AQUIS RESORT ENVIRONMENTAL IMPACT STATEMENT: AGENCY SUBMISSIONS AND ISSUES

SEPTEMBER 2014

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ACRONYMS AND ABBREVIATIONS

TERM	MEANING
EIS	Environmental Impact Statement
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
SDPWO Act	*State Development and Public Works Organisation Act 1971* (Qld)
NQA	North Queensland Airports

1 INTRODUCTION

1.1 PURPOSE AND FORMAT

This is one of a set of three reports prepared to inform the Coordinator-General on the nature and content of all community and agency submissions made on the Environmental Impact Statement (EIS) prepared by Aquis Resort at The Great Barrier Reef under the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) for the proposed Aquis Resort at The Great Barrier Reef (Aquis Resort). The Coordinator-General will take all submissions into account when compiling his report on the project. The three reports are:

- Community Submissions and Issues
- Agency Submissions and Issues (**this report**)
- Supplementary Information.

This report deals with government agencies and infrastructure providers. These are treated differently in that:

- community submissions were analysed by theme (i.e. comments on all similar issues were aggregated and assessed together)
- agency and infrastructure provider submissions were analysed individually.

The *Community Submissions and Issues Report* deals with community submissions including those from:

- all private individuals/families
- industry groups
- community, Indigenous, and environment organisations
- companies.

The *Supplementary Information Report* provides details of additional work prepared in response to community and agency issues as raised in the other two reports. It also includes an **Aquis Schedule of Commitments** that lists all further actions that Aquis has agreed to undertake. Most of these were identified in the EIS and are referred to in this report as appropriate. It is expected that, should the application not be refused, the Coordinator-General will include a condition in his report that all matters included in the **Aquis Schedule of Commitments** be actioned by Aquis.

1.2 SOURCES OF SUBMISSIONS

The Office of the Coordinator-General (OCG) provided a spreadsheet based on the Community Space Tool (CST) database and this included all agency and infrastructure provider details and comments. Some variations were:

- when agencies also included an attachment, this was provided separately (in some cases the content of the attachment was transcribed in the CST and in other cases not)
- when submissions were provided independently of the CST (i.e. via email, attached electronic document, or handwritten), OCG dealt with this by first creating a unique submission entry in the CST database and then in one of the following ways:
  - by inserting the text of the submission into the CST database
  - by referring to the attachment
  - both of the above.

In all cases OCG provided a copy of the attachment and the contents included in the analysis.

1.3 SUBMISSIONS RECEIVED

Submissions were received for the following agencies and infrastructure providers. These are dealt with separately from community submissions as the bodies concerned play a special role in the assessment and approvals process and subsequent project implementation.

TABLE 1-1 AGENCY AND INFRASTRUCTURE PROVIDER SUBMISSIONS

NAME	TYPE
1. Air Services Australia	Infrastructure
2. Cairns Regional Council	Agency
3. Department of Aboriginal and Torres Strait Islander Affairs	Agency
4. Department of Agriculture, Fisheries and Forestry	Agency
5. Department of Education, Training and Employment - Infrastructure Services Branch	Agency
6. Department of Education, Training and Employment - Strategic Engagement	Agency
7. Department of Energy and Water Supply	Agency
8. Department of Environment and Heritage Protection	Agency
9. Department of Housing and Public Works	Agency
10. Department of National Parks, Recreation, Sport and Racing	Agency
11. Department of Natural Resources and Mines	Agency
12. Department of State Development, Infrastructure and Planning - Planning Services, Planning and Property Group	Agency
13. Department of State Development, Infrastructure and Planning - Regional Services	Agency
14. Department of State Development, Infrastructure and Planning - Strategic Policy - Organisational Support and Reform	Agency
15. Department of the Environment	Agency
16. Department of Tourism, Major Events, Small Business and the Commonwealth Games	Agency
17. Department of Transport and Main Roads	Agency
18. Ergon Energy	Infrastructure
19. Great Barrier Reef Marine Park Authority	Agency
20. Mareeba Shire Council	Agency
21. North Queensland Airports	Infrastructure
22. Queensland Fire and Emergency Services	Agency
23. Queensland Health - Health Protection Unit	Agency
24. Queensland Health - Tropical Public Health Services	Agency

These submissions are dealt with below in the above (alphabetical) order.

1.4 TYPES OF REPSONSES

The following table is similar to that used in the analysis of community issues except that in the case of agency and infrastructure providers the response is by submission rather than by theme.

Each submission from government agencies or infrastructure providers is analysed below agency by agency as follows.

a) Issues Analysis Table

The basis of each Issues Analysis Table is:

- agency comments are listed verbatim in a point by point format as per the original submission – the first column (Category) refers to the chapter reference or specific agency reference if this was supplied)
- comments are provided by the Aquis consultant team – where the issue can be addressed in a few words this is done in the table, otherwise a reference is made to subsequent discussion
- an action category is assigned as follows (note that it is possible to have more than one action category).

TABLE 1-2 TYPES OF RESPONSES

CATEGORY	RESPONSE / ACTION
1	Issue requires no action (i.e. advice).
2	Issue is addressed by better explanation.
3	Issue requires further work prior to Coordinator-General's decision via the *Supplementary Information Report*
4	Issue requires further work as a condition in the Coordinator-General's Evaluation Report
5	Issue can be managed by a condition in the Coordinator-General's Evaluation Report
6	Issue required to be dealt with under a subsequent approval
7	Issue requires action by others

b) Narrative

The narrative under the table addresses issues as follows for each submission:

- Category 2 responses are dealt with in the table or in the section titled **Discussion**.
- Category 3 responses are dealt with in the section titled **Further Assessment** outlining further investigations/actions that will be documented in the *Supplementary Information Report* (in preparation).
- Category 4, 5 and 6 responses are dealt with in the section titled **Future Action**. As special case of a Cat 5 action is the **Aquis Schedule of Commitments** – this will be included in the *Supplementary Information Report*.

2 DETAILED ASSESSMENT

2.1 AIR SERVICES AUSTRALIA

2.1.1 Issues Analysis

TABLE 2-1 ISSUES ANALYSIS – ASA (84)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 24	1. 'ARFF currently operates to a level capable of covering Code E aircraft' is not a true statement as Cairns ARFF is currently equipped to cover Cat 8 aircraft (B767). Airservices is not currently planning to provide an ARFF capability that would be suitable for Code E aircraft and we do not have the staffing or equipment needed to provide the Cat 9 capability for Code E aircraft.	Advice in EIS was supplied by NQA. See discussion below.		X					
Chapter 24	2. This section states that: 'that a desktop review found that the Aquis Resort as proposed would penetrate the 'area of interest' relative to the Airservices sighting criteria for surveillance system'. **Suggested Solution:** Airservices (as per the requirements outlined in Appendix W of the EIS) will need to conduct an assessment of any possible degradation in our surveillance systems such as the Redden Creek Terminal Area Radar. This assessment should be conducted before the development design is finalised.	Further assessment is warranted under the Aquis Schedule of Commitments.					X	X	
Chapter 24	3. Airservices will be required to assess the impact of any aspect of the development on the operation, safety or integrity of our Air Traffic Control services and procedures, navigation aids, protected airspace, surveillance systems and our communication services at or near Cairns Airport. **Suggested Solution:** Our assessment of any potential impacts can be conducted once the proposed development plans include precise height, location and building material details. We will also need to consider the method of construction and possible impact of cranes during construction. Please note that our formal technical assessment process involves a number of specialist areas within Airservices and the process can take six to eight weeks.	See discussion below. Further assessment is warranted under the Aquis Schedule of Commitments.		X			X	X	
Chapter 24	4. Airservices understands that you have engaged an aviation consultancy group to assist with the development of your plans for this resort. **Suggested Solution:** Airservices would appreciate an opportunity to consult and share information with your consultant during development of the plans and to discuss aviation impact issues including temporary obstacle plans (such as crane activities).	See discussion below. Further assessment is warranted under the Aquis Schedule of Commitments.					X	X	

2.1.2 Discussion

Item 1

Item 1. NQA advised by email dated 21 October 2013 that the Cairns International Airport is designed for Code E aircraft i.e. B747 – 400) and this information has been relied on. NQA further advise that there is an intent to operate Code E aircraft into Cairns Airport into the future.

However, the issue is not significant as NQA will permit whatever aircraft are suitable for its facilities and Aquis has no concerns regarding this.

Items 2-4

CairnsPlan notes that navigational aids (markers, transmitters, beacons and radar) are located at Redden Creek, Machans Beach and Yorkeys Knob. It is a Performance Criteria under CairnsPlan that the project does not create physical obstruction, electrical or electro-magnetic interference and deflection of signals. Specifically, CairnsPlan (A8.1 – 8.10) documents acceptable measures for ensuring that structures do not impair the operation of the aids. However, as stated in the EIS, CairnsPlan does not include the above radar 'area of interest' which extends to 15 km from the radar facility and hence includes most of the Resort Complex Precinct. A8.3 of the *Function of Aviation Facilities* overlay does not extend further than 4000 m from the airport. This anomaly was not noted until late in the EIS process following consultation with ASA.

As stated in the ASA submission, a desktop study was undertaken for the EIS by Aviation & Airspace Design Solutions (AADS 2014). This study discovered that a number of existing penetrations of a greater magnitude than that of the proposed development already exist. These include:

- substantial areas of terrain immediately to the west of the airport and within the Sensitive Zone
- buildings and terrain within the area of interest and associated with the Cairns populous area
- potential shipping associated with that of the Port of Cairns and operations at HMAS Cairns may be of a similar magnitude as the proposed development and to a large extent 'uncontrolled'.

AADS concluded that the radar shadow produced as a result of the Aquis Resort would be experienced at low level and below normal aircraft approach and departure profiles. It was therefore assumed in the EIS that although the shadow may exist, it will have limited impact on normal operations at the airport.

The EIS also noted that the final assessment into any operational impacts as a result of the Aquis development will be subject to Airservices internal assessment.

2.1.3 Further Assessment

None required in support of land use approval.

2.1.4 Future Action

AADS observed that there are already penetrations greater than that potentially involved with Aquis and recommended that further discussion be held with ASA to determine the best course of action, specifically:

- consultation with the service provider be undertaken to clarify the issues
- further design development be done in consultation with both the airport and the service provider so as to achieve the desired outcomes
- orientation and positional data be calculated so as to assess true impact

- develop an accurate assessment of the likely impacts on radar efficiency incorporating stakeholder consultation and technical specifications.

These actions are all consistent with ASA requirements and will be included in the Aquis Schedule of Commitments (Cat 5). Such investigations will address all aviation issues as required to comply with CairnsPlan (Cat 6) and include attention to construction (e.g. cranes) as well as operation phase issues.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with ASA.

2.2 CAIRNS REGIONAL COUNCIL

2.2.1 Issues Analysis

TABLE 2-2 ISSUES ANALYSIS – CAIRNS REGIONAL COUNCIL (215)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Important Macro and Micro Impacts	1. The new workers and their families, in both the construction and operational phases and the significant increase in the numbers of tourists, will have direct impacts on Cairns and the nearby areas in several ways. These impacts will have social consequences, as well as creating infrastructure issues across transport, water, waste water and other areas that are the responsibility of the CRC. But there will be other impacts, for example: • Local businesses are likely to lose staff to the proposed development once it is operating because of the significant scale of the proposed development and its needs. • Shortages in available and affordable housing will cause housing pressures, and increase the price of buying dwellings and renting accommodation • A wide range of cost of living pressures can be expected as the local and regional economies adjust to the changes in prices and availability of goods and services due to the demands for the same items and services by the proposed development • Responding to the accelerated pressures for new housing and accommodation will generate new expectations for increasing the density of residential development across the City and in nearby areas. • It is likely that the full range of the CRC's assets and services will be impacted with increased demands and use.	Refer Future Actions - Workforce Development and Management Plan. Refer Further Assessment- Housing and Accommodation Plan. Refer Further Assessment Infrastructure Planning.			X		X		
Housing the New Workforce	2. A key impact that requires further consideration is that of the housing needs of the workforce required to build and then operate the proposed development. How and where this additional population is housed has significant flow-on impacts for the CRC and for the State. The EIS suggests a construction workforce of up to approximately 3,750 people, while the operational workforce is estimated to be 20,000 people. This latter figure does not take into account the families of those workers, so a conservative estimate would put the total population demanded by the proposed development at around 25-30,000 people – about the size of the city of Gladstone. That population will need to be housed somewhere in the Cairns region, ideally as close to the development as practical.	Refer Further Assessment - Housing and Accommodation Plan.			X		X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	However, it is clear from the CRC's current planning for its draft new planning scheme that there is insufficient land available close to the proponent's site in the current density, level of service and infrastructure are continued in the status quo. An increase in density may satisfy a small portion of the increase, but a wider response is necessary.								
Mitigation Strategies and Plans	3. The Proponent has committed to, but not necessarily specified the outcomes of, a range of strategies, initiatives and plans that are intended to mitigate these impacts. These special initiatives, along with an Infrastructure Agreement and an Aquis Local Plan (a development code) will require commitment, implementation and monitoring if they are to be effective. The CRC considers these impacts are manageable, but will require: • A tripartite Infrastructure Agreement between the Proponent, the CRC and the State which will provide for the coordination of, and the timely delivery of the necessary additional and new infrastructure items and improvements, as well as upgrades to services • A development code (described as the Aquis Local Plan within the EIS), which will set the parameters for the land use and development requirements of the proposed development, and be integrated with the Infrastructure Agreement, and • A suite of special strategies and management plans that will address the specific and particular issues and impacts as a result of the proposed development. With regard to the latter, CRC maintains a position that the Proponent prepares and implements the management plans at no cost to the State or the CRC, or as otherwise appropriate by agreement. These plans include the following: • Community Engagement Plan • Workforce Development and Management Plan • Local Content Plan • Construction Management Plan • Strategic Change Management Plan • Housing and Accommodation Plan • Community Services and Facilities Plan • Community Health and Safety Plan • Cultural Development Plan • Responsible Gaming Plan • Cultural Heritage Management Plan • An Economic Risk Management Plan which is based on an assessment of scenarios where the development fails, or changes its market focus to target the existing markets in the Cairns Region, and an analysis of the impact of the proposed retail and hospitality facilities on the CBD and Cairns' network of activity centres.	Refer Further Assessment and Future Actions.			X		X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	The level of service of community infrastructure throughout all development stages should be equivalent to, or better than, that of the current level, or minimum standard of service provided within the CRC area. Prior to the commencement of construction, the Proponent is to enter into an infrastructure agreement with CRC and the State government to determine the level of service for community planning items listed above.								
Major Bring-Forward Infrastructure Requirements	4. The infrastructure requirements (hard and soft) that such a new population will bring also have major budgetary implications for the CRC. The proposed development will involve the bringing-forward of substantial planned (but not yet programmed / budgeted) infrastructure, bine either or both of upgrades and new services that may have been required at some stage in the future. However it should be noted that these upgrades were certainly not programmed within the 5-8 year proposed development construction timeframe. These and other related external infrastructure issues have been given limited consideration in the EIS, but are fundamental to the proper implementation or a development of this scale. The response within the EIS is generally that with growth comes the ability to implement the external infrastructure networks to make up for an actual or perceived lack of infrastructure to service the cumulative impact of the project. It is considered that while this is one aspect of the growth, infrastructure providers and authorities will benefit from the EIS describing the infrastructure network impact in more detail with respect to the cumulative impacts of the growth rather than the consequential impacts from the proposal only.	Refer Further Assessment and Future Actions.			**X**		**X**		
Recommendations to Progress the Project	5. The CRC recommends: 1. Prior to the CG making a comprehensive and informed decision, the Proponent undertakes the following (and the outcomes are appropriately conditioned): a) Confirm the proposed development statistics and conduct additional analysis of social impacts to confirm the projected population growth, workforce and social infrastructure to support the growing community b) Develop an agreed Housing Strategy based on a rigorous analysis c) Commit to providing any necessary temporary works accommodation facility as a result of the housing strategy that may assist in mitigating any short term impacts on the housing sector, associated social impacts and infrastructure networks	Refer Further Assessment and Future Actions.		**X**			**X**		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	d) Confirm commitments to and plans for appropriate travel management options for employees during both construction and operational phases of the project e) Commit to an Infrastructure Agreement, and ensure agreement is reached on objectives and principles of such by relevant parties, and f) Commit to a development code (nominally the Aquis Local Plan) to an agreed standard with CRC. 2. The CG includes conditions in the evaluation report to: a) Prepare and seek agreement on the committed plans and strategies that are necessary to mitigate impacts of the project b) Undertake the necessary infrastructure improvements to service the project, and as necessary by way of an infrastructure agreement c) Undertake the development in the master plan for the project and the relevant development code. d) Mitigate visual impacts and light spill where possible to minimise any adverse impacts on amenity e) Sequence the staging of development to ensure the casino is constructed during the first stage of development f) Provide a bond to manage the risk of restoration works should they become necessary g) Prepare an isolation plan to integrate the project (during construction and operation phases) with local disaster management plans h) Prepare travel management plans to manage impacts of construction and operational workforces and mitigate impacts by infrastructure improvements and housing responses i) Confirm the details of water and wastewater demand assumptions reached I the EIS, and demonstrate the serviceability of the project, and j) Prepare Environment Management Plans that include details of: (i) Earthworks staging (ii) Acid sulphate soils management (iii) Water quality sampling, objectives and monitoring (iv) Lake design and operations								

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	(v) Any other matters that is relevant to the construction or operational phases of the project that require monitoring, management or corrective actioning. 3. The CG includes directions in the evaluation report to ensure the Proponent provides the following within subsequent development applications a) Any matter raised in the process of addressing conditions or outcomes of the CG's evaluation report b) Demonstration of the concurrent actions under an Infrastructure Agreement to support the development application c) The Aquis Local Plan, and demonstrated compliance with the local plan d) Plans and programs for the upgrading of external works, and e) Mapping and analysis which underpins and provides proof of concept of the proposed design and measures to address flooding, coastal processes, and sea level rise.								

2.2.2 Discussion

Anticipated Population Growth

In 2013 the State Government's Office of Economic and Statistical Research (OESR) produced population projections from 2011 to 2036 for the Cairns Regional Council area which shows the population growing from 150,992 persons in 2011 to 244,088 in 2036.

Planning for such growth is set out the Far North Queensland Regional Plan 2009-2031 (FNQRP) which includes a number of requirements for Cairns Regional Council to accommodate in the preparation of future planning schemes. These include:

- The achievement of higher average densities for residential development.
- The achievement of minimum densities in the remaining 'green field' areas within the urban development areas.
- Planning for a Major Regional Activity Centre at Smithfield to achieve better employment 'self-containment' on the Northern Beaches.

The current planning scheme – CairnsPlan was prepared and adopted in 2005 prior to the gazettal of the FNQRP and consequently does not reflect the regional plan initiatives.

The Draft Cairns Region Planning Scheme (CRPS) has been prepared and informal public notification undertaken by Council in late 2013.

The draft CRPS has been subject to 'State Interest Review' and Public Notice of the draft CRPS will occur in the very near future in order to achieve adoption of the scheme by the end of 2014.

Deloittes – Access Economics modelling indicates that creation of 20,000 direct employment opportunities will result in up to 35,000 indirect jobs.

An economic stimulus such as Aquis will necessarily result in accelerated growth. The population growth as a marginal increase over and above the 'Business as usual – No Aquis 'can be estimated as follows:

- anticipated employment growth of 55,000 jobs (20,000 direct and 35,000 indirect)
- population growth based on a dependency factor of 1.5 (i.e. 2 employed persons support another person not in the workforce)
- 20% of additional employment filled by repatriation of exiting Cairns residents working remote from Cairns, reduced unemployment and increased participation rate by Cairns residents (No population increase)
- 80% of additional employment filled by labour relocating to Cairns (population growth).

Based on these assumed parameters the marginal increase in resident population due to Aquis is estimated to increase by 80 000 persons by 2024 as shown in **Figure 2-2** below.

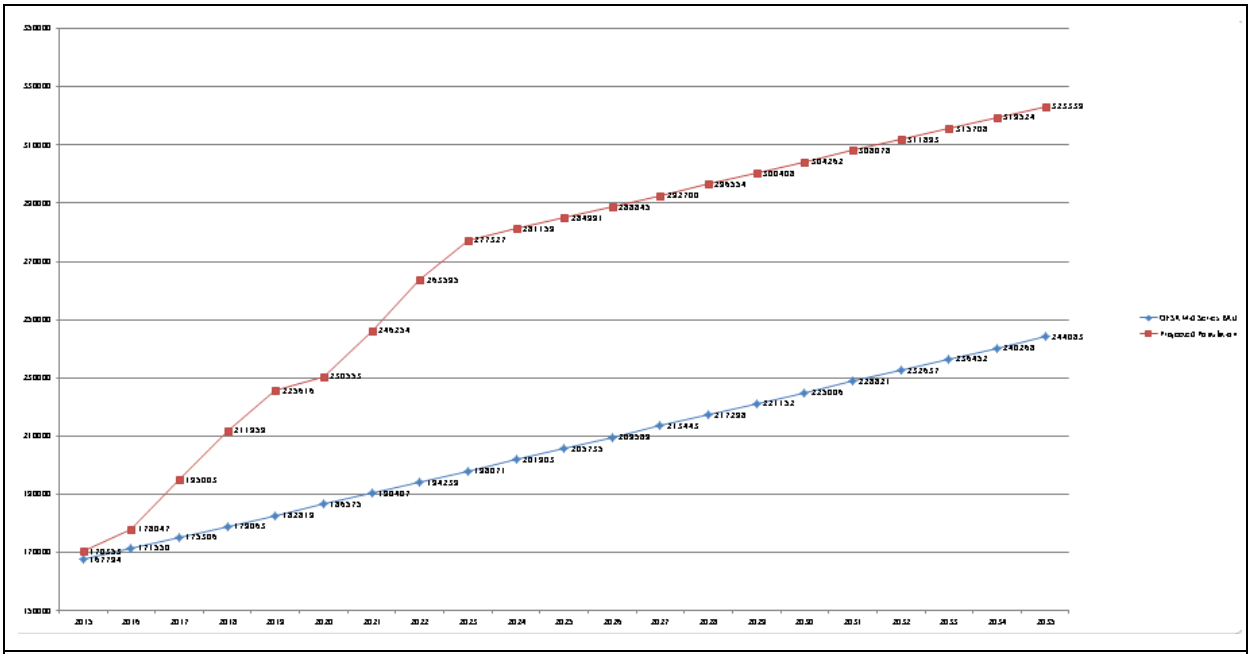

Figure 2-1 Resident population (trend and Aquis).

Aquis will effectively bring forward the predicted population for 2036 (244,000) by population growth to 2022 (14 years). Such a rapid population growth and the location of 20,000 direct employment places at Yorkeys Knob will likely have significant impacts on the Council's planned settlement pattern.

Currently the majority of the residential growth (and employment) is planned to be accommodated in consolidated densification in the central suburbs and around Edmonton as well as in the urban expansion area known as Mt Peter located between Edmonton and Gordonvale to the south.

Given the location of employment north of the city and residential growth south of the city, the creation of travel demand through the southern and central suburbs will expose the existing constrained transport corridors to increased congestion and extended travel delays.

Given the nature of Cairns as a linear city consisting of urban development on a narrow coastal plain between mountain ranges to the west and the Coral Sea and Trinity inlet to the east, there is limited capacity to upgrade transport corridors to accommodate the travel patterns that would result from persisting with the current planned settlement pattern.

Due to the constrained opportunities for upgrade of transport infrastructure to accommodate such travel from south of the city to Yorkeys Knob and the likely desire of Aquis employees to reside within reasonable travel distance from their place of employment, there is likely to be considerable pressure for a substantial increase in housing stock to be available to the north of the CBD of Cairns and on the northern beaches.

Council officers have recognised this potential and have discussed providing incentives to increase densities being provided in existing development approvals currently being implemented on the northern beaches. **Figure 2-2** below shows the location of major development proposals in proximity to the Aquis site.

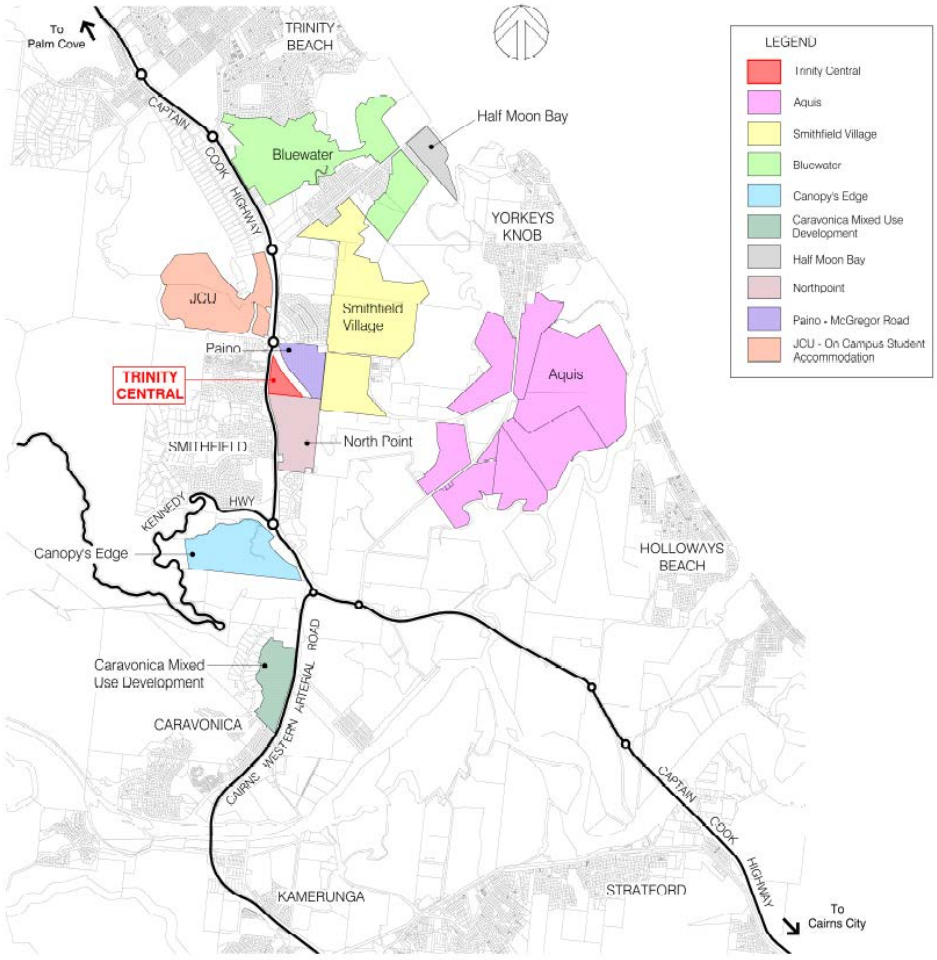

Figure 2-2 Major development proposals in proximity to the Aquis site.

There are limited 'greenfield' opportunities as most of this development is substantially progressed. Consequently there are likely to be a range of redevelopment opportunities in existing urban areas in proximity to or within reasonable travel distances to the Aquis site.

These areas include:

- Yorkeys Knob
- Trinity Park
- Trinity Beach
- Holloway's Beach
- Machans Beach
- Smithfield
- Caravonica
- Kamerunga
- Freshwater
- Stratford
- North Cairns.

The creation of an employment centre at Yorkeys Knob providing 20 000 jobs together with transport corridor constraints through the City will result is a change to the settlement pattern in Cairns. The increase in demand for accommodation within reasonable travel time of the Aquis site will result in substantial increase in housing demand north of Cairns. The Aquis site is located in reasonable proximity to majority of both greenfield and redevelopment opportunities north of the city.

Construction workforce accommodation

The Council concerns regarding temporary accommodation facilities to house the construction workforce appears to based on recent experience with mining/resource projects. As the EIS points out this project differs significantly from such projects. The very large operational workforce (20,000) compared to construction workforce (3,750) is in contract to mining /resource projects which generally feature large construction workforces compared with relatively small operational workforces. The nature of the integrated resort project is that is results in elevated and ongoing demand for housing which stimulates a supply of housing. Mining/resource projects have construction workforce peaks which are relatively short term with a consequent limited sustainable demand for housing supply and even diminished demand for stock that is provided to cater for construction workforces. Hence the housing supply tends to be temporary in the form of relocatable FIFO/DIDO camps.

Recent research by HTW reveals that Cairns has relatively low vacancy rates for both houses (2.1%) and units (2.4%) due to a run-down of stock through suppressed development activity in recent years. The research also indicates that there are potentially 10 700 dwellings (6300 residential lots and 4400 units) there are part of developments that are approved but not yet developed. This indicates that there is a significant supply backlog which is likely to 'unleashed' in the face of market confidence that will be a direct consequence of approval of Aquis. Given that construction direct workforce peak will not occur till 2017-18 there is ample time for the housing supply to rise the meet the potential increase in demand in the short term.

As noted in the EIS it is anticipated that a significant proportion of the construction workforce demands will be met by current Cairns residents working remote form Cairns due to low levels of construction activity local. It is anticipated that these workers will repatriate to Cairns given the increase in construction activity as a consequence of the Aquis approval.

It is acknowledged that upward pressure of house prices and rental rates can be a direct consequence of sluggish supply lagging behind increased demand. Consequently it is proposed to develop a housing and accommodation plan to consider appropriate strategies are pursued to ensure housing supply issues are being addressed in the event that supply does not keep up with growing demand.

Infrastructure provision

Aquis is committed to payment of infrastructure contributions which reflect the relative level of direct demand place on infrastructure networks.

The population forecasts indicate a potential demand for up to 70 000 dwellings in Cairns by 2036 based on forecast growth and the likely population growth as a consequence of the significant economic stimulus resulting for the Aquis capital investment on operational employment opportunities.

Preliminary estimates indicate that such housing development will contribute $1.4billion (at 2014 rates) in Infrastructure Charge for the provision of trunk infrastructure (transport, water supply, sewerage and drainage networks) referred to as hard infrastructure. This estimated to peak at approximately $140 million /year immediate prior to the commencement of operation of stage 1 of the project.

Council's role in planning future provision of community facilities and services is acknowledged. The guests of the resort facilities are unlikely to create any demand for community facilities. It is acknowledged that the economic stimulus provided to the region through the 20 000 direct employment opportunities at full operation together with indirect employment will result in an accelerated growth to the city's and region's population with a consequent increase in demand for community facilities and services. The location of these direct employment opportunities north of the city together with constraints on transport corridors through the city, may result in a redistribution of planned population to northern side of the city. This will impact on Councils current planning for provision of community facilities.

In recognition of these impacts Aquis proposes, in conjunction with service agencies including CRC, to develop a Community Service and Facilities Plan to consider future service provision (including community facilities) to the growing City.

Aquis also proposes a Strategic Growth Management Plan to be developed by multiple agencies including CRC's role as the land use planner, infrastructure (both hard and soft) provider to plan and manage the growth of the city. Aquis considers that CRC, as a key service and facilities provider, will have a vital role in the development and implementation of that plan.

In relation to Council's expectation for a contribution to the expansion of the local community facilities, Chapter 13 of the EIS outlines the substantial contribution that Aquis will make to state government revenue. The expanded resident population will contribute taxes and charges which will also bolster state government revenue from the region as well as providing a substantial expansion of Council's rate and revenue base. The state government and CRC have the responsibility for provision of community facilities and services to the local community. The existing and future population of Cairns are likely to have legitimate expectations that the level of community facilities to be provided to the city would be commensurate with or exceed the minimum acceptable level of service required.

Given the significant contribution to state and local government revenue from its operations and the consequent growth in the city's population, Aquis considers that a condition requiring a contribution for provision of community facilities would not meet the test of being reasonable or relevant.

2.2.3 Further Assessment

Population forecasts

The Aquis consultant team is working collaboratively with Cairns Regional Council, DSDIP and DTR officers to assist with planning for growth and infrastructure planning. Infrastructure planning workshops are considering population forecasts to provide clarity for housing and infrastructure demand projections. It is anticipated that population/demand forecast will be agreed and documented in the *Supplementary Information Report*. These will provide an input to the CoG's Evaluation Report and inform the Cairns Regional Council in its land use, infrastructure and community facilities planning.

Infrastructure Planning

The Aquis consultant team is working collaboratively with Cairns Regional Council, DSDIP and DTR officers to assist with planning for growth and infrastructure planning.

The objectives of the infrastructure workshops are to establish:

- actions required to allow assessment of the direct and cumulative impact of Aquis on infrastructure networks
- 'principles' on which future Infrastructure Agreements would be established.

Impact Assessment

In order to assess the infrastructure impacts of Aquis on infrastructure networks and requirements for and timing for upgrades, it is necessary to test the **direct** and **cumulative** impacts on infrastructure planning as a consequence of the economic stimulus to the region which will result in a more accelerated population growth such that FNQRP 2009-2031 population thresholds are likely to be achieved well before the FNQRP planning horizon.

The following actions have been agreed:

- CRC to undertake threshold based Planning based on a target population on a 'Business as Usual' Basis i.e**. without Aquis scenario**. The objective is to establish what is the infrastructure (transport networks and urban services) required for Cairns urban settlement when it has a population of 250,000 with a settlement pattern and employment distribution consistent with FNQRP 2009-2031 projections. All infrastructure networks are to be planned for the same population threshold.
- Aquis EIS Team to review Aquis direct infrastructure impacts (water supply demand, wastewater generation and transport demands) and clarify assumptions regarding operational issues (shift change time, staffing, staging etc.) mode share, vehicle occupancy etc.
- Aquis and CRC to develop/agree range of possible direct demand/generation outcomes based on 'what if' scenario analysis of operating assumptions.
- Aquis/ CRC to review the threshold based Planning based on a the same target population (250,000) on a **with Aquis scenario.** The objective is to establish what is the infrastructure (transport networks and urban services) required for Cairns urban settlement when it has the same population as baseline with a settlement pattern and employment distribution that may result from the establishment of a large employment generator located north of the CBD at Yorkeys Knob. Land use /settlement pattern/employment may be reviewed as a consequence of corridor constraints i.e. higher 'self-containment' may be required north of the city due to corridor constraints for travel from south.

The outcome would be to compare infrastructure for target population on business as usual basis) with infrastructure for same target population on a with Aquis basis. This will identify the possible redistribution of infrastructure from south to north and may also identify some efficiencies that could result from accelerated growth.

The outcomes of this analysis will be documented in the *Supplementary Information Report.*

Infrastructure Agreements

The broad principles to form the basis for future infrastructure agreements should be based on the Aquis' commitment to paying for external works required to meet the direct demands imposed by Aquis (i.e. connection to networks) and payments of infrastructure charges (where these apply) for the capacity of networks consumed directly by Aquis (likely to be obligations set by conditions) and its reasonable and relevant contribution to cumulative impacts identified by the impact assessment

outcome of the comparative threshold planning assessment. Such contributions may include works required as 'enabling infrastructure' to be in place to suit Aquis' staging/opening.

Any contribution would take into account the benefits and efficiencies that may result as a consequence of redistribution of network elements and accelerated growth.

The infrastructure agreement principles will be documented in the *Supplementary Information Report.*

Aquis Local Plan

The Aquis EIS team is working collaboratively with CRC and DSDIP officers to revise the Aquis Local Plan to incorporate CRC and DSDIP suggestions and amendments and relevant state and CairnsPlan Code provisions to ensure that it is a robust development control instrument for future development applications.

The revised Aquis Local Plan will be reviewed by DSDIP and CRC officers for adequacy and 'in principle' acceptance.

The revised Aquis Local Plan will be included in *Supplementary Information Report*.

Housing and Accommodation Plan

The Aquis EIS team is currently preparing a Housing and Accommodation Plan frame work which will identify:

- Work Scope and Methodology to be used for preparation of the Plan (Existing situation i.e vacancy rates, current approvals, population projections, projected housing demand, supply side constraints)
- Consultation/engagement (CRC, DHPW, REIQ. HIA. MBA, UDIA)
- Housing Supply Strategies/Market interventions
- Monitoring and Reporting.

The population forecasts being developed in Infrastructure workshops will be used to inform housing demand forecasts. These together with the outputs from recent housing supply research will be provided in the *Supplementary Information Report*.

2.2.4 Future Action

It is anticipated that the CoG Evaluation Report will reference the Council endorsed Aquis Local Plan as the appropriate planning instrument against which future code assessable applications will be assessed.

It is further anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitment to enter into Infrastructure Agreements with Cairns Regional Council for the contribution to and construction of trunk infrastructure and connections to networks in accordance with the agreed principles.

It is further anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include commitments to prepare the following suite of Management Plans:

- Community Engagement Plan
- Workforce Development and Management Plan
- Local Content Plan
- Construction Management Plan
- Strategic Change Management Plan
- Housing and Accommodation Plan
- Community Services and Facilities Plan
- Community Health and Safety Plan
- Cultural Development Plan
- Responsible Gaming Plan
- Cultural Heritage Management Plan.

2.3 DEPARTMENT OF ABORIGINAL AND TORRES STRAIT ISLANDER AFFAIRS

2.3.1 Issues Analysis

TABLE 2-3 ISSUES ANALYSIS – DATSIMA (209)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Labour and Skills Shortages	1. In addition to engaging with local Universities, TAFES, NGO's, schools and other community stakeholders, that Aquis partners with DATSIMA with respect to labour and skills shortages where potential employees come from a culturally diverse or an indigenous background.	Noted. Aquis will engage with DATSIMA.	X				X		
Workforce Development and Management Plan	2. That in addition to engaging with DETE, TAFE and construction contractors as key stakeholders, that Aquis also adopts DATSIMA as a key stakeholder with respect to opportunities for indigenous enterprise and employment as well as establishing a code of conduct for the Aquis labour force, including cultural awareness, equal opportunity. Need for Aquis to partner with the Queensland Government's Department of Aboriginal and Torres Strait Islander and Multicultural Affairs (DATSIMA).	Noted. DATSIMA will be included as a key stakeholder in the development of the Workforce Development and Management Plan	X				X		

2.3.2 Discussion

DATSIMA's role is assisting and addressing labour and skill shortages is acknowledged.

2.3.3 Further Assessment

None required for land use approval.

2.3.4 Future Action

DATSIMA will be included as a key stakeholder in the development of the Workforce Development and Management Plan. It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitment to engage with DATSIMA.

2.4 DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY

2.4.1 Issues Analysis

TABLE 2-4 ISSUES ANALYSIS – DAFF (104)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 4	1. s4.7.2, table 4-8, p4-43). Certain approvals required by Fisheries Queensland have been left out of the tables provided. **Suggested Solution:** Any works within a declared Fish Habitat Area will require a Resource Allocation Authority (under the *Fisheries Act 1994)* and a Development Approval under the *Sustainable Planning Act 2009* via SARA. Waterway barrier works are an additional approval (under SPA) likely to be triggered during operational works phase.	Noted. To be added to revised Approvals Register.						X	
Chapter 5	2. (s5.2.1, p5-57 - e) State Planning Policy) Land use change - land suitability assessment and agricultural land classification. **Suggested Solution:** The Proponent should identify Agricultural Land Classification Class A and Class B lands affected by the project. Consistent with the SPP, the Proponent is requested to provide detail on how it will manage development to protect these lands for agricultural use.	No longer current following introduction of RPI Act) – see DNRM	X						
Chapter 5	3. EIS Page numbering Volume 1 Chapter 5. The page numbering from page 2 starts at 5-49. **Suggested Solution:** Is there any information missing or is this just a typographical error?	Noted. Page number is in error (no content is missing and all cross references are correct).	X						
Chapter 7	4. s7.1.13, p7-54 and 7-55. This section does not state that electric ants have been found on the site or their impacts and the need for management and monitoring on the site. **Suggested Solution:** Electric ants pose a significant risk to the area and need to be included in this section. Even if they are eradicated from the site, there will always be a threat of re-introduction especially from movement of materials from overseas.	Covered in Chapter 19 (Biosecurity).							

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 7	5. s7.2.4, p7-69, table 7-12. Proposed rehabilitation of 29 hectares of mangroves. **Suggested Solution:** While this may likely improve the fisheries habitat values locally there is a concern about the number of mangrove propagules required to undertake such a large scale rehabilitation. It would require approximately 580,000 propagules if the whole site was actively rehabilitated. Some of the areas identified for mangrove rehabilitation are not currently tidal. Provide: • Details of what modification to the soil profiles would be required to estimate the success of the rehabilitation. • Details of the proposed large scale rehabilitation would be required for Fisheries Queensland to assess, if it is feasible, given restrictions on collection of propagules within a 100 km radius of the site (in accordance with DAFF policy). Also collection of propagules within a declared Fish Habitat Area (FHA) to rehabilitate areas outside FHAs is not generally supported. • Details of the re-profiling or modification to ground levels to increase tidal flushing will need to be assessed.	To be addressed in detailed design.						X	
Chapter 7	6. s7.1.13, p?-69. Draining aquaculture ponds will require the removal of fish species prior to filling. **Suggested Solution:** Any fish removal will need to be undertaken either by a commercial fisher or by a contractor with a General Fisheries Permit depending on methods used. Refer to Fisheries Queensland for advice regarding approvals required or methodologies involved in the removal of fish stocks from the aquaculture ponds.	Noted. To be added to revised Approvals Register. Investigation in preparation regarding retaining aquaculture ponds.			X			X	
Chapter 10	7. s10.1.2, p10-15. Impacts of lake overflow and discharge on Richters Creek. **Suggested Solution:** It is mentioned that further assessment of impacts to be made during the detailed design stage. Fisheries Queensland requests copies of any design or assessment reports relating to the overflow/discharge channel.	Investigation in preparation regarding flood performance and offshore outlet.			X				
Chapter 11	8. s11.3.1, p11-33, 1 dot point. Lake aerators of propeller pumps. **Suggested Solution:** Fisheries Queensland supports the proposed installation of propeller pumps and aerators in the lake and would recommend that it be a compulsory piece of infrastructure within the lake, to ensure water quality and to maintain suitable dissolved oxygen levels for fisheries resources within the lake.	Noted. Proposed for detail design. Include in Aquis Schedule of Commitments.						X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	9. s11.3.1, Figure 11-14, p11-35. Volumes of water coming out of the lake via the overflow channels into Yorkeys Creek and Richters Creek. **Suggested Solution:** Both creeks may be impacted by flows during flood events. Yorkeys Creek, in particular, is a small creek system and high volumes could have an impact on the stream morphology and vegetation. The Proponent should provide: • details of proposed water volumes expected during flood events to be used by the two overflow channels (Yorkeys Creek and Richters Creek) and velocities expected • details of potential impact to the stream morphology, such as stream bed and bank impacts along with any impacts to vegetation up and downstream from directed high flows into Yorkeys Creek and Richters Creek.	Investigation in preparation regarding flood performance and offshore outlet.			X				
Chapter 11	10. s11.3.1, Figure11-15and 11-16, p11-36 and 11-37. (1) It is described in Figure11-15 and 11-16 that a concrete lined well may be required around the outlet within the creek with no detail. **Suggested Solution:** The Proponent should provide details of the proposed concrete lined well and what impact that may have on sand movement at the mouth of Richters Creek.	Investigation in preparation regarding flood performance and offshore outlet. This will address issue raised.			X				
Chapter 11	11. s11.3.1, Figure11-15and 11-16, p11-36 and 11-37. (2) Inlet and outlet infrastructure maintenance. **Suggested Solution:** The Proponent should provide details on proposed maintenance of the inlet and outlet structures and any potential impacts on fisheries resources either through operational works required with sand removal (if in the current outlet location of Richters Creek) or through direct de-fouling processes.	Maintenance to be addressed in *Lake Management Plan* (Aquis Schedule of Commitments).					X		
Chapter 11	12. s11.3.1 p11-35 to 11-37).Details of intake and discharge structures for the lake. **Suggested Solution:** Details in the EIS on the impact of the intake and discharge pipelines are very limited. Given this aspect is an integral part of the proposed development it is important that all the relevant information is provided for to make a suitable assessment of the proposal. The lake discharge location is within the Yorkeys Creek declared FHA and has important local and regional fisheries values. More details are required to determine impacts of the discharge via the outlet pipes on fisheries resources. The major concern is the erosion of the banks of Richters Creek by the discharge during ebb tides. The Proponent should provide details of the assessment of the velocities and appropriate design responses of the outlets in Richters Creek as part of the detailed design, as described on page 11-36.	Investigation in preparation regarding offshore outlet.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	13. s11.3.1, p11-36. Concerns over the discharge outlet structure locations. **Suggested Solution:** Fisheries Queensland suggests that alternative discharge locations be discussed within the EIS including more offshore locations. Offshore discharge would increase dilution of discharge waters and reduce the potential effects on fish habitats in the current proposed location The Proponent should provide details on alternative discharge outlet locations to what is currently proposed, outlining locations and structure details.	Investigation in preparation regarding offshore outlet.			X				
Chapter 11	14. s11.3.1, p11-40. Inlet pipeline construction. **Suggested Solution:** It is proposed to use a 'cut and cover' approach. This method would cause significant disturbance to the seabed with excess sediment being returned to the seabed on completion. The Proponent should investigate other options to install the intake pipeline with minimal impacts on the seabed and surrounding environments such as directional drilling.	Investigation in preparation regarding construction methodology for offshore inlet and outlet.			X				
Chapter 13	15. s13.5, p13-37. Mitigation strategies for adverse impacts to agriculture. **Suggested Solution:** • How will the Proponent minimise and mitigate any adverse impacts to the current and potential agricultural land use, and the continuity of existing agribusiness operations as viable going concerns (e.g. including cane harvesting and milling businesses) affected by the Project? • How will the Project provide positive flow-on benefits for the agricultural supply chains in and out of the local/regional community?	See discussion below.		X					
Chapter 19	16. The scope of the Biosecurity Chapter does not include the potential for materials to be vectors for the introduction and/or reintroductions of weeds and pests to and from the area. **Suggested Solution:** Consideration of the size and scope of the project and in particular, risks associated with the construction and importation and movement of materials, such as soil, equipment and other materials associated with construction, being moved to and from the site. A comprehensive and correctly implemented biosecurity management plan needs to focus on both movement pathways onto, as well as off, the development to prevent weeds and pests being introduced to the site and the surrounding region, everywhere along the supply route. Bulk materials from overseas presents a high risk.	Noted. To be addressed in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Yellow Crazy Ants (YCA) is a Class 1 species declared pest under the *Land Protection (Pest and* Stock *Route Management) Act (2002),* that are spreading very quickly in the Cairns area and like electric ants, are in the world's top 100 worst invasive species. The majority of the YCA movements in Cairns have been connected to developments and construction materials. YCA will pose a significant movement risk when construction begins.								
Chapter 19	17. s19.1.1, Table 19-1, p19-1. Weed species located on site. Incorrect listing of *Opuntia stricta* as a Class 3 declared species. **Suggested Solution:** • Amend the listing of *Opuntia stricta* from Class 3 to Class 2 declared species. • Amend all other references that refer to it as a Class 3.	Noted. To be addressed in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		
Chapter 19	18. s19.2.3, table 19-5, p19-15. For your information: stocking the lake with barramundi. **Suggested Solution:** Barramundi fry can be purchased from commercial operators and released into the lake, as long as the fish are not to be harvested for commercial purposes. A receipt of purchase will need to be kept to prove purchasing details. Only native species would be supported for stocking of the lake.	Noted. To be addressed in *Lake Management Strategy* (Aquis Schedule of Commitments).					X		
Chapter 20	19. s20.2.1, p20-4 to 20-6. Vector control impacts on fisheries resources. **Suggested Solution:** Vector control such as biting midges and mosquitos. Any spraying of pesticides. into adjacent wetland areas and within declared Fish Habitat Areas should be undertaken in accordance with the *Fish Habitat Area code of practice – The lawful use of physical, pesticide and biological controls in* a *declared Fish Habitat Area FHACoP01 February 2005. The Proponent should* make reference to vector control in accordance with *Fish Habitat Area code of practice - The lawful use of physical, pesticide and biological controls in* a *declared Fish Habitat Area FHACoP01 February 2005.*	Noted. To be addressed in *Insect Vector Management Strategy* (Aquis Schedule of Commitments).					X		
Chapter 23	20. s23.2.4, Table 23-1, p23-11. This section states there is 'very minor potential for weed transport to and from the site' underestimates the risks involved. **Suggested Solution:** Given there will be two million cubic metres (nearly 60,000 loads by 35 cubic metre trucks) of soil moved from the site during construction and over 60 weeds present on the site, the material is likely to contain weeds and could potentially contain electric ants. If not managed effectively these can be spread to areas beyond the project site. The movement of material onto the site during construction presents a significant biosecurity risk.	Noted. To be addressed in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	The Proponent should provide: • An amended appraisal of risk (i.e. elevated) with consideration of the size and scope of the project and associated risks as described above. • Manage the threat of re-introduction of electric ants. The plan needs to include quarantining/surveillance of all high risk materials (as defined in the Plant Protection Act 1989), especially plants/plant materials coming onto the site as this is the predominant method of movement of electric ants.								
Chapter 23	21. s23.3.3, Table 23-2, p23-29. Does not include consideration of the potential for the importation of materials as vectors for the introduction of new weeds and pests to the area. **Suggested Solution:** The scope of the EMP should include consideration of the potential for the importation of materials as vectors for the introduction of new weeds and pests to the area. Additional information: The plan needs to include quarantining/surveillance of all high risk materials (as defined in the *Plant Protection Act 1989),* especially plants/plant materials coming on to the site, as this is the predominant method of movement of electric ants. Electric ants are so small and cryptic that they can easily be missed even when present in high densities. During construction there will also be a chance of illegal dumping of high risk materials (especially green waste) the mitigation of which needs to be incorporated into any plan.	Noted. To be addressed in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		
Chapter 23	22. 23.3.3, Table 23-2, p23-25. Lake Management Strategy. **Suggested Solution:** A more detailed Lake Management Strategy is required during the Development approvals stage, with Fisheries Queensland to assess potential impacts on adjacent fish habitats and declared Fish Habitat Areas.	Noted. To be addressed in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		
Chapter 23	23. s23.3.9, c. Reversible Impacts, p23-18. The section on biosecurity indicates biosecurity impacts as 'reversible.' Biosecurity risks can also be 'unpredictable'. **Suggested Solution:** Indicate 'irreversible' impacts in place of 'reversible' to provide a precautionary approach to biosecurity risk. It is often impractical, not technically or economically feasible and sometimes impossible to reverse the impacts of a pest once it has been introduced. Some examples include Yellow Crazy Ants, Myrtle Rust, Siam Weed and feral pigs. Biosecurity incursions can be 'unpredictable as there is uncertainty about the presence or absence of weeds, pests or other contaminants on or in any given materials or equipment.	Noted. No action proposed as EIS is completed. However, advice will be included in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 23	24. s23.4.5, p23-34. There is no mention of mitigation of the threat of movement of pest animals onto the development during operation and maintenance. The only action stated here is weed control. **Suggested Solution:** A correctly implemented biosecurity management plan needs to be ongoing, to maintain rigorous hygiene and monitoring protocols, to prevent introductions of weeds and pests or reintroductions of pests, such as electric ants, during operation and maintenance.	Noted. Advice will be included in *Weed and Pest Management Strategy* (Aquis Schedule of Commitments).					X		

2.4.2 Discussion

Item 15: Mitigation strategies for adverse impacts to agriculture.

- s13.5, p13-37. Mitigation strategies for adverse impacts to agriculture:
  - How will the Proponent minimise and mitigate any adverse impacts to the current and potential agricultural land use, and the continuity of existing agribusiness operations as viable going concerns (e.g. including cane harvesting and milling businesses) affected by the Project?
  - How will the Project provide positive flow-on benefits for the agricultural supply chains in and out of the local/regional community?

The EIS (s13.4.4) discusses viability of the Mulgrave Central Mill based on information provided during the preparation of the EIS. The Mulgrave Central Mill stated identical issues in its submission on the EIS (189). Aquis considers that the loss of some productive cane land is an unavoidable impact of the project and does not propose to consider compensation. Regarding the second point, although not addressed in the EIS, the expected increase in the regional population as a result of the development will lead to a substantial growth in demand for agricultural produce, although probably not sugar. No further investigations or actions are proposed.

2.4.3 Further Assessment

A number of issues raised are the subject of matters currently under investigation regarding:

- flood behaviour (includes consideration of hydrodynamic and hydraulic effects)
- possible offshore lake outlet
- construction methodology for lake inlet (and possibly outlet)
- possible retention of aquaculture ponds.

These studies will be documented in the *Supplementary Information Report* currently in preparation.

2.4.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with DAFF.

2.5 DEPARTMENT OF EDUCATION, TRAINING AND EMPLOYMENT - INFRASTRUCTURE SERVICES BRANCH

2.5.1 Issues Analysis

TABLE 2-5 ISSUES ANALYSIS – DETE (241)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	1. Although there are no identifiable environmental or construction impacts on the day to day operation of our existing schools, DETE suggests that there is a potential impact from the anticipated increase in the local population, which may create enrolment pressure across the local network of schools.	Noted.	X						
Chapter 14	2. We note that the EIS report identifies a probable increase in the local student population and welcomes the commitment from the proponent to collaborate regarding the need for increased investment in human services, such as schools.	Education requirements will be included in the Community Services and Facilities Plan					X		
Chapter 14	3. It is also acknowledged that the EIS provides an assurance that the proponent will develop a Community Services and Facilities Plan to support the provision of service needs as a result of the expected population increase. We welcome the opportunity to work with the proponent in the progression of this plan, including any analysis of relevant demographic modelling, to determine the impact on our local school facilities resulting from this Resort development.	DETE will be included as a key Stakeholder in the development and implementation of the Community Services and Facilities Plan	X						
Chapter 14	4. DETE would expect, as a condition of the project, a co-contribution to the expansion of the local school network, where enrolment pressure is linked to the population growth generated by the project.	Refer Discussion.		X			X		

2.5.2 Discussion

DETE's role in planning future provision of educational facilities is acknowledged. The guests of the resort facilities are unlikely to create any demand for primary or secondary education facilities. It is acknowledged that the economic stimulus provided to the region through the 20,000 direct employment opportunities at full operation together with indirect employment will result in an accelerated growth to the city's and region's population with a consequent increase in demand for education facilities. The location of these direct employment opportunities north of the city together with constraints on transport corridors through the city may result in a redistribution of planned population to northern side of the city. This will impact on DETE's current planning for provision of education facilities.

In recognition of these impacts Aquis proposes, in conjunction with service agencies including DETE, to develop a Community Service and Facilities Plan to consider future service provision (including education facilities) to the growing City.

Aquis also proposes a Strategic Growth Management Plan to be developed by multiple agencies including land use planning, infrastructure providers and service agencies to plan and manage the growth of the city. Aquis considers that DETE, as a key service and facilities provider, will have a vital role in the development and implementation of that plan.

In relation to DETE's expectation for a co- contribution to the expansion of the local school network, Chapter 13 of the EIS outlines the substantial contribution that Aquis will make to state government revenue. The state government has the responsibility for provision of education facilities to the local community. The expanded resident population will contribute taxes and charges which will also bolster state government revenue from the region. The existing and future population of Cairns are likely to have legitimate expectations that the level of education facilities to be provided to the city would be commensurate with or exceed the minimum acceptable level of service required.

Given the significant contribution to state government revenue from its operations, Aquis considers that a condition requiring a co-contribution for provision of education facilities would not meet the test of being reasonable or relevant.

2.5.3 Further Assessment

None required for land use approval.

2.5.4 Future Action

Population projections and consequent demand for services and facilities will be an initial task in the development of Community Service and Facilities Plan and the Strategic Growth Management Plan. It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitment to prepare the Community Service and Facilities Plan and the Strategic Growth Management Plan with DTE identified as a key stakeholder in each.

2.6 DEPARTMENT OF EDUCATION, TRAINING AND EMPLOYMENT - STRATEGIC ENGAGEMENT

2.6.1 Issues Analysis

TABLE 2-6 ISSUES ANALYSIS – DETE (242)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Workforce Development Plan	1. DETE requires that Aquis consult with them in the development of the Workforce Development Plan.	Noted.					X		

2.6.2 Discussion

DETE's role is addressing skill shortages is acknowledged.

2.6.3 Further Assessment

None required for land use approval.

2.6.1 Future Action

DETE will be included as a key stakeholder in the development of the Workforce Development and Management Plan. It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitment to prepare the Workforce Development Plan and engage with DETE as a key stakeholder.

2.7 DEPARTMENT OF ENERGY AND WATER SUPPLY

2.7.1 Issues Analysis

TABLE 2-7 ISSUES ANALYSIS – DEWS (252)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Section 25.1.1	1. The 'Safe Yield' of raw water sourced from Behana Creek and Copperlode Falls Dam is defines as 28,283 ML/a in the EIS. The Overall Water Supply Strategy for Cairns planning report referenced by the EIS defines the 'adopted safe yield' as 26,010 ML/a. **Suggested Solution:** Correct the 'adopted safe yield' to 26,010 ML/a, including its use in subsequent graphics to reflect the referenced report.	Noted. Correction does not materially affect the assessment.	X						
Section 25.1.1	2. The safe yield is the threshold where there is no probability of the dam volume falling below 40% of capacity. **Suggested Solution:** CRC's 2009 report says this is the HNFY on a 1929 to 2003 dataset. The comment should be edited to reflect this.	Noted. Inclusion will not materially affect the assessment.	X						
Section 25.1.1	3. The volumes available from the Mulgrave Aquifer and the Barron River are not assessed against the reliability of supply in the same manner as the existing Behana Creek and Copperlode Falls Dam system. **Suggested solution:** The volumes available from these supply sources be given with an indication of reliability (i.e. the volume of water available with no probability of failure).	Noted. Inclusion will not materially affect the assessment.	X						
Section 25.1.1	4. The safe yield is the threshold where there is no probability of the dam volume falling below 40% of capacity. **Suggested solution:** CRC's 2009 report says this is the HNFY on a 1929 to 2003 dataset. The comment should be edited to reflect this.	Noted. Inclusion will not materially affect the assessment.	X						
Section 25.1.1	5. The volumes available from the Mulgrave Aquifer and the Barron River are not assessed against the reliability of supply in the same manner as the existing Behana Creek and Copperlode Falls Dam system. **Suggested solution:** The volumes available from these supply sources be given with an indication of reliability (i.e. the volume of water available with no probability of failure).	Noted. Inclusion will not materially affect the assessment.	X						

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Section 25.1.1	6. Potential early development of Southern WTP, Kamerunga WTP, Mulgrave Aquifer and Barron River due to Aquis Development. **Suggested solution:** Aquis proponents to work with Cairns Regional Council to deliver additional bulk water supply and treatment capacity attributable to Aquis development.	Refer Further Assessment.			X				
Section 25.1.1	7. Potential early purchase of additional entitlement from the Mareeba Dimbulah Water Supply Scheme due to Aquis development. **Suggested solution:** Aquis proponents to work with Cairns Regional Council and relevant stakeholders to deliver additional water entitlement needed.	Refer Further Assessment.			X				
Section 25.1.1, Table 25-3 and Section 25.1.3, Table 25-6	8. Table refers to Tunnel Hill WTP. This should be referring to the Freshwater WTP. **Suggested solution:** Replace Tunnel Hill WTP with Freshwater WTP.	Noted. Correction does not materially affect the assessment	X						
Section 25.1.2	9. No quantifiable justification has been given for the reduction in total water use from 18.4 ML/d (using EP method) to 8.01 ML/d (using first principles method). **Suggested solution:** EIS to include quantifiable justification of discrepancy between 18.4 ML/d and 8.04 ML/d.	The 18.4 ML/D using the EP method is acknowledged as an error (should be approximately 10 ML/day). Refer Further Assessment.			X				
Section 25.1.2	10. Construction workers average water demand of 38 L/d is well below average per capita water use for Cairns. Most likely it does not take into account water use outside of work hours. **Suggested solution:** EIS to consider total water use for construction workers.	The construction workers water demand is based on what they will use while working on site. As discussed below.			X				
Section 25.1.2	11. Reference to onsite capture and reuse of rainwater without quantification. **Suggested solution:** Provide quantity of anticipated rainwater reuse in peak season average day (ML/d) format.	Refer Discussion.		X			X	X	
Section 25.1.3	12. The acronym 'EDU' is not included in Appendix B – Acronyms and Abbreviations. **Suggested solution:** Include 'EDU' along with an appropriate definition in Appendix B – Acronyms and Abbreviations.	Noted. Inclusion will not materially affect the assessment	X						

2.7.2 Discussion

Item s6, 7, 9, and 10

The Cairns Water Security Panel is currently reviewing new sources of raw water supply including the Mulgrave Aquifer and Barron River sources. This will inform the source reliability and implementation strategy for new sources with and without Aquis. The outcomes of this review will inform downstream decision making processes beyond the COG decision on this proposal.

Aquis proposes a Strategic Growth Management Plan to be developed by multiple agencies including CRC (land use planning, water infrastructure providers) and DNRM, DEWS and service agencies to plan and manage the growth of the city. Raw water supply will be a key consideration in the development and implementation of that plan.

Item 11

Rainwater capture and reuse is subject to the development of design, (areas of impermeable surfaces etc.).The EIS includes a commitment for best practice including priority for utilisation of captured rainwater. Details of rainwater reuse will be provided in subsequent Applications for Development permits (MCU Code assessable).

2.7.3 Further Assessment

The Aquis consultant team is working actively with Cairns Regional Council to assist with planning for raw water supply. Infrastructure planning workshops are considering population forecasts to provide clarity of water demand projections. It is anticipated that population/demand forecast will be agreed and documented in the *Supplementary Information Report*. These will provide an input to the COG's Evaluation Report and inform the Cairns Water Security Panel.

The water use for workers is included in the resident population forecasts.

First principles analysis of water demand for Resort guests have been clarified with CRC Water and Waste as part of the infrastructure workshops.

2.7.4 Future Action

Details of rainwater collection and reuse will be included in the supporting information to future MCU (Code assessable) applications for Development permits

Population projections and consequent demand for services and facilities will be an initial task in the development of Community Service and Facilities Plan and the Strategic Growth Management Plan.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include commitment to:

- Prepare the Strategic Growth Management Plan with CRC, DNRM and DEWS identified as a key stakeholders.
- Adoption of best practice rainwater capture and reuse in the design and operation of the resort

2.8 DEPARTMENT OF ENVIRONMENT AND HERITAGE PROTECTION

2.8.1 Issues Analysis

TABLE 2-8 ISSUES ANALYSIS – DEHP (253)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	1. Biological quality of the flood mitigation lake was not described in this section. While water chemistry and chemical contaminant considerations have been addressed, potential impacts on biological quality was not addressed, such as control of biofouling (e.g. bivalve or coral growth) of the seawater transfer pipeline and lake, as well as transportation of nonthreatening or potentially harmful offshore organisms to the lake, and potentially, to an estuarine environment. A 'Fauna Management Strategy' was cited as dot point 5 in the strategies list, but there has been no specific mention of biological quality considerations under Section 11, Water quality. **Suggested Solution:** Provided information on the biological water quality risk, concerns and mitigation measures of the proposed flood mitigation lake.	Biological aspects of lake and exchange pipework to be addressed in *Lake Management Plan* (Aquis Schedule of Commitments).					X		
Chapter 11	2. The proposed pipeline intake structure is part of the revised design of the project. For the proposed pipeline route, the sampling of vertebrates and larger invertebrates undertaken was not consistent with sampling intensity required for waterway and terrestrial surveys as per requirement of the TOR, sections 2.3, 2.4, 7.14(b). **Suggested Solution:** Undertake adequate fauna sampling for the proposed pipeline route in accordance with the TOR, sections 2.3, 2.4, 7.14(b)). The data presented should also provide enough evidence to show that the proposed pipeline alignment was located to avoid significant impacts on flora and fauna habitat.	Investigations in preparation regarding inlet pipeline construction methodology and possible offshore outlet. Surveys as needed will be undertaken in support of marine parks permit.			X			X	
Chapter 7 (and 22)	3. The EIS rejects the potential for dolphins to be present in the project area on the basis of water depth. This may not be the case. Refer to the GBRMPA Vulnerability Assessment of the Great Barrier Reef: Indo-Pacific (inshore) Bottlenose Dolphin (2012). **Suggested Solution:** The likely presence of dolphins (and the likelihood of any impacts) should be assessed prior to submitting a development application.	Investigations in preparation regarding various marine species.			X				
Chapter 15	4. Conclusions made in this section are not supported by the description of possible impacts of contaminants and the lack of specific proposed avoidance and mitigation measures. **Suggested Solution:** Provide clear commitments to the preparation and delivery of management plans for dealing with contaminants	Contaminants to be addressed as an element of the EMP (Construction) to be included in the Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	5. The EIS states: 'the sediments proposed to be disturbed during construction of the inlet and outlet pipelines are tested for contaminants prior to disturbance, and appropriate management measures are implemented according to the results'. However, this subsection does not provide characteristics of the dredge spoil. It also does not identify the likely 'mitigation' measures to be adopted to minimise dredging-associated impacts, and the likely or available 'management' options for reuse or disposal of dredge spoil. **Suggested Solution:** Provide a (Sediment) Sampling and Analysis Plan (SAP) as described under the *National Assessment Guidelines for Dredging* (DEWHA, 2008), and describe the mitigation measures likely to be employed to minimise dredging-associated impacts, and the likely management options available for the reuse or disposal of dredge spoil.	Investigations in preparation regarding inlet pipeline construction methodology and possible offshore outlet. SAP will be undertaken in support of marine parks permit. No offshore dumping is proposed			X		X		
Chapter 7	6. The removal of tidal gates can fundamentally shift the flow dynamics in the affected waterways. This could have significant implications upon efforts to establish baseline water quality values, and the subsequent assessments that depend upon those baseline values. The design of monitoring programs should be cognisant of the potential implications of the action, e.g. shifting baselines can extend the length of time needed for a water quality monitoring program and may have implications for end-of-pipe lake water quality assessment criteria. **Suggested Solution:** Provide monitoring programs that establish local baseline values that would accommodate the changes due to tidal gate removal on aquatic biodiversity values.	Investigations in preparation regarding monitoring program – to include assessment of tide gate removal issues.			X				
Appendix F	7. In the methods section of a technical report it is insufficient to state that 'All sampling was in accordance with the Monitoring and Sampling Manual 2009 (DERM 2010a)'. A full description of the sampling methodology applied in the field surveys for water and sediment quality sampling is required. **Suggested Solution:** Provide a full description of the field sampling methodologies used for water and sediment quality sampling.	Not considered necessary for land use or subsequent approvals.	X						
Appendix F	8. That maps presented in the EIS are not current and are not up-to-date with the current design of the development. **Suggested Solution:** Maps (figures) that are consistent with the current design of the proposed development should be provided particularly were identified impacts are likely to be significantly affected. Implications for the impact and management of the project due to project changes should be identified and described.	Not considered necessary for land use or subsequent approvals.	X						

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Appendix F	9. There is a recommendation in the specialist report to survey and translocate native fish from 'onsite waterbodies' prior to the water body's removal. This mitigation approach may address some of the concerns surrounding habitat loss and environmental harm, e.g. from the loss of the disused aquaculture ponds. However, the proposed recommendation from the specialist report was not transferred into the EIS, leaving it unclear if the recommendation would be implemented. **Suggested Solution:** It is recommended that the proponent clearly indicate which recommendations and commitments will be adopted as part of the project proposal.	Investigations in preparation regarding future of aquaculture ponds– to include consideration of the issue raised. Outcome to be included in Aquis Schedule of Commitments.			X		X		
Chapter 11	10. The EIS states that a 2km intake pipe would run between the proposed developments, artificial lake and Yorkeys Knob Beach. The vulnerability of the intake pipeline to river mouth and bar changes has not been assessed. **Suggested Solution:** Address potential impacts from the proposed intake pipeline and associated infrastructure to the river mouth and bar changes as per TOR requirements, sections 7.37(d), 7.42, 7.44. The assessment should include the management of infrastructure proposed for this unstable zone, where large 'events' take place including erosion, accretion and mouth changes.	Investigations in preparation regarding options for outlet pipeline and river erosion issues for all lake exchange infrastructure.			X				
Chapter 11	11. Seawater outlet structures would be located at the mouth of Richters Creek. Onshore pumping assets (station/inlet sump and valve room) and the discharge diffusers are indicated on the map at the creek mouth and, for the assets, close to the creek edge. EHP notes that the mouth of the creek is among the most active sections of the local coastline. The structures would be in the zone of historical creek mouth movement by channel migration and spit growth. Both processes pose medium to long term risks to the pumping and discharge assets from both erosion and burial of the subaqueous diffusers by sand accumulation. This has potential consequences for lake water quality management. Justification for the proposed alignment is lacking within the EIS as required in the TOR, section 7.42. **Suggested Solution:** While assets can be actively managed with erosion protection works and dredging, alternative options should be considered including: • relocation of the pumping assets further inland; with pipes buried to -2m LAT should be immune to these coastal processes • relocation of the diffusers to a more effective location outside the active coastal zone • optimising environmental impacts of the installation and operation of the structures.	Investigations in preparation regarding options for outlet pipeline and river erosion issues for all lake exchange infrastructure.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	12. Insufficient information regarding the design, construction and management of the proposed lake for EHP to determine the projected impacts and whether they can be adequately managed. Figure 10-17, 10-18 shows lake liner options and cut-off walls with a complex process of dewatering and treatment of ASS during construction of the lake. It is understood that key decisions related to lake lining and ASS treatment are yet to be made. Environmental impact and nuisance issues arising during construction have not been fully assessed and no framework for their management has been provided in the EIS. Issues relating to construction including lake liner design, dewatering, ASS management and identifying and managing associated impacts (e.g. water, noise, vibration and air quality) are all proposed to be addressed in future environmental management plans (and Strategies) as per s23.4. Furthermore, TOR s2.5, 2.7, 3.1, 6.10 (c, g), 7.1 (a), 7.30, 7.31, 7.34, 8.7 – 11 have not been addressed for the design and construction of the lake. **Suggested Solution:** Provide commitments to achieve project specific outcomes in terms of discharge and receiving water quality (surface and groundwater) for the project site and related areas (e.g. ASS disposal areas). Appropriate monitoring regimes, trigger levels of water quality and quantity, and an outline of response mechanisms should trigger levels be exceeded, should also be described.	Investigations in preparation regarding lake management and discharge strategies for all conditions. All construction management impacts to be included in Aquis Schedule of Commitments.			X		X		
Chapter 10	13. The proposed artificial lake has the potential to significantly impact on groundwater resources. The extent and nature of these impacts are dependent on the design of the lake and the lining system. However, the EIS does not provide enough information and detail on the design of the artificial lake and the lining system. Furthermore, no performance criteria for the lake with regards to potential impacts on groundwater resources and groundwater values, including lateral and vertical interactions affecting water quality, water use and ecological impacts have been provided. Lacking are also environmental outcomes that would be achieved by the preferred construction, operation and management of the artificial lake in order to effectively regulate it. **Suggested Solution:** Provide information and detail on: • design of the artificial lake and the lining system • performance criteria for the lake with regards to potential impacts on groundwater resources and groundwater values • any lateral and vertical interactions affecting water quality, water use and ecological impacts • the environmental outcomes of the preferred construction, including operation and management of the artificial lake.	Specific design solutions for quarantining lake water (including permeability objectives) to be to be included in Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 10	14. As outlined above, EHP notes that there are potentially significant risks associated with the interactions of lake water and vertical and lateral connections with groundwater. The EIS does not suitably confirm the existing barriers including extent and permeability of clay layers on site nor identify a clear solution to address the risk (as required per TOR, section 7.34). **Suggested Solution:** Address the risk of interactions between lake and groundwater and provide a practical and effective solution to mitigate any potential impacts to groundwater in the surrounding area.	Specific design solutions for quarantining lake water (including permeability objectives) to be to be included in Aquis Schedule of Commitments.					X		
Chapter 11	15. This section summarises the scenarios for hydrological modelling, but does not investigate the hydrodynamic (and water quality) performance of the lake designs at different depths. This information is needed because the current proposed design depth requires a large amount of associated infrastructure, energy demands, and environmental impacts. Some of those impacts could be avoided or mitigated if the same outcome could be achieved with a lake of lesser depth, or onsite water treatment (i.e. a closed system) rather than exchange of seawater (i.e. an open system). **Suggested Solution:** Additional hydrodynamic and water quality modelling scenarios should be provided. The modelled scenarios should assess whether lesser volumes of seawater in an open system, or onsite water treatment in a closed system could achieve acceptable water quality outcomes for the flood conveyance 'lake solution' and deliver a reduced impact scenario for construction and operation phases of the project.	The lake depth as stated is the best solution based on the current level of design. While it is likely to remain as proposed, there is to be a period of detailed design where this and other parameters may be optimised. Investigations in preparation regarding lake management and discharge strategies for all conditions.			X			X	
Chapter 11	16. It was not appropriate to report that the waters were 'non-compliant' with regard to water quality criteria on the basis of single-survey results being compared to a water quality objective intended to be used with a median value of 12 monthly samples. The WQOs quoted only apply to ambient water quality data, and not data representative of a significant weather event (i.e. heavy rainfall). The data presented in the EIS does not suit requirements for comparison to guidelines nor are useful for baseline determinations. The same comment applies to data on turbidity, Secchi depth values and dissolved oxygen saturation. **Suggested Solution:** The quality of waters sampled and reported on in the EIS should be reassessed and appropriate comparisons with available criteria, taking into account differences in the sampling regimes, should be provided.	Investigations in preparation regarding recent and proposed monitoring programs and their application to setting lake management, release strategies, and discharge standards.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	17. Table 11-7 illustrates expected annual site-generated sewage volumes, re-use volumes and the difference (remaining demand, or excess to requirements) at various construction and operational stages. However, given that the influence of wet season rainfalls are likely to significantly reduce the outdoor-based demands during that period of the year, Table 11-7 would be more appropriate if it considered expected seasonal differences in demand. This would inform recycled water management implications. **Suggested Solution:** That Table 11-7 should be reproduced on a seasonal (rainfall; wet and dry) basis and that the respective considerations during each of those seasons should be presented and suitably discussed.	The development of an *Integrated Water Management Strategy* (IWMS) is recommended in the EIS and will be included in the Aquis Schedule of Commitments. the IWMS will include a detailed water balance model incorporating the EHP recommendations.					X		
Chapter 11	18. Based on the scale of the proposed trench (page 11-40), pipe diameter (page 11-35) and construction method (paragraph 3, page 11-40) there will be approximately 5,588 cum of excess spoil likely disposed *in situ*. However, it is not clear from the information provided in the EIS whether the proposal conforms with the *National Assessment Guidelines for Dredging* (NAGD) (DEWHA, 2008). **Suggested Solution:** Information should be provided on the suitability of approximately 5,600 cum of dredge spoil to be disposed of *in situ* and specifically how the proposal would incorporate the procedures outlined in the NAGD (DEWHA, 2008) and any other relevant guidelines.	Investigations in preparation regarding inlet pipeline construction methodology and possible offshore outlet. No offshore dumping is proposed. Further assessment will be required in support of marine parks permit.			X			X	
Chapter 11	19. The effectiveness of the proposed structures should be assessed should the project proceed. Historical licensing of similar seawater intakes have included a requirement to maintain monthly marine fauna biomass and taxa identification (where possible) records over an initial assessment phase (minimum 1 year) to determine whether the design features restrict marine organism entrainment to an acceptable level. **Suggested Solution:** The effectiveness of the proposed impingement and entrainment measures for the seawater intake should be confirmed through a monitoring program in the EMP.	Monitoring for the inlet pipeline will form part of the *Lake Management Strategy* to be to be included in Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	20. This section has not adequately described how appropriate proposed water quality trigger values for the water discharge will be established. While a number of statements, definitions and approaches are provided they are not adequately described or explained, including: the medium or long term basis of investigation of toxicants; default values and derived values. **Suggested Solution:** Details of how locally relevant trigger values for water quality values will be determined for the proposed water discharge should be provided. This should include the correct use of contemporary standards and approaches for deriving the proposed discharge water trigger values.	Investigations in preparation regarding recent and proposed monitoring programs and their application to setting lake management, release strategies, and discharge standards.			X				
Chapter 11	21. It is acknowledged that any proposal to assess the quality of floodwater prior to discharge is likely to be problematic. Table 11-19 presents 'Performance Objectives' which are, for physicochemical stressors, to be based on flood-related values, and for toxicants, the default ANZECC trigger values. Typically sampling receiving environment water quality conditions during a flood event is not only difficult, but dangerous. In terms of toxicants, it is likely that many chemicals would not exist at an elevated concentration under the dilution effect of floods. The design of the lake should minimise the potential for uncontrolled discharges such as when flood waters over top the levees. Any controlled release through pumping or weir overflow is controlled and should be subject to the appropriate release criteria agreed to in advance so that receiving environment sampling is not required at that time. It may be appropriate to apply the usual 'wet season' assessment criteria/limits at that time, or develop a post flood criteria. Table 11-19 presents 'Performance Objectives' that are 'marine' ecosystem trigger values, and it is likely that those trigger values would not be appropriate during flood events since the floodwater is likely, at least temporarily, to be more representative of freshwaters. **Suggested Solution:** It is recommended that water quality data be reanalysed and re-reported and an appropriate set of discharge criteria be developed in consultation with EHP prior to the conclusion of the EIS process.	Investigations in preparation regarding recent and proposed monitoring programs and their application to setting lake management, release strategies, and discharge standards.			X				
Chapter 11	22. It is unclear whether marine ecosystem trigger values should apply to assessment of discharges into fresh floodwaters. The ANZECC guidelines state that for estuaries, it is the lower of the freshwater and marine ecosystem trigger values that should be adopted. **Suggested Solution:** The proponent should determine the relevant guideline to use in establishing trigger values for water quality discharge. EHP should be consulted on this matter.	Investigations in preparation regarding recent and proposed monitoring programs and their application to setting lake management, release strategies, and discharge standards.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11	23. Table 11-21 describes how lake water discharge would vary from between 7-20% of the tidal volume of Richters Creek. The modelling concluded that there would be no significant adverse effects on water quality. It is not stated how the seawater intake rate, retention time, and discharge regime has been optimised to minimise associated environmental impacts, including: • reduction in the intake (seawater) volumes, leading to reduced entrained marine fauna biomass • reduction in the potential use of flocculants • other (operational) improvements, such as not restricting releases solely to ebb-tides, and thereby avoiding the worst-case mixing (neap tide) periods. Additional modelling, investigations and a receiving environment monitoring program to validate the modelling outputs should be included in the environmental management plan. The outcomes would be useful in setting appropriate compliance limits. **Suggested Solution:** That lake water management is optimised to ensure associated environmental impacts are minimised whilst maintaining acceptable water quality effects. This consideration should be incorporated into discussions about selecting flood mitigation options and in setting compliance limits.	Investigations in preparation regarding a possible offshore lake outlet will address this issue.			X			
Chapter 11	24. The paragraphs under this subsection describes an approach of establishing seasonally-specific TSS trigger values for the construction phase but does not include a maximum TSS limit. **Suggested Solution:** The proponent should commit to applying the appropriate erosion and sediment control guidelines for the project and that the proponent establish a relevant maximum TSS limit for incorporation in any approvals.	Investigations in preparation regarding recent and proposed monitoring programs and their application to setting lake management, release strategies, and discharge standards.			X				
Chapter 15	25. There will be up to 2.8 million tonnes of ASS excavated in the construction of the proposed development. This volume of ASS provides management challenges and if mismanaged has the potential to causes significant environmental harm. **Suggested Solution:** Despite statements that ASS management is a known process and it is technically possible to manage, given the scale, intensity and location of the proposed action, further investigation and assessment is required to detail the volume and management arrangements for ASS to confirm their acceptability.	Noted. The proposed methodology will be expanded on in the design of construction and in the ASSMP (Aquis Schedule of Commitments). Development of an ASSMP is also a condition of a future approval.					X	X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 15	26. Matters of land contamination are of particular relevance for a land use decision where the proposed land use is more sensitive than the existing land use. The contamination review identified that Lot 2 on RP800898 was listed on the EMR for Petroleum product and oil storage. More detailed investigations and possible remediation of contaminated areas would need to occur to enable a Site Suitability Statement to be issued for the proposed development. **Suggested Solution:** In pursuing approvals for the project, the proponent would need to ensure that appropriate investigations were undertaken to determine the nature and extent of any contamination, and if present, what measures would be need to be taken to ensure the land was fit for the proposed use.	Noted. The proposed methodology and will be expanded on in the design of construction and in the EMP (Construction) which will be included in the Aquis Schedule of Commitments. Dealing with contaminated soils is also a condition of a future approval.					X	X	
Chapter 16	27. Page 16, para 2: the Appendix refers to DME (1995) as the basis for the nuisance dustfall deposition air quality criterion. More recent guidance material, for example 'Guideline Mining. Model mining conditions. EM944', (DEHP 2014) could be used to guide as well as the Environmental Protection (Air) Policy 2008 should be used to determine acceptable levels for dust deposition. **Suggested Solution:** It is recommended that the 'Guideline Mining. Model mining conditions. EM944', (DEHP 2014) and Environmental Protection (Air) Policy 2008 be used to establish appropriate air quality criteria which the project can achieve. Documentation should be provided to demonstrate that the project can meet the appropriate criterion.	Noted. To be part of the EMP (Construction) which will be included in the Aquis Schedule of Commitments.					X		
	28. Page 23, Table 6.1: The EIS does not mention that chemicals associated with many pesticides can be odorous. **Suggested Solution:** Add 'odour' be considered concerning golf course pesticides in establishing an inventory of possible air emissions.	Noted. Management of odour to be part of the EMP (Operation & Maintenance) which will be included in the Aquis Schedule of Commitments.					X		
	29. Page 27, Section 7.1: the Appendix refers to DERM (2010) as the basis for defining buffer zones. **Suggested Solution:** That the DERM (2010) reference be replaced with Draft State Planning Policy. Policy Guideline, State interest-emissions and hazardous activities, Guideline for managing industrial and sensitive land uses, Department of State Development, Infrastructure and Planning (2013).	Noted. Management of odour to be part of the EMP (Construction) and EMP (Operation & Maintenance) which will be included in the Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	30. Page 28, Figure 7.1: the Figure shows the location of an orange 'Buffer excluding accommodation to protect from cane farming'. A green buffer is also shown at the south- western and northern Project boundaries, but not described in the Figure legend. **Suggested Solution:** A description for the green buffers should be provided.	Not considered necessary for land use or subsequent approvals. Buffers will be addressed in detailed design.	X					X	
	31. The EIS provided a limited assessment on potential noise impacts (TOR 8.8-8.11). There are concerns around planning of and mitigation for noise generating activities such as concrete batching, excavation and piling activity given the scale and nature of the project and the and proximity and number of sensitive receivers that would be impacted by the activity. During the construction phase, noise and vibration (earth works, pile driving, and transport traffic) have the potential to be one of the more significant nuisance issues to sensitive receptors and the local community. The noise and vibration study undertaken (Appendix S) to inform potential noise impacts from the proposed development provided limited information on background data on the existing environment (one week of monitoring in August 2013). Construction noise and vibration is considered a significant issue that would require further detailed investigation and the development of suitable management options. **Suggested Solution:** Not stated (dealt with below).	Noted. Refer to following comments.	X						
	32. Dredging, concrete batching, piling and other activities are activities for which the location of the activity/plant needs to be selected for practical reasons and consideration of noise propagation. Potential specific exposure of sensitive receivers to noise needs to be further investigated. **Suggested Solution:** Consider the number, location and timing of noisy activities for the management of noise impacts to local residents. This would require simulation and modelling with expected machinery. Management measures should be provided to confirm suitable noise criteria would be met during construction.	Noted. To be part of the EMP (Construction) which will be included in the Aquis Schedule of Commitments.					X		
	33. The project layout has been modified extensively and the layout used for noise considerations does not correspond to current project. **Suggested Solution:** Implications of the preferred project layout on noise impacts to sensitive receptors should be provided.	Not considered necessary for land use or subsequent approvals. Noise mitigation (buffers, barriers etc.) will be addressed in detailed design.	X					X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	34. The pile driving section does not propose clear mitigation measures nor consider available technology like G Pile (silent) Driving. **Suggested Solution:** Define practical solutions to demonstrate the ability of the project to meet acceptable noise outcomes at all sensitive receptors.	Noted. To be part of the EMP (Construction) which will be included in the Aquis Schedule of Commitments.					X		
	35. The EIS indicated that EMP elements are yet to be developed. Potential sources of significant environmental impact and nuisance from the proposed development include erosion and sedimentation, noise, air and dust, water quality and light emissions. Constructions impacts may be significant, if not appropriately managed. **Suggested Solution:** Nuisance performance outcomes for the project during construction should be specified, and preferably detailed EMPs dealing with construction impacts and controls (as well as an effective complaints management framework) should be provided.	Noted. To be part of the EMP (Construction) which will be included in the Aquis Schedule of Commitments.					X		

2.8.2 Discussion

Most of the comments raised by EHP are proposed to be addressed in the further investigations currently underway, with the balance being matters to be addressed in the Aquis Schedule of Commitments, These are discussed below.

2.8.3 Further Assessment

Investigations are underway on most of the matters raised above, including:

- water quality:
  - suitability of current and proposed monitoring for setting lake management objectives, release strategies, discharge standards, and associated monitoring
  - behaviour of lake during and after flooding (hydraulic and water quality)
  - option for moving the Richters Creek outlet further offshore
  - more details of construction methodology for offshore pipeline(s)
- terrestrial ecology:
  - inputs to multi-criteria analysis on aquaculture ponds (retain or fill)
- aquatic ecology:
  - effect of light emissions on turtles and other marine species
  - inputs to multi-criteria analysis on aquaculture ponds (retain or fill)
- multi-criteria analysis of various options:
  - for aquaculture ponds (retain or fill)
  - seasonal VS wet lake.

These studies will inform the preparation of the *Supplementary Information Report* which will address all of the Cat 3 issues raised in the submission. EHP is to be involved in a technical workshop associated with this work and relevant comments will be included in the above report and any future commitments.

2.8.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with EHP.

2.9 DEPARTMENT OF HOUSING AND PUBLIC WORKS

2.9.1 Issues Analysis

TABLE 2-9 ISSUES ANALYSIS – DHPW (217)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Social Impact Assessment – Cumulative Impact	1. Indications are that Cairns is about to experience significant residential development over the next few years. Together with the Aquis resort, such development over a relatively short time will have a cumulative impact on the affordable housing market, particularly during the construction phase. The EIS rightly states that Yorkey's Knob, in particular will be the most vulnerable community in terms of housing impact. The assertion on page 67 of the SIA that older housing stock will be more affordable is not accurate as it is the location that will drive prices up and displace vulnerable residents. Rising market prices will also fuel property speculation as it has done in resource centres, again prompting market inflation and redevelopment. Consequent to inflationary market pressures, staff and key workers in tourism and service industries generally could also find it increasingly difficult to source affordable housing in Cairns and potentially the wider region over time. This may be an issue during the construction phase, although it is understood that a proportion of construction workers will be sourced from within Cairns and surrounding region. If no staff accommodation is provided in the resort complex, then affordable accommodation for staff and key workers may also become an issue during the operation phase. The department has concerns regarding impacts on residents on low, fixed incomes. Displacement of low, fixed income residents and a general increase in housing stress across the region will put greater demands on the DHPW housing register and make it more difficult for current DHPW tenants capable of transitioning from social housing to the private rental market to do so. **Suggested solution:** The proposed Housing and Accommodation Plan to put forward a response to mitigating housing market impacts should the proposed market response fail to produce outcomes for residents on low-moderate incomes. Such a response could include: • Providing accommodation for staff, either on or off site • Undertaking regular monitoring of the housing market • Working with housing providers such as not-for-profit housing providers, DHPW and Cairns Regional Council to develop appropriate housing responses	Noted. Refer Discussion and Further Assessment.	X	X	X		X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	• Working cooperatively with other project proponents to address cumulative impact • Providing a financial contribution to mitigate housing impact on affordable housing and accommodation services. The impact of other significant private sector projects in the Cairns region will need to be considered as part of addressing cumulative impact on the housing market, particularly during the construction phase. Such projects include the 1,500 apartment building and 17,000 sqm2 commercial centre by the Central Park Group, Spence Street.								
Social Impact Assessment – Rental Market Issues	2. **Reduction in rental property pool** – a significant increase in property sales, including properties in the existing rental property pool, could occur due to expected increase in the sale price and possible redevelopment of sites for better yield and return. This would reduce the number of actual rental properties available on the market (even in the short term if additional rental properties are being built). It may also remove existing lower cost rental properties due to redevelopment. **Increased demand for rental properties** will occur due to the influx of Aquis and other construction workers and a consequent increase in the general workforce, it construction workers building new houses, local service industry supplying the project, general demand. **Whole of region impact** – a 'ripple effect' could occur across the region due to increasing rental costs impacting on low and very low income earners – squeezing them out of the inner Cairns region into adjoining regional communities (e.g., creating increased demand for affordable housing, increased travel costs for work if employed in Cairns, demand on services, schools, etc.) **Increased rental costs** – increasing rental costs will have a ripple effect across the region as rental costs are increased due to demand and available properties are taken up by project and associated workers willing to pay the higher costs. **Affordable rental properties** – Cairns region has existing high level of unemployment. Any increase in low skilled (low paid) jobs across the region will increase pressure on demand / need for affordable rental properties and support services in the region. **Suggested Solution:** **Affordable Housing Supply** Additional affordable rental properties will be required to address loss of rental stock to home ownership in addition to increasing the number of rental stock available to address rising demand.	Noted. Refer Discussion and Further Assessment.	X	X	X		X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Opportunities may exist for the not-for-profit (NFP) sector in conjunction with the department, Cairns City Council and the proponent to expand the supply of affordable rental accommodation. The department currently engaged in the transitioning the management of a proportion of its rental stock to the NFP sector and that sector itself is opening up for national scale competition under the National Regulatory Scheme. The department's Housing 2020 Strategy aims to establish a flexible, regionally-based, integrated system that will see the further development of social and affordable housing. As has been flagged for the community housing sector, with at least 90 percent of all social housing to be managed by community housing providers by 2020. Work is underway to implement the National Regulatory Scheme, which will make it easier for community housing providers to operate in Queensland. **Monitoring** Monitoring will be a significant component in identifying and responding to market trends and potential impacts. A monitoring framework as a component of the Housing and Accommodation Plan will need to identify who is involved, what is monitored, timing and thresholds for action / intervention. An adaptive management methodology is recommended as a way to enable a flexible and outcome-focused response to impacts as they arise. The department is willing to participate in monitoring and provision of relevant data where required.								
Social Impact Assessment – Broad Housing Market Impacts	3. **Sales to tenants** – higher rents will make it more attractive for higher income renters to purchase their own home and also attract investors to the market. While this outcome may be good for some tenants, it could also serve to reduce the pool of affordable rental accommodation for residents on low and/or fixed incomes. **Construction of new properties** – timing of construction and delivery of new affordable housing and rental properties in the region may be impeded due to issues with: • Land availability • Approval process • Provision of associated infrastructure • Competing labour market – availability of tradesmen / contractors **DHPW Rentconnect Program** – the Department's Rentconnect program could be impacted by a decrease in private market rental properties available for referrals. This is due to increased demand and increased cost for rental properties in the whole of Cairns region.	Noted. Refer Discussion and Further Assessment.	X		X		X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Homelessness – the capacity to assist clients to obtain permanent accommodation will be reduced if there are fewer rental properties available due to increased demand from the workforce and higher rental costs. **Increased demand for support services** – as the impact 'squashes' down on those who can least afford higher rental costs, there is a risk of increased demand on welfare support services who provide social and emergency housing services to lower socio-economic sectors in the community (i.e. St Vincent de Paul, Anglicare, Salvation Army, etc.) **Suggested Solution:** **Timing** The timing and implementation of the Housing and Accommodation Plan will be important in relation to responding to market trends and pressures. Experience in mining / resource communities suggests that there is a need to consider housing assistance early in the approval stage, i.e. once a Final Investment Decision (FID in mining sector terms) is made or some equivalent in this case. Such urgency is due to the potentially significant displacement caused by property market speculation. It is recognised that the Cairns context is different to that of the mining / resource sector whereby the mining operations phase requires fewer personnel to be accommodated than during the construction phase. The tourism and property sector in this case however will sustain growth and demand over the medium and long term, thereby having a longer, more pronounced impact. Development assessment and lot registration process will need to be streamlined to ensure adequate and timely availability of residential lots for new dwellings and address shortages in supply. It is recognised that this will be a resourcing and capacity issue for Cairns City Council and that additional resources will be required. The department is willing to work with council where possible and appropriate to address planning scheme issues. Aquis may also consider providing additional resources to council to facilitate quicker outcomes. Resourcing and capacity of homelessness organisations will need to be included in the Housing and Accommodation Plan. The department is willing to work with the proponent as part of the plan.								

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Social Impact Assessment Indigenous Population	4. **Indigenous population** – Cairns is a regional centre providing services to surrounding regions (Torres Strait, Cape York, Gulf, etc.). Indigenous people from the remote areas regularly travel to Cairns for medical, educational, recreational and employment opportunities. Between 2001 and 2011, the indigenous population increased by 4,903 persons (49.9%) (ABS). This group already subject to difficulty in accessing rental properties. Any decrease in available affordable rental housing will have an impact on this group. **Suggested solution:** In addition to including resourcing and capacity of homelessness organisations in the Housing and Accommodation Plan, an integrated approach to housing impact will need to include Indigenous housing and service organisations in the Cairns region and development of strategies to address pressures on Indigenous housing.	Noted. Refer Discussion and Further Assessment.	X		X		X		

2.9.2 Discussion

DHPW's suggestions for the Housing and Accommodation Plan are considered valid and constructive suggestions which will be adopted in the preparation of the Housing and Accommodation Plan.

References to mining/resource projects is not considered to be valid. As the EIS points out this project differs significantly from such projects. The very large operational workforce (20,000) compared to construction workforce (3,750) is in contract to mining /resource projects which generally feature large construction workforces compared with relatively small operational workforces. The nature of the integrated resort project is that is results in elevated and ongoing demand for housing which stimulates a supply of housing. Mining/resource projects have construction workforce peaks which are relatively short term with a consequent limited sustainable demand for housing supply and even diminished demand for stock that is provided to cater for construction workforces. Hence the housing supply tends to be temporary in the form of relocatable FIFO/DIDO camps.

Recent research by HTW reveals that Cairns has relatively low vacancy rates for both houses (2.1%) and units (2.4%) due to a run-down of stock through suppressed development activity in recent years. The research also indicates that there are potentially 10,700 dwellings (6,300 residential lots and 4,400 units) there are part of developments that are approved but not yet developed. This indicates that there is a significant supply backlog which is likely to 'unleashed' in the face of market confidence that will be a direct consequence of approval of Aquis. Given that construction direct workforce peak will not occur till 2017-18 there is ample time for the housing supply to rise the meet the potential increase in demand in the short term.

As noted in the EIS it is anticipated that a significant proportion of the construction workforce demands will be met by current Cairns residents working remote form Cairns due to low levels of construction activity local. It is anticipated that these workers will repatriate to Cairns given the increase in construction activity as a consequence of the Aquis approval.

It is acknowledged that upward pressure of house prices and rental rates can be a direct consequence of sluggish supply lagging behind increased demand. Consequently it is proposed to develop a housing and accommodation plan to consider appropriate strategies are pursued to ensure housing supply issues are being addressed in the vent that supply does not keep up with growing demand.

2.9.3 Further Assessment

The Aquis EIS team is currently preparing a Housing and Accommodation Plan frame work which will incorporate the DHPWs suggestions and identify:

- Work Scope and Methodology to be used for preparation of the Plan (Existing situation i.e vacancy rates, current approvals, population projections, projected housing demand, supply side constraints)
- Consultation/engagement (CRC, DHPW , REIQ. HIA. MBA, UDIA)
- Housing Supply Strategies/Market interventions
- Monitoring and Reporting

The population forecasts being developed in Infrastructure workshops will be used to inform housing demand forecasts. These together with the outputs from recent housing supply research will be provided in the *Supplementary Information Report*.

2.9.4 Future Action

DHPW will be included as a key stakeholder in the development of the Housing and Accommodation Plan. It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitments to prepare the Housing and Accommodation Plan and engage with DHPW.

2.10 DEPARTMENT OF NATIONAL PARKS, RECREATION, SPORT & RACING

2.10.1 Issues Analysis

TABLE 2-10 ISSUES ANALYSIS – DNPRSR (83)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 4	1. It is understood that during construction the lake basin may collect water (via rainfall or runoff) with this water potentially being contaminated by acid sulphate soil. **Suggested Solution:** Onsite treatment measures should be adopted to ensure no contaminated water collected is released to the adjacent declared Fish Habitat Areas or state Marine Park.	Noted. This is the proposed methodology and will be expanded on in the design of construction and in the ASSMP (Aquis Schedule of Commitments).					X		
Chapter 11	2. The discharge of any water must meet appropriate standards set by the Department of Environment and Heritage Protection and/or Department of Science, Information Technology, Innovation and the Arts. **Suggested Solution:** To minimise the potential collection of runoff in the lake basin during construction it is recommended bunds should be used to help divert runoff and other overland flow away from the construction site.	Noted. Refer Further Assessment.			X				
Chapter 11	3. Water released from the construction site and during operation must meet appropriate water quality standards. With the lake intake and outlet running continuously (noting outlet on ebb tide) what will be the frequency of water quality monitoring and once an adverse parameter has been tested what will be the period of time between detection and release into the declared Fish Habitat Area and state Marine Park? **Suggested Solution:** It is understood this is an operational matter which may require further consideration but an approach is needed where the declared Fish Habitat Area and marine park are not becoming a sink for poor water quality.	Noted. This is the subject of further investigations as outlined below.			X				
Chapter 11	4. Water quality standards. **Suggested Solution:** Appropriate water quality discharge limits need to be set by the Department of Environment and Heritage Protection and/or Department of Science, Information Technology, Innovation and the Arts, and the use of a development approval or associated Sustainable Planning Act code appear appropriate means to manage this aspect.	Noted. Refer Further Assessment.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 11 Chapter 23	5. Water quality monitoring. **Suggested Solution:** Appropriate operational standards for water quality monitoring plus monitoring program are needed to ensure the declared Fish Habitat Area and state Marine Park are not receiving poor water quality prior to corrective action being taken.	Noted. Refer Further Assessment.			X				

2.10.2 Discussion

Issue 1 will be covered by the ASSMP that will form part of the EMP (Construction) and will be in the Aquis Schedule of Commitments (Cat 5).

Issues 2 to 5 above are the subject of further assessment (see below).

2.10.3 Further Assessment

Issues 2 to 5 above are the subject of current investigations by Aquis on lake management and discharge standards for documentation in the *Supplementary Information Report* (i.e. Cat 3) and is planning a detailed technical working session with EHP and additional modelling as inputs to that report. Issues relevant to the above that are under consideration are:

- lake management in general
- lake release strategies and associated standards and monitoring
- lake performance during floods (including hydraulic and water quality aspects).

Further consideration of lake management will be undertaken in completing the committed *Lake Management Strategy* (Cat 5).

2.10.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with NPRSR.

2.11 DEPARTMENT OF NATURAL RESOURCES AND MINES

2.11.1 Issues Analysis

TABLE 2-11 ISSUES ANALYSIS – DNRM (235)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 10	1. The closest (freshwater) watercourse regulated under the *Water Act 2000* is north of the project site, located above the downstream limit of Avondale Creek at latitude 16.829038°S, longitude 145.712178°. **Suggested Solution:** No solution required; the project does not require any approvals relating to the use and control of surface water managed under the *Water Act* 2000.	Nil.	X						
Chapter 10	2. Melaleuca wetlands identified on the project site may be classed as lakes; however the EIS states that these will not be altered. **Suggested Solution:** No solution required	Nil.	X						
Chapter 10	3. The project site is located in the Cairns Northern Beaches Sub-artesian Area, regulated by the *Water Resource (Barron) Plan 2002.* As described by the EIS, the construction of an artificial lake will involve the taking of approximately 900 ML of groundwater for dewatering purposes. Once removed, the part of the shallow aquifer affected will effectively be quarantined from the surrounding aquifer. While the *Water Resource (Barron) Plan 2002* does not require the management of groundwater interference, the construction and operation of the lake will significantly impact upon groundwater flows in the shallow unconfined aquifer, potential recharge to the shallow aquifer, and flow paths between the shallow and deeper aquifer systems. **Suggested Solution:** A permit to take water will be required under the *Water Act 2000* for the dewatering (resulting from the removal of approximately 2.8 million m^3 of sediment to excavate the lake and basements). The application for this permit must state the volume of water (approximated in the EIS to be 900 ML) to be taken as well as the proposed start and end dates for the activity.	Need for permit to take water noted. To be addressed in detailed design.						X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 10	4. The EIS proposes cut-off walls/liners (Chapter 10, section 10.2(f), p.10-29) to isolate the lake from the underlying freshwater aquifers. This raises issues about the durability of materials used as liners and their long term maintenance and effectiveness to avoid salt water ingress into the freshwater aquifers. This is an important consideration as existing bore users (Chapter 10.2.1, section b, p10-20) in the vicinity of the lake may be negatively affected by saline water if cut-off walls/liners fail. **Suggested Solution:** A possible solution would be for the proponent to enter into agreements with existing bore users to protect their interests in the event that their bores become saline as a consequence of the proposed lake.	Noted. Liner durability to be addressed during detailed design. Agreement with adjacent owners regarding bores to be added to Aquis Schedule of Commitments.					X		
Chapter 5	5. The *Regional Planning Interest Act 2013* (RPIA) commenced on the 13 June 2014, repealing the *Strategic Cropping Land Act 2011.* Consequently, all 'Strategic Cropping Land' development assessment triggers have been removed from the *Sustainable Planning Regulation 2009* and the thus the proposed development will not be triggered for assessment of 'Strategic Cropping Land' (strategic cropping areas described under RPIA which call up mapping for 'Strategic Cropping Land' are not triggered for this development). **Suggested Solution:** No solution required.	Noted.	X						
Chapter 4	6. Patches of remnant vegetation totalling approximately 53 ha occur on the project site. Clearing of some of this vegetation may be required for constructing infrastructure including drains, canals/lake overflows, service buildings, access tracks and any associated buffers e.g. fire breaks. The EIS advises that no endangered regional ecosystem (regional ecosystem 7.3.12b) is proposed to be cleared and that the exact extent of required clearing of other remnant vegetation will be determined during detail design closer to project commencement. **Suggested Solution:** Remnant vegetation to be cleared will require an approval from DSDIP. Any such clearing is expected to be able to be readily offset by the establishment of an Environmental and Conservation Precinct (113 ha.) involving the rehabilitation of previously cleared land.	Need for permit to clear natural vegetation noted as is likely suitability of offset. Revegetation to be addressed in detailed design.						X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Rehabilitation should be consistent with Table 17 (Appendix G p89) and drawing FCG 3528-SK17 seeking to recreate vegetation communities as described in the Regional Ecosystem Description Database.								
	7. Reservations in Title exist over two areas of State land on the proposed development site. Lot 1 on RP800898 has a floating Reservation in Title. In order to utilise this portion of the site for the proposed development, an application to purchase the Reservation in Title was made by the proponent on 11 April 2014 to the Department of Natural Resources and Mines (DNRM). DNRM responded to the proponent with an offer to purchase the floating Reservation in Title on 27 June 2014. Lot 100 on NR3818 has a defined Reservation in Title. DNRM has previously recommended the proponent engage a surveyor for this site and make an application to purchase the Reservation in Title. The defined reservation is identified on the survey plan as an esplanade. To date no application to purchase the Reservation in Title has been made over Lot **Suggested Solution:** The proponent should continue to liaise with DNRM regarding the Reservations in Title which exist on the site. If the proponent wishes to proceed with the purchase of the Reservation in Title over Lot 1 on RP800898, the proponent should formally respond to DNRM's offer (a survey will be required to be conducted by the proponent to facilitate the purchase). If the proponent wishes to proceed with the purchase of the Reservation in Title over Lot 100 on NR3818, the proponent should make an application to purchase to DNRM (likewise, a survey will be required to be conducted by the proponent to facilitate the purchase).	Noted. This issue is being addressed by current landholder.	X						
	8. Acid sulfate soils (ASS) occur on site both as actual acid sulfate soil (AASS), containing sulfuric acid, and potential acid sulfate soil (PASS), containing acid precursors such as pyrites that generate acid when aerated. Excavation for the lake, building footings and any underground infrastructure will intersect layers of acid sulfate soil. The acid present and additional acid generated when disturbance or dewatering occurs can, if not neutralised by treatment, corrode concrete, adversely affect plant growth and kill fish in affected streams_	Advice re details noted for attention in preparation of ASSMP (Aquis Schedule of Commitments).					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	The potential damage to future buildings is significant due to the very large volumes anticipated to be disturbed directly by excavation and, potentially, indirectly through dewatering. Approximately 2.8 million cum of sediment is to be excavated for the lake and basements on site. The depth will be -2.5m AHO from an original ground level averaging 2 – 3 m AHO. Not all of the 4.5 – 5 metre deep profile is ASS. Nonetheless, acid generating material extends below 1 – 2 m AHO suggesting as much as 1.68 million cum of material could be ASS. Excavation rate is expected to be 21,000m^3 (equivalent to 840 truck and dog movements per day; p15-7). **Suggested Solution:** Suggestions provided for an ASSMP and groundwater monitoring								

2.11.2 Discussion

The issues raised cover:

- future approvals (Cat 6)
- advice for inclusion in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance) – these will be included in the Aquis Schedule of Commitments (Cat 5).

No issues require further discussion.

2.11.3 Further Assessment

None required for land use approval.

2.11.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with NRM.

2.12 DEPARTMENT OF STATE DEVELOPMENT, INFRASTRUCTURE AND PLANNING - PLANNING SERVICES, PLANNING AND PROPERTY GROUP

2.12.1 Issues Analysis

TABLE 2-12 ISSUES ANALYSIS – DSDIP (218)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 10	1. The proponent specifically relies upon a flood mitigation approach that creates a high flood island, approximately at the level of the PMF, to accommodate a maximum of 12,000 people – equivalent to a large urban neighbourhood – even in a 1% AEP flood event which cuts off all road access to the site. The EIS states that 'a safe refuge above the PMF flood can be provided for the in resort complex precinct'.	Agree.	X						
Appendix K	2. The EIS technical Appendix K Flooding addresses the issue of long term impacts of climate variability and cyclones – the strategy for major cyclone events will be one of 'shelter in place' for guests and staff.	Agree.	X						
Chapter 12	3. The SPP Guideline P125 suggests an acceptable solution, which would also be met by the development under the CairnsPlan 2009: • AO2.2 The development incorporates an area on site that is at least 300mm above the highest known flood level with sufficient space to accommodate the likely population of the development in safety for a relatively short time until flash flooding subsides or people can be evacuated. Given the large numbers of people possible and that the site is likely to be isolated, the mode of evacuation available is limited and this should be considered at the earliest possible state. Helicopter evacuation is not considered to be viable as the only option. A full disaster management plan should be required for the site which outlines possible warning times and procedures.	EIS includes provision for an *Integrated Emergency Management Plan* (see comment below) and this will be included in the Aquis Schedule of Commitments.		X			X		
Chapter 12	4. The SPP provisions require that development 'supports and does not unduly burden, disaster management response or recovery capacity and capabilities. The proponent could argue that the refuge design approach and the scale of the development would enhance the survivability of not only the complex population, but also the nearby residential community of Yorkeys Knob. Approximately 3.7km of Yorkeys Knob Road will be improved to be trafficable in a 50 year ARI flood event. These assertions need to be tested.	EIS includes provision for an *Integrated Emergency Management Plan* (see comment below) and this will be included in the Aquis Schedule of Commitments.		X			X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Appendix K	5. We have not reviewed the technical Appendix K Flooding. A limited flood modelling report by BMT WBM addresses relevant aspects of the Terms of Reference (ToR) prepared by the Coordinator General for the project on behalf of the Queensland Government in relation to flooding, including clauses 7.1(a), 7.4, 7.24 (c), 7.25 (c), and (d), 7.27, 7.28, 7.33 and 7.34. Curiously the BMT WBM modelling maps appear to ignore the central artificial island created for the resort (e.g. see Figure 9-8). The report acknowledges that 'As part of the subsequent detailed design process, detailed flood modelling (is required) to test and inform refinements to the layout and design to ensure no significant adverse flood impact occurs. We suggest that the final flood study should be subject to expert peer review.	Comment not accepted. See comment below.		X					
Chapter 9	6. These comments are restricted to flood related issues and do not address water quality, siltation, or natural environment impacts.	Noted.	X						

2.12.2 Discussion

Item 3

The development of an Integrated Emergency Management Plan outlined in s12.5.2a) is a project commitment (Cat 5). This plan will need to take into account the logistical issues raised above.

- In essence, evacuation via road will be practical until the immunity of the road network is exceeded (the commitment is that this will be to a standard equivalent to the Cairns Western Arterial Road (CWAR) which is the existing high-level route to the Cairns CBD – i.e. 2% AEP).
- For higher flood levels (up to 0.5 m above the PMF and well above the 0.01% AEP storm tide), the podium will remain un-flooded and guests can shelter in place.
- Vertical evacuation will be provided for shelter at a higher level and appropriate emergency power, communications, medical, and subsistence facilities will exist at this higher level.
- Once access by road is now longer possible, access for emergency purposes will be available via helicopter (the helipad is proposed to be sited above PMF).
- An integral part of the Integrated Emergency Management Plan is a warning system that will allow any important evacuations to be made before the resort is cut off from the road network.

Item 5

BMT WBM flood modelling uses the Council's Barron Delta Flood model. Flood Investigations to date are based on the 'central island' being above the design flood event. Flood modelling to date demonstrates that the habitable places within the resort will achieve compliance with Council's *Flood Management Code*. Additional details of data source and flood modelling methodology have been provided in response to similar issues raised in submissions from community members (see Part A report) .

Council flood code requirements have been incorporated into the Aquis Local Plan.

2.12.3 Further Assessment

None required for land use approval.

2.12.4 Future Action

As part of future MCU (code assessable) applications for development permits the proponent is required to demonstrate compliance with the Aquis Local Plan which includes a Code incorporating Council's flood code requirements. Council uses independent experts to test proposals using the Barron Delta Flood Model.

2.13 DEPARTMENT OF STATE DEVELOPMENT, INFRASTRUCTURE AND PLANNING – REGIONAL SERVICES

2.13.1 Issues Analysis

TABLE 2-13 ISSUES ANALYSIS – DSDIP (239)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Land Use	1. Consistency with Far North Queensland Regional Plan 2009-2031. No action required. While the proposal is not consistent with FN2031 with respect to some matters, the EIS assessment is considered adequate. The EIS correctly identifies the key areas of inconsistency with the regional plan's strategic directions and desired regional outcomes, being loss of primary production land (strategic cropping land) and urban development outside nominated activity centres. Regional Services generally supports the assessment in the EIS. A development of such a large scale as Aquis was not contemplated in FNQ2031. Given recent changes to the strategic cropping land policy and lack of suitable alternative sites for the development, any inconsistencies with FNQ2031 are likely to be of a minor nature and are adequately compensated for by the potential economic benefits derived from the development. From a land use / economic viewpoint, the key issue to be addressed is the potential loss of cane production from the site and consequent impact on the viability of the mills and transport impacts, however these impacts are considered negligible.	Noted.	X						
Land Use	2. Consistency with State Planning Policy July 2014 (SPP). Note the SPP was amended in July 2014. Suggest EIS review and update as necessary. Also note that State interest – Biodiversity was amended on 1 July 2014 in response to changes to the environmental offsets framework. Further information of environmental offsets can be found at http://www.qld.gov.au/environment/pollution/management/offsets/	Noted. Inclusion of the update will not change the assessment.	X						

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Land Use	3. Integration of SPP in new planning scheme. Cairns Regional Council is currently preparing a new planning scheme under the *Sustainable Planning Act 2099* (SPA). The draft Cairns SPA planning scheme has been prepared by Council and a state interest review has been undertaken by the Cairns' planning team of Regional Services to ensure, amongst other things, that the draft scheme appropriately integrates the SPP. The planning scheme is currently with council with the next step being its lodgement with DSDIP for approval by the deputy Premier for public notification Note that interim development assessment criteria may apply to future development applications where the final scheme does not appropriately integrate the SPP. Interim development assessment requirements have been prepared for the following state interests: • Liveable communities • Mining and extractive industries • Biodiversity • Coastal environment • Water quality • Natural hazards, risk and resilience • Emissions and hazardous activities • State transport infrastructure • Strategic ports and aviation. It is recommended that the proponent consider the relevance of these assessment requirements to its proposed development and incorporate appropriate code provisions (performance outcomes and acceptable outcomes) in the Aquis Local Plan to facilitate Council's assessment of these requirements. While the Aquis site is mapped as Agricultural Land Classification (ALC) Class A and B, there are no interim development assessment requirements for agricultural land contained within the SPP.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Land Use	4. Timing of SPA planning scheme adoption versus date of lodgement of preliminary approval. It is understood the proponent intends to lodge an application with Cairns Regional Council in November 2014 for preliminary approval and section 242 SPA approval to override the planning scheme (CairnsPlan 2009), with future development undertaken in accordance with the Aquis Local Plan. Cairns Regional Council intends that its new SPA planning scheme be adopted in December 2014.	Noted. Refer Further assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Given the proximity of these ambitious deadlines, it is recommended that the draft Aquis Local Plan be structured such that it will meet both Council's and the state's requirements, regardless of which planning scheme is in place on the date of lodgement.								
Land Use	5. Consideration matters of state interest in MCU and subsequent approvals. Under Section 37 of the SDPWO Act, MCU and impact assessment are exempt from IDAS and referral to the state. As such the Coordinator-General's report is taken to be the state's concurrence agency response. It is important that the relevant concurrence agency matters that would have been triggered under IDAS are considered in the Coordinator-General's report and addressed through an infrastructure agreement and/or incorporated into the Draft Aquis Local Plan Future applications for development nay trigger assessment by the state through SARA. Attachment 1 provides details of the SARA triggers that may be relevant to the development site. Note the strategic cropping land trigger has been removed. Development applications referred to the state will be assessed against the State Development Assessment Provisions (SDAP). To facilitate the state's assessment of the SDAP requirements, it is recommended that appropriate performance outcomes and acceptable outcomes from SDAP be incorporated into the Aquis Local Plan.	Noted. Refer Further Assessment.			X				
Land Use	6. Cumulative impacts of Aquis development. Given the scale of the proposed development, it will be necessary for both the state government and Council to ring forward plans for infrastructure upgrades (transport, water supply and sewerage) to meet the demands of the increased population. Not all these works can be directly linked to the proposed development. Consideration should be given to how these works will be funded and staged to ensure 1) impacts of the development on the broader community are minimised and 2) the development is not stalled by lack of supporting infrastructure.	Note Refer 2.15.2 Discussion		X			X		
Land Use	7. Strategic planning – opportunities for greater employment self-containment in the Northern Beaches. Preparation of Council's new SPA planning scheme provides an opportunity reconsider housing densities and employment self-containment options in Cairns and the Northern Beaches suburbs that may, in the longer term, alleviate some of the transport issues arising from the development.	Noted Refer Discussion		X			X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Appendix D – Draft Aquis Local Plan	8. Integration of state interests. The draft Aquis Local Plan lacks specific detail and could be improved by creating stronger linkages with the details of development and proposed strategies to mitigate adverse impacts, as outlined in the EIS. Stronger integration of state interests, as expressed in the SPP and SDAP is recommended. See Attachment 1.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements			X				
Appendix D – Draft Aquis Local Plan	9. Compliance with Queensland Planning Provisions (QPP). The Draft Cairns Regional Council Planning Scheme being developed under SPA is likely to be in effect at the end of 2014 or early 2015. The local plan will need to be QPP compliant if it comes into effect following adoption of the SPA Cairns planning scheme. For example, the rules for determining the levels of assessment and consistent terminology should be used consistent with QPP. Development codes should use performance outcomes and acceptable outcomes rather than acceptable outcomes and probable solutions. Similarly consistent use of QPP definitions is recommended.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	10. Timing of SPA planning scheme adoption versus date of lodgement of preliminary approval. See earlier comments relating to land use. The draft Aquis Land Use Plan could be 'future-proofed' b removing specific references to CairnsPlan 2009, and referring more generally the Cairns Regional Council Planning Scheme.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements			X				
Appendix D – Draft Aquis Local Plan	11. Section 1.3 – Consistency in plan names. Check document for consistency in naming of relevant plans. For example, the Concept Master Plan is also referred to as the Concept Land Use Plan in the Table of Contents and code – refer to P02.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	12. Section 1.4(2) – no relevant period proposed for approval. Recommend a suitable timeframe be set for approval, to avoid having a 'sleeper' approval should the development not proceed as planned.	Relevant period of 10 years will be included in Aquis Local Plan.			X				
Appendix D – Draft Aquis Local Plan	13. Section 1.4(3) – Reference to advice agencies. Remove reference – there are no longer advice agencies since amendments were made to the Sustainable Planning Regulation in 2013.	Noted. Reference will be removed.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Appendix D – Draft Aquis Local Plan	14. Section 4 – Table of assessment. The tables of assessment call up various codes from the CairnsPlan 2009. Council may need to consider how these codes will translate to relevant codes under the new planning scheme. To ensure state interests are addressed satisfactorily, it may also be appropriate to call up relevant overlay codes, such as coastal management overly code or natural hazard overlay code. CairnsPlan 2009 codes that may be applicable to the site include: • Rural planning area • Flood management • Operational aspects of Cairns International Airport • Acid sulphate soils • Vegetation and waterway • Use codes e.g. Short term accommodation • Excavation and filling • Infrastructure works • Landscaping • Parking and access • Height and Impact of Buildings Note there currently appear to be some inconsistencies between the draft Aquis Land Use Plan (AO2.1) and the provisions of the Operational Aspects of Cairns International Airport and Height and Impact of Buildings codes in relation to maximum height limits. The aspects of Cairns International Airport and Height code also deals with a broader range of issues, including bird strikes, lighting, air emissions and aviation facilities.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	15. Section 5.2 – Purpose. Some of these outcomes read more like marketing strategies purpose statements.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	16. Section 5.2 – Sport and Recreation Precinct. In the first sentence is this intended to be 'for' indoor and outdoor…? If so, should it be three as the activities mentioned are tennis, equestrian and golf.	Noted. Refer Further Assessment. ALP is being updated to incorporate DSDIP and CRC comments/ requirements.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Appendix D – Draft Aquis Local Plan	17. Section 5.2 – AO2.5. The reference to roof structures and parapet detail do not appear to relate to the performance outcome. It also appears this AO exempts roof structures and parapet detail from height calculations. This should be clarified.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	18. Section 5.2 – AO1.2 and Schedule 3 – Legibility of land use plan. The acceptable outcome requires distribution If land used to be generally in accordance with Schedule 3. The plan included is very rudimentary and does not specifically nominate any land uses and does not contain a legend. Note plan title should also be amended to read 'Concept land use plan', not master plan.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	19. Schedules 1.4. Add title for each schedule.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	20. Schedule 3 – Legibility of land use plan. The proponent has advised that the development will occur in 2 stages. Words on the Schedule 3 map are illegible. Concept land use plan 3523-ADP2 dated 8 October 2013 provided a better indication of the proposed land use of the site. It would be useful to identify the states of development on this plan.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				
Appendix D – Draft Aquis Local Plan	21. General comments. • Remove draft and add page numbers and referencing • Consider including headings within the code for example 'built form' and/or 'noise and scenic amenity • Greater consideration of acceptable outcomes where none are specified.	Noted. Refer Further Assessment. Aquis Local Plan is being updated to incorporate DSDIP and CRC comments/ requirements.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Economic Part 13 – Pages 1-16	22. Description of positive and negative social impacts on affected communities and proposed mitigation measures. The EIS provides a good level of detail regarding economic impacts during both the construction and operational phases of the Aquis project. Mitigation Strategies discussed in Section 13.5 discuss an integral aspect of Aquis' mitigation for the overall project and its impacts will be continuously sharing information yet an explanation of how this will occur, who will lead, and a firm idea of agencies involved is not discussed. A structure or body for mitigation strategy management, community engagement is suggested. A reporting framework would be useful including risk management, and monitoring indicators are in place to trigger a need for action.	Refer Further Assessment. Community Engagement Plan framework addressing issues raised is being prepared.			X				
Economic Part 13 Pages 22-23	23. Description of likely negative and positive impacts on the economies materially impacted by the project – Tourism. Impacts on the tourism industry have been well scoped; however a mitigation strategy for issues such as perceived competition with the Cairns Convention Centre would be useful. For example, will Aquis market only to convention market of 2,000 to 10,000 delegates? Could a joint convention destination marketing program be initiated?	Refer 2.15.3 Further Assessment Opportunities for joint marketing can be investigated as part of the Community Engagement Plan.			X				
Economic Part 13 Pages 34-37	24. Impacts on the viability of the local sugar cane industry due to proposed loss of agricultural land. The value of the loss sugar cane production and impact on mill viability, harvesting and consequential impacts are well detailed. The loss of cane production resulting from the Aquis project appears to be negligible. In future the Mulgrave Mill will likely have to deal with the loss of cane production land due to population expansion in the southern corridor of Cairns. It is suggested a mitigation strategy for impact would not be responsibility of Aquis.	Noted.	X						
Economic Part 14.4 Pages 28-32	25. Mitigation and Management. The Workforce Development and Management Plan could include Construction Skills Queensland as a key stakeholder, as the industry levy will potentially fund training. Aquis intend to develop a Local Content Plan. It is likely that Aquis will be required to submit an Australian Industry Participation (AIP under the Australian Jobs Act 2013) plan to the Commonwealth Department of Industry. A key part of the AIP approach will be the use of the ICN Gateway. The Queensland Government Charter for Local Content can be offered as a means of accessing ICN Qld and the services of DSDIP to assist in the development of a local participation plan and to monitor local industry participation in the project.	Noted. Refer Future Action.					X		

2.13.2 Discussion

DSDIP comments of the Aquis Local Plan are acknowledged as constructive comments to ensure that the Aquis Local Plan in a robust planning instrument.

Aquis proposes a Strategic Growth Management Plan to be developed by multiple agencies including land use planning, infrastructure providers and service agencies to plan and manage the growth of the city. Aquis considers that DSDIP will have a vital role in its development and implementation.

2.13.3 Further Assessment

Aquis Local Plan

The Aquis EIS team is working collaboratively with CRC and DSDIP officers to revise the Aquis Local Plan to incorporate CRC and DSDIP suggestions and amendments and relevant state and CairnsPlan Code provisions to ensure that it is a robust development control instrument for future development applications.

It is anticipated that the revised Aquis Local Plan will be reviewed by DSDIP and CRC officers for adequacy and the submitted to CRC for formal endorsement by Council.

The revised Aquis Local Plan will be included in *Supplementary Information Report*.

Community Engagement Plan

The Aquis EIS team is preparing a frame work for the proposed Community Engagement Plan. This will include:

- Communication and Consultation strategies.
- Who will be engaged with? (Community groups or representatives, Yorkeys Knob or broader Northern Beaches/Cairns Community, Council/Agencies, Tourism/Environmental groups).
- The mechanisms to be used (Community Reference Group, Business Supplier Reference group, Agency Reference Group, Tourism Reference group, Environment Reference group, Social media, Newsletters, project updates).
- Monitoring and Reporting protocols.

The Community Engagement Plan frame work will be documented in the *Supplementary Information Report*.

2.13.4 Future Action

It is anticipated that the CoG Evaluation Report will reference the Council endorsed Aquis Local Plan as the appropriate planning instrument against which future code assessable applications will be assessed.

It is further anticipated that The COG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include:

- A commitment to prepare a Strategic Growth Management Plan with DSDIP as a key stakeholder.
- A commitment to prepare the Community Engagement Plan in accordance with the developed framework.
- A commitment to prepare a Workforce Development and Management Plan including Construction Skills Queensland as a key stakeholder.
- A commitment to prepare a Local Content Plan with DSDIP as a key stakeholder.

2.14 DEPARTMENT OF STATE DEVELOPMENT, INFRASTRUCTURE AND PLANNING - STRATEGIC POLICY - ORGANISATIONAL SUPPORT AND REFORM

2.14.1 Issues Analysis

TABLE 2-14 ISSUES ANALYSIS – DSDIP (239)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 5	1. The project is increasing urban development outside the existing FNQ Regional Plan urban footprint. This Regional Plan is still in effect under SPA.	Noted.	X						
Chapter 5	2. The project is reducing agricultural production contrary to the Four Pillars policy, this is balanced by increased Tourism (another pillar).	Noted.	X						
Executive Summary	3. The document makes some statements about the probability of flooding (for example Executive Summary p26 in reference to 1977 flood) that demonstrate a poor understanding of the meaning of flood probability calculations. A 2% AEP flood has a 2% chance of occurring in any year, not as commonly perceived being a '1 in 50' annual recurrence interval. Floods occurring in 1971 and 1977 do not indicate anything exceptional.	Comment not clear and not accepted. See below.		X					
Chapter 12	4. The discussion of the impact of mosquitos and midges does not address potential health impacts of diseases carried by those vectors or the impact of placing a substantial population of overseas visitors in such a location.	EIS addresses this issue. Further advice received from Queensland Health.	X						

2.14.2 Discussion

Item 3

The comment is incorrect. When making reference to the '1 in 100 year flood', the Executive Summary (p26) refers to this as the 'old way' of describing floods and does this simply because many readers would only be familiar with this term. The relationship to AEP is described for public assistance.

While agreeing that the 1977 and 1979 floods 'do not indicate anything exceptional', they were large floods that occurred in living memory and a rough AEP (2%) was assigned to the former. The statement that the similar 1979 flood came soon after was precisely to make the point raised in the submission – that large floods can occur more frequently than suggested by the old way of expressing probability (i.e. ARI). No further discussion required as issue adequately dealt with in EIS.

2.14.3 Further Assessment

None required for land use decision.

2.14.4 Future Action

No future action required.

2.15 DEPARTMENT OF THE ENVIRONMENT

2.15.1 Issues Analysis

TABLE 2-15 ISSUES ANALYSIS – DOTE (212)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
General	1. There are some issues that may seem to be repeated throughout these comments. This is because some issues need to be addressed in a number of sections in the EIS	N/A	X						
Project details	2. The final design of the project has not been provided. This will influence impacts relating to Outstanding Universal Value. In particular: • height of buildings • colour of buildings • lighting on site • design of lake relating to water quality and bird (and other fauna) habitat.	Investigations in preparation regarding visual amenity and lake water quality.			X				
Project details	3. Please provide further details regarding the commitments to implement best practice lighting and noise.	Investigations in preparation regarding minimisation of light and noise emissions.			X				
Project details	4. The EIS states that flooding overflow will drop the lake salinity (undesirable) and the management response will be to reduce water level as soon as possible and raise the salinity by pumping seawater at an enhanced rate. However, the EIS does not address the fact that this will in-turn result in additional freshwater being pumped into the receiving waters and impacts this may have. Further information is required on the impacts of flooding on matters of national environmental significance (MNES).	Investigations in preparation regarding behaviour of lake during major flooding.			X				
Environ-mental Character-istics	5. The Terms of Reference specify that the proponent should provide information on climate in regards to both long term averages and extreme values, including consideration of rainfall patterns and storm events. Chapter 3 of the draft EIS provides information on rainfall data for the area, including monthly averages, highs and lows. However, the number of years over which this data has been collected has not been provided, and a description of the area's flood history and probability of future flood events has not been discussed. As run-off from storm events, other extreme rainfall or flood events may potentially impact MNES, further information relating to the probability of flood events (of varying levels) is required.	Noted. Refer Discussion.		X					

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	6. Further information is required on the potential impacts of artificial lighting on MNES, for example turtles, birds and visual impacts from the Great Barrier Reef World Heritage Area (GBRWHA), avoidance and mitigation measures.	Investigations in preparation regarding light emissions and impact on species and visual amenity.			X				
	7. Please provide additional information on the proposed vegetated screen including the type of vegetation to be used, the management of the vegetated screen and the likely effectiveness of the vegetated screen for this project.	Investigations in preparation regarding effectiveness of screening using vegetation.			X				
	8. It is important to note that the aquaculture ponds and artificial drainage networks currently on site provide habitat for fauna including MNES. Although they are not considered to be natural, they still provide habitat that will be removed by the Aquis development. Further information is required as to how the impacts of removing this habitat will be fully considered and mitigated.	Investigations in preparation regarding possibility of retaining the aquaculture ponds.			X				
	9. The surveys summarised in Appendix F were designed to provide input into the design of the proposed development, rather than as baseline surveys for a known development. Please provide baseline data to ensure that changes to water quality can be monitored during the construction and operation of the proposed development.	Investigations in preparation regarding baseline water quality data, discharge strategies, and monitoring.			X				
	10. There is some lack of clarity (pp. 22-108-109) as to where the site is located in terms of the North/South, Inshore/Offshore, and Inland/Coastal zones described in the draft GBRMPA strategic assessment. The EIS claims that the Aquis site is within the 'Southern in-shore and southern offshore' areas, despite also stating that the inshore/offshore dividing line is generally about 20 km offshore. It appears that the text intends to indicate that the Aquis site (particularly the pipeline) is within the southern inshore area, since the pipeline extends only 2.2 km offshore; however the confusion raises doubts about the potential area of influence of the Aquis site (are its impacts likely to be observable 20+ km out to sea?). Likewise, in terms of onshore habitats, the text states that the Aquis site was in the Southern Inland area, while in the next sentence quotes GBRMPA's definition of coastal areas as being those areas less than 5 km from the coast or where the land reached 10 m AHD, whichever was furthest (with the inland area being the remainder of the catchment), and indicates that the project site is within the coastal zone. Please provide a clear description of the location of the project in regard to the coastal areas.	Noted. Refer Discussion.		X					

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Identification of MNES	11. As mentioned above, further discussion is required regarding the impacts associated with the loss of the aquaculture ponds. The EIS states that the proposed artificial lake will result in an overall increase in habitat as it will provide habitat for birds (including MNES). However the lake is being designed to minimise attracting waders and crocodiles by designing the lake with steep sides. Further information is required to clarify what habitat the lake is providing for which species.	To be addressed during detailed design. preparation of Lake Management Strategy covered by Aquis Schedule of Commitments					X		
	12. Appendix F lists colonisation of lake by pest species as a potential negative outcome. Further information is required as to the impacts of potential pest species on MNES and how this potential threat will be avoided including mitigation measures.	To be addressed during detailed design. preparation of Lake Management Strategy covered by Aquis Schedule of Commitments.					X		
	13. While the EIS addresses cetaceans, turtles and dugong it is difficult to understand how conclusions were reached regarding the importance of habitat present and the severity of impacts. There is no information on sensitive areas. This needs to be provided and set in context for all species. For example, while some of the more important habitats for marine turtles occur elsewhere in the GBRWHA, the EIS needs to discuss the regional importance of habitat present and provide maps of these habitats adjacent to the site and within the region.	Investigations in preparation regarding further assessment of impacts on particular species.			X				
	14. Statements that this area is not considered to be core habitat for a species and not considered to support important populations or offer habitat critical to the survival of the species need to be supported by evidence. This is also the case when describing the area may be low or moderately likely to provide habitat for a species. Further justification is required when attributing low or moderate score to habitat features for the species.	Investigations in preparation regarding further assessment of impacts on particular species.			X				
	15. The proposal could potentially result in adverse impacts to Indo-Pacific humpback dolphins (*Sousa chinensis*) and Australian snubfin dolphins (*Orcaella heinsohni*), which generally occur in waters less than 15 metres deep that are close to river and creek beds within the proximity of seagrass beds. The EIS concludes that significant impacts on the inshore dolphin species are not likely as there are only small numbers present. The Australian snubfin and the Indo-pacific humpback dolphin occur in small and isolated populations. Further evidence is required to demonstrate that these species or their habitat will not be significantly impacted by the proposed development.	Investigations in preparation regarding further assessment of impacts on particular species.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Great Barrier Reef World Heritage Area Outstanding Universal Value Criterion vii - contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance. 16. Justification needs to be made as to why the mangroves on site are not considered representative of the attribute of Outstanding Universal Value (page 22-94).	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	17. Low visibility and turbid waters are not sufficient explanation as to why marine flora and fauna are not considered to be a significant contribution to Outstanding Universal Value. Please justify this statement.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	18. Please justify why the beaches south of Yorkeys Knob, the Richters Ck mouth and the northern part of Holloways Beach are not considered spectacular sandy beaches contributing to the Outstanding Universal Value of GBRWHA.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	19. Claiming that the mainland (and development site) is an area that visitors leave behind to visit the GBRWHA and that it is not part of the GBRWHA experience itself does not recognise the full extent of the GBRWHA. The aesthetic values of the GBRWHA need to be considered as broader than the actual reef and include a broad landscape experience.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	Great Barrier Reef Marine Park 20. Examples of indigenous use of land and sea resources were found on the site in 1991 although not in 2013 surveys. The EIS states they are outside the development footprint and therefore not an issue. The EIS needs to substantiate why these values no longer exist.	Noted. Refer Discussion.		X					
Identification of Impacts	21. Potential impacts to listed species or their potential habitat have been discussed in the EIS, however further information is required to outline which impacts are relevant to which listed species.	Investigations in preparation regarding further assessment of impacts on particular species.			X				
	22. Of the potential impacts to MNES identified (table 22-12), wildlife disturbance was stated to be not relevant as there is no beach access provided and all resort activities will take place onsite. How is access to the beach going to be restricted? Not providing access may mean that guest/staff/people wanting to gain access from the resort to the beach make their own, resulting in multiple and not maintained paths to the beach or creek. This may have a greater impact than providing maintained access to the beach.	Noted. Refer Discussion.		X					

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	As discussed above, further information is required relating to wildlife disturbance including; how access to the beach and creek will be restricted, all disturbance impacts associated with the construction and operation of the project and how these impacts will be mitigated.								
	23. Please specify mitigation measures for the construction of the inlet/outlet pipes. These should include measures for noise impacts to marine fauna such as soft startup of machinery/drilling equipment, start up and shutdown times to avoid important feeding/movement times of fauna such as turtles.	Investigations in preparation regarding appropriate construction methodology for the offshore works.			X				
	24. Impacts to shorebirds and turtles need to be addressed under the relevant controlling provisions, for example listed threatened species, listed migratory species and World Heritage Area (Outstanding Universal Value of the GBRWHA).	Investigations in preparation regarding further assessment of impacts on particular species.			X				
	Light 25. 1 September 2014The EIS acknowledges numerous impacts of artificial light but concludes that light from the proposed development will not impact on any matters of national environmental significance.	Investigations in preparation regarding further assessment of impacts of light emissions on particular species.			X				
	26. The EIS list mitigation measures that will reduce the impact of light on turtles however there is no evidence provided to suggest that this is the case. Evidence is required to justify these statements.	Investigations in preparation regarding further assessment of impacts of light emissions on turtles.			X				
	27. The EIS claims that the night time light of the Aquis resort will be perceived as part of the Cairns node of intensive development. There is significant distance between the proposed development and Cairns particularly relating to night time glow. Further justification is required relating to the perceived single node of intensive development.	Investigations in preparation regarding light emissions in the local context.			X				
	28. Further consideration needs to be given to how all lighting onsite will be managed to mitigate impacts to fauna (including turtles), and to minimise the night time glow from the resort as seen from onshore and offshore sites.	Investigations in preparation regarding mitigation of light emissions.			X				
	Great Barrier Reef World Heritage Area <u>Criterion vii</u> - contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance 29. As discussed above, further justification is required regarding the impacts of light on the aesthetic values of the GBRWHA and fauna such as marine turtles.	Investigations in preparation regarding further assessment of impacts of light emissions on turtles and other marine fauna.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	30. The EIS states that the development won't impose a visual change to the connectivity between GBRWHA and Wet Tropics World Heritage Area (WTWHA) (this occurs further north). However, there will be a visual impact when looking from the WTWHA towards the GBRWHA. Further justification is required regarding visual impacts to GBRWHA and WTWHA.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	31. There is inconsistency in the EIS as to whether or not the resort (tall buildings) will be seen from Green Island. Clarification needs to be provided on this issue.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	32. As discussed above, further information is required on the adequacy of vegetation screens. For example, where vegetation has been used to successfully screen similar developments from light impacts to aesthetics of an undeveloped area.	Investigations in preparation regarding effectiveness of screening using vegetation.			X				
	33. There is no evidence of consultation on aesthetic impacts with either residents or existing visitors to the Cairns region. The EIS makes assumptions about their 'likely' views. Social research on the opinions of residents and visitors on the development's likely impacts on their aesthetic enjoyment of the area could assist to address this.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	Criterion x - contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation 34. shore birds – as discussed above further information is required on the impacts of the project on migratory birds and /or their habitats and the impact on Outstanding Universal Value of GBRWHA.	Investigations in preparation regarding further assessment of impacts of light emissions on shore birds.			X				
	Wet Tropics of Queensland World Heritage Area Outstanding Universal Value Criterion vii - contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance. 35. Insufficient consideration of the impacts on WTWHA is provided in the EIS. Further justification is required regarding the impact the project will have on the aesthetic values of WTWHA and its links to GBRWHA.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	Criterion x - contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation. 36. Further consideration needs to be given to the impacts of increased tourism to the WTWHA.	Investigations in preparation regarding visitor management.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Evaluation of Significant Impacts	**Great Barrier Reef World Heritage Area** Criterion vii - contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance 37. The EIS relies on the property having been a sugar cane property as evidence of diminished World Heritage Value. The fact that there is cropping on the site does not mean that the attributes of the world heritage area do not exist. For example, the visual connectivity between GBRWHA and WTWHA. Although agricultural land is not natural vegetation, the change from agricultural landscape to an urban landscape will impact on both WHAs. Further discussion regarding the impact of changing landscape should be provided.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	38. As discussed above, the department considers it likely that there would be a noticeable increase in artificial lighting and noise and in turn impacts on wildlife and aesthetics. The impact of artificial light and noise requires further investigation.	Investigations in preparation regarding further assessment of impacts of light emissions on wildlife and aesthetics			X				
	39. As well as discussing the visual impacts of the development from Green Island and other offshore points, the visual impact of the development in the more immediate vicinity needs to be discussed. It is likely that the resort will be visible from a broad sweep of the adjacent coastline, coastal waters and hinterland, and from the WTQWHA.	Investigations in preparation regarding further assessment of OUV (presence and impacts)			X				
	Criterion x - contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation 40. Further discussion is needed on the impacts to migratory shorebirds including: • What are the impacts to shorebird habitat including water quality? • What are the likely impacts of introduced species (weeds) on migratory shorebirds? • What are the likely impacts of noise on migratory shorebirds?	Investigations in preparation regarding further assessment of impacts on shore birds.			X				
	Integrity 41. In Table 22-27 on page 22-130, the text indicates that there are coral reefs at Haycock Reef and Double Island Reef, approximately 10 km north of Richter's Creek mouth. Earlier in the document, it is stated that the 'nearest mapped coral is approximately 25 km north-east of the site' (p22-121, p 22-123) and 'there are no reef structures within 25 km of the investigation area (p 22-142). This inconsistency should be corrected.	Noted. Refer Discussion.		X					

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	42. In relation to the discussion of the concept of Outstanding Universal Value on pages 22-87 to 22-89, the proponent includes discussion of the criteria and integrity as components of Outstanding Universal Value; however the third element of Outstanding Universal Value, protection and management is not discussed and must also be included.	Investigations in preparation regarding further assessment management issues.			X				

2.15.2 Discussion

Many of the issues raised above are the subject of further investigations (Cat 3) described in **Section 2.15.3**. Other issues are discussed below.

Item 5

Data provided in s3.6 is described as having been derived from climate statistics from the Bureau of Meteorology (BoM) station, Cairns Aero (Station 031011). It is noted that 'This rainfall station … has records from 1942 to the present. It has the most accumulated data and least amount of missing data and is therefore the most reliable gauge in the area.' As noted, the records commenced in 1942 and therefore the number of years over which the data has been collected is 73 (missing records not known).

The discussion on Climate Change in s3.6.6 is based on the best current advice that is that:

> … annual rainfall is projected to decrease by two per cent (-25 mm) and three per cent (-38 mm) under low and high emissions scenarios respectively. The largest seasonal decrease under a high emissions scenario of 16 per cent (-21 mm) is projected for spring. (DERM 2009b). For Queensland in general it is predicted that there will be a stronger but shorter rainfall season during January and February thus resulting in drier autumns. It is generally anticipated that the number of rainy days will decrease but the amount of rain falling on wet days may increase by up to 20%. Extreme rainfall events are predicted to also become more frequent during the summer months (Office of Climate Change 2012). (p3-18)

The flood history was not stated in detail (although two historic floods were referred to as they were within reasonably recent living memory). However, the modelling described in Chapter 9 uses CRC's Barron Delta Flood Model which is based on industry-standard hydrologic and hydraulic techniques. The frequency analysis of rainfall and floods included in the model was based on peer reviewed consideration of all historic data and current best-practice. The flood model has been used on over 50 separate development assessments to date, including for setting urban development levels across the delta, for Cook Highway upgrades and for major tourist developments such as Skyrail. It has standing in the Queensland's P&E Court.

Regarding the likely effect of extreme rainfall or flood events on MNES, it needs to be acknowledged that the Aquis site at 343 ha represents just 0.16% of the area of the Barron River Catchment. The proportion of sediment and other nutrient loads is set out in Table 11-10 and this shows that the Aquis export of pollutants is 0.15% of the Barron catchment. For the untreated condition (i.e. existing cane farm), the figure is 0.25%. These figures apply to the whole Aquis site – when the Environmental Management and Conservation precinct (113 ha) and much of the Sport & Recreation Facilities Precinct (155 ha in total) are excluded on the basis that they are largely natural areas, the role of the Aquis site in generating contaminants diminishes further. In any case, modelling shows that the effect of WSUD is to reduce the contribution of the site to pollution compared with the cane farm. Under flood conditions when the Barron River breaks its banks and floodwaters enter the site, the lake will first fill and then surcharge, leaving the built form of the Hotel Complex well above the expected flood levels (i.e. even above the PMF). At this time, most of the rest of the site and the adjacent Yorkeys Knob area will be inundated by floodwaters and flow through the lake will join the general overland flood flow and

exit the site via the existing creek system. As the flood falls, the lake level will be gradually lowered by the two lake overflows (until the level falls below their inverts) and by pumping to the lake outlet.

Under these extreme conditions, the effect of any discharge from Aquis is totally insignificant. The plume of the Barron River discharge under high flows is known to extend up to 1 km offshore, totally swamping any local effect on Matters of NES.

Regarding the assessment of the probability of future floods, the AEP approach provides just this assessment. Should climatic circumstances change in the future, then adjustments need to be made to either the probability of events of a certain magnitude, or conversely, adjustment made to the magnitude for a given probability. If future rainfall intensity is to increase, then floods of a certain AEP will be bigger. Conversely, floods of a certain magnitude will be more common (i.e. larger AEP). These future circumstances are unknowable.

Given that these future circumstances will apply to the whole Barron River catchment (and the whole GBR), the impact of the small Aquis catchment will remain insignificant.

Item 10

The Aquis Resort lies within the following areas defined in GBRMPA (2013, 2014) see **Figure 2-2**:

- GBR Region – within the southern in-shore (S.I.) area:
  - the north/south dividing line is around Port Douglas
  - within 18 km of the southern off-shore (S.O.) area as the dividing line is 20 km offshore.
- GBR catchment – within the southern coastal (S.C.) area.

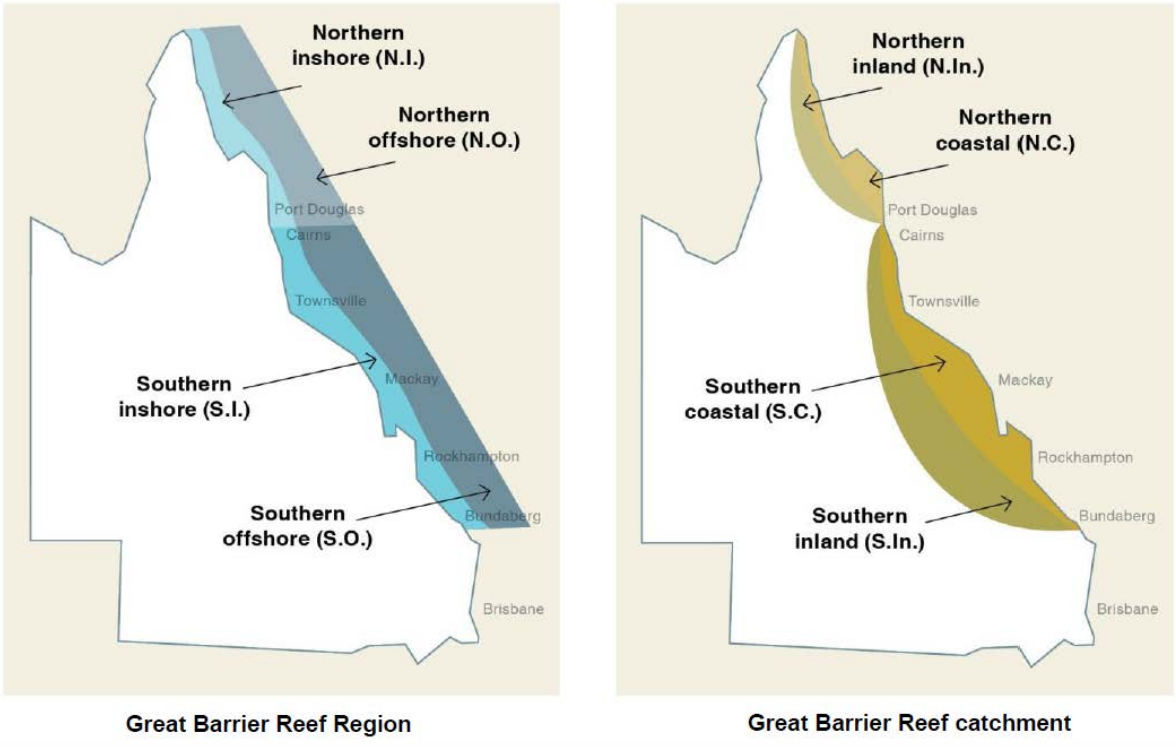

Figure 2.3 Indicative broad assessment areas for the Region and its catchment

Figure 2-3 Location of the Aquis Resort site relative to GBRMPA's regionalisation.

Source: GBRMPA (2014).

However, because the EIS assessment aimed to be conservative, values and impacts beyond this location were also considered (hence the reference to the S.O. area). With respect to the issue raised in the submission:

- impacts of the development on the GBR Region are likely to restricted to the coast (i.e. within the 20 km boundary) although they are not expected to extend beyond the project site to any significant extent)
- impacts of the development on the GBR Catchment are likely to be restricted to the coastal area (defined as being a minimum of five kilometres landward from the coastline or where land reaches the height of 10 metres AHD, whichever is furthest from the coast).

Item 20

In summary:

- A 1991 survey located three items of ICH and coordinates were submitted to the Queensland Government. These sites were all within the current wooded area.
- Despite a targeted search for these in 2013 (i.e. knowing the coordinates and what to look for), the archaeologists were unable to locate the sites. This means that they were either not present or not visible.
- The project footprint was selected partly to avoid these sites should they still exist (and also to maximise the retention of existing natural vegetation for biodiversity conservation and other reasons).

Thus, whether or not the sites still exist they will not be impacted. Further, Aquis has signed off on a Cultural Heritage Management Plan (CHMP) with the Yirrganydji (Irukandji) people following procedures set out in the *Aboriginal Cultural Heritage Act 2003* (Qld) (ACH Act). This ensures a high level of care during construction and the appointment of monitors.

In addition to the CHMP process, Aquis proposes to include all Indigenous groups in planning for the Interpretive Centre under the *Interpretation Strategy* (see EIS Table 23-2).

Item 22

As shown on EIS Figure 11-14 and 11-15, lake inlet and outlet pipework will be installed between the lake and the Richters Creek area. The route of this pipeline is shown to utilise an existing clearing and minimal-impact techniques will be used in finalising route selection and construction. It is proposed to provide hardened access along this route for small vehicles and foot traffic for regular or emergency maintenance. This will for official use only and will be fenced with locked gates and appropriate signage.

Regarding public access, the EIS (s4.2)states:

> There is no plan to install infrastructure to facilitate Aquis Resort guests access the public foreshore. (p 4-38)

Prevention of public access to the foreshore will be achieved by:

- providing no public infrastructure that facilitates formal access
- fencing and appropriate signage to prevent access of the maintenance track described above
- fencing off the boundary of the site to prevent any informal access
- appropriate signage along the boundary
- guest education.

Item 41

The EIS does say in a number of places that that the nearest mapped coral is approximately 25 km north-east of the site. This is incorrect as noted in the submission. The best available information is contained in the following EIS references:

- p7-28: 'The field survey confirmed that no rocky or coral reefs are present in the survey area. It is also known that there are no rocky or coral reefs in the vicinity of the proposed pipeline alignment. The closest known reef is approximately 7 km to the north-west at Taylor Point. This reef covers a small area (approx. 0.0075 km^2) on the western side of the headland, and is likely to provide habitat for a variety of flora and fauna that are usually found on inshore reefs.'
- p22-25: 'No listed species were recorded during any of the field surveys undertaken by frc environmental [and this includes the survey of the pipeline route]. In addition, no habitats critical to the survival of listed species (e.g. seagrass meadows, rocky reefs, coral reefs) were recorded within the potential area of impact of the Aquis development.'
- p22-128: 'The nearest coral reefs to the project site are Green Island (approximately 25 km east of Richters Creek mouth), Haycock Reef and Double Island Reef (approximately 10 km north of Richters Creek mouth).'

Notwithstanding the above, no impacts are expected on these distant communities. Although the water quality assessment model does not extend north of Trinity Beach and therefore does not cover the Double Island area which is greater than 10 km from the mouth of Richters Creek, the model results show that there is 'negligible change in water quality concentrations off-shore with 90th percentile changes indicating over 99.9% dilution'. The EIS notes that dilution need only be considered if the discharge is of a worse quality than the receiving water body – all work done to date suggests that discharge will be of a better standard than the receiving waters.

2.15.3 Further Assessment

Investigations are underway on most of the matters raised above, including:

- water quality:
  - behaviour of lake during and after flooding (hydraulic and water quality)
  - option for moving the Richters Creek outlet further offshore
  - more details of construction methodology for offshore pipeline(s)
- visual assessments:
  - options to reduce light emissions
  - light modelling (distant views and Yorkeys Knob Beach)
  - effectiveness of natural vegetation for screening
- terrestrial ecology:
  - effect of light emissions and other impacts on shore birds and other particular species
  - inputs to multi-criteria analysis on aquaculture ponds (retain or fill)
- aquatic ecology:
  - effect of light emissions on turtles and other marine species
  - inputs to multi-criteria analysis on aquaculture ponds (retain or fill)
- multi-criteria analysis of various options:
  - for aquaculture ponds (retain or fill)
  - seasonal VS wet lake.

These studies will inform the preparation of the *Supplementary Information Report* which will address all of the Cat 3 issues raised in the submission.

2.15.4 Future Action

No future action required unless warranted by the approval under the EPBC Act.

2.16 DEPARTMENT OF TOURISM, MAJOR EVENTS, SMALL BUSINESS AND THE COMMONWEALTH GAMES

2.16.1 Issues Analysis

TABLE 2-16 ISSUES ANALYSIS – DTMESBCG (240)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Significant Catalytic Tourism Project	1. Aquis at the Great Barrier Reef is the largest integrated tourism resort development project ever proposed in Queensland. The Tropical North Queensland (TNQ) Destination Tourism Plan identifies Aquis as a significant catalytic tourism infrastructure project that will help to invigorate the region's tourism potential; providing new and memorable destination locations for tourism and other leisure activities. Aquis will provide a much needed economic stimulus for the local and regional economies and increase the resilience of the TNQ tourism industry. Aquis is an important additional tourism product within the region, adding to the range of natural attractions including the reef, the tropical rainforest, rivers and an abundance of natural wildlife that surround the resort.	Noted.	X						
Attraction and Investment in New Tourism Products	2. The Queensland Government is committed to creating the right environment for new investment, revitalisation and redevelopment of the tourism industry. Approval of this project would send a strong signal to potential investors that Queensland is serious about developing a prosperous tourism industry and economy, while at the same time demonstrating the state's commitment to the stewardship of its natural assets. The tourism benefits and subsequent economic development opportunities that will arise from the proposed development will be substantial.	Noted.	X						
Key International Tourism Markets and Visitation	3. Aquis Resort represents a unique and significant opportunity to establish Cairns, as an important international tropical tourism destination, within the Asia Pacific Rim. This is underpinned by continued visitation growth from key international markets, mostly notably China, and will assist in capitalising on the opportunity from a growing Asian middle class with significant wealth and purchasing power. It is noted Aquis Resort is estimated to increase international visitation to Tropical North Queensland by up to 1 million visitors per annum or about 140% relative to 2012 visitation levels, creating an additional bed capacity of 7,500 beds and representing an increase of 23 per cent compared to June 2013 bed capacity levels.	Noted.	X						
Sort Term Accommodation Supply and Demand Considerations	4. The size and scale of the short term accommodation component of the development should take into account the projected future demand for accommodation in the region. The design of the resort and accommodation should also complement the distinct attributes of Tropical North Queensland.	Noted.	X						

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Demand for a high end international integrated resort hotel and casino should consider the anticipated room occupancy rates. RevPAR (Revenue per available room) in Cairns has averaged $100 over the year to May 2014 and while having shown some improvement, it remains 5.9% below December 2007 market peak of $106. Estimates in short term accommodation supply are projected to average 0.8% per annum to end of 2018. Equally, the short term accommodation in Cairns may be impacted by Aquis Resort's drawing capacity creating a market downturn within the Cairns Central District. It is acknowledged Aquis will be constructed in two stages; however the timing of opening the hotel accommodation will need to consider mitigating the economic impact it is likely to have on the short term accommodation in Cairns. It is noted Aquis is expected to attract 74 per cent overseas visitors and 11 per cent domestic visitation into Tropical North Queensland. These factors indicate a need to develop a specific Aquis tourism marketing strategy in order to sustain the demand for high end hotel accommodation and increased investment in diversifying tourism products. The resort development will also be heavily dependent on access from key Asian markets. Success of the resort will be dependent on increasing the number of international direct flights from major Asian markets to Cairns. Although this is North Queensland Airport's matter, the resort will be dependent upon upgrading of airport facilities which include check-in, crowd management and baggage handling at the Cairns International Airport.								
Value Chain Stimulus	5. The tourism industry is based around 'the destination', where demand and supply come together. The value chain recognises tourism begins with a visitor deciding to come to a place for some primary purpose. Once there, tourist often visit a range of attractions and buy goods and services from many suppliers, including transport operators, accommodation providers, restaurants and retail stores. It is the convergence of attractions, transport, supporting services and other tourism infrastructure that forms the tourism product for visitors and tourists. The interconnectedness and pervasiveness of the tourism industry can be seen in the tourism 'value chain'.	Noted.	X						

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Employment Stimulus	6. Tourism is vital to the Queensland economy, creating regional jobs, supporting local and regional communities and driving regional economic development and diversification. Tourism's importance to the North Queensland economy is demonstrated by a number of local statistics such as: • One in five jobs is in tourism (directly or indirectly) • One in every 10 businesses relies directly on tourism • The unemployment rate in Cairns Regional Council area was 7.09% for December quarter 2013 Cairns Region has the second highest youth unemployment rates (aged 15-24 years) by region, average of 12 months to January 2014 and In 2012-2013, the total tourism and hospitality sales in Cairns was $1,730.8M, the total value added was $819.8M. I am also aware 'indigenous unemployment' is an issue in North Queensland. In this context, an opportunity exists to investigate the capacity for the Traditional Owners of the Cairns/Trinity Inlet Region (the Yirrgandji and Gimuy Walubarra Yidinji People) to be involved either in tourism or mainstream business activity associated with the project. The Aquis project will provide both direct and indirect employment opportunities further and post construction. The outcomes are welcomes as there is an urgent need to address the seasonal and casualization of employment in North Queensland. In 2011, there were 6,245 people who make up the tourism and hospitality workforce in Cairns. Of this, 57.6% worked full-time and 37.9% worked part time. I also note KPMG has estimated the Aquis project will create: • 16,600 jobs at peak construction (9,300 direct and 7,300 indirect jobs) • 26,700 jobs when fully operational (10,000 direct and 16,700 indirect jobs). You may be aware the Australian Trade Commission (Austrade) in partnership with the Queensland Government, is currently developing a 'Tropical North Queensland Tourism Employment Plan' which will be available on Austrade's website in September 2014. This publication will assist with the future development of the Aquis Workforce and Management Plan. Austrade has also produced a guide to developing tourism employment plans which is an exemplar publication. The publication is cited as: Australian Government. 2013. Tourism 2020. Tackling labour and skills issues in the tourism and hospitality industry:	Noted. Reference to November 2013 Draft version of EIS. KPMG data superseded by Deloitte's analysis in EIS.	X						

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	A guide to developing tourism employment plans. Australian Trade Commission (Austrade). http://www.austrade.gov.au/Tourism/Policies/National-long-term-strategy/Working-groups/Labour-and-Skills/Tourism-Employment-Plans/Develop-your-own								
Education and Training Opportunities	7. The demand for highly skilled and trained staff for a world class resort such as Aquis is an imperative to its success. This demand for highly skilled workers will drive the educational and vocational institutions in North Queensland to new levels of expertise, business acumen and the pursuit of further opportunities to deliver quality service. These training programs will need to be developed in conjunction with Aquis management which in-turn benefits the likes of James Cook University and other local tertiary institutions within the region. There is also an opportunity to develop significant training and employment programs for indigenous youth as the project develops. I note the EIS sets out the proponent's commitments including a number of strategies to mitigate likely positive and negative impacts of the development; including: strategic land use planning; workforce and training; human services; local participation; and ongoing engagement. I commend this approach for its long term vision and sustainable practice. The Aquis Integrated Resort development will cement the role of Cairns as the heart of the urban settlement pattern for Tropical North Queensland, with an expected population growth of approximately 50,000 people by 2020, directly attributed to this project.	Noted.	X						

2.16.2 Discussion

No further discussion required.

2.16.3 Further Assessment

None required for land use decision.

2.16.4 Future Action

No future action required.

2.17 DEPARTMENT OF TRANSPORT AND MAIN ROADS

2.17.1 Issues Analysis

TABLE 2-17 ISSUES ANALYSIS – DTMR (219)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
General Heavy Commercial Vehicle Traffic	**Issue** 1. The EIS does not consider the impacts of the significant increase in heavy commercial vehicle traffic, particularly B doubles during the construction stage on the road network. The EIS identifies the quantities of materials that will be required (242, 152 truck trips excluding return trips), however the impact of these movements on the road network need to be considered and strategies that address road safety, pavement rehabilitation and traffic operation need to be identified. It is likely that there will be a significant increase in heavy commercial vehicle traffic movements between: • Aquis and the port • Aquis and the rail terminal • Aquis and suppliers located in commercial and industrial areas in central and southern Cairns. **Additional Information Required** In addition to identifying that excess fill material from the site will be deposited on airport land, the proponent is required to identify the location of key supply points for the various construction materials and determine the impact of heavy commercial vehicle traffic on the road network. Truck movements require specific consideration in the EIS given potential impact on road safety, pavement rehabilitation and traffic operations. In accordance with GARID (chapter 3 p8) traffic operation impacts will need to be addressed for all sections along haul routes where the development traffic equals or exceeds 5% of the existing ES. A traffic operation assessment focusing on overtaking lanes, road width and provision for heavy commercial vehicle movements at intersections will be required. The EIS is to identify mitigation measures to ensure that the safety, condition and efficiency of the transport system is maintained. **Reason for Requirement** This information is required to ensure the safety, condition, capacity and efficiency of transport corridors is maintained at existing, adequate levels, in accordance with the provisions of the *Transport Infrastructure Act 1994.*	Traffic Impact Assessment to be provided as supporting information to subsequent applications for development permits for MCU (code) and Operational works.						X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Section 3.3, Criteria 4 of Guidelines for Assessment of Road Impacts of Developments (GARID) requires that the impacts of heavy commercial vehicle movements on traffic operations be identified. (TOR 8.24, TOR 8.26)								
General Timing	**Issue** 2. The proposed development has a large construction workforce with stage 1 resulting in an additional 3,750 construction workers accessing the site. Typically, transport impacts associated with an urban use are not significant until the use commences, thereby providing lead up time to complete infrastructure projects needed to support a development. Interim solutions are required a construction should not commence until the impact of the workforce traffic on the road network does not result in safety, capacity or efficiency issues. The Smithfield Bypass is in early planning stages with a preferred concept being identified in early 2014 and a business case is currently being developed. Detailed planning has not commenced on the duplication and other upgrade works for the Cairns Western Arterial (CWAR). It is necessary for interim strategies to be in place as if not realistic for the EIS to be based on the Queensland Government completing the Smithfield Bypass and duplication of CWAR by 2018. **Additional Information Required** The proponent is to prepare a road infrastructure timing and construction strategy to align with the proposed stages of the Aquis development to ensure that road infrastructure will be sufficient to ensure safety, condition, capacity and efficiency for the various stages of development. In particular, the proponent is required to identify the nature and scope of road works that will be completed prior to the construction stage commencing and impact mitigation measures that will be implemented. These may be interim measures until such time as major roadwork infrastructure is completed which may involve a construction period of 2-5 years. Road works will be required prior to the construction of stage 1 commencing to accommodate the traffic associated with the construction workforce and this should be identified in the phases and timelines that are outlined in section 24.1.2 (page 24.9) of the EIS. **Reason for Requirement** This information is required to ensure safety, condition, capacity and efficiency of the road network is maintained at existing, adequate levels, in accordance with the provisions of the *'Transport Infrastructure Act 1994'*. (TOR 8.26)	Refer Discussion and 3 Further Assessment.			**X**			**X**	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
General Planned Infrastructure	**Issue** 3. In accordance with Item 8.24 of the Terms of Reference, the EIS is required to provide sufficient information to allow an independent assessment of how existing and planned transport infrastructure will be affected by project transport at the local and regional level. The EIS does not address the development's potential impacts on planned transport infrastructure including the Smithfield Bypass. **Additional Information Required** The concept planning for the Smithfield Bypass has been completed and a preferred alignment established. However, this project is not in the QTRIP and no funds are committed. The EIS needs to consider how the proposed development will impact on: • The timing of the bypass • The alignment of the bypass, including any proposed connections between the bypass and Yorkeys Knob Road • The timing of the various projects identified in the Captain Cook Highway Link Plan (2010-2040). **Reason for Requirement** The EIS is to provide sufficient information so that TMR are able to understand how the project will impact on existing and planned transport infrastructure.	Refer Further Assessment.			**X**			**X**	
General Transport Impact Assessment and Modelling	**Issue** 4. A Transport Impact Assessment Report for Aquis was prepared in September 2013 which contains more extensive information than Chapter 24 – Transport of the EIS including: • A traffic impact assessment report which examines specific traffic and transport modelling • Design solutions particularly round-about and intersection treatments and connectivity to the Smithfield bypass The solution identified in the EIS is to enter into an infrastructure agreement, however design concepts are required in order to determine some indicative costings and the nature and scope of the infrastructure agreement **Additional Information Required** Update the traffic impact assessment prepared in September 2013 including modelling and proposed mitigation measures including design solutions.	Refer Further Assessment.			**X**			**X**	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	The modelling should be supported by accurate inputs and assumptions including the identification of potential haul routes and population distributions. All model inputs need to be disclosed as part of the EIS to confirm the accuracy and robustness of model outputs. **Reason for Requirement** Chapter 9 of GARID requires a traffic impact assessment to consider what additional road works or mitigation measures are required to accommodate the proposed developments impacts on the state controlled road network. This requires accurate transport modelling. An infrastructure agreement is a potential mitigation measure, however sufficient information needs to be contained in the EIS to enable the scope of the infrastructure agreement to be determined and general cost implications for TMR. (TOR 8.25)								
Section 24.1.2 Impacts. Figure 24-7 and Figure 24-8, page 24-14 Major Issue	5. The theory that supports the traffic distributions identified in figure 24-7 and 24-8 needs to be disclosed. In particular, 35% of traffic accessing the site via CWAR seems low and 25% accessing the site via Dunn Road seems high. Demographics from the Queensland Government Statistics Office reveal that the total number of technicians and trade workers, machinery operators and drivers and labourers in the northern Cairns area is 6885 (33%) and southern and central Cairns area is 14,441 (67%). Similar figures also exist for people involved in the accommodation and food services industry. Therefore, based on current demographic trends construction workers and hospitality workers are more likely to be living in southern and central Cairns and using CWAR to access Aquis. Additionally, in accordance with the Cairns City Council Planning Scheme, there is greater capacity for residential growth and intensification in southern Cairns. The 35% modal split for CWAR is considered low due to the transport of building material from the Redlynch Quarry to the site being via CWAR in addition to the transport of construction materials from southern areas likely to be via this route. **Additional Information Required** It is requested that the proponent provide supporting details to demonstrate that traffic distributions are based on accurate assumptions. This will involve a demographic and land use analysis to determine where workers are likely to be living during construction and operational phases of the development. If assumptions are based on an intensification of development in the northern beaches area, this must be supported by some detail regarding land use planning as currently the Cairns Regional Council Planning Scheme does not identify any significant increases in population density in the northern beaches.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Reasonable assumptions about the expected traffic distribution are required in order for the assessment to be based on accurate modelling. Reason for Requirement In accordance with Chapter 4 of GARID the methodology used to determine the distribution of the generated traffic to the surrounding road networks should be identified (TOR 8.25).								
Section 24.1.1, page 24-3 Moderate Issue	6. There is no analysis of the impact of the proposed development on the intersection of Airport Avenue with the Captain Cook Highway. The proposed development has the potential to significantly impact on the intersection with a majority of the 12,000 guests flying to the region and using HOV to travel between the airport and the Aquis development. **Additional Information Required** The impact of the proposed development on the Airport Avenue / Captain Cook Highway intersection needs to be established and any necessary mitigation works identified. In order to determine the impact on the intersection, additional information is also required on the expected HOV movements from the airport including timing of HOV transfers, size of coaches and impact on queue lengths. **Reason for Requirement** This information is required to ensure safety, condition, capacity and efficiency of the intersection is maintained at existing, adequate levels, in accordance with the provisions of the *Transport Infrastructure Act 1994.* (TOR 8.23, 8.24, 8.26)	Refer 2.19.3 Further assessment			**X**			**X**	
Section 24.1.2 Impacts, page 24-10 Minor Issue	7. Trip generation has been based on 10% of the construction workforce accessing the site by active transport (bicycle 6% and pedestrian 4%). In order to achieve this high active transport mode share appropriate active transport infrastructure needs to be provided. Although the EIS identifies that end of trip facilities will be provided, no other active transport infrastructure has been identified. The 4% pedestrian mode share should be reviewed, as the location of the site is unlikely to result in walking being a practical mode of transport. The closed residential area to the site is Yorkeys Knob and the majority of the residential area is located in excess of an acceptable walking distance (400m) from the Aquis building area. **Additional Information Required** The proponent is required to identify active transport infrastructure that will be constructed as part of the development in order to achieve the identified active transport mode share target of 10%. For instance, the active transport infrastructure connecting the development site with the residential areas of Yorkeys Knob and Holloways Beach should be considered.	Refer Further Assessment.			**X**			**X**	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Reason for Requirement The EIS must consider all modes of transport including active transport. This information is required to substantiate the assumption made in the EIS and to achieve sustainable transport solutions and contribute to addressing safety, capacity, condition and efficiency issues of transport corridors. The FNQ Regional Plan seeks to reduce the use of private motor vehicles through promotion of alternative modes, including cycling and passenger transport. (TOR 8.23, 8.26)								
Section 24.1.2 Impacts, page 24-10 Minor Issue	8. Trip generation has been based on an occupancy of 1.5 pax/car. This is considered high and 1.1 – 1.2 pax/car would be more realistic. **Additional Information Required** For the modelling inputs amend the 1.5 pax/car to 1.2 pax/car, unless research can be provided to demonstrate that a higher car occupancy rate can be warranted. **Reason for Requirement** Accurate modelling is needed to determine the impact of the proposed development and establish an accurate development profile. (TOR 8.24)	Refer Further Assessment.			X			X	
Executive Summary 4 Project Description, page 14 Minor Issue	9. The Executive Summary refers to a HOV system (hail & ride) being introduced. In particular the Executive Summary states: *'the transport of workers represents 92% of the total construction traffic movements and this can be mitigated by the implementation of a dedicated high occupancy vehicle (HOV) fleet'.* *'the impact of traffic peaks can be mitigated by introducing a HOV service to transfer the workforce on a hail-an-ride system, operating between Gordonvale and Palm Cove….'* However, there are no details in Chapter 24 Transport relating to the proposed HOV system for employees. The proponent's intentions regarding HOV is unclear. **Additional Information Required** The proponent should ensure that the content of the Executive Summary are discussed in sufficient detail in the EIS. The proponent needs to confirm if a dedicated HOV fleet will be available as a transport option for employees. Details are required regarding the proposed operation of the HOV fleet including: • Integration with the existing urban bus service • Park and ride / kiss and ride facilities • Capacity and expected patronage.	Refer Further Assessment.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Reason for Requirement The FNQ Regional Plan seeks to reduce the use of private motor vehicles throughout promotion of alternative modes including passenger transport. (TOR 8.23).								
Section 24.1.2 Impacts, a) Road Transport Task, page 24-10, 24-13 Minor Issue	10. The impact of the proposed development on transport infrastructure is partly related to employee numbers and shift arrangements. The employee numbers, particularly the construction workforce needs to be reviewed to ensure accuracy. As the project has evolved it has increased its construction timeframe from 4 years to 8 years and the cost has increased from $4.2 to $8.15 billion. However, there has been no increase in employee numbers as they have remained relatively consistent. Additionally, there is no discussion in the EIS on the manner that restrictions on employee numbers and shift arrangements can be monitored and enforced. The effectiveness of the staggering of shifting arrangements as a mitigation measure for transport impacts is partly related to the ability for enforcement. **Additional Information Required** The proponent should detail the approach taken to estimate employee numbers and demonstrate why employee numbers have remained relatively constant despite the development significantly changing. The use of staggering shift arrangements as a mitigation measure to the transport impacts of the development needs to be supported by compliance strategies. **Reason for Requirement** In accordance with Section 4 of GARID, an accurate development profile must be established in order to understand the impact of the proposed development on transport infrastructure. (TOR 8.26)	Refer Further Assessment.			**X**				
Page 24-1 onwards 24.1.1 General	11. Level of Service diagrams show very high capacities inconsistent with the actual network conditions (Figure 24.3 for example). The indicative capacity in this figure is in the order of 1750 veh/l/hr in the peak which is very close to peak efficiency (1900 to 2100). This is only achieved where there is free flow (no intersections etc.) – for example Captain Cook Highway (Mulgrave Road to Airport Avenue) carries 40,000 vpd and would be LoS by figure 24.3 but within the text shows the section is operating at LoS E/F in peak periods. **Additional Information Required** Amend the diagram to accurately reflect the actual situation and capacity of links being analysed. Their basis needs to be clearly shown to allow determination of accuracy and their ability to be applied to this scenario.	Refer Further Assessment.			**X**			**X**	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Reason for Requirement Increasing the capacity and therefore improving the level of service on the network increases the ability of the network to absorb development traffic without upgrades. This will make identification of key upgrades difficult and won't demonstrate the true impact.								
Page 24-3 onwards 24.1.1 Captain Cook Highway Mulgrave Road to Airport Avenue	12. The report states '*It is configured as a four-lane urban type cross section'.* Sheridan street is 6 lane to Grove Street and 4 lane beyond **Additional Information Required** Adjust the description to match the actual characteristics. **Reason for Requirement** The road cross section varies as do volumes along this section. It is important to differentiate the segments to allow determination of actual impacts and possible mitigation measures.	Refer Further Assessment.			X				
Page 24-3 24.1 24.1.1 Existing Situation Captain Cook Highway Mulgrave Road to Airport Avenue	13. There is no mention of the current performance or operation of the following intersections: • Sheridan Street / James Street • Sheridan Street / Grove Street • Sheridan Street / Lily Street • CCH / Airport Avenue **Additional Information Required** Include the current performance of these intersections as required under *Guidelines for Assessment of Road Impacts of Development (GARID).* **Reason for Requirement** Both operational and construction traffic will impact on these intersections. To fully understand the proposal it is necessary to accurately reflect the current network and pressure points.	Refer Further Assessment.			X			X	
Page 24-3 24.1 24.1.1 Existing Situation Captain Cook Highway Airport Avenue to Barron River	14. The report states that Airport Avenue to Barron River *'carries 37,000 vpd and operates typically at a LoS 'C' during peak periods.'* This section is heavily congested in the AM Peak and operates below LoS C for southbound traffic. **Additional Information Required** The existing situation that the EIS considers should reflect Airport Avenue to Barron River operating below LoS C for southbound traffic.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Page 24-3 24.1 24.1.1 Existing Situation Captain Cook Highway Airport Avenue to Barron River	15. The report states that Airport Avenue to Barron River *'has fewer intersections and operates more efficiently due to limited access….'* There is no mention of the current performance or operation of the following intersections: • CCH/Aeroglen Drive • CCH/Arnold Street (north and south) **Additional Information Required** Include the current performance of these intersections as required under GARID. Reason for Requirement Both operational and construction traffic will impact on these intersections. To fully understand the proposal it is necessary to accurately reflect the current network and pressure points.	Refer Further Assessment.			X			X	
Page 24-4 24.1 24.1.1 Existing Situation Captain Cook Highway Barron River to Caravonica Roundabout	16. The report states that Barron River to Captain Cook Highway/CWAR *'Captain Cook Highway between Barron River and Caravonica Roundabout will function at a LoS B to C up to 2034'.* This section operates as a LoS C or D currently in both the AM and PM peaks with queues forming rapidly and large platoons passing each intersection. The EIS performance is inconsistent with actual performance. **Additional Information Required** Revise or carry out additional modelling to more accurately reflect true performance of the section. **Reason for Requirement** To fully understand the proposal it is necessary to accurately reflect the current network and pressure points.	Refer Further Assessment.			X				
Page 24-5 24.1 24.1.1 Existing Situation Cairns Western Arterial Road	17. The section between Mulgrave Road and Reservoir Road is not referenced by the EIS. This section is constrained particularly by the intersections at Mulgrave/McCoombe and Moody / Hoare Streets. All traffic from the south accessing the CWAR needs to travel through these intersections. **Additional Information Required** Provide additional details regarding the segment between Mulgrave Road and Reservoir Road and the current operation of major intersections.	Refer Further Assessment.			X			X	
Page 24-5 24.1 24.1.1 Existing Situation	18. The report states that Pease Street to Freshwater Creek Bridge *'represents the existing four-lane divided section urban type section of CWAR which operates at a LoS B and C in the peak periods.'* Duplication ends prior to Freshwater Creek Bridge. This is a major restriction on the network and the segment operates below LoS C.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Cairns Western Arterial Road Pease Street to Freshwater Creek Bridge	Congestion on this segment is significant in both the AM and PM peaks particularly at the intersection with Pease Street. **Additional Information Required** Revise or carry out additional modelling to more accurately reflect true performance of the section. **Reason for Requirement** To fully understand the proposal it is necessary to accurately reflect the current network and pressure points.								
Page 24-7 24.1 24.1.1 Existing Situation Yorkeys Knob Roundabout	19. With reference to 'Table 24-1 Current Performance of Yorkeys Knob Roundabout'. The volumes appear low and the level of service is inconsistent with observed behaviour. **Additional Information Required** Manual counts should be undertaken to accurately determine current traffic volumes and modelling performed to determine actual performance. This will aid calibrating the model for remaining sites. **Reason for Requirement** To fully understand the proposal it is necessary to accurately reflect the current network and pressure points.	Refer Further Assessment.			X			X	
Page 24-7 24.1 24.1.1 Existing Situation Yorkeys Knob Roundabout	20. *DTMR has advised there is planning to meter the roundabouts at the intersections of Yorkeys Knob, Machans Beach and Holloways Beach Roads by signalisation of the approaches. These works are currently underway.* DTMR did not provide this advice nor are any such works underway. There is no planning or funding for metering signals at these intersections. **Additional Information Required** The EIS should be based on there being no planning to meter the roundabouts at the intersections of Yorkeys Knob. Remove the reference in the Additional Information to the EIS and reassess as required.	Noted.	X						
Page 24-7 24.1 24.1.1 Existing Situation Caravonica Roundabout	21. With reference to *Table 24-1 Current Performance of Yorkeys Knob Roundabout.* The volumes appear low and the level of service is inconsistent with observed behaviour. The roundabout suffers significant queuing in both AM and PM peak on some legs. **Additional Information Required** Manual counts should be undertaken to accurately determine traffic volumes and modelling performed to determine actual performance. This will aid calibrating the model for remaining sites.	Refer Further Assessment.			X				

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Reason for Requirement To fully understand the proposal it is necessary to accurately reflect the current network and pressure points.								
Page 24-9 24.1 24.1.2 Impacts Trip Generations Construction	22. *Trip generation modelling has been prepared on the basis of workers travelling by vehicle, bicycle and by foot adopting an assumed modal split of:* • *Vehicle 90% at an occupancy of 1.5 pax/car* • *Bicycle 6%* • *Pedestrian 4%.* The modal split for construction workers is not consistent with current trends. Most current construction work in the region does not involve significant transport. 1.5 pax/vehicle is very high. Rates are more typically 1.1 to 1.2. **Additional Information Required** Provide justification for the high component of active transport (what measures will be used to encourage active transport). Also revise vehicle occupancy to be consistent with current regional patterns. **Reason for Requirement** The measures used aim to reduce the apparent impact on the network. This may not be a true reflection of the likely outcome.	Refer Further Assessment.			**X**			
Page 24-9 24.1 24.1.2 Impacts Trip Generations Construction Major Issue	23. *The proponent will require the managing contractor to adopt a staggered 10 hour shifting arrangement described in Table 4-1 (actually Table 24-3).* The shift patterns shown are equivalent to 9 hours not 10 hours. If adjusted to 10 hours staff will be active within all peak hours in the ramp to peak. **Additional Information Required** Revise the table to show actual shift patterns. This may include revision of actual peak periods (peak periods may coincide with school traffic peaks). **Reason for Requirement** The measures used aim to reduce the apparent impact on the network. This may not be a true reflection of the likely outcome. TMR needs additional information to determine the likely impact.	Refer Further Assessment.			**X**			

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Page 24-13 24.1 24.1.2 Impacts Trip Generations Operations	24. *Table 24-6 Operations Transports Modal Splits.* The proposed modal split is inconsistent with current behaviour. Limited staff trips be active transport are possible with existing networks and land use. **Additional Information Required** Revise the modal split to be consistent with the results of the Cairns Household Travel Survey and existing Cairns Strategic Transport Model or detail info and strategies to be provided to achieve these high levels of active transport.	Refer Further Assessment.			X				
Page 24-13 24.1 24.1.2 Impacts Trip Generations Operations	25. *Table 24-7 Operations Staff Shifting Arrangement.* The table shows very short shifts (approximately 7 hours). The distribution of trips (Figure 24-8) shows a very high number from within local roads. This is not supported by current land use. **Additional Information Required** Confirm that the shift pattern is intended to provide very short shifts and advise how the distribution is to be achieved. Provide an alternative scenario where staff travel matches the current (Stage 1 Construction) distribution. **Reason for Requirement** The proponent is suggesting a significant change in settlement patterns within the region between 2014 and 2018. To develop management strategy TMR needs to understand the basis for this change clearly and the impact if such a change is not achieved.	Refer Further Assessment.			X				
Page 24-16 24.1 24.1.2 Impacts b) State Controlled Network Captain Cook Highway (Barron River to Caravonica Roundabout)	26. *The plot demonstrates this portion of the Captain Cook Highway operates on average at LoS B at 2015 and in the absence of Aquis will continues to be at LoS B to C by 2034. With the Aquis traffic demands overlayed, LoS B to C is maintained at 2034. Hence the Aquis Resort impacts on the operating efficiency and capacity of the Captain Cook Highway link on average are not significant.* The road is currently operating below a LoS B in peak periods and the capacities used in the model are very generous. The conclusion that there is no or limited impact is not supported given the increase in traffic volumes. The EIS suggests that traffic is contra flow to the peak hour traffic. This is only true for staff arrivals and not construction material supply or waste removal (fill to the airport). **Additional Information Required** Review the capacity used to derive level of service and ensue the model matches current performance of the network. Advise what strategies will be used to minimise the impact of construction vehicles on peak flows.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Reason for Requirement DTMR cannot currently determine the impact of the development on current networks.								
Page 24-16 24.1 24.1.2 Impacts b) State Controlled Network Captain Cook Highway	27. The EIS does not discuss impact of the development on much of the Captain Cook Highway. Specifically: • Mulgrave Road to Grove Street • Grove Street to Airport Avenue • Airport Avenue to Barron River • The intersections with o Grove Street o James Street o Lily Avenue o Airport Avenue o Aeroglen Drive **Additional Information Required** Include the impacts on these links of both the construction and operational traffic. **Reason for Requirement** The impacts have been assessed only on a very limited proportion of the network preventing assessment of the overall impact.	Refer Further Assessment.			X			X	
Page 24-20 24.1 24.1.2 Impacts b) State Controlled Network Cairns Western Arterial Road (Freshwater Creek Bridge to Caravonica Roundabout)	28. *Figure 24-12 illustrates the predicted annual average daily traffic (AADT) on the Cairns Western Arterial Road with and without the planned 4 lane upgrade.* There is no planned upgrade of this road. Funding has not been provided either for the planning and design of upgrade or for their construction. **Additional Information Required** Clearly identify that the existing network is a dual lane road and the impact of the development Duplication may be a mitigation measure suggested in the EIS. **Reason for Requirement** Planning, design and construction of duplication will take a minimum of 5 years, as a result any upgrades won't be available until at least 2020 if funding were made available.	Refer Further Assessment.	X						
Page 24-20 24.1 24.1.2 Impacts b) State Controlled Network	29. The EIS does not discuss impact of the development on the Cairns Western Arterial Road other than from Freshwater Creek. Significant links have not been assessed including: • Mulgrave Road to Moody/Hoare Street • Moody/Hoare Street to Reservoir Road • Pease Street to Enmore Street • Enmore Street to Ramsay Drive • Ramsay Drive to Freshwater.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Cairns Western Arterial Road	**Additional Information Required** Include the impacts on these links of both the construction and operational traffic. **Reason for Requirement** The development proposes that at least 35% of operational trips will use this network in the long term. Previous work suggests existing links do not have capacity for background growth without significant upgrades to the 2031 horizon. The development will accelerate the need for works.								
Page 24-23 24.1.2 Impacts b) State Controlled Network Broader Network Impacts	30. *2031 model and a suite of maps were generated which communicate the impacts created by Aquis above and beyond the current 2031 predictions.* 2031 is inappropriate for the model and will increase background traffic thereby reducing the apparent impact. The critical time periods that must be assessed are: 2015 (Stage 1 construction traffic) 2019 (Stage 1 operational + Stage 2 construction traffic) 2024 (Stage 1 and 2 operational) 2034 (10 years past opening) **Additional Information Required** Revise outputs to provide impacts at these critical time periods. **Reason for Requirement** DTMR cannot assess the actual impact of the proposal from the information provided. In particular it is difficult to assess what links the model incorporates that allow for there to be no capacity related impact on the broader network.	Refer Further Assessment.			X			X	
Page 24-23 24.1.2 Impacts b) State Controlled Network Broader Network Impacts	31. The EIS shows no net increase about 5% for much of the network. Considering only traffic from Stage 1 operational phase (11,000 staff) 35% are due to use CWAR. This is equivalent to 3,850 vpd. This is greater than 5% of current traffic (and traffic with background growth) on CWAR, Mulgrave Road and Bruce Highway. **Additional Information Required** Clearly identify the true network by increased traffic volumes. **Reason for Requirement** DTMR needs to consider the impact on the broader network.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Page 24-34 2.1.2 Impacts b) State Controlled Network Pavement Impacts	32. The EIS does not demonstrate how existing ESA were calculated. No pavement impacts are assessed and the EIS does not include data on existing pavement ages or remaining life to allow assessment. There are no assessments of the structural adequacy of drainage structures on the network. The operational and safety impact of movements have not been identified. Only a limited network is considered, significant amounts of freight are to be delivered from the rail yard and port. The links to these facilities are not covered in the assessment. **Additional Information Required** Additional information including the methodology for calculating existing ESA, existing pavement age and structure assessment of the routes proposed for haulage. Identification of the operational and safety issues associated with haulage and mitigation strategies. **Reason for Requirement** The development has the potential to accelerate impacts on pavements and structures as well as increasing maintenance demand for an 8 year period with a state wide budgetary impact. The routes proposed are primarily commuter routes and include high number of cyclists and HOV.	Refer Further Assessment.			X			X	
Page 24-46 24.1.3 Augmentation Impact Mitigation	33. *Staff incentivisation schemes to encourage carpooling and use of public transport.* The proposed measure doesn't offer certainty and isn't quantifiable. **Additional Information Required** The potential benefits of this measure need to be quantified if it is intended to reduce impacts and key performance indicators developed that allow monitoring.	Refer Further Assessment.			X			X	
Page 24-47 Augmentation Infrastructure Agreement	34. The EIS provides no detail possible mitigation measures where impacts are demonstrated. It relies on an Infrastructure Agreement being drafted to develop solutions. This lacks any certainty, particular for a preliminary approval, and required development of an additional information to the EIS identifying possible solutions. **Additional Information Required** Development of a supplemental EIS identifying possible solutions. **Reason for Requirement** The current EIS provides insufficient data and no alternative solutions for impacts likely as a result of the development. DTMR is not in a position to enter into an IA without additional information.	Refer Further Assessment.			X			X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Page 25-21/22 25.1.3 Augmentation Augmentation of the Distribution Network Table 25-6	35. *CRC advise Aquis will result in the need for the proposed distribution network upgrade associate with the implementation of the Kamerunga WTP to be upsized for the additional demand.* There is insufficient corridor width within the existing Cairns Western Arterial Road and Captain Cook Highway corridors to accommodate augmentation of existing mains. **Additional Information Required** Applicant to note and be aware of the need for CRC to carry out planning delaying the implementation of upgrades. **Reason for Requirement** The placement of further Public Utility Plant within these road corridors is incompatible with planned upgrades and represents a significant cost risk to the State.	Noted.	X						
Page 25-38 25.3.1 Existing Situation Energy	36. *The 2 x 132 kV feeders will be installed along the Cairns Western Arterial Road reserve, and as a result will not have any redundancy in location. From the Caravonica roundabout, to the Smithfield substation location, it is possible to separate the cables via two independent cable routes to provide added security, by utilising a new road relocation reserve being progressed by DTMR.* There is insufficient corridor width within the existing Cairns Western Arterial Road corridor to accommodate the 2 x 132kV feeders and Ergon has advised that DTMR will not allow their installation on this corridor. Future acquisitions by DTMR will not include provision for additional feeders. **Additional Information Required** Applicant to revise statement to indicate that no alignment has been agreed for the proposed feeders. **Reason for Requirement** The placement of further Public Utility Plant with these road corridors is incompatible with planned upgrades and represents a significant cost risk to the State.	Noted.	X						

2.17.2 Discussion

The DTMR's Guidelines for Assessment of Road Impacts of Developments (GARID) requires assessment of the impacts development generated traffic on the safety and efficiency of the State Controlled Road Network at a planning horizon 10 years beyond the completion of the development.

The DTMR submission generally deals with the assessment of impacts of Aquis on the existing road network. In a growing city such as Cairns the state controlled road network is not static but rather a dynamic network which is progressively upgraded to cater for increased traffic demands from a growing city.

Given the scale and timing of the Aquis development, in order to assess the impacts on the network it is necessary to have an understanding of what the network will be on a 'business as usual' basis (i.e without Aquis) at critical stages of the Aquis development including:

- 2019 at the commencement of Operation of Stage 1
- 2024 when fully operation
- 2034 at 10 years beyond completion of the development.

During the reparation of the EIS, DTMR were unable to advise of the planned network configuration at these key threshold time frames. Network planning information was limited to planned network upgrades as reflected in QTRIP.

The GARID assessment regime does not contemplate assessment of a development the size of Aquis in the context of a city the size of Cairns. It is more focused on a relatively smaller scale of development where there is a greater level of understanding of how the development will operate and create local impacts, and where the impacts don't fundamentally change the land use /settlement pattern and associated infrastructure planning for an entire city. It relies on all of the current planning and associated infrastructure planning remaining valid.

Currently network planning is based on the majority of the residential growth (and employment) being planned to be accommodated in consolidated densification in the central suburbs and around Edmonton as well as in the urban expansion area known as Mt Peter located between Edmonton and Gordonvale to the south.

Given that Aquis will result in the location of significant employment north of the city, with residential growth south of the city, the creation of travel demand through the southern and central suburbs will expose the existing constrained transport corridors to increased congestion and extended travel delays.

Given the nature of Cairns as a linear city consisting of urban development on a narrow coastal plain between mountain ranges to the west and the Coral Sea and Trinity inlet to the east, there is limited capacity to upgrade transport corridors to accommodate the travel patterns that would result from persisting with the current planned settlement pattern.

The creation of an employment centre at Yorkeys Knob providing 20,000 jobs together with transport corridor constraints through the City will result is a change to the settlement pattern in Cairns. The increase in demand for accommodation within reasonable travel time of the Aquis site will result in substantial increase in housing demand north of Cairns. The Aquis site is located in reasonable proximity to majority of both greenfield and redevelopment opportunities north of the city.

The resultant change in the settlement pattern and redistribution of travel direction and desire lines will result in a substantial change to state controlled road network planning.

2.17.3 Further Assessment

The Aquis consultant team is working collaboratively with DTMR officers in a series of infrastructure planning workshops to assist with State controlled road network planning.

The objectives of the infrastructure workshops are to establish:

- actions required to allow assessment of the direct and cumulative impact of Aquis on infrastructure networks
- 'principles' on which future Infrastructure Agreements' would be established.

Impact Assessment

In order to assess the infrastructure impacts of Aquis on the state controlled networks and requirements for and timing for upgrades, it is necessary to test the **direct** and **cumulative** impacts on infrastructure planning as a consequence of the economic stimulus to the region which will result in a more accelerated population growth such that FNQRP 2009-2031 population thresholds are likely to be achieved well before the FNQRP planning horizon.

The following actions have been agreed:

- DTMR to undertake threshold based Planning based on a target population on a 'Business as Usual' Basis i.e**. without Aquis scenario**. The objective is to establish what is the infrastructure(transport networks and urban services) required for Cairns urban settlement when it has a population of 250 000 with a settlement pattern and employment distribution consistent with FNQRP 2009-2031 projections. All infrastructure networks are to be planned for the same population threshold.
- Aquis EIS Team to review Aquis direct infrastructure impacts (water supply demand, wastewater generation and transport demands) and clarify assumptions regarding operational issues (shift change time, staffing, staging etc.) mode share, vehicle occupancy etc.
- Aquis and DTMR to develop/agree range of possible direct demand/generation outcomes based on 'what if' scenario analysis of operating assumptions.
- Aquis/DTMR to review the threshold based Planning based on a the same target population (250 000) on a **with Aquis scenario**. The objective is to establish what is the State controlled road network required for Cairns urban settlement when it has the same population as baseline with a settlement pattern and employment distribution that may result from the establishment of a large employment generator located north of the CBD at Yorkeys Knob. Land use /settlement pattern/employment may be reviewed as a consequence of corridor constraints i.e. higher 'self-containment' may be required north of the city due to corridor constraints for travel from south.

The outcome would be to compare infrastructure for target population on business as usual basis with infrastructure for same target population on a with Aquis basis. This will identify the possible redistribution of infrastructure from south to north and may also identify some efficiency that could result from accelerated growth.

The outcomes of this analysis will be documented in the *Supplementary Information Report.*

The infrastructure workshops also involve a review of the operating assumptions (shift arrangements) and mode share assumptions the outcomes of these reviews will also be documented in the *Supplementary Information Report.*

Infrastructure Agreements

The broad principles to form the basis for future infrastructure agreements should be based on the Aquis' commitment to paying for external works required to meet the direct demands imposed by Aquis (i.e. connection to networks) and payments of infrastructure charges (where these apply) for the capacity of networks consumed directly by Aquis (likely to be obligations set by conditions) and its reasonable and relevant contribution to cumulative impacts identified by the impact assessment outcome of the comparative threshold planning assessment. Such contributions may include works required as 'enabling infrastructure' to be in place to suit Aquis' staging/opening.

Any contribution would take into account the benefits and efficiencies that may result as a consequence of redistribution of network elements and accelerated growth.

The infrastructure agreement principles will be documented in the *Supplementary Information Report.*

2.17.4 Future Action

It is further anticipated that the COG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitment to enter into an Infrastructure Agreements with DTMR for the contribution to and construction of connections to and any necessary augmentation of the State controlled road network directly attributable to Aquis in accordance with the agreed principles.

2.18 ERGON ENERGY

2.18.1 Issues Analysis

TABLE 2-18 ISSUES ANALYSIS – ERGON (143)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 25	1. Ergon Energy does not object to the Coordinator General approving the development of the Aquis Resort. However, to ensure the coordinator General is suitably informed with regard to all energy considerations, the following comments are made in response to the EIS. These comments are also intended to inform the ongoing supply / connection negotiations between the proponent and Ergon Energy.	Noted.	X						
Chapter 25	2. It is understood that the Aquis Resort will be a single customer connection (for electricity purposes), with all resort facilities owned and operations by the proponent.	Noted.	X						
Chapter 25	3. Section 25.3 of the EIS document descries the resort's energy requirements as 14MW (stage 1) with the total development requiring 29MW from the network. The EIS notes that without major augmentation, the existing network does not have the capacity to provide the project's dedicated loads. Reference is made in the EIS to a new 132/22kV zone substation in Smithfield. The development of this substation is currently not anticipated by Ergon Energy's capital works play for the next regulatory period (2015-2020). Ergon Energy's current estimates predict that a substation in Smithfield will not be required until 2024/25 (based on load forecasting and demand management activities). Based on our knowledge of emerging projects in that area, construction of a substation at Smithfield earlier (were that the chosen option) would be solely to meet the needs of the Aquis Resort project.	Refer Discussion.		X				X	
Chapter 25	4. The proponent has stated that construction works for the resort are proposed to commence by the middle of 2015, with resort operations commencing by the middle of 2018. It is acknowledged that preliminary discussions between Ergon Energy and the proponent have occurred (yielding productive exchanges of information and contacts), however to date, Ergon Energy has not received a formal connection enquiry from the proponent. A Major Customer Connection Enquiry is required to accurately inform all aspects of the connection arrangement (from attributable costs and timing to network design and topology).	Refer Discussion.		X				X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 25	5. Whilst the proponent's reluctance to proceed with a form connection enquiry until they have greater certainty regarding licenses and approvals is understandable, it is critical that the proponent lodges a formal Major Customer Connection Enquiry without further significant delay in order to accurately inform all electricity connection aspects of the project. The EIS suggests that (without development of the Aquis Resort) a new zone substation would be required in the Smithfield area by 2024/2025. It is understood that this prediction is based on informal discussions held between Ergon Energy and the proponent's (GHD Hill Michael). To reiterate, a formal Major Customer Connection Enquiry (of which a Planning Report is a key component) would be the appropriate mechanism for prompting the review and refinement of this assumption. Lead times for a project of this scale (from initial enquiry to commissioning) can be up to four years. Given the proposed resort opening date (2018), beginning the formal connection process now is imperative to ensure the proponent's ambitious schedule can be achieved.	Refer Discussion.		X				X	
Chapter 25	6. The EIS is unclear on where responsibility lies for the new infrastructure required to supply the Aquis Resort. The EIS proposes the need for a new substation to meet the resort's expected load requirements, but suggests (intentionally or otherwise) that the substation and associated infrastructure is required (and planned) for the augmentation of the broader network (i.e. network initiated capital works).	Refer Discussion.		X					
Chapter 25	7. To be clear, the development of the Smithfield zone substation is not currently included in Ergon Energy's capital works plan for the next regulatory control period (2015-2020). Whilst Ergon Energy has strategically purchased land in Smithfield, the existing network in the north of Cairns has sufficient capacity for the anticipated load growth over coming years without the requirement of a new zone substation. A new substation is not required to meet demand (as currently forecasted). The dedicated works required to provide supply to the resort would be considered under the Australian Energy Regulator's Distribution made under the National Electricity Rules as a Large Customer Design & Construct Service. Under the Distribution Determination, the cost would be funded by the customer in line with regulatory requirements.	Refer Discussion.		X				X	

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
	Other works may be classified as Standard Control Services (such as augmenting the shared network). If required, these would be funded through Ergon Energy's revenue cap. It is important to note that the classification of these services and their funding will be subject to the regulatory requirements applying at the time of an agreement being reached.								
Chapter 25	8. In addition to the key discussion given above, the following comments relating to connection topology and design are offered for clarification. As stated previously, a Major Customer Connection Enquiry is the most appropriate process to address many of these matters.	Noted.						X	
Chapter 25	9. The configuration of any Major Connection and distribution network as an outcome of such an Enquiry is ultimately Ergon Energy's responsibility. Any supposition prior is premature and speculative. See Table in Submission for further details.	The configuration illustrated was a concept only. It is acknowledged that Ergon will be responsible for network configuration.	X						
Chapter 25	10. The EIS document notes potential for multiple energy sources, and use of alternate energy sources including: generator power to supply essential loads during a loss of power event: parallel/transfer arrangement to assist with peak power demand management as well as enabling periodic testing of the generators (without affecting the connecting load or the need to use load banks); and solar generation. Other sources including wind power, tidal power and co-generation from waste are also reference in the EIS. As advice to the proponent, an advanced level of customer input on the intended design of these multiple and alternate sources would be needed to accurately inform the Major Customer connection Process.	Noted. It is intended that alternative power supply sources and operational alignment of these sources will be further explored in close liaison with Ergon during the design phase of the project.						X	
Chapter 25	11. We note that a stakeholder meeting is scheduled between Ergon Energy and the proponent's representatives in early August, aimed at clarifying the project's electricity infrastructure needs, connection processes and timeframes. It is Ergon Energy's intention that this meeting will further inform the formal Major Customer Connection Enquiry to be lodged by the proponent.	Meeting provided clarity as to Ergon's expectations on cost contributions, process and time lines for securing supply.	X						

2.18.2 Discussion

Ergon Energy does not object to the Coordinator-General approving the development of the Aquis Resort. Aquis' representatives have met with Ergon Energy to discuss their comments and the process for securing supply likely Aquis contributions has been discussed. Next action required is for Aquis to submit a Major Customer Connection Enquiry subsequent to the COG's decision on the EIS.

The EIS identified that the Smithfield Zone substation was planned by Ergon between 2015 – 2020 based upon their own information available in the public domain. Ergon have subsequently advised that this is no longer the case. Ergon have expressed a desire to participate in the land use and infrastructure planning review currently being undertaken by the proponent with CRC and DTMR, though Ergon will not actively engage on the project until the Major Customer Connection Enquiry is submitted.

2.18.3 Further Assessment

None required for land use approval.

2.18.4 Future Action

Aquis to submit a Major Customer Connection Enquiry subsequent the achieving project approval certainty which will be dependent on the outcome of:

- the EIS Evaluation Report by the Co-ordinator General.
- the Integrated Resort selection process by DSDIP.
- the Casino Application process by DJAG.
- the Section 242 Preliminary approval by CRC.

2.19 GREAT BARRIER REEF MARINE PARK AUTHORITY

2.19.1 Issues Analysis

TABLE 2-19 ISSUES ANALYSIS – GBRMPA (254)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 6, 10, 11	1. Issues surrounding groundwater intrusion, lake water quality and overall aesthetic values are a concern however these issues may be adequately addressed based on which of the proposed mitigation measures are adopted by the proponent.	Noted. See discussion below.		X			X		
Chapter 22	2. The only outstanding issue that is not adequately addressed by the draft EIS is the impact that an additional one million visitors will have on the surrounding World Heritage Properties (Great Barrier Reef WHA and Wet Tropics WHA). This issue needs to be addressed in the final EIS to ensure that all potential impacts on the use and the outstanding universal value of the World Heritage Properties are considered.	Issue was addressed in s22.17.8. See below. This is also the subject of further investigations.		X	X				

2.19.2 Discussion

Mitigation Measures

The submission notes that impacts associated with groundwater intrusion, lake water quality and overall aesthetic values may be able to be addressed by mitigation. These matters will all be addressed in the EMP (Planning) which is included in the Aquis Schedule of Commitments (Cat 5).

Reef Visitation

The concern raised is that Aquis guests will wish to visit the reef and this visitation will cause consequential / cumulative impacts. The EIS (s22.17.8) includes a discussion on this issue of consequential impacts on the GBR as a result of increased reef tourism. This concludes that it is matter beyond the ability of the proponent to predict or manage, as all commercial tours to the GBR are managed by GBRMPA under permit.

The issue of management was also raised by the Department of The Environment and further investigations are underway on this issue for documentation in the *Supplementary Information Report*.

2.19.3 Further Assessment

Aquis is undertaking additional work on a range of NES issues for documentation in the *Supplementary Information Report*. Issues relevant to the above that are under consideration are:

- the role of management in protecting OUV (i.e. as it applies to GBRMP visitation)
- consultation with GBRMPA as required.

2.19.4 Future Action

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with GBRMPA.

2.20 MAREEBA SHIRE COUNCIL

2.20.1 Issues Analysis

TABLE 2-20 ISSUES ANALYSIS – MSC (223)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 24	1. The Mareeba Shire Council welcomes the substantial economic opportunities and regional stimulus generated by this proposal given the Shire's close proximity to the proposal area. Conversely, the Council recognises that there will be potential negative economic and social impacts on the shire that are not articulated in the Cairns City Council focussed EIS that will need to be addressed.	Noted. Refer Discussion. MSC to be included as key stakeholder in Strategic Growth Management Plan.		X			X		
Chapter 14	2. Given these significant economic benefits and potential adverse social and economic impacts it is strongly recommended that the Mareeba Shire Council is involved as a stakeholder in the development of mitigation measures at the beginning of scoping these plans and strategies to capitalise on the benefits for our shire and manage social impacts that will flor on to our region. Additionally, MCS references The Tablelands Community Plan 2012 which includes and articulates community' aspirations in the Mareeba Shire, and informs regional planning and Council's operations. The Plan articulates critical infrastructure issues and identifies the upgrade of the Kuranda Range Road as a major priority.	Noted. Refer 2 Discussion. MSC to be included as key stakeholder in Strategic Growth Management Plan.		X			X		
Chapter 24	3. Council has concerns about the consequential impacts caused by this proposal for future growth in the Kuranda/Myola area in the Mareeba Shire, and the associated demands for increased transport infrastructure to service increased population and tourism growth. Whilst the proponents have identified the road network and impacts in the immediate vicinity of the proposed development, the EIS does not identify the Kuranda Range Road and Kennedy Highway within in its audit for State Controlled Roads managed by the Department of Transport and Main Roads affected by this proposal. Considering that the Kuranda Range Road provides an important freight, passenger transport and natural disaster emergency route and regional connectivity between Cairns and the Atherton Tablelands, Cape York Peninsula and the Gulf of Carpentaria, this omission is very concerning.	Noted. Refer Discussion. MSC to be included as key stakeholder in Strategic Growth Management Plan.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 24	4. As noted above, Council has concerns about the consequential impacts caused by this proposal for future growth in the Kuranda/Myola area in the Mareeba Shire, and the associated demands for increased infrastructure to service increased population and tourism growth. Council notes that the proponents have addressed the regional implications on the water supply arising from the Aquis development but have not considered impacts on Mareeba Shire. The three options identified in Chapter 25.1.2 of the EIS to manage water shortfall require further investigation regarding their impacts of the Mareeba Shire.	Noted. Refer Discussion. MSC to be included as key stakeholder in Strategic Growth Management Plan.		X			X		

2.20.2 Discussion

The issue of the upgrade of Kuranda Range Road is a critical regional planning consideration not directly related to Aquis which has been subject to detailed consideration by DTMR subsequent to it being identified as critical economic infrastructure in the FNQ Regional Plan 2010.

Aquis proposes a Strategic Growth Management Plan to be developed by multiple agencies including land use planning, infrastructure providers and service agencies to plan and manage the growth of the city. Aquis considers that MRC will have a vital role in the development and implementation of that plan.

2.20.3 Further Assessment

None required for land use approval.

2.20.4 Future Action

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include a commitment to prepare the Strategic Growth Management Plan with MRC identified as a key stakeholder.

2.21 NORTH QUEENSLAND AIRPORTS

2.21.1 Issues Analysis

TABLE 2-21 ISSUES ANALYSIS – NQA (221)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 24	1. Cairns Airport has been consulted during the preparation of the Aquis EIS and Is satisfied that the development will be designed to conform with the purpose and performance criteria of the 'Operational Aspects of the Cairns International Airport Code' in the Cairns Regional Council's Planning Scheme, CairnsPlan which includes performance criteria and acceptable measures to minimise the effect a development will have on airport operation and the effect activities associated with the airport will have on a development. We accept that the key operational issues have been noted in the document and adequately addressed for the design, construction and operational phase.	Noted.	X						
Chapter 24	2. The EIS notes that buildings and other structures must not penetrate the OLS. Other issues that should be addressed are that fireworks have the potential to penetrate the OLS and laser light shows can interfere with pilot's vision, causing a safety risk to aircraft, therefore it would not be possible for either of these to be used at Aquis	Lighting restrictions and Airport operational requirements will be included in the Aquis Local Plan.			X			X	
Chapter 24	3. Airport Capacity – NQA affirms its position that Cairns Airport is well equipped to cater for the anticipated increase in domestic and international aircraft movements and passenger numbers which would be expected to be generated by the Aquis development. We do not foresee any requirement for significant upgrade or expansion of core aviation infrastructure to meet this increase in demand.	Noted.	X						
Chapter 24	4. Route Development – Cairns Airport undertakes an active program of route development for both direct international services and domestic services, targeting the introduction of new routes and increased capacity on existing routes. New Asian routes could be more readily opened up if the international airports in Northern Australia, including Cairns Airport, became de facto members of the ASEAN open skies agreement. For this to happen the Australian Government would need to approve bilateral or multilateral Air Service agreements that allow CASA approved ASEAN based airline uncapped capacity to and from Northern Australia.	Noted.	X						X

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
General	5. The visa application process for Chinese nationals needs to be refined to ensure it is as smooth as possible and on par with competing destinations such as the US and Europe.	Noted. This is an action for Federal Government agencies to respond to.							X
General	6. In closing I emphasize that Cairns is well placed geographically to further develop as Australia's Asia Pacific gateway and it has the infrastructure to support such growth. It can support the increased demand expected through Aquis. This development will bring far reaching benefits to the regional economy, with the additional airline capacity it attracts also serving to deliver guests to existing hotels and tourism operations throughout the region.	Noted.	X						

2.21.2 Discussion

No further discussion required.

2.21.3 Further Assessment

The Aquis Local Plan will be amended to include Airport operational requirements. The revised Aquis Local Plan will be included in *Supplementary Information Report*.

2.21.4 Future Action

It is anticipated that the CoG Evaluation Report will reference the Council endorsed Aquis Local Plan incorporating airport operational requirements as the appropriate planning instrument against which future code assessable applications will be assessed.

2.22 QUEENSLAND FIRE AND EMERGENCY SERVICES

2.22.1 Issues Analysis

TABLE 2-22 ISSUES ANALYSIS – QFES (106)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 24	1. Increase of traffic to the resort both during the construction phase and when in operation. This will likely impact the QFES by increasing the frequency of road RTC incidents. **Suggested Solution:** Suggested solution: Consultation with the Road Traffic authorities will increase the likelihood of these issues being considered.	Roads will be designed in accordance with CRC and DTMR and standards. The preparation of a *Traffic Management Plan* will be included in the Aquis Schedule of Commitments.	X				X		
Chapter 4	2. The resort will accommodate guests and employees who will be subject to the normal expected risk for this type of establishment. **Suggested Solution:** Suggested solution: The QFES will be involved in the building approval process as a referral agency and the completed building will need to comply with the Building Fire Safety Regulations. This should keep the risk level within the accepted parameters.	Noted. This is a matter for future approvals. Discussions will be held with QFES as required.						X	
Chapter 12	3. The QFES maintains three fully manned fire stations within the region and the response times are as follows: (1) Smithfield – 5 minutes (2) Cairns – 20 minutes (3) Cairns South – 30 minutes. **Suggested Solution:** Suggested solution: When the proponent is in the process of establishing the ERT, QFES recommends consultation occur to form a collaborative agreement where both AQUIS and QFES work together in a unified approach to deal with emergency incidents.	The preparation of an *Integrated Emergency Management Plan* will be included in the Aquis Schedule of Commitments.					X		
Chapter 23	4. We note the proponent should comply where necessary with relevant Queensland statutory legislation and should implement safety and health management systems so as to mitigate hazard and risk [details provided].	Noted. This is a matter for future approvals. Discussions will be held with QFES as required.					X	X	

2.22.2 Discussion

All of the matters raised above will be included in the various management and mitigation strategies as noted.

2.22.3 Further Assessment

None required for land use approval.

2.22.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with QFES.

2.23 QUEENSLAND HEALTH - HEALTH PROTECTION UNIT

2.23.1 Issues Analysis

TABLE 2-23 ISSUES ANALYSIS – QH HEALTH PROTECTION UNIT (200)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 12	1. The development of an Integrated Emergency Management Plan as described within the EIS to mitigate the hazards identified within Chapter 12 of the EIS (such as disease outbreaks/pandemics, cyclones, flooding etc.). Please ensure that the Queensland Ambulance Service (QAS) is continually consulted with regard to access and egress requirements for medical and disaster emergencies, during both the construction and operational phase of the project. QAS must also be consulted with regard to the resort's emergency response policies, procedures and guidelines.	The *Integrated Emergency Management Plan* will be included in the Aquis Schedule of Commitments and QAS consulted in its preparation.					X		
Chapter 23	2. The components of the Environmental Management Plan (construction and operational) within Chapter 23 that will reduce the risk of adverse human health within the local community. For example, appropriate dust and noise mitigation measures during the construction and operational phases etc.	The EMP (Construction) and EMP (Operation & Maintenance) will be included in the Aquis Schedule of Commitments and QH consulted in its preparation.					X		
Chapter 14	3. The development of a Community Health and Wellbeing Plan as described within Chapter 14 (S14.4.8 pg. 14-34) to reduce and offset the demands on health and emergency services workers. Please note that any on-site medical centre will need to comply with the requirements of the Health (Drugs and Poisons) Regulation 1996 and be designed to ensure appropriate access and egress into the centre for medical emergencies.	The *Community Health and Wellbeing Plan* will be included in the Aquis Schedule of Commitments and QH consulted in its preparation.					X		
Chapter 20	4. The development of mosquito and biting midge management plans, as described within Chapter 20, and in accordance with Queensland Health's Guidelines to Minimise Mosquito and Biting Midge Problems in New Development Areas (Queensland Health 2002). This plan should also incorporate an active educational program, which was identified within Chapter 20 (S20.2.4 pg. 20-7).	The EMP (Construction) and EMP (Operation & Maintenance) will be included in the Aquis Schedule of Commitments and will include mosquito and biting midge management elements.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 23	5. Queensland Health recommends and expects that the proponent makes adequate commitments to ensure that, at a minimum, the mitigation and monitoring measures described within the EIS are put in place to safe guard human health and well-being. These mitigation measures/ plans should be made in consultation with the local Hospital and Health Service and where appropriate, the Queensland Ambulance Service.	The EMP (Construction) and EMP (Operation & Maintenance) will be included in the Aquis Schedule of Commitments and QH / QAS consulted in their preparation as appropriate.					X		

2.23.2 Discussion

All of the matters raised above will be included in the various management and mitigation strategies as noted.

2.23.3 Further Assessment

None required for land use approval.

2.23.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with Queensland Health and the Queensland Ambulance Service as appropriate.

2.24 QUEENSLAND HEALTH - TROPICAL PUBLIC HEALTH SERVICES

2.24.1 Issues Analysis

TABLE 2-24 ISSUES ANALYSIS – QH TROPICAL PUBLIC HEALTH SERVICES (253)

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 14 and 23	1. Tropical Public Health Services, Cairns requests the opportunity to review the following Management Plans which will be relevant to the provision of public health services: • Construction Management Plan • Housing and Accommodation Plan (Construction workers camps) • Community Services and Facilities Plan • Community Health and Wellbeing Plan.	These management plans will be included in the Aquis Schedule of Commitments and QH consulted in their preparation as requested.					X		
Chapter 20	2. The potential public health impacts of the project, especially the risk of infectious disease have not been comprehensively identified or mitigated in the EIS. The document only lists pandemic influenza and dengue as potential risks when there are many more public and communicable disease that need to be considered. While we understand that the issues listed below may be beyond the scope of the EIS, we would like to see a more comprehensive Health Impact Statement conducted to identify the health risks and a comprehensive Health Management Plan (HMP) developed to address and mitigate these risks.	Noted. The preparation of a comprehensive *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 20	3. Clearing of sugar cane from development site- There is a risk of workers contracting leptospirosis while working in these areas.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 20	4. Pandemic/Outbreaks- Surveillance, detection and control procedures for outbreaks of infectious disease need to be developed in conjunction with Cairns and Hinterland HHS and outlined in detail in the HMP.	Address in *Health Management Plan* w to ill be included in the Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 13 and 20	Chapter 13 indicated that approximately 40% of the work force is likely to be sourced from outside the area, probably from other parts of the State or Australia. In the event that the some portion of the work force will need to be sourced internationally (due to lack of skilled labour within Australia) then it is recommended that the HMP state that all workers are fully vaccinated to Australian standards as a condition of employment to reduce the risk of imported infections and potential outbreaks. Comprehensive pre-employment medicals should be considered to detect personal health conditions and ensure workers are fit for work. This would reduce the impact on local health services which will already be dealing with an increased workload due to the influx of additional personnel.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 13 and 20	5. Regardless of the origin of the workers required during the construction phase, there will probably be the need to have temporary camps to accommodate workers, especially FIFO workers. There are significant health and hygiene risks associated with living in close- quarters in high-density camp accommodation. It is recommended that the HMP include measures to address, water, food and kitchen hygiene, ventilation, and cleaning and laund1y procedures in order to mitigate the risk of infectious disease in these settings.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 14 and 20	6. On site Health care- the HIS indicates a medical facility for Aquis visitors but does not outline the onsite medical services for the workers in the construction phase. The issues of project-specific on site medical staff and facilities need to be further discussed and outlined in the HMP, because there is a need to have immediate emergency response facilities for accidents and injuries as well as facilities for managing minor primary care issues. Collaboration with local services is essential to ensure rapid response and seamless integration into local services when required.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 12 and 20	7. Another infectious disease risk not mentioned in the HIS is the potential risk of an increase in Sexually Transmitted Infections (STIs) including HIV. Historically, there is usually an influx of sex trade workers in response to large scale construction projects due to the high volume of unaccompanied males. A pattern of increased rates in STIs often results. The issues of risk of STIs including, communicating and mitigating the risk needs to be addressed in the HMP.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 12 and 20	8. Pandemic/outbreak- As above these protocols and procedures need to be refined and fully operational by the time the resort is operational and receiving visitors. In addition to the projected visitors, one of the projected indirect impacts of the project is the addition of new flights or the increase of existing direct flights arriving from several Asian countries potentially increasing the number of visitors arriving from areas with established high rates of infectious disease.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 12 and 20	9. Clear understanding of on-site medical services that will be provided, how these services will meet the needs of acute situations and reduce impact on local services.	Address in *Health Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 20	10. Many species of mosquitoes and biting midges inhabit coastal wetland areas. Aedes aegypti, a vector for dengue virus and Chikungunya (CHIK) virus breeds in and around human habitation in natural and artificial containers .Human activities or habitation in proximity to insect breeding areas will be adversely impacted on. These impacts may be of a nuisance nature or may pose a health risk to humans in the form of arthropod borne viruses, like Ross River Virus (RRV), Barmah Forest Virus (BFV), Kunjin Virus (KUNV) and many others (see attached appendix 1). The diseases listed in appendix 1 are all Queensland endemic mosquito-borne diseases except dengue virus. Biting midges in Australia do not transmit any disease to humans and pose a severe nuisance threat only.	Address in *Insect Vector Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 20	11. Various measures to mitigate the nuisance and health impacts may be employed. However, appropriate entomological mitigation guidance can only be given after extensive surveys of the area has been conducted to dete1mine species presence and base line levels of population abundance. Habitat changes caused by property development such as the creation of artificial freshwater or tidal water bodies may impact on reduced water quality through nutrient load or acidic runoff. . Many coastal low-lands on the east coast in Queensland are underlain by sulfidic sediments, which when drained for development; often oxidise to form acid sulfate soils, producing highly acidic discharges. These acidic waters may provide highly productive mosquito breeding areas devoid of fish and other predators. Altered drainage systems and siltation may exacerbate mosquito and biting midge problems.	Address in *Insect Vector Management Plan* to be included in the Aquis Schedule of Commitments.					X		

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	AQUIS RESPONSE	ACTION						
			1	2	3	4	5	6	7
Chapter 20	12. Mitigation options are based on the results of base line surveys, which usually run for a period of 12 months to determine species diversity and abundance. A 12 month surveillance program takes into account seasonal diversity and population fluctuations. However, shorter peak period surveillance (4 months) can give good data. The mitigation options are varied and should be an integrated approach, using physical, chemical and biological control methods.	Address in *Insect Vector Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 20	13. Taking into consideration that salt marsh and mangrove areas are ecological sensitive areas, the control options would have to be environmentally sensitive to the fauna. E.g. No pythrethroids may be used in salt marsh and mangrove areas. It should also be noted that the only effective treatment of these areas are by applying these agents via aerial spraying. It is impossible to apply effectively via ground applications.	Address in *Insect Vector Management Plan* to be included in the Aquis Schedule of Commitments.					X		
General	14. The main specific issues of concern with this proposed development site are: • Potential impacts of mosquitoes and biting midges on the health, welfare and amenity of future residents and visitors; and • Potential and long term environmental impacts resulting from mosquito control measures on the environment, necessitated by the close proximity of humans to the mosquito breeding areas.	Noted.	X						
General	15. Before any specific entomological recommendations can be given it is important to gather relevant information to: • determine the need for a control program, which is dependent on the results of the baseline survey • guide the planning of the program • monitor the operation of the program • evaluate the program to assess the effectiveness of the program.	Address in *Insect Vector Management Plan* to be included in the Aquis Schedule of Commitments.					X		
Chapter 25	16. Any recycled water used and/or stored on site must comply with the provisions of the Public Health Regulations 2005.	Noted.						X	

2.24.2 Discussion

All of the matters raised above will be included in the various management and mitigation strategies as noted.

2.24.3 Further Assessment

None required for land use approval.

2.24.4 Future Action

All matters of advice regarding management matters will be incorporated in the various management strategies and the EMP (Construction) and EMP (Operation & Maintenance). These will be included in the Aquis Schedule of Commitments (Cat 5) and will be addressed during detailed design and in advance of the relevant applications for further approvals.

It is anticipated that the CoG Evaluation Report will condition compliance with the **Aquis Schedule of Commitments** which will include the matters listed above and a commitment to engage with Queensland Health.

3 REFERENCES AND DATA SOURCES

Aviation & Airspace Design Solutions. 2014. Aquis Great Barrier Reef Redden Creek Radar Shadow Assessment. Prepared for Flanagan Consulting Group, 25 April 2014.

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