FLANAGAN CONSULTING GROUP
Trusted Advisor to Northern Australia

Ports North

CAIRNS SHIPPING DEVELOPMENT PROJECT

Revised Draft Environmental Impact Statement

Chapter B9 Socio-Economic

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B9.1 Introduction

This chapter presents the results of socio-economic investigations and assessments. It is based on detailed technical studies and consultation undertaken specifically for this Revised Draft EIS. It also draws on relevant information and findings from the Draft EIS where are relevant to the current CSD project.

Several detailed technical assessments have been undertaken to establish exiting socio – economic environment and potential impacts of the project. These are listed in **Table B9-1** below. The final column shows where these reports are located in this Revised Draft EIS.

TABLE B9-1 DETAILED TECHNICAL ASSESSMENTS

STUDY	REFERENCE	DETAILS	LOCATION
Cairns Shipping Development Project Demand Study Update	AEC (2016)	Update to shipping demand forecasts based on the revised channel catering for Vista and Grand Class Vessels	**Appendix H**
Cairns Shipping Development Project Revised Draft EIS TS 9 Social Impacts	Briggs & Mortar (2017)	Assessment of the potential social impacts of the project	**Appendix AP**
Cairns Shipping Development Project 2016 Economic Analysis Update	AEC (2017)	Analysis of the potential economic benefits resulting from implementation of the project	**Appendix AQ**
Cairns Shipping Development Project Economic Assessment	MacroPlan Dimasi (2017)	Review of AEC Economic Analysis Update and response to relevant TOR and Guideline requirements.	**Appendix AR**

B9.2 Social Impact Assessment

B9.2.1 Introduction

A draft Socio-economic Impact Assessment (SEIA) was previously carried out in 2014 as part of a draft EIS to assess the potential social impacts and benefits associated with the construction and operation of the proposed CSD Project at the Port of Cairns as it was then proposed. This included a larger volume of dredging and marine placement of dredged material.

Since that time, project recalibration has been undertaken to redefine the extent of channel dredging by considering changes to target cruise ships and assessing the impact on channel design to reduce dredge volumes and costs.

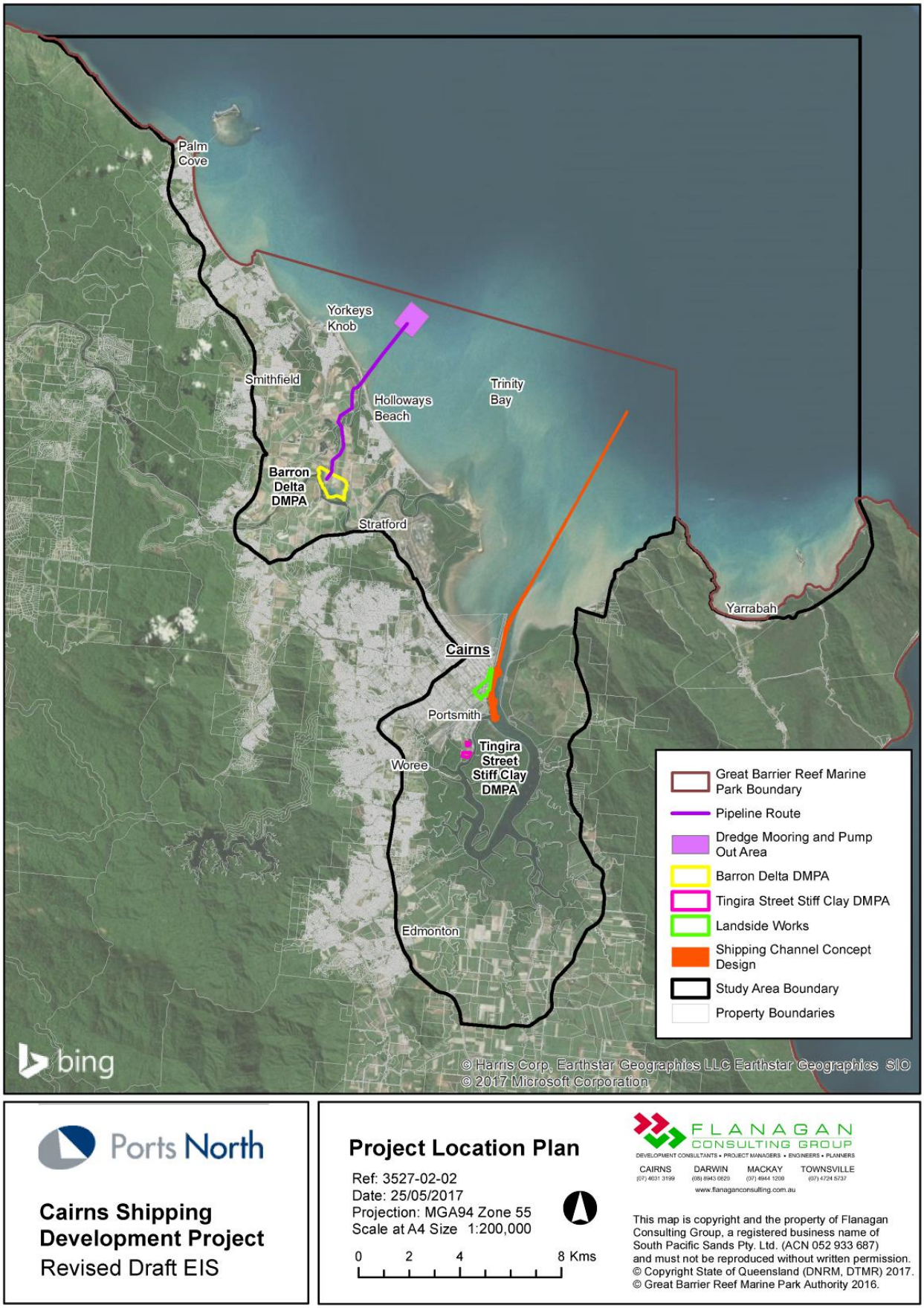
In addition, a Dredge Material Placement Options Study (**Appendix I)** was undertaken to expand on the land based placement options assessed in the draft EIS, in order to inform a detailed assessment of impacts in this revised draft EIS.

This SIA has been prepared to focus on the social impacts of the revised project including the dredging and dredged material delivery and placement within the two proposed land placement sites. It will also assess other social changes arising from redistribution of shipping between Cairns and Yorkeys Knob.

The placement sites are:

- Land placement of the soft clay component of the capital dredge material at Barron Delta (Northern Sands) Dredge Material Placement Area (DMPA) (an existing void in the Barron River delta created by past sand extraction and now used for burial of 'inert' construction and demolition fill).
- Land placement of stiff clays at previously reclaimed Ports North land at Tingira Street, Portsmith.

These sites are shown on the Project Location Plan **Figure B9-1**



Ports North

Cairns Shipping Development Project
Revised Draft EIS

Project Location Plan

Ref: 3527-02-02
Date: 25/05/2017
Projection: MGA94 Zone 55
Scale at A4 Size 1:200,000

0 2 4 8 Kms

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Figure B9-1 Project location plan.

B9.2.2 SIA Methodology

B9.2.2.a Scope

The revised draft EIS is required to meet the following:

- Terms of Reference (ToR) issued by the Coordinator General (Queensland) dated 30 November 2012.
- EIS Guidelines issued by the Commonwealth Departments of Energy and Environment (DoEE) / Sustainability, Environment, Water, Population and Communities (SEWPaC) dated 21 March 2013.

This SIA has been prepared by Sharyn Briggs (**Appendix AP**) in accordance with the Queensland Government Department of State Development, Infrastructure and Planning (DILGP) Social Impact Assessment Guideline (2013).

B9.2.2.b Stages

The stages in the methodology adopted are summarised below.

Baseline Study

A baseline study of the existing environment was undertaken to profile existing conditions, characteristics and trends upon which assessment of social impact could be based. This included:

- review of the proposal, review of information received from the client, feedback from previous community consultation, and a literature review of other studies and reports to determine potential social issues and community values and aspirations
- establishment of the regional and local community structure and activity patterns
- a land use review of directly impacted and immediately neighbouring properties
- overview of local commercial and employment activities
- a demographic profile of potentially affected communities
- a description of the future community.

Review of Consultation

A review was undertaken of existing consultation findings, and a summary developed of key issues/benefits identified through consultation relating to potential social impact. This was supplemented by a review of the outcomes of targeted localised consultation undertaken by Ports North to inform the SIA.

Assessment

Potential social impacts (adverse and beneficial) were predicted and synthesised across each stage of the project lifecycle (construction and operation), informed by the baseline study and the feedback from consultation. Assessment was then undertaken of potential impacts and opportunities by considering the likely changes to the values of the affected areas. The mitigation measures inherent in the concept design were identified and considered.

Evaluation of the significance of the impacts on individuals, groups and communities was undertaken using a table of significance adapted for social impact. The likelihood of an impact occurring, and the likely risk of an impact occurring was evaluated by using a risk matrix (the product of significance versus likelihood).

Mitigation/Enhancement and Management/Monitoring Measures

Desirable mitigation/enhancement measures in design, construction, operation and maintenance phases which might minimise adverse social impacts and optimise social benefits, were identified. The level of residual impact was assessed following mitigation/enhancement measures. Management/monitoring measures necessary to maintain the residual outcome were also identified, including indicators to measure the achievement of objectives.

A conclusion based on the above regarding the significance of the mitigated impact and consequences for the project was developed.

B9.2.3 Project and Study Areas

Social impacts can be viewed at several geographic levels. Various definitions have been adopted for the purposes of this Assessment, based on the following geographic boundaries:

- EIS Study Area – The Cairns Regional Council Local Government Area (LGA) (referred to as Cairns LGA), has been adopted as the EIS Study Area or where demographic information has not been available, the combined Cairns Regional Council and Douglas Shire Council LGAs (referred to as Cairns Douglas LGA) (**Figure B9-2**).

Figure B9-2 LGA Study Areas.

- Project Area – The Project Area has been defined for the purposes of the EIS as the area including the immediate footprint of the project, including the shipping channel, dredge material placement areas (DMPA) and wharf upgrades.
- Barron Delta (Northern Sands) DMPA Study Area (Figure B9-3). This comprises the lower 'Northern Beaches' area of Cairns, as well as areas extending up the Barron delta. For demographic purposes, a number of sub-areas have been reported on:
  - Yorkeys Knob
  - Holloways Beach
  - Machans Beach
  - Kamerunga
  - Caravonica (containing the Barron Delta DMPA itself).

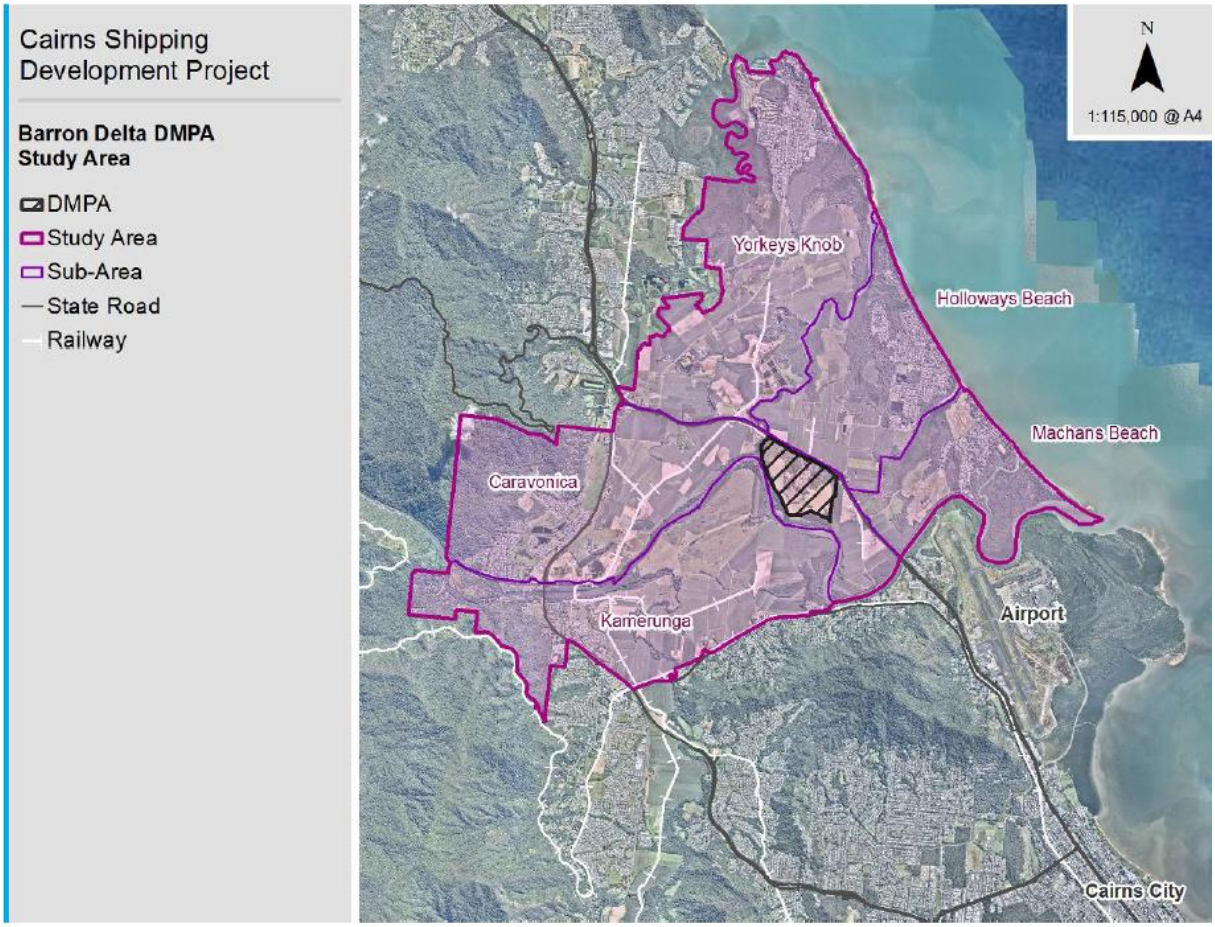


Figure B9-3 Barron Delta DMPA Study Area and Sub-Areas.

- Tingira Street DMPA Study Area (**Figure B9-4**). This comprises several sub-areas adjacent to and containing the Tingira Street DMPA. The majority of these are uninhabited or sparsely populated. Two sub-areas have been selected for further reporting:
  - the surrounding area of the Portsmith Industrial Area
  - the area opposite and nearby the Cairns Cruise Liner Terminal, called in this study the 'Wharf Street Area'.

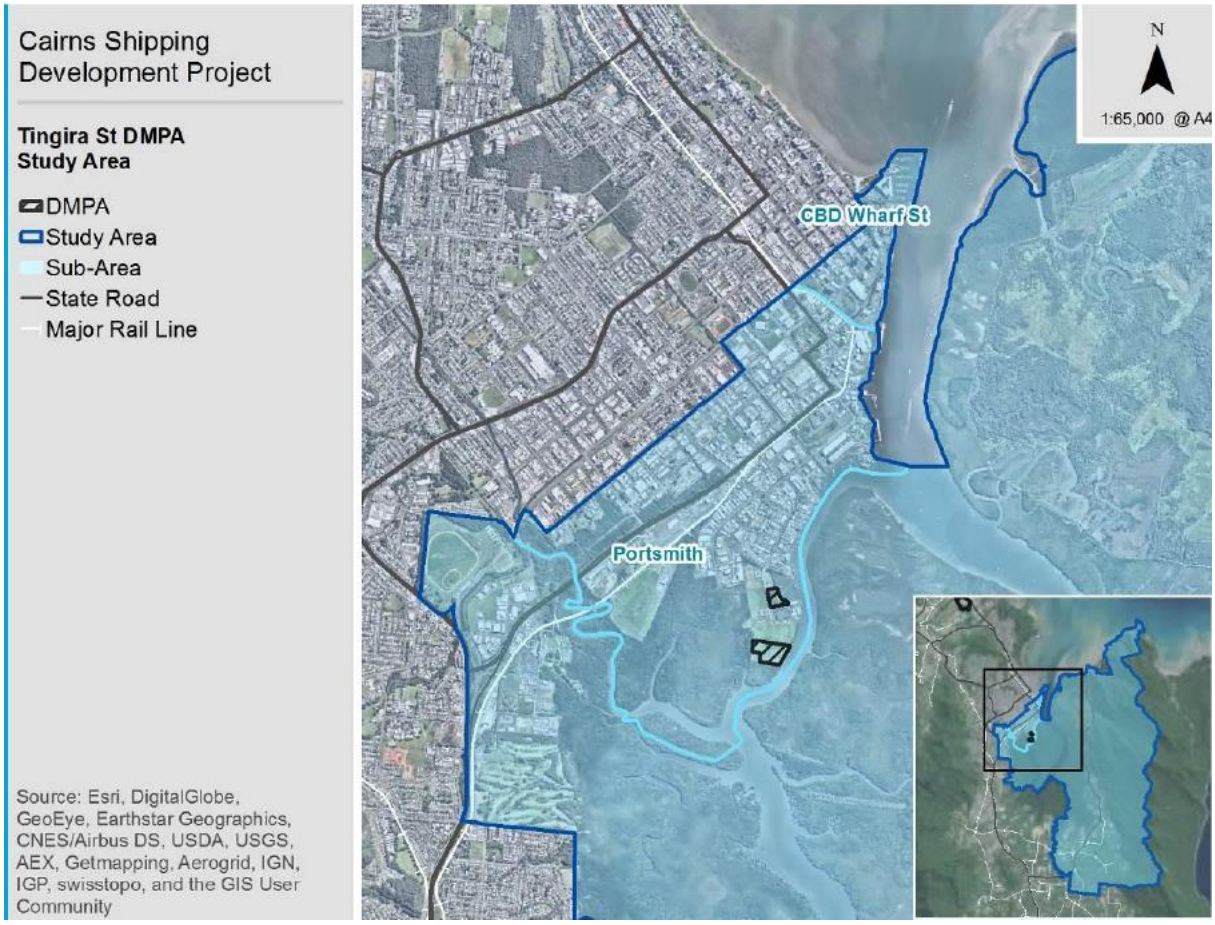


Figure B9-4 Tingira St DMPA Study Area and Sub-Areas.

B9.2.4 Stakeholder and Community Engagement

Ports North engaged a range of stakeholders and community members during the preparation of the EIS for the project commencing in 2011-2012. The outcomes of these consultations relating to social matters were reviewed by the social consultant, and key individuals/groups or communities potentially affected, and key issues/benefits potentially arising, were identified.

In addition, the social consultant identified a number of additional consultations which it requested Ports North to undertake as part of its engagement program, in order to specifically inform the Assessment. This included consultation in the two placement precincts, and in the vicinity of the pipeline.

Additional stakeholders consulted included:

- affected landowners
- Holloways Beach Environment Education Centre
- Cairns Regional Council (Infrastructure Services, Parks, Engineering and others).

Outcomes of the consultation were documented and summarised by Ports North for use by the consultant.

B9.2.4.a Review of Previous Consultation Findings

A large amount of consultation has been undertaken in relation to the CSD Project over the period of time in which it has been under consideration since 2012. Relevant findings from various sources were reviewed. A large amount of this consultation pertained to issues related to the initial project phase where marine placement of dredge material was considered, which is now not relevant to this proposal but demonstrates the desirability of land placement.

The overall key outcome of engagement activities was reported by Ports North (2014) to have been broad support for the CSD Project proceeding in relation to the economic benefits it will deliver to the local and regional economy. Job creation was viewed as an important social outcome of this increased economic activity. While the majority of stakeholders were highly supportive of the project proceeding, given the significance of the Great Barrier Reef to tourism and the role tourism plays in the local economy they were also very keen to ensure the reef is protected during the process.

B9.2.4.b Review of Consultation for the Current Proposal

Ongoing Meetings and Discussions

Ports North have continued to undertake consultation on the revised proposal and will undertake a further round of consultation during the exhibition of the EIS. Issues raised in the current consultation were provided by Ports North and include:

- a remaining high level of interest in port dredging
- ensuring land placed dredged material is not available for flood resuspension at Barron Delta sites
- that EIS should be clear and detailed on demand and economic justification including Cairns versus Yorkeys Knob numbers and growth, with and without the project
- cumulative impacts (e.g. extra shipping)
- soil quality and suitability for other uses
- acid sulphate soils
- the contamination status of material to be dredged
- that the past 16 years of rehabilitation at East Trinity should not be reversed by proposed land development or spoil placement, but turned into a wetland park
- an understanding that the that volume reduction had made it a different project
- relatively short period for preparation of the revised EIS.

B9.2.4.c Targeted Localised Consultation

A number of additional consultations were requested by the social planning consultant and undertaken by Ports North as part of its engagement program, in order to specifically inform this Assessment. This focused on consultation in the two placement precincts. Outcomes provided by Ports North include the following.

Barron Delta DMPA Study Area

- no significant issues raised by potentially impacted land owners in the Barron Delta
- the need to maintain access to paddock areas for planting/growing and to cane tramline sidings for harvesting by cane farmers and the need for individual disruption mitigation (pipeline vicinity)
- the possible need for multiple layers of approvals required both for the dredging at the mouth of Richters Creek and installation of the pipeline traversing various land tenures. Early discussion with the relevant statutory authorities to minimise any perceived delays in obtaining approvals was recommended by Council.
- the temporary land based pipeline would not conflict with any proposed future water and waste infrastructure planned by Council in the same timeline

- the temporary land based pipeline would not conflict with any proposed future leisure activity infrastructure planned by Council in the same timeline
- recent contractors undertaking Council's dredging works at the mouth of Richters Creek have improved their operation significantly over those in the early 2000s, and use by the Holloways Beach Environmental Education Centre was much improved with no major issues. The above centre stated no major concerns in regard to noise or direct disturbance to the facility or staff from the Council dredging activity in the Poinsettia Reserve adjacent to the centre. No significant issues were identified in relation to the current process.

Tingira Street DMPA Study Area

- no issues of concern in relation to harbour operation or amenity issues anticipated associated with tenants adjacent to the Tingira Street DMPA
- the placement of dredged material is in line with the purpose of the land and existing activities
- the proposed barge and land activities at the Tingira Street DMPA were similar to existing operations and would not be expected to create any social or amenity issues
- the site selection and design of the common use of barge facility at the proposed new locations for the new dredge barge mooring and unloading area was operationally appropriate
- general interest of tenants in buildings adjoining the Tingira Street DMPA in ensuring no water quality impacts and potential noise impacts if large quantities of rock were being handled.

B9.2.5 Policy Context and Legislative Framework

Policies, plans and strategies relevant to establishing the social context of the CSD Project and community values which may be enhanced or affected have been identified and summarised below.

B9.2.5.a Commonwealth

The Reef 2050 Plan

The *Reef 2050 Long-Term Sustainability Plan* was released by the Australian and Queensland governments in March 2015 and is the overarching framework for protecting and managing the Great Barrier Reef until 2050. The Plan outlines management measures for the next 35 years to ensure the Outstanding Universal Value of the Reef is preserved now and for generations to come.

The Plan sets clear actions, targets, objectives and outcomes to drive and guide the short, medium and long-term management of the Reef. The Plan firmly responds to the pressures facing the Reef and will address cumulative impacts and increase the Reef's resilience to longer term threats such as climate change.

At the core of the Plan is an outcomes framework that will drive progress towards an overarching vision:

> To ensure the Great Barrier Reef continues to improve on its Outstanding Universal Value every decade between now and 2050 to be a natural wonder for each successive generation to come.

The Great Barrier Reef is identified in the Plan as playing an important role in community life. Many people are seen to have strong connections to the reef through culture, occupation or familiarity. Human wellbeing – happiness, good health, and prosperity – is also seen to be inextricably linked to environmental health. People were also seen to derive less tangible benefits from healthy ecosystems, such as nature appreciation, opportunities for relaxation and enjoyment, and a better understanding of the complex natural world. The Reef also provides coastal residents with protection from wave action, especially in extreme weather.

The Plan seeks to ensure that community benefits derived from the Reef are considered in local and State-level policy and planning instruments and development and management decisions.

As an outcome of the Plan, the Australian Government has placed a permanent ban on disposal of material in the Great Barrier Reef Marine Park from capital dredging projects. In addition the Queensland Government has legislated to restrict capital dredging for the development of new or expansion of existing port facilities to within the regulated port limits of Gladstone, Hay Point/Mackay, Abbot Point and Townsville, and prohibit the

sea-based disposal of dredge material from these sites in the Great Barrier Reef World Heritage Area.

Environment Protection and Biodiversity Conservation Act 1999

As the project was deemed by the Minister to require assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) in relation to a number of matters of national environmental significance, the method of assessment is an EIS and Ports North is required to prepare the EIS according to the EIS Guidelines provided by the DoEE Minister. These guidelines include a requirement for a socio-economic assessment.

Great Barrier Reef Marine Park Act 1975

The *Great Barrier Reef Marine Park Act 1975* (GBRMP Act) is the primary Act in respect of the Great Barrier Reef Marine Park (GBRMP). It has provisions for the establishment of the Marine Park and the Authority responsible for its management (the Great Barrier Reef Marine Park Authority (GBRMPA)), the planning and management of the Marine Park, acceptable uses of the Marine Park and enforcement mechanisms for breach of these (Great Barrier Marine Park Authority 2017).

Great Barrier Reef Marine Park Regulations 1983 (GBRMP Regulations) are the primary regulations in force under the Great Barrier Reef Marine Park Act 1975. A component of the project requires permission under the GBRMP Regulations and therefore the GBRMP Act. To streamline the assessment process, the EIS Guidelines also include requirements for this permission to be assessed.

Great Barrier Reef Marine Park Zoning Plan 2003 (GBRMP Zoning Plan) is the primary planning instrument for the conservation and management of the Marine Park. Subsection 32(1) of the Great Barrier Reef Marine Park Act 1975 sets out that the Zoning Plan takes account of the World Heritage values of the Marine Park and the principles of ecologically sustainable use. The Zoning Plan aims, in conjunction with other management mechanisms, to conserve the biodiversity of the Great Barrier Reef ecosystem within a network of highly protected zones, and provide opportunities for the ecologically sustainable use of the Reef and access to the Great Barrier Reef Region (Great Barrier Marine Park Authority 2017).

B9.2.5.b Queensland

Sustainable Ports Development Act 2015

The *Sustainable Ports Development Act 2015* is the legislative framework developed by the Queensland Government to implement the main port-related actions of the *Reef 2050: Long-Term Sustainability Plan*. The legislation restricts new port development to areas within current port limits (or outside Commonwealth and state marine parks), restricts capital dredging for new or expanded port facilities to priority ports only (Gladstone, Hay Point/Mackay, Abbot Point and Townsville) (however there is a special exemption for the Port of Cairns, and the Port of Cairns Shipping Development Project as outlined below), and prohibits sea-based disposal of material generated by port-related capital dredging into the Great Barrier Reef World Heritage Area (GBRWHA).

Capital dredging relates to dredging for creating or enlarging channels, basins, ports etc., new port foundations, or laying pipe, cable or tubing, rather than for maintenance of existing channels, basins, ports etc. (or protecting human life or property).

As well as allowing capital dredging in priority port areas, the legislation permits limited capital dredging within the Port of Cairns' inner harbour to a total of no more than 50 000 cubic metres per approval and a total limit of 150 000 cubic metres in a four-year period. There is a further exemption of this provision for projects which are the subject of an ongoing EIS process started before the commencement of the Act, which includes the CSD Project.

However, the Act prohibits capital dredging where dredge material is deposited or disposed of in a restricted area including the GBRWHA, unless used for land reclamation, beach nourishment or environmental restoration. There are no exemptions to this requirement.

State Development and Public Works Organisation Act 1971

The project has been declared a coordinated project for which an EIS is required. A separate set of guidelines were issued by the Queensland Government for this assessment, namely the ToR. The ToR require that a social and economic impact assessment is undertaken and included in the EIS.

Far North Queensland 2009-2031 Regional Plan

The *Far North Queensland 2009-2031 Regional Plan* (FNQRP) remains the current Queensland Government strategic planning document for Far North Queensland. It is noted that the Queensland Government is in the process of updating the state's regional plans. The FNQRP highlights the Port of Cairns as a key node for the development of tourism in the region.

Advancing Tourism Plan 2016-2020

Advancing Tourism is the Queensland Government's plan to attract more visitors to the state. It identifies a number of key competitive advantages of Queensland including: diversity in products and experiences; iconic natural assets that offer unique experiences; accessibility through strong transport connections, safe, clean and green environment; and close proximity to Asia.

The Great Barrier Reef is identified as a natural asset that can support new and refreshed ecotourism and nature-based tourism products and experiences. Indigenous and cultural tourism products, events and experiences are also identified as an area for growth.

Encouraging private sector investment in key cruise ship ports is identified as an action to improve access to tourism transport and infrastructure. Also related to the cruise ship market is an action to undertake a study to investigate opportunities around superyachts and investigating the economic contribution that base porting in Queensland could provide.

Advancing Tourism Plan 2016-2020: Advancing Tourism in North Queensland

A supplement to the Advancing Tourism Plan, the Advancing Tourism in North Queensland Strategy provides specific actions for the North Queensland region.

The Great Barrier Reef is again noted as an important tourism draw-card for the region, and supporting cruise and other maritime infrastructure is again noted as an action.

Draft Queensland Tourism and Transport Strategy 2016

Acknowledging that transport is an important component of a successful tourism industry, the Queensland Government developed a transport strategy to improve access to places around Queensland for visitors. The strategy was released as a draft in 2016, and a final version is due to be released responding to feedback in mid-2017.

The cruise ship market is identified as one of the fastest growing sectors of the tourism industry in the strategy, and aviation and cruise infrastructure are therefore considered priorities in the strategy. The Port of Cairns is identified as a key cruise port in Queensland supporting the cruise market which is one of the fastest growing travel sectors.

As well as actions on improving visitor information, transport services, and ticketing and products, the strategy identifies actions on planning and investment to encourage long term tourism growth which include actions related to the cruise ship market. The actions include:

- supporting the development of the cruise shipping ports by continuing to encourage private sector investment in the industry and developing a prioritised list of opportunities to optimise long-term growth
- capitalising on cruise industry market opportunities by studying potential economic impacts of superyachts, highlighting economic contribution of base porting, and providing a coordinated approach to cruise shipping across Queensland Government.

B9.2.5.c Local

Cairns Regional Council Corporate Plan 2013-2018

The Corporate Plan is an overarching strategy to guide CRC decision making in annual budgets and operational plans and is updated every five years. The vision for the Cairns region includes valuing the natural environment, lifestyle and surroundings; supporting and respecting distinctive and vibrant communities; being innovative and creative; and growing and diversifying the economy. Economic development is identified as a key priority for CRC. A multi-pronged approach to achieve sensitive and sustainable economic development is outlined, including a focus on diversifying the economy with emphasis on both tourism and agriculture, as well as a various other sectors.

Protection of productive rural land from urban encroachment is also mentioned in the planning for the future priority area.

Other priority areas include regional cooperation, infrastructure management, arts and culture, disaster management, environmental management, community health and wellbeing, and community services and public safety.

A number of strategic goals are outlined based on the quadruple bottom line approach to governance:

- Community: A vibrant, inclusive and healthy community with access to services and facilities which reflect its unique character, role and needs.
- Economy: A strong, diversified and sustainable regional economy that supports the growth of new and existing industry and business activities whilst enhancing local lifestyle and providing long term employment opportunities.
- Environment: A sustainable, well managed and healthy environment that provides a balance between built infrastructure and the conservation of our world heritage features and natural and cultural resources.
- Governance: An efficient organisation providing best practice service delivery through leadership and policy making and the effective management of people, assets and finances.

Cairns Regional Council Cairns Plan 2016 Strategic Framework

A new planning scheme for the Cairns region was adopted by CRC in February 2016 and commenced on 1 March 2016. The strategic framework section of the Cairns Plan 2016 includes a vision for the region to 2031 which includes the following vision elements:

- the region is internationally renowned for its natural beauty, outstanding biodiversity values and unique tropical lifestyle attracting international visitors, domestic visitors and new residents
- the community is cognisant of natural hazards and climate change and this influences land use planning and decision making
- growth is consolidated within the identified urban area
- rural land is protected and is used for rural purposes
- the region has a diverse and thriving economy complementing environmental values. Tourism and primary production remain substantial economic drivers and employers, however other industries have contributed to a diverse economy
- the built environment is characterised by tropical design and natural surrounds
- the Cairns City Centre is the capital of commerce and services for Far North Queensland, Cape York, the Gulf Country, Papua New Guinea and the wider South Pacific region.

Port of Cairns Land Use Plan

Ports North prepares land use plans for strategic port land under its control which are approved by the State Government Minister of Transport. Assessment of development on strategic port land is then undertaken according to the approved land use plan and planning legislation (*Sustainable Planning Act 2009* and Sustainable Planning Regulation 2009).

The Land Use Plan (Ports North 2013a) aims to encourage sustainable expansion of port holdings, facilitate the integration of port interests with State and local government interests, provide a basis for assessing development applications, and provide government, residents and businesses with confidence about future development on port held land.

It has separate local area plans for Cityport and Seaport (**Figure B9-5)**. Cityport is the area of the port that is north of around Draper St and Seaport is the section south of Draper St. This distinction relates to the different focuses of activities in these areas – with Cityport being a major part of the Cairns waterfront for use by residents and visitors, and integrating with the Cairns CBD, and Seaport being used for a diverse range of strategic port industries.

The vision for the Cityport area is that it is a 'functional, dynamic and cohesive urban waterfront precinct that is distinctive' including a diverse range of uses and activities that complement the Cairns CBD. It notes that Cityport provides a world standard international cruise ship terminal and reef fleet tourist vessel facility reinforcing the reputation of Cairns as the gateway to Far North Queensland and the Great Barrier Reef. The area will retain views to and from the waterways, provide pedestrian routes, and provide distinctive tropical Cairns landscape and built form.

Precincts 4 and 5 are immediately adjacent to the cruise ship terminal. The land use plan for Cityport notes that these precincts are gateways into Cityport, and any development in this area will focus on tourist activities and short term accommodation. Mixed use buildings of around 6-10 storeys are envisaged on these sites.

The Cityport area includes several existing buildings which are intended to be retained: Cairns Convention Centre; Hilton Hotel; Radisson Hotel and the Pier Shopping Centre and several heritage buildings. The landside construction areas are located within Cityport.

Figure B9-5 Port Land - Cityport and Seaport.

Source: Ports North (2013a).

The Tingira St DMPA is located within the Seaport area and therefore the Seaport Local Area Plan volume is relevant. The vision for the Seaport area is that development will 'enhance and maintain the operation and commercial viability of the port', and 'maximising available wharf space and support areas as well as the flexibility of their use', among a number of other vision elements.

The Tingira St DMPA is located within areas designated as Waterfront Industry Planning Area and Industrial Planning Area. The intent of the Waterfront Industry Planning Area includes:

> The Waterfront Industry Planning Area will incorporate a diverse range of marine orientated industrial uses including low-impact industrial and port activities, including shipyards, ship maintenance, fishing bases, commercial fishing operations and marinas, barge ramps, vessel storage and harbour operational and port service activities.
>
> Existing shipyards, dry dock/ship repair operations, general cargo and the commercial fishermen's base are located within the waterfront area of this planning area. The continued operation and expansion of these marine orientated industries and activities is encouraged. Recreational uses such as boat clubs are also envisaged in this area.
>
> Future development within this area should not compromise the operation of the port or the environmental qualities of Trinity Inlet and Smiths Creek.

The intent of the Industrial Planning Area includes:

- The Industrial Planning Area is located on the western side of Tingira Street and does not have direct access to the waterfront. It is envisaged that an Industrial Business Park will be developed in this planning area with linkages to the Waterfront Industry Planning Area.
- This planning area is intended to provide for a range of activities that support the primary activities and operation of the port. Such activities include general industries, low-impact industries, storage premises, and warehouse and distribution uses. Commercial and office support activities may also be appropriate depending on their scale and location.
- This planning area adjoins a substantial conservation area to the south and any future development should be designed to minimise any potential impact on this area.

Therefore regardless of the project, the Tingira St DMPA Study Area is likely to continue developing for strategic port uses and/or as industrial uses to service the port.

Cairns Community Plan – Your Community Plan 2011-2031

The community plan was developed during 2010-2011 as a requirement of the Local Government Act at that time. Development of a community plan is no longer a requirement for local government and it has not been updated since 2011.

Broad community consultation was undertaken for the development of the community plan including workshops, online surveys and forums, postcards, letters and other forms. In total, around 2,500 pieces of public feedback were received. The community vision, aspirations and values outlined in the plan are therefore considered to remain of relevance.

The relaxed laid-back lifestyle of the region is noted as an asset attracting residents to the region. It was suggested that Cairns has the amenities of a city, with the feeling of a big country town which was considered a feature that residents valued. Other characteristics valued by the community noted in the plan included: the diverse culture and history; multicultural and cosmopolitan community; vibrant arts sector; outdoor lifestyle encouraged by the local climate; natural setting of the lush wet tropics (including green hill sides, tablelands, reefs, ocean and rainforests); and focus on sustainable living.

The vision for Cairns in 2031 includes elements that may be relevant to the proposal such as:

- renowned as a great place to live and visit
- world-class infrastructure
- living in social and environmental harmony including sustainable living
- diverse community enriches the cultural landscape and contributes to economic growth and celebrations
- sense of community/community spirit
- outdoor recreation
- safe places and spaces
- robust economy for enterprise
- tourism will remain a significant driver and substantial employer but other industries will provide a diverse economy. Networks or clusters will result from collaboration between business, education and research institutes
- connected region
- global centre of wet tropics living and industry – drawing thinkers, entrepreneurs, businesses, environmentalists, humanitarians, etc.
- appreciation and respect of the natural environment, including learning from traditional owners
- live close to nature and minimise environmental impact.

Desired outcomes outlined in the report are summarised under six themes. The desired outcomes of relevance include:

- Community
  - Includes strategies focused on education and health
  - Social equity including extra attention for disadvantaged communities/neighbourhoods
  - Safety and security strategies
  - Providing community places to enhance participation and wellbeing.
- Culture, lifestyle, people
  - Maintain the relaxed, laid back outdoor lifestyle within the context of a large and growing population
  - Ability to interact with diverse natural environment
  - Meet needs of ageing population.
- Economy
  - Diverse, sustainable, low-carbon, resilient economy
  - Expanding existing employment and economic bases, while encouraging new opportunities such as agriculture, aviation, clean energy, marine, manufacturing, mining and mining services, culture, lifestyle, education and tropical expertise
  - *Maintaining the Cairns Seaport as a major refit and maintenance base as well as a marine training location for Queensland TAFE, with a commercial fishing and an Australian Navy base, a thriving super yacht industry, and as the largest concentration of dive tourism industry in the country.*
  - Retaining agricultural land for food production and agriculture
  - Build tourism including nature-based tourism and best-practice sustainable nature conservation, and diversification into sport, adventure, cultural and business tourism opportunities. Tourism to focus on natural environment, vibrant cultures and related businesses as opportunities
  - Marketing laid-back lifestyle as a must-see destination to domestic and international markets
  - *Expanding marketing campaigns for our region as a major cruise ship port.*
- Natural environment
  - Internationally renowned for natural wonder, biodiversity values and sustainable living
  - Mitigation of environmental impacts of population growth
  - Minimise impacts of climate change
  - Protecting built and natural heritage.
- Urban environment and built form
  - Infrastructure for self-contained functioning suburbs
  - Diverse and unique communities
  - Exemplar of holistic sustainable living in tropical environment.
- Governance
  - Active participation of community in governance
  - Network of community leaders.

Cairns Regional Council Community Development Strategic Plan 2011-2016

The Cairns Regional Council's Community Development Strategic Plan focuses on the five years from 2011 to 2016. It is proposed to be reviewed in the 2016/17 operational year.

The plan aims to:

- respond to social inclusion and community development priorities highlighted in the Council Corporate Plan
- set clear directions as to how these priorities will be achieved, measured and monitored
- strengthen the capacity of the community development unit of Council to better meet the needs of vulnerable groups in the community who traditionally have difficulty being heard.

The CRC has a vision for the future where the region thrives and inspires in the way it balances economic development, environmental management and social wellbeing. This plan supports that commitment to deliver the community outcome priorities expressed in the Corporate Plan.

Cycling and Walking Strategy: Network Plan 2010-2030

The Cairns Regional Council Cycling and Walking Strategy Network Plan (Cairns Regional Council 2010) sets the strategic direction for the delivery of walk and cycle infrastructure in the region. It includes a network map showing proposed walk and cycle routes throughout the entire Cairns region including functional route hierarchy, design guidelines for bikeways, an implementation plan and an implementation toolbox.

The connection between Yorkeys Knob and Holloways Beach is identified as a future route as part of the Northern Beaches cycling route, and two options are identified (**Figure B9-6**). Both of the potential routes pass through the study area for the Barron Delta DMPA.

The two options are:

- Option A: Integrate walk/ cycle facilities with proposed future road (between Cassia St - Yorkeys Knob Rd/ Dunne St)
- Option B: Exclusive pedestrian/ cycle bridge crossing of Thomatis Creek downstream of the boat ramp near Acacia St.

The Northern Beaches Route is identified as a key project in the network plan to provide a continuous walking and cycling link from Machans Beach to Palm Cove to deliver a unique recreation and tourism experience:

> Ongoing development of the 'Northern Beaches Route' to provide a continuous walking and cycling link from Machans Beach to Palm Cove – this long range strategy seeks to deliver a unique recreation and tourism experience, showcase the beaches and service local destinations on-route. It will be established with urban growth over time and utilise a mix of foreshore open space (where possible), road-based links, local parks and other open space. Some sections will be subject to detailed planning, environmental, engineering and feasibility investigations e.g. creek crossings.
>
> Low key measures to enhance the pedestrian and cycling environment through beach esplanades e.g. meandering paths in foreshore parks, advisory treatments for on-road cycling, route signage and branding.

Branding of the route, route signage, network maps and interpretive opportunities on-route are suggested to enable promotion of the route as a tourist attracting feature of the region, and opportunities to provide bike facilities at strategic locations and activity nodes are suggested to encourage use of existing activity nodes by cyclists.

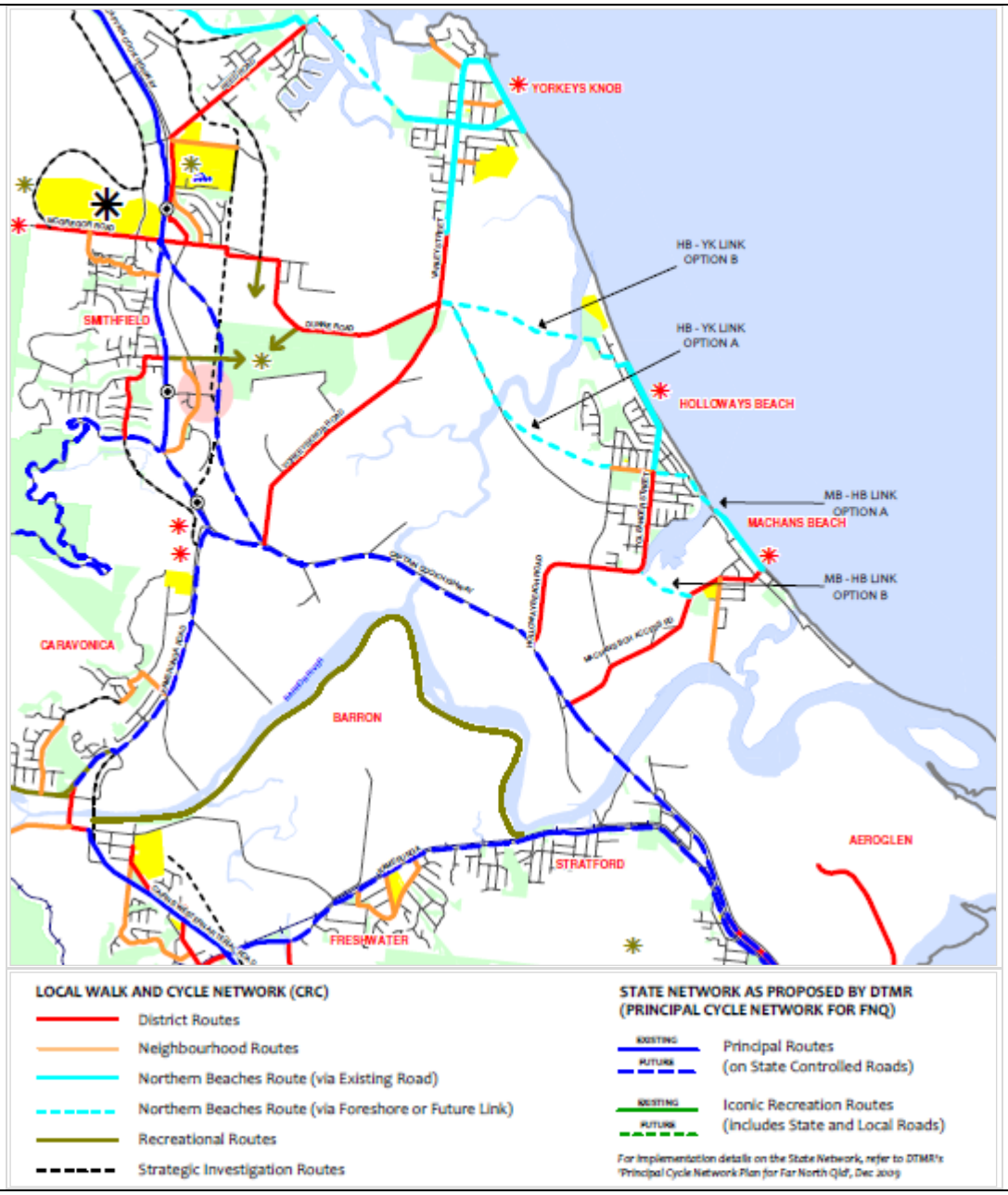


Figure B9-6 Walking and cycling network, Northern Beaches.

Source: Cairns Regional Council (2010).

Yorkeys Knob Foreshore Improvement Plan 2015

Council engaged GGI Landscape Architects (2016) to undertake stakeholder consultation and develop a new vegetation management plan and foreshore redevelopment plan for the Yorkeys Knob esplanade area. The study area included all of the foreshore area adjacent to Sims Esplanade from Yorkeys Knob Foreshore Park to the north and Goodwood Park to the south.

The southern section of the study area is closest to the Barron Delta DMPA and is around 900 m to the north of Thomatis Creek. The southern section of the study area is suggested to remain as a mostly natural setting, with only a few improvements to the beach access area around Kempton Street including:

- new outdoor fitness equipment (one of three locations in the study area)
- picnic area with barbeque

- nature play zone
- all abilities access to the beach
- new bike parking, seating, water connection (shower, drinking water), bin and signage
- possible future connection with the Northern Beaches cycleway to the south.

Key

1. 3m wide esplanade path weaves through shading parkland
2. New outdoor fitness system location 3
3. New picnic area and barbeque, proposed planting as beach arrival statement
4. Proposed future nature play zone
5. Proposed all abilities access to beach look out deck
6. New bike parking, seating, water connection, bin and signage
7. Proposed Goodwood Park feature planning and statement signage
8. Proposed Goodwood Park information platform, interpretive signage and framed views
9. Possible future connection to Northern Beaches Cycleway.

Figure B9-7 Yorkeys Knob Foreshore Improvement Plan, Southern section.

Source: GGI Landscape Architects (2016).

Draft Holloways Beach Foreshore Improvement Program 2017

Cairns Regional Council has proposed improvements to part of the Holloways Beach foreshore (Otium Planning Group and Landplan Landscape Architecture 2017). The foreshore improvements relate to around 750m of foreshore from where Casuarina St meets Poinsettia St in the north, to Oleander St in the south. These were put forward to the community in April 2017 as draft improvements for community feedback.

Positive features of the foreshore noted in consultation undertaken for the project included the natural intrinsic value of the foreshore, the facilities installed (including playgrounds, toilets, barbeques and seating), the quiet family nature of the foreshore, and the dog friendly nature of the foreshore. Main issues related to unsociable behaviour, erosion, and drainage and that any improvements would contribute to over-development of the area.

Consultation with local stakeholders to inform the draft strategy noted that at least one respondent felt that the amount of dredging that is occurring in the surrounding area should be reduced (although no further details were provided). One respondent suggested that sand replenishment was needed at the Thomatis/Richters Creek end of the beach.

It was noted that Holloways Beach often undergoes beach nourishment:

> Holloways has had major issues with erosion and loss of foreshore areas in the past. Several structural and replenishment efforts have been undertaken with rock walls to the south of the main beach area and the use of geo-fabric groynes near the swimming area.
>
> In 2008 the worst beach erosion was much further north in front of the park (right back into the grassed area, 2 m out from the first barbeque). CRC placed over 35 000 m^3 of sand dredged from Richters Ck, half of which went in north of Oleander St. In 2009 further nourishment was undertaken (18 000 m^3) with sand trucked down the beach from the dredge at Richters Creek. Some of that sand went on the beach north of Oleander St. There has been sand replenishment as far up as the Environmental Centre.

Recommendations of the plan included activating the northern end of the foreshore study area, including providing formalised parking, exercise nodes, barbeque and shelter to increase use:

> It is important to activate the northern section of the foreshore. This can be achieved by providing recreation opportunities at the northern most section of the study area. A BBQ/ picnic shelter would provide the local community another location to gather and would active the space. If complemented with other elements it would add significant recreation value for residents.

It was noted that pathways along the foreshore should be a minimum width of three metres to ensure that the path can serve as part of the Northern Beaches Leisure Trail, which is a proposed cycleway connecting the Cairns CBD with Palm Cove and identified as part of the principal cycle network for Far North Queensland. Proposed options for the alignment of the Northern Beaches Leisure Trail between Yorkeys Knob and Holloways Beach were included as part of a literature in the Foreshore Improvement Plan (shown in **Figure B9-7** below) however no additional information about the preferred alignment or timing of work on the Northern Beaches Leisure Trail was included.

There is a further Council proposal to create a long-distance mountain bike and walking trail from Palm Cove to Port Douglas which is referred to as the Wangetti Trail Project. This trail would connect to the Northern Beaches Leisure Trail.

B9.2.5.d Other Relevant Strategic Plans

Tropical North Queensland Tourism Opportunity Plan 2010 - 2020

The *Tropical North Queensland Tourism Opportunity Plan* (TTNQ n.d.) provides direction on the sustainable development of tourism in the TNQ region. It lists the upgrade of the Cairns Cruise Liner Terminal (CCLT), which was completed in 2010, and the upgrade of the shipping channel, as key opportunities to grow cruise tourism.

Tropical North Queensland Regional Economic Plan 2011-2031

Advance Cairns' *Tropical North Queensland Regional Economic Plan 2011-2031* (TNQREP) (Advance Cairns 2010) outlines a 20-year economic vision for the region built through consultation with key economic stakeholders in Far North Queensland. It sets out a vision to become 'The World's Leading Sustainable Tropical Region'.

This will be achieved through:

- a strong and confident tropical economy
- an enriched lifestyle in liveable communities
- a natural and built tropical environment which is enjoyed, protected, and enhanced.

The project is listed in the TNQREP as an activity to strengthen and diversify the region's tourism industry and destination appeal.

Regional Development Australia Far North Queensland and Torres Strait Roadmap 2013-2016

Regional Development Australia (RDA n.d.) *Far North Queensland and Torres Strait Roadmap 2013 – 2016* (FNQTSRM) sets out a number of regional focus areas which include:

- expanding the region's outside earnings
- ensuring social services and infrastructure are at levels appropriate to the population
- re-establishing confidence in the region's future opportunities
- leveraging opportunities to enhance employment opportunities for the region's Indigenous population
- ensuring long-term planning commitments from governments to tackle water and energy security and climate adaptation measures.

FNQTSRM recognises that strong growth in the cruise ship market in Australia offers an opportunity for the region as an existing major cruise ship port. However, this growth has been accompanied by an increase in the size of cruise ships. It recognises that Cairns has a major challenge to achieve the deepening of the harbour channel and port anchorages to accommodate these larger cruise vessels.

The upgrade of the shipping channel and associated port infrastructure is identified as a key infrastructure asset needed for social and economic development and future sustainability of the region.

Tropical North Queensland Destination Tourism Plan 2014

Tourism Tropical North Queensland developed a tourism plan for the area to assist in achieving an increase in regional tourism expenditure by $2 billion per year from 2012 to 2020 (TTNQ 2014). The Tropical North Queensland region recognises that tourism is supported by natural assets including the Great Barrier Reef. The five 'hero experiences' for the region are the Great Barrier Reef, the world's oldest tropical rainforest, tropical lifestyle and culture, adventures, and Aboriginal and Torres Strait Islander people.

The CSD Project is identified as a major tourism-related infrastructure project for the region creating future opportunities. Actions are identified to 'Grow a portfolio of Cruise Liner port visitation schedules and Cairns home porting' and 'Grow superyacht visitation'.

B9.2.6 Existing Socio-Economic Conditions

B9.2.6.a EIS Study Area

Cairns is the urban heart and key economic centre of Far North Queensland. It is the capital of commerce and services not just for Far North Queensland, but also Cape York, the Gulf Country, Papua New Guinea and the wider South Pacific region (CRC, 2016). Cairns role extends into health care, government, retail and other services, with major providers such as Cairns Base Hospital established in the Cairns CBD.

Cairns is an internationally significant tourist destination offering connection to the Great Barrier Reef and tropical rainforests. The Port of Cairns is a key cruise port in Northern Queensland, along with ports in Port Douglas, Townsville and Airlie Beach. Cairns is also the location for the region's major airport, with Cairns Airport servicing both domestic and international aircraft. In 2015/16 more than 5 million passengers travelled through Cairns Airport (Cairns Airport 2017).

The Cairns LGA is located on coastal land between the Great Dividing Range and the Coral Sea. The World

Heritage Wet Tropics rainforest is located to the west and north, and the Coral Sea and GBRMP to the north and east. The Cairns CBD is located directly adjacent to the Port of Cairns.

As outlined in Tourism Tropical North Queensland and Tourism Queensland's *Tropical North Queensland Tourism Opportunity Plan* 2010-2020 (2010):

> Cairns city is situated along the foreshore of the Coral Sea and Trinity inlet. It is an established tourism destination of global significance and acts as the region's hub for tourism. Other destinations within Cairns include Palm Cove and Kuranda which have substantial existing tourism infrastructure. As a hub for the region it also is the key centre for tourism related industry including retail and business events. Equipped with an international airport and a busy cruise port with over 200 international and domestic cruise ship visits a year, Cairns provides the base from which many visitors explore Tropical North Queensland. It hosts a wide variety of accommodation options ranging from backpacker hostels through to five star hotels. Tours to the rainforest and Great Barrier Reef depart daily from Cairns' major accommodation providers. A large number of community, cultural and tourism related festivals and events are also based in Cairns. It is also home to the Cairns Convention centre which has very good existing capacity and capability to host tourism related events. The recent redevelopment of Cairns foreshore 'esplanade' has incorporated excellent community space including pools, recreation and sporting facilities.

B9.2.6.b Project Area

The Port of Cairns is situated on the western bank of Trinity Inlet, a mangrove-lined estuary to the west of the city of Cairns on the border of the Cairns CBD. Trinity Wharf is the location of the CCLT. The land immediately surrounding the port is a mix of industrial and commercial uses. East Trinity Reserve, an undeveloped environmental reserve, lies opposite the port on the eastern side of Trinity Inlet, providing a green backdrop to the city of Cairns. The current Port of Cairns navigational channel extends into Trinity Bay, which forms part of the Coral Sea.

To maintain its defined dimensions, the Port of Cairns' shipping channel is dredged annually. This maintenance dredging has been undertaken each year since the Port opened. Ports North currently has approval from the Great Barrier Reef Marine Park Authority (GBRMPA) to place the material from this maintenance dredging in a location (the DMPA) approximately 12 kilometres offshore.

Ports North has placed dredge material in this location for the past 20 years and estimates that approximately 6.5 million cubic metres of dredge material has been placed in this location to date. The location of this DMPA is recorded in marine mapping. A Notice to Mariners regarding the dredge activity is issued to advise other vessel operators to proceed with caution around the operating dredge vessel.

B9.2.6.c Barron Delta DMPA Study Area

The Barron Delta DMPA Study Area as defined in **Figure B9-8** is located in the suburb of Barron, which is a mainly rural area to the north of the Cairns urban area on the Barron Delta. The Barron River winds through the area and most of it is relatively low lying and subject to flooding in a flood event. Surrounding uses are mainly agricultural (including aquaculture and cane farming), with some other uses along the Captain Cook Highway, such as the Northern Sands quarry (the site of the DMPA) and a motorcycle track and Go-Kart track and Laser Tag Arena entertainment facility.

The Northern Sands site lies on the western side of the highway and is accessed directly from it by a gravel driveway in poor condition. The site contains several uses:

- the sand mining operation
- a Boral concrete batching plant
- a commercial dump.

Other than for scattered residences such as farm houses, there are no nearby urban settlements.

The Northern Beaches suburbs of Holloways Beach and Machans Beach are located to the east of the site, and are each separately accessed from the Captain Cook Highway. Yorkeys Knob and other Northern Beaches suburbs (including Trinity Beach, Clifton Beach and Palm Cove) are further north. The suburbs of

Kamerunga and Caravonica lie well to the west of the site in the Barron Gorge.

The suburbs comprising the Barron Delta DMPA Study Area are shown on **Figure B9-8** and described below. The figure also shows suburbs of the Northern Beaches surrounding the study area referenced below.

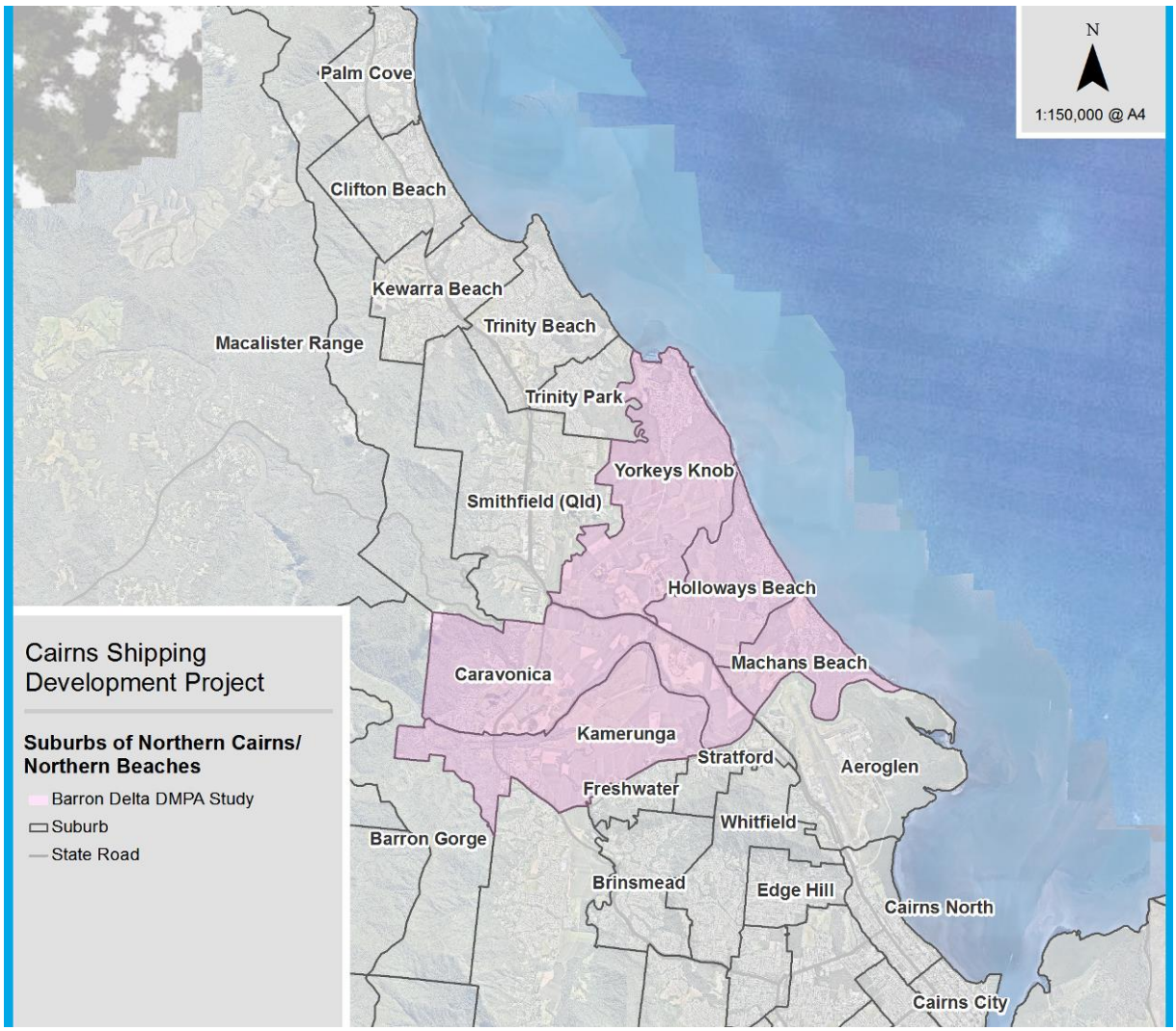


Figure B9-8 Northern Beaches suburbs.

Machans Beach

Machans Beach is the southernmost of the Northern Beaches, and is located close to and under the flight path of Cairns International Airport. Its location may have affected the amenity of the suburb, despite its coastal location, and it appears to contain some low-cost housing and is not a tourist destination. It hosts few facilities and services, although it does have a school, a few shops and a sports field. It is separated from the highway by flood liable cane fields and served by a bus service.

Council has recently built a new retaining wall along the length of Machans Beach to make it safer and better protected from weather events and erosion. This included foreshore park improvements along O'Shea Esplanade. Prior to the works, Machans Beach seawall was unstable and susceptible to collapse. Reconstruction works began in April 2014, and after 15 months of construction, the foreshore is now comprised of rocks placed to form a stable, flatter rock-face extending about 15 metres out to sea from the original wall.

The $16.8 million Machans Beach seawall reconstruction project was officially opened on 15 August 2015[1].

Holloways Beach

Holloways Beach is the next most southern beachside suburb, and like Machans Beach, is separated from the highway by flood liable cane lands. Its proximity to the airport is shown by an air navigation mast and again planes fly low over Holloways Beach, although at a slightly higher altitude.

Holloways Beach has a greater number of community facilities, including a neighbourhood shopping centre, restaurant, football club, and other community facilities and parks. It has slightly higher residential amenity than Machans Beach, and a limited amount of tourist development in multistorey units. Markets are held at Holloways Beach on one Sunday of the month. Buses serve the suburb. There is a stinger enclosure and lifesavers patrol the beach. It has an adjoining cafe and contains a children's playground and amenities.

Council is currently planning a foreshore improvement program at Holloways Beach, which is on exhibition. According to the Draft Holloways Beach Foreshore Reserve Improvement Plan (CRC 2017), Holloways Beach has had major issues with erosion and loss of foreshore areas in the past. Several structural and replenishment efforts have been undertaken with rock walls to the south of the main beach area and the use of geofabric groynes near the swimming area.

In 2008 the worst beach erosion was much further north in front of the park (right back into the grassed area). CRC placed over 35 000 m^3 of sand dredged from Richters Creek, half of which went in north of Oleander Street. In 2009, further nourishment was undertaken (18 000 m^3), with sand trucked down the beach from a dredge at Richters Creek. Some of that sand went on the beach north of Oleander Street. There has been sand replenishment as far up as the Environmental Centre, which lies on the northern tip of the beach.

The Draft Foreshore Improvement Plan reports that erosion at Holloways has moved around and the attention has been focused on the worst affected areas at the time. Council has usually addressed this by sand nourishment with some attention around the stinger net area almost every year.

It is noted by the Draft Foreshore Improvement Plan that for the last 3 years, apart from local erosion in the area of the stinger net, the beach has held its profile fairly well, a big improvement on 2008 and 2009. Using groynes has always been an option and a geofabric groyne trial (sand tubes) was done years ago at the southern end of the park. Further pursuit of geofabric or other groyne style systems is constrained by approvals required from EPA/EHP who appear to be very reluctant to consider these solutions. This has made it problematic for Council to progress any more stable and lasting solutions to sand loss and beach erosion.

According to Council's website[2], the most recent sand nourishment program was undertaken in Holloways Beach between late February and the end of May 2016, a period of three months. This involved dredging sand from the mouth of Richters Creek at the northern end of the beach and pumping it through pipes to the rock wall and stinger net areas at the southern end of the beach. Dredging and pumping was programmed to take approximately 10 weeks to complete.

During this time, partial beach closures and minor disruptions to traffic and car parking areas were required. Council sought the public's patience and cooperation. Minor vegetation removal was also required for machinery access requirements.

Figure B9-9 shows a Location Plan for the works as well as aerial photographs of the works whilst in progress around June 2016.

[1] http://www.cairns.qld.gov.au/council/major-projects/completed/machans-beach-seawall-reconstruction#sthash.xRRIPDAs.dpuf.

[2] http://www.cairns.qld.gov.au/water-waste-roads/works-in-progress/closed/holloways#sthash.D3hSBrmh.dpuf

Figure B9-9 Recent beach nourishment works undertaken at Holloways Beach.

Yorkeys Knob

Yorkeys Knob is the next beachside suburb to the north, and contains significantly more tourist accommodation than either of the previous two beaches. There is current multistorey tourism development occurring along the foreshore. It is similarly accessed through cane lands with isolated farmhouses.

The Cattana Wetlands Environmental Park, a low-key tourist attraction and wetlands recreation area, can be accessed from the road leading into Yorkeys Knob from the Captain Cook Highway. The Cattana Wetlands is around 80 hectares of formerly degraded land which Council has rehabilitated into a nature conservation park. Cattana Wetlands has a volunteer program involved in general maintenance such as weeding, planting and re-vegetation. It also involves schools in environmental programs.

Other activities around Yorkeys Knob include an equestrian centre and quad bike tours, as well as the site of the previously proposed Aquis development. It has limited community facilities, primarily the Yorkeys Knob Boating Club and Marina, a small local shopping centre, school and restaurant. Again it is served by the bus line. The amenity of the suburb appears mixed, with some more substantial apartments and dwellings situated on the Knob with views out to sea or over the Delta.

Other surrounding suburbs

The overall strategic framework for the settlement pattern of the area is shown on **Figure B9-10**. It is notable that the area containing the site is identified as remaining rural.

The Captain Cook Highway is designated as a major road and public transport route between Cairns and Smithfield and the northern suburbs in Cairns Plan 2014, as is Brinsmead Kamerunga Road, which runs to the west of the site through the suburbs of Kamerunga and Caravonica. These suburbs lie on the western fringe of the identified study area and are more newly developed suburbs, previously used as farmland. Significant urban development did not occur until the 1980s, and the population increased substantially between 1991 and 2006 as new dwellings were built in the two suburbs. Both lie some distance from and upstream of the site.

Mount Whitfield and the associated conservation area is located to the south of the site on a high hill, as are parts of the suburbs of Freshwater and Stratford. These suburbs focus towards Cairns rather than the Delta, and have been identified as lying outside the local study area.

The suburb of Smithfield is located to the northwest and has likewise been determined as lying outside the local study area. Smithfield is designated a major activity centre in Cairns Plan 2016 (**Figure B9-10**). Major centres are envisaged to provide a 'concentration of a mix of activities that consist of higher order retail, employment, commercial, administrative, community, cultural, education, higher density housing and entertainment. The start of the Skyrail Rainforest Cableway, a significant tourist attraction, is also located in Smithfield, as is the James Cook University Cairns campus and Smithfield Mall. Smithfield is the major activity centre serving the whole local study area.

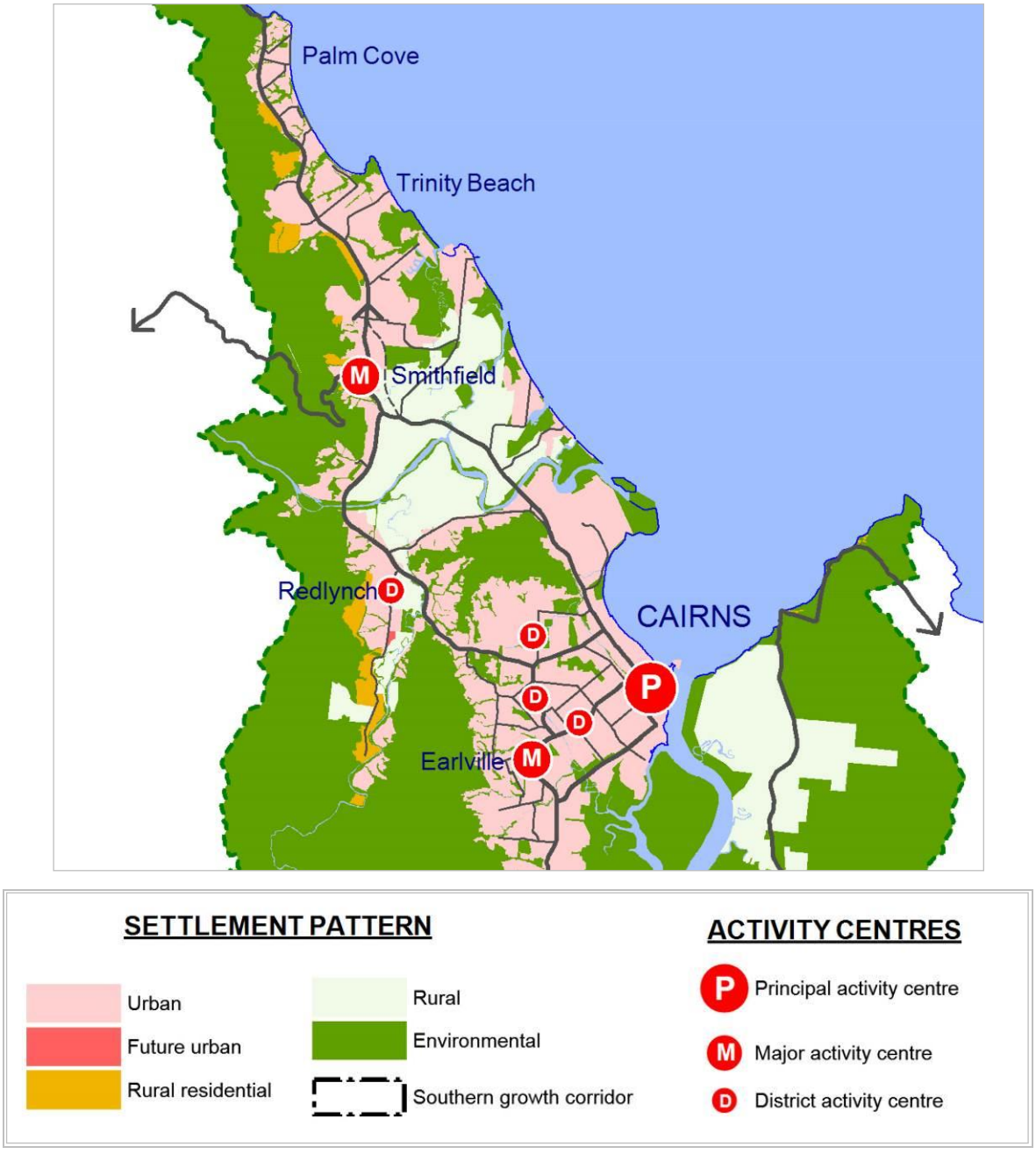


Figure B9-10 Cairns Plan Strategic Framework Settlement Pattern Map.

Source: Cairns Plan 2016.

B9.2.6.d Tingira Street DMPA Study Area

The Tingira Street DMPA Study Area comprises several sub-areas adjacent to and containing the Tingira Street DMPA. The Tingira Street DMPA is located on reclaimed Ports North land at Portsmith, a largely industrial area to the south of the Cairns CBD. The site is zoned Strategic Port Land under Cairns Plan 2016 and is surrounded by additional Strategic Port land and industrial areas to the north and west, and conservation areas to the west, south and east (on the opposite side of Smiths Creek).

Part of Smiths Creek is adjacent to the site on the eastern side and runs around 1km before meeting the larger section of Chinaman Creek/Trinity Inlet which runs adjacent to the Cairns CBD.

Portsmith Industrial Area

As outlined in **Section B9.2.3**, the Tingira St DMPA comprises two sites located on designated strategic port land and within the Seaport Local Area of the Port's Land Use Plan (Ports North 2013). The sub-area of the Tingira St DMPA Study Area containing the sites is located within areas designated as Waterfront Industry Planning Area and Industrial Planning Area.

In line with the intent of the Waterfront Industry Planning Area, the immediately surrounding area contains a diverse range of marine related industrial uses including low-impact industrial and port activities such as shipyards, dry dock/ship repair operations, general cargo and the commercial fishing base are located. The continued operation and expansion of these marine orientated industries and activities is encouraged and anticipated, including that of the subject land, which regardless of the project will be filled and utilised for industrial purposes. The Industrial Planning Area is located on the western side of Tingira Street and does not have direct access to the waterfront. It is envisaged that an Industrial Business Park will be developed in this planning area with linkages to the Waterfront Industry Planning Area.

Four community uses are located within the vicinity of the sites:

- a public boat ramp, parking and amenities
- Wooden Boat Association clubhouse and yard
- Great Barrier Reef International Marine College
- Cairns Cruising Yacht Squadron, including a bar, public restaurant, shipyard and marina.

Further, there are already two barge ramps located in Smiths Creek between Cairns Cruising Yacht Squadron and the commercial fishing base. A large barge loading facility is also located in the Duck Pond in Smiths Creek for loading construction materials[3].

There are also various Government agency offices/operations contained in a complex of modern buildings adjoining one site and relatively close to the other site, and adjacent to the public boat ramp:

- Queensland Police Service (QPS) Water Police
- National Parks and Wildlife Service (NPWS) Cairns District Operations Centre
- Wet Tropics Management Authority Yellow Crazy Ant Eradication Office
- Maritime Safety Queensland Operations Base.

Within the wider industrial area there is a vast mixture of uses including concrete pumping, food related industries such as cold stores, food services and warehousing, general and fibreglass fabrication, storage and carriers. Major land uses include the Portsmith Rail Complex and the Portsmith Materials Recovery Facility, the previous Council landfill site. The naval base, HMAS Cairns, is also located in the area.

Wharf Street Area

The area opposite and nearby the Cairns Cruise Liner Terminal has been termed the 'Wharf Street Area'. This area forms part of the Cairns city centre. The city centre is identified as a principal centre in the Strategic Framework of the Cairns Plan 2016 (CRC, 2016). This framework notes that the principal centre should provide the highest intensity of development including the highest order and most diverse mix of uses consisting of retail, commercial, administrative, community, cultural, tourism, recreation and entertainment uses.

The Cairns city centre is the centre of the public transport network and is the primary focal point for employment and business opportunities. It supports development which contributes to a 24 hour economy and development contributes to the activity and vitality of the centre, while maintaining a desired standard of amenity.

[3] http://www.portsnorth.com.au/pdfs/cairns/InformationSheet_CairnsBerthsWharves.pdf

Residential uses are to be provided above ground level to support active frontages to the street, and should support both tourist accommodation and permanent residents.

The areas adjacent to the Cruise Liner Terminal are predominantly zoned as Principal Centre Zone (**Figure B9-11**). Some pockets of land are zoned for community facilities (mainly government facilities including courthouse and police station at the corner of Sheridan St and Hartley St) and open space in the area adjacent to the wharf.

The Principal centre zone code notes the following relevant overall outcomes for development in the zone:

- widest range of uses provided – retail, commercial, administrative, community, cultural, tourism, recreation and entertainment activities
- accommodation activities are provided at an appropriate scale and integrate with and enhance the vibrancy of the centre
- development provides a high level of amenity with tropical design architectural elements and building features
- landscaping is of a high quality
- development encourages active transport
- development contributes to a vibrant, engaging and active city centre
- development does not affect the operational aspects of the Port of Cairns.

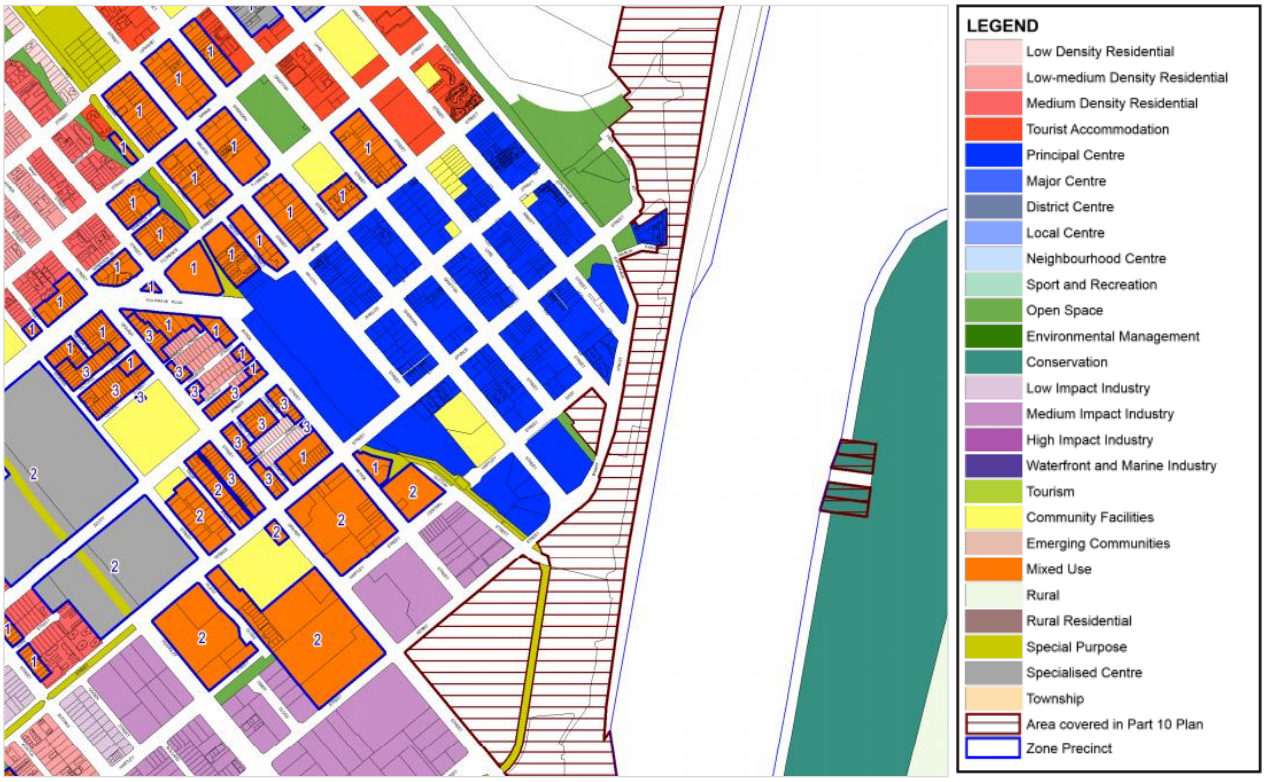


Figure B9-11 Cairns Plan 2016 zoning map.

Source: CairnsPlan (2016).

The area adjacent to the wharf is designated in the Cairns city centre Local Plan as part of the city centre core precinct (**Figure B9-12**). The overall outcomes for the city centre core precinct suggest that development should:

- offer the widest range and diverse mix of the highest order retail, commercial, employment, residential, administrative, community, cultural, recreational and entertainment activities
- have a built form and building height that reinforces the city centre as a principal centre
- support a 24 hour economy
- residential buildings should provide higher density living above ground level to facilitate active frontages at street level.

The Cairns city centre Local Plan Code also includes detailed extrinsic material about the city centre local plan area, including:

- Identification of key infrastructure supporting the city centre including Cairns Airport, Port of Cairns, Cairns Base Hospital and Cairns Private Hospital.
- The city centre is the dominant centre for office based employment including head offices and government agencies.
- It has an active and vibrant night economy support by tourist activity, and further permanent residential development is encouraged to complement tourist activity.
- New development has established on the edge of the city centre towards Trinity Inlet. The urban structure needs to be more compact and link this area with the city centre. The city centre master plan identifies Cairns Central, Esplanade and City Port as key nodes in the city centre that require connection and integration.
- Activity needs to be encouraged in the city centre through diversification of uses and establishment of a 24 hour economy. A lively city centre is encouraged and being an economic hub for the region.
- The Port of Cairns including Cairns Cruise Liner Terminal and City Port are noted as strategic port land assessed separately under the Port's Land Use Plan.

As anticipated from the above planning framework, the Wharf Street area is a lively and interesting precinct, with a mixture of tourist, retail, commercial, entertainment and a small amount of residential development. One large scale high-rise tourist/residential development is located directly opposite the Cairns Cruise Liner Terminal, built behind the facade of a heritage building. The terminal itself has now being redeveloped to accord with Cairns tropical design and retain important heritage elements, and is surrounded by an attractive and active landscaped public domain, and a view of this is obtained by residents in the high-rise building.

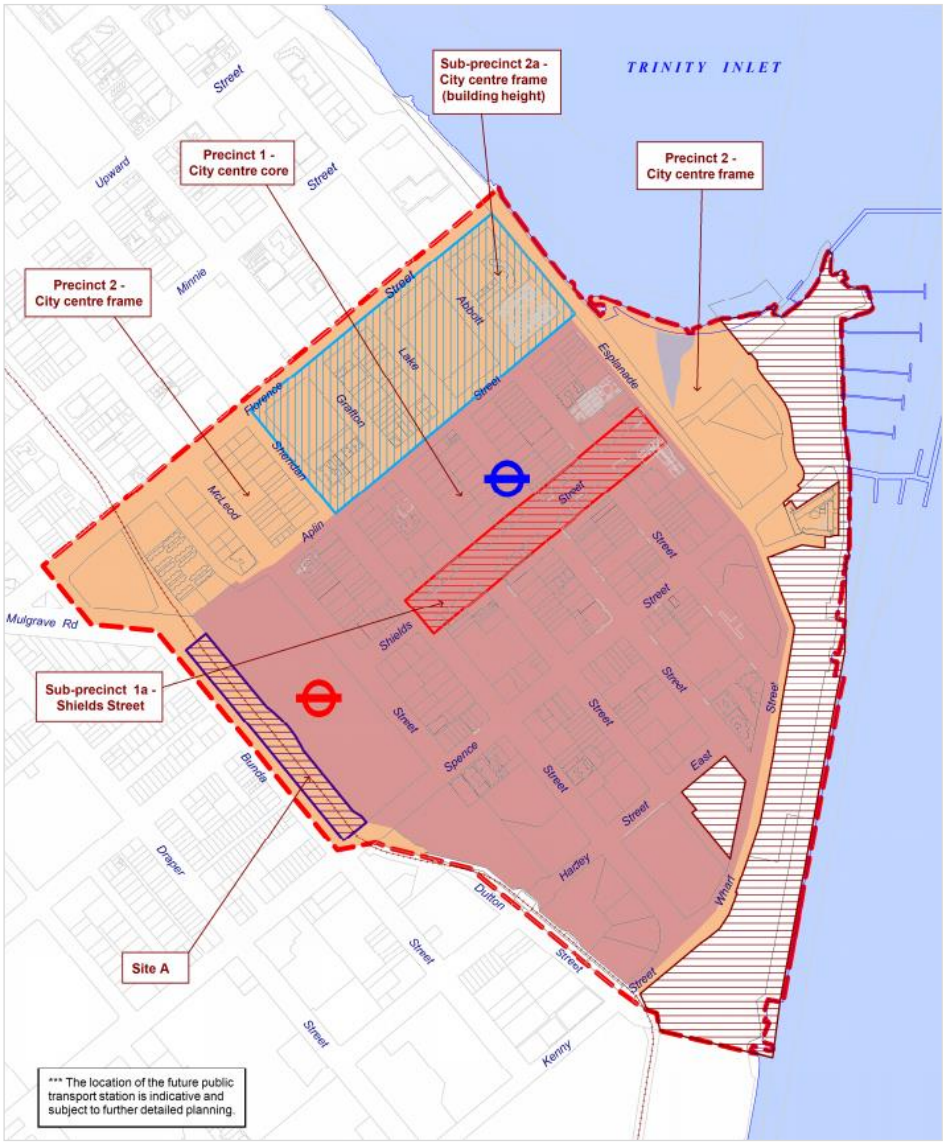


Figure B9-12 Cairns Plan 2016 city centre local plan precincts.

Source: CairnsPlan (2016).

B9.2.6.e Demographic Profile of the Study Areas

EIS Study Area – Cairns LGA

Population

The estimated resident population[4] of the Cairns LGA was estimated to be 161 932 people at 30 June 2016 (this is a preliminary estimate and may be revised). Between 2011 and 2016 the population is estimated to have grown by around 10 940 people, or around 1.4% per year during this five year period. This is a slightly lower growth rate than for Queensland as a whole during this period, with 1.6% per year.

[4] Estimated resident population (ERP) figures are calculated for 30 June by adjusting census counts of usual residents to include those missed in the census and those who were overseas on census night and also take account of births and deaths occurring between 30 June and census night (usually early August). It is the official population count.

TABLE B9-2 POPULATION GROWTH, CAIRNS LGA AND QUEENSLAND, 2006-2016P

Area	2006	2011	2016p
	Estimate Resident Population (average annual growth rate for preceding period)		
Cairns LGA	131,843 (2.7%)	150,992 (2.7%)	161,932 (1.4%)
Queensland	**4,007,992** (2.3%)	**4,476,778** (2.2%)	**4,843,303** (1.6%)

Source: Queensland Treasury (2017).

Notes: p = preliminary estimate.

Around 4500 visitors were counted in the region on census night in visitor only households.

The population of the Cairns LGA is expected to grow to 227 542 people in total at 2036, an increase of around 64 000 people above the population estimate at 2016. This is an anticipated increase of around 40% during this 20 year period, and an average annual growth rate of around 1.7%.

TABLE B9-3POPULATION PROJECTIONS, CAIRNS LGA AND QUEENSLAND, 2011-2036

Area	2011	2016	2021	2026	2031	2036
	Population (average annual growth rate for preceding period)					
Cairns LGA	150,992 (2.7%)	163,469 (1.6%)	177,655 (1.7%)	193,970 (1.8%)	210,844 (1.7%)	227,542 (1.5%)
Queensland	**4,476,778** (2.2%)	**4,853,048** (1.6%)	**5,250,292** (1.6%)	**5,730,062** (1.8%)	**6,240,546** (1.7%)	**6,763,153** (1.6%)

Source: Queensland Treasury (2017).

Notes: Queensland Government Population Projections: 2015 Edition (Medium Series).

Age Structure

The median age of the population was estimated to be 36.5 years in 2015, which was just slightly younger than the median age for the population of Queensland at that time of 36.9 years.

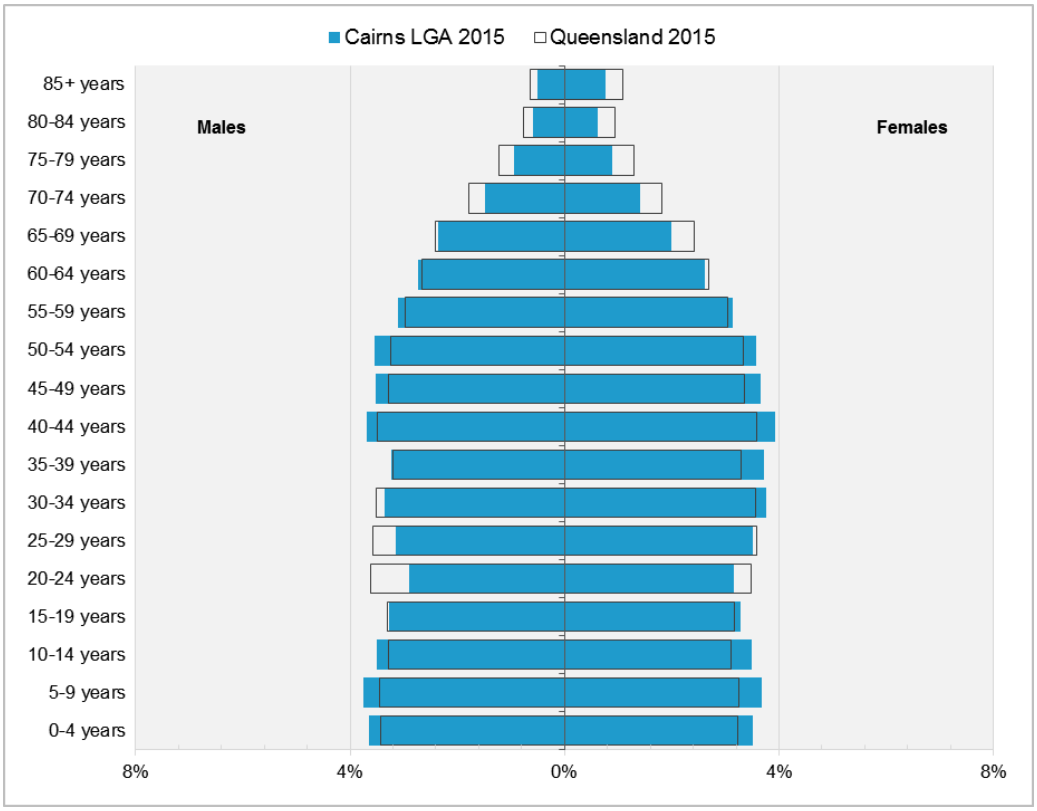
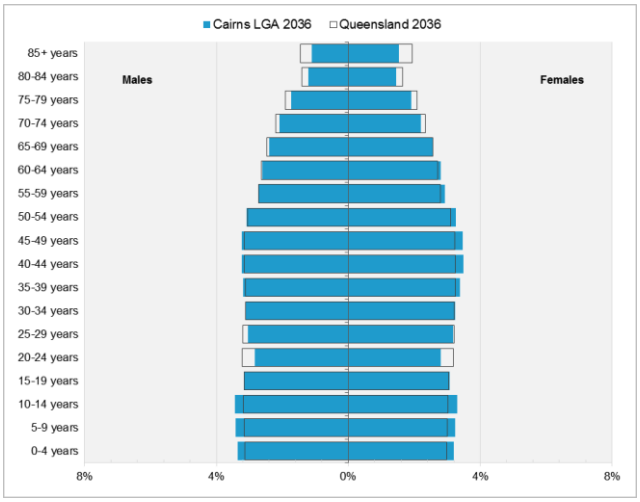


Figure B9-13 Age profile, Cairns LGA and Queensland, 2015p.

Source: Queensland Treasury (2016a).

Notes: p = preliminary estimate.

Compared to 2015, the age profile of the Cairns LGA is projected to include higher proportions of older people (65 years of age and older), and lower proportions of other age groups (**Figure B9-14**). This ageing of the population means that at 2036, around 18% of residents could be 65 years of age and older compared to around 12% in 2015. This is in line with national trends of an ageing population.



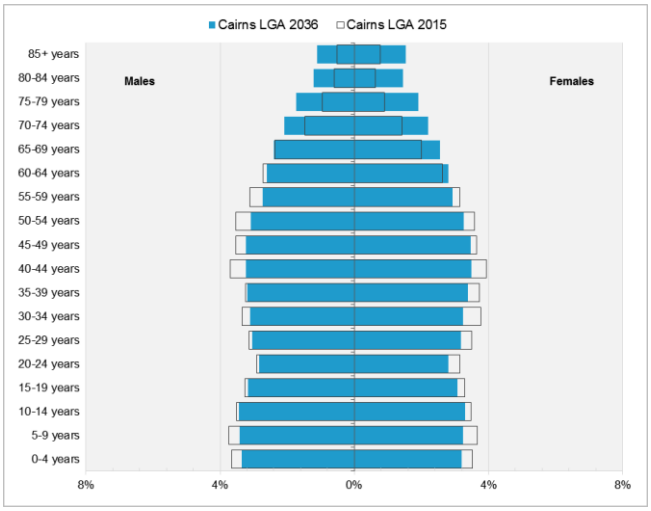


Figure B9-14 Future age profile, Cairns LGA and Queensland, 2015p and 2036.

Source: Queensland Treasury (2016b).

Notes: p = preliminary estimate.

Household and Family Structure

Cairns LGA had a similar household structure to Queensland, with slightly higher proportions of lone person households and one parent households, and slightly lower proportions of couples and couples with children households (**Table B9-4** and **Figure B9-15**). The most common household type in both Cairns LGA and Queensland was couple families with children.

TABLE B9-4 HOUSEHOLD TYPE, CAIRNS LGA AND QUEENSLAND, 2011

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Group	Lone person	Total
Cairns LGA	14,023 (26.4%)	15,044 (28.4%)	7,141 (13.5%)	574 (1.1%)	2,573 (4.9%)	13,674 (25.8%)	**53,030** (100%)
Queensland	442,309 (28.6%)	479,499 (31.0%)	180,151 (11.6%)	18,870 (1.2%)	72,966 (4.7%)	353,510 (22.8%)	**1,547,304** (100%)

Source: Queensland Treasury (2017).
Note: Data for families and households have been combined here by assuming that secondary families in the small number of multi-family households (748 of 53 030 households) for the Cairns LGA have the same family type as the primary family.

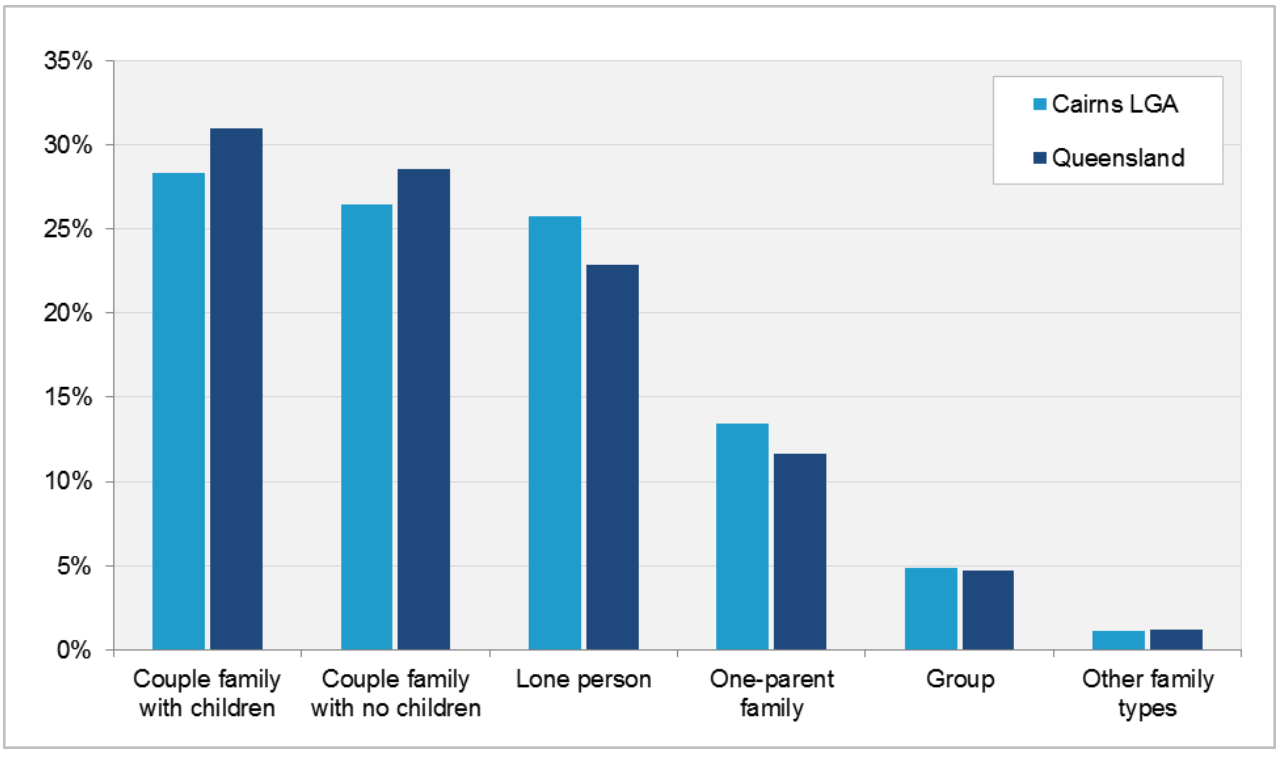


Figure B9-15 Household type, Cairns LGA and Queensland, 2011.

Source: Queensland Treasury (2017).

Note: Data for families and households have been combined here by assuming that secondary families in the small number of multi-family households (748 of 53 030 households) have the same family type as the primary family.

Cultural diversity

There were 13 438 people in the Cairns LGA who identified as Aboriginal and/or Torres Strait Islander in 2011, representing 9.2% of the total resident population counted on census night5. This included 6,997 people who identified as Aboriginal, 4,176 people who identified as Torres Strait Islander and 2264 people who identified as being of both Aboriginal and Torres Strait Islander origin. This compares to 3.6% of the Queensland population who identified as Aboriginal and/or Torres Strait Islander people.

Around 20% of the population in 2011 was born overseas, including around 13 900 people or 9.6% of the population born in mainly English speaking countries[6], and 15,600 people or 10.7% of the population born in mainly non-English speaking countries. These were similar proportions compared to Queensland, with 11.0% of the population born in mainly English speaking countries and 9.5% born in mainly non-English speaking countries, a total of 20.5% of the population born overseas.

Socio-economic characteristics

The Socio-Economic Indexes for Areas (SEIFA Index) is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage by using various Census-based statistics (i.e. income, skills, unemployment, educational attainment, etc.). In this report the SEIFA measure used is the index of relative socio-economic disadvantage at the SA1 level for the whole of Australia. For this measure each neighbourhood in Australia has been ranked from most disadvantaged to least disadvantaged, and then these neighbourhoods are grouped into deciles based on population. Each decile group in Australia therefore includes neighbourhoods that each consist of 10% of the population of Australia. However, disadvantage is not equally distributed geographically across Australia, and some areas therefore have higher/lower proportions of their population in each decile group. The index of relative socio-economic disadvantage is most concerned with disadvantage, rather than for distinguishing groups that are the least disadvantaged, and therefore the analysis here concentrates on the proportion of the population in the most disadvantaged deciles.

Figure B9-16 shows the proportion of the Cairns LGA in each decile of disadvantage, from most disadvantaged to least disadvantaged. If the Cairns LGA was reflective of the disadvantage in Australia, it would have 10% of its population in each decile group. However, around 15% of the population have characteristics that place them in the most disadvantaged group and around 12% in the second most disadvantaged group. This suggests that a higher proportion of the Cairns LGA population is severely disadvantage compared to Australia. This is also true when compared to Queensland.

5 The resident population counted on census night is referred to as the population based on place of usual residence (PUR Population). It is the count of the population on census night according to where the person usually lives.

6 Mainly English speaking countries are the United Kingdom, Ireland, Canada, the United States of America, South Africa and New Zealand.

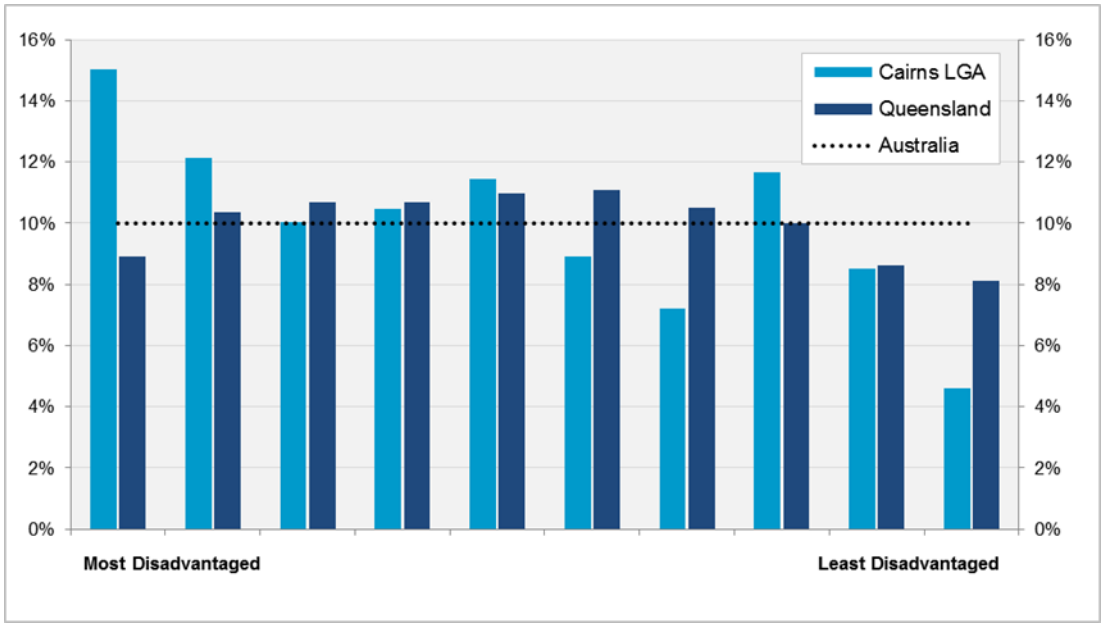


Figure B9-16 SEIFA Relative Disadvantage, Population distribution, Cairns LGA, Queensland and Australia, 2011.

Source: ABS (2013b).

Socio-economic disadvantage in the region is clustered around the inner western suburbs of Cairns and extends to the south along the Bruce Highway toward the suburb of Edmonton, according to the SEIFA index (ABS 2013b). Parts of the western suburbs including Manunda, Manoora and Westcourt, and southern suburbs including Woree, White Rock, Bentley Park and Edmonton generally have higher levels of socio-economic disadvantage. **Figure B9-17** below shows the index of relative socio-economic disadvantage (IRSD) for statistical areas in the region.

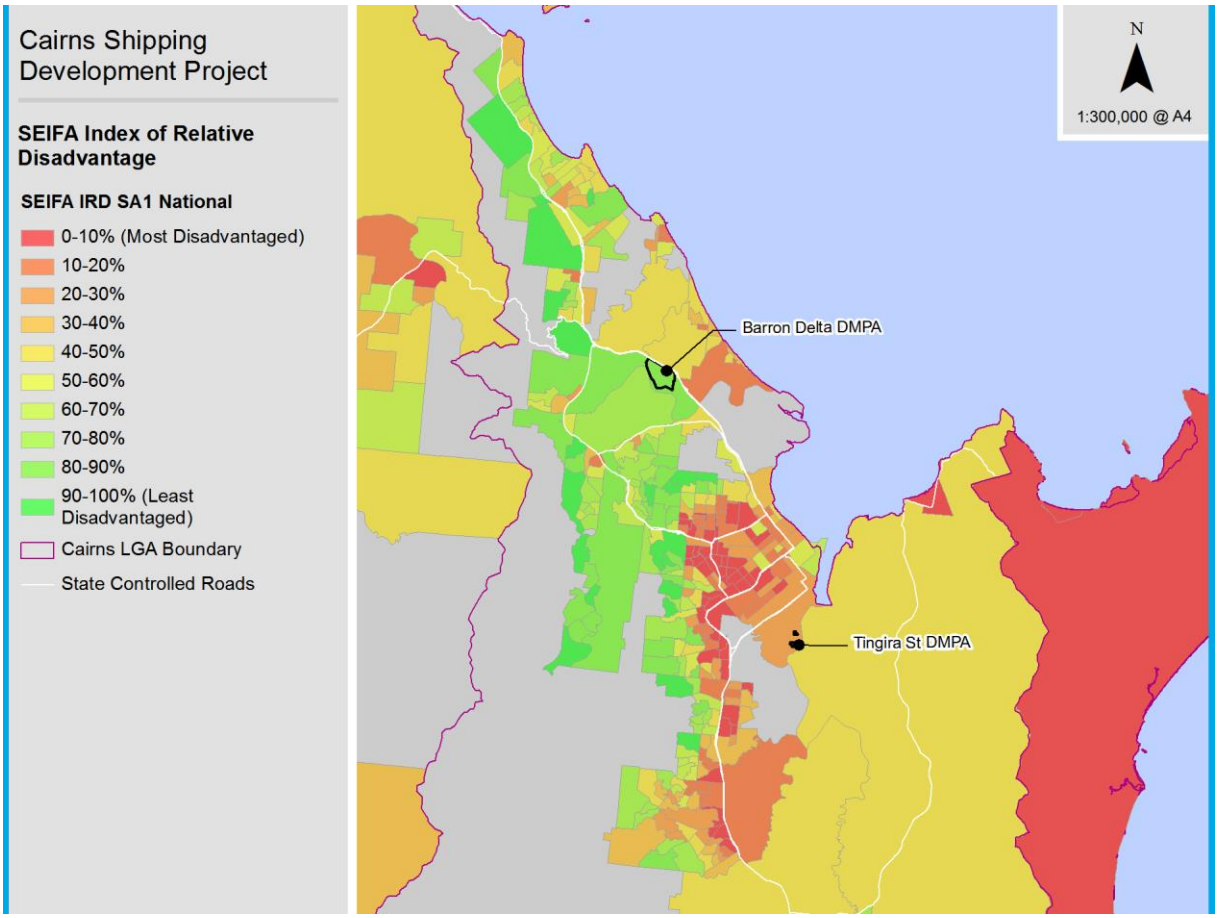


Figure B9-17 SEIFA Relative Disadvantage, SA1 (Australia), Cairns City, 2011.

Source: ABS (2013b).

Income

The median weekly individual income was $624, median weekly family income was $1,407 and median weekly household income was $1,160 for the Cairns LGA in 2011 (**Table B9-5**). These median incomes were similar to the median incomes for Queensland.

TABLE B9-5 INCOME MEASURES, CAIRNS LGA AND QUEENSLAND, 2011

Area	Median Weekly Income (2011)		
	Individual	Family	Household
Cairns LGA	$624	$1,407	$1,160
Queensland	**$587**	**$1,453**	**$1,235**

Source: Queensland Treasury (2017).

Employment and Unemployment

The unemployment rate for Cairns LGA was 6.6% in 2011, which was slightly higher than for Queensland at 6.1%. The participation rate for Cairns LGA was comparable to Queensland in 2011 (65% for Cairns LGA, compared to 63% for Queensland).

More recent data shows that the Cairns LGA unemployment rate was around 1% point higher than for Queensland in the December Quarter of 2016 (**Table B9-6**).

TABLE B9-6 EMPLOYMENT MEASURES, CAIRNS LGA AND QUEENSLAND, DECEMBER 2016

Area	Employed / Unemployment Rate (Dec Quarter 2016) (a)
	Number and Rate
Cairns LGA	5,773 (7.1%)
Queensland	**154,184 (6.1%)**

Source: Queensland Treasury (2017).

Notes: (a) Unemployed and unemployment rate smoothed using four-quarter average.

The Cairns LGA unemployment rate has been higher than the Queensland rate from 2011 to 2016 (**Figure B9-18**). In recent times, while the Queensland unemployment rate increased in 2015 to around 6.5%, it decreased in 2016 to just over 6.0%. The Cairns LGA unemployment rate increased in 2016 to be around 7.5% on average.

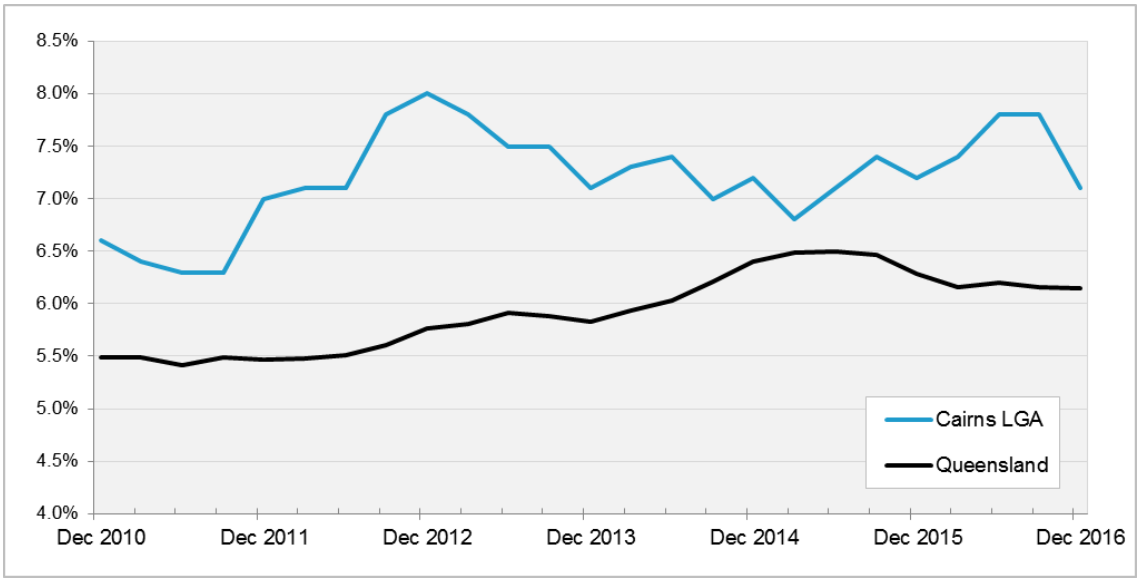


Figure B9-18 Unemployment rate (smoothed Cairns LGA and Queensland Dec 2010 – Dec 2016).

Source: Department of Employment (2017).

Unemployment rate smoothed using four-quarter average.

In 2011, over 50% of the working population residing in Cairns LGA were employed in the top five employment industries: health care and social assistance (12.8%), retail trade (11.9%), accommodation and food services (9.6%), construction (8.8%) and public administration and safety (8.3%) (**Table B9-7**). Compared to Queensland, Cairns LGA had higher proportions of residents working in accommodation and food services; arts and recreation services; transport, postal and warehousing; and public administration and safety. These industries are highlighted in the following table.

TABLE B9-7 INDUSTRY OF EMPLOYMENT, CAIRNS LGA AND QUEENSLAND, 2011

Industry	Cairns LGA		Queensland		Special-isation ratio (b)
Health care and social assistance	8,855	12.8%	242,559	11.9%	1.07
Retail trade	8,216	11.9%	217,610	10.7%	1.11
Accommodation and food services	6,651	9.6%	141,855	7.0%	1.38
Construction	6,112	8.8%	183,780	9.0%	0.98
Public administration and safety	5,779	8.3%	136,818	6.7%	1.24
Education and training	5,534	8.0%	160,921	7.9%	1.01
Transport, postal and warehousing	4,624	6.7%	107,072	5.3%	1.27
Manufacturing	3,534	5.1%	171,669	8.4%	0.61
Professional, scientific and technical services	3,459	5.0%	132,754	6.5%	0.77
Other services	2,839	4.1%	78,713	3.9%	1.06
Administrative and support services	2,541	3.7%	65,015	3.2%	1.15
Wholesale trade	2,216	3.2%	74,288	3.6%	0.88
Rental, hiring and real estate services	1,360	2.0%	37,007	1.8%	1.08
Arts and recreation services	1,267	1.8%	28,444	1.4%	1.31
Financial and insurance services	1,203	1.7%	54,153	2.7%	0.65
Mining	997	1.4%	52,955	2.6%	0.55
Agriculture, forestry and fishing	931	1.3%	55,416	2.7%	0.49
Electricity, gas, water and waste services	777	1.1%	24,828	1.2%	0.92
Information media and telecommunications	642	0.9%	25,358	1.2%	0.75
Total (a)	**69,253**	**100.0%**	**2,039,275**	**100.0%**	**1.00**

Source: Queensland Treasury (2017).

Notes:

(a) Includes inadequately described and not stated responses.

(b) Specialisation ratio = Cairns LGA proportion / Queensland proportion. Therefore, values above 1 note where the industry employs a higher proportion of the local population than for Queensland, and values below 1 note where the industry employs a lower proportion of the local population than for Queensland. It therefore implies some local specialisation in that industry compared to the State.

Based on place of usual residence (not place of work). Light blue highlighting represents industries employing higher proportions of residents in Cairns LGA compared to Queensland.

Barron Delta (Northern Sands) DMPA Study Area

Population, age and household characteristics

The Barron Delta DMPA Study Area had a resident population of 8850 people at the time of the census in 2011 (based on place of usual residence), representing around 6.1% of the total population of the Cairns LGA.

The median age of the Barron Delta DMPA Study Area was 39.0 years of age in 2011. This was 2-3 years older than the median age for Cairns LGA and for Queensland, both around 36 years in 2011. The age profile of the Barron Delta DMPA Study Area is shown below in **Figure B9-19**. It suggests that the area had larger proportions of older working age people from around 35 to 64 years of age, lower proportions of children and young adults, and slightly lower proportions of older people.

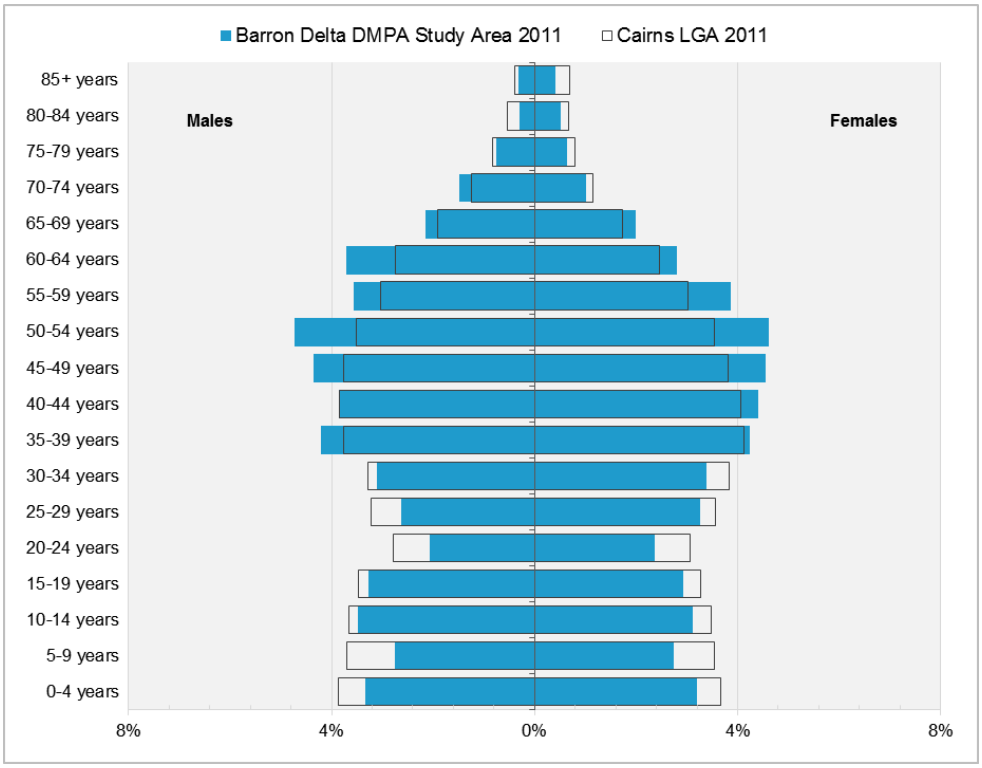


Figure B9-19 Age profile, Barron Delta DMPA Study Area and Cairns LGA, 2011.

Source: ABS (2013a).

There were 1062 lone person households in the Barron Delta DMPA Study Area in 2011, representing 29.3% of total households (**Table B9-8**). This was the most common household type in the study area, followed by couple families without children (27.9%), couple families with children (22.8%) and one parent families (13.4%). Compared to Cairns LGA and Queensland, the study area had a high proportion of lone person households (29.3%, compared to 25.8% for Cairns LGA and 22.8% for Queensland).

TABLE B9-8. HOUSEHOLD TYPE, BARRON DELTA DMPA STUDY AREA, CAIRNS LGA AND QUEENSLAND, 2011

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Group	Lone person	Total
Barron Delta DMPA Study Area	1,009 (27.9%)	824 (22.8%)	486 (13.4%)	40 (1.1%)	199 (5.5%)	1,062 (29.3%)	3,621 (100%)
Cairns LGA	14,023 (26.4%)	15,044 (28.4%)	7,141 (13.5%)	574 (1.1%)	2,573 (4.9%)	13,674 (25.8%)	**53,030** (100%)
Queensland	442,309 (28.6%)	479,499 (31.0%)	180,151 (11.6%)	18,870 (1.2%)	72,966 (4.7%)	353,510 (22.8%)	**1,547,304** (100%)

Source: ABS (2011) Queensland Treasury (2017).

Note: Data for families and households have been combined here by assuming that secondary families in the small number of multi-family households (748 of 53 030 households) for the Cairns LGA have the same family type as the primary family.

Cultural diversity

There were 547 people who identified as Aboriginal and/or Torres Strait Islander people in the Barron Delta DMPA Study Area in 2011, representing 6.2% of the population. This compared to 9.2% for the Cairns LGA, and 3.6% for Queensland.

Around 1927 people in the Barron Delta DMPA Study Area were born overseas, representing 21.8% of the population. This was a slightly higher proportion of people born overseas than for the Cairn LGA at 20.3%, and Queensland at 20.5%. Of the population born overseas, 1473 people were born in mainly English speaking countries (76%), and 454 people were born in mainly non-English speaking countries (24%) in the Barron Delta DMPA Study Area. This was a high proportion of migrants from mainly English speaking countries, compared to Cairns LGA and Queensland (76% of migrants in the Barron Delta DMPA Study Area were from English speaking countries, compared to 47% for the Cairns LGA and 70% for Queensland).

Only a small proportion of the population had migrated to Australia during the preceding five year period (2.9%), a lower proportion when compared to Cairns LGA (4.0%) and Queensland (4.5%).

Socio-economic characteristics

The median weekly individual income for residents of the Barron Delta DMPA Study Area was $652, median family income was $1,400 and median household income was $1124 in 2011 (**Table B9-9**). These medians were very similar to the medians for the Cairns LGA at $624, $1407 and $1160 per week respectively.

There were 342 unemployed people in the Barron Delta DMPA Study Area at the time of the census in 2011, which represented an unemployment rate of 8.0%. This was a high unemployment rate compared to the Cairns LGA at 6.7% and for Queensland at 6.1% at this time.

TABLE B9-9 INCOME AND EMPLOYMENT RATE, BARRON DELTA DMPA STUDY AREA, 2011

Population	Median Weekly Income (2011)			Unemployed (2011)
	Individual	Family	Household	
Barron Delta DMPA Study Area	$652 (a)	$1,400 (a)	$1,124 (a)	342 (8.0%)
Cairns LGA	$624	$1,407	$1,160	4,983 (6.7%)
Cairns Douglas LGA	$620	$1,393	$1,145	5,264 (6.6%)
Queensland	$587	$1,453	$1,235	131,797 (6.1%)

Source: ABS (2011); ABS (2013a); Queensland Treasury (2017).

Notes: (a) Estimated for combined area.

In 2011, 14.3% of employed residents of the Barron Delta DMPA Study Area were employed in the health care and social assistance industry, 10.4% were employed in retail trade, 10.1% in construction and 9.9% in accommodation and food services (**Table B9-10**). Compared to the Cairns LGA, the study area had higher proportions of residents employed in health care and social assistance; construction; accommodation and food services; education and training; transport, postal and warehousing; administrative and support services; and mining. Surprisingly, a lower proportion than Cairns LGA and Queensland were employed in agriculture, forestry and fishing (0.7% compared with 1.3% and 2.7% respectively.

TABLE B9-10 INDUSTRY OF EMPLOYMENT, BARRON DELTA DMPA STUDY AREA, CAIRNS LGA AND QUEENSLAND, 2011

Industry	Barron Delta DMPA Study Area		Cairns LGA		Queensland	
Health care and social assistance	657	14.3%	8,855	12.8%	242,559	11.9%
Retail trade	479	10.4%	8,216	11.9%	217,610	10.7%
Construction	464	10.1%	6,112	8.8%	183,780	9.0%
Accommodation and food services	455	9.9%	6,651	9.6%	141,855	7.0%
Education and training	399	8.7%	5,534	8.0%	160,921	7.9%
Public administration and safety	380	8.3%	5,779	8.3%	136,818	6.7%
Transport, postal and warehousing	336	7.3%	4,624	6.7%	107,072	5.3%
Professional, scientific and technical services	248	5.4%	3,459	5.0%	132,754	6.5%
Manufacturing	223	4.9%	3,534	5.1%	171,669	8.4%
Administrative and support services	173	3.8%	2,541	3.7%	65,015	3.2%
Other services	151	3.3%	2,839	4.1%	78,713	3.9%
Wholesale trade	93	2.0%	2,216	3.2%	74,288	3.6%
Arts and recreation services	79	1.7%	1,267	1.8%	28,444	1.4%
Mining	77	1.7%	997	1.4%	52,955	2.6%
Rental, hiring and real estate services	79	1.7%	1,360	2.0%	37,007	1.8%
Financial and insurance services	52	1.1%	1,203	1.7%	54,153	2.7%
Information media and telecommunications	52	1.1%	642	0.9%	25,358	1.2%
Electricity, gas, water and waste services	46	1.0%	777	1.1%	24,828	1.2%
Agriculture, forestry and fishing	31	0.7%	931	1.3%	55,416	2.7%
Total (a)	**4,595**	**100.0%**	**69,253**	**100.0%**	**2,039,275**	**100.0%**

Source: ABS (2011); Queensland Treasury (2017).

Notes: (a) Includes inadequately described and not stated responses.

Based on place of usual residence (not place of work). Light blue highlighting represents industries employing higher proportions of residents in the Barron Delta DMPA Study Area compared to the Cairns LGA.

Barron Delta DMPA Area – Sub Areas

Population, age and household characteristics

The resident population of each of the five sub-areas within the Barron Delta DMPA Study Area is listed in **Table B9-11** below for 2011. Yorkeys Knob had the highest population in 2011 of any of the sub-areas, with a population of 2766 people, followed by Holloways Beach at 2283 people, and Caravonica at 1934 people. Machans Beach and Kamerunga had around 950 people each.

The median ages of the sub-areas were fairly similar and were all higher than the Cairns LGA and Queensland medians in 2011. Machans Beach had the highest median age at 42 years followed by Holloways Beach at 41 years. Caravonica and Kamerunga had the lowest median ages of the sub-areas at 38 years.

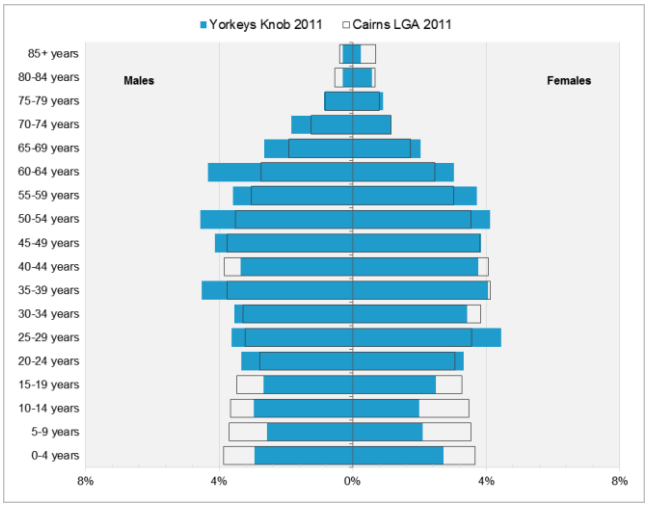
TABLE B9-11 POPULATION AND MEDIAN AGE, BARRON DELTA DMPA STUDY SUB-AREAS, 2011

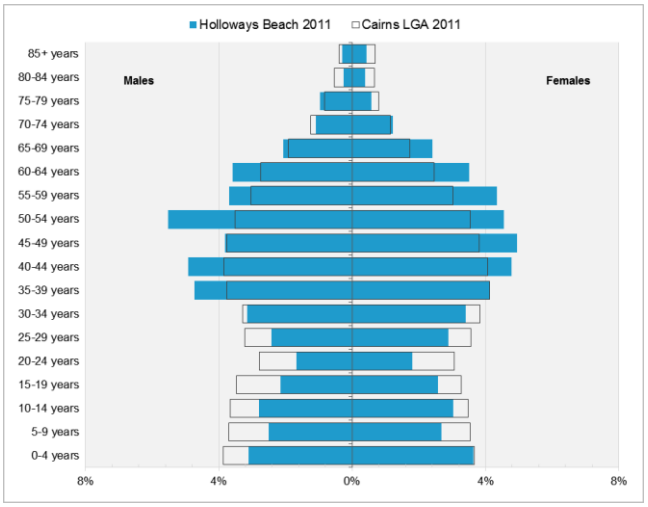
Area	Population (Usual Place of Residence)	Median Age
Yorkeys Knob	2,766	39.0
Holloways Beach	2,283	41.0
Machans Beach	941	42.0
Caravonica	1,934	38.0
Kamerunga	926	38.0
Barron Delta DMPA Study Area	8,850	39.0
Cairns LGA	145,338	36.0
Cairns Douglas LGA	156,169	36.0
Queensland	4,332,739	36.0

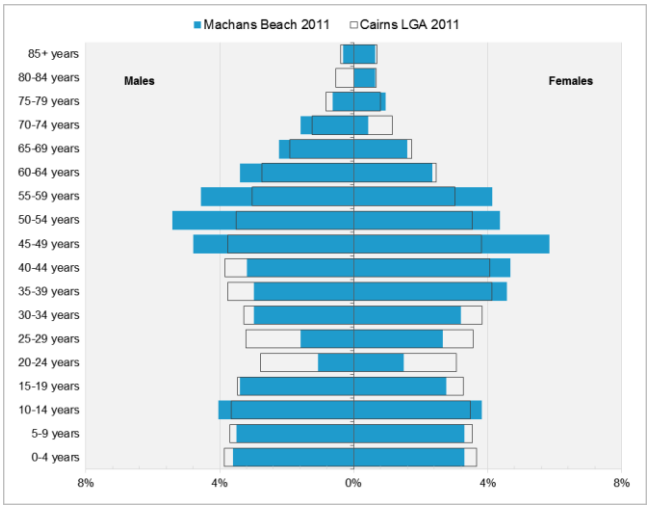
Source: ABS (2011); ABS (2013a).

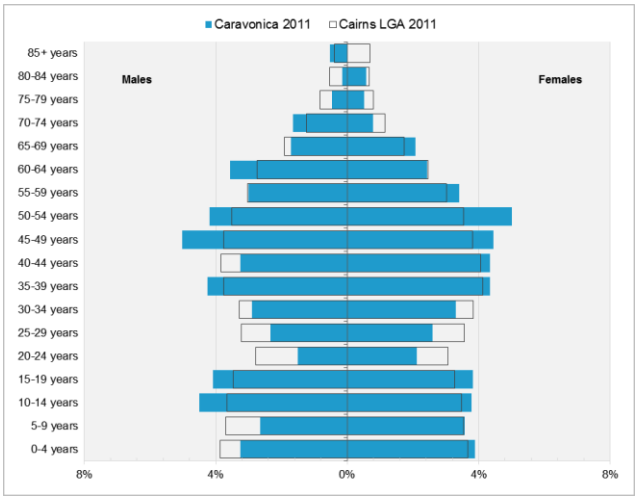
Age profiles for each of the five sub-areas are included in **Figure B9-20** below. A number of observations can be made about the age profiles of these sub-areas at 2011:

- Yorkeys Knob had lower proportions of children (0-19 years of age) compared to Cairns LGA, and higher proportions of older adults (50-64 years);
- Holloways Beach also had lower proportions of children, but also lower proportions of young adults as well (0-34 years of age). Holloways Beach had higher proportions of age groups from 35 to around 64 years of age.
- Machans Beach had only slightly lower proportions of children compared to Cairns LGA in 2011, but significantly lower proportions of young adults (20-34 years of age). The suburb has higher proportions of older age groups from around 45 to 64 years of age.
- Caravonica also had lower proportions of young adults (around 20-34 years of age), as well as lower proportions of younger children (0-9 years) but higher proportions of older children (10-19 years), as well as higher proportions of older people in the 45 to 54 year age groups.
- Kamerunga was somewhat similar to Caravonica with lower proportions of younger children (0-9 years), higher proportions of older children (10-19 years), lower proportions of young adults (20-34 years), and higher proportions of older adults (40-59 years).









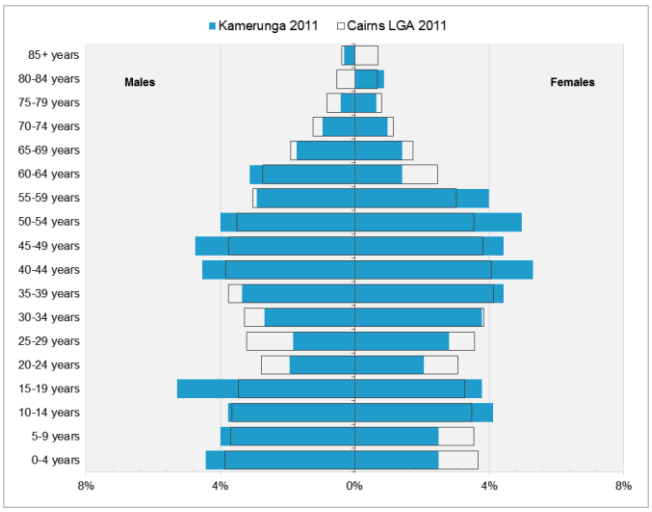


Figure B9-20 Age profile, Barron Delta DMPA Study Sub-Areas, 2011.

Source: ABS (2011); ABS (2013a).

Household profiles for each of the five sub-areas are included in **Table B9-12** below. These profiles show:

- Yorkeys Knob had a high proportion of lone person households (37.7%) compared to the other sub-areas, and Cairns LGA (25.8%) and Queensland (22.8%). It had smaller proportions of couple families with children (16.2%), compared to the other sub-areas, Cairns LGA (28.4%) and Queensland (31.0%).
- Holloways Beach also had a higher proportion of lone person households (32.7%) compared to Cairns LGA (25.8%) and Queensland (22.8%), and a lower proportion of couple families with children (18.5%), compared to Cairns LGA (28.4%) and Queensland (31.0%).
- Machans Beach had a higher proportion of one parent families (18.2%) compared to the other sub-areas, Cairns LGA (13.5%) and Queensland (11.6%). The sub-area also had a lower proportion of couple families with children (22.0%) than Cairns LGA (28.4%) and Queensland (31.0%).
- Caravonica had a higher proportion of couple families with children, and a lower proportion of lone person households. Couple families with children made up 34.5% of households, compared to 28.4% for Cairns LGA and 31.0% for Queensland. Lone person households made up 18.7% of households, compared to 25.8% for Cairns LGA and 22.8% for Queensland.
- Kamerunga also had a higher proportion of couple families with children (36.0%) compared to the other sub-areas, Cairns LGA (28.4%) and Queensland (31.0%), and a lower proportion of lone person households (17.1% compared to 25.8% for Cairns LGA and 22.8% for Queensland).

In summary, lone person households were more common in the beachside sub-areas and couple families with children were more common in the sub-areas away from the coast. The proportions of couple families without children were similar across the sub-areas, as were the proportions of group households and 'other family type' households. One parent families were also fairly similar across the sub-areas, except for at Machans Beach which had a higher proportion of this household type.

TABLE B9-12 HOUSEHOLD TYPE, BARRON DELTA DMPA STUDY SUB-AREAS, CAIRNS LGA AND QUEENSLAND, 2011

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Group	Lone person	Total
Yorkeys Knob	336 (26.9%)	203 (16.2%)	153 (12.3%)	15 (1.2%)	72 (5.8%)	472 (37.7%)	1,251 (100.0%)
Holloways Beach	275 (28.2%)	181 (18.5%)	130 (13.3%)	14 (1.4%)	57 (5.8%)	319 (32.7%)	976 (100.0%)
Machans Beach	106 (29.8%)	78 (22.0%)	65 (18.2%)	3 (0.8%)	22 (6.2%)	82 (23.0%)	356 (100.0%)
Caravonica	204 (28.3%)	249 (34.5%)	98 (13.6%)	5 (0.7%)	31 (4.3%)	135 (18.7%)	723 (100.0%)
Kamerunga	87 (27.7%)	113 (36.0%)	40 (12.6%)	4 (1.2%)	17 (5.4%)	54 (17.1%)	315 (100.0%)
Barron Delta DMPA Study Area	1,009 (27.9%)	824 (22.8%)	486 (13.4%)	40 (1.1%)	199 (5.5%)	1,062 (29.3%)	3,621 (100.0%)
Cairns LGA	14,023 (26.4%)	15,044 (28.4%)	7,141 (13.5%)	574 (1.1%)	2,573 (4.9%)	13,674 (25.8%)	**53,030** (100%)
Queensland	442,309 (28.6%)	479,499 (31.0%)	180,151 (11.6%)	18,870 (1.2%)	72,966 (4.7%)	353,510 (22.8%)	**1,547,304** (100%)

Source: ABS (2011); Queensland Treasury (2017). Note: Data for families and households have been combined here by assuming that secondary families in the small number of multi-family households (748 of 53 030 households) for the Cairns LGA have the same family type as the primary family.

Of the 941 residents of Machans Beach, around 45 people or 4.7% of the population, needed assistance in their daily lives with self-care, body movements or communication, which was a slightly higher proportion than for the other sub-areas, Cairns LGA at 3.8% and Queensland at 4.4%.

Cultural diversity

Machans Beach had a slightly higher proportion of people who identified as being of Aboriginal and/or Torres Strait Islander origin (10.1%) compared to the Cairns LGA (9.2%) (**Table B9-13**), however this included just 95 people. The other sub-areas had lower proportions of Aboriginal and Torres Strait Islander people. Caravonica had the lowest proportion of the sub-areas at 4.3% (83 people). Yorkeys Knob had the highest number of Aboriginal and Torres Strait Islander people of any of the sub-areas at 188 people.

Caravonica had a higher proportion of residents born overseas at 23.1%, compared to the other sub-areas, Cairns LGA at 20.3%, and Queensland at 20.5%. Caravonica also had a high proportion of residents born overseas in mainly non-English speaking countries compared to the other sub-areas, however this proportion was only slightly higher than for Cairns LGA (6.4%) and Queensland (6.1%).

All of the sub-areas had higher proportions of residents born overseas than the Cairns LGA proportion except for Machans Beach (18.8%, compared to 20.3% for Cairns LGA); and all of the sub-areas had low proportions of new migrants, with under 4% of the populations of each sub-area having migrated to Australia within the preceding five year period.

TABLE B9-13 ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE, PEOPLE BORN OVERSEAS, AND NEW MIGRANTS, BARRON DELTA DMPA STUDY SUB-AREAS, 2011

Area	Aboriginal and Torres Strait Islander	Born Overseas (English Speaking)	Born Overseas (Non-English Speaking)	Born Overseas, Migrated to Australia in last 5 years
Yorkeys Knob	188 (6.8%)	466 (16.8%)	127 (4.6%)	98 (3.5%)
Holloways Beach	121 (5.3%)	405 (17.7%)	107 (4.7%)	54 (2.4%)
Machans Beach	95 (10.1%)	132 (14.0%)	45 (4.8%)	25 (2.7%)
Caravonica	83 (4.3%)	318 (16.4%)	128 (6.6%)	47 (2.4%)
Kamerunga	60 (6.5%)	152 (16.4%)	47 (5.1%)	30 (3.2%)
Barron Delta DMPA Study Area	547 (6.2%)	1,473 (16.6%)	454 (5.1%)	254 (2.9%)

Source: ABS (2011); ABS (2013a); Queensland Treasury (2017).

Socio-economic characteristics

Kamerunga had higher median weekly incomes than the other sub-areas, and a lower unemployment rate at 2011 (**Table B9-14**). The median individual income in Kamerunga was $750, the median family income was $1692, and the median household income was $1542. The unemployment rate was 5.4% in 2011. The sub-areas with the lowest median incomes and highest unemployment rates were Yorkeys Knob and Machans Beach. Holloways Beach also had a fairly low median household income and median individual income but a higher median family income.

TABLE B9-14 INCOME AND EMPLOYMENT RATE, BARRON DELTA DMPA STUDY SUB-AREAS, 2011

Population	Median Weekly Income (2011)			Unemployed (2011)
	Individual	Family	Household	
Yorkeys Knob	$620	$1,279	$938	124 (8.0%)
Holloways Beach	$656	$1,370	$988	82 (6.6%)
Machans Beach	$622	$1,255	$1,167	46 (9.3%)
Caravonica	$662	$1,537	$1,328	61 (5.6%)
Kamerunga	$750	$1,692	$1,542	29 (5.4%)
Barron Delta DMPA Study Area	$652 (a)	$1,400 (a)	$1,124 (a)	342 (8.0%)

Source: ABS (2011); ABS (2013a); Queensland Treasury (2017).

Notes: (a) Estimated for combined area.

Around 8.5% of the households of Yorkeys Knob did not have access to a motor vehicle in 2011, which was a high proportion compared to the other sub-areas (Holloways Beach 5.3%, Machans Beach 4.2%, Caravonica 2.5% and Kamerunga 1.6%). This proportion however was similar to the proportion for Cairns LGA at 8.7% and for Queensland at 7.2%. Hence residents of most of the sub-areas appear car dependent for transport.

Tingira St DMPA Study Area

Population, age and household characteristics

The Tingira St DMPA Study Area had a resident population of 1215 people in 2011 (based on place of usual residence). On census night in 2011, an additional 1237 visitors were counted in the study area. A large number of people would also work in the Tingira St DMPA Study Area and therefore visit regularly on work days, however an estimate of the number of workers was not able to be made as the census place of work data is only available for larger geographic areas (SA2 areas).

The median age of the Tingira St DMPA Study Area population was 42.0 years in 2011, which was significantly higher than the median age for the Cairns LGA and for Queensland, both around 36 years of age. The age profile of the Tingira St DMPA Study Area is shown in **Figure B9-21** below, and demonstrates that the study area has low proportions of children and younger adults, and higher proportions of older adults from around 40 to 74 years of age when compared to the Cairns LGA in 2011.

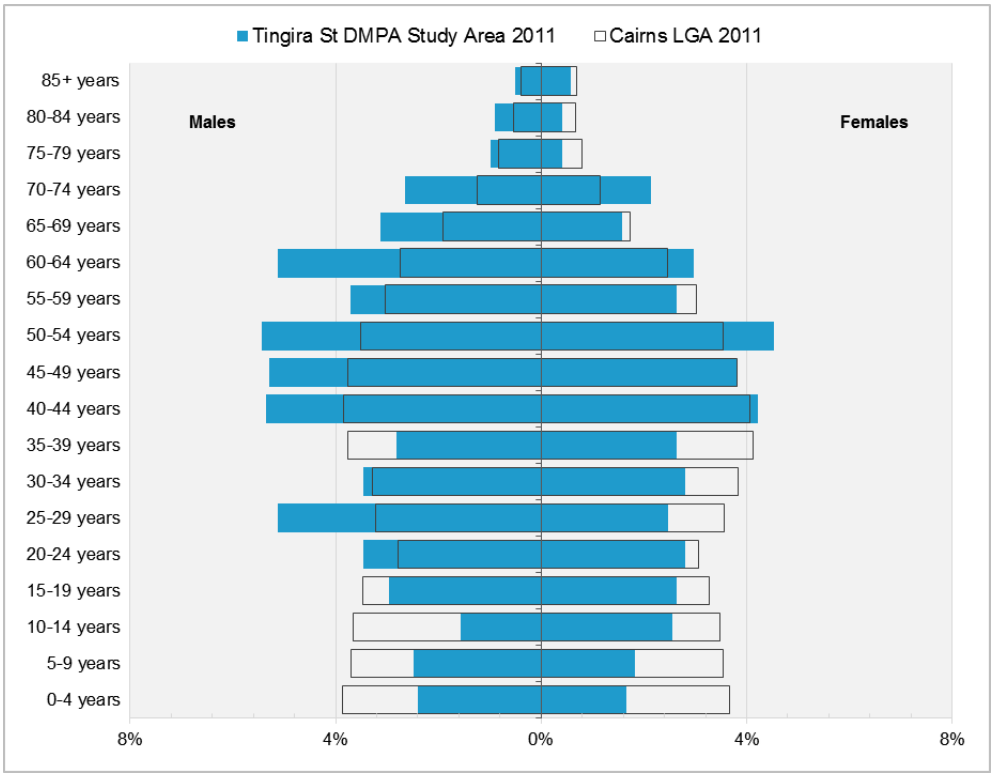


Figure B9-21 Age profile, Tingira St DMPA Study Area and Cairns LGA, 2011.

Source: ABS (2013a).

There were just 407 households in the Tingira St DMPA Study Area in 2011. Of these households, 138 were couple families with no children (33.8%), 135 were lone person households (33.2%), 83 were couple families with children (20.5%), 30 were one parent families (7.4%) and 21 were group households (5.2%). Compared to the Cairns LGA and Queensland, the study area had a high proportion of lone person households and couple families without children (**Table B9-15**).

TABLE B9-15 HOUSEHOLD TYPE, TINGIRA ST DMPA STUDY AREA, CAIRNS LGA AND QUEENSLAND, 2011

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Group	Lone person	Total
Tingira St DMPA Study Area	138 (33.8%)	83 (20.5%)	30 (7.4%)	0 (0%)	21 (5.2%)	135 (33.2%)	**407** (100%)
Cairns LGA	14,023 (26.4%)	15,044 (28.4%)	7,141 (13.5%)	574 (1.1%)	2,573 (4.9%)	13,674 (25.8%)	**53,030** (100%)
Queensland	442,309 (28.6%)	479,499 (31.0%)	180,151 (11.6%)	18,870 (1.2%)	72,966 (4.7%)	353,510 (22.8%)	**1,547,304** (100%)

Source: ABS (2011); Queensland Treasury (2017).

Note: Data for families and households have been combined here by assuming that secondary families in the small number of multi-family households (748 of 53 030 households) for the Cairns LGA have the same family type as the primary family.

Cultural diversity

There were 67 people in the study area who identified as being Aboriginal and/or Torres Strait Islander people, and this represented 5.5% of the population. This was a low proportion of Aboriginal and Torres Strait Islander people compared to Cairns LGA at 9.2%, but higher than for Queensland at 3.6%.

Around 300 residents of the Tingira St DMPA Study Area were born overseas or 24.9% of the population of the study area, this was a higher proportion than for Cairns LGA at 20.3% and Queensland at 20.5%. Of the population born overseas, 215 people were born in mainly English speaking countries (71%), and 88 people were born in mainly non-English speaking countries (29%) in the Tingira St DMPA Study Area. This was a high proportion of migrants from mainly English speaking countries, compared to Cairns LGA, but similar to Queensland (71% of migrants in the Tingira St DMPA Study Area were from English speaking countries, compared to 47% for the Cairns LGA and 70% for Queensland).

Around 5.8% of the population had migrated to Australia in the preceding five year period, which was a slightly higher proportion than for the Cairns LGA at 4.0% and Queensland at 4.5%.

Socio-economic characteristics

The median weekly individual income for residents of the Tingira St DMPA Study Area was $764, median family income was $1549 and median household income was $1193 in 2011 (**Table B9-16**). These medians were well above the medians for the Cairns LGA at $624, $1407 and $1160 per week respectively. The median weekly individual and family incomes were above the medians for Queensland, but the median weekly household income was slightly less than the median for Queensland. This data may reflect the presence of the HMAS Cairns facility at Draper St.

There were 41 unemployed residents in the Tingira St DMPA Study Area at the time of the census in 2011, which represented an unemployment rate of 5.9%. This was a low unemployment rate compared to the Cairns LGA at 6.7% and for Queensland at 6.1%.

TABLE B9-16 INCOME AND EMPLOYMENT RATE, TINGIRA ST DMPA STUDY AREA, 2011

Population	Median Weekly Income (2011)			Unemployed (2011)
	Individual	Family	Household	
Tingira St DMPA Study Area	$764 (a)	$1,549 (a)	$1,193 (a)	41 (5.9%)
Cairns LGA	$624	$1,407	$1,160	4,983 (6.7%)
Cairns Douglas LGA	$620	$1,393	$1,145	5,264 (6.6%)
Queensland	$587	$1,453	$1,235	131,797 (6.1%)

Source: ABS (2011); ABS (2013a); Queensland Treasury (2017a).

Notes: (a) Estimated for combined area.

In 2011, 19.7% of employed residents of the Tingira St DMPA Study Area were employed in the public administration and safety industry, 15.2% in accommodation and food services, 8.9% in health care and social assistance and 6.5% in retail trade (**Table B9-17**). The defence industry was a key employer with 14.4% of resident workers employed by the defence industry, also presumably associated with the HMAS Cairns facility at Draper St.

Compared to the Cairns LGA, the study area had higher proportions of residents employed in public administration and safety; accommodation and food services; agriculture, forestry and fishing; other services; arts and recreation services, and information media and telecommunications.

TABLE B9-17 INDUSTRY OF EMPLOYMENT, TINGIRA ST DMPA STUDY AREA, CAIRNS LGA AND QUEENSLAND, 2011

Industry	Tingira St DMPA Study Area		Cairns LGA		Queensland	
Public administration and safety	130	19.7%	5,779	8.3%	136,818	6.7%
Defence	*95*	*14.4%*	*859*	*1.2%*	*14,885*	*0.7%*
Accommodation and food services	100	15.2%	6,651	9.6%	141,855	7.0%
Health care and social assistance	59	8.9%	8,855	12.8%	242,559	11.9%
Retail trade	43	6.5%	8,216	11.9%	217,610	10.7%
Construction	42	6.4%	6,112	8.8%	183,780	9.0%
Other services	42	6.4%	2,839	4.1%	78,713	3.9%
Agriculture, forestry and fishing	40	6.1%	931	1.3%	55,416	2.7%
Professional, scientific and technical services	33	5.0%	3,459	5.0%	132,754	6.5%
Education and training	30	4.5%	5,534	8.0%	160,921	7.9%
Transport, postal and warehousing	30	4.5%	4,624	6.7%	107,072	5.3%
Manufacturing	25	3.8%	3,534	5.1%	171,669	8.4%
Arts and recreation services	16	2.4%	1,267	1.8%	28,444	1.4%
Administrative and support services	12	1.8%	2,541	3.7%	65,015	3.2%
Rental, hiring and real estate services	12	1.8%	1,360	2.0%	37,007	1.8%
Information media and telecommunications	10	1.5%	642	0.9%	25,358	1.2%
Wholesale trade	9	1.4%	2,216	3.2%	74,288	3.6%
Financial and insurance services	6	0.9%	1,203	1.7%	54,153	2.7%
Electricity, gas, water and waste services	3	0.5%	777	1.1%	24,828	1.2%
Mining	3	0.5%	997	1.4%	52,955	2.6%
Total (a)	**660**	**100.0%**	**69,253**	**100.0%**	**2,039,275**	**100.0%**

Source: ABS 2011; ABS 2013a; Queensland Treasury (2017).

Notes: (a) Includes inadequately described and not stated responses.

Based on place of usual residence (not place of work). Light blue highlighting represents industries employing higher proportions of residents in the Tingira St DMPA Study Area compared to the Cairns LGA.

Tingira St DMPA Study Sub-Areas

The sub-areas in the Tingira St DMPA Study Area have low populations and therefore the demographic analysis is less reliable. Small differences in the number of people with a particular demographic characteristic can have a large impact on the reported results of the demographic analysis. In addition, ABS data is confidentialised by random adjustment, and this has more impact on small statistical areas with low populations. These are limitations of the demographic analysis presented in this section, and have been taken into account when considering the implications for the social impact assessment.

Population, age and household characteristics

The resident population of the Portsmith Sub-Area was 230 people at 2011 (based on place of usual residence), while the population of the CBD Wharf St Sub-Area was 487 people. Around 90 people counted in the population of the Portsmith Sub-Area are employed in the defence industry and may be therefore based at HMAS Cairns. (**Table B9-18**)

This equates to almost 40% of the population of the sub-area and influences the demographic statistics presented in this section. The median age of the resident population of the Portsmith Sub-Area was 41.0 years of age in 2011 and 48.0 years of age for the Wharf Street Sub-Area. These were higher than the median

age for the Cairns LGA and for Queensland, both at 36 years.

TABLE B9-18 POPULATION AND MEDIAN AGE, TINGIRA ST DMPA STUDY SUB-AREAS, 2011

Area	Population (Usual Place of Residence)	Median Age
Portsmith Sub-Area (3115405)	230	41.0
CBD Wharf St Sub-Area (3114504)	487	48.0
Tingira St DMPA Study Area	1,215	42.0
Cairns LGA	145,338	36.0
Cairns Douglas LGA	156,169	36.0
Queensland	4,332,739	36.0

Source: ABS (2011); ABS (2013a).

Age profiles for the two sub-areas are presented below **(Figure B9-22**).

The age profile for the Portsmith Sub-Area shows that there is a higher proportion of males than females (72% to 28%), and that there are significantly higher proportions of males in the 20-29 year age groups, and higher proportions of males in the 30-79 year age groups compared to the Cairns LGA at 2011. This might to some extent reflect the navy workforce present in the area.

The Wharf St Sub-Area had a lower proportion of children, but higher proportions of some young adult age groups, and significantly higher proportions of 45 to 54 year olds and 60 to 74 year olds.

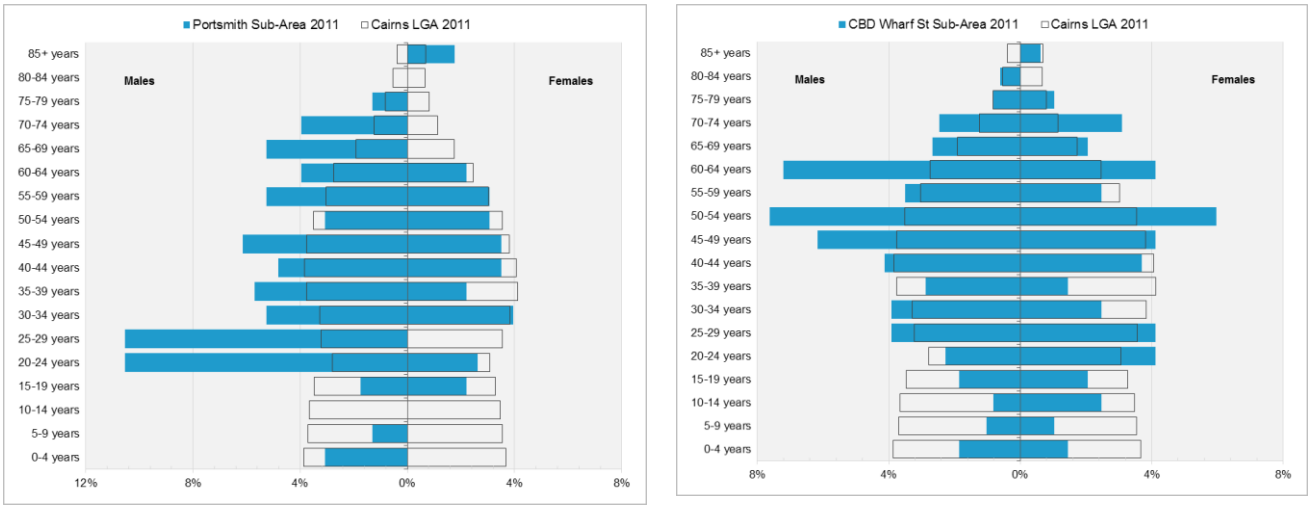


Figure B9-22 Age profile, Tingira St DMPA Study Sub-Areas, 2011,

Source: ABS (2011); ABS (2013a),

The Portsmith Sub-Area had a high proportion of lone person households (57.1%), compared to the Cairns LGA (25.8%) and Queensland (22.8%), slightly higher proportions of group households (6.1%, compared to 4.9% for Cairns LGA and 4.7% for Queensland) and lower proportions of other household types (**Table B9-19**). The Wharf St Sub-Area had a higher proportion of couple families without children, lone person households and group households, compared to the Cairns LGA and Queensland. Around 42% of all households in the sub-area were couples without children compared to 26.4% for Cairns LGA and 28.6% for Queensland. Around 9.5% of households were made up of groups, which was about double the rate for the

Cairns LGA and Queensland, and around 31% of households were lone person households compared to 25.8% for the Cairns LGA and 22.8% for Queensland.

TABLE B9-19 HOUSEHOLD TYPE, TINGIRA ST DMPA STUDY SUB-AREAS, CAIRNS LGA AND QUEENSLAND, 2011

Area	Couple family with no children	Couple family with children	One-parent family	Other family type	Group	Lone person	Total
Portsmith Sub-Area (3115405)	9 (18.4%)	5 (11.0%)	4 (7.3%)	0 (0%)	3 (6.1%)	28 (57.1%)	**49** (100%)
CBD Wharf St Sub-Area (3114504)	81 (42.4%)	24 (12.7%)	8 (4.4%)	0 (0%)	18 (9.5%)	59 (31.1%)	**190** (100%)
Tingira St DMPA Study Area	138 (33.8%)	83 (20.5%)	30 (7.4%)	0 (0%)	21 (5.2%)	135 (33.2%)	**407** (100%)
Cairns LGA	14,023 (26.4%)	15,044 (28.4%)	7,141 (13.5%)	574 (1.1%)	2,573 (4.9%)	13,674 (25.8%)	**53,030** (100%)
Queensland	442,309 (28.6%)	479,499 (31.0%)	180,151 (11.6%)	18,870 (1.2%)	72,966 (4.7%)	353,510 (22.8%)	**1,547,304** (100%)

Source: ABS (2011); Queensland Treasury (2017).

Note: Data for families and households have been combined here by assuming that secondary families in the small number of multi-family households (748 of 53 030 households) for the Cairns LGA have the same family type as the primary family.

Cultural diversity

In 2011, 51 people living in the Portsmith Sub-Area identified as being of Aboriginal and/or Torres Strait Islander origin which was 22.2% of the population of the sub-area (**Table B9-20**). This was a high proportion compared to the Cairns LGA at 9.2% and Queensland at 3.6%. The Wharf St Sub-Area had only 4 Aboriginal and Torres Strait Islander people.

A high proportion of the Wharf St Sub-Area were born overseas (35.1%), which was high compared to Cairns LGA (20.2%) and Queensland (20.5%). 26.3% of the population were born overseas in mainly English speaking countries and 8.8% were born overseas in mainly non-English speaking countries.

Around 9.2% of the population of the CBD Wharf St Sub-Area had migrated to Australia in the preceding five year period. This compared to 5.2% of the population of the Portsmith Sub-Area, 4.0% for Cairns LGA, and 4.5% for Queensland.

TABLE B9-20 ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE, PEOPLE BORN OVERSEAS, AND NEW MIGRANTS, TINGIRA ST DMPA STUDY SUB-AREAS, 2011

Area	Aboriginal and Torres Strait Islander	Born Overseas (English Speaking)	Born Overseas (Non-English Speaking)	Born Overseas, Migrated to Australia in last 5 years
Portsmith Sub-Area (3115405)	51 (22.2%)	33 (14.3%)	15 (6.5%)	12 (5.2%)
CBD Wharf St Sub-Area (3114504)	4 (0.8%)	128 (26.3%)	43 (8.8%)	45 (9.2%)
Tingira St DMPA Study Area	67 (5.5%)	215 (17.7%)	88 (7.2%)	70 (5.8%)
Cairns LGA	13,438 (9.2%)	13,890 (9.6%)	15,580 (10.7%)	5,798 (4.0%)
Cairns Douglas LGA	14,391 (9.2%)	21,669 (13.9%)	9,928 (6.4%)	6,176 (4.0%)
Queensland	155,824 (3.6%)	623,225 (14.4%)	265,411 (6.1%)	196,284 (4.5%)

Source: ABS (2011); ABS (2013a); Queensland Treasury (2017).

Socio-economic characteristics

The median weekly individual incomes in the Portsmith Sub-Area and Wharf St Sub-Area were both higher than the median for Cairns LGA and Queensland (**Table B9-21**). However the median family and household incomes diverged, with the median family and household incomes for the Portsmith Sub-Area being substantially lower compared to Cairns LGA and Queensland, and the Wharf St Sub-Area median incomes being substantially higher. The unemployment rate for the Wharf St Sub-Area was slightly higher at 7.0% than the rate for Cairns LGA and Queensland at 6.6% and 6.1% respectively, however the rate for the Portsmith Sub-Area was lower at 3.7%.

TABLE B9-21 INCOME AND EMPLOYMENT RATE, TINGIRA ST DMPA STUDY SUB-AREAS, 2011

	Median Weekly Income (2011)			Unemployed (2011)
	Individual	Family	Household	
Portsmith Sub-Area (3115405)	$814	$1,075	$644	5 (3.7%)
CBD Wharf St Sub-Area (3114504)	$877	$1,784	$1,559	21 (7.0%)
Tingira St DMPA Study Area	$764 (a)	$1,549 (a)	$1,193 (a)	41 (5.9%)
Cairns LGA	$624	$1,407	$1,160	4,983 (6.7%)
Cairns Douglas LGA	$620	$1,393	$1,145	5,264 (6.6%)
Queensland	$587	$1,453	$1,235	131,797 (6.1%)

Source: ABS (2011); ABS (2013a); Queensland Treasury (2017).

Notes: (a) Estimated for combined area.

B9.2.6.f Community Values

The Cairns Community Plan (CRC 2011a) articulates the social values of the LGA:

> Residents of the region have been attracted for many different reasons over a long period of time. As a result the things people love about the region have added to its unique character as Cairns has grown into an important regional service centre.
>
> However, there is a constant theme that resonates from residents: lifestyle. Many people say our region's greatest asset is its laid-back and relaxed lifestyle. Some enjoy the fact that Cairns remains liveable with the amenities of a city, yet with the feeling of a big country town.
>
> The diverse culture and history of the Aboriginal and Torres Strait Islander people is integral to the sense of place and community spirit of the region. Also important is the fact the region is multicultural and cosmopolitan with people from all over the world choosing to live and contribute to the diverse lifestyle choices the region has to offer. Aboriginal and Torres Strait Islanders and people from culturally and linguistically diverse backgrounds continue to inspire the arts sector and bring life and vitality to the region.
>
> Of great importance is the outdoor lifestyle encouraged by the region's climate, while the natural setting provides many great destinations within close proximity. All of this is located within a unique natural garden that offers lush wet tropics, green hill sides, tablelands, reefs, ocean and rainforests. Even the cane fields are viewed as a unique and desirable contributor to the landscape. Some even say that they live on vitamin 'G': the green essence that permeates every vista in almost every direction. Hence, the sustainability passion of residents who believe the region must remain known for its green approach to all aspects of life.
>
> Finally, the focus on their local community and the desire to keep their space unique and special is paramount in the minds of many.

The vision for the Cairns region from the Corporate Plan 2013-2018 (CRC 2012) was identified as including valuing the natural environment, lifestyle and surroundings; supporting and respecting distinctive and vibrant communities; being innovative and creative; and growing and diversifying the economy.

From the literature review and the outcomes of consultation, key values which may be relevant to the proposal include the following:

- the natural environment and green backdrop, including the cane fields
- liveability – a great place to live, work and play
- healthy, outdoor recreation opportunities
- world-class infrastructure
- social and environmental harmony
- a sense of community
- multiculturalism and cosmopolitanism
- local villages and suburbs that express their own character and spirit
- a robust, diverse and thriving economy complementing environmental values
- tourism remaining as a significant driver and substantial employer, as well as the rise of other industries
- the global centre of wet tropics living and industry
- protection of rural land
- sustainability - a commitment to minimising the environmental impact of development, while ensuring the region's natural resources and values will be enjoyed by future generations
- pride in the built environment which will continue to reflect a distinctive tropical Far North Queensland character while also utilising contemporary architectural aesthetics and sustainable design principles
- protection of the Great Barrier Reef.

B9.2.7 Impact Assessment

B9.2.7.a Initial Assessment

Future possible impacts of the proposal were identified through a process of prediction based on the profile of the existing social environment including surrounding land uses, the nature of the proposed development, review of documentation on community character and values, and the findings of consultation.

This section initially assesses these potential impacts and assesses their significance by considering the likely changes to the values of the placement area study areas, the pipeline vicinity and Yorkeys Knob, including the social impacts both during construction and operation of the CSD Project. The consequence criteria shown in **Table B9-22** and the classifications of duration of identified impacts shown in **Table B9-23** were adopted for this Assessment and have been initially used to assess social impacts in line with the assessment process provided.

TABLE B9-22 CONSEQUENCE CRITERIA

Impact Consequence	Description of Significance (examples)
Very High	The impact is considered critical to the decision-making process Impacts tend to be permanent or irreversible or otherwise long term and can affect many people in a major way The social environment is irrevocably changed Impacts cannot be adequately mitigated
High	The impact is considered likely to be important to decision-making Impacts tend to be permanent or irreversible or otherwise long to medium term. Impacts can affect many people in a major way The social environment has major changes Many mitigation measures would be required
Moderate	The effects of the impact are relevant to decision-making including the development of mitigation measures Impacts can range from long term to short term in duration Impacts can affect many people across the community in a moderate way or otherwise affect a small number of people in a major way The social environment is changed in some ways Some mitigation measures would be required
Minor	Impacts are recognisable/detectable but acceptable These impacts are unlikely to be of importance in the decision making process Some mitigation measures may be desirable Impacts tend to be short term or temporary and/or affect few people The social environment is changed in a minor way
Negligible	Minimal change to the existing social environment and few, if any, people affected
Beneficial	Impacts have a positive outcome on the social environment

TABLE B9-23 CLASSIFICATION OF THE DURATION OF IDENTIFIED IMPACTS

Relative Duration of Impacts	
Temporary	Days to Months
Short Term	Up to one year
Medium Term	From one to fifteen Years
Long Term	From fifteen to 50 Years
Permanent / Irreversible	In excess of 50 Years

Potential social impacts have been summarised in **Table B9-24** below.

Factors which have been included in the table from the initial assessment are:

- The potential social impact element.
- who is likely to be affected?
- What is the value likely to be affected?
- What would be the significance of the impact?
- What would be the duration of the impact?
- Would the impact be reversible or irreversible?
- Would there be any consequential or cumulative impacts?

TABLE B9-24 INITIAL ASSESSMENT OF SOCIAL IMPACTS

Potential social impact element	Who is likely to be affected?	What is the value likely to be affected?	What would be the consequence of the impact?	What would be the duration of the impact?	Would the impact be reversible or irreversible?	Would there be any consequential or cumulative impacts?
BARRON DELTA (NORTHERN SANDS) DM						
Impact on the character of the northern beaches area						
A change of character of the coastal area	Residents and users of Holloways Beach and Yorkeys Knob	Natural beachfront area	Minor	Temporary	Reversible	No
Potential for change in views from northern beaches	Residents and users of three northern beaches	Uninterrupted ocean views	Negligible	Temporary	Reversible	No
Potential for change in rural character	Residents and users of Yorkeys Knob, Holloways Beach and Machans Beach; and tourists and users of Captain Cook Highway	Rural character of the area, especially the cane lands	Negligible	Temporary	Reversible	No
Impact on local amenity and liveability						
Change in local amenity (from traffic, noise, visual impacts or lighting)	Residents in the immediate vicinity of the pipeline	Rural farming environment	Negligible	Temporary	Reversible	No
	Users of the DMPA and surrounding land users	Amenity	Negligible	Temporary	N/A	No
	Students and staff at Holloways Beach Environmental Education Centre	Natural environment	Negligible	Temporary	Reversible	No
	Residents in nearby suburbs, especially those overlooking the DMPA and those in the northern part of Holloways Beach	Living environments	Minor	Temporary	Reversible	No
Impacts on beach and creek use						
Change in use of beachfront and creek mouth	Users of Holloways Beach/Richters Creek mouth	Use of a natural foreshore area	Minor	Temporary	Reversible	No
Effect on use of Environmental Education Centre	Students at Holloways Beach Environmental Education Centre	Natural learning environment	Negligible	Temporary	Reversible	No
Threats to safety and wellbeing	Users of Holloways Beach/Richters Creek mouth	Use of a natural foreshore area	Minor	Temporary	Reversible	No
Restrictions to recreational fishing and boating use	Users of Richters Creek and Acacia Street boat ramp	Use of a natural creek environment	Minor	Temporary	Reversible	No

Potential social impact element	Who is likely to be affected?	What is the value likely to be affected?	What would be the consequence of the impact?	What would be the duration of the impact?	Would the impact be reversible or irreversible?	Would there be any consequential or cumulative impacts?
Change in amenity of environment of Richters Creek	Users of Richters Creek and Acacia Street boat ramp	Natural creek environment	Minor	Temporary	Reversible	No
Impacts on recreational facilities						
Effect on foreshore improvement programmes	Residents and users of foreshore parks	Upgraded foreshores	Negligible	Long term	N/A	No
Effect on future cycleway routes	Users of future planned routes	Unimpeded off-road cycleway routes	Negligible	Long term	N/A	No
Impact on livelihoods						
Effect on landowners and affected properties	Canegrowers in the vicinity of the pipeline, Northern Sands Operators and tenants	Agricultural activity	Beneficial	Long term	Irreversible	No
TINGIRA STREET DMPA						
Impact on the character of the Portsmith area						
Compatibility of the use with existing character	Employers, employees and visitors to Portsmith Industrial Area	Port related industrial development	Minor/Beneficial	Short and long term	Reversible adverse/irreversible beneficial	Yes, provision of additional port industrial land
Impact on local amenity						
Change in local amenity (from traffic, noise, visual impacts or lighting)	Employers, employees and visitors to Portsmith Industrial Area	Employment generating industry	Negligible	Short term	N/A	No
Impact on neighbouring land uses						
Change to usage of neighbouring port/commercial activities (including Maritime College, QPS Water Police etc.)	Government services located in the area	Community services	Negligible	Short Term	N/A	No
Change to usage of the boat ramp and community facilities (including Wooden Boat Association)	Users of boat ramp and community facilities	Unimpeded use of boat ramp and community facilities	Negligible	Temporary	Reversible	No
Impact on maritime users						
Changes to usage of Smiths Creek	Boat owners/live-aboards	Mooring area	Negligible	Temporary	N/A	No

Potential social impact element	Who is likely to be affected?	What is the value likely to be affected?	What would be the consequence of the impact?	What would be the duration of the impact?	Would the impact be reversible or irreversible?	Would there be any consequential or cumulative impacts?
OTHER AREAS						
Impacts on residents in the Wharf Street Area						
Effects of landside construction and increased ship arrivals at the CCLT	Residents in Wharf Street Area	City living environment	Minor/Moderate	Short and long term	Reversible minor/irreversible moderate	No
Impacts on Yorkeys Knob						
Effect of change in ship arrivals in Yorkeys Knob	Businesses and tourism operators	Economic development	Minor/Beneficial	Short and long term	Reversible minor/irreversible beneficial	No
	Members of the Yorkeys Knob community and tourists	Living and tourist environment	Beneficial	Short term	Irreversible	No
	Boat Club	Economic development	Minor/Beneficial	Short and long term	Reversible minor/irreversible beneficial	No
	Ship passengers and crew	Safe and efficient shore transfer	Beneficial	Short term	Irreversible	No

B9.2.7.b Barron Delta (Northern Sands) DMPA Study Area

Impact on the Character of the Northern Beaches Area

Change of Character of the Coastal Area

The coastal area at the mouth of Richters Creek is an isolated and secluded area lying between Yorkeys Knob to the north and Holloways Beach to the south. The pipeline will make landfall and cross the coast near the mouth, thence to the Barron Delta DMPA via cane farm headlands. A pipe storage and lay down area, and a pipe fabrication area, will both need to be provided close by on vacant caneland, and some minor sand cutting may be required across the beach.

Richters Creek is a natural border between the two suburbs, and the pipeline will temporarily change the character of the area. The lay down and fabrication areas will be less visible although they will result in a change in character from truck movement, activity and noise.

The effect is mitigated by the selection of a secluded area for the pipeline to cross, and the short period of time (approximately four months) that the pipeline will be in place. Likewise, the selection of the pipe storage and lay down area and pipe fabrication area are in an isolated area and are unlikely to be visible from the beach.

Council has also undertaken similar works in this area previously. Holloways Beach has had major issues with erosion and loss of foreshore areas in the past, and that several structural and replenishment efforts have been undertaken. This has included dredging sand via a cutter suction dredge located at the mouth of Richters Creek and pumping it through pipes to the rock wall and stinger net areas at the southern end of the beach. Between late February and the end of May 2016, a period of three months, there were partial beach closures and minor disruptions to traffic and car parking areas. Minor vegetation removal was also required for machinery access requirements. This previous experience will mean that the proposed works are not an unusual activity in this area. Further, CRC has confirmed that they had not encountered any community issues while undertaking previous pumping and dredging projects in the Northern Beaches.

Hence while there will be a direct adverse effect on the character of this area, this will be temporary and reversible and the social impact is considered to be minor.

Potential for Change in Views from Northern Beaches

It was noted in the description of the proposed project that soft clay dredge material is to be dredged via a 5,600m^3 capacity Trailer Suction Hopper Dredge (TSHD) discharging to a temporary floating pump out facility between approximately 2.6 and 3.6 km NE of Yorkeys Knob. Dredge material will be pumped via a submerged steel pipeline from the pump out facility.

This activity and the temporary floating pump out facility will be visible from various points on the Northern Beaches. However, **Chapter B12** (Landscape and Visual) found that the proposed pipelines and associated infrastructure located at Yorkeys Beach will potentially be visible only from elevated viewpoints, or coastal areas in close proximity to the booster pumps, and the visual effect of these would be attenuated by distance. Marine-based infrastructure is more likely to be noticeable on the surface of the water. However visual intrusion of the dredge, pipeline and associated infrastructure was considered negligible.

Of the more southern suburbs of the Northern Beaches (Yorkeys Knob to Machans Beach), Yorkeys Knob is positioned best to take advantage of ocean views, and the socio-economic characteristics of this community suggest that more advantaged residents have taken up these opportunities, with good quality housing being built with expansive views.

The outcomes of the visual assessment suggest that these residents will not be disadvantaged by a reduction in views or any effect on house prices. Likewise, residents at Holloways Beach and Machans Beach are not expected to be adversely affected by a change in their view.

Hence there will be minimal direct adverse effect on the views obtained by residents of this area. Further, this will be temporary and reversible. The social impact therefore is considered to be negligible.

Potential for Change in Rural Character

A key value expressed in Council strategies and plans is the retention of the natural environment and green backdrop of Cairns, including the cane fields. 'The green essence that permeates every vista in almost every direction' was specifically identified in the Community Plan (CRC 2011a). This vista is also available to tourists as they drive along the Captain Cook Highway through cane fields; to residents in suburbs that overlook the Barron Delta (parts of Stratford and Freshwater) or tourists on the Skyrail or on planes; and residents who drive through cane fields to Yorkeys Knob, Holloways Beach and Machans Beach.

Visually, the effect of the pipeline in a cleared 100 m wide corridor across cane lands has been identified by **Chapter B12** (Landscape and Visual) as not likely to be overt or apparent from elevated views, due to the viewing distance, intervening vegetation (including sugar cane) and the inherently low elevation of the infrastructure. While the corridor could be expected to appear as a swathe through mature cane fields, depending on the time of year of the operation it could be indiscernible from a harvested cane field. The route has also been planned as far as possible to cut through cane headlands (the area at each end of a planted field for turning), which is a mitigating measure inherent in the concept. Further, the pipeline will pass under the Captain Cook Highway in a culvert. It is therefore unlikely that highway users will realise they have crossed the pipeline.

Chapter B12 (Landscape and Visual) noted however that during the construction phase, a bund would be constructed to 7.5 m AHD around the Barron Delta (Northern Sands) DMPA, which would be glimpsed by passing highway motorists through gaps in vegetation, as well as seen locally. It would also be visible from elevated viewpoints, including the Skyrail and Henry Ross Lookout, from planes departing or leaving Cairns airport, and from elevated residences located in foothill suburbs. Nevertheless, the operational activities were seen as likely to be similar to the current sand extraction and landfill operations, and not introduce additional visual impacts. This was evaluated as a temporary impact affecting a site which is currently disturbed by sand extraction, and within the context of a surrounding district with a mosaic of different land uses and activities. Lighting and vehicular movement will also be visible at night from elevated viewpoints, although it will be seen as part of cluster of lighting associated with the Captain Cook Highway, Smithfield and other commercial activities which either operate at night, or are lit, throughout the Barron Delta.

The placement of the dredged material in the DMPA should make no discernible difference to vistas available over the Barron Delta. On completion, the DMPA will appear as a lake, as it currently does.

The selection of the pipeline route, its design passing under the Captain Cook Highway, and the selection of the DMPA are all inherent mitigation factors in lessening any impact on the rural character of the study area.

Hence it is considered that there will be no adverse social impact on the rural character of the DMPA study area.

Impact on Local Amenity and Liveability

Change in Local Amenity

There are several different social environments around various parts of the concept proposal:

- the rural farming area through which the pipeline passes
- the DMPA
- Holloways Beach Environmental Education Centre
- nearby residential areas.

It is proposed that on land the pipeline (1 m diameter) will be placed above-ground on earth 'saddles'. For the majority of its route it will run through cane farms[7]. The pipeline will require a construction corridor and road access along the length of its route. The corridor needs to be of sufficient width to allow for delivery of the pipe by truck, the unloading and installation of pipe components, and vehicle access for inspection and

[7] The effects on the beach and Richters Creek are considered below

maintenance throughout the dredging program. Hence a broad pipeline alignment route up to 100m wide has been proposed.

The pipeline cross over and laydown area for the ocean-based pipeline construction will be located close to the creek mouth, inland from and on the opposite side of Richters Creek to the Education Centre. There will also be a pipeline fabrication yard and a general works area for the dredging contractor (e.g. storage of plant and equipment, temporary workshop etc.) in the same area. The pipeline will be delivered to Cairns either by road transport or sea freight in components typically up to 12 m in length. The pipe components will need to be transported by road to land and ocean-based laydown areas.

The above elements will all be foreign to the current environment.

Rural Areas

Only six farmhouses have been identified in the rural areas in the vicinity of the pipeline. The noise assessment (**Chapter B10** (Noise and Vibration)) found that noise emissions from pipeline construction and decommissioning would not significantly impact sensitive receptors such as rural residences. Noise emissions from booster pump stations may result in moderate noise exceedances but it was expected that further mitigation (i.e. bunding or quieter plant selection) would result in compliance with the noise limits.

Chapter B14 (Transport) identified that there would be traffic generation associated with the establishment, operation and disestablishment of the pipeline, and in the case of rural properties, this would involve the delivery of the land-based pipe (12 m) sections during the first 2 weeks of establishment and removal during the last 2 weeks of the disestablishment phase. These movements are anticipated to be evenly distributed between three land-based laydown points – one accessed from Yorkeys Knob Road, one from Holloways Beach Access Road and one at the DMPA itself. The pipeline haulage operation will generate 278 B-Double equivalent trips (139 Establishment/139 Disestablishment) for the land-based pipeline delivery/removal and 136 B-Double equivalent trips (68 Establishment/68 Disestablishment) for the ocean-based pipeline delivery/removal over a 2 week period during the establishment period and the disestablishment period.

There would also be 32-33 light vehicle trips and two to three heavy vehicle trips per day from the transport of plant, cribbing and fencing to the sites and workforce. During operation of the pipeline these would decrease to an average of nine light vehicle trips and three heavy vehicle trips per day.

Owners, lessees and workers on farms would commonly experience the effects of heavy machinery, cane haulage trains, dust and noise from the operations of the farms at certain times. These are clearly considered part of farming life. While the pipeline haulage operation will create unusual heavy vehicle haulage onto private properties, the effects of the proposal are considered likely to be able to be similarly tolerated. Noise at night is not expected to be such at any residence that sleep or daily living such as watching TV would be interrupted.

The effect of the works will be mitigated by the short period of time during which they will be undertaken, particularly in regard to the delivery and removal of pipe sections. Farmhouses not on the directly affected properties are likely to be so distant that any noise emerging will blend into normal background noise. No significant issues were raised during consultation by Ports North with potentially impacted land owners in the Barron Delta.

Hence it is considered there will be no adverse social impact on the amenity of the surrounding rural areas.

DMPA

The Northern Sands DMPA is to be located in a mainly agricultural (including aquaculture and cane farming) area, with some other scattered uses along the Captain Cook Highway, such as a motorcycle track and Go-Kart track and Laser Tag Arena entertainment facility.

The Northern Sands quarry (the site of the DMPA) itself contains several uses – the primary sand mining operation, a Boral concrete batching plant and a commercial dump. The existing operation could be expected to generate heavy vehicles, constant traffic and machinery operation, and to have a low quality visual, noise and air quality environment.

The dredged material will be delivered into the DMPA as a slurry through the dredged material pipeline. The dredged material may be handled upon entry into the pond by conventional earthmoving equipment (e.g. dozers, excavators, etc.) to ensure it is distributed to all areas of the DMPA.

The type of operation proposed would consequently not be substantially different from that undertaken on the site. This is a mitigating measure inherent in the proposal, such that little change should be experienced to the amenity of the area. It is also noted that there are noisy activities already existing in the surrounding area. A further mitigating factor is that the works will be in operation only for a short time, following which normal operations at Northern Sands will continue.

Hence it is considered that there will be no adverse social impact on the amenity of the DMPA area.

Holloways Beach Environmental Education Centre

Holloways Beach Environmental Education Centre is the closest neighbouring use to the location at which the pipeline will cross the coast, and the pipeline lay down areas. It is in a relatively isolated location near the northern tip of Holloways Beach on the southern side of Richters Creek. The current environment of the centre is low key. Facilities appear very basic and relatively old, although there have been improvements such as greenhouses. The setting of accommodation buildings is among natural dunal vegetation, with much of the remainder of the site grassed. The centre is separated from the creek mouth by Poinsettia Reserve, within the southern part of which it is located. There are some tracks through this reserve, however the vegetation is dense in the northern part.

The works proposed would not be visible from the centre, and there would be no increase in vehicle traffic past the centre. It is noted from consultation undertaken by Ports North that the centre had no major concerns with regard to noise or direct disturbance to the facility or staff from Council's 2016 dredging works, and that no significant concerns were held in relation to the effects of the current proposal. The noise environment of the centre may be slightly changed by the pipeline establishment, vehicle movements during operation of the pipeline, minor excavation works during pipeline installation and removal, and the activities at the laydown area. However **Chapter B10** (Noise and Vibration) confirmed that noise emissions from pipeline construction and decommissioning would not significantly impact the centre. Minor night time noise exceedances from booster pumps under adverse conditions at the Environmental Centre were identified; however it was expected that further mitigation (i.e. bunding or quieter plant selection) would result in compliance with the noise level targets.

Hence any social impact on the amenity of the centre is considered to be negligible. Any effect on the amenity of the environment of the Environmental Centre would in any case be mitigated by the short period of time during which works will take place.

Nearby residential areas

Analysis of the social environment of surrounding residential communities reveals that there were no nearby urban settlements to the DMPA, and indeed the site appears to lie in the middle of five surrounding communities which essentially turn their backs on the Delta.

Of the five surrounding communities, the route of the pipeline passes between Yorkeys Knob and Holloways Beach.

The urban areas of Yorkeys Knob lie to the north of the site some distance along the beach, and to the west along Yorkeys Knob Road (approximately 900 m from the laydown area). Yorkeys Knob primary school is located approximately 1000 m to the north-west from the laydown area.

The closest urban areas are the northern extension of Holloways Beach along Poinsettia Street, with houses approximately 750 m from the laydown area; and those in a small enclave in Acacia Street near the boat ramp (a similar distance). The dwellings in Acacia Street are also within approximately 150 m from the boat ramp, however at this point the pipeline is located some distance away on the other side of wetlands on the side of the creek. Both of these urban areas are also separated from the laydown and dredging areas by a large area of reserve (Poinsettia Reserve).

Dwellings at Baronia Crescent are approximately 750 m from a booster pump however they are separated by a bend of the creek and a wide belt of mangroves on either side of the waterway.

Chapter B10 (Noise and Vibration) found that noise emissions from pipeline construction and decommissioning would not significantly impact any of these sensitive receptors. Minor night time noise exceedances from booster pumps under adverse conditions at the three closest receptors were identified; however it was expected that further mitigation (i.e. bunding or quieter plant selection) would result in compliance with the noise level targets.

The location of the DMPA is consequently a mitigating factor inherent in the proposal. A further mitigating factor is the short period of time over which the operation will take place.

Hence while there will be a direct adverse effect on the amenity of the closest urban areas in Holloways Beach, this will be limited to a small number of dwellings, it will be temporary and reversible and the social impact is considered to be minor.

Impacts on Beach and Creek Use

Change in Use of the Beachfront and Creek Mouth

It was noted above that Richters Creek is a natural border between the two villages, and it is most likely a termination point for dog walkers from Yorkeys Beach, who are able to walk dogs off leash at the southern part of the Yorkeys Knob suburb. It is also noted that environmental and bird-watching groups, and some people beach/sand bank fishing, use the creek mouth area. Establishment of the pipeline would mean that the beach may need to be partially closed at this point.

The effect is mitigated by the selection of a little used area for the pipeline to cross, and its coincidence with the natural boundary provided by the creek. It is also mitigated by the short period of time (approximately four months) required for establishment and for the pipeline to be in place. Likewise, the selection of the pipe storage and lay down area and pipe fabrication area are in an isolated area and unlikely to be highly apparent to users of the beach.

For the few walkers or environmentalists utilising this area there will be minor inconvenience and a small change to the natural character of the beach for a short period of time (six weeks). It is anticipated that the fabrication of the pipeline and the dismantling process will require use of these areas for a slightly longer period of time, another three weeks for installation and two weeks for dismantling. The process as a whole will therefore take place in less than three months, and is proposed to be undertaken mid-winter when there may be less beach usage. Some noise and traffic movement may be apparent to the few users on the beach during this period; however overall the social impacts on the users are anticipated to be few.

It was noted above that Council has previously undertaken works dredging sand from the mouth of Richters Creek and pumping in this area. This included partial beach closures. Works in this area are therefore not an experience with which users are unfamiliar.

Hence while there will be a direct adverse effect on users of the beach and creek mouth, this will be temporary and reversible and the social impact is considered to be minor.

Effect on Use of the Environmental Centre

The Holloways Beach Environmental Education Centre was established in 1990 at the northern end of Holloways Beach. Outdoor and environmental education centres (O&EECs) are provided by the Queensland Department of Education and Training (DET) to promote, develop provide and deliver highly effective outdoor and environmental education programs for schools and the community, and provide professional development for teachers. Strong links are fostered with local communities by providing information about environmental issues and serving as venues for community forums. Holloways Beach is currently one of 26 in the state.[8]

[8] http://education.qld.gov.au/schools/environment/outdoor/index.html

The centre's facilities include an air-conditioned administration block with conference room, a fully established kitchen and four air-conditioned cabins with shower and toilet, each capable of accommodating 11 persons and an additional donga capable of sleeping an extra 9 persons.

The centre is located to enable students' easy access to mangrove, estuarine, beach and urban environments. Boating, water quality testing, aquariums, crab tagging, mangroves, beach and urban programs are offered to students from Year 5 to Year 12 on overnight camps and day excursions.

The close proximity of rainforests and freshwater creeks also enables the centre to work with local primary and secondary schools in developing water quality projects, historical trails, recreational studies and Aboriginal cultural programs. Personal development programs involving leadership, group cooperation, trust, initiative and problem-solving activities are used to promote active informed citizenship in groups camping at the centre.

The centre also offers outdoor education experiences with its high ropes course on location and close proximity to abseiling/rock climbing, canoeing/kayaking and expedition venues in the Cairns region[9].

Clearly the relationship to the Richters Creek estuary, surrounding wetlands and beach environments is critical to the functioning of the Environmental Centre. The centre utilises the Acacia Street boat ramp for launch and retrieval of boats for small groups of school students on a regular basis, and for conduct of water quality and mud crab monitoring in the Richters-Thomatis Creeks and Barron River area.

However based on the views expressed during consultation, and the fact that no major concerns were expressed in relation to the 2016 Council creek mouth dredging operation, which had a pipeline extending from the creek mouth to the public beach area to the south running the full length of beach adjacent the centre, it is not expected that the project will impact on the users and management of the facility. There may even be a positive impact in terms of providing learning and monitoring opportunities arising from the project.

Threats to Safety and Wellbeing

The local beach and estuarine environment, whilst subject to the normal threats from nature, provides a relatively safe location for passive recreation, primarily fishing and walking. The sand cutting and pipeline works will present potential threats to public safety.

The concept proposal includes partial closure of the beach to fence off these activities and to mitigate any risk to the public along with mitigation of vandalism for the period of the project. Appropriate site security, fencing and signage will be used to minimise such impact elements.

It is noted that for purposes of safety and risk relating to boating in Richters Creek, the concept design incorporates the submerging of the pipeline to cross the creek, rather than a temporary trestle bridge. Adequate clearance for boats will be provided. In addition mitigation measures could include a ‘Submerged Pipeline’ sign on the bank with depth information.

In both cases, while there is an environmental risk inherent in the project, subject to detailed design the mitigation measures proposed are considered adequate to minimise risks to public safety and wellbeing. Hence while there will be a direct adverse effect on users of the area, this will be temporary and reversible and the social impact is considered to be minor.

Restrictions to Recreational Fishing and Boating Use

Richters-Thomatis Creek is a tributary system to the Barron River which is used for recreational fishing. It is however described not as a ‘fishing mecca’ due to the proximity to Cairns and the Northern Beach suburbs, and fishing can be difficult[10].

The area is recognised as a declared fish habitat for its natural values of mangrove-lined creeks and wetlands.

[9] http://education.qld.gov.au/schools/environment/outdoor/holloways.html

[10] https://www.fishingspots.com.au/s/thomatis-creek/

Its fisheries values (together with Yorkeys Creek) are for recreational and Indigenous fishing; barramundi; blue salmon; bream; estuary cod; grunter; mangrove jack; queenfish; whiting; and tiger prawns[11].

Land based people fish the river mouth from the sand banks. Boats launch from the boat ramp at Acacia Street, Holloways Beach and can travel downstream a short distance toward the river mouth or upstream. Upstream, Richters Creek is fed by Thomatis Creek and other feeder creeks.

The concept proposal is for the pipeline to cross Richters Creek upstream of the boat ramp. This will be by way of a submerged pipe laid on the bed of the creek. The pipe would be constructed on one side then pulled (or floated) across the creek and sunk onto the creek bed.

This will involve a two-day period of installation and a similar period for removal, during which access upstream from the boat ramp will be restricted. Similarly, land fishing at the mouth would be restricted during minor excavation works to establish and remove the pipeline.

The effect of the restriction will be mitigated by the short period of time during which access upstream will be impeded, and the remaining availability of some areas of the mouth and other parts of the creek for fishing at all times during the works. Altogether, the concept proposal will affect recreational fishing only for a temporary period. The effect would be further mitigated by signage and advertising (including mapping) advising of the restrictions and their period of applicability.

Hence while there will be a direct adverse effect on recreational fishing and boating, this will be temporary and reversible and the social impact is considered to be minor.

Change in Amenity of Environment of Richters Creek

The current environment of Richters Creek is one of quietness and solitude. The works above will create some disturbance to this environment through the generation of noise, activity and disturbance of the natural environment.

Noise will arise from a set of booster pumps located close to the creek, just upstream of the boat ramp, from traffic associated with trucks delivering and removing pipes to the laydown area, and from works to submerge the pipeline crossing the creek. The latter will also generate activity such as ramping down to creek level with earthmoving machinery, and vegetation removal.

This disturbance will change the environment of the creek for a temporary period. The Noise Assessment (Ask, 2017) identified various sources of noise during the establishment period and some from booster pumps during operation. This will affect land-based people fishing on the sand banks at the mouth of Richters Creek and to a lesser extent those who are boating. Those boating will be able to travel upstream to quieter spots. It may also affect students of the Holloways Beach Environmental Education Centre, who utilise the creek and river mouth for educational purposes. However, again alternative locations may be able to be utilised while the main impacting stages of the project activities (such as pipeline assembly and installation) are occurring.

The effect on amenity of the creek environment will be mitigated by the short period of time during which it will occur, and the availability of some alternative parts of the creek which will not be affected. As above, the effect would be further mitigated by signage and advertising (including mapping) advising of the works and their duration, which may result in other locations being sought during this period.

Hence while there will be a direct adverse effect on the amenity of the creek environment, this will be temporary and reversible and the social impact is considered to be minor.

[11] https://www.npsr.qld.gov.au/managing/area-summaries/yorkeys.html

Impacts on Recreational Facilities

Effect on Future Foreshore Improvement Plans

The Holloways Beach Foreshore Improvement Plan recently on exhibition at Council[12] includes a recommendation that:

> It is important to activate the northern section of the foreshore. This can be achieved by providing recreation opportunities at the northern most section of the study area. A BBQ/ picnic shelter would provide the local community another location to gather and would active the space. If complemented with other elements it would add significant recreation value for residents.

This would result in more public recreation at the northern section of the beach potentially closer to areas which would be subject to the proposed works (**Figure B9-23**).

Figure B9-23 Holloways Beach improvement program, northern section.

Source: GGI Landscape Architects (2016).

Draft plans of the proposed improvements[13] however show these no further north than the end of Casuarina Street; and the recommendation is medium-term. Works are estimated to be completed and the area restored by this time.

It is therefore not considered that there would be any impact arising in relation to this proposal.

A foreshore improvement and vegetation management plan for Yorkeys Foreshore and Goodward Park (at the southern end of the beachfront urban area) was prepared by CRC in 2015[14]. The plan retains the southern section of the beach in its natural setting.

The concept proposal will return the beach area to its natural state. The proposal is temporary and reversible. It is therefore considered that there would be no social impact arising in relation to these improvement programs.

12 http://www.cairns.qld.gov.au/council/have-say/open/draft-holloways-beach-foreshore-improvement

13 http://www.cairns.qld.gov.au/__data/assets/pdf_file/0014/201038/Holloways-Beach-Plans-reduced.pdf

14 http://www.cairns.qld.gov.au/council/have-say/closed/yorkeys-foreshore#sthash.HMpaKW6z.dpuf

Effect on Future Cycleway Routes

There is also a recommendation in the Holloways Beach Foreshore Improvement Plan[15] for the Holloways Beach foreshore path to join to the Northern Beaches Leisure Trail:

> *'The cycleway will ultimately be part of the Northern Beaches Leisure Trail, which will extend from the CBD to Palm Cove to offer cyclists a safer alternative to the Captain Cook Highway. It will also link with the future Wangetti trail' (Palm Cove to Port Douglas).*

The Department of Transport and Main Roads (TMR) identifies networks of core cycling routes in Queensland in collaboration with local governments. These are outlined in network plans for each region and shown in the Principal Cycle Network Plan: Far North Queensland (TMR 2016).

A connection of the principal cycle network between Yorkeys Knob and Holloways Beach is identified in the plan as a future principal cycle route (**Figure B9-24**). Future principal routes identify expansion opportunities for the principal cycle network in areas where significant urban growth has been identified but land use planning has not yet been undertaken or finalised. Hence the exact alignment of the future link may change after more detailed planning.

Figure B9-24 Principal cycle network, Northern Beaches.

Source: TMR (2016).

[15] http://www.cairns.qld.gov.au/__data/assets/pdf_file/0013/201037/Holloways-FS-MP-Final-Draft-low-res.pdf

There are a couple of options recently investigated (in 2016) for the trail by Council according to the Holloways Beach Foreshore Improvement Plan Draft Report16, a coastal one across Richters Creek near the boat ramp and an inland one, which both would cross the pipeline route. These are shown on **Figure B9-25**.

Figure B9-25 Proposed options for Northern Beaches Leisure Trail connection between Yorkeys Knob and Holloways Beach.

16 http://www.cairns.qld.gov.au/__data/assets/pdf_file/0013/201037/Holloways-FS-MP-Final-Draft-low-res.pdf

The Northern Beaches Leisure Trail is however noted to be a long-term plan with staged implementation. Consultation with Council has identified that the timing and route of such project is undefined at this stage and unlikely to coincide with the project.

The proposal of the pipeline and accompanying works is temporary and reversible. Its timing, subject to approval, is anticipated to be short-term. It is therefore considered that there would be no adverse social impact arising in relation to this recommendation.

Impacts on Livelihoods

Effect on Landowners and Affected Properties

Northern Sands is an active long-term sand mining operation. However it is understood that recent recycling operations have significantly reduced the volume of material being placed in the void to the point that operational life of the waste disposal operation is greater than 30 years.

The concept proposal will provide an alternative source of fill which will be of economic benefit to the landowner.

Hence it is considered that there will be beneficial impacts to the landowner of the DMPA.

There are anticipated to be no adverse social impacts on affected rural properties and the concept proposal has been designed to minimise any impact on farming operations. Any economic impact on pipeline land owners would be compensated.

B9.2.7.c Tingira Street DMPA Study Area

Impact on Character of the Portsmith Area

Compatibility of the Use with Existing Character

The Tingira Street DMPA comprises two sites located on reclaimed Ports North land at Portsmith, a largely industrial area to the south of the Cairns CBD. The land is zoned Strategic Port Land under Cairns Plan 2016 and is surrounded by additional Strategic Port land and industrial areas to the north and west, and conservation areas to the west, south and east (on the opposite side of Smiths Creek).

The sub-area of the Tingira St DMPA Study Area containing the sites is located within areas designated as Waterfront Industry Planning Area and Industrial Planning Area.

In line with the intent of the Waterfront Industry Planning Area, the immediately surrounding area contains a diverse range of marine related industrial uses including low-impact industrial and port activities. The continued operation and expansion of these marine orientated industries and activities is encouraged and anticipated, including that of the subject land, which regardless of the project will be filled and utilised for industrial purposes.

Future development within the area would not compromise the operation of the port or the environmental qualities of Trinity Inlet and Smith's Creek, and would be in line with the development of support under the ports land use plan. It would consequently be quite compatible with the existing operations and character of the Portsmith industrial area.

The concept proposal will concurrently prepare further land for industrial development. It is therefore considered that the social impact would be beneficial.

Impact on Local Amenity

Change in Local Amenity

The Portsmith Industrial Area is an important economic and employment hub for Cairns. The current amenity of the area is busy, thriving, in some places noisy, and generally has the appearance of a hive of activity. A large number of workers are employed in the Tingira St DMPA Study Area, and any changes in amenity would primarily affect these. There were relatively few people found to be living in the large Statistical Area which includes the Tingira St DMPA.

The sites will be filled with dredged stiff clays transferred to shore in dumb barges via temporarily moored barge mounted excavators loading heavy haulage vehicles at two barge ramps. Minor earthworks including temporary piles may be necessary at the ramps to facilitate unloading.

The filling of sites for industrial use is an ongoing activity in the development of the Strategic Port lands and one which would be commonly expected by workers in the area. The effect is mitigated in this case by the concept proposal selecting utilising locations which are relatively segregated from existing industrial and port development and at the end of a largely (as yet) undeveloped cul-de-sac. This location ensures that it will have minimal effect on the working environment of the industrial area. It is also mitigated by the temporary nature of the activity.

Further, Ports North purchased 10 000 m^3 of fill some years ago with the intention of continuing with a rolling program of shifting/repositioning this onto the sites in approximately 1 ha areas after 1 to 2 years in place. The receipt of dredge material will avoid a significant amount of re-handling earthworks in the area, and can consequently be considered a beneficial outcome on local amenity.

The Regional Harbour Master confirmed through consultation that the placement of dredged material in the Tingira Street DMPA was in line with the purpose of the land and existing activities, and would be beneficial in terms of filling and surcharging the less the land in a less disruptive manner as opposed to ongoing relocation of existing surcharge material or importation of fill by road.

Any limited effect on amenity would be temporary and reversible. It is therefore considered that there would be no adverse social impact arising in relation to the activity.

Impact on Neighbouring Land Uses

Change to Usage of Neighbouring Port/Commercial Activities

It was also noted that there are various Government agency offices/operations contained in a complex of modern buildings adjoining one site and relatively close to the other:

- Queensland Police Service (QPS) Water Police
- National Parks and Wildlife Service (NPWS) Cairns District Operations Centre
- Wet Tropics Management Authority Yellow Crazy Ant Eradication Office
- Australian Maritime Safety Authority (AMSA) Queensland Operations Base.

These users may have different expectations of a work environment (i.e. Government offices), although three of the agencies are involved in port related waterfront activities. Internal discussions undertaken with the QPS Water Police, NPWS, Wet Tropics Management Authority and AMSA did not indicate any foreseeable social impacts, but raised only general interest in ensuring no water quality impacts and potential noise impacts if large quantities of rock were being handled. It was noted that the adjacent existing barge ramp had been utilised to supply rock via barges for a number of remote projects in recent years without issue by tenants. It is not anticipated that the stiff clay materials will contain significant quantities of rock.

The works would also be temporary and reversible. It is therefore considered that there would be no adverse social impact arising in relation to these land uses.

Change to Usage of the Boat Ramp and Community Facilities

Four community uses are located within the vicinity of the sites:

- a public boat ramp, parking and amenities
- Wooden Boat Association clubhouse and yard
- Great Barrier Reef International Marine College
- Cairns Cruising Yacht Squadron, including a bar, public restaurant, shipyard and marina.

The Smiths Creek boat ramp is a well-used large public ramp and car park offering wash down and rigging areas. It is lit for night usage, and has a floating pontoon. There are public toilets at the entry to the carpark. It has no direct access to the sites other than by Tingira Street, in common with other uses.

Usage of the boat ramp, car park and amenities would not be expected to be impeded by the activity. While the barge ramps may temporarily increase marine traffic past the pubic boat ramp, it is not expected that this would cause any undue delays or interference with the use of the boat ramp.

It is understood that the Wooden Boat Association property is used by both the Wooden Boat Builders and representatives of the Cairns Maritime Museum Inc. This use is on casual month-to-month leasehold basis and offered as a community service by Ports North. The proposed dredge material placement will not displace or interrupt this use, however any minor amenity issues would be expected to be tolerated given the chosen location and tenure of the presence.

The Great Barrier Reef International Marine College (GBRIMC) provides maritime training to local, national and international clients, as part of the TAFE Queensland network. It is located on the western side of Tingira Street without direct waterfront access and opposite a site that is currently being filled. The college is a new state-of-the-art training facility including training rooms, simulators, engineering workshops, an immersion pool and a training vessel. Its location was selected as highly appropriate for a marine oriented training school, and it is therefore anticipated that the activities undertaken in the surrounding port area are considered compatible. No impacts on the ability of the TAFE to operate are envisaged.

The Cairns Cruising Yacht Squadron is located on the eastern side of Tingira Street, approximately 400 metres from the closest site. It has extensive member and public usage, including functions, indoor and outdoor dining and use of the lawn overlooking Smiths Creek with a view to Admiralty Island opposite. It also provides a deep water frontage with a pontoon for members and dinghy tieups from live-aboards or visiting boat owners. These uses are an important part of the club's operation and its location is clearly valued by the club and users. No interruption of these uses is envisaged, and the view of passing barges at this point could only be considered part of the interesting marine precinct in which it lies.

The works would also be temporary and reversible. It is therefore considered that there would be no adverse social impact arising in relation to these community uses.

Impact on Marine Users

Changes to Usage of Smiths Creek

The Port of Cairns has 65 pile moorings, for craft up to 18m (59') in length, on the eastern side of Trinity Inlet. There are also areas designated for anchorage only north and south of the piles, east of Admiralty Island and in Smiths Creek[17]. Smith Creek tends to be a quieter mooring area in terms of passing traffic the further upstream moorings are located. However there is undoubtedly noise from existing industrial, marine and barge operations. There may also be wash.

Barges loaded with dredged stiff clays will pass these moorings to access the new barge ramps. It is not anticipated that live-boards or boat owners would be unduly impacted by the operations of the additional barges.

[17] http://www.portsnorth.com.au/pdfs/cairns/InformationSheet_CairnsBerthsWharves.pdf

The barges would also be temporary and reversible. There would be no ongoing barge movements after the dredge material placement is completed. It is therefore considered that there would be no adverse social impact arising in relation to these marine users.

B9.2.7.d Other Areas

Impacts on Residents in the Wharf Street Area

Effects of Land Based Wharf Upgrades, Dredging and Change in Number of Ship Arrivals

Residents in the Wharf Street area are included in the Study Area. This area forms part of the Cairns city centre. The city centre contains major infrastructure, is the dominant centre for office based employment including head offices and government agencies, and has an active and vibrant night economy support by tourist activity, while maintaining a desired standard of amenity. In 2011 it contained just under 500 residents. In the Wharf/Abbott/Lake Street block opposite the Cairns Cruise Liner Terminal (CCLT) there were three apartment buildings identified, providing a mix of residents and holiday rentals. One large scale high-rise tourist/residential development is located directly opposite the CCLT and its car park, on Wharf Street.

It was noted that as anticipated from the above planning framework, the Wharf Street area is a lively and vibrant precinct. Further permanent residential development is encouraged to complement tourist activity. The terminal itself has been recently redeveloped to accord with Cairns tropical design and retain important heritage elements, and is surrounded by an attractive and active landscaped public domain.

The concept proposal will involve widening and deepening of the Cairns Shipping Channel and improvement of navigation and wharf facilities to accommodate larger cruise ships and facilitate a future expansion of HMAS Cairns Navy Base. It will enable an increased number and size of cruise ships to be berthed at the CCLT.

At the present time, cruise ships visiting Cairns either berth at the CCLT or anchor 4km off shore at Yorkeys Knob and use tenders (catamarans) to get passengers ashore. In 2016, a total of 64 ships visited Cairns. 40 of these used the CCLT and 24 utilised Yorkeys Knob. These numbers were a significant increase over the 2015 figures of 20 and 15 respectively. More significant growth again is currently forecast for Cairns in 2017 with 80 ships in total (Cairns/Yorkeys Knob) (excluding adventure class[18]) scheduled as at 6 September 2016, compared to the current combined total of 64[19].In the case of the Cruise Terminal the 2015 number had remained fairly constant since 2010, with arrivals increasing more at Yorkeys Knob than the CCLT over this period of time.

It is noted from the *Demand Update* (AEC, 2016) that significant growth in ship arrivals is possible under the existing port infrastructure. This has been occurring over the last two years. Residents in the vicinity of the project area may have noticed changes in their environment as a result of the growth in shipping arrivals. Under the recalibrated project, ship arrivals at the CCLT are projected to increase to 129 by 2021, 148 by 2026 and 152 in 2031. This is a threefold increase in arrivals over the next five years.

Further incremental increases in localised environmental impacts could be experienced by permanent residents/tourists as a result of landside construction, the dredging works, and particularly the increase in shipping arrivals associated with the proposed project. Assessment has found the following:

- Noise: The Noise Assessment (Ask, 2017) found that noise emissions from wharf operations may result in minor exceedances of night-time acoustic objectives within nearby units, with windows and doors closed. However, the exceedance was considered acceptable on the basis that noise levels are not increasing in magnitude, only frequency of occurrence, and that there are no historical complaints from existing noise levels. Noise emissions from wharf construction activities were found to be acceptable if occurring during standard construction hours.

[18] Carrying less than 150 people

[19] *Demand Update* (AEC, 2016)

- Traffic: People who currently live or work in close proximity to the CCLT could experience an increase in vehicle/pedestrian traffic when a cruise ship is docked at the terminal. Such congestion would occur more frequently and could worsen as the number and size of ships able to berth at the terminal increase. **Chapter B14** (Transport) found that construction works associated with the wharf redevelopment for the Cairns Cruise Liner Terminal would have negligible impacts on the external transport network. It also found that the operations of the CCLT would have negligible impacts on the external transport network. However some refinement of internal facilities and management associated with pedestrian and bus/taxi provisions are recommended to improve safety and functionality at the terminal. This may reduce any local congestion experienced by residents or workers in the area.
- Air Quality: **Chapter B10** (Noise and Vibration) found that exceedances of criteria predicted due to the wharf construction activities are likely due to the conservatism of the model and can be mitigated. The use of fuel oil by cruise ships when berthed at the wharf is predicted to cause exceedances of two criteria in both the 2028 baseline scenario and the 2028 project scenario. However as the International Maritime Organisation has mandated the use of low Sulphur fuels and /or exhaust scrubbers by international shipping after 1^{t} January 2020. These will be adopted by Australian Authorities and consequently criterion compliance is expected. The criterion would be met by marine diesel use at berth, and this is therefore recommended as a mitigation measure. Dust deposition levels from shipping are predicted to be within under the nuisance criterion but deposition of diesel soot may accumulate over time and be observable due its dark colour. It is noted that the Cruise industry is fitting exhaust scrubbers to new ships and retrofitting current ships expected to be operating after 2020.

  The use of diesel fuelled backhoe dredge and associated barge will avoid potential criterion exceedance when operating near the wharf are.

  In summary, there was found to be low risk of air quality impacts associated with the project provided the recommendations for mitigation are implemented.
- Visual Impacts: Visual impacts associated with the operation of the project have been assessed **Chapter B12** (Landscape and Visual).
  - Visual impacts were identified as likely to be short-term (dredging and landside construction) or transient (larger ships).
  - Only minor visual intrusion from barge movements associated with moving material to the Tingira Street DMPA was identified as likely, and these would be temporary only. Where feasible, construction plant, materials and machinery would be screened behind fencing or located to minimise visual impacts. Lighting of compounds and works sites would be restricted to agreed hours and in accordance with a Construction Environmental Management Plan. Directed lighting would be used at the wharf construction site to minimise glare and light spill. Regular maintenance of site hoarding and perimeter site areas would be undertaken, including the prompt removal of graffiti. The management of dredging activities themselves would minimise the potential for visual intrusion from dredging operations and dredge plumes.
  - The main long-term outcome of the CSD project, in terms of visible changes within the viewshed, was assessed as likely to be an increase in the number and size of cruise ships. The largest cruise ship which currently visits Cairns regularly is the approximate equivalent of 16 storeys high above the waterline, whereas in future (after channel deepening) the largest vessel will be the height equivalent of a 20 storey hotel (approximately). It is also significant that the number of large cruise ships visiting Cairns is likely to increase by an average of 5 -10% additional trips per year to 2026. **Chapter B12** (Landscape and Visual) considered the likely change in the perceived character of Trinity Bay for people living in the high-rise apartments would be negligible. Additional light glow from wharf and shipping activities was also considered to be negligible.

It is clear from Council planning documents that this area is expected to develop as an active and vibrant part of the city centre with a 24-hour economy. Consistent with this, there was found to be a relatively low proportion of children, relatively high proportions of some young adult age groups, and also significantly higher proportions of 45 to 54 year olds and 60 to 74 year olds. The latter would be expected to be empty nesters seeking a city lifestyle and in some cases, good water views. This is confirmed by the demographic profile of the Wharf St Sub-Area, which had a high proportion of couple families without children, lone person households and group households, compared to the Cairns LGA and Queensland.

These residents have chosen a location which is active and vibrant, and the expectation of a quiet residential environment would be unrealistic. It is also clear from Council's planning documents that despite the fact that residential development is encouraged, development should not affect the operational aspects of the Port of Cairns.

The *Port of Cairns Land Use Plan* (Ports North 2013a) envisages ongoing development of the Port. Ports North prepares land use plans for strategic port land under its control which are approved by the State Government Minister of Transport. The land use plan aims to encourage sustainable expansion of port holdings, facilitate the integration of port interests with State and local government interests, provide a basis for assessing development applications, and provide government, residents and businesses with confidence about future development on port held land.

The project is one of the major last stages of development in the Cityport which has seen a significant revitalisation and increased connection of the esplanade, lagoon and foreshore to the operating port area including the upgraded CCLT. This process has seen a steady increase in the number of tourists and economic benefit from restaurant and tourist accommodation through these areas of the Cairns LGA.

It is felt that many younger residents, especially in group households, are unlikely to be affected by the above potential impacts of the proposed development. However many of the residents of the Wharf Street Area are mature aged. The median age is 48 years of age for the Wharf Street Sub-Area, substantially higher than the median age for the Cairns LGA and for Queensland, both at 36 years. Median incomes in the Wharf Street Sub Area were substantially higher than for Cairns LGA and Queensland. It could be expected that some of these residents have chosen to live in this location to achieve a lifestyle and may feel upset and disturbed by the changes that are occurring. They may also be concerned about impacts to property values.

While it may have been difficult to envisage the increases in the popularity of cruising which have led to the extent of likely shipping arrivals, an overriding consideration is that these residents have bought or chosen to live opposite a shipping terminal and a working port. The landside construction and dredging works would be temporary and reversible, and it is considered that the social impacts arising from these would be minor. The impacts arising from operation of the terminal would be direct, adverse, long-term and irreversible. Their social impact is considered moderate.

The *Cityport Local Area Plan* (Ports North, 2006, amended March 2013), in achieving its vision, states that it will balance economic, social and environment factors in decision making to minimise adverse impacts on the community and environment. It is consequently considered that predicted environmental impacts on residents, particularly those relating to noise and air quality, should be mitigated as far as possible by available practicable measures.

On the other hand, the proposal is expected to further enliven and activate the public domain in the vicinity of the Cruise Liner Terminal and the Cityport area as a whole. This is considered a beneficial social impact for members of the community and visitors, increasing public safety and the use of a unique Cairns precinct.

Impacts on Yorkeys Knob

Effect of Change in Ship Arrivals in Yorkeys Knob

The number of ship arrivals at Yorkeys Knob has increased over the years, from 15 in 2010, to 24 in 2016, and further growth is scheduled in 2017.

Under the recalibrated project, shipping arrivals at Yorkeys Knob are estimated to decrease from 24 in 2016 to 13 by 2021. By 2026 it will remain similar (16). However by 2031, the number of ships will again have increased to 31, exceeding the current number of arrivals.

This decrease in shipping numbers at Yorkeys Knob will have various impacts on different groups of stakeholders.

Businesses and tourism operators in Yorkeys Knob

The people of Cairns are said to be used to 'ship days' and the local economy is geared to meeting the needs of visiting cruise passengers by offering relevant tour options (type, duration and quantity of offerings) and putting on additional staff in retail and hospitality offerings to meet additional demand for services. Similarly, business and tourism operators are well aware of ship arrival dates in Yorkeys Knob, and have organised procedures to collect tourists etc. from this location once disembarked from the ship and transported to shore.

Arrangements in Yorkeys Knob have been well acknowledged as not ideal. In 2013, a Working Group was established by the Minister for Transport and Main Roads with members from key stakeholder groups from tourism, cruise shipping and marine and transport logistics and operations to identify improvements that needed to be made in response to unfavourable passenger feedback on both the facilities and the shore based welcome. This was felt to reflect poorly on the reputation of Cairns and the region amongst cruise companies and cruise passengers (Ports North 2013b).

Land-based infrastructure improvements which were subsequently made included six dedicated tour coach loading bays in a herringbone design, a separate transit coach loading location and increased passenger congregation and movement area. The additional passenger congregation zones provided opportunities to address the other issues including orderly passenger movement and additional space for seats, shelter, markets, photos and tour information.

Marine based infrastructure improvements included reuse of the existing pontoon, re-arranging the deck equipment to improve the passenger ferry interfaces, construction of three 'L' shaped gangways for common use by ferry operators, the purchasing of new floating fenders to create additional space at the gangway exit points, increasing the width of the gangway from the pontoon to the shore and increasing the pontoon length by 3 m.

These improvements are reported to have significantly improved arrangements for transfer of passengers at Yorkeys Knob. Tourism operators have also pointed out that it limits the amount of time passengers are able to utilise seeing attractions and travelling around the region. These operators are equally, and indeed more readily able to operate their services from the CCLT. A higher number of passengers may result, and longer and more tours are likely to be able to be booked.

There are relatively few local businesses in Yorkeys Knob, with the exception of a small local neighbourhood shopping centre. It is considered unlikely that these would currently benefit from ship arrivals at Yorkeys Knob. Some local tourist attractions have developed which offer half day quad bike and horse riding tours for passengers. Early booking of these is recommended, however there may be a minor impact on walk-in businesses in the short-medium term. In the long-term, the overall number of ship arrivals will again increase and these businesses are likely to be able to offer their services to more passengers. The social impact on these businesses is considered minor and reversible.

The social impacts arising in the short-medium term of a decrease in ship arrivals at Yorkeys Knob is therefore considered beneficial to tourism operators. In the long-term, the overall number of ship arrivals will again increase and tourism operators will be able to add increased services to cover the additional demand. Again the social impact on operators is likely to be beneficial.

Members of the Yorkeys Knob community and tourists

Yorkeys Knob is a relatively quiet seaside suburb, with the Yorkeys Knob Boating Club being a major feature. Residential housing is interspersed with medium scale tourism development. The Yorkeys Knob community tends to be an older community with low proportions of children and a high proportion of lone person households.

While the tender landing facilities are relatively segregated from most residential uses, it is understood that there is considerable traffic and parking congestion on a 'ship day', and the quiet nature of the suburb is likely to be somewhat disturbed. The entry road is also likely to be heavily used by buses and other vehicles. This could create issues for some people, including older residents, to move around on those days.

It is also understood that on 'ship days' there are constraints to the use of the public boat ramp at Yorkeys Knob Boat Club and some inconvenience to members of the local community and tourists staying at Yorkeys Knob or nearby areas who intended to go boating or fish.

The short-medium term reduction in ship arrivals will alleviate this congestion and disturbance. It will however re-occur in the longer term (by 2031) when ship arrivals will be increased over those in 2016.

The social impact arising in the short-medium term of a decrease in ship arrivals at Yorkeys Knob is therefore considered beneficial to the community. In the long-term, the overall number of ship arrivals will again increase and this congestion is likely to re-occur. While this benefit will reverse over time, this is not seen as a consequence of the proposal, but rather a long-term increase in the number of passengers wishing to visit the region.

Yorkeys Knob Boating Club Inc.

Yorkeys Knob Boating Club Inc. currently benefits from ship arrivals through cruise ship passenger visitation to the club and restaurant facilities, and charges associated with the pontoon access hire. It is noted that the changes in procedures, combined with the upgrades in infrastructure, added costs to the operations at the Club. Passengers are also understood to use the club's toilet amenities, and the club needs to ensure that it is open at these times.

The pontoon access hire is a source of income to the club, which may also make an economic gain from use of the club by a small number of passengers. This income will be reduced by a decreased number of ship arrivals in the short-medium term and this is considered to be a minor adverse social impact. This loss of income will be gradually reversed over time as the number of ship arrivals increases and exceeds the existing number. This will be a beneficial social impact over time, however it is not seen as a consequence of the proposal, but rather a long-term increase in the number of passengers wishing to visit the region.

Ship Passengers and Crew

Despite improvements to the infrastructure at Yorkeys North, transfer by tender is still likely to be considered unsatisfactory from the point of view of some passengers on board ship, who may choose not to go ashore because of sea, weather or other conditions. These conditions can create difficulties for crew and possible safety issues, for example when dealing with elderly passengers. The current arrangements are also not ideal in terms of the amount of time passengers are able to utilise seeing attractions and travelling around the region. It is probably fair to say that arrival at Yorkeys Knob also does not have the destination appeal of berthing in the city of Cairns.

The ability of an increased number of ships to berth at CCLT rather than Yorkeys Knob will clearly be advantageous to passengers, crew and cruise lines. The social impact arising in the short-medium term of a decrease in ship arrivals at Yorkeys Knob is therefore considered beneficial. While this benefit will reverse over time, this is not seen as a consequence of the proposal, but rather a long-term increase in the number of passengers wishing to visit the region.

B9.2.7.e Likelihood of Impact and Risk Rating

The next stage of the assessment involves:

- assessing the likelihood of an impact occurring
- assessing the likely risk of an impact occurring by using a risk matrix.

Risk is determined as the product of consequence and likelihood. **Table B9-25** outlines the risk probability categories that have been used; and **Table B9-26** the risk matrix used. **Table B9-27** outlines the risk rating legend (from extreme risk to negligible risk).

TABLE B9-25 LIKELIHOOD OF IMPACT

Likelihood of Impacts	Risk Probability Categories
Highly Unlikely	Highly unlikely to occur but theoretically possible
Unlikely	May occur during construction of the project but probability well below 50%; unlikely, but not negligible
Possible	Less likely than not but still appreciable; probability of about 50%
Likely	Likely to occur during construction or during a 12 month timeframe; probability greater than 50%
Almost Certain	Very likely to occur as a result of the proposed project construction and/or operations; could occur multiple times during relevant impacting period

TABLE B9-26 RISK MATRIX

Likelihood	Consequence					
	Beneficial	Negligible	Minor	Moderate	High	Very high
Highly Unlikely/ Rare	Negligible Positive	Negligible	Negligible	Low	Medium	High
Unlikely	Low Positive	Negligible	Low	Low	Medium	High
Possible	Moderate Positive	Negligible	Low	Medium	Medium	High
Likely	High Positive	Negligible	Medium	Medium	High	Extreme
Almost Certain	Extremely Positive	Low	Medium	High	Extreme	Extreme

TABLE B9-27 RISK RATING LEGEND

Extreme Risk	An issue requiring change in project scope
High Risk	An issue requiring further detailed investigation and planning to manage and reduce risk
Medium Risk	An issue requiring project specific controls and procedures to manage
Low Risk	Manageable by standard mitigation and similar operating procedures
Negligible Risk	No additional management required

The outcomes of this analysis are summarised in **Table B9-28** for the construction and operation phases of the CSD Project.

TABLE B9-28 IMPACT ASSESSMENT TABLE

Primary Impacting Processes	Initial Assessment with Standard (Statutory) Mitigation Measures in Place			Residual Assessment with Additional (Proposed) Mitigation in Place		
	Consequence of Impact	Likelihood of Impact	Risk Rating	Consequence of Impact	Likelihood of Impact	Risk Rating
Construction						
BARRON DELTA (NORTHERN SANDS) DMPA						
Establishment of pipeline and laydown area changing character of the coastal area	Minor	Almost certain	Medium	Minor	Likely	Medium
Establishment of pipeline and land-based laydown areas affecting rural character	Negligible	Unlikely	Negligible	Negligible	Unlikely	Negligible
Establishment of pipeline affecting amenity of local residents (traffic, noise, visual impacts and lighting)	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible
Establishment of pipeline affecting amenity of users of the DMPA and surrounding land users	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Establishment of pipeline affecting amenity of students and staff at Holloways Beach Environmental Education Centre	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible
Establishment of pipeline affecting amenity of residents in nearby suburbs	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible
Restrictions affecting use of beachfront and creek mouth	Negligible	Possible	Negligible	Negligible	Possible	Negligible
Establishment of pipeline affecting use of Environmental Education Centre	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible
Works threatening safety and wellbeing	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible

Primary Impacting Processes	Initial Assessment with Standard (Statutory) Mitigation Measures in Place			Residual Assessment with Additional (Proposed) Mitigation in Place		
	Consequence of Impact	Likelihood of Impact	Risk Rating	Consequence of Impact	Likelihood of Impact	Risk Rating
Pipeline construction restricting recreational fishing and boating use	Minor	Likely	Medium	Minor	Possible	Low
Pipeline construction decreasing amenity of environment of Richters Creek	Minor	Possible	Low	Minor	Possible	Low
Works conflicting with foreshore improvement programmes	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Works conflicting with future cycleway routes	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
TINGIRA ST DMPA						
Compatibility of the dredge material placement works with existing character	Minor	Possible	Low	Minor	Possible	Low
Traffic, noise, visual impacts or lighting from dredge material placement works decreasing local amenity	Negligible	Unlikely	Negligible	Negligible	Unlikely	Negligible
Dredge material placement works limiting or affecting usage of neighbouring port/commercial activities (including Maritime College, QPS Water Police etc.)	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Dredge material placement works limiting or affecting usage of the boat ramp and community facilities (including Wooden Boat Association)	Negligible	Unlikely	Negligible	Negligible	Unlikely	Negligible
Dredge material placement works affecting usage of Smiths Creek (e.g. live-aboards)	Negligible	Unlikely	Negligible	Negligible	Unlikely	Negligible

Primary Impacting Processes	Initial Assessment with Standard (Statutory) Mitigation Measures in Place			Residual Assessment with Additional (Proposed) Mitigation in Place		
	Consequence of Impact	Likelihood of Impact	Risk Rating	Consequence of Impact	Likelihood of Impact	Risk Rating
OTHER AREAS						
Effects of land-side construction on amenity of residents in Wharf St area	Minor	Possible	Low	Minor	Unlikely	Low
Operation						
BARRON DELTA (NORTHERN SANDS) DMPA						
Temporary floating pump out facility affecting views from northern beaches	Negligible	Unlikely	Negligible	Negligible	Unlikely	Negligible
Operation of pipeline affecting amenity of local residents (traffic, noise, visual impacts and lighting)	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible
Operation of pipeline affecting amenity of users of the DMPA and surrounding land users	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Operation of pipeline affecting amenity of students and staff at Holloways Beach Environmental Education Centre	Negligible	Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Operation of pipeline affecting amenity of residents in nearby suburbs	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible
Restrictions affecting use of beachfront and creek mouth	Negligible	Possible	Negligible	Negligible	Possible	Negligible
Operation of pipeline affecting use of Environmental Education Centre	Negligible	Possible	Negligible	Negligible	Unlikely	Negligible

Primary Impacting Processes	Initial Assessment with Standard (Statutory) Mitigation Measures in Place			Residual Assessment with Additional (Proposed) Mitigation in Place		
	Consequence of Impact	Likelihood of Impact	Risk Rating	Consequence of Impact	Likelihood of Impact	Risk Rating
Pipeline on operation threatening safety and wellbeing	Negligible	Unlikely	Negligible	Negligible	Unlikely	Negligible
Pipeline on operation restricting recreational fishing and boating use	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Pipeline on operation decreasing amenity of environment of Richters Creek	Minor	Possible	Low	Minor	Possible	Low
Pipeline on operation conflicting with foreshore improvement programmes	Negligible	Highly Unlikely	Negligible	Negligible	Highly Unlikely	Negligible
Economic benefit to landowner of DMPA	Beneficial	Almost Certain	Extremely Positive	Beneficial	Almost Certain	Extremely Positive
TINGIRA ST DMPA						
Compatibility of the filled site with existing character	Beneficial	Almost Certain	Extremely Positive	Beneficial	Almost Certain	Extremely Positive
OTHER AREAS						
Increased number of ship arrivals affecting the amenity of residents in the Wharf St area	Moderate	Likely	Medium	Minor/ Moderate	Unlikely	Low
Decreased number of ship arrivals in Yorkeys Knob in short term affecting business and tourism operators	Minor	Almost Certain	Medium	Minor	Almost Certain	Medium
Increased number of ship arrivals in Yorkeys Knob in long term affecting business and tourism operators and Boat Club	Beneficial	Almost Certain	Extremely Positive	Beneficial	Almost Certain	Extremely Positive

Primary Impacting Processes	Initial Assessment with Standard (Statutory) Mitigation Measures in Place			Residual Assessment with Additional (Proposed) Mitigation in Place		
	Consequence of Impact	Likelihood of Impact	Risk Rating	Consequence of Impact	Likelihood of Impact	Risk Rating
Decreased number of ship arrivals in Yorkeys Knob in short term affecting members of the Yorkeys Knob community and tourists	Beneficial	Almost Certain	Extremely Positive	Beneficial	Almost Certain	Extremely Positive
Decreased number of ship arrivals in Yorkeys Knob in short term affecting Boat Club	Minor	Almost Certain	Medium	Minor	Almost Certain	Medium
Decreased number of ship arrivals in Yorkeys Knob in short term affecting ship passengers and crew	Beneficial	Almost Certain	Extremely Positive	Beneficial	Almost Certain	Extremely Positive

B9.2.8 Mitigation and Management

Social impacts examined in this Assessment have generally found to be minor, and the mitigation measures inherent in the proposal have been found to be extensive. There are nevertheless some possible opportunities to further mitigate adverse impacts and to enhance some beneficial impacts. These are shown in **Table B9-29**.

TABLE B9-29 PROPOSED MITIGATION/ENHANCEMENT MEASURES

Impact	Proposed Mitigation/Enhancement Measure
Design	
None identified	
Construction	
Impacts on residents in the Wharf Street area of noise, visual and traffic changes during land based wharf upgrade construction works	Predicted temporary environmental impacts on residents, particularly those relating to noise, should be mitigated as far as possible by available practicable measures.
Impact on the character of the coastal area/change in the use of the beachfront/threats to safety and wellbeing from pipeline	Where feasible, construction plant, materials & machinery should be screened behind fencing or located to minimise visual impacts (**Chapter B12** (Landscape and Visual)). Appropriate site security, fencing and signage should be utilised to mitigate any threats to public safety and wellbeing from pipeline construction/dismantling and dredging operations.
Impact on users of Richters Creek	Signage and advertising (including mapping) advising of the works affecting the use of Richters Creek and their duration should be provided.
Impacts on Holloways Beach Environmental Education Centre	Pre works consultation should take place with the Holloways Beach Environmental Education Centre to ascertain peak usage times in which works may be able to be amended if required. Ongoing liaison should take place with the Holloways Beach Environmental Education Centre to enhance the potential for future involvement of the centre in learning and monitoring opportunities.
Operation and Maintenance	
Impacts on residents in the Wharf Street of Air Quality Changes	Predicted long term environmental impacts on residents, particularly those relating to air quality, should be mitigated as far as possible by available practicable measures and mandated industry changes to fuel specifications and exhaust scrubbing.
Impact on users of Richters Creek	A 'Submerged Pipeline' sign should be erected on the bank of Richters Creek for the period of the pipeline with depth information to mitigate any potential danger to boat users.

B9.2.9 Summary of Impacts and benefits

The types of impacts are summarised in **Table B9-30** under the following categories:

- adverse/beneficial
- consequential
- cumulative
- short term/long term
- reversible/irreversible
- predictable/unpredictable.

TABLE B9-30 IMPACT CATEGORY SUMMARY

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
Construction										
BARRON DELTA (NORTHERN SANDS) DMPA										
	Establishment of pipeline and laydown area will change the character of the coastal area		None	None	✓		✓		✓	
	Establishment of pipeline and land-based laydown areas could affect rural character		None	None	✓		✓		✓	
	Establishment of pipeline could affect the amenity of local residents (traffic, noise, visual impacts and lighting)		None	None	✓		✓		✓	
	Establishment of pipeline could affect the amenity of users of the DMPA and surrounding land users		None	None	✓		✓		✓	

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
	Establishment of pipeline could affect the amenity of students and staff at Holloways Beach Environmental Education Centre		None	None	✓		✓		✓	
	Establishment of pipeline could affect the amenity of residents in nearby suburbs		None	None	✓		✓		✓	
	Restrictions will affect the use of beachfront and creek mouth		None	None	✓		✓		✓	
	Establishment of pipeline could affect the use of the Environmental Education Centre		None	None	✓		✓		✓	
	Works could threaten safety and wellbeing		None	None	✓		✓		✓	
	Pipeline construction will restrict recreational fishing and boating use		None	None	✓		✓		✓	

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
	Pipeline construction will decrease the amenity of environment of Richters Creek		None	None	✓		✓		✓	
	Works could conflict with foreshore improvement programmes		None	None	✓		✓		✓	
	Works could conflict with future cycleway routes		None	None	✓		✓		✓	
TINGIRA ST DMPA										
		Compatibility of the dredge material placement works with existing character	None	None	✓		✓		✓	
	Traffic, noise, visual impacts or lighting from dredge material placement works could decrease local amenity		None	None	✓		✓			✓

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
	Dredge material placement works could limit or affect usage of neighbouring port/ commercial activities (including Maritime College, QPS Water Police etc.)		None	None	✓		✓			✓
	Dredge material placement works could limit or affect usage of the boat ramp and community facilities (including Wooden Boat Association)		None	None	✓		✓			✓
	Dredge material placement works could affect usage of Smiths Creek (e.g. live-aboards)		None	None	✓		✓			✓
OTHER AREAS										
	Land-side construction could temporarily affect the amenity of residents in Wharf St area		None	None	✓		✓			✓

(Continued over)

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
Operation										
BARRON DELTA (NORTHERN SANDS) DMPA										
	Temporary floating pump out facility could affect views from northern beaches		None	None	✓		✓			✓
	Operation of pipeline could affect the amenity of local residents (traffic, noise, visual impacts and lighting)		None	None	✓		✓			✓
	Operation of pipeline could affect the amenity of users of the DMPA and surrounding land users		None	None	✓		✓			✓
	Operation of pipeline could affect the amenity of students and staff at Holloways Beach Environmental Education Centre		None	None	✓		✓			✓
	Operation of pipeline could affect the amenity of residents in nearby suburbs		None	None	✓		✓			✓

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
	Restrictions will affect use of beachfront and creek mouth		None	None	✓		✓		✓	
	Operation of pipeline could affect the use of Environmental Education Centre		None	None	✓		✓			✓
	Pipeline on operation will threaten safety and wellbeing		None	None	✓		✓		✓	
	Pipeline on operation could restrict recreational fishing and boating use		None	None	✓		✓			✓
	Pipeline on operation will decrease the amenity of environment of Richters Creek		None	None	✓		✓		✓	
	Pipeline on operation could conflict with foreshore improvement programmes		None	None	✓		✓		✓	
	Economic benefit will accrue to landowner of DMPA		None	None	✓		✓		✓	

(Continued over)

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
TINGIRA ST DMPA										
		Compatibility of the filled site with existing character	Provision of additional port industrial land	None		✓		✓	✓	
OTHER AREAS										
	Increased number of ship arrivals could affect the amenity of residents in the Wharf St area		None	None		✓		✓		✓
	Decreased number of ship arrivals in Yorkeys Knob in short term affecting business and tourism operators		None	None	✓		✓		✓	
		Increased number of ship arrivals in Yorkeys Knob in long term affecting business and tourism operators and Boat Club	None	None		✓		✓	✓	
		Decreased number of ship arrivals in Yorkeys Knob in short term affecting members of the Yorkeys Knob community and tourists	None	None	✓		✓		✓	

	Adverse Impact	Beneficial Impact	Consequential Impact	Cumulative Impact	Short Term	Long Term	Reversible	Irreversible	Predictable	Unpredictable
	Decreased number of ship arrivals in Yorkeys Knob in short term affecting Boat Club		None	None	✓		✓		✓	
		Decreased number of ship arrivals in Yorkeys Knob in short term affecting ship passengers and crew	None	None	✓		✓		✓	

B9.2.10 Conclusions

The social policy framework in which the Assessment was undertaken is one of overwhelming support for the development of the cruise shipping market and home porting of cruise vessels. Documents reviewed that referred directly to the CSD Project expressed support for the expansion of opportunities, and the importance of the employment and tourism stimulus that it would provide for the region. In particular, the FNQRP highlights the Port of Cairns as a key node for the development of tourism in the region. The Great Barrier Reef is noted as an important tourism draw-card for the region, and supporting cruise and other maritime infrastructure is noted as an action in many plans and strategies.

At a local level, the need to balance values relating to the natural environment whilst providing local long-term employment opportunities was however recognised, including the sustainability of built infrastructure and the conservation of world heritage features and natural and cultural resources. It was also recognised as important that rural land was protected and used for rural purposes, and that both tourism and primary production remain substantial economic drivers and employers.

The project concept was found to have many mitigation measures inherent in the proposal. Compared to the economic and social benefit of the project to the EIS Study Area, the adverse social impacts identified in this assessment have generally been found to be negligible or minor. The majority are temporary in nature. There was only one impact that was identified as potentially moderate. Several beneficial impacts were also identified. There are possible opportunities to further mitigate some adverse impacts and to enhance some beneficial impacts.

From a social perspective, there are no concerns which would warrant the project not proceeding.

B9.3 Economic Impact Assessment

B9.3.1 Scope

The revised draft EIS is required to meet the following:

- Terms of Reference (ToR) issued by the Coordinator General (Queensland) dated 30 November 2012.
- EIS Guidelines issued by the Commonwealth Departments of Energy and Environment (DoEE) / Sustainability, Environment, Water, Population and Communities (SEWPaC) dated 21 March 2013.

This Economic Impact Assessment has been prepared by Macroplan-Demasi (**Appendix AP**) and has been informed by a wide range of existing reports and studies, including:

- ABS census data – 2011 Census data has been used to provide information about relevant populations
- AEC Group (2016) CSDP 2016 Demand Study Update Final Report V07 (November 2016) **Appendix**
- AEC Group (2017) CSDP 2016 Economic Analysis Update (June 2017) **Appendix AQ**.

B9.3.2 Project Rationale

The proposed CSDP provides a competitive response to a growing cruise ship sector and a growing Asian source market.

The global and Australian cruise shipping sectors have enjoyed significant increases in demand over the last ten years. Australia is well positioned to access this anticipated increased supply due to its counter seasonal climate patterns relative to the major northern hemisphere cruise locations, Australia's reputation as a safe location and a variety of things to see and do, which appeals to a broad range of cruising passenger segments.

In this context, Cairns represents an established tourism location with good weather and climate, accessible by an international airport within an established tourism infrastructure network.

The proposed CSDP itself builds upon this infrastructure providing an expanded major attractor/focus and offering additional marketing opportunities to promote and downstream.

B9.3.3 Queensland 4 Pillar Economy

The Queensland Government is renewing focus on developing Queensland's strengths in tourism, agriculture, resources and construction. The first and fourth pillar relate directly to the CSDP, as further discussed below.

B9.3.3.a 3.3.1 Tourism

The State's objectives set a high bar for investors in the tourism industry. The Queensland Government's goal is to increase annual international visitor expenditure from $3.8 billion (2012) to over $9 billion by 2020 – a rise of $5.2 billion. This is a bold target, but it is achievable in light of the rapid growth in the number of affluent households within China. The analysis indicates that from future growth in the number of affluent households in China, a 6% market share would secure an additional $4 billion in Queensland tourism expenditure:

- Additional international tourism by affluent Chinese by 2022: 72 million persons p.a.
- Queensland achieves 6% of the global market: 4 million persons p.a.
- Average of 4 nights in Queensland and $250 per day = $4 billion p.a.

The CSDP proposition is to create additional visitor flows to Cairns through investment in a channel modification and wharf upgrades. The direct impacts of new tourism could contribute to employment to the projects themselves and the national/state economies more generally. The areas where new tourism will add value to Cairns and Queensland more generally include:

- Accommodation – hotel staff and management.
- Food and drink – chefs, bar workers, and wait staff at restaurants.

- Transport – taxi and limousine drivers, bus operators, petrol retailers.
- Shopping – local businesses including store assistants at a range of general and specialised retail shops such as fashion/clothing, jewellery, cosmetics, and craft/souvenir premises.
- Entertainment –hospitality staff, tour guides, travel agents and adventure operators providing excursion activities within FNQ area.

Furthermore, the project is expected to positively and uniquely impact upon a range of industries and creates future business opportunities. For example, the luxury goods market is likely to gain critical mass while experiential offerings such as new tours and fishing will see growth in demand. The visitor focus would support arts and cultural patronage and a wider offer in day spa, health and wellbeing services are likely to be in demand. This report gives consideration to these issues in deriving the impact related to the project itself and also industry sector multipliers.

The CSD Project will provide obvious opportunities for visitors to broaden out into other experiences, as cruise ships come and go from the upgraded terminal. There is scope for holiday extensions through the Cruise Ship Terminal into the Queensland coast or to Sydney.

In addition, the CSD Project offers additional marketing opportunities to promote the Cairns region which is not available in other locations.

B9.3.3.b Construction

From 2018 to 2019 the project activities will be focused on construction only. In total construction activity - including building, non-building and infrastructure - equates to $83.9 million (in NPV terms) over the construction period.

Due to the scale of this project, the substantial workforce that will be supported onsite will create a net increase in demand for accommodation, retail facilities, commercial office, local services, industrial supply chain impacts, and more. The Cairns CBD will be the largest beneficiary from this induced demand throughout the period.

B9.3.4 Policy Context and Legislative Framework

B9.3.4.a Commonwealth

Environment Protection and Biodiversity Conservation Act 1999

The project was deemed by the Minister to require assessment under the EPBC Act in relation to a number of matters of national environmental significance. The method of assessment is an EIS and Ports North is required to prepare the EIS according to the EIS Guidelines provided by the DoE Minister. These guidelines include a requirement for a socio-economic assessment.

Great Barrier Reef Marine Park Act 1975

The *Great Barrier Reef Marine Park Act 1975* (GBRMP Act) is the primary Act in respect of the Great Barrier Reef Marine Park. It has provisions for the establishment of the Marine Park and the Authority responsible for its management (the Great Barrier Reef Marine Park Authority (GBRMPA)), the planning and management of the Marine Park, acceptable uses of the Marine Park and enforcement mechanisms for breach of these (Great Barrier Marine Park Authority, 2014).

The *Great Barrier Reef Marine Park Regulations 1983* (GBRMP Regulations) are the primary regulations in force under the *Great Barrier Reef Marine Park Act 1975*. A component of the project requires permission under the GBRMP Regulations and therefore the GBRMP Act. To streamline the assessment process, the EIS Guidelines also include requirements for this permission to be assessed.

The *Great Barrier Reef Marine Park Zoning Plan 2003* (GBRMP Zoning Plan) is the primary planning instrument for the conservation and management of the Marine Park. Subsection 32(1) of the *Great Barrier Reef Marine Park Act 1975* sets out that the Zoning Plan takes account of the World Heritage values of the

Marine Park and the principles of ecologically sustainable use. The Zoning Plan aims, in conjunction with other management mechanisms, to conserve the biodiversity of the Great Barrier Reef ecosystem within a network of highly protected zones, and provide opportunities for the ecologically sustainable use of the Reef and access to the Great Barrier Reef Region. (Great Barrier Marine Park Authority 2014).

B9.3.4.b Queensland

State Development and Public Works Organisation Act 1971

The project has been declared a coordinated project for which an EIS is required. A separate set of guidelines were issued by the Queensland Government for this assessment, namely the TOR for an EIS. The TOR require that a social and economic impact assessment is undertaken and included in the EIS.

Fisheries Act 1994

The *Fisheries Act 1994* sets out Fisheries Queensland's responsibilities for the economically viable, socially acceptable and ecologically sustainable development of Queensland's fisheries resources.

The *Fisheries Regulation 2008* defines specific regulatory rights and allocation requirements for people and/or entities wishing to disturb and/or remove Queensland's fisheries resources. The EIS TOR require that any potential impacts on commercial or recreational fishing are identified and documented in the EIS.

Marine Parks Act 2004

The Queensland Government's *Marine Parks Act 2004* allows for the establishment of marine parks on tidal lands and waters to protect and conserve marine habitats including mangrove wetlands, seagrass beds, mudflats, sandbanks, beaches, rocky outcrops and fringing reefs. The Great Barrier Reef Coast Marine Park is one of three marine parks established in Queensland.

The Great Barrier Reef Coast Marine Park runs the full length of the national Great Barrier Reef Marine Park (GBRMP) from just north of Baffle Creek (north of Bundaberg) to Cape York. It provides protection for Queensland tidal lands and tidal waters and lies adjacent to the GBRMP. The State Marine Park complements the GBRMP by adopting similar zone objectives, and entry and use provisions. The Department of National Parks, Recreation, Sport and Racing manages the Great Barrier Reef Coast Marine Park as a multi-use marine protected area under the Marine Parks Act.

The *Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004* is the primary tool used to manage the Marine Park. It outlines activities permitted and restricted in different zones of the Marine Park.

Far North Queensland Regional Plan 2009-2031

The Far North Queensland Regional Plan 2009-2031 (FNQRP) remains the current Queensland Government strategic planning document for Far North Queensland. It is noted that the Queensland Government is in the process of updating the state's regional plans. The FNQRP highlights the Port of Cairns as a key node for the development of tourism in the region.

Destination Q

Destination Q is a partnership between the Queensland Government and the tourism industry which seeks to secure Queensland's market share of the national target by reaching $30 billion in overnight visitor expenditure per annum by 2020.

The plan indicates that approximately 80% of the targeted growth will come from only four destinations out of thirteen Regional Tourism Organisations. Tropical North Queensland (TNQ) has been identified as the third priority growth destination and the only destination, of the four priority growth areas, located outside South-East Queensland

B9.3.4.c Local Government

Cairns Regional Council Corporate Plan 2013 - 2018

The Cairns Regional Council Corporate Plan 2013-2018 presents Cairns Regional Council's key strategic plan which provides direction for Council to achieve a sustainable future for the Cairns region. The Corporate Plan contains Strategic Goals which provides a guidance to the region's economic activities towards building a strong, diversified and sustainable regional economy that supports the growth of new and existing industry and business activities whilst enhancing local lifestyle and providing long term employment opportunities.

Community Development Strategic Plan (2011 – 2016)

The Cairns Regional Council's Community Development Strategic Plan focuses on the next five years from 2011 to 2016. This plan aims to:

- Respond to social inclusion and community development priorities highlighted in the Council Corporate Plan
- Set clear directions as to how these priorities will be achieved, measured and monitored
- Strengthen the capacity of the unit to better meet the needs of vulnerable groups in the community who traditionally have difficulty being heard.

The CRC has a vision for the future where the region thrives and inspires in the way it balances economic development, environmental management and social well-being. This plan supports that commitment to deliver the community outcome priorities expressed in the Corporate Plan. It is noted that the plan will be reviewed in the 2016/17 operational year.

Imagine Tomorrow – Your Community Plan 2011-2031

The Cairns Regional Council prepared its Community Plan to gain a clear appreciation of the needs and priorities of residents and to provide a framework for future development and growth of the region. The Community Plan creates a vision for the regional community, which is critical considering predicted future population growth and the need to plan for strong, sustainable growth.

B9.3.4.d Other Relevant Strategic Plans

There are several non-Government strategic plans that also reference the project.

Tropical North Queensland Regional Economic Plan 2011-2031

Advance Cairns' Tropical North Queensland Regional Economic Plan 2011-2031 (TNQREP) outlines a 20-year economic vision for the region built through consultation with key economic stakeholders in Far North Queensland. It sets out a vision to become 'The World's Leading Sustainable Tropical Region'. This will be achieved through:

- a strong and confident tropical economy
- an enriched lifestyle in liveable communities
- a natural and built tropical environment which is enjoyed, protected and enhanced.

The project is listed in the TNQREP as an activity to strengthen and diversify the region's tourism industry and destination appeal.

Regional Development Australia Far North Queensland and Torres Strait Roadmap 2013 – 2016

Regional Development Australia (RDA's) Far North Queensland and Torres Strait Roadmap 2013 – 2016 (FNQTSRM) sets out a number of regional focus areas which include:

- Expanding the region's outside earnings.
- Ensuring social services and infrastructure are at levels appropriate to the population.
- Re-establishing confidence in the region's future opportunities.
- Leveraging opportunities to enhance employment opportunities for the region's Indigenous population.
- Ensuring long-term planning commitments from governments to tackle water and energy security and climate adaptation measures.

FNQTSRM recognises that strong growth in the cruise ship market in Australia offers an opportunity for the region as an existing major cruise ship port. However, this growth has been accompanied by an increase in the size of cruise ships. It recognises that Cairns has a major challenge to achieve the deepening of the harbour channel and port anchorages to accommodate these larger cruise vessels.

The upgrade of the shipping channel and associated port infrastructure is identified as a key infrastructure asset needed for social and economic development and future sustainability of the region.

Tropical North Queensland Destination Tourism Plan

The Tropical North Queensland Destination Tourism Strategy is one of 13 regional destination plans prepared by Tourism and Events Queensland. The plans provide a framework to guide tourism industry development in Tropical North Queensland by coordinating stakeholders to work towards common goals to maximise the tourism potential of destinations to achieve a balance of economic, social and environmental outcomes.

Tropical North Queensland Tourism Opportunity Plan 2010 – 2020

The Tropical North Queensland Tourism Opportunity Plan provides direction on the sustainable development of tourism in the TNQ region. It lists the upgrade of the Cairns Cruise Liner Terminal (CCLT), which was completed in 2010, and the upgrade of the shipping channel as key opportunities to grow cruise tourism.

B9.3.5 Socio Economic Environment

This section provides an assessment of these various regional trends and projected growth outcomes and provides an overview of the existing regional and local environments, and how they relating to the proposal.

B9.3.5.a Cairns Evolution

Cairns is one of Australia's largest regional cities and is currently the 9th largest Local Government Area in Queensland (**Table B9-31**)

TABLE B9-31 QUEENSLAND LOCAL AREA POPULATIONS

Rank	LGA	2016 Population
1	Brisbane	1,180,285
2	Gold Coast	567,644
3	Moreton Bay	434,751
4	Logan	313,646
5	Sunshine Coast	292,990
6	Ipswich	198,590
7	Townsville	195,914
8	Toowoomba	164,469
9	Cairns	161,932
10	Redland	152,080

Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0).

The city was initially formed to serve goldfield miners, before later developing into a railhead and major port for exporting sugar cane, gold and other metals, minerals and agricultural products from surrounding coastal areas. After World War II, Cairns gradually developed into a centre for tourism.

As a major regional centre, Cairns services its population with a range of physical and social infrastructure which includes:

- Education – such as childcare, primary, secondary and tertiary facilities.
- Healthcare – such as hospitals, doctors, allied health.
- Shopping/retail areas
- Recreational facilities – such as swimming pools, sports fields, The Esplanade
- Arts and cultural facilities – such as Cairns Convention Centre
- Services – such as power, water, sewerage, waste collection • Commercial services – such as banking
- Emergency services – such as ambulance, fire, police
- Tourist attractions - such as Skyrail, Tjapukai Aboriginal Cultural Park, Cable Ski Park, Cairns Tropical Zoo and the Great Barrier Reef.

Going forward, the Cairns population is projected to continue to grow and reach around 227,542 by 2036 with average annual growth rate of 1.7%. This growth will create additional demand for housing, infrastructure and services as the city continues to evolve and expands its critical mass of residents.

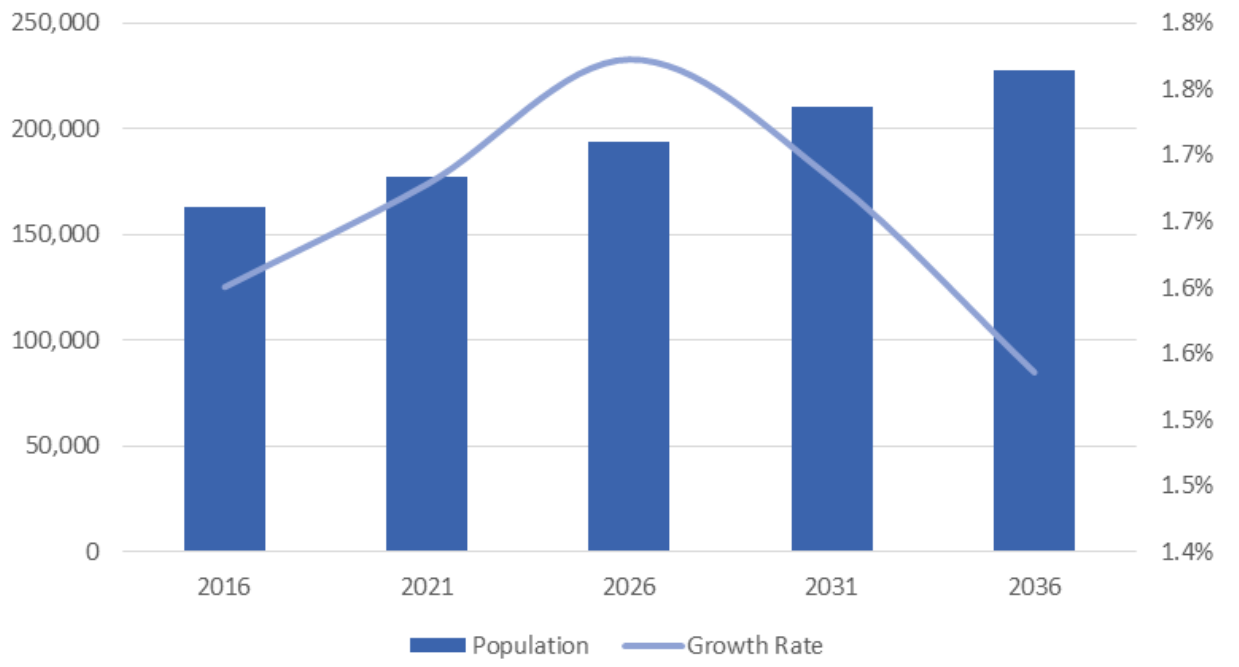


Figure B9-26 Cairns population projection.

Source: Queensland Government population projections, 2015 edition.

B9.3.5.b Population Structure

While the regional population continues to grow the demographic profile underpinning this growth raises a number of challenges in developing a resilient economy. Between 2006 and 2011, the Cairns population increased by 17 939 people. This represents an average annual population change of 2.67% per year over the period with the largest change being an increase in persons aged between 60 and 64 years (+2,260 persons).

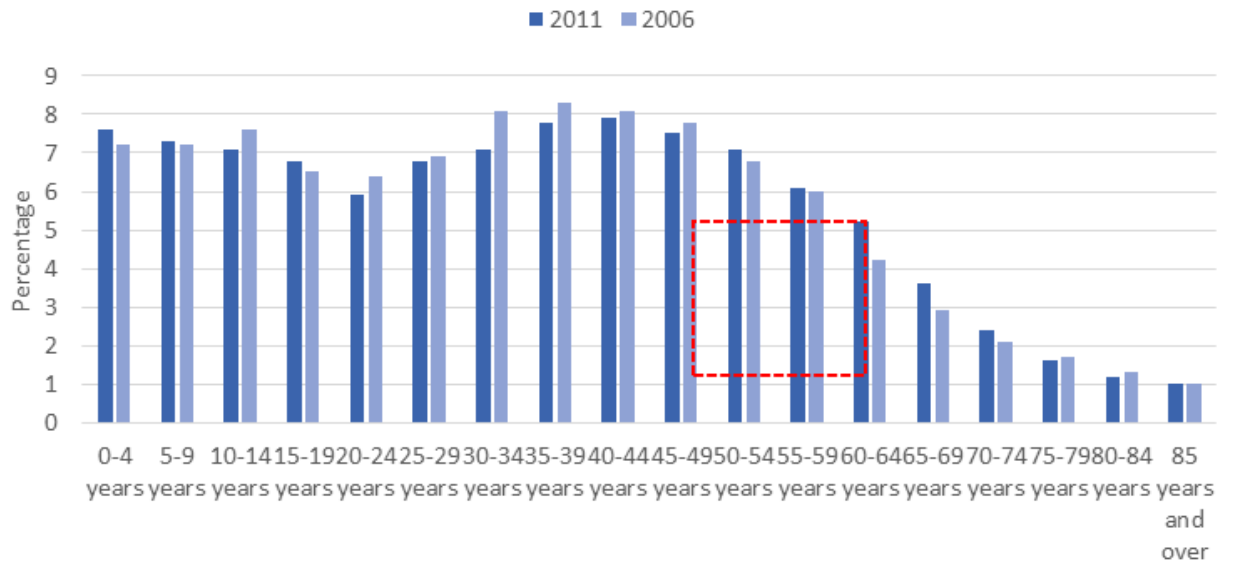


Figure B9-27 Change in population structure.

Source: Australian Bureau of Statistics, Census of Population and Housing, 2011, (Usual residence data).

According to the Queensland Government population projections, Cairns is aging rapidly with the strongest

projected growth forecast for the 70+ age cohorts. Comparatively, the region is projected to have relatively low growth of people aged 30 to 49 to 2036.

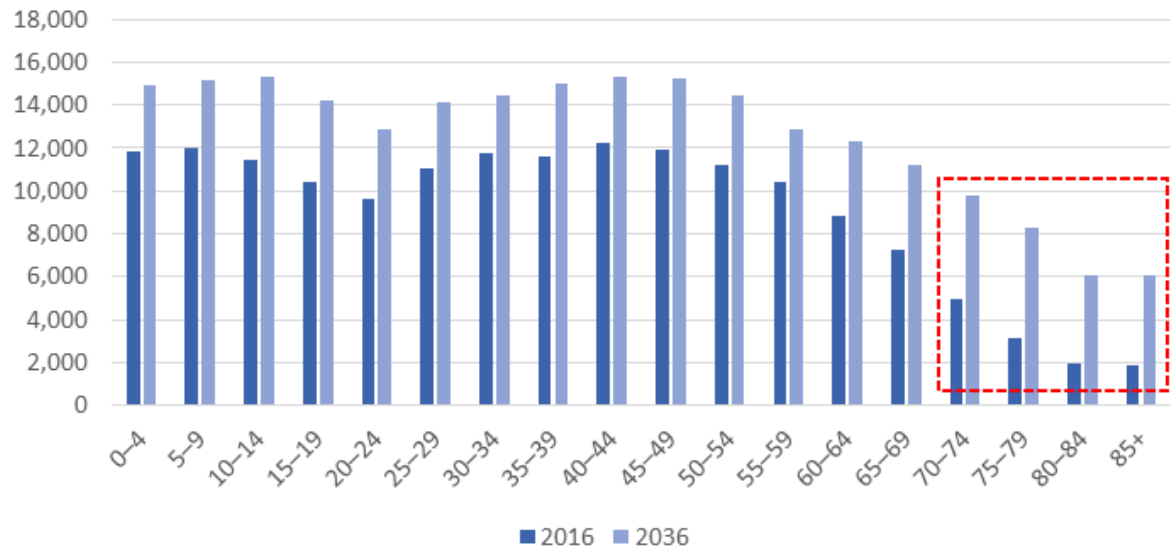


Figure B9-28 Cairns Population Forecasts by Age Cohort (2016 - 2036).

Source: Queensland Government population projections, 2015 edition.

The ageing population has many implications for regional workforce participation, income support and the future provision of health and community services. It also has ramifications for the investment proposition of the region, workforce and skills retention and breadth of the economy.

B9.3.5.c Economic Context

As the main centre of Far North Queensland, Cairns plays a vital role in the region's economy. In 2015, Cairns registered a Gross Regional Product (GRP) of $7.8 billion, representing 2.69% of Queensland's overall Gross State Product.

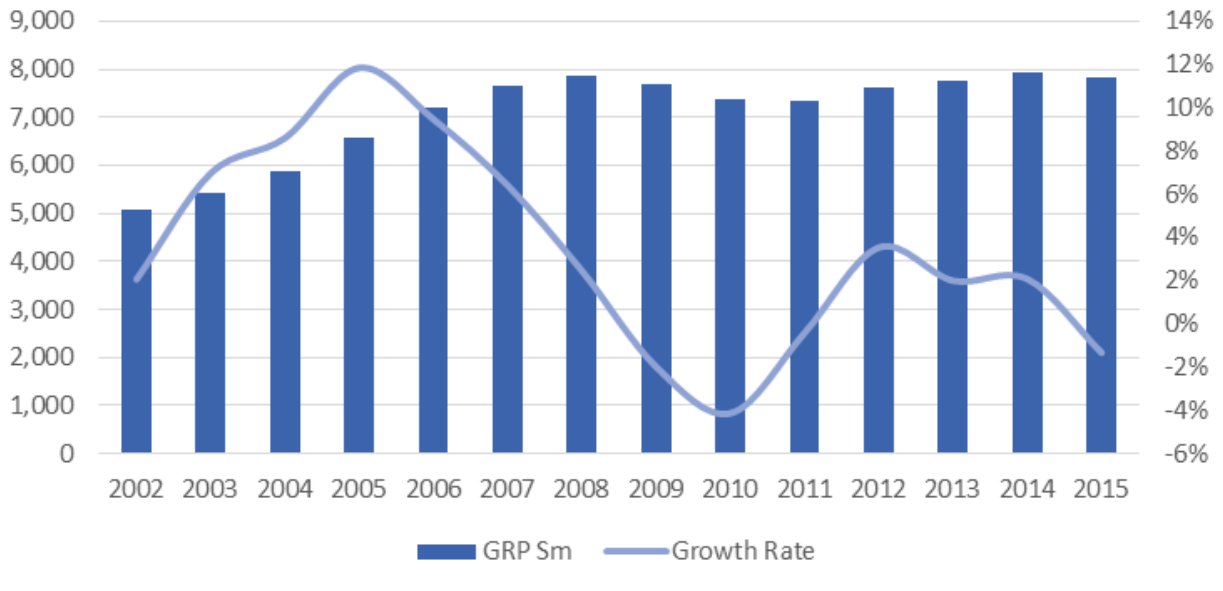


Figure B9-29 Cairns Gross Regional Product.

Source: National Institute of Economic and Industry Research (NIEIR).

Overall, the GRP for Far North region of Queensland was recorded at $12.6 billion in the 2011. Over a ten-year period between 2000- 01 and 2010-11 the far north region economy grew by an average of 2.3% per annum, considerably slower than Queensland's average 4.1%.

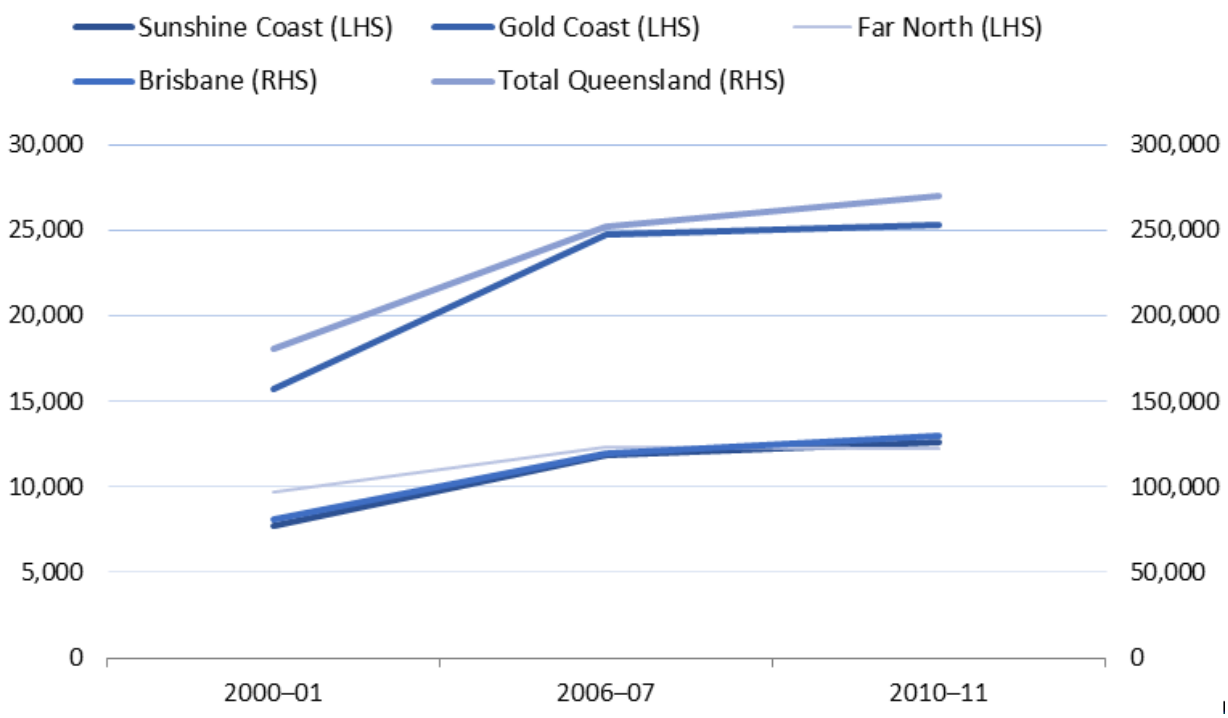


Figure B9-30 Real Gross Regional Product, Chain Volume Measures ($m).

Source: Queensland Treasury and Trade, Experimental Estimates of Gross Regional Product 2000–01, 2006–07 and 2010–11.

Figure B9-31 illustrates the region's high dependency on health care and visitor-driven industries like retail and accommodation and food services, and the relative under-representation in the economy of labour intensive industries such as manufacturing and mining.

In addition, the transport, postal and warehousing industry is also vital to the region's economy, which represents a significant contribution to GRP at approximately 9.1%.

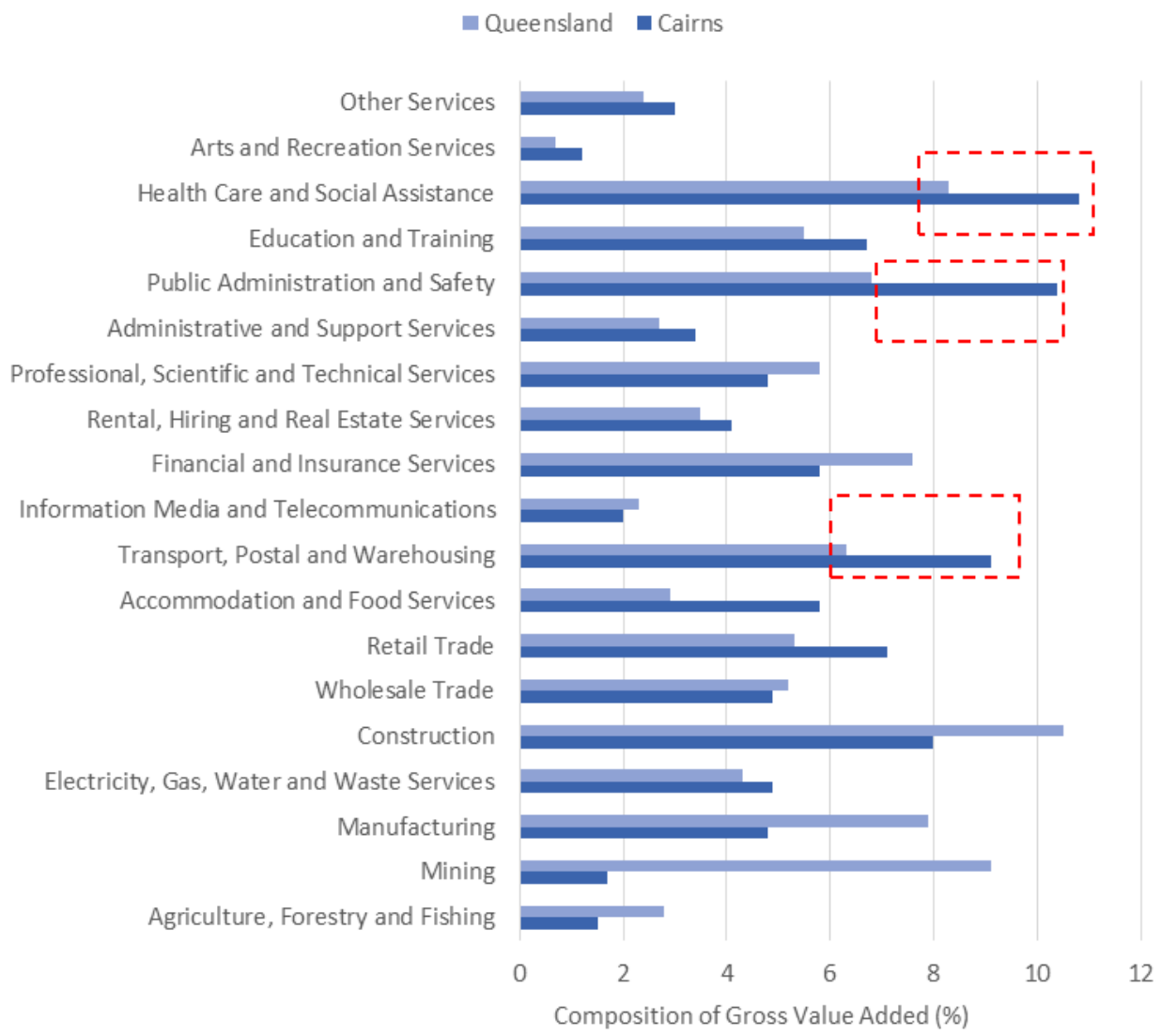


Figure B9-31 Composition of Gross Value Added (2014-15).

Source: National Institute of Economic and Industry Research.

In addition to port related activity, the importance of the transport sector in the region is indicative of areas connection with and reliance to the tourism industry.

This is also supported by the relatively high contribution to the economy by retail trade and accommodation and food services (7.1% and 5.8% of GRP respectively), as these two industry sectors benefit most and are affected most by tourist visitation. By comparison, at the state level, retail trade and accommodation and food services represent only 5.3% and 2.9% of Queensland.

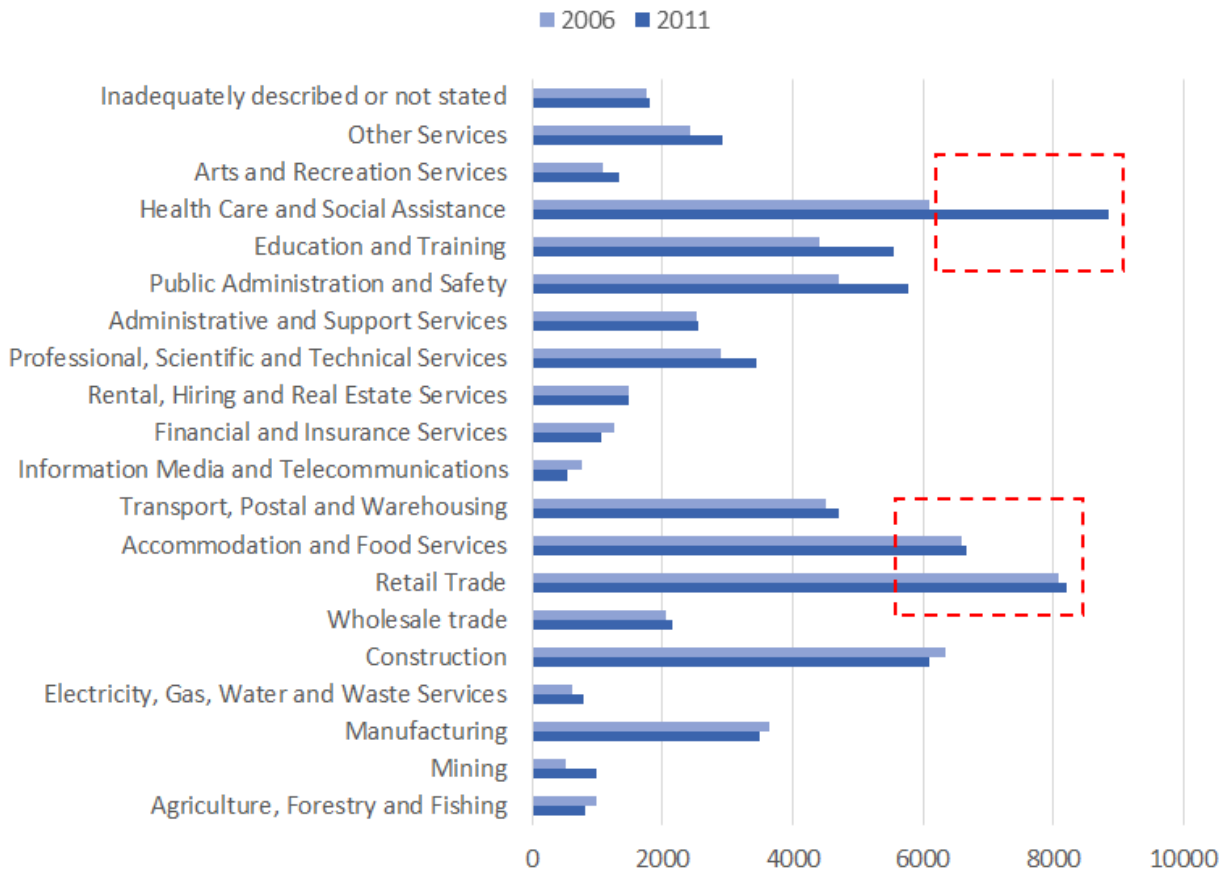


Figure B9-32 Cairns, Number Employed by Industry 2006 and 2011.

Source: Australian Bureau of Statistics, Census of Population and Housing 2006 and 2011.

Health Care and Social Assistance, Retail Trade and Accommodation and Food Services industries make up a high proportion of total employment in the local economy. In combination, these three industries employed 34.2% of the total employed resident population in 2011. Notably the largest growth was in Health Care, while the other two largest sectors only saw minimal growth over the period.

Construction is also an important sector to the region, and indicative of areas that experience high levels of population growth (given the demand population growth places on residential development) and a growing tourism industry. However, the construction industry is vulnerable to slowdowns in population growth and/or in the tourist industry – both of which are now occurring in Cairns (and have been occurring since 2006-07).

B9.3.5.d Tourism and a Key Driver

As a hub for the region, Cairns is the key centre for tourism events. Equipped with an international airport and a busy cruise port with over 200 international and domestic cruise ship visits a year, Cairns provides the base from which may visitors explore Tropical North Queensland.

In 2015/2016, there were approximately 5 million international visitor nights in Cairns, registered a 1.5% descend from previous year as a result of the flights cancel or lower in frequency between Cairns and international destinations, reduced the accessibility of the region for international visitors.

On the other hand, the domestic visitor nights rebounded by 15%, reached a record high of 5.3 million visitor nights in year 2015/16.

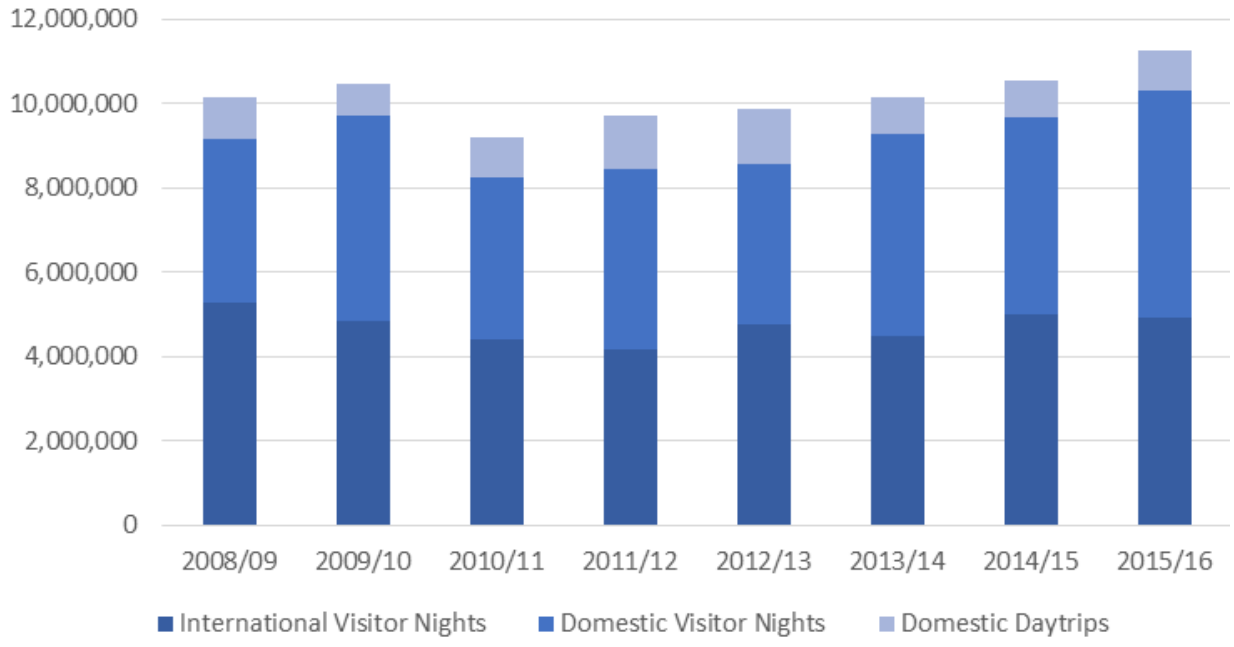


Figure B9-33 Cairns Tourist Visitation Nights.

Source: Tourism Research Australia, International Visitor Survey.

Cairns needs to aggressively target attracting greater numbers of international visitors to the region if it is to reverse the decline in visitors seeking overnight accommodation. The CSDP and expansion of cruise shipping will help facilitate this end.

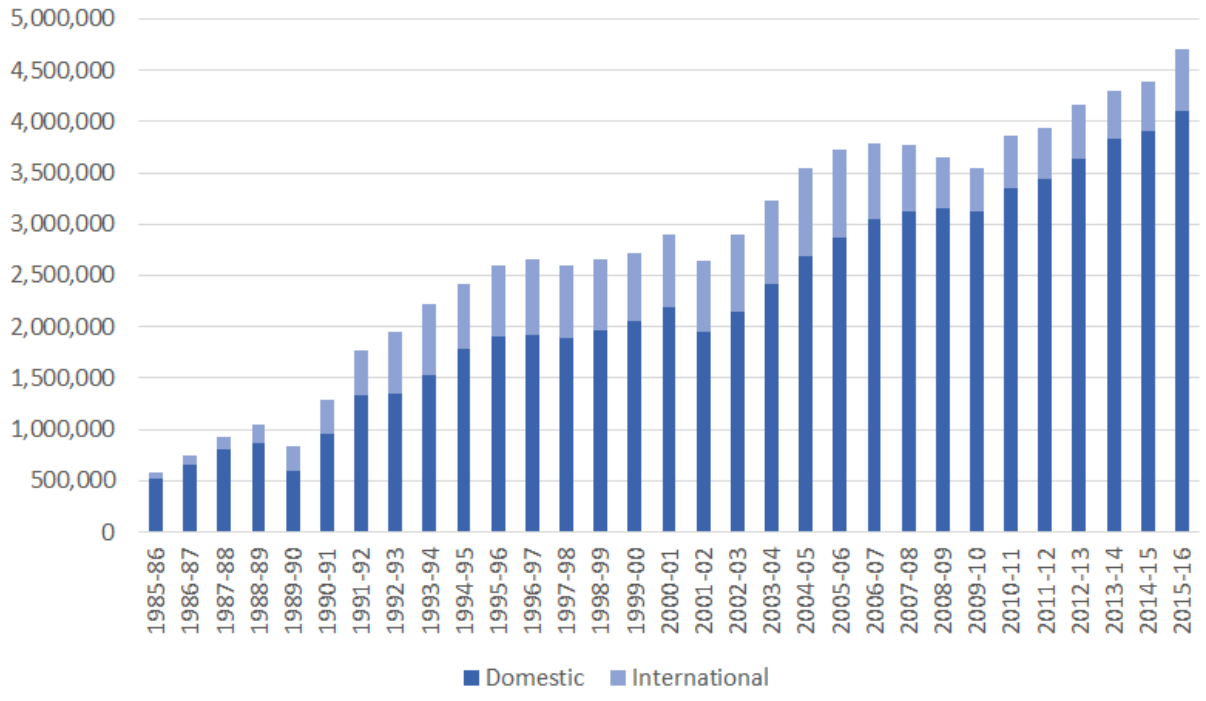


Figure B9-34 Cairns Airport passenger movements.

Source: BITRE.

The Cairns airport has been ranked as the 7th busiest airport in Australia with over 4.7 million passengers (excl. transit passengers) arriving in the year 2015/16. Trends for passenger numbers over the past few years has been increasing through the domestic terminal, but falling passenger numbers through the international terminal.

The CSD Project will provide obvious opportunities for visitors to broaden out into other experiences, as cruise ships come and go from the upgraded terminal. There is scope for holiday extensions through the Cruise Ship Terminal into the Queensland coast or to Sydney.

In addition, the CSD Project offers additional marketing opportunities to promote the Cairns region which is not available in other locations.

Going forward, the Queensland Government stated 'Queensland can be positioned as a world-leading drive tourism destination', and designated the tourism industry as one of the four pillars of the economy. Support for drive tourism will play a part in contributing to the government's goal of increasing overnight visitor expenditure in Queensland to $30 billion per annum by 2020.

This is a bold target, but it is achievable in light of the rapid growth in the number of affluent households within China. The analysis indicates that from future growth in the number of affluent households in China, a 6% market share would secure an additional $4 billion in Queensland tourism expenditure:

- additional international tourism by affluent Chinese by 2022: 72 million persons p.a.
- Queensland achieves 6% of the global market: 4 million persons p.a.
- average of 4 nights in Queensland and $250 per day = $4 billion p.a.

China provides the capacity to continue driving growth in tourism. An expanding middle class with disposable income, and penetration of low cost airlines into China, are combining to generate tourism growth. Chinese tourists are seeking a tailored tourism experience, tending to travel in groups, and are more focussed on cultural icons & experiences.

In 2013, it was estimated that 100 million Chinese travellers ventured beyond their borders, becoming active tourists around the world. CLSA, a CITIC[20] investment and brokerage firm based out of Asia, predicts that outbound tourism in China will reach 200 million persons by the year 2020. On this basis, the tourist numbers are forecast to double over a period of seven years, of which Queensland requires only a small increase in market share.

According to a recent McKinsey research paper, and as illustrated in Figure 27, affluent urban households in China increase from 8 million in 2012 to 32 million in 2022.

[20] China International Trust and Investment Corporation

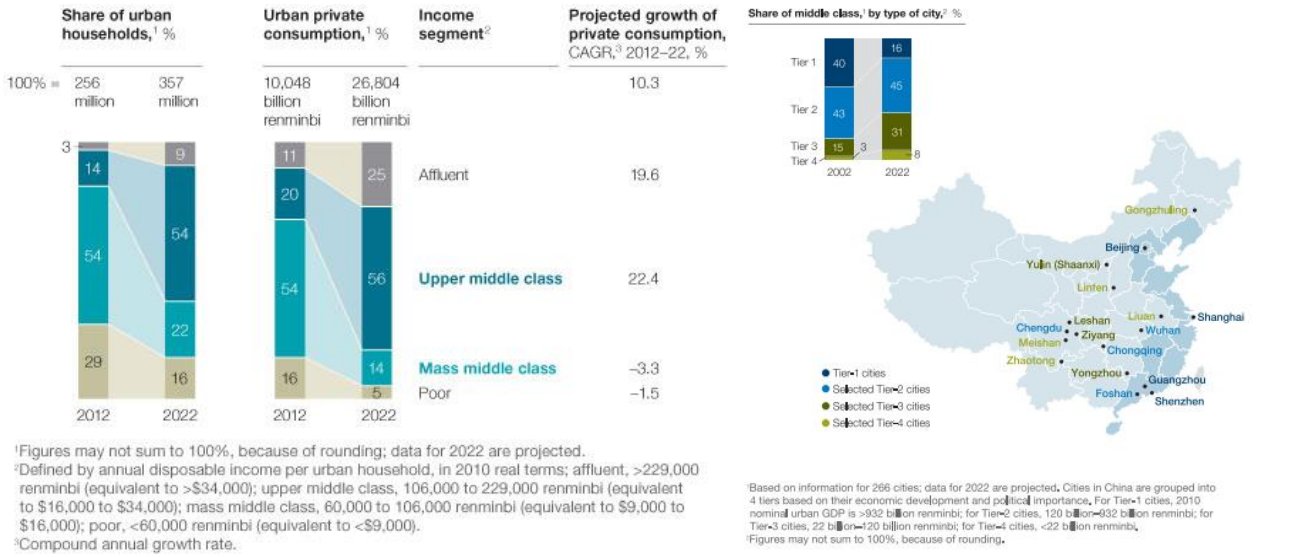


Figure B9-35 China: share of middle class.

Source: Mapping China's Middle Class, McKinsey & Co.

Over the next decade, the emergence of wealthier households is expected to derive from inland cities. These 'next wave' cities are the potential sources of new direct flights, with Cairns well-placed to attract and benefit from this growth.

B9.3.5.e The Marine Environment

The marine environment offshore from Cairns provides a variety of commercial and recreational opportunities that provide both economic and social benefits for the community. This section describes the current commercial and recreational uses of the marine environment

Commercial Fishing and Aquaculture

The commercial catch and effort for the primary grid of H16 and the adjacent grids are shown on **Figure B9-36**.

These graphs show that since 1990 fishing effort and catch weights have all been in decline. A key reason for this decline was the July 2004 implementation of a new zoning plan for the GBRMP that increased the number of 'no-take' (no fishing) areas from 5 percent to 33 percent of the Marine Park.

It also increased the number of 'no-trawl' areas from 15 percent to 28 percent of the Marine Park. At this time the Australian Government committed to a structural adjustment package to assist fishers, fishery related businesses and others adversely affected by the rezoning to exit the industry, restructure their businesses to adjust to the changes or make other changes to lessen the impact. This has resulted in a reduction in the effort and catch volume over time.

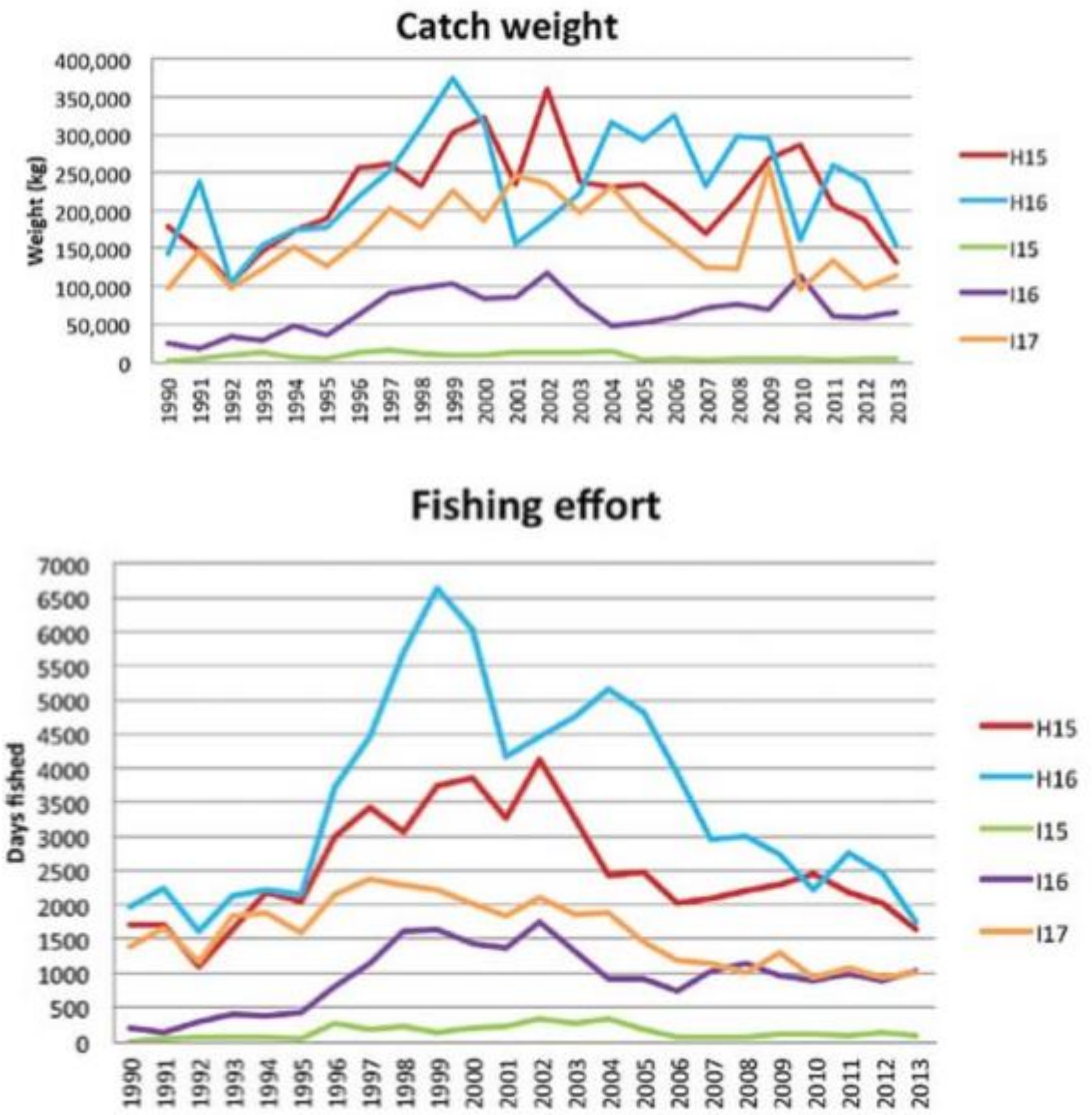


Figure B9-36 Catch weight (kg) and fishing effort (days) by reporting grid.

Source: Ports North (2014).

The total direct value of all commercial fishing and aquaculture in the Great Barrier Reef World Heritage Area in 2010/11 was estimated at $193 million (Deloitte Access Economics, 2013). In the Wet Tropics region, where Cairns is the major urban centre, the direct value of commercial fishing and aquaculture in 2010-11 was estimated at $21.3 million, comprised of:

- line, net, pot and trawl - $12 million
- harvest - $3.1 million
- aquaculture - $6.2 million.

Scientific Research

The Great Barrier Reef inspires and facilitates a wide range of scientific research from independent study projects to large multi-agency collaborative research programs (Deloitte Access Economics 2013).

In 2010, research funding for reef-related projects from the Australian Research Council (ARC) grants alone totalled more than $8 million. This funding supports a large body of research with 230 research reports

published in 2009 in the Australian Coral Reef Society's publications. The 2012 International Coral Reef Symposium, held in Cairns, had over 2000 attendees, 1200 of these from outside Australia – an indicator of the importance of the Great Barrier Reef to international reef research (Deloitte Access Economics 2013).

Cruise Industry

The Port of Cairns is a strategic, popular and attractive destination for cruise companies (BMT WBM, 2014). When visiting the Cairns region cruise ships either use the shipping channel to access the CCLT at the Port of Cairns or anchor offshore at Yorkeys Knob.

The Port of Cairns is predominantly a transit port with cruise ships generally visiting for a day with some staying overnight. A transit port is an en route stop within a longer itinerary. Passengers are generally unable to join or leave the ship at a transit port. There are also limited opportunities for ships to take on supplies or undertake maintenance as their stops are of a short duration.

In 2012/13 direct expenditure associated with cruise shipping in the Cairns region was $11.6 million. A large portion of this expenditure is generated by passengers and crew spending money in the local economy. Expenditure generated by passengers and crew members who come ashore is estimated at $220 per passenger and $78 for crew for a Port of Cairns anchored ship (2016 dollars).

This drops to $172 for passengers and is assumed as $0 for crew (who cannot go ashore) for a Yorkeys Knob anchored ship in 2016 dollars (Cummings Economics 2014). The drop in expenditure when anchored at Yorkeys Knob is attributable to a reduction in the number of passengers who choose to come ashore and the fact that crew cannot typically take shore leave.

The complication of ship to shore transfers discourages around 25 percent of passengers from leaving the ship, with this number increasing in bad weather. For those passengers who do decide to come ashore, very few stay in Yorkeys Knob, around one half transfer to the Cairns CBD and the other half go on tours (Cummings Economics 2014).

Marine Based Tourism

Vessels operating tourism based services out of the Port of Cairns include reef vessels, fishing charter vessels, dive charter vessels, sail charter vessels and river cruise vessels.

A Deloitte Access Economics study undertaken for the 2011-12 financial year indicated that tourism related to the Great Barrier Reef adds around $5.2 billion to the national economy and generated approximately 64 000 full-time equivalent (FTE) jobs (Deloitte Access Economics, 2013). Close to 50 percent of this added economic value ($2.5 billion) and 30 percent of jobs were located in the Wet Tropics Region where Cairns is the major urban centre.

Reef Vessels

The Reef Fleet Terminal at Marlin Marina within the Port of Cairns serves as the home for a variety of vessels operated by cruise and tourism operators. An estimated 740 000 visitors pass through the terminal annually, with the building designed to accommodate up to 2000 people at a time (Ports North 2013a).

The 'reef fleet' that operates out of the terminal includes (but is not limited to):

- Big Cat
- Cairns Dive Centre
- Compass Cruises
- Deep Sea Divers Den
- Down Under Dive
- Falla
- Fitzroy Island Resort

- Ocean Free/Freedom
- Passions of Paradise
- Pro Dive
- Quicksilver (including Great Adventures and Ocean Spirit)
- Raging Thunder
- Reef Day Tripper
- Reef Magic
- Rum Runner
- Seastar Cruises
- Sunlover Cruises
- Tusa Dive

Charter Fishing

A number of fishing charters also operate out of the Port of Cairns. In 2013, 16 licensed charter fishing licences were active in the H16 grid (Fisheries Queensland 2014). During engagement activities charter operators reported the following areas are popular for charter fishing:

- Trinity Inlet
- False Cape
- he Hospital Flats
- The end channel markers
- In the vicinity of channel markers four and five
- Barron River
- The old anti-submarine boom gates (which now create an artificial reef for marine life)
- Saltwater Creek
- Redden Creek
- Thomatis Creek.

These boats are used to transport tourists to the reef for day or overnight trips usually to undertake diving, snorkelling and sightseeing activities.

Recreational Fishing and Boating

The marine environment is also used for a variety of recreational purposes. Locals and visitors use the beaches and foreshores, local waters and reef areas for recreational activities

Recreational fishing is a popular activity with approximately 23 percent of Far North (which includes Cairns, Cooktown and Weipa) residents aged five years or above fishing during the 12 months according to 2010 state-wide recreational fishing survey (Department of Agriculture, Fisheries and Forestry - Fisheries Queensland 2010). This percentage is greater than the state-wide average of 17 percent. More days were spent fishing from boats than the shore and most of this fishing was done in marine waters

Recreational boating activity is closely tied to recreational fishing activity with most people heading out on boats to partake in fishing or cruising activities. There were 10 838 recreational vessels registered with the Department of Transport and Main Roads in suburbs closest to the Port of Cairns (postcodes 4865, 4868 – 4872 and 4878-4879) at July 2014 (Fisheries Queensland 2014).

In the vicinity of the project areas there are a number of boat ramps which provide access to local waters. These include:

- Smiths Creek: Next to sugar terminal. Small ramp with limited car parking.
- Tingira Street-Smith Creek: Large public ramp and car park offering wash down and rigging areas. Lighting provided. Handy floating pontoon. To become main town ramp.
- Redbank: Off Redbank Road and further up the system. Small ramp with limited parking. Not good access on large dropping tides as access is limited at very low water.
- Blackfellow Creek: Off Thompson Road Edmonton. Small ramp with limited parking.

In 2011-12 recreational activities in the Wet Tropics region, which includes Cairns, were valued at $78.5 million. Of this, $48.6 million was spent on the purchase of equipment for recreational activities (such as boats and fishing equipment), $13 million was spent on fishing trips and $4.6 million was spent on boating trips.

B9.3.5.f Context Summary

The Queensland economy has been one of the better performers in Australia, however the Queensland economy is currently in transition. Investment in the resources sector remains at an elevated level but is falling sharply as new major project commencements are failing to come through to replenish the existing pipeline of work.

The transition from investment to strong export growth will present broad challenges to the Queensland economy and industry. In the meantime, a lower Australian dollar supporting trade exposed industries offer some opportunities.

In addition to wider economic conditions, understanding the local Cairns market and its positioning within the broader regional economic cycles is critical to understanding the key benefits and linkages derived from a major project such as the CSDP.

In this regard, key findings from the situation analysis include;

- The Cairns economy, despite slowing post-GFC, has continued to grow due to its strong population growth and jobs creation. Major projects remain a critical component of future growth.
- The economy has a heavy reliance on a retail, accommodation and food services. These are sectors of high employment vulnerability and more exposed to economic cycle fluctuations. The CSDP will support and underpin future growth in these key sectors.
- There is significant demographic diversity across the region in terms of income, employment and home ownership. Job creation remains critical to future prosperity within the region.
- The Port of Cairns is a significant piece of physical and social infrastructure for the people of Cairns and Far North Queensland driving significant benefits to the local economy. Passengers who come to shore are likely to join a land or marine based tour during their stay, with ships berthing at Trinity Wharf increasing this length of stay and provide more interaction with the Cairns' civic facilities and opportunities to spend money in the local economy on food, beverage and retail items.

Based on the above, local job generating major projects such as the CSD Project will remain a key component of continued economic growth within the region.

B9.3.6 Updated Demand Analysis

AEC were commissioned by Ports North to review projected cruise ship visits for Cairns based on emerging changes in the Australian cruise industry and allocation of those cruise ship visits between Trinity Wharf and Yorkeys Knob anchorage based on revised channel modifications to Trinity Inlet to accommodate Grand and Vista Class vessels and Voyager class vessels anchoring at Yorkeys Knob.

The AEC Demand Study Update 2016 (refer **Appendix H**) provides an update shipping projections previously undertaken in 2011 and 2014.

AEC reported that since 2011 and 2014 the cruise shipping industry has continued to grow globally and in Australia. In 2015 over 1 million Australians went ocean cruising, an increase of 14.6% from 2014, with 71.3% departing from an Australian port to cruise in the South Pacific, Australia or New Zealand. The number of passengers represents a market penetration of 4.5% the second year in a row that a cruising region has broken through the 4% barrier. The South Pacific/Australia/New Zealand region represents 6.1% of total global available lower berth days.

As demand for cruising grows cruise lines have been adding capacity to the global fleet by building larger capacity ships to take advantage of economies of scale. As these new ships are added, older smaller ships are either refurbished and orientated to a particular market or decommissioned. Of the 81 ocean cruise ships for delivery between 2016-2026 59 are mega class ships and more than 60% of these are voyager class. No new regal or sun class ships are on order.

In the 2015-16 season 46 cruise ships visited and/or operated in Australia, up from 42 in 2010-11 and 16 in 2004-05. Whilst the number of ships has increased so has their average size and capacity. Globally the majority of new ships on order are of the voyager class and these will replace smaller and older ships over time.

There were 1015 cruise ship visits to Australian ports/destinations in 2015-16, an increase of 139 visits, or 15.9%, from the 2014-15 total of 876. Sydney (308), Brisbane (148), Melbourne (75), Fremantle (58), Cairns (50), Darwin (45), Moreton is (33) and Hobart (32) were the most frequently visited ports/destinations in 2015-16.

Sydney is regarded as a marquee port by the cruise lines, however, it is rapidly becoming constrained with the Overseas Passenger Terminal fully booked for eight months of the year (October to April). Whilst there is still capacity at the White Bay Cruise Terminal, access is limited to those cruise ships that can fit under the Sydney Harbour Bridge. Collectively, Sydney cruise berth bookings were 365 for 2016-17 and 369 for 2017-18 as at 13 October 2016.

Australia's second most visited port Brisbane, is also constrained by the Gateway Bridges and the turning basin at Portside Cruise Terminal. However, Brisbane Port has recently announced the development of the Brisbane Cruise Terminal (BCT) at Luggage Point supported by both Carnival Australia and Royal Caribbean Cruise Lines (RCCL). It is expected that the BCT will be operational from 2019 and will triple the size of the Brisbane cruise industry by 2035 although the development is still subject to commercial negotiations. Cruise lines have indicated that this facility could see the home porting of four ships in Brisbane. This increased traffic will have significant implications for visits to Cairns.

The total number of cruise ship visits to Cairns in 2015 was 43, which has grown from 34 in 2010 or a CAGR of 4.8%.

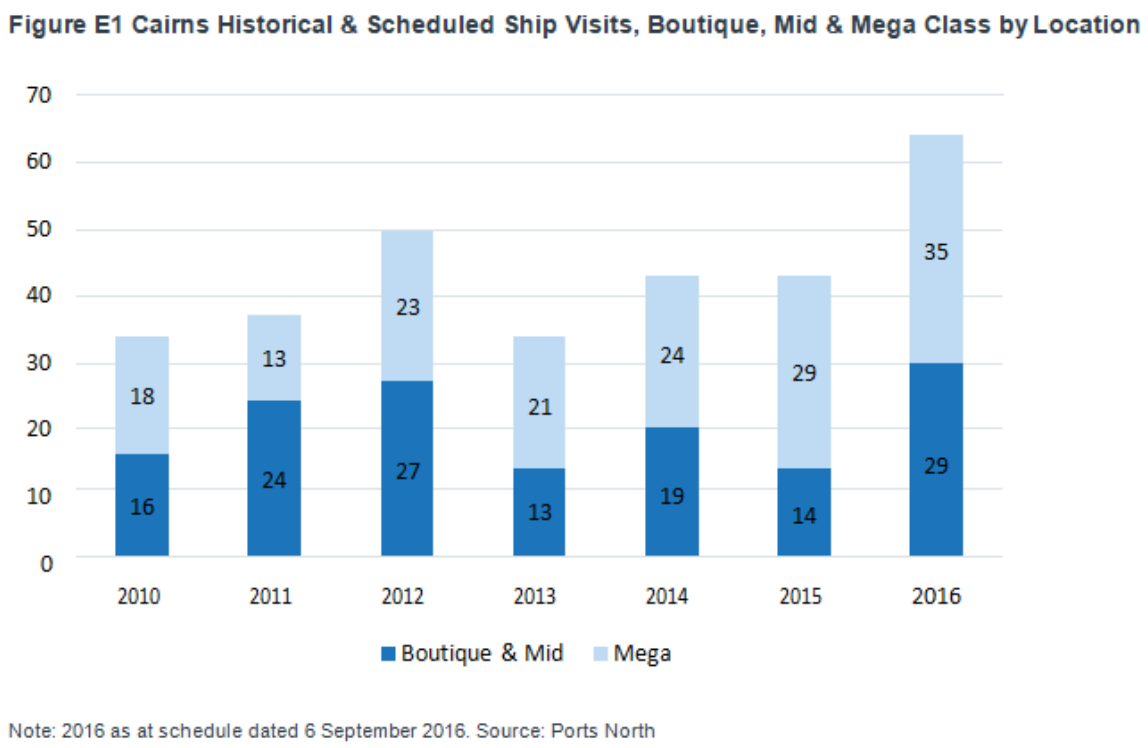


Figure B9-37 Cairns Historical & Scheduled Ship Visits, Boutique, Mid & Mega Class by location.

Source: Appendix H.

The number of cruise ships (excluding Adventure class) visiting Trinity Wharf in 2015 was 20, which was up from 19 in 2010 (CAGR 1.0%). This number is scheduled to rise to 40 in 2016 due to:

- an additional 17 visits by P&O mid/sub-regal class ships (Pacific Eden & Pacific Aria), which are recent acquisitions to the P&O fleet
- an additional 7 visits by Sun class (mega) ships, which have been diverted from the Yorkeys Knob anchorage following successful simulation outcomes.

In comparison the share of ships to the Yorkeys Knob anchorage increased from 15 visits to 21 visits from 2010 to 2015 (a compound annual growth rate (CAGR) of 7.0%). The number was scheduled to increase to 24 for 2016 increasing the CAGR to 8.1% over the six-year period. This pattern reflects the increasing size of cruise ships visiting Cairns that cannot access the port.

For 2016, the scheduled total ship visits to Cairns is 64 (CAGR of 11.1% since 2010). This large increase in visitation reflects the transit and home porting of the P&O mid/sub-regal class ships, however even omitting these ships (17 visits) from the analysis, there is still significant extra growth in Cairns in 2016 with 48 other scheduled visits representing an CAGR of 5.5% since 2010.

More significant growth again is currently forecast for Cairns in 2017 with 80 ships (excluding adventure class) scheduled as at 6 September 2016.

Previous projections of cruise ship visits were undertaken in 2011 and 2014. These projections were based on a channel upgrade that could accommodate sun, vista, grand and voyager class vessels. The current study considered a channel upgrade that can accommodate vista and grand class vessels noting that sun class vessels can now enter the port following recent successful simulation outcomes.

This study also considered the following emerging changes in the cruise industry that were not foreseen by the earlier studies:

- Home porting of mid classified ships in Cairns commencing in 2016.
- Potential for future home porting of vista class vessels in Cairns.
- Relocation of additional larger cruise ships to the Australian market.
- Impacts associated with other port constraints/developments, in particular the proposed BCT.

The projection methodology AEC used in Demand Update is different to that used in the 2011 and 2014 studies in that many more scenarios have been considered. The assumptions used in the projections were informed through previous studies, consultation and AEC's experience in the sector.

The basic approach to undertaking the projections was to project cruise ship visits to Cairns and then determine whether they can berth or have to anchor based on ship length. With no channel modifications, only ships of 240m or less are typically assumed to berth, subject to the following:

- Due to limited maneuverability, no P&O regal class ships can berth but other regal class ships can. Sun class ships can now berth following successful simulation outcomes.
- The fleet mix of visiting cruise ships that may visit Cairns has been modelled on the existing mix of cruise ships based in or visiting Australia modified for the known and expected change in fleet composition. For example, the replacement of P&O regal class ships with a larger class of ship, retirement of sun class ships as they reach their useful life and additions of grand class (approximately one every four years) and voyager class ships (one every second year).

A base line projection of ship visit growth (excluding home porting ships) was established at 5% per annum on which alternative scenarios are applied. Four alternatives to the base case are incorporated in the projections. The combination of alternatives gives sixteen scenarios. The alternatives are.:

- With or without development of the BCT (expected to be in place by 2019.)
- With or without home porting.
- With or without channel modifications,
- With or without availability of bunker.

Assumptions used in the projections are as follows:

- Growth in cruise ship visits from the BCT is estimated to triple from 2019 to 2035 in a linear fashion based on mega class ships accounting for increases in the average size of cruise ships. Cairns is assumed to receive visits from 30% of these cruise ships.
- Home porting is assumed to number 20 ships visits per annum of sub-regal class with no channel modifications changing to 16 of vista class with channel modifications.
- Channel modifications will allow port access to vista and grand class ships commencing in 2021. Without channel modifications, only sub-regal, regal and sun class ships can enter the port. The additional access to the port is estimated to increase mega class visits to Cairns by 20% for regal, vista and grand class ships.
- Availability of bunker is estimated to increase all cruise ship visits for those that can access the port by 10%.

The logistical constraints associated with ships anchoring and tendering passengers to Yorkeys Knob, especially as ship passenger capacity increases, has been estimated to reduce unconstrained ship visit projections to Yorkeys Knob by 35%. This reduction factor was phased in linearly from 2019 to 2025.

The alternatives present a total of 16 scenarios with both low, medium and high projections. The most pessimistic scenario of business as usual (BaU, no BCT, no homeporting and no channel modifications) still sees growth in ship visits reaching 97 in 2031 but with 43 of these at Yorkeys Knob versus 54 at Trinity Wharf. However, construction of the revised channel and bunker availability not only sees the total increase by 27 to 124 but 19 at Yorkeys Knob compared to 105 ships at Trinity Wharf (**Table B9-32**).

TABLE B9-32 PROJECTED SHIP VISITS (BUSINESS AS USUAL), MEDIUM PROJECTION

Table E1 Projected Ship Visits (Business as Usual), Medium Projection

Scenario	Class	Trinity Wharf			Yorkey's Knob			Total Cairns		
		2021	2026	2031	2021	2026	2031	2021	2026	2031
Existing Channel										
Scenario 1 BaU, no homeporting	Sub-Regal	25	33	42				25	33	42
	Regal	3	2	2				3	2	2
	Sun	16	14	10				16	14	10
	Vista				15	15	11	15	15	11
	Grand				2	6	13	2	6	13
	Voyager				7	9	19	7	9	19
	Total	**44**	**49**	**54**	**24**	**30**	**43**	**68**	**79**	**97**
Revised Channel										
Scenario 4 BaU, no homeporting, channel modifications, bunker	Sub-Regal	28	36	45				28	36	45
	Regal	3	2	3				3	2	3
	Sun	18	15	11				18	15	11
	Vista	23	29	21				23	29	21
	Grand	3	11	25				3	11	25
	Voyager				7	9	19	7	9	19
	Total	**75**	**93**	**105**	**7**	**9**	**19**	**82**	**102**	**124**
Difference		*31*	*44*	*51*	*-17*	*-21*	*-24*	*14*	*23*	*27*

Source: AEC

Source: Appendix H.

Looking at the more optimistic scenario of the BCT and homeporting in Cairns, the overall number of ships visits is projected to reach 151 with 69 at Yorkeys Knob and 82 at Trinity Wharf. With construction of the revised channel and bunker availability the overall number is projected to increase by 33 to 183 with the Yorkeys Knob/ Trinity Wharf balance shifting to 31/152. An additional 85 Mega Class vessels will be able to dock at Trinity Wharf (**Table B9-33**).

TABLE B9-33 PROJECTED SHIP VISITS (WITH BRISBANE CRUISE TERMINAL & HOME PORTING), MEDIUM PROJECTION

Table E2 Projected Ship Visits (with Brisbane Cruise Terminal & Home Porting), Medium Projection

Scenario	Class	Trinity Wharf			Yorkey's Knob			Total Cairns		
		2021	2026	2031	2021	2026	2031	2021	2026	2031
Existing Channel										
Scenario 13 BCT, homeporting	Sub-Regal	45	53	62				45	53	62
	Regal	5	3	4				5	3	4
	Sun	31	25	16				31	25	16
	Vista				30	27	17	30	27	17
	Grand				4	10	21	4	10	21
	Voyager				13	16	31	13	16	31
	Total	**81**	**81**	**82**	**47**	**53**	**69**	**128**	**134**	**151**
Revised Channel										
Scenario 16 BCT, homeporting, channel modifications, bunker	Sub-Regal	28	36	45				28	36	45
	Regal	6	4	5				6	4	5
	Sun	33	26	17				33	26	17
	Vista	56	64	47				56	64	47
	Grand	6	18	38				6	18	38
	Voyager				13	16	31	13	16	31
	Total	**129**	**148**	**152**	**13**	**16**	**31**	**142**	**164**	**183**
Difference		*48*	*67*	*70*	*-34*	*-37*	*-38*	*14*	*30*	*32*

Note: Sub-Regal home porting has been replaced by vista class home porting with the revised channel.
Source: AEC

Source: Appendix H.

B9.3.7 Economic Analysis

AEC were commissioned by Ports North to provide an identification and economic analysis, including economic impact and value added net present value (NPV), of the economic benefits flowing from CSD Project (**Appendix AQ**) The CSDP seeks to invest in channel modifications that will allow vista and grand class cruise ships to access Trinity Wharf as opposed to anchoring at Yorkey's Knob.

Projected changes to cruise shipping from the CSDP are contained in *Cairns Shipping Development Project 2016 Cruise Demand Update* prepared by AEC (**Appendix H**). Also assessed are potential changes to cargo shipping and Navy shipping activity.

B9.3.7.a Approach

Activity surrounding the identified economic benefits has been defined and costed with any assumptions clearly stated and sourced. Economic impacts are calculated using an Input-Output model of the Cairns regional economy (Cairns Regional Council local government area), or Queensland economy where relevant. Economic impacts are generally presented for 2021, 2026 and 2031. Also calculated is the NPV from the stream of value added benefits over the period 2018 to 2043. Reported below are NPV in $2016-17 at a 7% discount rate. NPVs of 4% and 10% were also calculated.

B9.3.7.b CSDP Construction

The $120 million construction cost of the CSDP will be spent over a number of years with leadup work being undertaken from 2016-17, dredging and upgrades in 2019 followed by monitoring in 2019-20. The channel is assumed to be available for cruise shipping from 2021. The NPV of the CSDP construction is estimated at $91.5 million in $2016-17

B9.3.7.c Channel Maintenance

Channel maintenance from additional annual dredging is estimated at $150 000 per annum. The NPV of the channel maintenance is estimated at $1.2 million in $2016-17.

B9.3.7.d Cruise Shipping

The main effects of the channel modifications are to allow vista and grand class cruise ships access to Trinity Wharf resulting in increased expenditure from more passengers and crew in Cairns and increased expenditure on port charges, supplies and services and passenger related services by cruise lines. In addition to facilitating these larger cruise ships to berth rather than anchor at Yorkey's Knob, the availability of a larger capacity port will also attract new cruise ship calls.

Of the sixteen scenarios contained in **Appendix H**, two comparisons were chosen for economic analysis. For each comparison there is a base case and a project case, the project case being with the channel modifications. The two comparisons are:

Comparison A: With Brisbane Cruise Terminal & homeporting:

- Scenario 13: No channel modifications & no bunker (Base Case).
- Scenario 14: With channel modifications & no bunker (Project Case).

Comparison B: Business as Usual (no BCT & homeporting):

- Scenario 5: No channel modifications & no bunker (Base Case).
- Scenario 6: With channel modifications & no bunker (Project Case).

Comparison A results in an estimated NPV of $728.6 million, whilst comparison B results in an estimated NPV of $541.9 million.

B9.3.7.e Home Porting

Home porting delivers considerably more economic benefit than a transit call. Essentially there are twice as many passengers involved in a turnaround visit and the cruise ship is taking on sufficient provisions for the voyage. The projections in **Appendix H** consider 20 sub-regal ship home port calls moving to 16 vista ship home port calls once the channel modifications are in place.

There is a significant risk that Cairns could lose the home porting activity as cruise lines replace the older sub-regal class ships currently used for home porting with larger vista or grand ships (as appears to be the trend), in which case without the channel modifications these ships do not fit in the port. Over the time period of the economic analysis home porting has a value added NPV of $492.2 million. Should Cairns lose the current homeporting activity, there will be an economic loss equivalent to this value.

B9.3.7.f Cairns visitation

Additional benefits are delivered by home porting. These are passengers staying in the region pre and post cruise. The current home porting pre and post visitation NPV benefit is estimated at $10.1 million.

Just over 61% of surveyed passengers to Cairns responded that they were likely to return to Cairns and of these, 21.8% are likely to return within 1 year, 24.2% are likely to return within 1-2 years and 46.1% sometime after 2 years. It is impossible to determine if these passengers will return and is unknown how they will return (they could be future cruise passengers in which case they are already counted in future economic impacts). The economic impact from returning passengers is therefore calculated.

B9.3.7.g Cargo

The increased depth of the channel means that bulk cargo carriers can carry a larger load meaning that the number of cargo ship visits can be reduced but deliver the same volume of cargo. This improvement in economic efficiency is passed on to producers (sugar exports) or consumers (petroleum imports). The economic benefits of reduced cargo transport costs have a NPV of $5.5 million.

B9.3.7.h Navy

Deeper channel access to HMAS Cairns creates the potential for the Royal Australian Navy's (RAN) largest ships (HMAS Canberra, HMAS Adelaide) to berth in Cairns. There is also the opportunity for large foreign navy ships (e.g. USS Boxer) to berth for rest and relaxation after joint naval exercises. Assuming one additional large RAN ship each year for three days and one additional foreign navy ship every six years for three days an additional NPV of $11.7 million could be delivered.

Furthermore, the CSDP relocates the Main Swing Basin positioned adjacent to HMAS Cairns, which would enable a potential future expansion of HMAS Cairns into the inner harbour. If the expansion was to occur it would see a significant construction program as well as a tripling of personnel and operations in Cairns.

B9.3.7.i Wider Regional & State Benefits

Having a second significant home port with international air access provides additional cruising opportunities for Queensland. Based on Comparison A above, growth caused by the CSDP in the number of additional north bound Queensland loop cruises have been identified. Additional economic benefits have been estimated for Brisbane, Whitsundays and Port Douglas. Over the analysis timeframes this additional activity is estimated to deliver a NPV of $144.6 million.

B9.3.8 Economic Impacts

As outlined previously, the proposed CSDP provides a competitive response to a growing cruise ship sector and a growing Asian source market.

Given the heavy reliance of the Cairns local economy on tourism related sectors such as retail, accommodation and food services, the CSDP will provide a significant stimulus and ongoing source market to underpin jobs growth in these sectors.

The CSDP builds upon the significant existing tourism infrastructure in the Cairn's region, providing an expanded major attractor and offering additional marketing opportunities to promote and downstream.

Ultimately the CSDP will improve the competitiveness of Cairns and QLD through:

- supporting local employment and growth industries
- increasing the competitiveness of the region over alternate destinations due to an increased capacity to do business
- strengthening the economic resilience of the local economy, via the delivery of a wider distribution of both the location and industry composition of jobs.

Overall, the proposed development scenario is estimated to generate significant output into the Cairns and State economies based on construction, worker, resident and visitor spending. In turn this output supports significant job generation during both the construction phase and operational life of the project.

B9.3.8.a Investment Requirements & Development Sequencing

Capital cost estimates for the proposal are summarised in **Table B9-34**, with a total cost on completion estimated at $120.0 million[21].

[21] Key costings and project specifications have been provided by the Proponent.

TABLE B9-34 CAPITAL COST ESTIMATES ($M 2016/17)

Cost Component	$M
Dredging	$50.90
Land Placement	$22.30
Wharfs & services upgrades	$24.40
Professional services & fees	$22.40
Total	$120.00

Source: Ports North.

The channel design requires dredging of soft and stiff clay, placement of the dredged material on land to be acquired by Ports North, wharfs and services upgrades and associated professional services and fees.

From a timing perspective, the project is to targeting completion in 2020, with the bulk (89%) of capital costs to be incurred in 2019 (**Table B9-35**). Lead up work including inputs and technical assessments for the EIS have commenced.

TABLE B9-35 COST SEQUENCING ($M 2016/17)

Cost	2016	2017	2018	2019	2020
Dredging				$50.90	
Land Placement				$22.30	
Wharfs & services upgrades				$24.40	
Professional services & fees	$2.30	$2.90	$5.20	$8.90	$3.20

Source: Ports North.

The construction and on-going operational phase of the project will create two key impact periods. During the initial Construction Phase (2018-2019) the project is projected to provide major positive stimulus with limited competitive impacts due to the unique nature of the proposed development.

On completion of the development, the project triggers critical mass in development with a range of new industries/ business opportunities being established, major economic multipliers and value capture.

B9.3.8.b Construction Impacts

The first source of industry output stimulus will be that of the work done during the construction phase. This output directly supports employment in the construction / dredging industry.

As illustrated in **Table B9-36**, a total investment of $120.0 M in development of the project ($108.7 M excluding transfer payments) will in turn support an additional $164.0 M in indirect related output for a total non-escalated output over the construction period of $272.70 million.

In terms of gross value added (GVA), this equates to an additional $118.7M to the Cairns economy.

TABLE B9-36 CONSTRUCTION IMPACT (2016/17)

	Output ($M)	Incomes ($M)	Gross Value Added ($M)
Direct Impact	$108.70	$21.10	$37.90
Indirect Impact (All Industries)	$164.00	$40.80	$80.80
Total	$272.70	$61.90	$118.70

Source: Appendix AQ; **Appendix AR**.

Gross value added (GVA) refers to the value of output after deducting the cost of goods and services inputs in the production process. Value added defines the true net contribution and is subsequently the preferred measure for assessing economic impacts.

B9.3.8.c Ongoing CSDP Enabled Activity

Post construction completion, the CSDP will create ongoing economic benefit to the Cairns economy with a range of new industries and business opportunities being established including ongoing channel maintenance and monitoring, induced visitor expenditure, freight and logistics activity and increased Navy ship visitation.

Table B9-37 below outlines the direct annual ongoing economic contribution from each of the key project activities once fully established and operational.

As outlined, the economic modelling indicates that the passenger expenditure, port charges and supplies and servicing activity associated with the additional cruise shipping is the largest potential benefit. This level of direct activity could support around $112 million in additional GVA activity per annum in the Cairns economy (based on 2031 projections for Scenario 14).

TABLE B9-37 DIRECT ONGOING ECONOMIC CONTRIBUTION (2016/17)

		Output ($M)	Incomes ($M)	Gross Value Added ($M)
Channel Maintenance	p.a. from 2021 onwards	$0.15	$0.00	$0.05
Cruise Shipping	p.a. at 2031	$227.80	$61.90	$112.10
Induced Visitation	p.a. at 2031	$18.10	$5.30	$8.80
Navy	In year of impact	$3.05	$0.79	$1.55

Source: Appendix AR.

In addition to the direct on-going economic activity created by the proposed development, flow-on or indirect activity is generated. Specifically, in this instance only the industrial support effects (Type 1) multiplier has been utilised, which represent the production induced support activity as a result of additional expenditure by the industry experiencing the stimulus on goods and services in the intermediate usage quadrant, and subsequent round effects of increased purchases by suppliers in response to increased sales.

Table B9-38 below outlines the in-direct or flow-on economic contribution from each of the major CSDP activities once fully established.

TABLE B9-38 INDIRECT ONGOING ECONOMIC CONTRIBUTION (2016/17)

		Output ($M)	Incomes ($M)	Gross Value Added ($M)
Channel Maintenance	p.a. from 2021 onwards	$0.22	$0.10	$0.11
Cruise Shipping	p.a. at 2031	$281.90	$74.20	$153.50
Induced Visitation	p.a. at 2031	$20.40	$5.30	$11.20
Navy	In year of impact	$3.67	$0.97	$2.00

Source: Appendix AR.

The total value added to the Cairns economy by the CSDP discounted to $2016-17 yields a NPV at a 7% real discount rate of $848.5 million[22].

This assumes the development of the Brisbane Cruise Terminal and the continuation of home porting. If the Brisbane Cruise Terminal does not proceed, the NPV in terms of total value added to the Cairns economy will be in the order of $661.8 million, discounted to $2016-17 at a 7% real discount rate.

The CSDP will also increase the resilience of home porting in Cairns by accommodating the larger Vista and Grand class ships which are the likely replacements to the current older, smaller sub-regal class ships and thereby secure $492.2 million of value added by this key cruise shipping activity. Note that this is not additional to the total benefit.

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[22] *All value added economic benefits from increased expenditure directly associated with the CSDP from 2016 to 2043. AEC Group (2017) CSDP Economic Analysis Update June 2017;*

The above economic analysis shows that the benefits of the CSDP are extensive for cruise shipping and tourism in Cairns.

B9.3.9 Employment Impacts

As outlined in the previous section, the project is projected to provide major positive stimulus to the Cairns economy, with a NPV total value added of $848.5 million. [23]

This activity will generate and support significant employment both over the construction period and then through the establishment of on-site uses and activity.

Employment impacts for both phases are outlined in **Table B9-39** and **Table B9-40** following.

Construction Phase

Table B9-39 illustrates the construction employment generated from the development. Based on the $120m of direct construction investment, economic modelling indicates that 195 jobs will be directly created over the 5-year delivery period.

In relation to the dredging works, this is a specialist skill set and it is likely that the dredge contractor will bring a skilled workforce to complete these works. Ports North will work with the appointed dredge contractor to develop appropriate recruitment and training programs as relevant. This would include identifying roles that can be filled by local workers. Where possible recruitment and training programs will focus on attracting and training Indigenous people, women, secondary school students, unemployed and underemployed people.

TABLE B9-39 CONSTRUCTION EMPLOYMENT

	Employment (FTE's)
Direct Impact	195
Indirect Impact (All Industries)	607
Total	**802**

Source: Appendix AR.

In addition to this, the flow on activity will create additional demand for a further 607 jobs in the economy. In total this equates to 802 construction jobs (FTE) over the delivery period.

These jobs will be created in the broader market place and are not controlled by Ports North. Recruitment and training for these positions would therefore be managed by others.

Cairns has a well-developed marine industry with people who are experienced and skilled in a variety of marine related industries. This capability has developed predominantly to service the reef fleet, Australian Navy, commercial fishers and super yacht industry. It is therefore expected that where local personnel are required for marine related construction activities these skills will be able to be sourced from the local population.

Supply related issues associated with the recruitment of a suitably qualified and experienced workforce to undertake dredging and construction works for the project are not anticipated due to the small workforce required and the skills base that already exists in the Cairns region.

Operational Phase

Once completed and operational the project will also generate a range of ongoing jobs, located both on and off-site. **Table B9-40** illustrates the distribution and quantum of on-going jobs created and associated with the project.

[23] Discounted to $2016-17 at a 7% real discount rate from 2016 to 2043.

Based on analysis of sectors of activity, the total number of direct jobs has been estimated in excess of 1535 FTEs per annum.

TABLE B9-40 ONGOING INDUCED AND SUPPORTED EMPLOYMENT

	Direct Employment	Indirect Employment	Total Employment (FTE)
Channel Maintenance	0.2	0.8	**1.0**
Cruise Shipping	1,407	1,109	**2,515**
Induced Visitation	106	77	**183**
Navy	22	15	**37**

Source: Appendix AR.

Note: Equates to output contributions outlined in Tables B9-36 and B9-37.

In addition to this, the flow on activity will create additional demand for a further 1202 jobs in the economy. In total this equates to more than 2730 jobs (FTE) on an on-going basis.

The Cairns region has a number of training organisations providing retail, hospitality and tourism related training courses. These include Tropical North Queensland TAFE (TNQT) and a range of private training organisations. Some of these programs are supported by the Queensland and Australian Government.

Where relevant, Ports North would work with local training organisations to increase the skill base of the local population. Other jobs created will likely be in the marine servicing industry, which as discussed, Cairns has well developed skills, experience and training programs within the workforce.

It is expected that as demand for these skills increases, training opportunities in this industry will also increase. If home porting opportunities continue to increase there will be more opportunity for job creation and it is likely that these jobs will be in more diverse industries such as ship provisioning, training and specialised marine activities.

Cruise shipping activity in the Cairns region will increase gradually over time giving the local employment market time to grow and adjust to this gradual increase. The project will not create an unreasonable, immediate demand for these additional retail, hospitality, tourism and marine servicing jobs from day one, therefore issues associated with skills shortages once the project is operational are not anticipated. In the short (3-5 year) and medium to longer term (5 – 15 years) it is expected that the local employment and training market will develop in line with the gradual increase demand for employees in these industries.

The Cairns workforce is highly seasonal with lower unemployment percentages in the peak tourist season (April to October with the peak months being Jun to Aug) and higher unemployment during non-peak months, particularly in the 15- 24 year age bracket.

As the peak cruise season is October to May (i.e. outside of the current peak tourist season), the more ships that call into Cairns over time, the more potential that these employment peaks and troughs would be somewhat smoothed, because ship visits and the tourism related activities generated provide increasing employment opportunities in those months of the year outside the current peak tourist season.

B9.3.10 Sector Based Impacts

Based on the economic modelling outlined previously, the project is projected to provide major positive stimulus to the Cairns economy, with an estimated NPV of $848.5M to 2043, with limited competitive impacts due to the unique nature of the proposed development.

At a sub sector level, it is expected that there will be a range of industry sector impacts derived supported by the scale and mix of activities established onsite, as well as the induced output both locally and throughout the FNQ region.

As outlined, the economic modelling indicates that the passenger expenditure, port charges and supplies and

servicing activity associated with the additional cruise shipping is the largest potential benefit. This level of direct activity could support around $112 million in additional GVA activity per annum in the Cairns economy (based on 2031 projections for Scenario 14).

Within this benefit category, expenditure by passenger and crew is the larger sub-sector, approximately 84% of the total cruise related expenditure. Components of this expenditure are illustrated in **Table B9-41** based on surveys undertaken by AEC.

TABLE B9-41 INTERNATIONAL AND DOMESTIC PASSENGER EXPENDITURE

Expenditure	2014-15 Survey		2017 Survey					
	Pax	Crew	Pax	Crew	Pax	Crew	Pax	Pax
	Cairns Turnaround (Same as Brisbane)		Trinity Wharf		Yorkey's Knob		Trinity Wharf	
							1 Day	2 Day
Shopping	$86.98	$17.97	$105.27	$173.20	$114.94	$147.74	$85.01	$127.21
Food and Drinks	$105.00	$210.73	$74.28	$163.28	$17.35	$139.28	$102.91	$89.80
Organised Tours	$566.11	$119.41	$207.07	$0.00	$226.95	$0.00	$148.55	$170.92
Entertainment/Gambling	$2.92	$0.00	$31.19	$53.62	$2.21	$45.73	$30.85	$42.87
Transport	$38.05	$34.93	$7.67	$0.74	$0.17	$0.64	$5.44	$6.93
Other	$3.22	$0.00	$0.00	$2.13	$1.33	$1.81	$0.00	$0.97
Total	**$802.28**	**$383.04**	**$425.49**	**$392.97**	**$362.94**	**$335.20**	**$372.77**	**$438.71**

Source: Appendix AR.

This expenditure will drive direct benefits into the following Cairns based industries:

- Retail
- Accommodation
- Food & beverage
- Transport (road, rail, air)
- Rental & hiring services
- Heritage, creative & performing arts
- Sports and Recreation
- Gambling
- Automotive repair & maintenance
- Personal services.

B9.3.10.a Tourism

The Cairns economy relies heavily on tourism and tourism related sectors such as retail, accommodation and food services. In this regard, the CSDP will provide a significant stimulus and ongoing source market to underpin jobs growth in these sectors.

Specifically, the CSDP builds upon the significant existing tourism infrastructure in the Cairn's region, providing an expanded major attractor and offering additional marketing opportunities to promote and downstream.

The CSDP facilitates increased tourism benefits in 3 main ways:

- Increased passenger and crew days in port;
- Increased visitation pre & post cruise; and
- Induced returning passengers

As illustrated in **Figure B9-38**, by 2031 in Scenario 14, there are an estimated 387 841 projected passenger days in part, and increase of 110 543 over the comparable base case.

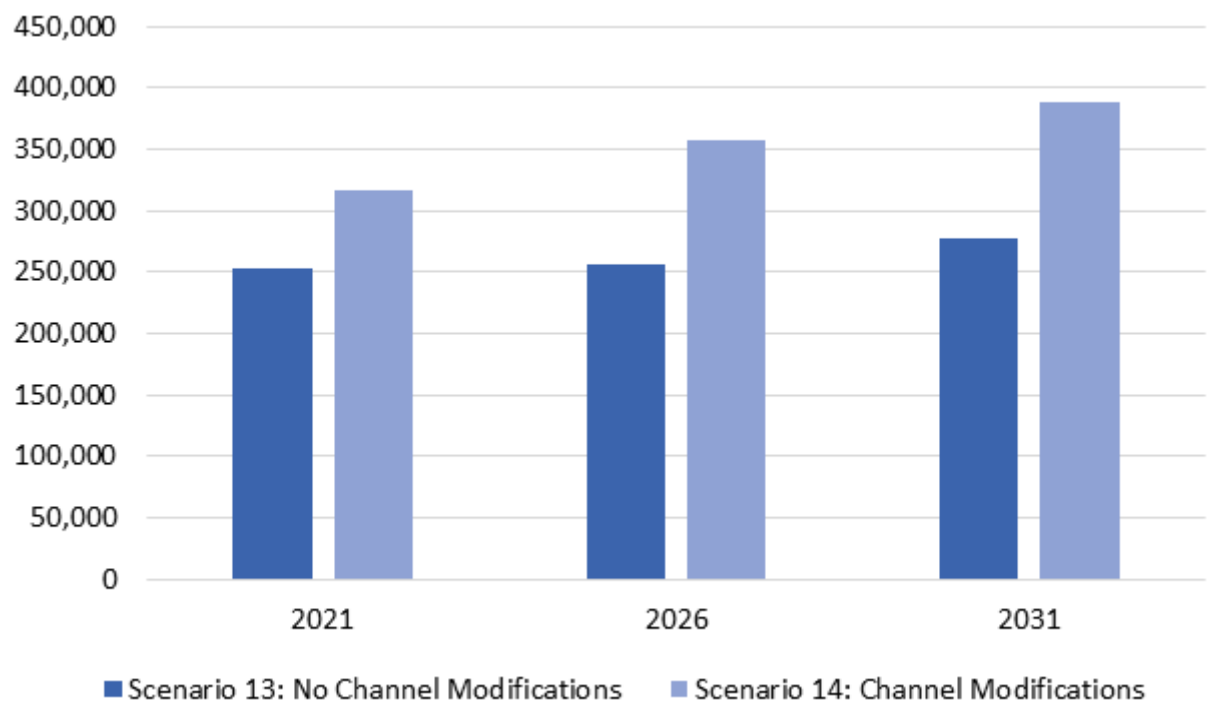

Figure B9-38 Projected passenger days in port (Scenario 13 v 14).

Source: Appendix AQ.

As outlined previously this will drive activity in retail, café and restaurants, tours and tourism operators, transport services and entertainment.

In addition to this at port activity, additional visitation will be driven by pre/post cruise activity and induced return visitors. In addition to the sector impacts noted above, this will also drive demand for commercial accommodation to cater for short-stay requirements.

Given the significant existing tourism infrastructure, including over 63 hotels, motel and serviced apartments (5,252 rooms) within Cairns City, tourist and natural attractions and a well-established supporting tour operations sector, the CSDP will not create an unreasonable, immediate demand for additional physical and social infrastructure from day one.

In the short (3-5 year) and medium to longer term (5 – 15 years) it is expected that local physical and social infrastructure will develop in line with resident population growth and additional demand for services by visitors.

B9.3.10.b Recreational and Commercial Fishing

In relation to marine based impacts there will be additional vessel traffic created by the dredging and wharf upgrade works, but this traffic is not considered to be significant in the context of the daily vessel traffic that uses the Port of Cairns and will be managed according to the **Chapter C3** (Vessel Traffic Management Plan).

While the dredging activities will impact localised areas of the marine environment (areas being dredged), these impacts will be managed according to the **Chapter C2** (Dredge Management Plan) and are therefore not expected to have a significant impact on the broader ecology of the area.

The impact to commercial fishing has therefore been assessed as low due to the low number of fishers operating in the vicinity, the temporary nature of the impacts and that impacts from dredging are expected to be localised to the areas being disturbed by dredging or the placement of material from the dredge activity.

It is not expected that the dredging activities will impact the fisheries values of the broader area. Commercial

fishing catch weights and GVP are therefore not expected to be significantly impacted by the works. In addition, anecdotal evidence gained through consultation activities with commercial fishers indicates that fishers are also known to fish areas that have been disturbed by dredge activities during the annual maintenance dredge campaign.

Given that the dredge activity will take place within the shipping channel and swing basins, this activity is not expected to significantly impact recreational fishers. Boat based fishers will need to manoeuvre around the dredge vessel according to Queensland boating rules. The Queensland Recreational Boating and Fishing Guide outlines Queensland requirements for boating and fishing and provides adequate guidance on recreational boating within shipping channels

Commercial activities such as charter fishing, reef vessels and diving activities are not expected to be impacted by the project. These activities would continue as usual, navigating around the dredge vessel as required.

Water quality impacts associated with dredging and the impact this could have on the reef is a key concern voiced by stakeholders and the community. The key water quality impact of relevance to the project is turbidity created by dredging activity. While no ecological impacts are expected outside the DMPA and adjacent areas, there is concern from operators and industry bodies that the Great Barrier Reef 'brand' could be impacted by adverse media attention at a national and international level related to dredging proposals in the vicinity of the GBRMP.

There is concern that damage to this brand could result in a drop in international and domestic visitation numbers and therefore spend in the local region which could impact the economic contribution of the Great Barrier Reef. It is recognised that this is an issue for the broader Great Barrier Reef, not just reefs in the vicinity of Cairns. Ports North will continue to work with tourism operators and the local media to ensure accurate information about dredging activities is communicated.

B9.3.10.c Housing and Accommodation Availability and Affordability

Total direct construction employment for the project is estimated at 182 FTE over the life of the project, with peak activity to occur in 2019.

Given the relatively small workforce required, and the skill base that already exists in the Cairn's region there is a low likelihood that housing supply, demand or pricing issues will result from the project.

Cairns City itself has some 63-established hotel, motel and serviced apartment operators, with over 5250 rooms and 14 660 beds, which provide sufficient capacity to cater for any short-term construction workforce demand requirements generated by the project.

B9.3.10.d Yorkeys Knob

The suburb of Yorkeys Knob is predominantly a beachside residential suburb, currently it is used as an anchorage and passenger transfer area by mega class ships that are too large to access the Port of Cairns.

These ships transfer passengers via tender vessel before they are loaded into coaches for transfer to tour locations or into Cairns City. The largest facility located in the suburb is the Yorkeys Knob Boating Club located at Half Moon Bay Marina. The marina provides berths for close to 200 boats and has two breakwaters to protect the north and north-west sectors of the marina.

Driftaways restaurant is located in the clubhouse. During this transfer process access to the marina and its facilities (i.e. refuelling facilities, boat ramp) are somewhat restricted for other users. Yorkeys Knob Boating Club is paid a fee per ship visit to facilitate these transfers.

Quicksilver, Reef Magic and Sunlover Cruises provide tender as required to cruise ships. Access in and out of the area is via Yorkeys Knob Road which joins the Captain Cook Highway. Buses transporting cruise ship passengers to the city use this route. This journey to the Cairns CBD currently takes approximately 30 minutes to complete.

With the project operational, the number of ships using the Yorkeys Knob anchorage will reduce initially but for further general growth will occur in the larger vessel sizes (>300 m) which will not be accommodated in the Port by the project proposal. With the project operational, services and facilities currently used in the ship-to-shore and city transfer process would no longer be regularly required.

This would result in:

- a reduction in road and vessel traffic in the Yorkeys Knob/Half Moon Bay Marina area on ship visit days. It is expected that vessels and coaches that currently service Yorkeys Knob would be redeployed to service ships berthed at Trinity Wharf
- a reduction in dis-benefits associated with using Yorkeys Knob through a reduction in actual costs and inefficiencies calculated as time cost for passengers
- a reduction in the dis-benefits (actual costs and inefficiencies calculated as time costs) associated with anchoring and unloading a ship at Yorkeys Knob from an estimated $173 400 to an estimated $35 000 (actual costs) if the ship was berthed at Trinity Wharf
- more passengers able to leave the ship and spend money in the local economy providing an improved passenger access and experience and economic benefits to the Cairns region
- more crew able to disembark for shore leave while the ship is docked. This is beneficial to cruise ship operators for the wellbeing of their staff and flexibility for roster/shift changes
- Yorkeys Knob Boating Club no longer receiving payment to facilitate ship-to-shore-to-city transfers
- other users' access to infrastructure at Half Moon Bay Marina, such as the boat ramp and refuelling facilities, will not be affected as frequently.

Overall, there are significant economic and amenity benefits for cruise ship operators and their passengers and amenity benefits for local Yorkeys Knob residents through the removal of traffic from their local roads.

B9.3.11 Wider Economic Benefits

In addition to the direct quantifiable economic benefits at the State level associated with the proposed project, a range of significant, but non-direct benefits have been identified.

These include:

- Additional stimulus to the Cairns tourism economy, with marketing/advertising likely to generate additional spending by visitors to the area.
- Induced investment effects associated with additional future capital investment in facilities adjacent to the cruise ship terminal.
- Benefits to other third party operators: While the analysis has included benefits to some third-party operators, such as tug and pilotage services as well as businesses benefiting from increased passenger and crew spend, there may be other third party benefits not included, such as additional revenues generated from taxis, bus charters and hire car activities for the movement of passengers to/from the cruise ship terminal.
- Additional defence benefits for the Australian Navy with an additional facility for crew and equipment/logistics support along Australia's east coast.
- Reputation and brand awareness of the Cairns: Provision of an increased capacity cruise ship terminal and additional access options for Cairns has the potential to improve the reputation and brand awareness of the region. Improving reputation and brand awareness can increase investment and visitation to Cairns.
- Additional State and local government revenues associated with the operations of the cruise ship terminal. These relate principally to additional land rates and charges for utilities (water, sewerage, power).

Table B9-42 below summarises the potential value added impacts of the channel modification NPV of all the various value added economic benefits from increased expenditure directly associated with the CSDP from 2017 to 2043.

TABLE B9-42 SUMMARISED NPV, ($M 2016-17)

Economic Activity	NPV at 7% Discount Rate
Channel	
CSDP Construction	$91.5
Channel Maintenance	$1.2
Cruise Shipping	
Cruise Shipping Activity	A: Change from Demand Scenario 13 to Scenario 14 $728.6 B: Change from Demand Scenario 5 to Scenario 6 $541.9
Home Porting	$492.2 (lost if home porting to cease)
Cairns Visitation	
Pre & Post Cruise Passenger Activity	$10.1 (Comparison A)
Passenger Return Intention	N/A
Cargo	
Increased Ship Capacity	$5.5
Navy	
Navy Ship Visits	$11.7
Navy Base Expansion	N/A
Wider Regional & State Benefits	
Cruise Shipping Activity	$144.6 (Comparison A)

Source: Appendix AQ.

The total value added to the Cairns economy by the CSDP discounted to $2016-17 yields a NPV at a 7% real discount rate of $848.5 million. This assumes the development of the Brisbane Cruise Terminal and the continuation of home porting. If the Brisbane Cruise Terminal does not proceed, the NPV in terms of total value added to the Cairns economy will be in the order of $661.8 million, discounted to $2016-17 at a 7% real discount rate.

In addition, the CSDP will value add $144.6 million to the wider region / State.

The CSDP will also increase the resilience of home porting in Cairns by accommodating the larger Vista and Grand class ships which are the likely replacements to the current older, smaller sub-regal class ships and thereby secure $492.2 million of value added by this key cruise shipping activity.

The above economic analysis shows that the benefits of the CSDP are extensive for cruise shipping and tourism in Cairns and also extend to the rest of Queensland, the economic efficiency of cargo shipping and to the navy and foreign navies as well.

This section has sought to quantify the projects economic outcomes and determined that the proposed CSDP will have a significant and positive influence on the growth of the Cairns and broader surrounding region. Understanding how the phases of development respond to the pillar economy objectives and other economic indicators is important in terms of measuring the potential of the project.

From an economic development perspective, the jobs and visitation impacts are in direct support of two State Government economic pillars, namely construction and tourism. The focus on international tourism is in alignment with ‘Destination Q’ target to double international tourism.

B9.3.12 Mitigation Strategy

There are a few mitigation measures proposed to manage identified temporary, localised impacts associated with the economic environment. These include:

- Ports North to continue consulting with Port Users - In the lead up to and during dredging activities Ports North will continue to consult with its customers to inform them of upcoming activities and discuss any impact these may have on operations.
- Ports North to continue consulting with commercial fishers – In the lead up to and during dredging activities Ports North will continue to consult with local commercial fishers so that any issues associated with the dredge program and its interaction with commercial fishers can be identified and addressed early.
- Ports North to work with its contractors to encourage local employment and supply opportunities – While jobs created by construction and operation of the project are not Ports North employed positions, Ports North recognises it has a role to play in developing employment, training and supply opportunities for local people. As relevant, Ports North will work with its contractors to develop local employment and training opportunities during construction, focusing on skills development for school leavers, women, Indigenous and unemployed/underemployed. During construction and operation, where relevant, Ports North will also encourage the organisation and its contractors to develop strategies to assess capacity and cost-effectiveness of sourcing goods and services from the regional and wider state economy.

In addition to these measures, Ports North also has a role in ensuring the economic benefits associated with the project are achieved. This involves continuing to work with the cruise industry to promote Cairns for inclusion on operators' itineraries and as a home port option. Ports North would also continue to work with local tourism and economic development bodies to maximise the economic benefits the new shipping infrastructure would bring.

B9.3.13 Conclusions

The CSD Project has been strategically positioned to take advantage of opportunities presented by cruise ship sector growth and respond to the Queensland Governments renewed focus on developing Queensland's strengths in tourism.

The current CSD Project proposal directly facilitates increased tourism opportunities in FNQ and supports the overall growth of the cruise ship sector in Queensland. The proposed CSDP builds upon existing infrastructure providing an expanded major attractor and offering additional marketing opportunities to promote and downstream.

This improved cruise ship infrastructure in Cairns will result in considerable benefits to the local Cairns economy and the Queensland cruise industry. This includes community benefit that extends over and above the significant contributions that will result through Project delivery, which will:

- generate an estimated NPV of $849M total value added to the Cairns economy (2016 to 2043 discounted to $2016-17 at a 7% real discount rate)
- create 802 new direct and indirect jobs during construction
- create over 2730 new direct and indirect jobs upon completion.

The Project will generate substantial economic investment, new jobs and major new infrastructure. Ultimately the CSDP will improve the competitiveness of Cairns and QLD through:

- supporting local employment and growth industries
- increasing the competitiveness of the region over alternate destinations due to an increased capacity to do business
- strengthening the economic resilience of the local economy, via the delivery of a wider distribution of both the location and industry composition of jobs.

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