



Great Keppel Island
REVITALISATION PLAN

ENVIRONMENTAL IMPACT STATEMENT

Comments and Responses to Submissions



November 2012



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1. Introduction

Located 12 kilometres off the Central Queensland coast, Great Keppel Island (GKI) is one of 16 islands collectively known as the Keppel Group, located within the southern part of the Great Barrier Reef World Heritage Area (GBRWHA).

Fourteen of the Keppel Islands are designated National Parks and do not present opportunities for tourism development. Pumpkin Island (approximately eight hectares) and GKI (1,308 hectares) are the only Keppel Group Islands not designated as National Parks and permitted to provide tourism development where it does not significantly detract from the natural values of the Island. Of the over 900 Great Barrier Reef (GBR) islands and coral cays, currently 28 comprise island based tourism resorts.

Tourism activities in the GBRWHA are important to enable people to experience, learn and understand the wonders of this world heritage area. Through appreciation and education, tourism activities can enhance the conservation and protection of these inherent world heritage values. Within the Southern GBR there is currently very limited tourism activity with only three islands that offer resort opportunities to tourists - Heron Island, Lady Elliot Island and GKI.

GKI Resort Pty Ltd (the Proponent) is now seeking to create an environmentally-focused tourism resort, implemented through the proposed Great Keppel Island Resort Revitalisation Plan (hereafter referred to as the GKI Revitalisation Plan or the Project). The GKI Revitalisation Plan's major focus is to exceed environmentally sustainable tourism guidelines (EarthCheck Precinct Planning and Design Standard, based on Agenda 21 principles) and to set a new benchmark for environmental management practices in the GBR.

The GKI Revitalisation Plan will deliver an exciting brand new tourism resort on the doorstep of Central Queensland and will be one of the most environmentally sustainable resorts in the Great Barrier Reef. The new resort will include a new beachfront hotel at Fisherman's Beach, several styles of low-rise resort accommodation, a marina, retail village, day spa, Greg Norman designed golf course, upgraded airstrip, Research Centre and a 575 hectare Environmental Protection Area. The new tourism resort will also significantly improve access to the Island for children, teenagers, families, the elderly and disabled.

The primary design tenet of the GKI Revitalisation Plan is to create a built-form which complements the natural environment and topography of the Island. In this regard, the GKI Revitalisation Plan comprises low rise tourist infrastructure that is predominantly below the height of existing tree canopies and on previously disturbed land.

The Proponent recognises the important values of the GBRWHA and the need to ensure that the proposed action does not result, or have the potential to result, in unacceptable environmental impacts, including on Outstanding Universal Values (OUV) matters of State and National significance and / or ecological and biological processes on the Island or surrounding marine waters. The GKI Revitalisation Plan seeks to ensure that the biodiversity of the GBRWHA is not adversely affected by the Project and that any identified potential



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environmental impacts are capable of being avoided, mitigated to an acceptable degree, or offset.

The Proponent has prepared an Environmental Impact Statement (EIS) which provides information on the nature and extent of potential environmental, social, cultural and economic impacts (direct and indirect) arising from the construction and operation of the Project, and the strategies to avoid, minimise or control these potential impacts.

The objective of the EIS process under State and Commonwealth legislation is to integrate environmental management with planning for projects and establish a process for:

- ensuring the Proponent assumes primary responsibility for protection of any environmental values that may be affected by their projects;
- addressing environmental management through the life of projects;
- forming a basis for statutory decisions on whether a project meets ecologically sustainable development principles, and if so, relevant environmental management and monitoring conditions; and
- incorporating community and stakeholder views in assessment and decision making processes.

An Initial Advice Statement (IAS) was lodged with the Office of the Coordinator-General (OCG) of the then Queensland Government Department of Infrastructure and Planning on 16 July 2009. The Project was declared to be a 'significant project for which an EIS is required' under Section 26 of the State Development and Public Works Organisation Act 1971 (SDPWO Act) on 28 August 2009.

Following the 'significant project' declaration, a draft Terms of Reference (TOR) for an Environmental Impact Statement (EIS) was prepared and made available for public comment for a period of eight weeks, commencing on 2 October 2010 and concluding on 29 November 2010. All relevant Commonwealth, State and Local Government agencies and authorities were invited to participate in the process as advisory agencies, including a site visit to the Island. In finalising the TOR, the CG gave regard to all submissions received on the draft.

The Project was also referred for consideration under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) on 1 June 2010. The assessment process commenced following a determination on 4 July 2010 by the then Federal Minister for Environment Protection, Heritage and the Arts, the Hon Peter Garrett MP, that the proposed development was a "controlled action" under the provisions of the EPBC Act.

On the same day as the declaration, Minister Garrett determined that an EIS would be required for the Project. The EIS Guidelines identify the issues that the Australian Government requires the Proponent to address in the EIS. Further, the Minister announced that the Project would be assessed by EIS under the EPBC Act (rather than via the bilateral agreement with the Queensland Government).



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As a component of the Project involves an activity that requires a permission under the Great Barrier Reef Marine Park Regulations 1983 (GBRMP Regulations), the referral under the EPBC Act is taken to be an application under the GBRMP Regulations.

The Proponent prepared the EIS in accordance with Part 4 of the State Development & Public Works Organisation Act 1971 and the Environmental Protection & Conservation Act 1999. The EIS was lodged with the OCG and SEWPaC on the 27th July, 2012.

The EIS was placed on public exhibition with times specified for public submissions. The Proponent has now reviewed the submissions and has indicated appropriate comments and responses.



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2. Public Consultation Process

Consultation with advisory agencies, members of the public and other stakeholders has formed an integral part of the EIS process and will continue to be a fundamental part of the Project development. The community consultation process aims to ensure clear, transparent, multilateral communication regarding the Project and particularly encourages interested and affected stakeholders to engage with the Project development process. The process provides an opportunity for the Proponent to impart information to the stakeholders regarding the Project, to obtain valuable local knowledge from stakeholder groups and to respond to concerns through appropriate actions. Stakeholders are provided the opportunity to engage with the process of the Project's development, to express views and concerns and to provide feedback.

A comprehensive consultation program commenced with the initiation of the EIS process through the development of the TOR and Guidelines for the EIS, and has continued throughout the impact assessment and EIS compilation phases. The consultation program will continue during project implementation, with key consultation activities planned for the public review of the EIS and beyond.

A variety of communication tools and activities have been utilised to inform and receive feedback, including meetings, newsletters, presentations, public displays, workshops, a project office, a freecall number, e-mail enquiries and a website.

The stakeholders identified for the Project broadly encompass:

- Island residents, businesses and landowners;
- Native Title claimants;
- Federal Government agencies;
- State Government authorities/agencies and representatives;
- local Government departments, personnel and committees;
- residents and businesses of the Capricorn Coast and Rockhampton; day visitors to the Island;
- industry associations, including tourism, hospitality and construction;
- recreational groups;
- conservation groups;
- community groups; and
- education and training providers and associations.

Issues identified in, and outcomes of the consultation program, were recorded and fed back into the EIS process. Mitigation and management measures proposed in the EIS were expanded to specifically address issues identified by stakeholders.



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3. Submissions

The EIS was made available for public comment and review for the following periods:

Queensland Government: Monday 30th July, 2012 to Friday 7th September, 2012

Federal Government: Monday 30th July, 2012 to Monday 22nd October, 2012

During the EIS public display period, Government agencies and the public were invited to lodge a submission to the OCG and SEWPaC.

Notification of the display centres, submission centres, submission procedures, lodgment address, deadlines and purchasing details were advertised in the following newspapers:

- The Morning Bulletin (Rockhampton);
- The Courier Mail (Brisbane); and
- The Weekend Australian.

Through the GKI EIS public review period, a significant number of submissions were received. A summary of the number of submissions received is outlined below.

3.1. Positive Submissions

The majority of submissions received were positive and in support of the project.

The following positive submissions in favour of the project were received during the public comment period:

Table 3.1 Positive Submissions Received on EIS

Submissions	State Public Comment Period	Federal Public Comment Period
Submissions received through project website	6,312	7,022
Submissions received by email / post	42	515
Total Positive Submissions	6,354	7,537

In addition to these positive submissions, two petitions in support of the project were submitted. These included:

- | | |
|--|----------------|
| 1. Petition submitted by Island resident | 327 signatures |
| 2. Petition submitted by Freedom Fast Cats | 83 signatures |

Total	410 signatures
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3.2. Negative Submissions

Almost all of the submissions received, including many of the negative submissions were actually in support of a re-development of the resort on the existing footprint. The main objections raised in the negative submissions related to the proposed golf course and marina due to perceived adverse environmental impacts.

The following negative submissions were received during the public comment period:

Table 3.2 Negative Submissions Received on EIS

Submissions	State Public Comment Period	Federal Public Comment Period
Submissions received by email / post	106	154
Total Negative Submissions	106	154

One of these negative submissions which was made by a local resident, included two petitions. These comprised:

1. An online petition using the website change.org. There is some concern as to validity of this petition as it does not include any address details or contact details for the petition names and also some of the names do not appear legitimate such as “One Direction”, “Harry Styles” and “Faggatron 3000”. In total, there are 2,497 names on this petition, however, only 1,006 of these names were dated within the public comment period. The other 1,491 names were posted prior to the release of the EIS. Furthermore, only 517 of these names (approximately 20% of the petition) were identified as being from the Capricorn region.
2. A hand written petition containing 1,608 signatures. This petition indicates that signatories are in favour of re-development of the existing resort but opposed to the golf course and marina. The petition does not include any dates, and it is unable to confirm how many of these signatures were obtained prior to the actual release of the EIS. It also appears that many of these signatories were also names on the change.org petition.

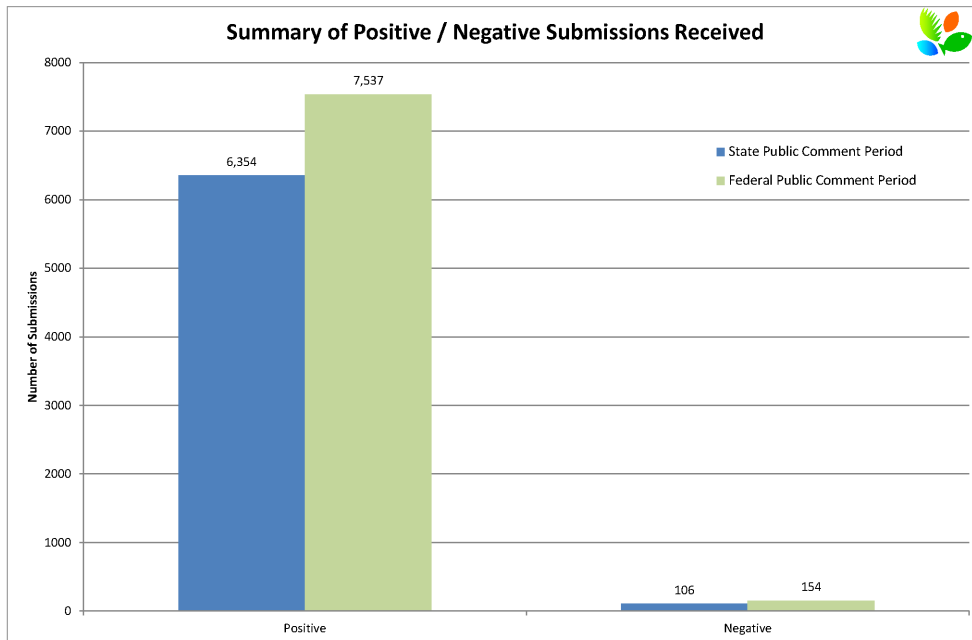


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3.3. Summary of Submissions

The below graph highlights the number of positive and negative submissions received:



The key issues which were identified in the submissions are as follows:

Table 3.3 Key Issues Identified in the Submissions

Positive	Negative
1. Positive lifestyle impacts for residents of Central Queensland	1. Marina & dredging
2. Improved accessibility to the Island	2. Use of Lot 21
3. Job creation	3. Acid Sulfate soils
4. Economic benefits	4. Flora & fauna
5. Positive social impacts	5. Airstrip
6. Creation of a genuine tourism industry along the Capricorn Coast	6. Water quality
7. Environmental benefits to the Island	7. Coastal Environment



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4. Comments & Responses to Submissions

This section provides the comments and responses to the submissions. It has been structured in accordance with the EIS on an individual chapter basis, as follows;

- General Comments;
- Executive Summary;
- Chapter 1 – Introduction;
- Chapter 2 – Description of the Project;
- Chapter 3 – Environmental Values and Management of Impacts;
- Chapter 4 – Social Values and Management of Impacts;
- Chapter 5 – Economic and Management of Impacts;
- Chapter 6 – Hazard and Risk;
- Chapter 7 – Cumulative Impacts; &
- Chapter 8 – Environmental Management Plan.



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4.1 General Comments

4.1.1 General

Submitter Comment

Miscellaneous errors cast doubt on the credibility of the writing team, for example cane toads are not feral animals (they were never domesticated).

Submitter Recommendation

The consultant should review the documents and clarify/correct any such errors.

Response

The EIS was prepared by some of the leading environmental consulting firms in Queensland. The document has been extensively reviewed and edited and is considered adequate in its current form.

4.1.2 General

Submitter Comment

No reference to or representation of the Middle Island Observatory (closed and abandoned by the proponent). This forms part of the lease and is within the bounds of the map.

Submitter Recommendation

Resubmit EIS showing proper relationship of all elements of development.

Response

The Middle Island observatory is outside of the project area.

4.1.3 General

Submitter Comment

No one seems interested in protecting Great Keppel for the people of Central Queensland. If the EIS is approved by the government, there will need to be conditions.



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Submitter Recommendation

A list of possible conditions is as follows:

- A water line from the mainland should be a prerequisite
- The bay in front of the resort needs to remain open to the public for anchoring.
- The public has access to the beach including the right to unload equipment onto the beach.
- The residents aren't forced to accept power, water etc from Tower Holdings.
- The road behind the privately owned dwellings at the southern end of Fisherman's Beach remains open.
- Or alternative development of such a scale to not go ahead.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.2 Executive Summary

4.2.1 General

Submitter Comment

Photo is extremely contrived and misleading. Area shown 'cleared' is mostly intertidal wetland at low tide. Actual cleared area in for-ground is miniscule if presented at a broader scale and represents less than.01% of GKI. A minor point perhaps, but typical of misrepresentation to the public and EIS process.

Submitter Recommendation

Reject EIS.

Response

The current description is correct.

4.2.2 General

Submitter Comment

"James Morris and his brothers constructed the jetty at Fisherman's Beach around 1960."(Alan Morris built the jetty.) James Morris died and was buried in 1935.

Submitter Recommendation

The proponent needs to utilise accurate information and have evidence of this information.

Response

Minor editing error and should have referred to Alan Morris.



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4.3 Chapter 1 – Introduction

4.3.1 Access

Submitter Comment

There is no vehicular access in front of the privately owned blocks to the south of the old resort on Fisherman's beach.

Submitter Recommendation

The designated road must be retained as a road in any redevelopment plan, not as a walking track.

Response

The areas in question in front of the privately owned blocks of land are outside of the project area.

4.3.2 Airstrip

Submitter Comment

There airstrip crosses Putney Creek. This has obvious drainage and environmental implications.

Submitter Recommendation

Continue to use the existing airstrip.

Response

Detailed hydraulic modelling regarding Putney Creek has been provided in the EIS in sections 2.4.6 and 3.5. Appendix AN also contains a detailed technical report regarding the hydraulic impacts of the Proposal. This information identifies that the construction of the runway will not result in an increase in upstream water levels. Furthermore, the EIS has demonstrated that it is proposed to reopen the mouth to Putney Creek which will significantly improve the functionality and productivity of the creek.



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4.3.3 Airstrip

Submitter Comment

There is no indication in the document of the method of disposal of excess fill that will be generated from the airstrip construction.

Submitter Recommendation

Continue to use the existing airstrip.

Response

The fill will be used throughout the construction of the balance of the resort and no fill will be taken off site. The ability to obtain this fill from the construction of the runway will eliminate the need to import fill onto the Island from the mainland.

4.3.4 Description

Submitter Comment

To suggest that Keppel was destroyed by cattle and pigs is disingenuous at best. Peter Garrett, Hon Minister for the Environment, in October 2009 said "The subject site, Lot 21, covers approximately 900 hectares, of which 99% is classed as remnant vegetation. During its early European history this property was used for sheep grazing, however this ceased in 1962 and the area has since been left to regenerate" This statement, less than 3 years later, is still valid.

Submitter Recommendation

Misleading statements in this EIS discredit the document and call into question the validity of the entire EIS. The EIS should be discredited for erroneous statements such as the above, whether intentional or simply incorrectly interpreted or researched; wrong is wrong.

Response

Minister Garrett's comments were in fact not correct as Lot 21 only covers 875 hectares and it is not 99% remnant vegetation. There is no doubt that significant vegetation disturbance occurred as a result of the previous agricultural history of the island.



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4.3.5 Description

Submitter Comment

This development plan does not have a significant reduction in developmental land as promised and is much too similar to the previous clearly unacceptable plan. Therefore, this plan is clearly unacceptable for the same reasons. This proposal is even less acceptable than the previous one as the moving of the airstrip will involve the removal of millions of cubic meters of material?

Submitter Recommendation

Reject this proposal and get the proponent to build the new resort on the old site.

Response

The current plan has been significantly scaled back from previous plans as shown in section 1.6 of the EIS.

4.3.6 General

Submitter Comment

The reference to “Queensland Department of Environment and Resource Management (DERM) (now known as DNRM)” in relation to the deployment and operation of wave ride buoys is incorrect. The Department of Environment and Heritage Protection (EHP) manages the wave-rider buoys.

Submitter Recommendation

None provided.

Response

Minor spelling error.

4.3.7 General

Submitter Comment

Incorrect reference to Appendix Z.

Submitter Recommendation

Amend ‘Refer Appendix Z– Coastal Environment Technical Report for further details’ to ‘Refer Appendix Y – Coastal Environment Technical Report for further details’.



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Response

Minor spelling error.

4.3.8 Marina

Submitter Comment

When comparing the environmental impacts of a marina versus a jetty, the proponent has not considered the impacts of dredging on the environment.

Submitter Recommendation

The proponent compares the dredging requirements and environmental impacts on a marina versus a jetty, and incorporates this information into this section.

Response

The evaluation of alternative sites for the marina and the option of a jetty is described in Section 1.6 of the EIS. Dredging impacts have also been considered in detail.

4.3.9 Marina

Submitter Comment

Table 1.1 – the list of the project team is inconsistent with list provided at Attachment H. For example Attachment H's list, Humphreys Reynolds Perkins Planning Consultants are listed as the EIS Project Manager's with four people – yet this firm is not listed in Table 1.1. Also firms listed in Table 1.1 do not appear in Attachment H.

Submitter Recommendation

None provided.

Response

Humphreys Reynolds Perkins are in fact listed in Table 1.1 and referred to as 'Cardno HRP'.



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4.4 Chapter 2 – Description of the Project

4.4.1 Construction

Submitter Comment

This table schedules expected works with most construction needs for water (earthworks, roads, landscaping, dust suppression, etc) beginning in 2014-15, but the wastewater treatment plant only is to be constructed 2013-22 and the existing plant decommissioned in 2014. This suggests little wastewater will be available during much of the early intensive construction period and consequently a heightened dependence on groundwater and mainland supply. This is not made clear in the EIS.

Submitter Recommendation

None provided.

Response

The program indicates that the wastewater infrastructure would be progressively installed over the period 2013-22. This indicates that it would be constructed in stages in accordance with the level of development that is to occur.

4.4.2 Construction

Submitter Comment

The building schedule plans for 746 villas yet Chapter 1 states the number as 750.

Submitter Recommendation

None provided.

Response

This is not correct. Table 2.3 provides for a total of 750 villas.

4.4.3 Demolition

Submitter Comment

The proponent has described/identified that many of the buildings on-site which are set to be demolished contain asbestos. The proponent has incorrectly referred to compliance with “Australian Standards” (pg 20 Appendix AM and pg 807 Chapter 3) in relation to asbestos management. It is unclear from this statement how asbestos will be



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safely managed so as not adversely impact the health of the workers and residents on the Island. Currently there is no specific Australian Standards relating to asbestos management.

Submitter Recommendation

Queensland Health recommends that Asbestos is managed on-site in accordance with the “how to Safely Remove Asbestos – Code of Practice 2011”, to ensure the risk of adverse exposure of asbestos is minimal:

<http://www.deir.qld.gov.au/workplace/resources/pdfs/safely-remove-asbestos-cop-2011.pdf> The safe removal of asbestos should be highlighted within the project commitments found within Appendix J.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.4 Demolition

Submitter Comment

“Turner and Townsend estimate that the demolition work will generate 13,391 cubic metres of waste building materials.” On the same page it states that “demolition of the existing resort and associated infrastructure will generate approximately 10,301 cubic metres of waste material.”

Submitter Recommendation

The proponent needs to utilise accurate information and have evidence of this information.

Response

As indicated in the Turner and Townsend report the 10,301 cubic metres relates to the amount of demolition material which will be generated. The report further indicates that the 13,391 cubic metre figure relates to the amount of material in the event that it is required to be removed from the Island. Basically, they add a 30% allowance for transportation of material to allow for empty air spaces in packaging.

4.4.5 Description

Submitter Comment

A footnote was regularly repeated in the sections on the proposed villas (including pages 116 and 117). It clearly explained that the proposed Plan of development would allow for the redistribution of the villas between the two nominated precincts- Fisherman's Beach and Clam Bay-so long as the maximum was 750 villas. We showed



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the footnote to several people who came back with the view this meant that, at the extreme, either precinct could have the full 750 villas.

Submitter Recommendation

None provided.

Response

The current footnotes and Plan of Development are correct in their current form. These footnotes indicate that a small redistribution of villas/apartments may occur between precincts, however, it clearly indicates the maximum number of villas/apartments in each precinct and also clearly indicates the maximum number of villas/apartments throughout the entire resort.

4.4.6 Description

Submitter Comment

Creation of 545 hectares of environmental protection areas including marked walking tracks, compost toilets and picnic facilities.

Submitter Recommendation

Is the correct figure 545, or 575 hectares – the numbers keep changing – in the abstract it is claimed 575 hectares. This is confusing.

Response

The area of 575 hectares for the Environment Protection Precinct has been used throughout the EIS document. The figure of 545 hectares was the area that was estimated at the time of the initial Referral and this was increased to 575 hectares during the EIS process.

4.4.7 Development Plan

Submitter Comment

The Development Plan is written in the terms and definition of the current Livingstone Shire Scheme, which will be superseded once the development takes place.

Submitter Recommendation

Please rewrite the draft Development Plan to be Queensland Planning Provision (QPP) and Sustainable Planning Act 2009 compliant



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Response

The Plan of Development is in a draft format only and has been prepared in light of the current Livingstone Shire Scheme. Following the determination of the EIS, a final Plan of Development will be required to be lodged with Rockhampton Regional Council. At this stage the Plan of Development will be revised as requested.

4.4.8 Development Plan

Submitter Comment

The EIS states that low key environmentally sustainable units and apartments will be designed and constructed, however for future development, no design detail/architectural details are supplied.

Submitter Recommendation

A condition of approval should be included that addresses the design/architectural features/colour scheme to prevent future owners/developers from creating little Tuscany on GKI.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.9 Development Plan

Submitter Comment

Appendix N proposes that the pedestrian, EMRV and service vehicle access and infrastructure (electricity, sewerage, water, telecommunications and lighting) corridor between the Fisherman's Beach Resort Precinct and the Clam Bay Resort Precinct will be part of the Environmental Protection Precinct. To give greater certainty to protection of the ecological values of the Environmental Protection Precinct and prevent development of a wider or additional corridor in the future, the corridor should be a separate lot and precinct. AS1.1 of the proposed Ecological Protection code actually provides for this: "Development is limited to:....(b) reconfiguring a lot associated with (a) above or where for the purposes of establishing an access mobility and infrastructure corridor in the Clam Bay Resort Precinct."

Chapter 2, Figure 2.7 Plan of Development Resort Precincts shows the corridors as part of the Clam Bay Precinct.

Submitter Recommendation

Amend the Great Keppel Island Resort Plan of Development to reflect inclusion of the services corridor between Fisherman's Beach Resort Precinct and the Clam Bay Resort



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Precinct in the Clam Bay Precinct. Provide for this land to be made a separate lot from the proposed lease for conservation purposes.

Response

The Plan of Development is a draft only. This will be corrected in the final Plan which will be submitted to Council.

4.4.10 Development Plan

Submitter Comment

AS14.1 of the Ecological Protection code is not adequate for self-assessable development within the conservation precinct. The standards that tracks, toilet blocks etc have to meet are not defined. A rehabilitation management plan will not address these issues and deferring to a plan that is yet to be developed leaves constraints to development uncertain. General requirements for other precincts such as 2.1, AS12.1, are not adequate for the Environmental Protection Precinct.

Submitter Recommendation

Amend the Great Keppel Island Resort Plan of Development Ecological Protection Code provisions for the Environmental Protection Precinct to ensure low impact location and design of any recreational infrastructure. Design guidelines used for national park infrastructure may be appropriate.

Response

The Plan of Development is a draft only. This will be amended in the final Plan which will be submitted to Council.

4.4.11 General

Submitter Comment

Fig 2.7 and 2.8 where has this data been generated from?

Submitter Recommendation

Reference the source of the data in these figures please.

Response

Figures 2.7 & 2.8 have been generated by Cardno HRP.



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4.4.12 Gross Floor Area

Submitter Comment

750 Resort Villas are proposed with an average floor area of 375 sq metres. It is highly unlikely that these units will be for tourist accommodation!

Submitter Recommendation

On this alone, the proposal is altogether at odds with the concept of the island being reserved for 'recreation' and with the proponent's own EIS pledges of an eco-sensitive development.

Response

The EIS clearly states that no residential occupation of the villas is proposed and that the entire resort is tourism based. The Gross Floor Area (GFA) provides for a built form that contains open common areas within each villa for the purposes of cross ventilation and resort style spaciousness (noting the subtropical climate). The maximum GFA as indicated in the Draft Plan of Development has defined a 'maximum gross floor area'. The maximum GFA control simply sets an upper limit on GFA rather than indicating what the GFA will actually be. Furthermore, the GFA is only one of the many planning controls that are indicated in the Plan of Development.

4.4.13 Infrastructure

Submitter Comment

Utilities - only preliminary designs have been carried out by Opus International Consultants.

Submitter Recommendation

Figures are required to ensure the project is economically viable. The public needs to know who will be paying the costs of the submarine utilities.

Response

The Proponent will be responsible for these costs and has taken these costs into account in determining the overall scale of the project.



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4.4.14 Infrastructure

Submitter Comment

Mainland landing details are scarce. Keppel Bay is very shallow and many beaches in the area (such as Kinka) are very shallow indeed and prone to significant erosion issues.

Submitter Recommendation

The placement of the mainland landing for pipes and cables should be given the same environmental consideration as Island works.

Response

The Utilities Services Corridor has been closely studied during the EIS. This has included the completion of a hydrographic survey, engineering input and aquatic ecology surveys to determine the most appropriate location of the corridor.

4.4.15 Internet

Submitter Comment

The proponent has significantly underestimated the requirements of visitors to be network connected. In particular, the expectation that smart phones and other wireless devices be always connected, are now ubiquitous.

Submitter Recommendation

Focus on wireless networks to provide the coverage people expect for mobile devices and include access for day trippers. Work with telephone carriers to upgrade mobile services to the Island. I.e., the Island is not just for paying guests and facilities should be available for other visitors.

Response

The EIS states that the Proponent intends to bring over a fibre optic cable to the Island to significantly improve internet/data coverage on the Island. This will obviously tie into the upgraded wireless network around the Island to greatly improve mobile coverage for guests and daytrippers.



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4.4.16 Lot 21

Submitter Comment

Environmental Protection Precinct. This is described as a 'Conservation' lease under the Lands Act. Given that the Lands Department, now Department of Natural Resources and Mines rarely enforces lease conditions or inspects lease land for compliance purposes the proposed tenure appears to be little more than a holding lease for future development purposes.

Submitter Recommendation

The proponent and the assessing Departments should clarify within the EIS the purpose and secure tenure of such Conservation Leases. In addition the proposal should be evaluated against other tenure options such as Conservation Park with joint trusteeship, National Park, Reserves for Environmental Purposes etc. The current lessee and previous lessees on Great Keppel Island do not have a demonstrated record of management of natural areas.

Response

The Proponent is prepared to work closely with the State Government to determine the most appropriate tenure for the Environmental Protection Precinct.

4.4.17 Lot 21

Submitter Comment

Proposed development will preclude access by public and any of the above persons to a major part of Lot 21.

Submitter Recommendation

None provided.

Response

At present, access throughout Lot 21 is very difficult for the majority of the public who do not have access to a private vehicle on the Island due to the terrain and lack of sealed tracks. The Proposal will not preclude access by public to a major part of Lot 21.

As indicated in Section 4.2.2.1 of the EIS, Lot 21 is leasehold land and has been privately leased continuously for over 100 years. When the Proponent purchased the resort, this included the purchase of the private lease over Lot 21. The GKI Revitalisation Plan will maintain public access through Lot 21. Furthermore, access throughout the Island and Lot 21 will be significantly improved through the inclusion of sealed paths, dedicated walking tracks and bicycle paths. The use of these facilities will



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be actively encouraged throughout the Resort. In addition, the majority of Lot 21 (575 hectares) will be set aside for Environmental Protection.

4.4.18 Lot 21

Submitter Comment

The present lessee, upon taking up the lease, closed the existing resort, dismissing all staff. The leased land soon became a wasteland, a junkyard.

Submitter Recommendation

None provided.

Response

GKI Resort took over the leases in January 2007 and continued to run the old resort operation until early 2008 when it became apparent that the resort operation was unviable. It was at this stage that the resort was closed.

4.4.19 Marina

Submitter Comment

The majority of access and the construction equipment/ materials will be barged from Keppel Bay Marina to the Island. Beach barge landings (until marina /jetty are complete) potential impacts include motor scouring on the beach changing the beach profile and shoreline processes. Impacts, monitoring, mitigation details not adequate. Details of barge landing impact mitigation not adequate; also applies to demolition and waste leaving the island on barges; and marina rock armour quarry material arriving by barge.

Submitter Recommendation

Provide details of impacts and mitigation measures for the expected duration of barge landings on the beach in Marine Park: e.g. monitor for scouring, survey beach profiles, limit high rev motor use causing scour, landing location considerations, high tide, shallow draw vessel; mitigation impacts of filling-in or levelling at low tide. Include capacity to refine transport plans in the EMP to responsive management.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.4.20 [Marina](#)

Submitter Comment

Section 2.2.3.5 refers to further information in Section 1.5.2 regarding the justification of the Marine Services Precinct. There is no section 1.5.2.

Submitter Recommendation

Amend accordingly.

Response

Minor spelling error. It should refer to 1.6.2.

4.4.21 [Marina](#)

Submitter Comment

Jetty as opposed to marina alternative not properly explored. Dubious table of pros and cons does not nominate environmental benefit of lesser impact nor environmental risks of marina construction and maintenance in close proximity to Passage Rocks coral and sea grass communities and endangered olive sea snake population.

Submitter Recommendation

Properly explore the option of a jetty. Resubmit EIS with fair and reasonable detail.

Response

The jetty option is considered appropriately in section 1.6.

4.4.22 [Power](#)

Submitter Comment

Regardless of day time solar use on the island, the requirement to use mains power will kick in right on peak load time (evening) meaning the overall impact of the solar on the amount of carbon produced will be to increase production.

Submitter Recommendation

If genuine about reducing carbon outputs, the proposal will be looking to reduce the load at peak time, not during the day. A mix of options, not just solar could be considered to provide genuine outcomes. Efforts to reduce energy use should also be a significant part of the drive as there is lot that can be done even for resorts to limit cooling, lighting and pool energy costs.



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Response

The project objective to achieve a carbon positive energy status is a significant target. The Renewable Energy report (Appendix AH) states that the achievement of a carbon positive status starts with reducing energy demand through enhanced passive building design strategies, enhanced energy management and commissioning as well as educational programs and target commitments from staff and guests. Therefore, the EIS accepts and has already considered the importance of reducing power usage in terms of reducing its carbon outputs.

4.4.23 Power

Submitter Comment

We have assumed that the proposed 24,000 solar panels will have low reflectivity.

Submitter Recommendation

This needs to be detailed.

Response

The visual impact assessment in Section 3 of the EIS has taken this into account and indicated that the panels are to have a low reflectivity.

4.4.24 Power

Submitter Comment

“step down the voltage to 400 v for consumer use” (We don’t use 400 volt power).

Submitter Recommendation

The proponent needs to utilise accurate information and have evidence of this information.

Response

The 400 v figure is correct.

4.4.25 Power

Submitter Comment

It seems back-up diesel generators will not provide power to the water pumping station nor the sewerage treatment plant in which case environmental damage might ensue.



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Submitter Recommendation

None provided.

Response

This is not correct. Section 2.4.3.7 indicates that generators will be used for back up power to the wastewater treatment system.

4.4.26 Utilities Services Corridor

Submitter Comment

The pipeline/power cables do have some potential implications for commercial fishers, particularly trawl. Usually these structures are buried but still require an exclusion zone. This means that quite a large footprint on fishing grounds can be created where fishing is no longer permitted.

Submitter Recommendation

To ensure that a consistent process is available to address fisheries adjustment processes, the new Fisheries Queensland policy document "Guidelines on Fisheries Adjustment" has been developed. Fisheries adjustment in a Queensland commercial fisheries context refers to any process that alters the access granted under a resource entitlement issued under the Fisheries Act 1994. The policy is intended to provide guidance to government agencies and private developers prior to undertaking an activity that will impact upon these resources entitlement holders.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.27 Wastewater

Submitter Comment

The proposed wet weather wastewater outfall will require development approval in meeting the objectives of the Fisheries Act 1994 and its protection of marine plants.

Submitter Recommendation

Additional development applications for operational works needed for the facilitation of the Revitalisation Plan are as follows: Operational work for 'the removal, destruction or damage of a marine plant' (under the Fisheries Act 1994) pursuant to Schedule 3, Part 1, Table 4, Item 8 of the Sustainable Planning Regulation 2009 (Marine Services Precinct, Wet Weather Wastewater Outfall and Utilities Services Corridor).



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Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.28 Wastewater

Submitter Comment

The proponent has identified that re-use of treated effluent (recycled water) will be component of the proposed development. However, the proponent has not supplied appropriate information on compliance with standards; treatment, storage and use of demonstrate that it will not pose a risk to human health.

Submitter Recommendation

Queensland Health recommends that any water proposed to be reused on site (including effluent from on site sewerage treatment plants) are managed in accordance with the Australian Guidelines for Water Recycling – managing health and environmental risk (phase 1) (2006) and (phase 2). This document released by the National Environment Protection Council provides guidance on water quality and management planning for recycled water and as such provides information on minimising risk to health. Although this document is mentioned on pg 96 Appendix AN, the proponent has not commented to adopting the guideline for the purposes of protecting public health. Queensland Health recommends that information is provided highlighting how re-use water will be appropriately tested, treated, transported, stored (and protected from contaminating potable supplies), reticulated and monitored to ensure it does not pose a risk to human health.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.29 Wastewater

Submitter Comment

The proponent has indicated non-drinking water and/or wastewater generation will occur on site, but has not supplied information dealing the management, treatment and storage of such water so it will not pose a risk to human health.

Submitter Recommendation

Queensland Health recommends that any non-drinking water and/or wastewater generated on site be rigorously assessed on potential impacts determined. The EIS should describe how much water will be managed to preclude the potential for direct and indirect contact with humans thereby minimising the potential for water borne



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disease transmission. In addition the EIS must specify how cross contamination and cross connection of individual supplies will be eliminated.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.30 Wastewater

Submitter Comment

Groundwater. Storage of Recycled Water etc. Open ponds are proposed across various parts of the development site. These will store treated wastewater and harvested stormwater. These areas will be open for wildlife to enter and possibly spread and or be affected by possible contaminants. There is a need for adequate signage warning of potential contaminants.

Submitter Recommendation

These bodies of water must be suitably fenced and signed warning of potential dangers and contaminants. Water quality monitoring of all stored waters needs to be regular.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.4.31 Wastewater

Submitter Comment

No major issues. Minor point is that while it is implied through the EIS, it is not explicitly stated that recycled water will be used on the existing golf course (e.g. during the initial stages of construction) until the new golf course has been developed.

Submitter Recommendation

Sentence added describing how wastewater will be disposed prior to the new golf course being developed.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.4.32 Wastewater

Submitter Comment

As a means of minimising odour generation at the sewage pumping stations (SPSs), the EIS indicates that this will be “achieved by sealing of all manholes and pumping stations, thus containing any odours within the system.” This may lead to odorous compounds building up at the SPSs and rising mains, resulting in potentially high concentrations of offensive gases being liberated at any STP. Also, since these odorous gases may lead to a corrosive environment in the SPS and rising mains (hydrogen sulphide reacts with water to form an acidic solution) this may result in failed infrastructure due to corrosive conditions leading to the release of sewage to the environment resulting in serious environmental and public health issues?

Submitter Recommendation

Ensure there is suitable odour mitigation equipment installed at the inlet works of any proposed STPs. Consider treatment of sewage pumping stations to minimise conditions which may lead to corrosion of sewer infrastructure and possible increase of sewage spills from the network.

Response

Design features would be incorporated as required to suit the situation for each particular pumping station – including limiting drops (and hence turbulence) in the reticulation system to minimise odour production and release, selection of corrosion resistant materials within pumping stations (eg ABS, fibreglass, or HDPE piping, stainless steel fittings, marine grade aluminium alloy covers etc). Provision can also be made for the future inclusion of dosing for odour control (eg aeration or ozonation) if odour issues arise with particular pumping stations.

4.4.33 Wastewater

Submitter Comment

The outfall at Long Beach is claimed to be unlikely to have an impact on ecological communities but no details of any baseline study on relevant ecological communities within the impact area were presented nor was any proposal to monitor these communities for impacts.

Submitter Recommendation

None provided.



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Response

Extensive hydraulic modelling, coastal engineering and aquatic ecology assessment has been undertaken to form this conclusion.

4.4.34 Wastewater

Submitter Comment

Calculations are made in Table 7.2 to arrive at “EP” units which are then used to calculate expected wastewater generation rates. It is noted in Table 7.2 that no allowance has been made for any wastewater that is generated as a result of operating any swimming pools and spas in the proposed Resort, or potential aquarium in the Great Keppel Island Research Centre. Swimming pools and spas need to be filtered on a regular basis, as well as disinfected typically using some form of chlorination. Wastewater is generated when backwash operations occur and when the swimming pools and spas are emptied for various reasons. These types of wastewater typically contain high levels of suspended solids and various forms of chlorine. Release of these types of wastewater to the environment may lead to serious environmental harm as chlorine is extremely toxic to aquatic biota at very low concentrations.

Submitter Recommendation

For noting and re-evaluation of ‘equivalent person’ estimate if necessary.

Response

Generally, the EP calculation and associated sewerage flow would take into account a normal level of swimming pool contribution within a sewerage system. The actual number of swimming pools is not known at this stage.

As far as the release of effluent containing swimming pool waste is concerned, the treatment system would be designed to handle this and dilution of any effluent into the sea would be substantial, noting:

- effluent discharge from the treatment plant is to the storage facility at the golf course;
- in the rare case of overflow from the effluent storage pond (note used as balancing storage for the golf course and to minimise the occurrence of overflows), the overflow would first be to the stormwater system within part of the golf course □ further dilution with ponds and stormwater runoff from the golf course; and,
- the overflow would be coincident with a high rainfall period (otherwise the storage pond would not be overflowing) giving rise to significant dilution with general rainfall runoff.



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4.4.35 Wastewater

Submitter Comment

Equivalent person estimates have been based on 1 EP for each marina berth without justification for the assumption.

Submitter Recommendation

Provide justification for the assumption of 1 EP wastewater generation per marina berth.

Response

Given the marina involving only visitors and not permanent residents, the rating for the marina berths is based on an average of 5 persons per boat, and 0.2 EP per person.

4.4.36 Wastewater

Submitter Comment

As a means of reducing the volume of overflows at sewage pumping stations, wet wells can hold a certain volume before there is an overflow in the event of sewage pump station failure. Larger wet well volumes reduce the risk of sewage spills as there is more time for actions to be implemented to contain any such sewage spills before an overflow event occurs. The EIS recommends a “Minimum of 2 hours storage capacity at ADWF within the pump station wet wells and contributing reticulation mains (and overflow storage if required with any overflow being returned to the wet well)...”. (Gold Coast City Council provides for a minimum of 4 hours storage capacity).

Submitter Recommendation

Justify a sewage pump station wet well storage capacity of “2 hours” as being satisfactory to minimise sewage spills from the proposed sewage pumping stations. Define which sewage pump stations will have “overflow storage” facilities and the design volume of these “overflow storages”.

Response

Given the proposed backup electrical generation for sewerage pump stations, dual pump systems (each pump with 100% capacity) and on site maintenance personnel, 2 hours storage is considered to be justified. 4 hours storage would be proposed without standby power generation. Which pump stations have overflow storage will not be determined until the final design when the wet well and reticulation capacities of each pump station is able to be calculated. Wherever there is a shortfall in the volume required for 2 hours of storage, then overflow storage would be provided.



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4.4.37 Wastewater

Submitter Comment

MEDLI modelling has indicated that the proposed wet weather storage volume is 37 ML and that this will hold approximately 86 days of average in-flow. Note: There are discrepancies between documents as to the volume of the proposed wet weather storage. In Appendix Y, it is stated to be 32 ML. The wastewater discharges are stated to contain approximately 20mg/L Total Nitrogen and 7mg/L Total Phosphorus. It is anticipated that long-term storage of nutrient rich water will lead to anaerobic conditions in the water storage tank, and the generation of ammonia, though it is acknowledged at s3.2.7 of the Preliminary Irrigation Management Plan that "...additional mechanical aeration may be considered...". The EIS does not present any data or modelling of concentrations of dissolved oxygen (DO), biological oxygen demand (BOD) or ammonia. See also comment for Appendix AN: Water Cycle Management Report, 10.3.1 MEDLI Input Values.

Submitter Recommendation

Correct any inconsistency in proposed volume of the wet weather storage. Provide modelling data on the ammonia, DO and BOD associated with water in the proposed wet weather storage over the extended period that water is expected to reside in the storage. Provide information regarding measures that will be instituted to mitigate against the release of water with low DO and high ammonia and the impacts it may have if used for irrigation.

Response

The MEDLI modelling has been reviewed and is deemed to be correct.

4.4.38 Wastewater

Submitter Comment

The irrigation strategy is to initiate irrigation at 80% plant available water deficit level and terminate at 5 mm above the field capacity. Irrigating up to 5 mm above the field capacity may lead to offsite movements of contaminated water through surface runoff or deep drainage. Run-off, spray-drift and groundwater infiltration from land irrigation may carry high nutrient loads, and this may have implications for the coral communities in Clam Bay offshore from the proposed golf course. These coral communities displayed a high degree of bleaching in the 2011 wet and post-wet season.



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Submitter Recommendation

The proponent needs to alter the irrigation initiation and termination triggers to minimise the risk of surface runoff or excessive deep drainage. Termination of irrigation at the field capacity may prevent irrigation induced surface runoff or excessive deep drainage. The proponent should consider the risk to the coral communities in Clam Bay south of the golf course when assessing the risks associated with nutrient transport into Clam Bay. Dependant on the outcome of revised MEDLI modelling, the risk to coral communities from nutrient bearing waters may warrant adoption of more stringent water quality parameters for the WWTP effluent, which would require a higher level of wastewater treatment.

Response

The model was originally run to cease irrigation 5mm beyond field capacity as a conservative assessment measure.

4.4.39 Wastewater

Submitter Comment

Soil type used in the MEDLI simulation is “sandy soils” from the standard MEDLI soil library. However, saturated hydraulic conductivity (Ksat) values for all four layers have been increased (doubled) for the MEDLI modelling. The saturated hydraulic conductivity of the MEDLI “sand” soil is 50, 50, 20, 10 mm/hr for the four layers in the soil profile. In the GKI MEDLI simulation values of 100, 100, 40, 20 have been used. This means water movement through the profile is faster with more deep drainage. Normally EHP would request that the applicant measure these values for the proposed disposal land.

Submitter Recommendation

The use of increased Ksat values in the MEDLI modelling should be confirmed and justified if necessary. If Ksat values have been increased without justification, the MEDLI should be repeated using the correct values and the results provided for further review. If results change, groundwater impact modelling may also have to be reviewed.

Response

Original values were doubled to be conservative. (i.e. faster drainage = higher risk of nutrient leaching). Therefore, the model is the worse case scenario.



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4.4.40 Wastewater

Submitter Comment

The consultants have used monthly occupancy rates of the previous resort to indicate “expected” occupancies of the new resort in order to generate the annual volume of wastewater to be treated, this being 157.92 ML/annum (In fact “157.7 ML/year” was used in the M.E.D.L.I. referred to in the EIS). There is no guarantee that “expected” occupancy” will occur for the new resort i.e. the resort will have capacity for a greater volume to be generated. Appendix Y Section 3.1 states that the project is expected to generate 208ML/year. Should actual occupancy rates exceed “expected” occupancy rates, the greatest volume of wastewater to be disposed of could increase to 292 ML/day, assuming full occupancy throughout the year. This equates to an 84.9 % increase. M.E.D.L.I. modelling has indicated a wet weather.

Submitter Recommendation

Recalculate M.E.D.L.I modelling using maximum occupancy rates for the new Great Keppel Island Resort. This equates to a maximum annual wastewater generation rate of 292 ML/year. Recalculate suitable wet weather storage volumes and irrigation areas so that nutrients discharged in any overtopping events do not exceed those levels specified in the Great Barrier Reef Marine Park guideline entitled Sewage Discharges from Marine Outfalls in the Great Barrier Reef Marine Park (GBRMPA, 2005). Describe the contingency plan for wet weather storage and irrigation areas if occupancy rates exceed “expected” values as used for M.E.D.L.I. modelling in the EIS. Alternatively, provide a commitment to limit the development so that a maximum volume of wastewater of 157.92ML/year is generated.

Response

Rather than commit to a limit on the maximum volume of wastewater/ year (and thus visitor numbers/ occupancy limits), it is suggested that the visitor numbers/ occupancy and associated wastewater flows/ effluent storage volume/ golf course watering be monitored and reviewed regularly. This would be with a view to, in the event that the occupancy is higher than expected and/ or effluent volume exceeds that required for (or the capability of) golf course tees, fairway and greens watering:

1. increasing the volume of the effluent storage ponds (with additional area to be reserved for future expansion of the ponds), or,
2. increasing the extent of golf course watering by the addition of watering to parts of the “rough” areas of the golf course, or,
3. a combination of 1 and 2 if/ as appropriate.

The above could be conditioned into the EIS approval.



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4.4.41 Wastewater

Submitter Comment

There could be up to 8 sewage pumping stations (SPSs) installed at the Resort as part of the sewage collection system. It is noted that an “alarm system” is proposed. A telemetry system installed at the SPSs to monitor the status of infrastructure such as the condition of sewage pumps, levels in any wet wells, sewage overflows from the wet wells (high level, high level, overflow) is considered best practice.

Submitter Recommendation

Provide a commitment to a minimum extent of installation of suitable telemetry and level indicators at all sewage pumping stations.

Response

The alarm system could be replaced or supplemented by a telemetry system. For after hours monitoring (unless the maintenance section runs 24 hours/ 7 days per week), the telemetry system could have alarms connected to the central reception area (or similar) to warn of issues requiring a maintenance call out.

4.4.42 Wastewater

Submitter Comment

It was presented here that while 31 ha of golf course area was expected to be suitable for irrigation using recycled water, the final design might mean additional areas may be required to be irrigated...yet earlier calculations around water and recycled water needs are variously based on only 15 ha or 31 ha to be irrigated.

Submitter Recommendation

None provided.

Response

The comment regarding additional landscape areas is in relation to provide added contingency areas if required.

4.4.43 Water

Submitter Comment

Reference is made to Section 2.5.5.6 however there does not appear to be a Section 2.5.5.6.



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Submitter Recommendation

Provide relevant Section.

Response

Minor spelling error. Should refer to Section 2.4.5.3 which is directly below the paragraph.

4.4.44 Water

Submitter Comment

Reference is made to Table 2.14 in Appendix AN, however there is not Table 2.14 in Appendix AN.

Submitter Recommendation

Provide correct reference to Table.

Response

Minor spelling error. Should refer to Table 8.8.

4.4.45 Water - Supply

Submitter Comment

The volumes/rates of water supply need checking and the range of demands needs to be accurately described. Currently the range is described to be between an average and a maximum. The range should be described as being between a minimum and a maximum, with the average subsequently described. From reviewing Appendix AN, (sub) Appendix E - Water Balance Spreadsheet, (sub) Appendix B.1 A - Water Balance. the minimum monthly demand of 19.5 ML occurs in February which has an average daily demand of 697 kL/d. The lowest daily demand would likely be less than this. Appendix B.1 A also shows the average for the year being $145 \text{ ML} + 282 \text{ ML} = 427 \text{ ML} = 1,169 \text{ kL/d}$, not $1,275 \text{ kL/d}$ as outlined in this Section.

Submitter Recommendation

Provide the actual range of water demand showing from minimum water demand to maximum water demand and subsequently describe the average demand.



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Response

The detailed water demand assessments contained in Appendix AN are deemed as appropriate and in accordance with standard industry practice. The important figures are the average and maximum water demand rather than the minimum.

4.4.46 Water Resources

Submitter Comment

No analyses were presented here of existing natural infiltration rates over the area for comparison to that proposed in the capture of rain water and the capture/treatment/redistribution of storm waters as volumes/unit area. Additionally, was redistribution intended for sloping areas, and what was the expected recapture rates in swales? There seemed to be no analysis of how the proposed system would cope with expected volumes of water experienced during intense rain events.

Submitter Recommendation

None provided.

Response

Detailed hydraulic modelling has been provided in the EIS in sections 2.4.6 and 3.5. Appendix AN also contains a detailed technical report regarding the hydraulic impacts of the Proposal.

4.4.47 Water Resources

Submitter Comment

p.186 stated total volume of water taken from the mainland source (Fitzroy River) is expected to range between an average of approx. 1 275 kL/day to a maximum of 2 270 kL/d – this contradicts Table 2.10.

Submitter Recommendation

None provided.

Response

P186 and table 2.10 are referring to different matters.



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4.4.48 Water Supply

Submitter Comment

The possibility of underestimation of construction usage would result in depletion of the aquifer, increased salinity and use of other bores.

Submitter Recommendation

The proponent should list the main activities that will occur during the construction phase and use this as a basis for calculating total construction water demand, and include on large contingency allowance.

Response

As indicated in Section 2.4.5.1 of the EIS, water supply for Stage 1 construction will be sourced from two production bores installed within the Long Beach Aquifer. These bores will only be operational for a short period of time whilst the mains supply is brought across from the mainland. A condition of approval can be set to ensure that the construction usage does not exceed the sustainable use of the aquifer.



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4.5 Chapter 3 – Environmental Values and Management of Impacts

4.5.1 Acid Sulphate and Soils

Submitter Comment

Preliminary Acid Sulphate soil assessment was not tested to the recommended standard. No photos of Putney Creek were provided to prove that the water was not indicative of acid sulphate soil.

Submitter Recommendation

Undertake further ASS assessment.

Response

The Douglas Partners Acid Sulphate Soils investigation was conducted with reference to the QASSIT (1998) guidelines.

4.5.2 Aquatic

Submitter Comment

There are important wetlands behind Putney beach that seem to be missing from Tower Holdings maps, images and plans.

Submitter Recommendation

Can these please included and the EIS resubmitted for comment so that people can make an informed decision.

Response

The Putney Creek is shown on the appropriate plans throughout the EIS. The environmental impacts. The environmental impacts are also discussed in detail in Section 2.4, 3.3, 3.4 & 3.5 of the EIS.



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4.5.3 Aquatic

Submitter Comment

All 6 Australian marine turtles are listed as Endangered or Vulnerable. The EIS only details Clam Bay beaches for effects of light spillage; however there are few/no records of marine turtles nesting on the Clam Bay beaches. Little information is given re: prevention of light spillage on other nesting beaches.

Submitter Recommendation

Since the location of turtle nesting beaches has been identified, the impacts of the resort and marina lights on orientation of emerging hatchlings should be assessed. Mitigation measures to prevent hatchling disorientation should be detailed – it is not sufficient to say “turtle hatching is unlikely to be affected by marina lights”.

Response

Section 3.3 of the EIS describes the status and potential impacts of each species of marine turtle. This also includes a risk assessment of the potential impacts. In particular, refer to page 333, 449 and sections 3.3.4.6 & 3.4.5.1. In regard to impacts from lighting, section 3.3 of the EIS states that light spillage will be minimised as design development is set back and well buffered by beaches used for turtle nesting, except in the marine services precinct where turtle hatching is unlikely to be effected by turtle hatching.

4.5.4 Aquatic

Submitter Comment

Assumed error in Lead concentrations (same values as given for Iron) on page 33, table 2.3 of marine sediment technical report (379 in pdf).

Submitter Recommendation

Provide correct values for Lead concentrations and a relevant discussion if values exceed guideline or are otherwise noteworthy.

Response

Minor editing error. Correction as follows:

mean: 12mg/kg

SD: 0.32mg/kg

95% UCL: 1.36mg/kg

This will not effect the balance of the report.



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4.5.5 Aquatic

Submitter Comment

Concerned that copper will be elevated within the marina – is this antifouling stuff going to also limit the growth of corals and sea grass, and if the marina waters are flushed everyday how far outside the marina will the effect of the copper spread?

Submitter Recommendation

None provided.

Response

The Coastal Environment Technical Report in Appendix Y contains hydrodynamic model simulations which have been undertaken to determine the resulting concentrations and fate of the copper leached from antifouling paint for a fully berthed marina. A conservative numerical tracer was released evenly over the berth area of the marina. The advection and dispersion of the numerical tracer showed that elevated copper concentrations are generally confined to the marina basin.

4.5.6 Aquatic

Submitter Comment

Lack of scientific rigour in relation to spatial and temporal replication with the freshwater water quality, sediment quality sampling and all other freshwater sampling parameters undertaken. Samples from eight sites were generally sampled once each spatially and temporally. The "once only" sample at each site is unacceptable in scientific terms to provide any valid scientific conclusions about the water quality; replication of samples is essential in any scientific field surveys and absolute minimum of three samples for each site sampling visit should have been completed over multiple temporal sampling events (date/season).

Submitter Recommendation

Sampling method utilised in relation to spatial and temporal replication (one sample only at each site with only one site visit) is not scientifically rigorous enough. Replication of sampling must occur to provide sample averages for each site, spatially and temporally. Further sampling, with further spatial and temporal replication, must be completed and included in the EIS and SEIS in relation to all freshwater aquatic sampling parameters listed in table 2.2.



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Response

The aquatic studies were conducted by and the report prepared by one of Australia's leading aquatic ecology consultancy practices (frc environmental). Proponent will accept approval conditions requiring ongoing monitoring.

4.5.7 Aquatic

Submitter Comment

Appears to be an error in the naming of the Putney Creek freshwater survey sites in Table 2.2 of the Aquatic Technical Report (Appendix W), as they are labelled as PC1, PC2 and PC3 in table 2.2, however on the map provided of freshwater monitoring site locations, they are P1, P2 and P3.

Submitter Recommendation

CCC requests clarification of this error, the differences between sites P1, P2, P3 and PC1, PC2 and PC3. Furthermore, how does or has this error caused repercussions for data presentation and analysis throughout the entire report. Amend the report.

Response

PC1, PC2 & PC3 refer to the same sites at P1, P2 & P3. Table 2.2 of Appendix W clearly indicates that PC1, PC2 & PC3 are in relation to Putney Creek. Furthermore, section 7.1 of Appedix W contains the freshwater sites and indicates that these are labelled as "Putney Creek (P1, P2 & P3)". Therefore, there are no repercussions for data analysis in the report.

4.5.8 Aquatic

Submitter Comment

Concerned that the fish trapping method (use of small bait traps only) will have missed any larger fish, and nets should have been used for a more comprehensive survey. No information about how long the sites were monitored, presuming it was for the length of time the bait traps were deployed.

Submitter Recommendation

None provided

Response

The aquatic studies were conducted by and the report prepared by one of Australia's leading aquatic ecology consultancy practices (frc environmental). Proponent will accept approval conditions requiring ongoing monitoring.



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4.5.9 Aquatic

Submitter Comment

The proposed Clam Bay residents might choose, as would be their right, to keep their boats close handy in Leeke's estuary with huge disturbance potential to marine and shore animals.

Submitter Recommendation

None provided.

Response

There is no residential development proposed as is clearly indicated in the EIS. Therefore, there will be no residential residents living within the Clam Bay precinct. There is no indication or proposal that boats would be kept within Leeke's estuary.

4.5.10 Aquatic

Submitter Comment

Sea level rise could also play a role in the dramatic long-term loss of seagrass beds around Great Keppel Island mentioned in the EIS, although excessive turbidity from the island following clearance of land for development, increased erosion in the watershed of the Fitzroy River, and increasing nutrients from the island or from the mainland could also be factors. It is impossible to clearly identify a cause from the information given, but loss of seagrass could lead to increased beach erosion.

Submitter Recommendation

None provided.

Response

The EIS has identified that only a small amount of seagrass will be lost at Putney Beach in which the seagrass is currently very patchy and has been diminishing over the years. This assertion that the loss of seagrass at Putney Beach will lead to increased beach erosion is unsubstantiated and incorrect. In fact, the EIS has demonstrated that the construction of the marina at Putney Beach will greatly assist in preventing further erosion along Putney Beach as is currently occurring.



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4.5.11 [Aquatic](#)

Submitter Comment

The water quality data in the EIS indicates that productivity of this ecosystem is strongly limited by nitrogen, but that nitrogen is already excessive in many locations, although not as excessive as phosphorus. But this is not pointed out in the EIS, even though it means that any further nutrient inputs, especially nitrogen, will greatly increase algae overgrowth of the corals. The EIS does not present data that allows the nutrient sources to be identified, but it is most likely that high nutrients and sediments from the agricultural hinterlands in the Fitzroy River watershed have created chronic high nutrient and sediment stress conditions in these reefs. As a result of this high background, any local additions of land-based nutrient and sediment sources from development on Great Keppel Island could trigger rapid and irreversible deterioration of the coral reefs.

Submitter Recommendation

None provided

Response

Elevated nitrogen levels were recorded during the post-wet event due to the record flows experienced in the Fitzroy River in January 2011 resulting in significant sediment loads from upstream catchments. This submission is from a foreign scientist who is likely to have limited on-site knowledge of the Island and its surrounds. The assertions are simply not correct and there is no evidence within the EIS that the project could trigger rapid and irreversible deterioration of the coral reefs.

4.5.12 [Aquatic](#)

Submitter Comment

The EIS recognises that there is a risk of turtle death and injury due to boat/propeller strike associated with the proposed number of boats using the marina. Table 3.49 (Summary of Potential Impacts on Marine Ecosystems) proposes “Design of channel areas to include construction of small coves where turtles can rest away from boating traffic”, and “Go slow zones around marina and Passage Rocks inline with MSQ’s boating safety requirements”. There is no objective commitment to implementation of either strategy. A speed limit of 6 knots was determined to be appropriate to reduce risk of boat strike in high risk areas of Gladstone harbour.

Submitter Recommendation

Objective commitments to the mitigation of boat strike on turtles should be provided to support the strategies proposed in the EIS, such as:

- profile drawings of proposed navigation channel and associated “coves” and a long term enforceable mechanism to maintain such structures;



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- defined area of reduced boat speed, proposed speed limit, and means by which the speed limit will be imposed and enforced.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.13 Aquatic

Submitter Comment

Black, smelly sediment extends for much more than the 30cm depth collected by the EIS consultants - photos enclosed. This contrasts with the EIS claim that the sediments are considered to be uncontaminated.

Submitter Recommendation

Do not rely on the information contained in the EIS and obtain independent testing to confirm the claims.

Response

The 'black, smelly sediment' is not contaminated material as indicated by the laboratory results contained in the EIS. In terms of managing the dredging process, it is proposed that a Dredge Management Plan will be prepared prior to construction which will be required to be signed off by GBRMPA and the various State Departments.

4.5.14 Aquatic

Submitter Comment

The EIS states that a small amount of seagrass will be impacted by the jet-trenching operations required for the services corridor, however no mapping has been provided to show where seagrass or other sensitive marine communities may be impacted by the trenching.

Submitter Recommendation

Provide a plan showing the entire utilities corridor overlaid on any biodiversity values impacted (e.g. seagrass).

Response

The Utilities Services Corridor has been closely studied during the EIS. This has included the completion of a hydrographic survey, engineering input and aquatic ecology surveys to determine the most appropriate location of the corridor.



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4.5.15 Aquatic Ecology

Submitter Comment

GKI Resort has a responsibility to respond to a stranding in the development's footprint, including marine areas. The proposed response to only report strandings to QPWS is not adequate.

Submitter Recommendation

Provide details of recording and response protocols for marine animal strandings during marina construction.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.16 Aquatic Ecology

Submitter Comment

Incorrect Statement: 'Aquatic ecology – the Proponent will actively commit to protect and enhance the marine environment surrounding the island.'

Submitter Recommendation

The Proponent must also develop and implement a Visitor and Operator Management Plan which outlines appropriate levels and types of recreation activities around the island that are connected with island visitors and operators, including indicators and limits of acceptable change, mitigation measures, and a code of conduct for all to ensure they have minimal or no impact on aquatic ecology.

Response

Section 8.3 of the EIS outlines the framework of the project Environmental Management Plan which clearly includes the requirement for "implementation". Furthermore, Appendix O contains the project EMP which specifically details the implementation requirements of management plans for nature conservation and visitor education.

4.5.17 Biodiversity Offsets

Submitter Comment

No offset strategy has been proposed for the loss of coral reefs at Passage Rocks, Putney Point or Middle Island.



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Submitter Recommendation

Proponent to outline biodiversity offsets for loss of seagrasses in Putney Bay, corals, sea snake habitat and oyster beds.

Response

Biodiversity Offsets are detailed in Appendix P and Section 3.3.4.10(a) of the EIS.

4.5.18 Bushfire

Submitter Comment

DCS is satisfied that bushfire has been adequately investigated by the draft EIS with the exception of provision for community infrastructure in bushfire hazard areas. As previously discussed in flooding, these forms of development have additional requirements for bushfire to achieve Outcome 3 of the SPP 1/03. Appendix 9 of the SPP 1/03 identifies the approaches which can be adopted by the proponent for the mitigation of bushfire hazard for these types of development.

Submitter Recommendation

The bushfire management plan must comply with the requirements of Appendix 5B of the SPP 1/03 Guideline for buildings and structures, including but not limited to accommodation facilities, as a means of complying with Outcomes 1 and 2 of the SPP 1/03. Bushfire has been addressed in the following sections of the EIS:- Section 3.1.1.2, p243, - Table 3.4, p249 and 250, - Table 3.5, p252 and 253 and Section 6.3.3, p1026 and 1025.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.19 Coastal Environment

Submitter Comment

Marinas at Nelly Bay Magnetic island for example have caused reduced water quality. Studies in 1980s reference demonstrated Putney Beach to be dynamic. Historically intertidal dunes and wetlands extended further south as far as the air airstrip area but at other times the beach and dunes extended hundred of metres further out into the Passage rocks and channel.



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Submitter Recommendation

What will be done to prevent the significant changes to the nature of the normal accretion rate accretion and erosion patterns?

Response

Significant coastal engineering modelling has been provided in the EIS to demonstrate that the project can be undertaken without these impacts.

4.5.20 Coastal Environment

Submitter Comment

Protected marine in the tidal vegetation area of Leeke's Creek has a very low level <0.5m margin between highest tides and small dual system that separates sea from the mangrove areas and salt pans, marine couch grasslands. Even moderate storm surge activity on top of high tides could potentially impact well into the Leeke's area, and with anticipated increasing oceanic swells and potentially.

Submitter Recommendation

Resort footprint to be limited to western part of GKI to avoid increasing risk of salt water intrusion in the Leeke's Creek area.

Response

Storm surges are a natural occurrence and the comments are not relevant to the proposed development and in any case the proposed development will be set back from Leeke's Beach. EIS has assessed storm surge activity and assessed that the project will not have an impact on this.

4.5.21 Coastal Environment

Submitter Comment

EIS states that the project will not affect the coastal and geomorphic processes associated with coral reefs around the Island including those associated with Middle Is and Passage Rocks. There is no modelling of post-construction marina impacts on water quality at Passage Rocks and no explanation about why the proponents consider that there will be no impacts except a quote from their own Appendix. Monitoring of decline in water quality will not prevent coral, algal, seagrass marine life deaths from siltation, heavy metals and photo system II inhibitors.



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Submitter Recommendation

Minimum expected here would be particle release model, estimates of rates of sediment settlement, rates of siltation, decrease in water clarity (increased turbidity) and leaching of contaminants.

Response

Post construction modelling is contained in Section 3.6 of the EIS and Appendix Y.

4.5.22 Coastal Environment

Submitter Comment

Impacts and mitigation – geomorphic and coastal processes – Project is not set back from the shoreline – please see marina at Putney Beach and Clam Bay golf course which are built on the beach protection zone.

Submitter Recommendation

Tower clearly little idea of the value of beach protection zones and how they work to protect beaches and reefs as two aspects of their development proposal are built right up to the beach.

Response

The Clam Bay precinct is not located within a beach protection zone as it is elevated by approximately 60 metres above Clam Bay.

4.5.23 Coastal Environment

Submitter Comment

The EIS states “Based on a projected increase in mean sea level of 0.82m, approximately 40 – 80m of shoreline recession could be observed.” Putney Beach is already showing significant signs of erosion along the foreshore, which is also threatening infrastructure.

Submitter Recommendation

Detail what mitigation measures are proposed to counter the erosion threat to existing infrastructure and to any infrastructure (apart from the marina) that is proposed within the 80m of the foreshore which may be affected from this expected recession.



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Response

As described in the EIS the proposed marina will reduce threats of ongoing erosion on Putney Beach. Existing infrastructure along Putney Beach, ie Keppel Haven backpacking facility, is not part of the project area.

4.5.24 Coastal Environment

Submitter Comment

Section 3.6 3 Exposure to Risk Putney and Fishermans Beach Recession pg 64
The report proposed beach nourishment to address loss of sand trapping through tidal current alteration. There is not evaluation of the dredging requirements to provide the sand of sufficient grain size to effect this work and no information on where this material would be dredged from. It is unlikely that the finer silts trapped within the marina would be suitable.

Submitter Recommendation

The report evaluates only threats to Project infrastructure and makes no mention of other land holding and public space such as esplanades and State Land retained for general use by the public. This should be corrected.

Response

The EIS shows that the construction of the marina at Putney Beach will improve the grave state of erosion which is occurring at Putney Beach which will have a positive impact on the State esplanade and adjoining land holdings.

4.5.25 Dredging

Submitter Comment

Nelly Bay requires twice yearly replenishment of beach sand due to altered accretion from the marina. If poor design or changing natural patterns cause excessive sedimentation (normal for most marinas especially those with only one entrance – Putney Beach Marina is similar to Nelly Bay marina into which Gustave Creek runs. Big Storm water events add great amounts of terrestrial of silt. This often contaminated soil mixes with fine marine sourced silt and as the normal process in enclosed marinas is for a greater rate of accumulation vs. lesser rate of flushing by tides).

Submitter Recommendation

What precautionary steps have been taken to ensure this cannot happen at Putney?



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Response

Significant coastal engineering modelling has been provided in the EIS to demonstrate that the project can be undertaken without these impacts.

4.5.26 Dredging

Submitter Comment

“ dredging approximately 2 km from reefs resulted in no detectable impact on corals” (near the Port of Townsville). This implies that there isn’t a great deal of data relating to the effects of dredging in close proximity to coral reefs.

Submitter Recommendation

Where is the factual scientific data?

Response

The actual quote which is being referred to on p52 of Appendix C in Appendix W is "Dredging activities at Magnetic Island (for the Magnetic Quays development), in close proximity to coral reefs, and for the Port of Townsville, approximately 2 km distant from reefs, resulted in no detectable impact to corals (Oliver pers. comm. 1993; Raaymakers & Oliver 1993)." This is simply a reference to a source.

4.5.27 Dredging

Submitter Comment

Section of EIS - 3.4.2.5.: EIS states that the marina will cause localised changes to current, tide, wave and sediment patterns in the impacted area.

The proponent has not provided assessment of the impacts of siltation or poor water quality on marine life including corals, seagrasses and algae. There is no hydrodynamic or particle release trajectory modelling provided in order to assess rates of flushing that support the proponents claim that maintenance dredging will be required only every 5 years.

Submitter Recommendation

None provided.

Response

Significant coastal engineering modelling has been provided in the EIS.



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4.5.28 Dredging

Submitter Comment

The EIS states “The Dredge Management Plan will need to be assessed and approved by GBRMPA”.

Any proposal to remove quarry material (sand, mud, gravel, rock) from Queensland tidal waters requires approvals under the Coastal Protection and Management Act 1995, and as an extraction activity under the Environmental Protection Act 1994, both administered by the Department of Environment and Heritage Protection. The State Planning Policy for Coastal Protection states that a Dredge Management Plan should be provided to support an application for approval of tidal works under the Sustainable Planning Act 2009.

Submitter Recommendation

Note that any dredge management plan will need to be consistent with a quarry material allocation under the Coastal Protection and Management Act 1995 and conditions of a development permit for tidal works and environmentally relevant activity (extraction) under the Sustainable Planning Act 2009.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.29 Dredging

Submitter Comment

It is proposed that the spoil from maintenance dredging will be used as beach nourishment along Putney Beach. The sediment build-up in much of the marina is likely to be finer material than in the navigation channel and the entrance to the marina where sand build-up will occur. The finer material sourced from Putney Creek inflow and drift through the mouth of the marina may not be suitable for transfer to the active zone of Putney Beach.

Submitter Recommendation

Provide information which demonstrates that the proposed maintenance dredging spoil to be used in beach nourishment will have suitable particle size characteristics and will be free from contaminants. Provide estimated volumes, and alternative disposal options, for maintenance dredge spoil that is too fine to use for beach nourishment, or that may contain contaminants.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.5.30 Dredging

Submitter Comment

While sediment chemical concentrations are within sediment and water quality guidelines, leaching from breakwater sediments may occur into the marina area and concentrations may increase to harmful levels. The potential for and impacts of this have not been assessed.

Submitter Recommendation

Within section 3.6.5.5, provide an indication of the potential for chemicals leaching from breakwater sediments into the marina and concentrating. Consideration should also be given to potential chemical or physical disturbances which may facilitate leaching. Discuss management and mitigation options for any potentially harmful chemical concentrations developing from breakwater sediment leaching.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.31 Flora & Fauna

Submitter Comment

'Terrestrial Fauna – the Proponent will commit to the preparation of a series of management plans to ensure protection of the terrestrial fauna on the island.'
This must be changed to: the Proponent will commit to the preparation and implementation of a series of management plans to ensure protection of the terrestrial fauna on the island.

Submitter Recommendation

The Proponent must also develop and implement a Visitor and Operator Management Plan which outlines appropriate levels and types of recreation activities across the island, including indicators and limits of acceptable change, mitigation measures, and a code of conduct for all to ensure they have minimal or no impact on terrestrial fauna.

Response

Section 8.3 of the EIS outlines the framework of the project Environmental Management Plan which clearly includes the requirement for implementation. Furthermore, Appendix O contains the project EMP which specifically details the implementation requirements of management plans for nature conservation and visitor education.



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4.5.32 Flora & Fauna

Submitter Comment

Figure 8 Page 38.

Submitter Recommendation

The Endangered and Of Concern regrowth vegetation mapping needs to be filtered to remove regrowth vegetation which is already secured under National Park and other protected tenures. This would allow the proponent to more accurately progress studies to define appropriate offset areas which address the required conditions.

Response

The current methodology and descriptions contained in the EIS are in accordance with standard guidelines and are deemed as appropriate.

4.5.33 Flora & Fauna

Submitter Comment

While the documents claims a “constraints based” design the information underlying this statement is erroneous. See also review of Appendix AB below. The use of the term “direct impacts” and “lower range” clearing (Tables 3.24 and 3.25) ignores the fact that once approved only “higher range” clearing will occur. Golf Courses are not sustainable natural habitat and should not be listed as such. Wider clearing around residential areas will occur for reasons such as air movement in a closed valley, bushfire management constraints, biting insects and the personal preference of typical purchasers of units for site manipulation and artificial tropical garden appearance.

Submitter Recommendation

This section, including the tables need an honest revision which acknowledges the errors in assuming that naturally disturbed vegetation is “cleared” (VMA). Verification of the claims regarding “cleared vegetation” should be sought from the Queensland Herbarium. In the event that the statements in Section 3.3.2.3 remain unchanged a policy statement regarding conditions of natural vegetation protection should be sought from the Rockhampton Regional Council who will be responsible for post approval regulation on Great Keppel Island. RRC has no current or historic demonstrated capacity to develop and enforce such regulations.

Response

The design of the Revitalisation Plan was in fact based of a rigorous constraints based assessment process. The vegetation assessment was conducted by and the report



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prepared by qualified and experienced ecologists from Cardno Chenoweth The current description is correct.

4.5.34 Flora & Fauna

Submitter Comment

Impact of past grazing has been blamed for weed incursions but the fact that none of the weeds are pasture species would make this unlikely. Unplanned but foreseeable introductions and non-endemic plantings in future by residents would tend to be more of a threat to native vegetation and ecosystems.

Submitter Recommendation

Another inaccuracy.

Response

The past agricultural activities have without doubt contributed to the weed issues on the Island. The Proponent is willing to accept a condition in the approval for planting of native species.

4.5.35 Flora & Fauna

Submitter Comment

Loss of connectivity and fauna corridors Figure 3.23 is not very believable as a portrayal of "Fauna Movement Corridors" not only does the supposed corridor include the golf course there appears to be no connection behind Long Beach.

Submitter Recommendation

This section is inadequate and needs more than just discussion as suggested. Furthermore manicured golf courses with minimal undergrowth do not constitute a wildlife corridor.

Response

The revitalisation plan has been designed to allow for movement between and around the various precincts. Similarly design parameters, such as retaining buffers around Leeke's and Blackall Creeks, allow for connectivity through development. These concepts are illustrated in Figure 3.23 of the EIS. As indicated in Section 3.3.3.1 (b)(vi) of the EIS, given the extent of vegetation retained in the Environmental Protection Precinct, proposed corridors between precincts, corridors of remnant vegetation to the south of the Fisherman's Beach Precinct and to the south and north of the Clam Bay Precinct, sufficient connectivity is allowed for to ensure wildlife populations are not isolated, ecosystem processes will be maintained and vegetation is of sufficient size to



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remain in the landscape. While the proposal will result in the loss of some habitat, this will not be at the expense of connectivity of the broad areas of retained habitat and as such no residual impact is expected.

4.5.36 Flora & Fauna

Submitter Comment

This table does not match up with some of the species found in the fauna surveys.

Submitter Recommendation

Take care with cross referencing and notice the many errors which downgrade the environmental values within this EIS.

Response

A detailed editing and review process has been undertaken. There may be some very minor errors which have occurred.

4.5.37 Flora & Fauna

Submitter Comment

Terrestrial species of State significance have been identified as occurring on GKI. The EIS has not addressed the disturbance to these species or how to mitigate it.

Submitter Recommendation

Human activity kept to certain areas or away from breeding areas of Beach Stone Curlew and Sooty Oystercatcher.

Consider methods of stopping the accidental introduction of feral predators and Cane Toads to GKI and the limiting or banning of domestic dogs and cats.

Response

All of these issues have been considered and committed to in Section 3 of the EIS and the Environmental Management Plan. The Proponent is willing to accept these conditions in the approval.

4.5.38 Flora & Fauna

Submitter Comment

Two Beach stone curlews, rare and endangered under Queensland, Commonwealth and IUCN lists, live/frequent daily Putney Beach and Putney Ck, exactly at site of proposed marina. Conservation of species requires conservation of their habitat.



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Submitter Recommendation

No marina at Putney Beach. Proceed with floating pontoon or jetty at say Fisherman's beach.

Response

Detailed assessment of the beach stone curlew habitat has been included in the EIS.

4.5.39 Flora & Fauna

Submitter Comment

Various comments have been raised which are critical of the flora and fauna survey methodologies and the accurateness of the assessments.

Submitter Recommendation

Refuse any development on Lot 21.

Response

The flora and fauna assessments have been undertaken by a very experienced and reputable Queensland organisation, Cardno Chenoweth. All surveys and assessments have been completed in accordance with all appropriate guidelines.

4.5.40 Flora & Fauna

Submitter Comment

All fauna species native to Queensland are classified as one of the following: 'endangered', 'vulnerable', 'near threatened', or 'least concern'.

The status 'rare' is no longer used by the Nature Conservation (Wildlife) Regulation 2006. The following general requirements under State legislation for impacts to protected fauna (including marine species) are applicable to the GKI Resort proposal:

The proponent must comply with the provisions of the Nature Conservation Act 1992 particularly in regard to the following:

1. Where there is a requirement for clearing of plants protected under the Nature Conservation Act 1992:
 - a. Clearing of protected plants must only occur in accordance with a clearing permit or an exemption under the Nature Conservation Act 1992.
 - b. Offsets must be provided for the permanent loss (take) of near threatened, vulnerable and endangered plants to achieve an equivalent or better overall outcome at a regional scale in accordance with the Queensland Biodiversity Offset Policy 2011.



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Submitter Recommendation

None provided.

Response

The comment refers to the point that the Proponent must comply with the NC Act. The Proponent is intending to follow the guidelines of the NC Act. The Proponent is prepared to accept these comments as conditions of approval.

4.5.41 Flora & Fauna

Submitter Comment

While the documents claims a “constraints based” design the information underlying this statement is erroneous. See also review of Appendix AB below. The use of the term “direct impacts” and “lower range” clearing (Tables 3.24 and 3.25) ignores the fact that once approved only “higher range” clearing will occur. Golf Courses are not sustainable natural habitat and should not be listed as such. Wider clearing around residential areas will occur for practical reasons such as air movement in a closed valley, bushfire management constraints, biting insects and the personal preference of typical purchasers of units for site manipulation and artificial tropical garden appearance.

Submitter Recommendation

This section, including the tables need an honest revision which acknowledges the errors in assuming that naturally disturbed vegetation is “cleared” (VMA). Verification of the claims regarding “cleared vegetation” should be sought from the Queensland Herbarium. In the event that the statements in Section 3.3.2.3 remain unchanged a policy statement regarding planning mechanisms for natural vegetation protection should be sought from the Rockhampton Regional Council who will be responsible for post approval regulation on Great Keppel Island. RRC has no current or historic demonstrated capacity to develop and enforce such regulations.

Response

The design of the Revitalisation Plan was in fact based on a rigorous constraints based assessment process and the current description is deemed correct.

4.5.42 Flora & Fauna

Submitter Comment

This section examines Corridors and Connectivity and states that corridors of 100 metres will exist between the Fisherman’s Beach Precinct and Long Peach with a narrowing (not quantified) to less than 100 metres (not quantified) along this corridor, The Clam Beach precinct will have fairways approximately 100 metres from marine



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environments. The Clam Bay Precinct, Leeke's Creek and Blackall Creek will only have a 50 metre corridor but this will be fragmented by road and service crossings. These corridors are too narrow and do not apply to principles of corridor design to ensure connectivity across the island. It would appear that the principal of designing and positioning of the golf course and associated villas has taken precedence and the environmental considerations have been considered after the fact and fitted around the development.

Submitter Recommendation

The proponent needs to provide detailed information concerning the design of the corridors, what species were considered, vegetation types needed for these species within the corridors and a detailed plan showing how the corridors will work instead of vague arrows on a development concept plan as shown in Fig 3.23. The statement that "no residual impact is expected" is hyperbole in the extreme. There is no monitoring plan proposed so how will the proponent know if there is any residual impact? In conclusion the proposed corridors and connectivity plan is seriously flawed and the proposal for the development of the golf course and associated villas should be rejected.

Response

The revitalisation plan has been designed to allow for movement between and around the various precincts. Similarly design parameters, such as retaining buffers around Leeke's and Blackall Creeks, allow for connectivity through development. These concepts are illustrated in Figure 3.23 of the EIS. As indicated in Section 3.3.3.1 (b)(vi) of the EIS, given the extent of vegetation retained in the Environmental Protection Precinct, proposed corridors between precincts, corridors of remnant vegetation to the south of the Fisherman's Beach Precinct and to the south and north of the Clam Bay Precinct, sufficient connectivity is allowed for to ensure wildlife populations are not isolated, ecosystem processes will be maintained and vegetation is of sufficient size to remain in the landscape. While the proposal will result in the loss of some habitat, this will not be at the expense of connectivity of the broad areas of retained habitat and as such no residual impact is expected.

4.5.43 Flora & Fauna

Submitter Comment

Development claims to be based around cleared vegetation The mapping does make appropriate corrections in Land Zone and hence regional ecosystem definition. There has however never been broad scale clearing (apart from areas near the homestead at Leeks Creek) of this area such as to trigger a change of cleared/remnant status under the Vegetation Management Act. There is a failure, possibly deliberate, to recognise the remnant status of low canopy vegetation community naturally induced by wind shear and exposure.



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Submitter Recommendation

Retain infrastructure services within the Fishermans Beach precinct. Minimal or no residential precinct at Clam Bay with no disturbance to micro catchments falling to currently undisturbed (by urban residential infrastructures) eastern beach and reef features. This area remains totally inappropriate for the construction of an exclusive residential enclave especially with the addition of sewage and stormwater works and a full size golf course. Also threatens the high quality estuarine features of Leeks Creek.

Response

There is no residential precinct proposed at Clam Bay. Detailed vegetation assessment has been carried out in the EIS to determine the status of existing vegetation in accordance with State guidelines.

4.5.44 [Flora & Fauna](#)

Submitter Comment

The photograph (photo 3.6) on this page is described as a beach Stone-curlew when it is fact a Bush Stone-curlew. This is quite disturbing because if the difference between the two birds cannot be determined by the proponents how can we have any confidence that they have accurately identified other birds that occur on the island.

Submitter Recommendation

Just changing the photograph will miss the point. We would ask the proponent to explain how they can make such a fundamental error and why we should trust the integrity of the other information concerning birds in the EIS.

Response

Minor editing error.

4.5.45 [Flora & Fauna](#)

Submitter Comment

Nature Conservation Air strip Bird plan will need consideration of flying foxes especially in *Corymbia* spp flowering seasons.

Submitter Recommendation

None provided.



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Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.46 Flora & Fauna

Submitter Comment

The applicant should address any mapping errors or claims of inaccurate mapping data of the Regional Ecosystem (RE) mapping prior to lodgement of the application for the Development Approval to Vegetation Management.

Submitter Recommendation

The following paragraph should be inserted in the section 3.3.2.2:

'Prior to the lodgement of the application to Department of Natural Resources and Mines (Vegetation Management) to clear native vegetation, the applicant will apply for a Property Map of Assessable Vegetation (PMAV) to change the Regional Ecosystem mapping.'

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.47 Flora & Fauna

Submitter Comment

Table 3.25 provides an estimated impact on regional ecosystems which is grossly misleading. The footnote (2) at the bottom of the table states that "Estimated higher impact – cleared vegetation including all areas that would otherwise become exempt for the purposes of the VMA". This high impact estimate is likely to be far exceeded as once zoning approval for residential is granted the provisions of the Vegetation Management Act no longer apply and it will be possible to clear 2 hectares around every dwelling.

Submitter Recommendation

The proponent should be required to undertake that for any development option that may be approved no more than the footprint for each dwelling can be cleared. Also that no further clearing could be undertaken once construction is complete.

Response

There is no approval being sought for residential development as indicated by this submission. The guidelines of the VMA have been adhered to in the calculations of impact areas. No further clearing other than maintenance of fire breaks for the



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protection of lives and infrastructure and maintenance of landscaped areas will be undertaken once construction is complete.

4.5.48 General

Submitter Comment

Table 3.26 refers to Table 3.27 for mitigation measures but instead table 3.26 does in fact relate to Table 3.28.

Submitter Recommendation

Mistake or deliberately misleading?

Response

Minor spelling error.

4.5.49 General

Submitter Comment

This table refers to itself.

Submitter Recommendation

Mistake or deliberately misleading?

Response

Minor spelling error.

4.5.50 General

Submitter Comment

Table 3.34 refers to itself and answers none of the "Predictions of Impact" e.g. Cane toads, crows, pets.

Submitter Recommendation

Mistake or deliberately misleading?

Response

Minor spelling error.



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4.5.51 General

Submitter Comment

Throughout the majority of the report, the Capricorn Conservation Council is referred to incorrectly as the Capricorn Conservation Commission (CCC). It is very disappointing that the name of our organisation is incorrectly provided, especially considering the consultants have met with CCC persons on a number of occasions, in regards to this project and other projects they are working on in the region.

Submitter Recommendation

Correct the name-error in the entire report and replace Capricorn Conservation Commission with Capricorn Conservation Council.

Response

Minor spelling error.

4.5.52 General

Submitter Comment

There is evidence from Woppaburra Elders' that is contrary to this statement about the Woppaburra people in ES 14.17.

Submitter Recommendation

Consult with the Woppaburra Elders and Trustees.

Response

The Proponent has undertaken appropriate stakeholder consultation.

4.5.53 General

Submitter Comment

Woppaburra Trustees have not been approached about Native Title issues in the current scaled down Environmental Impact Statement.

Submitter Recommendation

Consultations occur with Woppaburra Land Trust Trustees in the form of:



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- Information workshops
- Disseminate to WLT Trustees any information and or reports from meeting outcomes and consultations with regard to EIS
- Set up consultation meetings with Woppaburra Land Trustees
- Refer to the link below on protocols for consultation and negotiation with Aboriginal people
<http://www.datsima.qld.gov.au/atsis/everybodys-business/protocols-for-consultation-and-negotiation-with-aboriginal-people> - Qld Government.

Response

The Proponent has appropriately undertaken native title discussions to date with the relevant parties. The Proponent is also proposing to work closely with the Woppaburra to undertake a detailed Cultural Heritage Management Plan on the Island prior to construction. The Revitalisation Plan will provide the Woppaburra with significant tourism opportunities on their land holdings.

4.5.54 Lot 21

Submitter Comment

Assess the appropriateness of dog and cat ownership in new subdivisions.
Comment – we have no foxes, or feral cats, and another reason why dog and cat ownership on GKI should be reviewed. Great Keppel Island's Lot 21 needs National Park protection!

Submitter Recommendation

National Park for Lot 21, which will not totally protect all nesting sites – but will protect 80% of them.

Response

The Environmental Management Plan indicates that no dogs or cats animals will be permitted in the resort.

4.5.55 Marina

Submitter Comment

There is a map showing a Green Zone to the east of Middle Island. (A Green Zone is a marine national park.) It could be calculated from the map that the distance from the most westerly point of the marina wall to the Green Zone is approximately 500 metres (there is very little mention of the Green Zone in the EIS literature).



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Submitter Recommendation

None provided.

Response

Section 3.3 of the EIS has appropriately considered the potential impacts on the Green Zone east of Middle Island.

4.5.56 Marina

Submitter Comment

The proponent discusses the relevance of the GBRMP zoning on the location of the marina but this is not relevant as – it is possible to put a marina in a Conservation Park Zone if permitted by the GBRMPA – even the marina location at Putney will require permission and excision of part of the marine park – and this point does not seem relevant as this does not really outline the alternatives based on environmental impacts.

Submitter Recommendation

Suggest expansion of this section to compare the environmental impacts of alternative sites at Fisherman's Beach and Leeke's Beach. Similar argument applies to the seagrasses at Putney Beach – dugong now frequent this bay so the proponent must discuss the alternatives in relation to the impacts to seagrasses and dugong – their own time lapse satellite images show that Putney is an important seagrass habitat.

Response

The evaluation of alternative sites for the marina is comprised in Section 1.6 of the EIS. Impacts to seagrass is discussed in detail in Section 3.3 of the EIS.

4.5.57 Marina

Submitter Comment

The construction of marina walls into the GBRMP effectively extends the seaward boundary of the land of GKI which has consequent implications for purpose of defining territorial waters.

Submitter Recommendation

This must be taken into account legally under GBRMP legislation.



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Response

The final marina design will have the effect of not altering the marine park boundary.

4.5.58 Marina

Submitter Comment

The number of moorings in the marina has halved but the actual scale and size of the marina is the same. (I think more area has been allocated to shops, restaurants and accommodation at the marina). The number of buildings and resort rooms etc has remained pretty much the same.

Submitter Recommendation

The Developers have been saying that it is much smaller than the previous development and that's just a lie. The developers need to be honest about the size so people can make an informed decision as currently people are being tricked and fooled into thinking that they are supporting a much smaller development.

Response

This is an incorrect assertion. The 2009 Plan (Plan Number 2) comprised 560 berths and a footprint area of approximately 30 hectares. The current Plan comprises 250 berths and a footprint area of approximately 20.8 hectares.

4.5.59 Noise

Submitter Comment

Queensland Health has identified that the proponent will propose noise eliminating measures (such as limiting operating hours of the airport (Appendix AE pg35) and providing separation between the industrial area and the resort). However the proponent has not identified this as a commitment within appendix J.

The proponent has also not specified whether attenuation will be designed into both the new resort and residential properties to ameliorate any adverse noise levels and whether noise levels will be monitored or though a noise monitoring program to ensure compliance with noise standards. The Environmental Management Plan in Appendix O does not appear to identified any noise program.

Submitter Recommendation

Queensland Health recommended that the proponent:

1. Provides a commitment that aircraft noise will be limited to day-time hours, as outlined/stated within Appendix AE pg35.
2. Outline details of a noise monitoring and control program, stating that the proponent intends to measure noise so as to ensure levels are maintained at a satisfactory level for the preservation of health and well-being identified within



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Environmental Protection (Noise) Policy 2008. Furthermore it is recommended that an operational noise management plan, which includes monitoring, be established.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.60 Noise

Submitter Comment

Page 9 - 1.4.2 Recommendation 2 - Local Heritage Register It is recommended that discussions are held with Rockhampton Regional Council with a view to removing from the Rockhampton Regional Council Planning Scheme local heritage register, which is currently in preparation, those archaeological sites currently identified on the Livingstone Shire local heritage register as these sites do not fall within the parameters of site types defined within the QHA.?? Comment – this is somewhat worrying. Which archaeological sites currently on the Rockhampton Regional Council Planning Scheme local heritage register does this development want to remove? At a guess, I would suggest the midden materials found scattered throughout the Lot 21 Public access Land Clam Bay golf course site? If so, how expedient and convenient – these oyster and shell scatters did not walk inland by themselves – they were carried in the hands of the ancestors of our traditional Woppuburrans. If this is the case, now they are inconveniently in the middle of a proposed Golf course and Villa development on Public access Land, under Native Title Claim by those same Traditional Owners, the Woppuburra. Haven't we seen enough of aboriginal peoples being disenfranchised and abused on this island without their archaeological sites being conveniently "Removed from the Register?"

Submitter Recommendation

Suggested solution - If these are the sites that this proponent wishes removed, we request a proper and thorough investigation of these inconvenient sites and for them to be protected within a National Park on the public access land, Lot 21, 875 hectares, on Great Keppel Island. I presume the Woppaburrans were consulted over this proposed action? See Appendix 6 – Figure 39 right on Page 81 of this report – the map of inconvenient archaeological sites, from RRC Development plan. Appendix 6 Identified Archaeological Sites, page 79. Also see photos of shell midden materials and scatters as well as rock tool scatters taken at these sites. I will add photos of these shell scatters and midden material and rock tools.

Response

This is in reference to the non-indigenous technical report which in fact states that it is proposed to protect and manage these sites in consultation with the Aboriginal Party. The Proponent has appropriately undertaken native title discussions to date with the



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relevant parties. The Proponent is also proposing to work closely with the Woppaburra to undertake a detailed Cultural Heritage Management Plan on the Island prior to construction. The Revitalisation Plan will provide the Woppaburra with significant tourism opportunities on their land holdings.

4.5.61 Offsets

Submitter Comment

Some inferences are made to possible exemptions of clearing to provisions of the Vegetation Management Act 1999.

Submitter Recommendation

If impacts to State significant biodiversity values (as defined by the Queensland Biodiversity Offsets Policy) are determined to be exempt from the requirements of the Policy for Vegetation Management Offsets, offset should be required consistent with the requirements of the Queensland Biodiversity Offsets Policy.

Response

A comprehensive Biodiversity Offset strategy is contained in Appendix P.

4.5.62 Offsets

Submitter Comment

Concern that no offset strategy has been proposed for the loss of coral reefs at Passage Rocks, Putney Point or Middle Island.

Submitter Recommendation

Proponent to outline biodiversity offsets for loss of seagrasses in Putney Bay, corals, sea snake habitat and oyster beds. These should include research on feasibility of seagrass replanting done on GKI by CQ University, an artificial reef installation for coral regeneration and for snorkelling to offset the loss of the most well-utilised snorkelling site of the region at Passage Rocks.

Response

Biodiversity Offsets are detailed in Appendix P and Section 3.3.4.10(a) of the EIS.



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4.5.63 Public access

Submitter Comment

In the EIS public tracks are highlighted in RED all other tracks are brown but the legend does not indicate what type of public access they provide.

Submitter Recommendation

Can Tower holdings be asked to provide a map to identify areas that will be restricted to non resort guests.

Response

The EIS clearly indicates that the Proponent has made a commitment to retain public access through Lot 21. All of the public tracks will be accessible to non resort guests and they will also be able to walk throughout the bushland.

4.5.64 Tenure

Submitter Comment

Some precincts are described as “Environmental Protection Precinct” and ‘conservation” lease purposes.

Submitter Recommendation

There is no clear intent for the long term purpose of precincts described as “Environmental Protection Precinct” and ‘conservation” lease purposes. Does this mean that the intent is to maintain these areas under a loose tenure arrangement leases for future urban development or other infrastructure. Furthermore it is inappropriate to describe an area on dense residential dwellings and gold course as “conservation lease”. There are more secure tenure arrangements available under the Lands Act and Nature Conservation Act.

Response

The Proponent is prepared to work closely with the State Government to determine the most appropriate tenure for the Environmental Protection Precinct. No residential dwellings are proposed in the development.



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4.5.65 Tenure

Submitter Comment

A present there is a road behind the privately owned dwellings at the southern end of Fishermans Beach. There is no vehicular access in front of these blocks (above the high tide line) as this land is a council restoration zone. This access needs to be maintained.

Submitter Recommendation

None provided.

Response

This area is outside of the project area.

4.5.66 Traffic

Submitter Comment

The EIS states that the vessels involved in the transport of construction material for the resort will require mooring in sheltered waters 500m off Putney Beach and Fisherman's Beach. The construction phase is proposed over a period of 12 years. More detail is required about the impacts mooring large vessels in this area will have on the sea bed, marine flora and fauna in the immediate future and over time and information regarding disaster management.

Submitter Recommendation

Include information on marine environment in the proposed mooring area including sea bed and marine habitat including existence of coral, sea grass communities and sightings of marine fauna etc. More detail is needed on the cargo vessels will be holding and management plans for emergency situations e.g. failure of vessel cargo holding, vessel collisions, cyclones etc.

Response

Section 3.11.7.4 actually states that any mooring would be done in consultation with the Regional Harbour Master.

4.5.67 Traffic

Submitter Comment

The EIS states that the results of analysis indicate a total of 15,310 heavy construction vehicle movements to Rosslyn Bay over the course of the 12 year construction. This averages to 16 truck trips per day over the life of the GKI Revitalisation Plan programme



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and 28 heavy construction vehicle return movements for an average day in the heaviest construction year – 2013.

Submitter Recommendation

The Queensland Police Service (QPS) requests that the EIS reference the following legislation: Transport Operations (Road Use Management — Fatigue Management) Regulation 2008 Located: <http://www.tmr.qld.gov.au/Business-industry/Heavy-vehicles/Fatigue-management.aspx> QPS also requests that the EIS include a reference as to how the Proponent seeks to manage contractor and sub-contractor fatigue while engaged in Project construction activity.

Response

The Proponent is prepared to accept these comments as conditions of approval.

4.5.68 Traffic

Submitter Comment

The EIS description of the projects potential traffic impacts that may arise from the construction and operation of the GKI Resort Revitalisation Plan appear to be restricted to a response to the DTMR Guidelines for Assessment of Road Impacts of Development (Department of Main Roads 2006). QPS is the final authority for the approval of excess mass and over-dimensional vehicles. The accumulative effect of major mining, infrastructure and energy projects occurring concurrently within Central Police Region place a severe impost on police resources to provide escort duties and ensure there are adequate resources to respond to calls for service for core police activities.

Submitter Recommendation

Notwithstanding a preliminary tracking analysis showing the movement of heavy vehicles being restricted to 13 meters in length, the QPS requests the EIS reference the following Act and Regulation and that the proponent provide indicative schedules for quantities and vehicle type (as determined by the Regulation), for the construction phase of the project. Transport Operations (Road Use Management) Act 1995, Transport Operations (Road Use Management—Mass, Dimensions and Loading) Regulation 2005.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.5.69 Traffic

Submitter Comment

Concern - Is this the plan for the island's roads/tracks? What about the track, very important, to Wreck Beach for search and rescue? What about the tracks to Butterfish Bay for Search and rescue? What on earth is this supposed to show? Existing paths? There is no such track/path as the red one down from the Lighthouse track to the Lot 21 Clam bay precinct.

Submitter Recommendation

Consult with local residents, like me, who know and walk this island to get an accurate idea of what tracks are here, which need repair and maintenance, which need upgrade etc

Response

The Revitalisation Plan will significantly improve access throughout the Island as is demonstrated in the EIS. The Proponent and its engineers will engage with local residents during the finalisation of the Development Plan.

4.5.70 Transport

Submitter Comment

3.11.7 Shipping Management Planning (pp. 840 849) This section (and Appendix AD, that this section largely repeats) is the major section of the EIS in regard to shipping-related activities, operations, facilities and requirements during both the construction and operational phases of the project and as such, should adequately address all relevant issues.

Submitter Recommendation

Further detailed information from the proponent, especially in regard to ship-sourced pollution management, navigational arrangements and maritime infrastructure for all vessel locations including the barge loading and supply facilities and locations during both the construction and operational phases of the project.

Maritime Safety Queensland, as the regulator of maritime matters as they relate to the safety of navigation, the safety of vessel operations and the prevention of ship sourced pollution has an obligation to ensure that such matters have been adequately addressed by the proponent prior to any such activities occurring.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.5.71 [Visual](#)

Submitter Comment

Section 3.2.2.3 provided the visual Impact Modelling updated from the 2011 analysis by Chenoweth – it is unclear whether that work has been updated to the current proposal and how it was done without the aid of basis architectural plans and elevations (as noted elsewhere plans and elevations were not provided in the EIS).

Submitter Recommendation

None provided.

Response

The current modelling does reflect the current proposal and is correct.

4.5.72 [Visual](#)

Submitter Comment

Clearing Clam Bay and Fishermans Beach precincts will cause unacceptable visual impacts.

Submitter Recommendation

Any clearing of the vegetation on the east side of Clam Bay precinct will cause a medium to high level of exposure impact on retained vegetation in the lee side. This will consist mainly of scorch effect (salt air, sun).

Response

Visual impact assessment was one of the key constraints based criteria that was relied upon in the setting of the plan layout. The extensive visual impact assessment modelling that was undertaken in the EIS located the various development precincts in the areas of lower visual impact risk.

4.5.73 [Visual](#)

Submitter Comment

EIS includes intensive summation from Chenoweth study of visual aspects and protection of visual amenity. Including maps and tables. Note especially the statement in Table 3.12 Constraint category 1 that the design will create the impression that even with the proposed greatly magnified development the intention is to create the "perception of the island as a natural and undisturbed island...". Clearly this shows recognition that naturalness will in fact be lost.



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Submitter Recommendation

Acceptable Solutions: The EIS needs to consider the degree to which extension of development footprint to a second major valley system on the island is required: The analysis does not recognise ecological values or environmental sustainability values. Note for instance (Figure 3.3) the ranking of rainforest as the best natural community in which to high human infrastructure from sight. No loss of ecosystem values is raised in the discussion. The vegetation community of the proposed Clam Bay precinct, while weedy due to neglected management, is the most fertile and richest on the island. The SEIS should discuss the alternatives to reduce loss of ecosystem values as weighed up against scenic amenity values.

Response

The visual impact assessment has carefully considered the scenic amenity values and sought to guide the layout of the development.

4.5.74 Visual

Submitter Comment

World Heritage and Scenic Amenity Clearing Clam Bay and Fishermans Beach Precinct.

Submitter Recommendation

Clearing conditions noted. However any clearing of the vegetation on the east side of Clam Bay precinct will cause a medium to high level of exposure impact on retained vegetation in the lee side. This will consist mainly of scorch effect (salt air, sun exposure) mainly from SE winds and can lead to severe dieback and death. On the Capricorn Coast this has happened as far inland as the native forest at the Yeppoon Golf Club.

Response

Clearing of vegetation is not expected to create a 'scorch' effect and comparisons with Yeppoon Golf Club are not indicative of likely impacts.

4.5.75 Water - Flooding

Submitter Comment

The risk of flooding, beyond those caused by storm surge and cyclones has not been appropriately investigated and explained in the draft EIS.



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Submitter Recommendation

The proponent should undertake investigations to identify if a risk for creek flooding on the island.

Response

Detailed hydraulic modelling has been provided in the EIS in sections 2.4.6 and 3.5. Appendix AN also contains a detailed technical report regarding the hydraulic impacts of the Proposal.

4.5.76 Water - Irrigation

Submitter Comment

Whilst the water soaks quickly into the clean beach sand, this is not the case in the dark coloured sands away from the beach. Water tends to run off and cause scouring. Any underestimation of run-off could cause majority scouring problems.

Submitter Recommendation

The proponent should conduct controlled representative infiltration test to confirm infiltration values and run-off coefficients and use these in the design of the storm water system.

Response

Detailed irrigation modelling has been provided in sections 2.4.6 and 3.5 of the EIS and also in Appendix AN.

4.5.77 Water - Putney Creek

Submitter Comment

The proposal to permanently open the mouth of Putney Creek is not ecologically sound. This is a small estuary and the mouth of the creek should naturally open and close over time with sand bars, as they also do on the mainland. CCC also presumes that a marina will significantly affect natural processes by limiting the flow rate/intensity of tidal flow upstream.

Submitter Recommendation

- CCC objects to the sand bar being removed from the mouth of Putney creek.
- CCC object to the development of a marina on Putney beach and over Putney Creek due to the interference it will have with marine and aquatic and terrestrial environments.



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Response

Geomorphic, ecological and hydrological assessment and anecdotal information from local residents coupled with historic photographs indicate that the sand bar at the mouth of Putney Creek is not a “natural bar” and has in fact arisen due to the disturbance by the construction of the existing runway on the natural upstream hydraulic flows into the creek reducing the natural flows and allowing tidal movements to create the bar. As described in various sections of the EIS the “reopening” of the Putney Creek mouth to return it to its natural state will improve ecological health of the creek system.

Detailed hydraulic modelling regarding Putney Creek has been provided in the EIS in sections 2.4.6 and 3.5. Appendix AN also contains a detailed technical report regarding the hydraulic impacts of the Proposal. This information identifies that the construction of the runway will not result in an increase in upstream water levels. Furthermore, the EIS has demonstrated that it is proposed to reopen the mouth to Putney Creek which will significantly improve the functionality and productivity of the creek.

4.5.78 Water Resources

Submitter Comment

No hydrological study is provided for Putney Creek or information on how the creek will be modified to enter the marina.

Submitter Recommendation

Provide a hydrological study for Putney Creek to demonstrate that the proposed modifications will have adequate capacity and stability, and that peak discharge to the marina will not impact on use of the marina.

Response

Detailed hydraulic modelling regarding Putney Creek has been provided in the EIS in sections 2.4.6 and 3.5. Appendix AN also contains a detailed technical report regarding the hydraulic impacts of the Proposal. This information identifies that the construction of the runway will not result in an increase in upstream water levels. Furthermore, the EIS has demonstrated that it is proposed to reopen the mouth to Putney Creek which will significantly improve the functionality and productivity of the creek.

4.5.79 Water Resources

Submitter Comment

No details given by the proponent as to how ground water impacts are to be managed when contamination affects Central Dune aquifer and ultimately Leeke’s Creek (high ecological value) and designated by the State as Essential Habitats.



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Submitter Recommendation

None provided.

Response

Extensive ground water modelling is contained in Section 3.5 of the EIS and Appendix AN which demonstrates that contamination of the aquifers and Leeke's Creek is not a risk.

4.5.80 Water Resources

Submitter Comment

Any future bore construction needs to be consistent with the current standards. Section 11.1 in Appendix Z(i) and Section 9.1 in Appendix Z(iii) contain identical paragraphs:

'It is recommended that all bores be constructed in accordance with the Agriculture and Resource Management Council of Australia and New Zealand's 'Minimum Construction Requirements For Water Bores in Australia', dated September 2003'.

The current standard is the "Minimum construction requirements for water bores in Australia" (version 3) dated February 2012.

Submitter Recommendation

References to the out-of-date construction standards should be removed.

Paragraphs in Section 11.1 'Production Bore Construction Requirements' in Appendix Z(i) and in Section 9.1 'Production Bore Construction Requirements' in Appendix Z(iii) (and anywhere in the report in regards to future bore construction and decommissioning requirements) should be corrected as follows:

'All bores be constructed and maintained at all times in accordance with the edition of the standard "Minimum construction requirements for water bores in Australia" that is current at the time of construction. Any subsequent decommissioning of the water bore must also be carried out in accordance with the edition of that same standard that is current at the time of decommissioning'.

Response

The Proponent is prepared to accept these comments as conditions of approval

4.5.81 Water Resources

Submitter Comment

Hundreds of golf courses have been built next to coral reefs, and in every case the environmental impact assessments paid for by the golf course developers simply



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asserted that no harm could possibly result. In NONE of these cases were before and after comparisons made. There is only one case where the environmental effects of groundwater and nutrient runoff from golf course fertilizers on the coastal zone has ever been studied before and after. That study immediately found high levels of eutrophication-indicating algae in areas nearest the golf course, even though the developers claimed that they had “managed” the golf course to make any leaching of golf course nutrients to the sea totally impossible! It is certain that such impacts would have been found in ANY other tropical coastal golf course had people bothered to look. Details and photographs can be seen in Damage to Guana Cay coral reefs, Abaco, Bahamas from Baker’s Bay golf course, T. Goreau, T. Albury, & J. Cervino, 2011, at: <http://www.notesfromtheroad.com/sgcr/>

Submitter Recommendation

Golf courses simply should not be permitted in coastal areas with coral reefs, not in Great Keppel Island or anywhere else, if the reefs are to be properly protected.

Response

The water quality issues associated with golf course have been extensively assessed in regard to hydraulic modelling, aquatic assessment and groundwater assessment. This has found that the golf course can be constructed on the island without significant environment impacts. The Proponent is prepared to accept these comments as conditions of approval.

4.5.82 Weather Data

Submitter Comment

Weather data for the monitoring period was obtained from the following sites:

- Pumpkin Island – A small Island located on the southern side of North Keppel Island, approximately 9km north of Great Keppel Island. The data includes wind speed and direction. The temperature and humidity data is incorrect due to malfunction of the respective sensors.
- Rundle Island – A small Island located on the eastern side of Curtis Island, approximately 0km south-east of Great Keppel Island. The data does not include rainfall.
- Yeppoon – The coast side town approximately 20km west of Great Keppel Island.

Submitter Recommendation

Once again, weather stats have not been taken from GKI, although we have a Met Bureau approved weather documenter on the island. Why? The weather in Yeppoon often differs substantially from that on GKI, as does Pumpkin Island. Why do these studies never use the GKI weather data?



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Response

The weather data was obtained and assessed by professional engineers in accordance with normal industry practice. There is currently not a registered Bureau of Meteorology weather station on GKI.



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4.6 Chapter 4 – Social Values and Management of Impacts

4.6.1 Environmental Management Plan

Submitter Comment

Concern -It is untrue to say that the island currently has a volunteer rural Fire Service. Since Tower closed the resort, there has not been a functioning Rural Fire Brigade on the island. The Fire Brigade the day after the Resort closure comprised of 5 people - Glen Stokes, Gerry Christie, Peter Williams, Carl Svendsen and Lyndie Malan. As all but Gerry Christie and Glen Stokes were against the development of Lot 21, they were locked out of the Fire Shed, (eventually Glen Stokes was also out of favour with Tower and also locked out) and no training, no AGM or any other meetings took place (except one very ad hoc meeting where a severe conflict broke up the meeting) No equipment practice has taken place since Tower closed the resort. The fire truck was eventually moved out into the elements and left to deteriorate behind the house of a resident who was not even in the Fire Brigade.

Submitter Recommendation

Suggested solution - The members of this community who have been bullied, harassed and persecuted should be given police protection from the pro-Tower people. A conflict resolution session should be organised by the police to deal with the tense and intimidating atmosphere on the island. Unfortunately, the Social impacts of the "Revitalisation" proposal have already had severe health and social consequences for some in our community and to date there has been no management of the impacts.

Response

The Proponent has at no times 'bullied, harassed and persecuted' member of the GKI community.

4.6.2 Housing and Accommodation

Submitter Comment

It is noted that the timing for the construction phase of the project is to run for approximately 11 -12 years to 2023. While this proposed timeframe has a significant span, pressure from cumulative impact consequent to resource industry expansion over this time should also be taken into consideration.

The housing market in regional centres such as Rockhampton, may experience pressure over this time as major resource and infrastructure projects commence construction and operations phases, particularly those in the Bowen Basin with fly-in-fly-



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out (FIFO) and drive-in-drive-out (DIDO) workforces. The department also recognises that the timing of the project may also coincide with other variables in the housing market affected by the resource industry. Such variables may include a slowdown in the Bowen Basin, and a scaling back of construction in the LNG industry over this time, thereby relieving pressure on the housing market.

Submitter Recommendation

The department recommends that during the planning phase of the project, the proponent consider details which include:

- Workforce numbers to be updated where necessary (including contractors) for pre-construction and construction phases of the project.
- Clarification of accommodation requirements for the workforce required for construction. It is noted in Chapter 5 –Economies and Management of Impacts, that some of the construction workforce will be housed on the island and that a maximum of 50% will seek residential dwellings in Yeppoon. The department recommends further clarity on this closer to time of pre-construction. Key elements of contractual arrangements and tiered sub-contractual arrangements may also be necessary in some cases.
- Timing of the construction phase and potential impact on the local housing market. Evidence in other areas indicates that the demand for non-resident workforce accommodation in the pre-construction and construction periods have had detrimental impacts on housing supply. Mitigation strategies to manage such impacts are therefore recommended.

The expectation that much of the construction workforce will be drawn from the existing workforce in Rockhampton and Yeppoon is noted.

Response

The comment by the Department of Housing states that prior to construction, the Proponent should consider a number of various issues relating to housing demand. The Proponent is prepared to consider these items at the appropriate time prior to construction.

As a side point, it is noteworthy that the current residential housing market in Yeppoon is not performing very strongly. There has been a lot of new residential development occur over the last 10 years and there is evidence of some oversupply of residential housing at present.

The Proponent will consider these factors in the planning phase.

4.6.3 Housing and Accommodation

Submitter Comment

It is noted in this section that monitoring of housing impact is proposed for specific attention. The department supports this proposal, as it is considered necessary to determine preferred options for how the issue of cumulative impact is to be addressed.



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Submitter Recommendation

The department recommends that:

- If, over time, monitoring shows rising housing stress in the region, the proponent may consider a contribution to mitigation strategies which support affordable rental housing for families on low to moderate incomes.
The department would welcome the opportunity for further discussion of housing issues related to the Great Keppel Island Resort Project.

Response

The Proponent is prepared to work with the Department at the appropriate time should evidence of housing stress become available.

4.6.4 Lot 21

Submitter Comment

4.1.6.7

"...mistakenly thought access to lot 21 would not be available .."

Submitter Recommendation

So will it be ok to access the valley if it is a golf course on lot 21?

Response

The EIS clearly indicates that the Proponent has made a commitment to retain public access through Lot 21. All of the public tracks will be accessible to non resort guests and they will also be able to walk throughout the bushland.

4.6.5 Social

Submitter Comment

The EIS discusses concerns about the management or avoidance of poor behaviour related to alcohol consumption and drug use by workers both during the construction and operational phases of the Project. The QPS is required to provide infrastructure and resourcing to ensure the delivery of timely, efficient and effective policing responses that meets the needs of the community.

Submitter Recommendation

QPS welcomes the commitment by the Proponent to implement an Alcohol Policy and Drug an Alcohol Management Plan for the construction period and operational phase of the Project. It is requested the Proponent identify QPS as a stakeholder to be engaged



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in an ongoing consultation process in relation to the identification of impacts relating to good order issues and the mitigation strategies to be implemented. QPS Contact: Senior Sergeant Andrew Harris, Rockhampton District Tactician, Phone: (07) 49323706.

Response

The Proponent is prepared to accept these comments as conditions of approval. The Proponent acknowledges the valuable input the QPS have contributed to the consultation process to date and welcomes ongoing interaction.



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4.7 Chapter 5 – Economic and Management of Impacts

4.7.1 Economic

Submitter Comment

Table 5.1 provides comparisons of actual Gross Regional Product by sector in the Fitzroy SD, 2005-06. Tourism is an item which is conspicuously absent from the table.

Submitter Recommendation

None provided.

Response

Tourism is in fact represented on Table 5.1 and is noted as 'accommodation, cafes & restaurants'.

4.7.2 Economic

Submitter Comment

Tables 5.5 and 5.6 show Fitzroy SD Residents employment by industry and occupation. Again, both these tables do not include a category for Tourism.

Submitter Recommendation

None provided.

Response

Contrary to the comment, tourism is in fact represented on Table 5.1 and is noted as 'accommodation, cafes & restaurants'.

4.7.3 Economic

Submitter Comment

Section 5.1.2 Potential impact and migration measures of the 2011 ToR calls for the project Proponent to:

- A commitment to develop a Local Industry Participation Plan under the Local Industry policy (Department of Employment, Economic Development and Innovation, 2008) in conjunction with the DEEDI office of Advanced Manufacturing



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Submitter Recommendation

The EIS should be consistent with the ToR and provide for similar commitment. The Industry Development Unit suggests the following wording be inserted in the EIS:

“Private sector project proponents, that are not formally subject to the provisions of the Local Industry Policy – A Fair Go for Local Industry (Qld Gov., 2010) are strongly encouraged to work with the Department of State Development, Infrastructure and Planning (DSDIP) to voluntarily apply the Policy and guidelines to their projects, and prepare a Local Industry Participation Plan (LIPP) as part of their commitment to community and social responsibility. The proponent will adopt the principles of the Local Industry Policy and utilise The Local Industry Policy – A Fair Go for local Industry Guidelines (Qld Gov, 2011), also known as the Local Industry Policy Guidelines, to develop the LIPP. DSDIP and the Industry Capability Network (ICN) will assist the proponent with the preparation of the LIPP. The Proponent will prepare a Local Industry Participation Plan (LIPP).

Response

As indicated in Section 4.4 of the EIS the Proponent will prepare a Workforce Plan to maximise the local industry participation.

4.7.4 Economic

Submitter Comment

The economic assessment provided in the GKI Revitalisation EIS presents an inconsistent and patchy explanation of how many of the forecasted impacts on the regional economy are actually calculated. In some cases, we observed estimates that were derived straight out of the I-O analysis, whereas others appear to be simply the estimates of the consultants with little explanation. This applies to consultant’s estimates of future visitor numbers, occupancy rates and expected expenditures, as well as the estimates of additional flow on jobs as a result of this project. This again gives us a lack of confidence in the net impact as presented, as the lack of explanations of how all estimates were calculated made it impossible to recreate all values.

Submitter Recommendation

In conclusion, our examination of the economic analysis presented within the EIS has highlighted a number of concerns as outlined above. This leads us to conclude that there is insufficient economic analysis to ascertain whether this project will in fact deliver a net benefit to the local region and more broadly to the state of Queensland.

Response

The current economic assessment is appropriate. The economic impacts of the Proposal on the Capricorn Coast and State of Queensland are very significant.



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4.8 Chapter 6 – Hazard and Risk

4.8.1 Hazard and Risk

Submitter Comment

Plans should be identified and prepared to evacuate the workforce and visitors from the site in the event of a localised disaster situation.

Submitter Recommendation

None provided.

Response

The Proponent is prepared to accept these comments as conditions of approval.



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4.9 Chapter 7 – Cumulative Impacts

4.9.1 Cumulative Impacts

Submitter Comment

A detailed description of the methodology utilised to determine and assess the cumulative impacts has not been provided .

Submitter Recommendation

The proponent must provide and present a detailed description of the methodology used for cumulative impact assessment.

Response

Section 7.1 provides a description of the assessment of cumulative impacts.

4.9.2 Cumulative Impacts

Submitter Comment

The claims that the High and Medium impacts are mitigated to Low are not supported by clear evidence. The Low definition would require proof that impacts will be managed. We are expected to trust that detailed plans will be developed, implemented and monitored.

Submitter Recommendation

The EIS does not provide the detail to establish that the impacts can be managed and mitigated to a Low level, cumulative impacts must be considered as high to medium impact.

Response

The EIS does clearly articulate through all chapters and technical reports how risks are proposed to be managed and/or mitigated. Assessment of potential risks and nomination of recommended mitigations have been completed by professional specialists in response to the requirements of the ToR.



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4.9.3 Cumulative Impacts

Submitter Comment

Cumulative impacts are not given appropriate consideration as the proponent believes “Coal ports in the Fitzroy delta” are far enough away from the development that cumulative impacts are negligible. However the proponents EIS does not address other tourism operations on Keppel together with the proposed GKI revitalisation to assess the local cumulative impacts.

Submitter Recommendation

Address TOR with appropriate information and details to show all cumulative impacts.

Response

Section 7 is deemed to have appropriately considered the relevant cumulative impacts.



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4.10 Chapter 8 – Environmental Management Plan

4.10.1 Environmental Management Plan

Submitter Comment

This point states the following: “assurance to the community and to the government that the Proponent will endeavour to minimise environmental, cultural and social impacts during all phases of the Revitalisation Plan from initial construction through to the commissioning of the Resort”. This objective should be expanded to include additional wording as proposed in the response (opposite).

Submitter Recommendation

The following objective is changed to include the additional wording (underlined): “assurance to the community and to the government that the Proponent will endeavour to minimise environmental, cultural and social impacts during all phases of the Revitalisation Plan from initial construction through to the commissioning and operation of the Resort”.

Response

The current description in the EMP is deemed as appropriate and the EMP does address include mitigation measures for the operation phase of the Project.

4.10.2 Environmental Management Plan

Submitter Comment

One performance criterion is to “mitigate the loss of significant flora and fauna species”. The proponent should mitigate the loss of all species, not just those deemed significant.

Submitter Recommendation

The proponent alters the EMP to include the submitters’ responses (at left).

Response

The current description in the EMP is deemed as appropriate.



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4.10.3 Environmental Management Plan

Submitter Comment

The proponent also proposes to “preserve species within the Island’s Environmental Protection Precinct”. The proponent should endeavour to preserve all native species across the entirety of its holdings on the Island, not only those within the EPP.

In addition, to ensure that cane toads are not introduced to Great Keppel Island, there should be specific measures and a performance criterion to this effect.

Submitter Recommendation

None provided.

Response

The current description in the EMP is deemed as appropriate and the recommended measures to prevent cane toads entering the Island have been addressed in the EMP along with the commitment to develop a Pest Management Plan.

4.10.4 Environmental Management Plan

Submitter Comment

A performance criterion states that there will be “no significant deterioration in World Heritage Values”. This should be reworded to read “no deterioration in World Heritage Values” to reflect the importance of the World Heritage status of the environment at the proposed resort’s location.

Submitter Recommendation

The proponent alters the EMP to include the submitters’ response (at left).

Response

The current statement is deemed as appropriate.

4.10.5 Environmental Management Plan

Submitter Comment

Fire management has not been included in the Environmental Management Plan (EMP).



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Submitter Recommendation

The proponent includes fire management provisions, including a prescribed burning program for the Environmental Protection Precinct.

Response

Section 2.12 of the EMP states that a Bushfire Management Plan will be prepared prior to construction.

4.10.6 Environmental Management Plan

Submitter Comment

In Appendix O (Environmental Management Plan) the issues are further grouped into two tables called “Environmental Management Plan” and “Operations Environmental Management Plan. The whole arrangement of the information is confusing. It would appear that the operational table relates to the ongoing operation of the resort whilst the first table relates more to the construction part of the project.

The Environmental Objectives, Performance Criteria and Implementation Strategy included in Section 2.4 Water Resources of the Construction EMP and Section 3.4 Water Resources of the Operations EMP in Appendix O are generic, subjective, and sometimes irrelevant so that commitments drawn in the EMP have little if any meaning.

Appendixes Z(ii) and Z(iv) to the groundwater assessment for the EIS do contain specific recommendations in regards to groundwater management including development of groundwater monitoring program.

Submitter Recommendation

Provide clarity on which table refers to operational and construction components of the project. Reword the Environmental Objectives, Performance Criteria and Implementation Strategy included in Section 2.4 Water Resources of the Construction EMP and Section 3.4 Water Resources of the Operations EMP in Appendix O, to be specific and relevant to allow for clearly articulated commitments in the EMP. The recommendations in appendixes Z(ii) and Z (iv) need to be included in the GMP which should be attached to the EMP for both the construction and operational phases of the project.

Response

The EMP is appropriately clear as is. Any additional requirements can be dealt with as conditions.



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4.10.7 Environmental Management Plan

Submitter Comment

Reporting and assessment of groundwater take and impacts. There appears to be no mechanism for reporting or assessment of the impact of the project on groundwater either whilst the project is under construction or when the operational phase commences.

Submitter Recommendation

It is recommended that in Tables 2.4 and 3.4 of the EMP, in Appendix O under reporting and corrective actions, that a final construction groundwater report be provided that would provide copies of all investigative, operational and monitoring reports relating to groundwater within 60 business days from the end of the construction phase.

Response

The Proponent is prepared to accept these comments as conditions of approval.