

Submission (Part 1) on the environmental impact statement (EIS)—Great Keppel Island Resort Project

Submissions close at 5pm on Friday 7 September 2012

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Section of EIS	Describe the issue	Suggested solution
Overview	<p>CCC recognises that the current proposal attempts to reduce the scale of the development. However the scale is considered too far exceed the limits of ecological resilience on the Island and surrounding waters.</p> <p>Central Queensland Capricorn Coast and Keppel Bay are preferred destinations for low impact tourism and appreciation of natural beauty and environment.</p> <p>CQ has a history of unmet expectations from many false promises of large scale tourism resorts being the solution to competing with the international and Australian markets.</p> <p>Tower Holdings has not responded well to public concerns and suggestions despite a veneer on consultation processes.</p>	<p>More effective community engagement to demonstrate actual preparedness to listen and fully respond to questions and suggestions</p> <p>More time needed for full understanding of all aspects of the current proposal</p>

Complete, print and sign this form and send it to one of the following:

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Executive Summary	<p>ES.2 The GKI revitalisation Plan Objectives</p> <p>Broad statements about protecting Outstanding Universal Values of the Great Barrier Reef Marine Park and World Heritage Area, include the obscure statement, ‘ensure the ecological and sustainable development of the project’ are not clearly supported by an analysis (within the limited timeframe of the comment period) of the technical appendices and the conclusions or statements of intent.</p>	<p>These and other wordings in the opening are meaningless and do not demonstrate ‘principles of ecologically development’.</p> <p>CCC considers most potentially damaging components of the proposal are in order of threat.</p>
	<p>Key points of concern/ecological threats:</p>	<ul style="list-style-type: none"> • The ecological, hydrological threats in the Leekes Creek and Clam Bay precincts with significant residential style development, human population vehicle movements, golf course, effluent treatment and disposal • The massive reconfiguration of the airstrip with excavation and fill works resembling that of a moderate size coal mine and the airstrip noise and vibration impacts being moved to effect public use and low cost accommodation areas. • The spillover of residential precincts to the eastern fall of the island (Clam Bay/ Fishermans Beach. • the private and low cost developments on the island. • The marina: although the changed entrance may be an environmental benefit provided there is a clear assessment of values of the Passage Rock marine ecology • The potential ongoing loss of the Spit and sand supply to Putney Beach which unfortunately is also an effect of the marina proposal • But most importantly –join the growing ranks of Central Queensland Coast (and Great Barrier Reef generally), failed resorts
	<p>It is incorrect to say significant grazing activities were undertaken the actual extent of clearing. Impact on Island is very minimal. This is also reflected in the executive summary of false photographs showing the cleared area is a recent theory by former owner for horse paddock. Remainder of the island is uncleared, remnant with healthy natural regrowth of partially cleared areas.</p>	<p>Remapping</p> <p>Full response is required from the proponent to the recommendations in the:</p> <p><i>Section 16 Land Evaluation Report, Lot 21 on SP192569 – Great Keppel Island, RPOC/305/003</i></p> <p>that is for protection of Lot 21 under Nature Conservation Act.</p>

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	<p>Contradiction between villas and apartments ‘available for purchase by individuals’ and leasehold</p>	<p>What will be the tenure for ‘owners’ of villas and apartments?</p>
	<p>EC 3 refers to the Central Queensland Tourism Opportunity Plan - 2009 2019 but fails to mention the former DERM, <i>Section 16 Land Evaluation Report, Lot 21 on SP192569 – Great Keppel Island, RPOC/305/003</i>. This contains recommendations:</p> <ul style="list-style-type: none"> • 11.1 ‘most appropriate use is conservation’ • 11.2 ‘most appropriate tenure is protected area under the Nature Conservation Act 1992...suitable tenure to be National Park or Conservation Park’. 	<p>The Report was completed (2008) after public input, scientific and technical input. How will proposal meet the requirement of the Nature Conservation Act?</p> <p>Will Lot21 be handed back for protection as a National Park?</p>
	<p>False and misleading statements (page 4) referring to occupancy rates in Queensland resorts as declining due to insufficient new resort developments. There are a range of factors e.g. impact such as high Australian dollar and weather events and economic conditions (global and resource boom impacting on tourism and manufacturing</p> <p>Reference to island accessibility for the contemporary travellers: GKI has a good ferry service and accessible beaches for safe landing.</p>	<p>More detailed economic analysis needed.</p> <p>Current trends in Australian tourism tends towards low key ‘barefoot’ low impact resorts allowing access and appreciation of Queensland nature vs. poorer outlook for mega resorts and low use of marinas , natural islands with minimal infrastructure.</p>
	<p>575ha environmental protection precinct to be rehabilitated and protected ‘in perpetuity’. This is a misleading / false statement given that even nature refuges are not protected ‘in perpetuity’ .There is no limitation on the proponent or future owner expanding into the environment protection precinct.</p>	<p>575ha (or entirety of Lot 21) should be more clearly stated as being rehabilitated and returned to the status of National Park as recommended in the <i>Land Evaluation Report</i>.</p>
	<p>Paragraph ‘beneficial use’ of dredge material deceptive ...risk of too great as demonstrated by the failed ‘supposedly highly surveyed and engineered’ Bund Wall at Fishermans Landing (Gladstone Harbour). Subsequent result demonstrated that the design was deficient and temporary environmental permits and great expense was required to fix fault. The TEP resulted in higher than approved level of water quality contamination. Proponent need to do further work/study to assess risk factors. The bund wall had continuous leaching and re-suspension of sediment therefore the continuous release of contaminants in nutrients excessively into the ecosystem as opposed to sea dumping where the spoil is more likely to be kept wet throughout the process</p>	<p>More study into risk factors for disturbing natural beach system and placing spoil in bags</p>

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	<p>Bagged sediment will alternatively become wet and dry with tides and during the process of removal, bagging and deployment. Risks of Geo-fabric bags breaking during preparation, installation, over marina lifetime?</p>	<p>How will Geo-fabric bags be prevented from breaking during installation of rock armour?</p> <p>How much spoil will be lost in the removal, storage and bagging process?</p> <p>What dredging methods will be used, e.g. back-hoe, excavator, from the beach or floating, what are dredge management plans for range of tides, winds, storms, rain events.</p> <p>Contingency for breakdown, response if Dugong or Turtle are present, especially if with calf (Putney Beach has a light covering of sea-grass meadow and nursing mothers have been sighted here.</p> <p>Planning for Turtle nesting season?</p> <p>Presence of migratory birds or local species such as Beach Stone-Curlew, Sooty or Pied Oyster Catchers, all know to frequent the beach. What amount of bond will proponent set aside for remediation, rehabilitation of beaches, injured or distressed animals?</p>
	<p>Wrapping swells from prevailing currents, and winds forms the crescent shape of Putney Beach and Fisherman's Beach. Historical accretion / erosion patterns caused the shape of the beaches and dunes. GKI beaches are known to have quite dynamic history. Studies and local historical knowledge show that the dunes and beach and shallow water at Putney have extended much further into the passage between GKI and Middle Island (ref Creighton, C., 1984) – up to 100m further in the 1940s and charter operators up to the 1970s report that it was possible a low tides to walk most of the way to Middle Island. Creighton found evidence of even earlier history indicating that the entire area of the commercial village to the end of the airstrip is underlined with ancient salt pans and intertidal mangroves forests. Cyclone David is understood to have caused over a metre of water to overtop the Putney Beach dunes system. <i>(Ref Cyclone David which destroyed part of the rock wall of the Rosslyn bay Marina and more recent examples from Cyclone Yasi)</i></p>	<p>More study needed into alternative marine facility locations and types, in particular floating, moored jetty based marina, ferry and cargo terminal. Tropical Cyclone David 13 - 19 January 1976 edited Summary <i>David</i> crossed the Queensland coast just north of St Lawrence (south of Mackay). It passed over Gannet Cay Automatic Weather Station where a central pressure of 970 hPa was recorded. It was intensifying right up to the time of landfall. A feature was its huge size with gales extending from Papua New Guinea waters down to Lord Howe Is. It generated huge swells and these combined with large tides caused extensive damage to Heron Island as it passed to the north. It crossed the coast in a sparsely populated area however winds unroofed 30 buildings in Yeppoon and several in Mt Morgan. Wind gusts reached 95 knots at Pine Islet and 84 knots at the Gladstone Met. Office. Large seas combined with high tides caused considerable damage to breakwaters, retaining walls and other structures especially at Rosslyn Bay Harbour (Yeppoon) where the Breakwater was destroyed along with yachts and trawlers.at Yeppoon tides were up to one metre above predicted levels. http://www.bom.gov.au/cyclone/history/david.shtml</p>

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	<p>The pattern of erosion /accretion in the last 50-60 years (a period of declining average regional rainfall ~50mm per decade) has been for steady southward movement of the high tide which is causing considerable erosion of the Putney Beach dunes and changes in the entrance location to Putney Creek.</p> <p>Other marinas which also encompass creek or wetland entrances (Nelly Bay, Magnetic Island) have shown constant problems with erosion, siltation, alteration to sand deposition and erosion patterns (The local example is The Causeway Lake and the resultant attempts to manage the loss of sand from Kinka Beach. CCC understands that Nelly Bay beach need constant replacement of sand because of the construction of the marina.</p>	<p>Consider a jetty into deeper waters which will not require dredging of beaches and will not interfere with wave patterns and beach and channel accretion and erosion.</p> <p>More hydrological study and modelling into full range of alternative marine facility locations and types.</p>
	<p>Paragraph 85 final paragraph</p> <p>Tourism in Queensland 20 years - this statement may be false given the many projects proposed and either never commenced or started and not completed. just in the local area for example; Agnes Water dormant units construction on edge of coastal paperbark wetland, Capricorn Iwasaki, (despite two international standard Golf Courses) failed to meet promised occupancy, economic activity; Zilzie Bay, housing , resort, Golf Club, Magnetic Island (Nelly Bay) incomplete marina precinct despite approval in 1999,</p>	<p>Need to consider smaller scale proposal, reduced tourist numbers options in medium to long term 5-15+ years before full proposal approval given.</p>
	<p>Page 6 : The promise of economic activity and sustainable ecological activity is not realised referring to increase number of visitors (maybe in some of the following 4000 pages) any reference to the potential challenge for GKI as a prime attractive tourism destination due to the proposed massive expansion of coal shipping from Curtis Island Balaclava Island and Raglan Creek barge terminal, with significant increase in large bulk ship movements including offshore loading of coal within visual range</p>	<p>Issues raised in 'focus group' about the competing interests in Keppel Bay, Residential and low impact tourism vs. industrialisation need to be answered.</p>
S.8	<p>'internationally recognised a top management group' to manage Resort Hotel. Other Queensland resorts and holiday destinations in particular bigger resorts / apartments are struggling</p>	<p>Need to show a complete survey of other Queensland similar to those resorts and their economic status and ecological sustainability over recent decades, with projections contrast in various conditions of seasonal climate change, global economic outlook, including value of Australian dollar. The proposal also should look at the international situation in regard to such island and coastal tourism proposals many of the proposed venues at Clam Bay will face out into southern Keppel Bay which potentially become a heavy industrial zone.</p>

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	Concern about economic viability of the Clam Bay complex given distance from resort proper, community facilities and transport (terrain makes it unlikely for residents and tourists to walk of cycle)	Restrict development to eastern side of Mt Wyndham to Putney Point Ridge
	Final paragraph 'no plans to convert Lot 21 to freehold'; Current lot 21 lease to be extended twice since 2010 the lease agreement specifically states 'cannot be converted to freehold'. Lease has been extended past 2010 expiry date despite complaints about non-adherence to lease conditions (including investigations into illegal tree clearing resulting in a warning notice and lack of adequate environmental plans – feral goats, noxious weeds, erosion and fire management). Long extension of the EIS period – originally slated to be ready for release in 3 rd quarter 2011 has delayed any effective adherence to lease conditions.	A clear time line for meting all lease conditions must be set before any further extension is approved.
	Protected marine in the tidal vegetation area of Leekes 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 Leekes area, and with anticipated increasing oceanic swells and potentially	Resort footprint to be limited to western part of GKI to avoid increasing risk of salt water intrusion in the Leekes Creek area.
	Intertidal areas with respect to Putney Beach The area has been observed at the low tide of having a small colony of sea grasses known to have occasional visitation from nursing Dugong mothers and calves. A marina is not supportive of the natural beach, fish habitat and rock pools.	Marina should be rejected at this site and deep water alternatives properly considered. Proponent should seek and accept input from local knowledge of Putney Beach corals, marine life. What will be done to offset loss or damage of this environment
	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	What will be done to prevent the significant changes to the nature of the normal accretion rate accretion and erosion patterns?
	There are expectations of increased coastal inundation and erosion from more severe storms and heightened swells. Changing tidal impacts from placement of Marina in this location? Significant impacts on the wave and	Studies of range of projected changes to beaches dunes, dune vegetation, Putney Creek and wetlands and risk are needed

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	current patterns (wrapping swells?) It is understood that the coastal structure and sand mass, between Fisherman’s and Putney Beaches including the spit, is kept intact by the (~perpendicular) wave action wrapping around the island.	
	The insertion of a marina into the narrower passage between GKI, Passage Rocks and Middle Island will have a range of consequences for the ‘natural’ cycles (short and long term) of accretion and erosion.	<p>Will the inter-island channel have a greater accumulation of sand (potentially destroying the unique coral and marine life community?)</p> <p>Or will the deflection of the swell cause scouring a deeper channel?</p> <p>Could the marina wall cause a combination of both effects resulting in loss of stability and resilience for marine life in addition to becoming an unpredictable set of shoals causing navigation hazard?</p>
	The suggestion of the east facing marina , while suggestion reduced dredging would force mariners to enter and exit into prevailing winds, swell, and tidal flows, close to the Putney Point rocks.	<p>How will ecological damage be managed if there are accidents causing marine contamination?</p> <p>Also how will the existing corals and marine life in the shallows and rock pool on Putney Point be protected?</p>
	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).	What precautionary steps have been taken to ensure this cannot happen at Putney?
	Outstanding Universal Values - GKI is unique whole of ecosystem large coastal island in Southern GBR. Flora and fauna mapping and short term study might not show particular endangered species or regional ecosystems.	The island’s ecological community should be regarded as a whole,; representing island community unique in its entirety; hence the previous reports of the need for the majority of GKI to be protected under the Nature Conservation Act
ES.5	Marina comprised of bagged geotextile dredge spoil – (Ref Creighton, C. 1984) for dynamic nature of Fishermans, Putney beach, spit, changes to accretion, erosion based on historical and projected, wave interference patterns, potential silting of deeper coral rich passage, marina silting.	Need to more fully assess viability and risks of such a structure.

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ES 10	Airstrip impact on vegetation and on excavation and erosion of steep slopes, increased erosion and possible loss or partial destruction of Putney intertidal wetland – including increasing risk of storm surge, high tide, increased sea level impacts.	Airstrip
	Increased use of recreational water craft – jetskis have in the past caused injuries to Turtles on GKI	What is the projected increased in water craft traffic to GKI and how will marine life be protected from anchors, fast boats, contamination from debris, fuels spills, increased faecal coliforms?
	Putney creek and wetlands and altered airstrip size and location	How will water runoff from increased hard surfaces, and enclosure of the mouth by a silt trapping marina, with potentially lower water quality impact on the fish refugia potential of Putney Creek?
	Putney creek sediment basin may trap terrestrial sources of run-off, but another source of sediment will be fine marine sediment from geofab bagged sand which may continuously leach fine material and contaminants.	How will water quality changes be managed and corrected?
	Other marinas e.g. at Nelly Bay requires constant replacement of nearby beach sand and has a hazardous entry channel due to silting shoals.	Will this be possible at Putney Beach from changed wave and current patterns? How will this be risk and cost assessed and mitigated on GKI?
ES4.3	Wastewater; the total eventual waste water at completions even if treated the A class will change the natural seasonal wet/dry ecology - this will benefit certain species exotics and native including microbial bacterial fungal forms. Combined with increased nutritional sources from increased human presence and herbicides (glysophate has been shown to cause variations in competitive pressures in water bodies; CQ is experiencing many unexplained changes to aquatic micro flora including highly virile cyano-bacteria hard to detect in water treatment and capable of releasing powerful neuro-toxins into the food chain. CQ has decadal or longer dry periods, e.g. 1/2 yearly average rainfall followed by a wet year of three. It is not valid to suggest that water management can be based on this pattern into the future (too short a history plus predictions of even greater variability of so called extreme dries and fewer rainfall events and low intensity storms but more Cat. 3+ storms.	A complete review of the total water management plan with respect to ecological impacts should be done including changes expected in use and discharge during the various proposed expansion stages. This should also consider more extreme wet and dry year /decades.

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ES14	Photo montage the height of marina wall would appear to be below highest tide mark especially in storm event with increased wave height and storm surge,	More details of structure needed – or as already expressed alternative sites and types.
ES24	Where is the proof that that the fundamental issue of tourism decline or slow growth is lack of new investment. this argument has been applied to a whole series of dormant, stalled, interrupted or only partially completed projects which promised to be the salvation of local economies and tourism in particular; Hummock Hill, Wild Duck Is, Iwasaki, Great Barrier Reef (Zilzie Bay), Agnes Waters. Mainstay of Australian tourism has been low key, local, gray nomads seeking uncrowded natural places.	Proponent need to more clearly justify the viability of the full scale of the proposal or reduce the footprint.
	<p>Consultation history: Community engagement has been poor – little information ever provided and focus groups were ineffective. Questions about size, scope, locations were met with ‘it will all be in the EIS’ and concerned groups and individuals supporting of the redevelopment have been frustrated their input is being ignored.</p> <ol style="list-style-type: none"> 1. Meeting Sep 2009, Cap enterprise(2), CQCG (1), CCC(2), Cap Enterprise(1), Tower Holdings(2): post Plan 2 – 2. CCC Management Committee – Sep 2009, Tower (2) and Consultants (Engineering) CCC committee and members, 3. Social Impact consultant – discussed CCC position mainly regarding the possible expansion of the airstrip. 	
ES4 pg 9 -10	<p>Significant scale back EIS Key Changes made since the rejected proposal While some of the dot points listed are commendable many are misleading as to their intent and some can be considered to increase impacts on the community and natural values of Great Keppel Island. The scale back has been minimal since the rejected proposal and results have been in the creation of a second urban precinct on the island</p>	<p>Suggested Solutions: Reduce development footprint particularly the proposed airstrip realignment and development of Clam Bay Precinct which will cause urban run-off to reef systems on east beaches and headlands including seasonal effluent discharge. Development into relatively Review Marina proposal against alternative transport link on Fishermans Beach. Reduce size to avoid loss of natural values to Great Keppel Island</p>
	Villas behind Leeks eliminated Precinct. Refer commitments ES 14.17	<p>Villas behind Leeks Beach. I understand that this alteration was necessitated following the failure of negotiations regarding land held in Aboriginal freehold title. The proponent should consider factors which lead to this failure and outline additional measures which could further consider this proposal including equity of interests, cultural sensitivity, and sensitive design criteria. There may be accommodation options negotiable which are less destructive than those in the Clam Bay</p>

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	<p>Clam Bay Precinct Clam Bay Precinct 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 possibly deliberate failure to recognise the naturalness of low canopy vegetation community naturally induced by wind shear and exposure</p>	<p>Clam Bay Precinct Suggested Solution: Retain infrastructure services within the Fishermans Beach precinct. Minimal or no residential precinct at Clam Bay with no disturbance to micro-catchments falling to pristine 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 Suggested Solution See Comments/Solutions on Section 3.3.2.3.8 and Appendix AB</p>
	<p>Entrance Channel realignment . The concept of reducing dredging is accepted although Putney Beach is generally the worst place on the island to start with a dredging proposal being both shallow and potentially subject to the most rapid rate of unnatural sediment recruitment or loss. .</p>	<p>Marina Entrance Channel realignment. Suggested Solutions Further consideration of alternatives to Marina particularly to retain the remaining dugong feeding area on GKI. The EIS needs to consider the transit difficulties for watercraft due to the significant funnelled tidal flows and effect of strong north easterly winds on the proposed channel especially in a wind against ebb tide situation. Consideration should be given to a degree of porosity (e.g. passive sediment transport slots) in Marina walls to assist natural processes of sediment movement to and avoid the nutrient build up in trapped waters such as occurs within the marina end of Rosslyn Bay Boat Harbour</p>
	<p>Relocation of Airstrip Further information needed on the impact of this proposal. The relocation will result in further loss of habitat and comprises the most significant earth moving and landscape scarring activity within the Great Keppel proposal. The airstrip also moves the impact of noise, etc to the private dwellings and lower cost community accommodation along the northern end of Fishermans beach Appendix AE covers only the existing condition of limited flights.</p>	<p>Relocation of Airstrip. Suggested Solutions As the move is more likely to be an adjustment for use of larger aircraft the impact of this change should be clarified. Referencing between ES and Appendices was poor! The issue of this EIS ignoring the presence and interests of other landholders and public interest (day trippers etc) on the island need addressing in this and many other sections relating to noise, loss of beach amenity etc.</p>
ES 4.1	<p>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</p>	<p>Environmental Protection Precinct The proponent has 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</p>

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	tenure appears to be little more than a holding lease for future development purposes	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.
ES4.2	<p>Issues regarding the positioning of the dredged marina channel have been raised above.</p> <p>The “innovative” use of geotextile tubes to reduce the amount of dredge spoil dumping is raised in the EIS. The potential stability of this method is not discussed and no reference is provided regarding the “extensive assessment of the marina”</p>	<p>Further verification of this option and alternative options must be provided. Alternative options canvassed should include assessment of channelled or piered marina walls to assist natural sediment transport processes, sand loss to in minimising the expected significant sediment trapping, and nutrient accumulation which will be expected within Putney Beach</p> <p>A self functioning sand bypass system should be evaluated against a system which requires specific operations such as pumping or transfer of dredged material.</p>
	Proposed alteration to Putney Creek	<p>More discussion is needed on various alternatives to altering Putney Creek mouth other than just the “convenience” of removing the influence of the creek on the proposed marina. Entrance sand blockage of creeks of this catchment size and aspect is a normal characteristic in Queensland, especially in regions of high annual and seasonal rainfall variability. Creation of constant tidal inflow is likely to require highly unnatural construction processes.</p>
ES4.3	<p>Wastewater Treatment claimed to be innovative process in EIS. There appears to be minimal “innovation” revealed in brief examination of Appendix A suggests that more detailed modelling is required especially with proposed impacts within the pristine Leeks Creek catchment. Potential N and P long term increases are speculative.</p> <p>See also ES10.5</p>	<p>More detailed examination/verification of the claims in the ES needed and the technical data provided in Appendix AN. Issues include Maintenance of water clarity and nutrient levels in Leeks Creek Estuary.</p> <p>Construction of Stormwater Retention lined ponds on Golf Course could lead to loss of Freshwater inflow to estuary during dry months especially early Spring marine ecological trigger events. Interception of ground water flows.</p> <p>Build up of N & P in substrate/ groundwater</p>
ES4.4	EIS Carbon Positive Commitment	<p>Design/layout or proposed residential areas do not appear suited to this objective. In particular the location of a significant number of Clam Bay precinct units under the winter shadow line of the steep ridgeline to the north. The extent to which this inhibits solar energy collection and the adverse winter (too cool) and summer (too hot/ breezes blocked) needs to be validated.</p>

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ES4.5	EIS Infrastructure Footprint approximately 3.52% of island	This information is out by several orders of magnitude and apparently assumes that Golf courses, sewage works, artificial water structures are natural conditions. A more honest calculation of area of impact is needed as is a clear intent (by both proponent and government agencies) as to the future best condition for the remainder of the island.
ES7	EIS Project rationale This notes the steady decline in tourism sector especially inbound tourism and the tendency of Australians to take the outbound options. Also notes that there have been no major new tourism developments within G	Given than many of the large island resorts and marinas are struggling or closed there is a strong possibility that the model of service proposed will not meet contemporary demand should this start to increase again within the Great Barrier Reef Region. The proposal overall appears little different to those which preceded it 25 years ago. The option on not proceeding on GKI and modernising one of the existing underperforming resorts should be discussed. More information is needed which might justify that largely private residential design and layout will meet contemporary demand.
ES12	Outline of Alternative Options	No substantial details provided – appears as opinion only and no reference to other sources
ES14.2	EIS state that no significant alteration of the islands topography is required	This statement needs verification especially in the light of the significant works proposed to create essentially a new larger airstrip on an alignment which cuts significantly into the hard rock and dune topography of the island
ES18	The EIS describes minimising energy consumption and the use of solar power as major objectives of this proposal in the mitigation of climate change effect See also pg 263 dot points first paragraph	The mooted location of a significant number of the residential units especially in the Clam Bay Precinct is not suited to these energy efficient measures. Shading of dwellings on the south slope of the main spine of the island and poor access to cooling NE sea breezes (biting midges and white-winged sandflies love the valley) will require high energy consumption for human comfort.
END EXECUTIVE SUMMARY COMMENTS		
Page 257	EIS Commits to maintaining resilience of coral reefs and other ecosystems See also Strategy 4.2 in Table 3.6 on page 260 Urban stormwater mitigation strategies do not work with runoff from steep coastal headland slopes or seepage through dunes	The development footprint includes golf course and residential infrastructure extending into the micro-catchments (eastern fall) of Clam Bay and Long Beach. The EIS should demonstrate how the increased impact of these developments could be mitigated. As an alternative aimed at minimising impact on coralline ecosystems there should be discussion on the benefits of a drawback from the eastern fall catchments

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Chapter 3 Sct 3.3 2.3 page 374	<p>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.</p> <p>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</p>	<p>This section, including the tables need an honest revision which acknowledges the errors in assuming that naturally disturbed vegetation is “cleared” (VMA).</p> <p>Verification of the claims regarding “cleared vegetation” should be sought from the Queensland Herbarium.</p> <p>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.</p>
Table 3.6 Strategy 4.1 page 260	<p>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.</p> <p>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</p> <p>EIS Reduce impacts on reef through construction and use of marina. Marine expected to</p>	<p>This section, including the tables need an honest revision which acknowledges the errors in assuming that naturally disturbed vegetation is “cleared” (VMA).</p> <p>Verification of the claims regarding “cleared vegetation” should be sought from the Queensland Herbarium.</p> <p>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.</p>
Table 3.6 Strategy 4.1 page 260	<p>EIS Reduce impacts on reef through construction and use of marina. Marine expected to</p>	<p>Explanation needed as to why marine will not need to increased boat use and anchoring around the Keppel islands and what are the impacts on the adjacent marine ecosystems from marina and channel construction and maintenance</p>
Section 3.2.1.1 Tenure	<p>EIS List tenure purpose for land held under temporary lease areas. Some precincts are described as “Environmental Protection Precinct” and ‘conservation” lease purposes.</p>	<p>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.</p> <p>Furthermore it is inappropriate to describe an area on dense residential dwellings and gold course as “conservation lease”. There</p>

Section of EIS	Describe the issue	Suggested solution
		are more secure tenure arrangements available under the Lands Act and Nature Conservation Act
Section 3.2.2 Scenic Amenity pgs 277 -	<p>EIS includes intensive summation from Chenoweth study of visual aspects and protection of visual amenity. Including maps and tables. However – aspects such as Visual absorption capacity and constraint capacity.</p> <p>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.</p>	<p>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.</p> <p>Furthermore it is inappropriate to describe an area on dense residential dwellings and gold course as “conservation lease”.</p> <p>There are more secure tenure arrangements available under the Nature Conservation Act – refer to Section 16 Land Evaluation Report – Lot 21 Great Keppel Island, 28 August 2009 (File Ref ROC/305/003)</p>
3.2.5.3(a) ASS soils Pg 313 316	<p>Appendix Z (iv) Drawing No 1 and 2 pages 21/22</p> <p>Precinct 1 appears to be inadequately covered particularly the intertidal extent of the Precinct.</p>	More detailed information on substrate conditions needed
3.3.2.1	<p>EIS Description of Environmental Values (a) Methodology</p> <p>The introductory wording says nothing but uses a lot of words to say it. Reading the many poorly referenced attached documents (Appendices etc) indicates the continuing lack of direction. While the Ecological Assessment Preparation and discussion on Impact Mitigation, these appear to be written around a predetermined design dictated by the proponent. Some Mitigation is still possible and discussed elsewhere but the possibility of Mitigation – No Net Loss – Net Gain cannot ever be more than works on paper. Interpretation of the technical work (Appendices) has largely been slanted to downplaying the extent of loss of World Heritage and other natural values</p>	This sections should be discarded if there is no intention to reduce the footprint of the proposed expanded resort and mitigate the broad scale impacts the proposal will have on an iconic Great Barrier World Heritage Island
Section(a) (viii) Weeds	The EIS refers to the weed infestation Valley between Clam Bay and Leeks Creek. This area has some of the best soil development of the island, a condition naturally attractive to weed incursion on unmanaged land, Both species listed are regulated pests and a lower infestation of these species was raised with the administering authority and lessee over 15 years ago.	Discussion on ecological condition and management of weeds needed especially (a) weed species which have proliferated in intact vegetation and (b) weed management in the cleared 38 hectare paddock. This latter area is the largest area of broadscale clearing away from the original resort site.

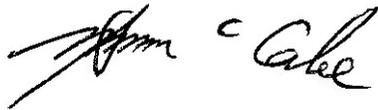
Section of EIS	Describe the issue	Suggested solution
Section(b) (ii) Regional Ecosystems pg 359	EIS States no access available for Res 8.2.2 but no explanation was given for this situation	Need to provide further discussion why access is not available and habitat/mapping check for this RE
Section (b) (iii) Other Vegetation	While the analysis that some these areas referred to as cleared is not accepted the reference to High Value Regrowth (in the event of a successful map modification being accepted) is noted.	The EIS should show that High Value Regrowth should be subject to offset investigation and should avoid the implication that there is an attempt to minimise obligations to address development impacts within a Great Barrier Reef World Heritage Area development.
	Section 3.3.3.2 (b) (ii) notes that additional clearing can occur once approval is granted but states that the attitude of the Proponent is an intention to exercise exemptions gained Vegetation Management Acts following rezoning approval. Mitigation measures noted in Table 3.28 (pg) 379	Discussion in Section 3.3.2.2 appears to indicate that this is the case As there is every possibility that the Proponent may secure sale of the development once approved this commitment has no legal weight with either current lessee or potential future lessee. Discussion of more legally secure options is necessary.
Section (d) Offsets	The EIS underestimates the extent of remnant vegetation by assuming that vegetation influenced by aspect (exposure, salt air, and wind shear) and climatic events is cleared or High Value Regrowth.	Improved information needed on project vegetation impact All discussion on map modification should be based on the current Regional Ecosystem and Remnant Map Version 6.1 and should not assume that unverified mapping interpretation implies acceptance that areas under natural vegetation are “cleared”
Also Appendix P	Preferred Commonwealth Offsets The map listed in Figure 7 pg 36 appears to relate to areas already under consideration as offsets for other Central Queensland projects. They are also within two different bioregions	While the proposed offsets, with initial intense management are valuable -further consideration of offset possibilities needed. This should include more consideration of Bioregion 8 offsets Figure 6 page 43 The Broad Vegetation Group layer should be filtered to remove areas already within Conservation Park or Commonwealth Defence Land (Shoalwater Bay Training Area) As noted elsewhere in this submission
	Figure 7 pg 36	Some areas such as the State Land on Casuarina Island are already protected being under only easily removed occupational tenures. Offsets here do not represent a true replacement.
Appendix P	Figure 2 Page 12 (App P) As noted elsewhere in this submission it is disputed that the extent of clearing shown in Figure 2 includes areas of low canopy native vegetation in various growth phases as cleared. This particularly applies to the areas mapped as cleared in the eastern zone of the island	The vegetation mapping must be corrected to note these sections as remnant. Given the liberal interpretation against benchmarks the vegetation mapping now needs independent validation.
	Figure 8 Page 38	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

Section of EIS	Describe the issue	Suggested solution
		offset areas which address the required conditions.
Appendix P Offset Fauna and Marine Requirements	4.2.2 ph 22 Table 4 State Offsets Required Essential Habitats Beach Stone Curlew	Beach Stone Curlew utilise at least 6 beaches and two estuaries on Great Keppel Island. Based on the “detailed studies” undertaken a modified ‘essential habitat” draft map should be produced for consideration. Discussion should include evaluation of the impact of more widespread utilisation of beach zones especially those sites which are currently remote to walkers and vehicles from the old resort precinct.
Appendix Z (V) Groundwater	Consultants reports primarily recommends more modelling. There are few assurances that groundwater will not become contaminated with long term use of nutrient rich effluent water	Given that future modelling may show that surface irrigation of nutrient rich waste water cannot be adequately catered for within the available landscape (Blackall Creek/Leeks Creek catchment) the proponents should develop a more detailed plan for alternative wastewater management. The alternatives need to be comprehensively studied and put forward for consideration
Appendix Plan of Management	Construction (2) and Operations (3) Section 2.2 Land	Dot point regarding potential beach nourishment should be referenced to a relevant Technical Report if this is covered elsewhere within EIS
	2.3 Nature Conservation Terrestrial Flora/ Fauna	Management which restores partial restoration of original > 1970s sea grass community could be objective Dot points should note that some shorebirds are resident and will be present/possibly breeding other than summer months. E.g.: red-capped plover and two species of oyster catcher. Clearing conditions
	2.13 World Heritage and Scenic Amenity Clearing Clam Bay and Fishermans Beach Precinct	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
	3.3 Nature Conservation	Air strip Bird plan will need consideration of flying foxes especially in Corymbia spp. flowering seasons
Appendix AB Floras and Fauna Technical Report Vegetation	The vegetation Report by consultants Chenoweth attached to the EIS is based on 1:10000 mapping and identifies Land Zone inconsistencies in relation to the coarser scale Herbarium Regional Ecosystem mapping (1:100,000) scale mapping.	The finer detail of mapping is appreciated as any information that increases knowledge of characteristics of a high value natural feature is useful. Unfortunately the consultants appear not to have had a brief to advise on maintaining these values or on management of an area

Section of EIS	Describe the issue	Suggested solution
	<p>The Report also identifies additional Regional Ecosystems by mapping at the finer scale including coastal freshwater wetland ecosystems.</p> <p>The Executive Summary does not however refer to whether the status of vegetation is based on the Vegetation Management Act or the Biodiversity status attributed to Regional Ecosystems by the Queensland Herbarium.</p>	<p>which has been somewhat neglected by the lessee(s) for many years.</p> <p>Discussion on the above issues should be based on more than speculation.</p> <p>Although more information is supplied later in the document. Due to confusing layout it is almost impossible to closely analyse the information in main document against Appendices.</p>
Sect 2.2.2.4 page 13	<p>The Report states that aerial photography 1961 > 1999 was used to refine Land Zones and Regional Ecosystem Boundaries.</p> <p>Also refers to areas historically cleared or thinned</p>	<p>Given the widely varying canopy heights along highly exposed coastlines the mapping and analysis needs review. In particular there is a failure to discuss the coastal dynamics which are the primary influence on the system. Thinning or opening of canopy by track construction, of placement of a drilling pad does not comprise broad scale clearing and nor does failure to control feral animal grazing.</p>
2.2.2.8	<p>Report lists areas considered (by the report writers only) to be non remnant as cleared. However there is a considerable tract of land mapped as cleared in the Clam Bay precinct which does appear verifiable from the mapping. As a visitor to this section of the island on various occasions over the past 50 years (e.g. 1964 -2005) including a visitation within 6 weeks of Cyclone David (1976) passing close to seawards of the island and around 1996, There little evidence in the eastern sectors to justify the vegetation as cleared... It is more likely that increased periods of dune mobilisation open grassland pockets within dune while salt and wind shear are the primary factors in canopy height.</p> <p>Mature Acacia/Leptospermum dominated thickets triggered by natural events have dominated vegetation communities on other coastal dunes (e.g. Round Hill Peninsula) for periods of over 50 years. These areas are mapped as Remnant. Low canopy cannot be taken to constitute regrowth not yet returned to remnant.</p>	<p>Given the widely varying canopy heights along highly exposed coastlines the mapping and analysis needs review. In particular there is a failure to discuss the coastal dynamics which are the primary influence on the system. Thinning or opening of canopy by track construction, of placement of a drilling pad does not comprise broad scale clearing and nor does failure to control feral animal grazing.</p> <p>Example site 29 (pg 137) which is classified as Non remnant but the site clearly has multi age class species and the note postulates disturbance as Cyclone/storm.</p> <p>See also status attributed to Site 55 (pg 184)</p> <p>Interpretation of the information shows no awareness of the relatively extreme wind and salt shear conditions and possibly fire history.</p> <p>Example site 29 (pg 137) which is classified as Non remnant but the site clearly has multi age class species and the note postulates disturbance as Cyclone/storm.</p> <p>See also status attributed to Site 55 (pg 184)</p> <p>Interpretation of the information shows no awareness of the relatively extreme wind and salt shear conditions and possibly fire history.</p> <p>Reference Sites selected in the most developed, least subject to natural disturbance locations do not mean that low canopy areas subject to greater exposure can be categorised as cleared.</p>

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Appendix Y Coastal Environment Technical Report	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 affect 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 of a sufficiently suitable marine ecological risk standard
	Foreshore Development Threats p. 66	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
Site 30. This site is mapped as Cleared in the EIS Report	Areas mapped as cleared or regrowth are actually uncleared low growing coastal forest, possible with reduced canopy height from fires (CCC has records of complaints of a thirty year period of neglect by lease holder to for effective fire regime management on GKI.	Re map and seek wider expert opinion.

If there is insufficient space in the table above, please attach additional pages.



Signature:(A submission by more than one person must be signed by *each* submitter.)