

CAIRNS SHIPPING DEVELOPMENT PROJECT

Revised Draft Environmental Impact Statement

APPENDIX AR: Economic Assessment (2017)



CAIRNS SHIPPING DEVELOPMENT PROJECT

Economic Assessment

June 2017



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Executive Summary

- i. MacroPlan Dimasi has been commissioned by Ports North undertake of a critical review of the Economic Assessment requirements and provide inputs towards delivery of the revised draft EIS as part of the Cairns Shipping Development Project
- ii. The scope of this report is based on addressing the key project brief requirements, including review of the AEC Economic Analysis Report, and response to the relevant government guidelines and terms of reference.

Review of AEC Economic Analysis

- iii. The AEC report has utilised Input-Output (I-O) modelling to assess the economic impacts on the Cairns economy facilitated by the CSDP. While I-O modelling is often cited as overstating the economic importance of specific sectoral or regional activities, when applied correctly, it does provide key information about both the industry structure of an economy and the potential impacts generated by major projects within it.
- iv. The AEC model is considered to be robust, its data sources to be generally accurate and methodology correctly applied. The AEC model correctly accounts for leakages by adjusting national I-O relationships with regional location quotients (LQs).
- v. Overall, while there are limitations with I-O analysis it is considered that they do not detract from the validity of the insights provided.

Economic Assessment

- vi. The CSDP has been strategically positioned to take advantage of opportunities presented by cruise ship sector growth and respond to the Queensland Government's renewed focus on developing Queensland's strengths in tourism.
- vii. The current CSDP 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.
- viii. 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:
 - o 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);
 - o Create 802 new direct and indirect jobs during construction; and
 - o Create 2,730 new direct and indirect jobs upon completion
- ix. 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:
 - o Supporting local employment and growth industries;
 - o Increasing the competitiveness of the region over alternate destinations due to an increased capacity to do business; and
 - o Strengthening the economic resilience of the local economy, via the delivery of a wider distribution of both the location and industry composition of jobs.

Section 1: Introduction

1.1 Scope

MacroPlan Dimasi has been commissioned by Ports North undertake of a critical review of the Economic Assessment requirements and provide inputs towards delivery of the revised draft EIS as part of the Cairns Shipping Development Project

The scope of this report is based on addressing the key project brief requirements, including review of the AEC Economic Benefits Report, and response to the relevant government guidelines and terms of reference.

1.2 Report Structure

As outlined above this document contains an economic assessment of these various regional trends and projected growth outcomes and provides an overview of the existing regional and local environments and the expected benefits arising from the CSDP.

It comprises the following sections:

Section 2: undertakes a review of the recommendations and assumptions made in the Economic Benefits Report prepared by AEC.

Section 3: provides key inputs towards delivery of the revised draft EIS as part of the Cairns Shipping Development Project, cross-referencing and summarising existing analysis into an omnibus report which addresses the relevant government guidelines and terms of reference

Section 2: Review of Economic Benefits (AEC)

This section undertakes a review of the recommendations and assumptions made in the Economic Benefits Report prepared by AEC. This report includes an assessment of the economic impact and value added net present value (NPV), of the economic benefits flowing from the Cairns Shipping Development Project (CSDP).

2.1 Identification of Costs and Benefits

The proposed development will generate additional industry outputs from a variety of sources. The two major categories of output are outlined below.

Category 1 - Construction

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 industry.

Category 2 – Ongoing On-site Enabled Activity

Development of increased cruise ship capacity will generate induced benefits for the State, through an increased capacity for the region to attract and accommodate additional visitors for increased periods of time. Flow-on effects include additional output, which supports the overall sustainability of local services as well as growth providing additional local employment for residents.

The AEC report has identified the following benefits for the CSDP.

Table 1. Identified Project Benefits (AEC Report)

Category 1	Category 2
<ul style="list-style-type: none"> ○ Construction activity undertaken for the CSDP 	<ul style="list-style-type: none"> ○ Additional operational expenditure to maintain the modified channel. ○ Changes to cruise shipping activity. ○ Home porting of cruise ships. ○ Additional Cairns visitation. ○ Changes to cargo shipping activity. ○ Changes to Navy shipping activity and potential HMAS Cairns expansion. ○ Wider regional and state benefits.

Source: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017

With regards to the identified project benefits within the AEC report, the following comments are made:

- Site acquisition and statutory fees have been correctly excluded from the analysis as they represent transfer payments. Transfer payments should generally not be included in economic impact assessments since there is no net impact on society, with benefits transferred from one group of stakeholders to another.
- Additional Cairns visitation refers to two separate benefit components, including:
 - Pre and Post Cruise Visitation; and
 - Passenger Return Intention Visitation.

Passenger Return intention refers to the benefit gained from passengers returning to a destination due to a positive first time around experience. It has been correctly excluded from the analysis as the actual number of passengers likely to return is impossible to determine with any certainty

The economic impact of passenger return intention is therefore not included further.

The AEC report notes and identifies the following project costs, however are not

included in the assessment of impacts, where only the quantification of economic benefits are used to determine the economic impacts:

- Environmental impacts from additional dredging.
- Dredging and disposal of dredge material.

The economic costs have only been considered in relation to the economic benefits generated by the construction and increased operational activity. This is a common criticism of input-output (I-O) based impact model, where typically any project will generate economic activity, directly and indirectly, given that increased expenditure leads to increased output, and therefore benefits.

2.2 Model Development

To assess the economic impacts to be supported within the Cairns economy by economic activity facilitated by the CSDP, the AEC report as outlined previously has utilised Input-Output modelling.

Input-Output analysis demonstrates inter-industry relationships in an economy, and shows the direct and indirect (flow-on) effects of one sector on other sectors and the general economy. Specifically, AEC state that:

Input-Output techniques provide a solid approach for taking account of the inter-relationships between the various sectors of the economy in the short-term and provide useful insight into the quantum of final demand for goods and services, both directly and indirectly, likely to be generated by a project.

When applied correctly, input-output analysis can provide key information about both the industry structure of an economy.

If applied incorrectly however, input-output analysis can overstate the economic importance of specific sectoral or regional activities, through the incorrect identification of benefits and/or incorrect application of multipliers.

I-O models are also typically based on assumptions related to local supply conditions. Since many of these assumptions can lead to an overstatement of the impacts of a project or program, many consider the estimates as upper bounds. For example that the Queensland State Government within its Project Assessment Framework¹ states that:

Economic impact analysis should generally be restricted to the evaluation of impacts of changes in economic policy (e.g. regulation or tax reform) on economic activity indicators. In these cases, a general equilibrium approach rather than an input-output approach should be used

CGE modelling may produce more rigorous long-term outcomes particularly for large complex projects, consideration of local supply conditions within a regional input-output model will provide insights into both direct and indirect final demand for goods and services generated by a specific project.

The AEC Report does this by utilising multipliers derived from sub-regional transaction tables developed specifically for the project. While these multipliers are not published, the methodology has been outlined as:

1. Use of a parent table, in this case, the 2013-14 Australian transaction table (ABS, 2016a).
2. Develop estimates of gross production (by industry) in the study areas based on the percent contribution to employment (by place of work) of the study areas to the Australian economy (ABS, 2012), and applied to Australian gross output identified in the 2013-14 Australian table.
3. Where appropriate, values were rebased from 2013-14 (as used in the Australian national IO transaction tables) to 2016-17 values using the Consumer Price Index (ABS, 2016b).

¹ Queensland Treasury, Project Assessment Framework Cost Benefit Analysis, July 2015 states:

The basic idea behind these adjustments is that industries in the region are not likely to produce all the intermediate inputs required to produce the change in final demand.

In these cases, local industries must purchase intermediate goods and services from producers outside the region, thereby creating leakages from the local economy.

The AEC methodology correctly accounts for these leakages by adjusting national I-O relationships with regional location quotients (LQs). Typically for most industries, LQs consist of the ratio of an industry's share of regional earnings to the industry's share of national earnings.

2.3 Model Limitations

As outlined in Section 2.2, typical criticism of I-O modelling often relates to its potential overstatement of benefits and failure to consider the opportunity cost of both spending measures and alternate uses of resources.

That said, I-O modelling that includes proper consideration of local supply conditions within the model does provide key insights into both direct and indirect project impacts.

The key limitations of Input-Output analysis are included in the AEC Report and are stated as:

- **Lack of supply-side constraints:** *The most significant limitation of economic impact analysis using Input-Output multipliers is the implicit assumption that the economy has no supply-side constraints so the supply of each good is perfectly elastic. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.*
- **Fixed prices:** *Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using Input-Output multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. The system is in equilibrium at given prices, and*

prices are assumed to be unaffected by policy and any crowding out effects are not captured. This is not the case in an economic system subject to external influences.

- **Fixed ratios for intermediate inputs and production (linear production function):** Economic impact analysis using Input-Output multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. That is, the input function is generally assumed linear and homogenous of degree one (which implies constant returns to scale and no substitution between inputs). As such, impact analysis using Input-Output multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount. Further, it is assumed each commodity (or group of commodities) is supplied by a single industry or sector of production. This implies there is only one method used to produce each commodity and that each sector has only one primary output.
- **No allowance for economies of scope:** The total effect of carrying on several types of production is the sum of the separate effects. This rules out external economies and diseconomies and is known simply as the "additivity assumption". This generally does not reflect real world operations.
- **No allowance for purchasers' marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.

The I-O limitations outlined within the AEC report are accepted however they do not detract from the validity of the insights provided. Specifically, with the subject case, three factors reduce the potential margin for error:

1. The capital costs are relatively small and contained to a small number of industries meaning that input constraints are less likely to be a major issue compared to a project considerably larger and with more complex input requirements;

2. The timeline is not extensive; the majority of the investment outlay is contained over a short-time frame meaning that fixed price and ratio assumption issues are likely to be minimal;
3. The use of location quotients to adjust for regional capacity; While not explicitly catering for supply constraints, the adjustment of national I-O relationships with regional location quotients (LQs) allows for leakages from the local economy.

2.4 Key Model Assumptions

The following section examines each of the major project components identified in the AEC Report and reviews the validity and consistency of the methodology utilised and any data sources or assumptions that have informed the recommendations and findings of the assessment.

Application of Multipliers

The AEC Report defines the following multipliers in its approach:

- *Flow-on impacts, which comprise the second and subsequent round effects of increased purchases by suppliers in response to increased sales. Flow-on impacts can be disaggregated to:*
 - *Industry Support Effects (Type I), 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.*
 - *Household Consumption Effects (Type II), which represent the consumption induced activity from additional household expenditure on goods and services resulting from additional wages and salaries being paid within the economic system.*

The AEC methodology correctly accounts adjustment these multipliers, to account for the fact that local industries in the region are not likely to produce all the intermediate inputs required to produce the change in final demand.

Net Present Value

The AEC Report discounts the total value added impacts within the report to derive a Net Present Value (NPV). The NPV determines the present value of the project by discounting the sum of all benefit flows received from the project.

The report uses real discount rates of 4%, 7% and 10% as per Building Queensland guidelines², which refers to reporting proformas for Infrastructure Australia. These proformas require a central case with a discount rate of seven per cent, as well as sensitivity testing conducted at discount rates of four and ten per cent.

Capital Costs and Construction

Key costings and project specifications assumptions within the AEC Report have been provided by the Proponent (Ports North).

Total capital outlays are estimated at \$120.0M. As mention previously, site acquisition and statutory fees have been excluded from the analysis as they represent transfer payments, meaning that only \$108.7M of the total capital investment is considered to have a direct impact on output.

The total indirect output impact is estimated at \$164.0M, equating to an output multiplier of 1.51 which seems reasonable for a region such as Cairns.

In regard to the employment multiplier, the AEC report states the following:

Even though dredging activity is included in construction services a separate exercise was undertaken for the draft EIS to determine the number of jobs that it would generate. This exercise estimated 1.5 FTEs per \$1 million of

² Building Queensland (2016). Cost Benefit Analysis Guide. Release 2, December 2016

output. This is much lower than the 3.5 FTEs in the construction services sector therefore an additional industry was established for dredging.

This is an appropriate assumption given the relatively low labour intensity associated with dredging activity.

Channel Maintenance

Channel maintenance costings and project specifications assumptions within the AEC Report have been provided by the Proponent (Ports North).

Maintenance costs associated with other components of the CSDP such as wharfs and services upgrades have been included in business as usual and therefore do not require additional expenditure.

The AEC report discounts the total value-added impacts of the channel maintenance to \$2016-17 at a 7% real discount rate, with economic impacts commencing annual from 2021.

Cruise Shipping

The AEC Report identifies two key categories of benefits arising from the increased number of ships berthing at Trinity Wharf will have the following impacts:

- Increased numbers of passengers and crew going ashore and therefore their expenditure.
- Increased cruise line expenditure on port charges, services and supplies and passenger related expenses.

It assesses these benefits against 4 project scenarios, broadly categorised as below:

- Comparison A: With Brisbane Cruise Terminal (BCT) & homeporting:

- o Starting scenario: Scenario 13: No channel modifications & no bunker.
- o Project scenario: Scenario 14: With channel modifications & no bunker.

- Comparison B: Business as Usual (no BCT & homeporting):
 - o Starting scenario: Scenario 5: No channel modifications & no bunker.
 - o Project scenario: Scenario 6: With channel modifications & no bunker.

The projected ship visits outlined in Figures 5.1 and 5.3, are sourced *AEC Group Pty Ltd (2016). Cairns Shipping Development Project 2016 Demand Study Update. Report prepared for Ports North, November 2016*, and make the following observations:

- Scenario 13 and 14 with the Brisbane Cruise Terminal (BCT) have significantly higher volumes of ship visits than Scenarios 5 and 6 which does not include the BCT. Obviously, development of the BCT is projected to benefit the CSDP significantly. The assumptions regarding the BCT growth are based on a comment by the Port of Brisbane that the BCT may *potentially* triple the size of the cruise industry. This underpins the growth assumption with the AEC Demand Study for Brisbane. From this, 30% of ships out of Brisbane have been assumed to visit Cairns.

Regarding the economic impact, the AEC Report applies a similar approach to that used by the Australian Cruise Association (ACA, 2016), where expenditure generated by cruise shipping activity is broken down into the following categories:

- Passenger and crew expenditure in port.
- Port charges.
- Supplies and services supplied to the cruise ship.
- Passenger related charges.
- Cruise line corporate expenditure.

Each of these in terms of key data sources are discussed following:

Passenger and Crew Expenditure in Port

Passenger and Crew Expenditure in Port represent the largest benefit item within the AEC Report, and subsequently data accuracy and reliability is critical.

Data on this expenditure was collected through passenger and crew intercept surveys at Trinity Wharf and Yorkey's Knob by AEC³ for the purposes of informing this study.

A review of the Cruise Ship Passenger Survey, specifically in terms of sample size (407 surveys) and stratification (transiting passengers (75.4%) and crew (24.6%)), indicates that methodology utilised is appropriate and that the survey results will have low relative standard errors and the results will provide accurate insights into the expenditure patterns of crew and passengers.

Port Charges

Port Charges and costing assumptions within the AEC Report have been provided by the Proponent (Ports North).

It has been assumed that there are no increases to Port of Cairns charges due to the channel investment.

Supplies and Services Supplied to the Cruise Ship

Key data source inputs for each of the supplies and services benefits are outlined in Table 2 below:

Table 2. Supplies and Services Supplied to the Cruise Ship - Data Sources

Component	Source
Fuel	Not included in assessment
Store and Provisions	ACA ⁴ and Wikipedia
Water	Port North and ACA
Waste water	ACA

³ AEC, Ports North Cruise Ship Passenger Survey Ports North March 2017

⁴ Australian Cruise Association (2016). Economic Impact of the Australian Cruise Shipping Industry 2015-16. Report prepared by AEC Group Pty. Ltd., September 2016.

Garbage	Port North
Tendering	Cummings ⁵

The report note that where charges are for years prior to 2016-17 an inflation rate of 2.5% per annum is used to inflate to 2016-17 prices. This is a reasonable assumption.

Most data inputs regarding the supplies and servicing within the AEC Report have been provided by the Proponent (Ports North) and/or based on empirical Australian Cruise Association data.

Stores and provision data however has been sourced from Wikipedia. The provisions list has apparently been adapted from the Celebrity Constellation (Pax 1,950 crew 999) for a seven-day cruise to Pacific Eden (1,250 Pax, 600 crew) with pricing has been obtained from North Queensland wholesalers.

The assumption is that for a seven-day turnaround cruise an amount of \$388.44 per head (passenger + crew) has been allowed.

It is possible the list sourced on Wikipedia is a full stock list and that only a proportion of it is consumed on a rolling stock basis.

Passenger related charges.

Passenger related charges include passenger levys, security costs and baggage and handling fees.

All passenger related charges a fee assumptions within the AEC Report have been provided by the Proponent (Ports North) based on current charges.

⁵ Cummings Economics (2014). Cairns Shipping Development EIS: Economic Analysis. Report prepared for Ports North, August 2014.

Cruise line corporate expenditure.

No expenditure component has been allocated to Cairns as most expenditure has been assumed to be located within Sydney and any allocation would be small and have no material impact on the analysis.

Cruise Shipping related activity represents the largest benefit item within the AEC Report for which it presents for three time stamps including 2021, 2025 and 2031. The report does not explicitly state why these time periods are chosen, however it is understood that these relate to the time periods used to project ship visits in the Demand Study.

The report concludes the Cruise Shipping impact section by discounting the total value added impacts of the increase in cruise related activity to \$2016-17 to yields a NPV at a 7% real discount rate of \$728.6 million for Comparison A and \$541.9 million for Comparison B.

Home Porting

Homeporting refers to a port in which a vessel is registered or permanently based. In this instance, the scenario assumed allows for 20 sub-regal class ship home port visits per annum by 2021. In 2016, there were 12 turnaround visits.

This assumption is sourced to the Demand Study undertaken by AEC in 2016 and is broadly based on the application of a 5% cruising penetration rate to the catchment area population. This assumption is considered to be valid, and potentially conservative given additional demand will be generated from beyond the catchment area.

After modification of the channel, it has been assumed that the 20 sub-regal ship visits would be replaced by 16 vista ships.

It is important to note that the homeporting impact is not an additional benefit in the previous scenarios which included homeporting as it will have already been accounted for in the cruise ship activity impacts. The AEC report clearly outlines this and by examining homeporting activity in isolation can assess the potential economic loss if homeporting was to cease.

Regarding the economic impact, the AEC Report applies a similar approach to that used by the Australian Cruise Association (ACA, 2016), where expenditure generated by cruise shipping activity is broken down into the following categories:

- Passenger and crew expenditure in port.
- Port charges.
- Supplies and services supplied to the cruise ship.
- Passenger related charges.
- Cruise line corporate expenditure.

The report concludes the homeporting impact section by discounting the total value added impacts of the increase in cruise related activity to \$2016-17 to yields a NPV at a 7% real discount rate of \$492.2M.

Cairns Visitation

In addition to the on-shore expenditure from passenger and crew, the AEC Report has identified additional or induced visitation to Cairns as an economic benefit. In this regard, additional Cairns visitation refers to two separate benefit components, including:

- o Pre and Post Cruise Visitation; and
- o Passenger Return Intention Visitation.

Pre and Post Cruise ship activity includes the economic benefits generated from pre and post cruise departing or arriving passengers and includes expenditure on retail, accommodation, food and beverage, transport etc. Whilst difficult to quantify this a valid economic benefit. Within the report, AEC have relied upon a survey of arriving and departing passengers undertaken in Sydney to determine that an average of 1.3 additional nights per turnaround passenger is applicable. It

is debatable as to whether data for Sydney is applicable to Cairns given the significant differences in accessibility and tourism product on offer, however the quantum of total benefit is minimal and it is suggested that any variation is likely to result in minimal impact on the validity of the outcome.

Passenger Return intention refers to the benefit gained from passengers returning to a destination due to a positive first time around experience.

The AEC Report refers to its Queensland Cruise Ship Passenger Survey⁶ which asks all passengers excluding current residents the following question:

How likely are you to return to Queensland on another trip in the future?

Based on the results of this question which suggested that 21.8% are likely to return within 1 year and 24.2% are likely to return within 1-2 years to Queensland, the AEC Report has applied a 10% assumption to allow for those who are assumed to return.

AEC have correctly excluded this from the analysis as the actual number of passengers likely to return is impossible to determine with any certainty. The economic impact of passenger return intention is therefore not included further.

Cargo

Channel modification will reduce the time for ships waiting for correct tides to enter the Cairns Port and fewer ships and less load sharing with other ports in total as larger ships carrying more load are able to utilise the Port facilities.

Increased Loads, Fewer Ships

As a result of channel modification, additional load capacities have been calculated for Sugar and Petroleum, and subsequently the reduced number of ship calls required to transport the same aggregate volume.

⁶ AEC Group Pty Ltd (2015) Queensland Cruise Ship Passenger Survey 2014-15 Season. Prepared on behalf of Tourism & Events Queensland and Cruise Down Under.

The economic benefit is calculated as the cost savings including both the running costs per day and the associated port charges.

Increased Load, Less Sharing with Other Ports

Assumes that due to channel modification there may be less sharing of loads between Ports.

The report calculates overall savings from reduced ships and no port savings amounts to \$3.24M in the first year if increased channel modification. The methodology behind this calculation is not immediately clear within the report and would benefit from further explanation.

The report concludes the cargo impact section by discounting the total savings to \$2016-17 to yield a NPV at a 7% real discount rate of \$27.0M.

This has been assessed for the period 2021 to 2043 which is consistent with the home porting analysis.

Navy

The AEC Report identifies three Navy activity related benefits associated with the CSDP, including:

1. Future RAN Activity
2. Future Foreign Navy Activity;
3. Future Expansion of HMAS Cairns.

The future expansion of the HMAS Cairns has not been quantified in terms of total economic impact directly attributable to the CSDP. Given that no clear investment commitment has been made, and the direct attributable benefits remain unclear this an appropriate assumption.

The future RAN activity is related to induced RAN ship visits over and above the ships homeported at HMAS Cairns. The assumption within the report is for one additional visit per annum from a LHD (Landing Helicopter Dock) ship for three

days with a full troop complement and 50% of crew and troops have shore leave permission each day and minimal provisioning.

In regard to future foreign Navy Activity, it is assumed that a US Navy ship visits Cairns for a 3 day visit every 6 years and 50% of crew and troops have shore leave permission each day and minimal provisioning.

These scenarios are highly assumption based given that no indication by the RAN has been made that a LHD will be based in Cairns.

The economic benefits accruing from both RAN and foreign Navy ships based on previous experience may be significant, quantification of these benefits is considered indicative.

The report concludes the Navy analysis by discounting the total value-added impacts of one LHD RAN ship visit per year and one foreign navy ship every six years from 2021 to yield a NPV at a 7% real discount rate of \$11.7 million.

Wider Economic Benefits

While the AEC report assesses the economic impact on Cairns, it also looks at potential wider benefits to the Queensland and Australian Cruise Ship industry.

The specific benefits identified include:

1. An increase in northbound Queensland loop cruises out of Brisbane staying in Cairns for two nights.
2. An increase in southbound cruises out of Cairns from ships home porting in Cairns.
3. An increase in southern repositioning cruises from ships home porting in Cairns.

The southbound cruises (2) and southbound repositioning (3) benefits are not quantified as the cruises are already occurring and would result in double counting.

The economic benefit calculated refers to the growth in cruise ships due to the Cairns channel upgrade resulting in additional calls to Brisbane and at either Whitsundays or Port Douglas. Regarding the economic impact, the AEC Report applies a similar approach to that used by the Australian Cruise Association (ACA, 2016), where expenditure generated by cruise shipping activity is broken down into the following categories:

- Passenger and crew expenditure in port.
- Port charges.
- Supplies and services supplied to the cruise ship.
- Passenger related charges.
- Cruise line corporate expenditure.

A review of these assumptions has been undertaken earlier in this section within the review of Cruise Shipping activity.

Section 3: CSDP Economic Assessment

The following section provides key inputs towards delivery of the revised draft EIS as part of the Cairns Shipping Development Project, cross-referencing and summarising existing analysis into an omnibus report which addresses the relevant government guidelines and terms of reference

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.

3.1 Information Sources

This report has been informed by a wide range of existing reports and studies, including:

1. ABS census data – 2011 Census data has been used to provide information about relevant populations
2. AEC Group (2016) CSDP 2016 Demand Study Update Final Report V07 (June 2016) Appendix
3. AEC Group (2017) CSDP 2016 Economic Analysis Update Working Draft V01(February 2017)
4. Part B Chapter B9 Socio-Economic (Appendix C);
 - a. Economic Analysis 2014 (Cummings Economics, 2014)
 - b. Demand Study Update 2014 (BMT WBM, 2014)

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.

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.

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. Our 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 CDSP 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 CSDP offers additional marketing opportunities to promote the Cairns region which is not available in other locations.

3.3.2 Construction

From 2016 to 2020 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.

3.4 Policy Context and Legislative Framework

3.4.1 Federal

3.4.1.1 Environment Protection and Biodiversity Conservations 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.

3.4.1.2 Great Barrier Reef Marine Park Act 1975

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).

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, 2014).

3.4.2 State

3.4.2.1 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.

3.4.2.2 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.

3.4.2.3 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.

3.4.2.4 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.

3.4.2.5 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

3.4.3 Local Government

3.4.3.1 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.

3.4.3.2 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.

3.4.3.3 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.

3.4.4 Other Relevant Strategic Plans

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

3.4.4.1 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.

3.4.4.2 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.

3.4.4.3 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.

3.4.4.4 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.

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.

Cairns Evolution

Cairns is one of Australia’s largest regional cities and is currently the 9th largest Local Government Area in Queensland.

Table 3. 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.

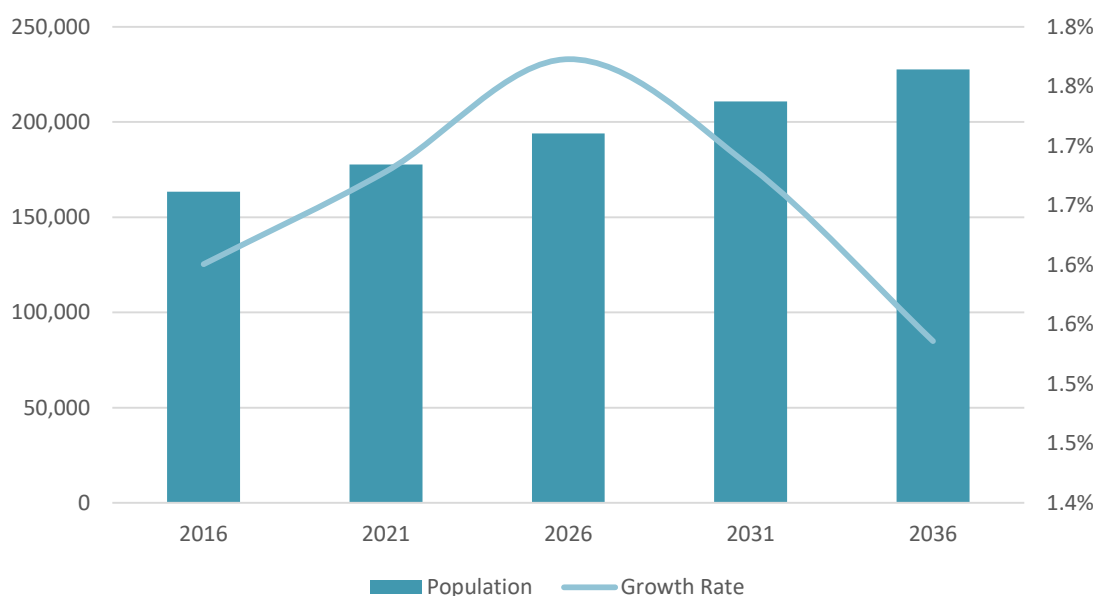
As a major regional centre, Cairns services its population with a range of physical and social infrastructure which includes:

- 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 1. Cairns Population Projection

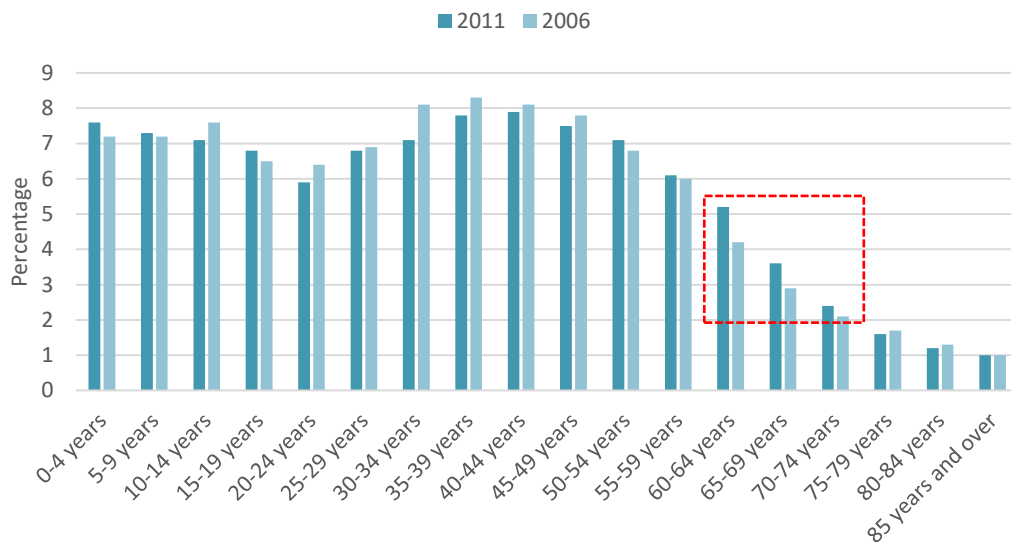


Source: Queensland Government population projections, 2015 edition

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).

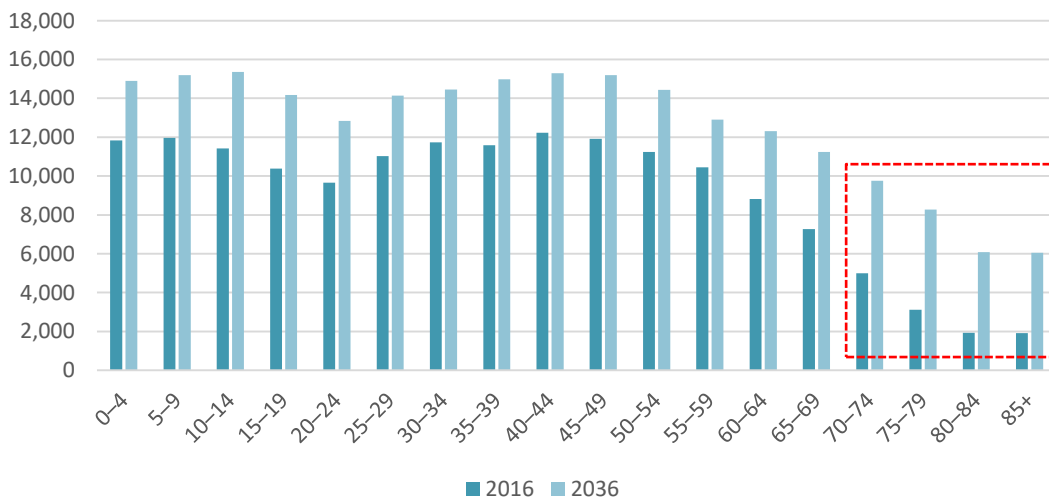
Figure 2. Change in Population Structure



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 3. Cairns Population Forecasts by Age Cohort (2016 - 2036)



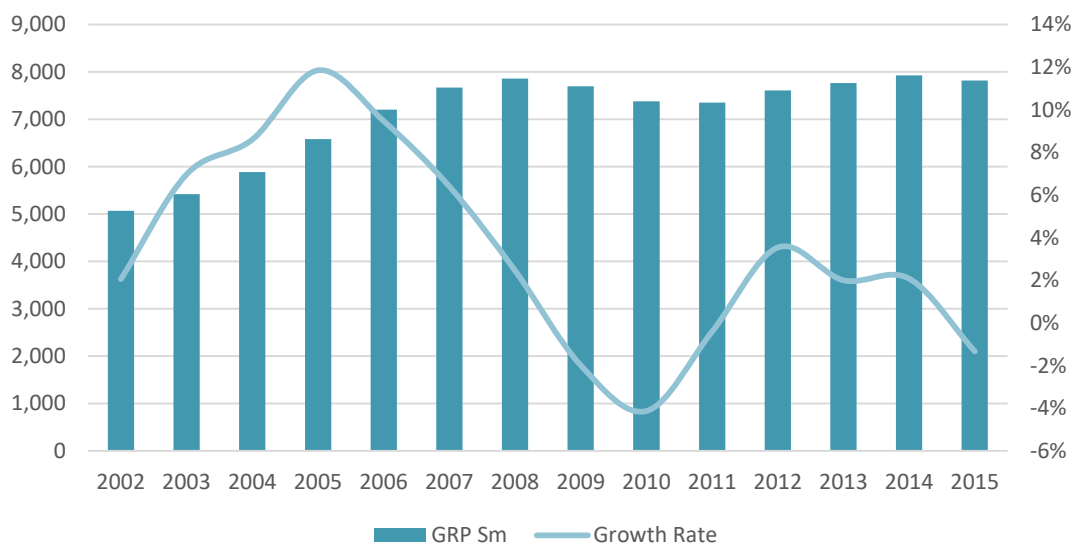
Source: Queensland Government population projections, 2015 edition

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.

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.

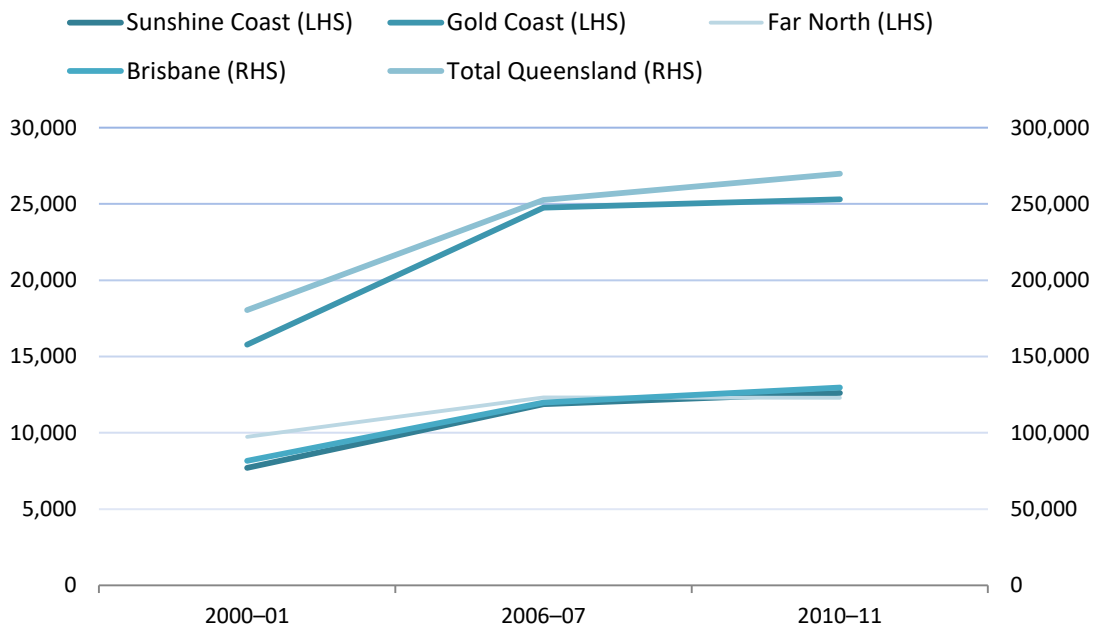
Figure 4. Cairns Gross Regional Product



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 5. Real Gross Regional Product, Chain Volume Measures (\$m)

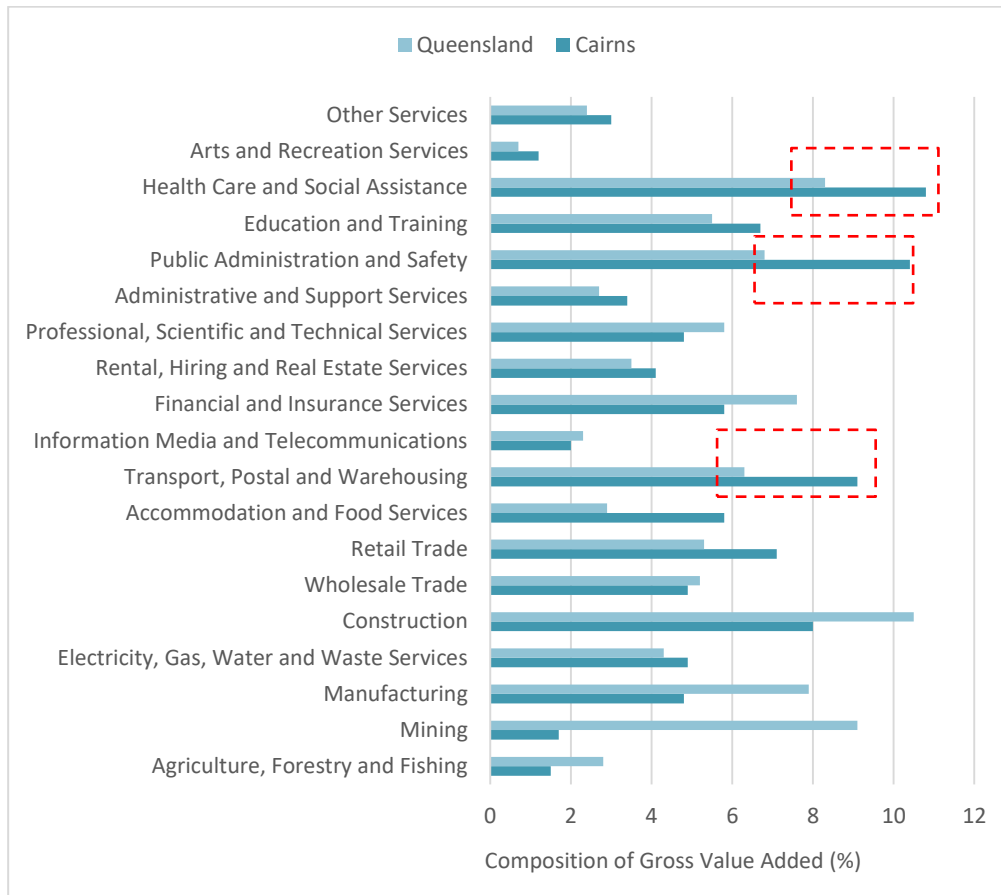


Source: Queensland Treasury and Trade, *Experimental Estimates of Gross Regional Product 2000-01, 2006-07 and 2010-11*

Figure 6 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 6. Composition of Gross Value Added (2014-15)

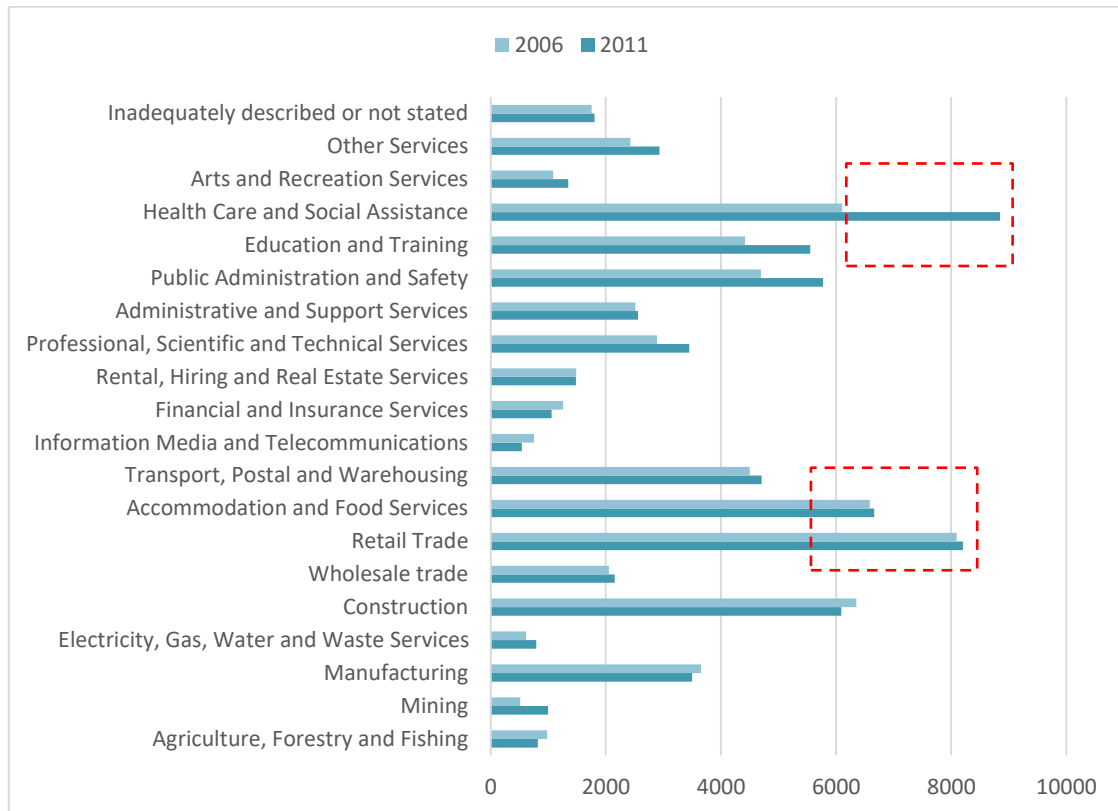


Source: National Institute of Economic and Industry Research

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 7. 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).

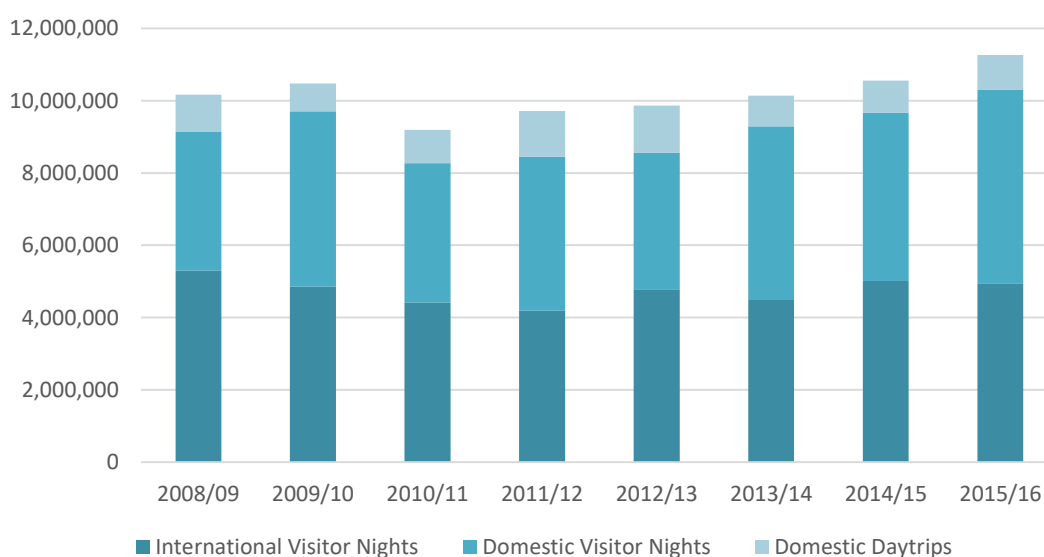
Tourism and a Key Driver

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.

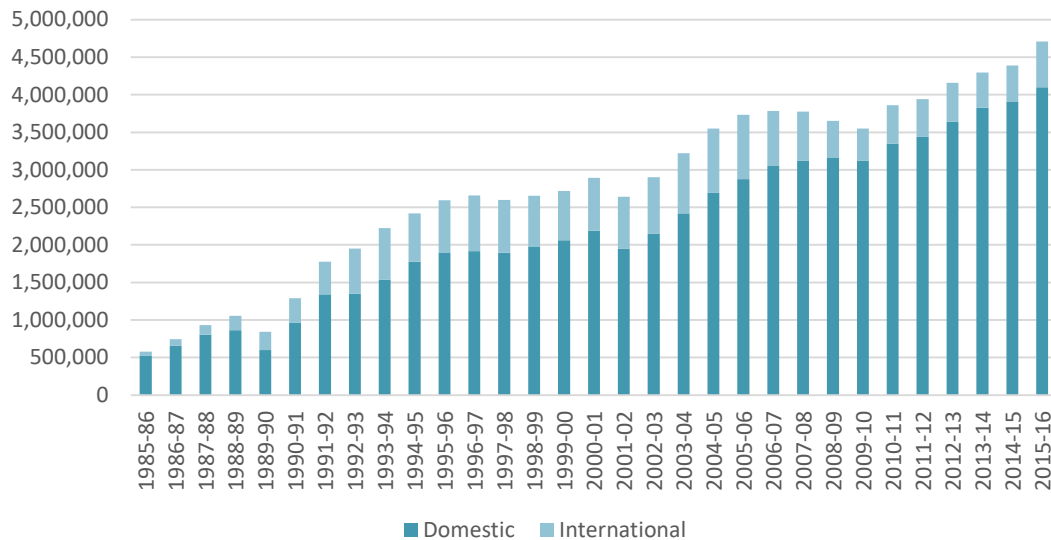
Figure 8. Cairns Tourist Visitation Nights



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 9. 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 CDSP 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 CDSP 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. Our 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.

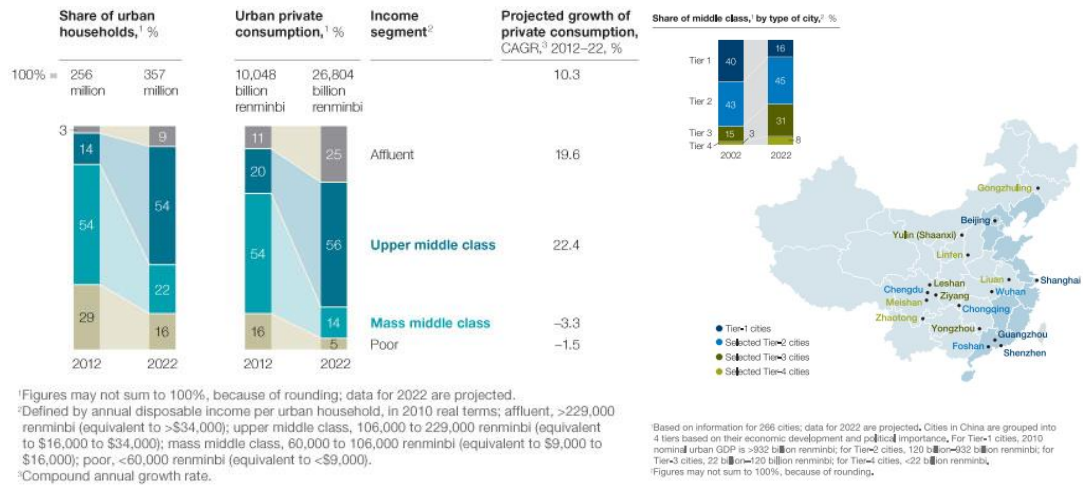
China provides the capacity to continue driving growth in tourism. An expanding middle class with disposable income, and penetration of low cost airlines into China, are combining to generate tourism growth. Chinese tourists are seeking a tailored tourism experience, tending to travel in groups, and 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 CITIC⁷ 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.

⁷ China International Trust and Investment Corporation

Figure 10. 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.

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

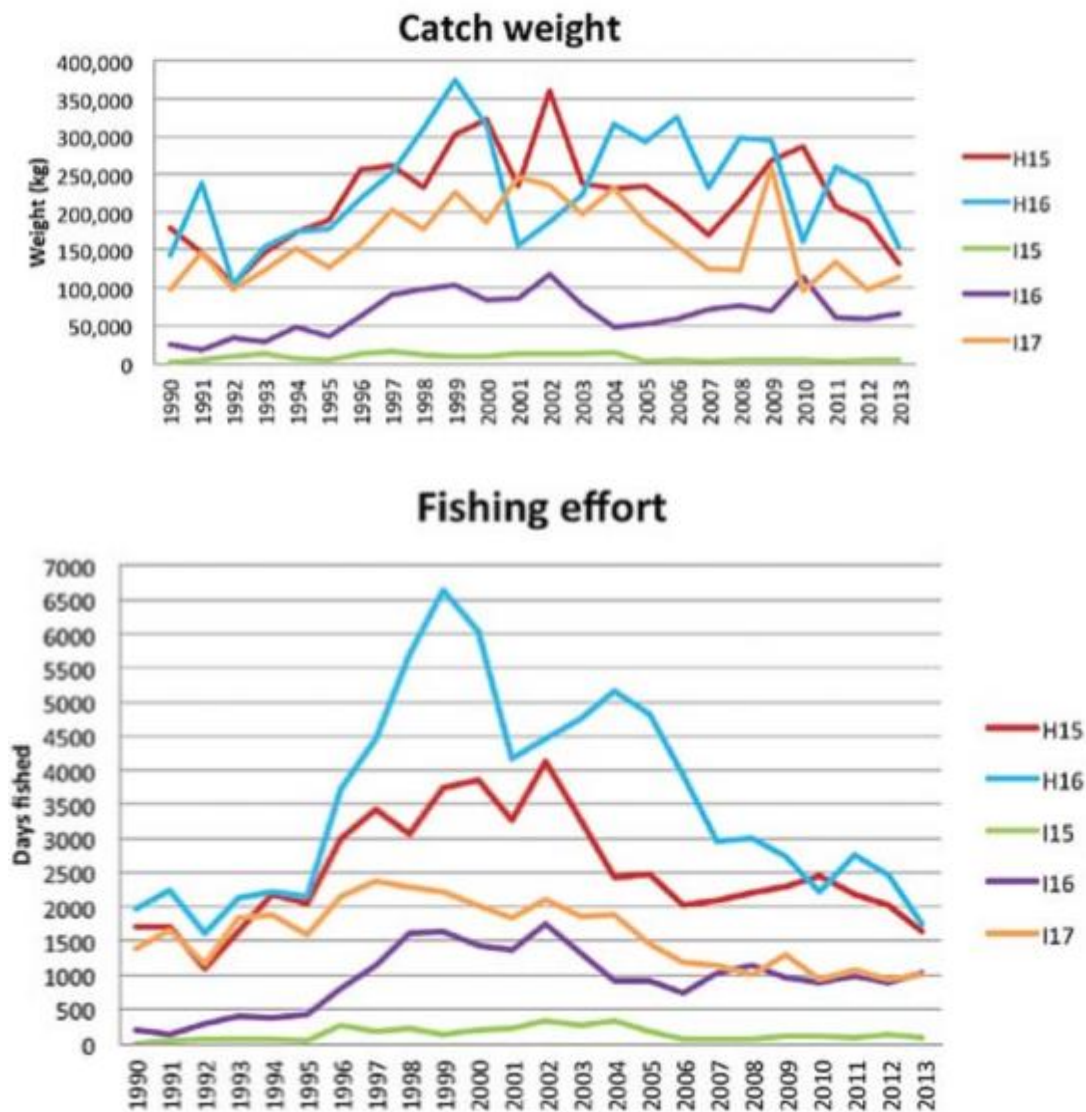
The commercial catch and effort for the primary grid of H16 and the adjacent grids are shown in Figure 11.

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 (Ledee, et al., 2012). 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 (Ledee, et al., 2012). This has resulted in a reduction in the effort and catch volume over time.

Figure 11. Catch Weight (kg) and Fishing Effort (days) by Reporting Grid



Source CSDP Draft EIS 2014; Department of Agriculture, Fishing and Forestry (DAFF) via Fisheries Queensland

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 2,000 attendees, 1,200 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.

At present, there is one company home-ported in Cairns - the small adventure class Coral Princess Cruises that operates cruises out of Cairns and use Cairns as its corporate and maintenance base for cruises conducted in the Kimberley region and the Pacific Island areas (Cummings Economics, 2014). P&O have recently announced plans to base the "Pacific Eden" in Cairns for cruises into the Coral Sea/Pacific area using a passenger ship that can berth at Trinity Wharf. Also, Paul Gaugin cruises commenced using Cairns as a point of embarkation / disembarkation during 2014.

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 CDB 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 2,000 people at a time (Ports North, 2013).

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 • The 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 • Reddin Creek • Tomatis 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 (Queensland Government, 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
- Tingara 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.

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 CSDP will remain a key component of continued economic growth within the region.

3.6 CSDP 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; and
- 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.

Investment Requirements & Development Sequencing

Capital cost estimates for the proposal are summarised in Table 4, with a total cost on completion estimated at \$120.0 million⁸.

Table 4. 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

As outlined the majority (42%) of project costs are associated with channel dredging to facilitate access to Trinity Wharf for vista and grand class ships.

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 targeting completion in 2020, with the bulk (89%) of capital costs to be incurred in 2019. Lead up work including inputs and technical assessments for the EIS have commenced.

Table 5. 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

⁸ Key costings and project specifications have been provided by the Proponent.

The construction and on-going operational phase of the project will create two key impact periods. During the initial Construction Phase (2016-2020) 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.

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 6, a total investment of \$120.0m in development of the project (\$108.7m excluding transfer payments) will in turn support an additional \$164.0M in indirect related output for a total non-escalated output over the 5-year 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 6. 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: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017; MacroPlan

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.

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 7 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 7. 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: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017; MacroPlan

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

Table 8. 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: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017; MacroPlan

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 million⁹.

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.

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

⁹ All value added economic benefits from increased expenditure directly associated with the CSDP from 2016 to 2043. AEC Group (2017) CSDP Economic Analysis Update Working Draft V02;

3.7 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.¹⁰

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 9 and Table 10 following.

Construction Phase

Table 9 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 9. Construction Employment

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

Source: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017; MacroPlan

¹⁰ Discounted to \$2016-17 at a 7% real discount rate from 2016 to 2043.

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 5-year 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.

As outlined in Section 3.5, 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 10 illustrates the distribution and quantum of on-going jobs created and associated with the project.

Based on analysis of sectors of activity, the total number of direct jobs has been estimated in excess of 1,535 FTE's per annum.

Table 10. 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
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Source: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017; MacroPlan

NOTE: Equates to output contributions outlined in Tables 7 and 8.

In addition to this, the flow on activity will create additional demand for a further 1,202 jobs in the economy. In total this equates to more than 2,730 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.

3.8 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 11 based on surveys undertaken by AEC.

As illustrated the major components include:

- Shopping;
- Food and drinks;
- Organised Tours;
- Entertainment/Gambling; and
- Transport

The proportional mix of expenditure varying depending on whether passengers are transiting or turnaround.

Table 11. 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: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017; MacroPlan

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

Tourism

As outlined in Section 3.5, 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.

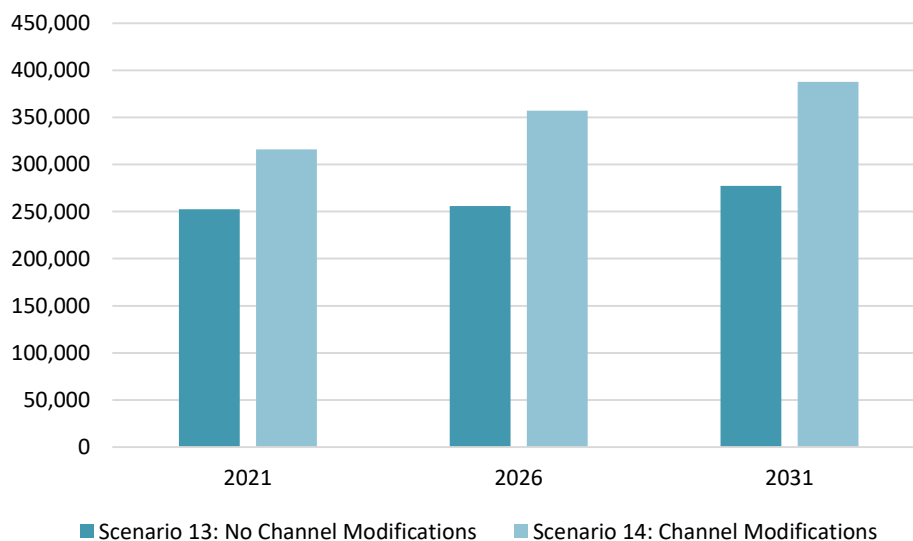
Specifically, the CSDP builds upon the significant existing tourism infrastructure in the Cairns region, providing an expanded major attractor and offering additional marketing opportunities to promote and downstream.

The CSDP facilitates increased tourism benefits in 3 main ways:

1. Increased passenger and crew days in port;
2. Increased visitation pre & post cruise; and
3. Induced returning passengers

As illustrated in Figure 12, by 2031 in Scenario 14, there are an estimated 387,841 projected passenger days in port, and increase of 110,543 over the comparable base case.

Figure 12. Projected Passenger Days in Port (Scenario 13 v 14)



Source: AEC Group (2017) Cairns Shipping Development Project - Economic Analysis Update, Final Report May 2017

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, we do not consider that the CSDP will 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.

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 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 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.

Housing and Accommodation Availability and Affordability

As outlined in Section 3.7, 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 Cairns region and discussed in Section 3.5, we do not foresee any housing supply, demand or pricing issues resulting from the project.

We also note that the Cairns City itself has some 63-established hotel, motel and serviced apartment operators, with over 5,250 rooms and 14,660 beds, which provide sufficient capacity to cater for any short-term construction workforce demand requirements generated by the project.

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 and coach services 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 would reduce significantly. All but the largest cruise ships, such as the Queen Mary 2, would be able to dock at Trinity Wharf. 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

3.9 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; and
- 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)

3.10 Mitigation Strategy

There are a few additional 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.

3.11 Key Findings

The CSDP 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 CSDP 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:

1. Generate an estimated NPV of \$848.5M total value added to the Cairns economy (2016 to 2043 discounted to \$2016-17 at a 7% real discount rate);
2. Create 802 new direct and indirect jobs during construction; and
3. Create 2,730 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; and

- 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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