

KUR-World

Cumulative Impacts

Chapter 20.0

Environmental Impact Statement



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Abbreviations used in this chapter are as follows:

Abbreviation	Meaning
CBD	Central Business District
CIA	Cumulative Impact Assessment
EIS	Environmental Impact Statement
GTH	Global Tourism Hubs
GBRWHA	Great Barrier Reef World Heritage Area
GDP	Gross Domestic Product
IFC	International Finance Corporation
ToR	Terms of Reference
TNQ	Tropical North Queensland



20.0 CUMULATIVE IMPACTS

The purpose of this Chapter is to address requirement 7.2 from the Terms of Reference: *“To the extent of the information available, the assessment should predict the cumulative impact of the project on environmental values over time including direct, indirect and consequential impacts. The EIS should also outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis. This will inform the Coordinator-General’s assessment and decision on the EIS and the setting of conditions.”*

20.1 Methodology

The assessment of the cumulative impacts of the proposed KUR-World project is a requirement of the Terms of Reference (ToR) for the Environmental Impact Statement (EIS). The definition of cumulative impacts in the ToR is the: *“combined impacts from all relevant sources (developments and other activities in the area)”*.

The inclusion of Cumulative Impact Assessment (CIA) is an evolving requirement for EIS and there is no single accepted state of global practice (IFC, 2013). The International Finance Corporation (IFC) which is part of the World Bank Group has produced a Good Practice Handbook to assist developers to assess cumulative impacts. A six-step process is recommended (Refer to Figure 20-1 and Table 20-1) to assess cumulative impacts on which other existing or future developments may also have detrimental effects, and avoid and/or minimise these impacts to the greatest extent possible.

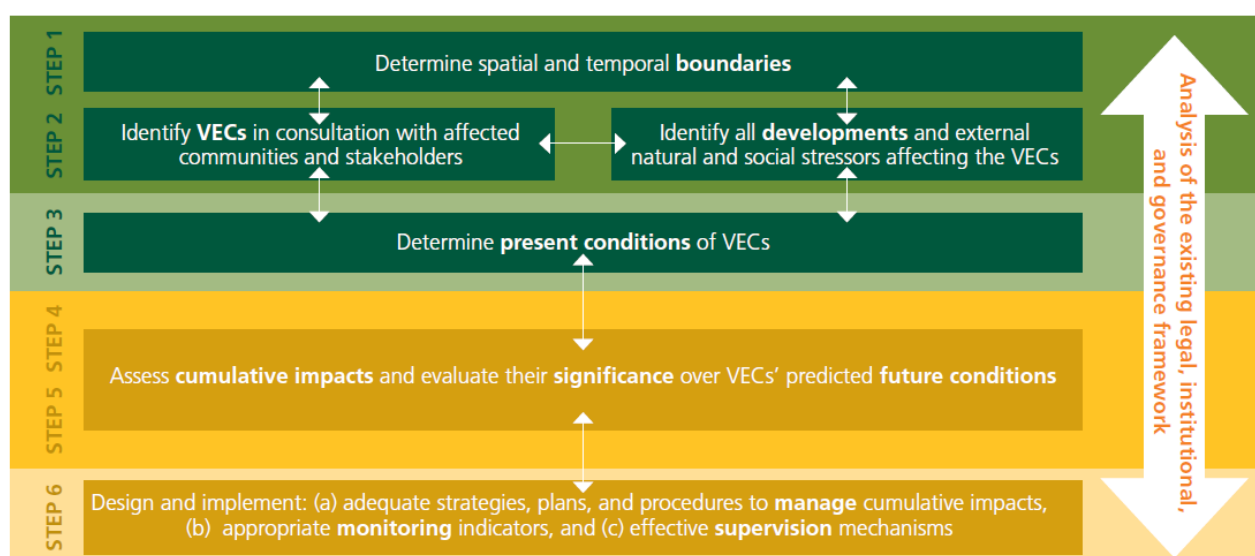


Figure 20-1 IFC six-step process for CIA.

Source: IFC (2013) *Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets*. Good Practice Handbook.

Table 20-1: Objectives, questions and relevant EIS Chapters against IFC CIA process steps.

Step	Description	Objectives	Questions	Relevant EIS Chapter
1	Scoping Phase I – VECs, Spatial	Identify and agree on VECs in consultation with stakeholders.	Whose involvement is key?	Chapter 11

Step	Description	Objectives	Questions	Relevant EIS Chapter
	and Temporal Boundaries	Determine the time frame for the analysis.	Which VEC resources, ecosystems, or human values are affected	Chapter 6 Chapter 8 Chapter 9 Chapter 11
		Establish the geographic scope of the analysis.	Are there concerns from existing cumulative impacts?	No - refer Chapters 6 - 19
2	Scoping Phase II – Other Activities and Environmental Drivers	Identify other past, existing, or planned activities within the analytical boundaries	Are there any other existing or planned activities affecting the same VEC?	No
		Assess the potential presence of natural and social external influences and stressors (e.g., droughts, other extreme climatic events).	Are there any natural forces and/or phenomena affecting the same VEC?	Yes - refer Chapters 6 - 19
3	Establish Information on Baseline Status of VECs	Define the existing condition of VEC.	What is the existing condition of the VEC?	Chapters 6 - 19
		Understand its potential reaction to stress, its resilience, and its recovery time.	What are the indicators used to assess such condition?	Chapters 6 - 19
		Assess trends	What additional data are needed?	Chapters 6 - 19
			Who may already have this information?	Chapters 6 - 19
4	Assess Cumulative Impacts on VECs	Identify potential environmental and social impacts and risks.	What are the key potential impacts and risks that could affect the long-term sustainability and/ or viability of the VEC?	Chapters 6 - 19
		Assess expected impacts as the potential change in condition of the VEC (i.e., viability, sustainability).	Are there known or predictable cause-effect relationships?	Chapters 6 - 19
		Identify any potential additive, countervailing, masking, and/or synergistic effects.	Can these impacts and risks interact with each other?	Chapters 6 - 19
5	Assess Significance of Predicted Cumulative Impacts	Define appropriate “thresholds” and indicators	Do these impacts affect the sustainability and/or viability of the resource and/or VEC?	Chapters 6 - 19
		Determine impact and risk magnitude and significance in the context of past, present, and future actions.	What are the consequences and/or trade-offs of taking the action versus no action?	Chapters 6 - 19
		Identify trade-offs.		
6	Management of Cumulative Impacts – Design and Implementation	Use the mitigation hierarchy.	How can cumulative impacts be avoided, minimised, and/or mitigated?	Chapters 6 - 20
		Design management strategies to address significant	How can the effectiveness of	Chapter 20



Step	Description	Objectives	Questions	Relevant EIS Chapter
		cumulative impacts on selected VECs.	proposed management measures be assessed?	
		Engage other parties needed for effective collaboration or coordination.	What are the triggers for specific adaptive management decisions?	Chapter 20
		Propose mitigation and monitoring programs.		Chapter 20
		Manage uncertainties with informed adaptive management		Chapter 20

For the purposes of the KUR-World CIA, the abovementioned guidelines plus the Social Impact Assessment guidelines from the International Association for Impact Assessment have been adopted. This methodology requires assessment of cumulative impacts resulting from development projects, including external, natural and social stressors and so the proponent has identified key regional projects in Queensland that are in or in close proximity to The Wet Tropics of Queensland World Heritage Area, and/or the Great Barrier Reef World Heritage Area.

Three radii have been selected to allow practical assessment of the potential order of magnitude of cumulative impacts arising from the KUR-World development (Figure 20-2). The spatial boundaries adopted for this CIA are:

- (i) District/local level - Kuranda district (32km radius - Figure 20-2);
- (ii) Sub-regional level - Atherton Tablelands and Cairns (64km radius - Figure 20-2)
- (iii) Regional level – Northern Wet Tropics (128km radius – Figure 20-2).

These are analogous to the *potential* for ‘high’ (32km), ‘moderate’ (64km), ‘low’ (128km) and ‘negligible’ (greater than 128km) magnitudes of potential cumulative impact. In addition to projects falling within the abovementioned radii, we have also looked at directly analogous projects (i.e. ‘Integrated Eco-Resorts’) falling outside the 128km radius (Figure 20-2) Table 20-3, where these have the capacity to inform the assessment of cumulative impacts.

The temporal scale adopted includes both the construction period (9 years) and 2.5 years of operation; providing an assessment of impacts over ten years (2018 -2028).

20.2 Environmental values

Environmental values have been drawn from the Terms of Reference, the stakeholder engagement conducted during the EIS process (Refer to Chapter 11) and studies conducted during the EIS. Some of the environmental values listed in Table 20-2 below therefore inevitably overlap with the critical matters discussed in detail elsewhere in this EIS. The current condition of environmental values (baseline studies) were studied extensively during 2017 and the results of these studies presented in this EIS.

Table 20-2: Environmental values

Environmental Value	Terms of Reference and Description for KUR-World	EIS Chapter
Cultural Heritage	The construction and operation of the project should aim to ensure that the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.	Chapter 17 – Cultural Heritage



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20.3 Socioeconomic Impacts

The broader cumulative impacts of the project include socioeconomic impacts (for further detail see Chapter 11 of this EIS, 'Social and Economic Impact').

20.3.1 Local Socioeconomic impacts

The two main sources of KUR-World's potential cumulative socioeconomic impacts are associated with tourism and residential development (both urban and non-urban) in and around Kuranda.

- (i) *Visitors:* The analysis set out in Chapter 11 has identified that current visitation to Kuranda is in the order of one million visitors per year (mostly day trippers) with visitors staying overnight equating to approximately 80,000 visitor nights per year, which is very low in comparison with the current number of Kuranda day visitors. The day visitor numbers projected for KUR-World are expected to build to about 500,000 per year by 2027-28; leading to a c.50% increase in Kuranda day visitor numbers. Overnight accommodation at KUR-World has been planned to meet what the proponent has identified as a significant gap in the market for accommodation in Kuranda and the wider Tablelands. Overnight visitor numbers are expected to build to 240,000 per year by 2027-28; staying an average of three nights and therefore generating about 720,000 visitor nights - a ninefold increase on current numbers.
- (ii) *Employment:* It is estimated that when fully operational, KUR-World will directly generate about 970 full time equivalent jobs, as well as a substantial part time employment requirement. The total projected workforce (full time and part time) is estimated at about 1,450. The analysis of past employment patterns in Kuranda and the Tablelands indicates that of the workforce living in Kuranda, almost 60% work outside Kuranda, especially in Cairns. Of those working *in* Kuranda, about 31% travel into Kuranda from outside (21% from Cairns). KUR-World therefore has the potential to provide employment to local residents and reduce the need to work away from Kuranda and the Tablelands. KUR-World further intends to provide specific employment opportunities for the training and employment of local indigenous people, reducing the significant current employment disadvantages set out in Chapter 11 of this EIS.

There is a projected requirement for local temporary accommodation at the peak of construction for up to 50 workers, as most of workforce can be sourced from across the Tablelands. Furthermore, with KUR-World's preferential local Tablelands based employment strategy, the need for additional workforce in Kuranda will be moderate (24% of the workforce when fully operational).
- (iii) *Population & Housing:* Kuranda's population is currently about 4,700 and additional population generated directly by the project and secondary impacts on Kuranda are estimated to be about 1,000 by 2027-28; adding 21% to the current existing population in the Kuranda area (i.e. the equivalent of an annual growth rate of 2% per annum) and requiring 354 additional dwellings. A requirement of about 350 dwellings by 2027-28 equates to an average of about 35 a year over the project lead-in period; as compared with an average of about 30 dwelling approvals per year over the past five years. Dwelling allotments currently available in the area approximately equate to additional dwelling needs by 2027-28.
- (iv) *Expenditure:* In addition to the direct economic impacts of KUR-World, there will be secondary impacts from expenditure by day and overnight visitors amongst Kuranda's retail and tourism businesses. There will also be an impact of construction to accommodate additional local workforce and population, as well as expenditure by additional permanent residents and



temporary residents during construction. Secondary expenditure is estimated to run at about \$36 million a year by 2027-28; generating a further 150 jobs, most of which are likely to be filled by Kuranda residents.

20.3.2 Sub-regional Socioeconomic impacts

Flow-on effects on regional expenditure and workforce opportunities associated with the KUR-World project will also contribute to cumulative impacts. These include:

- (i) *Workforce & Employment: It is estimated that about 24% of the workforce will be drawn from Cairns (construction phase 26% and operational phase 23%). There will also be substantial opportunities to draw workforce from other Tablelands centres, as appropriate skills sets exist in the region. Direct employment generated at the resort is estimated to reach about 1,450 by 2027-28, which (with flow-on effects) will generate a total of about 1,900 jobs in the region.*
- (ii) *Expenditure: An estimated \$230 million of resort-related expenditure by 2027-28, with the majority being on outside tours by overnight stay visitors across the region (especially the Tablelands) of about \$170 million.*

20.3.3 Regional Socioeconomic impacts

Regional cumulative impacts on socioeconomic values are also associated with planned large-scale developments. A brief summary of these developments is provided in Table 20-3 and Table 20-5 provides more information regarding their potential impacts on VECs.

If the proposed local (Kuranda), sub-regional (Tablelands/Cairns) and regional construction and tourism developments are taken into account, the next 10 years could be a period of significant growth for Far North Queensland.

20.4 Cumulative impacts summary

The cumulative impacts associated with KUR-World and other key projects (Figure 20-2) are summarised in Table 20-3 below. The relative cumulative impact contribution of KUR-World, when all these other projects are taken into account, is provided in the last line of the Table. Table 20-4 below identifies two projects, 'Lindeman Great Barrier Reef Resort' and 'Iwasaki Capricorn Integrated Resort', which, although both lie well outside KUR-World's sphere of influence in relation to potential cumulative impacts, are broadly similar in project scope and comparable assessment.



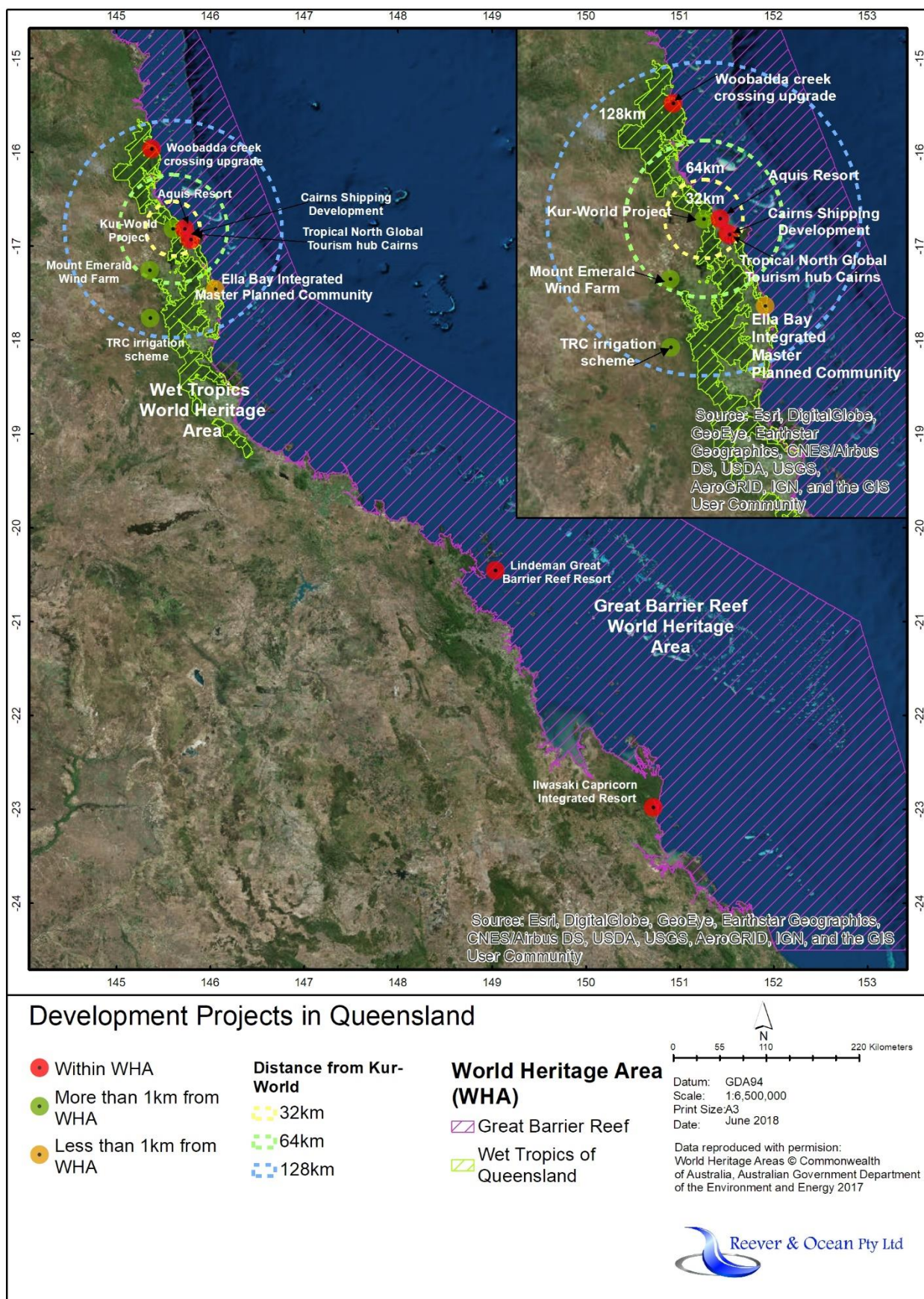


Figure 20-2: Location of key projects taken into account for the cumulative impact assessment.

Table 20-3: Projects selected in relation to cumulative impacts

Sector	Scale	Proximity to Areas of Conservation Significance	Project	Commentary
Infrastructure	District/ local (32km)	Within GBRWHA; proximate to WTWHA (~3.3km).	Cairns Shipping Development - located adjacent to the city of Cairns and within the GBRWHA. The port extends along Trinity Inlet which opens into Trinity Bay. This project seeks to improve shipping access to the Port of Cairns. The project has been approved and will promote expansion of the cruise shipping industry in Cairns and the wider North Queensland Region. <i>Approved 28/2/18</i>	This OCG coordinated project is selected for comparable environmental parameters. The EIS concluded that the East Trinity option could be further pursued if the Government assesses that the additional costs can be justified, with the EIS also outlining the additional studies that would be required. Option 1A, the shortlisted marine-based disposal site, is considered the best overall environmental, economic and social outcome; and if Government legislative changes do not occur, it is the preferred site and the basis of the project description. The potential impact on marine mammals of noise and vibration or unauthorised ballast water releases caused by additional shipping does not appear to have been assessed.
Infrastructure	District/ local (32km)	Adjacent to GBRWHA; proximate to WTWHA (~4.5km).	Tropical North Global Tourism Hub Cairns - Global Tourism Hubs (GTH) are a strategy for Queensland that delivers significant tourism infrastructure. GTHs are designed to deliver catalyst projects (including Integrated Resorts) that support city building objectives and other complementary projects, while optimising broader community gains, such as regional jobs, investment and associated flow-on developments. This development is located adjacent to the GBRWHA <i>In preparation</i>	This project is selected for comparable socio-economic and environmental parameters. The proposed Global Tourism Hub development was announced by the State Government in late 2017, with registrations of interest by potential developers closing in early 2018. The development is envisaged as comprising new international hotels, entertainment and tourism offerings and/or expansion of the current casino. The Government has identified a preferred waterfront site by partnering with Ports North on land within the Cityport precinct, at Wharf Street, Cairns. The site comprises approximately 4.85 hectares.
Resort	District/ local (32km)	Within GBRWHA; proximate to WTWHA (~4.7km)	Aquis Resort at the Great Barrier Reef (Aquis) - the EIS for this project has been approved with conditions. Aquis seeks to redevelop 343 ha of rural land into a large-scale integrated tourism resort, 13 km north of Cairns within the GBRWHA. Aquis would include a fully Integrated Resort and gaming experience, including world class accommodation and entertainment facilities. In addition, the proponent would engage with Cairns Regional Council (CRC) and the Queensland Government to contribute to the development of sports and entertainment facilities appropriate for a city that could become an internationally recognised destination as a consequence of Aquis. The objective is to attract visitors to Cairns through the staging of major entertainment and sporting events to complement the natural attractions of the region. <i>Approved 17/12/14</i>	This OCG coordinated project is selected for comparable socio-economic and environmental parameters. The presence of one T&NT fauna species was confirmed on the proposed site: Spectacled flying-fox. The Northern Quoll, Red Goshawk and the Bare-rumped sheath-tail bat may also occur on site. The presence of 12 listed migratory birds was confirmed: Fork-tailed Swift, Sharp-tailed Sandpiper, Cattle Egret, Red-necked Stint, White-bellied Sea-eagle, White-throated Needle Tail, Rainbow Bee-eater, Black-faced Monarch, Spectacled Monarch, Satin Flycatcher, Eastern Curlew and Whimbrel. The presence of Estuarine crocodile was also confirmed. One T&NT flora species was confirmed: Ant plant. The assessment of impacts concluded that there are no significant residual adverse impacts. The latest public province news of the Aquis resort (October 2017) is that it is unlikely to proceed at its full consented scale.
Heavy Industrial/Power Generation	Sub-regional (64km)	Proximate to WTWHA (~13.3km) and Mt Baldy Forest Reserve (~1.9km)	Mount Emerald Wind Farm - is a 'greenfield wind farm development' meaning that the land upon which the wind farm is located has had no previous commercial land-use. Development has been approved for up to 63 turbines at this site; however only 53 are being constructed. <i>Approved 2/12/16 (under construction)</i>	This called-in project is selected for comparable environmental parameters. The project site is visually prominent from the Wet Tropics World Heritage Area. No Listed Threatened Ecological Communities occur within the wind farm site. Two listed plant species are found on site: <i>Grevillea glossadenia</i> (Vulnerable) and <i>Homoranthus porter</i> (Vulnerable). Of the EPBC-listed fauna, three threatened species, the Northern Quoll, Spectacled Flying-fox and the Bare-rumped Sheath-tail Bat are present on the project site. One species, the Sarus Crane (Vulnerable) was observed on land surrounding the site, which forms part of the Atherton Tablelands KBA (for which the Sarus crane is a key species). Significant cumulative adverse effects are not anticipated on MNES flora and fauna as a result of the proposed Mount Emerald Wind Farm following the implementation of proposed and likely mitigation and management measures. The wind farm site forms part of the setting for and is highly visible from many parts of the WTWHA.
Infrastructure	Regional (128km)	Proximate to WTWHA (~13.5km) and	Tablelands Irrigation Project - this initiative will examine options for multi-purpose water use in the Upper Herbert catchment which drives sustained expansion of the regions	This project is selected for comparable environmental and socio-economic parameters. The Tablelands Irrigation Project is being developed under the auspices of Tablelands Regional Council, with the participation of relevant State

Sector	Scale	Proximity to Areas of Conservation Significance	Project	Commentary
		Proximate to Ravenshoe Forest Reserve (~9.6km)	<p>agriculture base; considers flood mitigation benefits to the Lower Herbert catchment and renewable power generation; and provides a Preliminary Business Case analysis using the Building Queensland Framework about water options.</p> <p><i>In preparation</i></p>	Government departments. It is focused on the Upper Herbert region to the southwest of Ravenshoe, where up to 100,000 hectares of potentially-irrigable land has previously been identified in a series of State Government studies. The current work is aimed at producing a preliminary business case for an initial stage project. Detail on site-specific impact on environmental, socioeconomic and cultural values is yet to be assessed
Infrastructure	Regional (128km)	Within WTQWHA	<p>Woobadda Creek Crossing Upgrade - was approved and has been constructed. The new bridge has been a long-time aspiration of the Wujal Wujal and Bloomfield communities. In this site, vehicles had been washed off in periods of exceptionally high rainfall. Although it is located within the WTQWHA Management agencies decided it was important to upgrade the crossing not only because of safety concerns, but to also enable Wujal Wujal residents to maintain their social and economic connections with residents and businesses in the township of Mossman.</p> <p><i>Permit issued 15/7/18 (constructed)</i></p>	<p>Although relatively small in scale in relation to other projects in this assessment, this project is selected for comparable environmental parameters, particularly in relation to threatened frog species.</p> <p>The design of the bridge ensures minimal disruption to the habitat of one of the Wet Tropics' endangered frog species, the Common Mistfrog. To maintain visual amenity in the WTQWHA, the design used stone facing on the sides of the arches to help the structure blend into the natural environment.</p>
Master Planned Community	Regional (128km)	Adjacent to WTQWHA (<1km) and GBRWHA (<1km)	<p>Ella Bay Integrated Master Planned Community - 450 ha master planned resort and residential eco-community including five resorts, 540 residences, golf course and swimming lagoon, over a 15-year period. Potential project cumulative impacts included:</p> <ul style="list-style-type: none"> introduction and/or spread of weeds and exotic species impacts on wetland vegetation to the north through hydrological and water quality effects edge-related effects where clearing occurs within and adjacent to remnant vegetation increased human and vehicle presence, potentially trampling or damage to vegetation from vehicles. <p><i>Approved 20/11/12</i></p>	<p>This project is selected for comparable socio-economic and environmental parameters.</p> <p>Flora surveys identified four State-listed threatened flora species, one endangered regional ecosystem, 13 'of concern' and 4 'least concern' regional ecosystems. Thirteen state-listed threatened fauna species were recorded in the Ella Bay development area and access road including the endangered Southern Cassowary and Common Mist Frog. Twenty-one State-listed threatened species were also identified as likely to occur in the project area, based on suitable habitat, local records and Queensland database searches.</p> <p>The proponent was required to implement a variety of management strategies to mitigate potential construction and operational impacts on fauna, flora and communities. The proponent presented strategies to mitigate and/or offset potential impacts of the development on threatened species and communities and world heritage values including:</p> <ul style="list-style-type: none"> habitat preservation connectivity preservation (dedicated conservations zones) environmental offsets (purchase and revegetation of onsite and offsite land) wildlife management plans (including plans for southern cassowary, marine turtles and stream dwelling rainforest frog species) water quality management (including wastewater/recycle water treatment with approved nutrient levels; erosion and sediment controls; water sensitive urban design; water quality monitoring; stormwater treatment) road management strategies for wildlife protection (fauna sensitive design mechanisms) public awareness/education. <p>The objectives of the proponent's strategies were to:</p> <ul style="list-style-type: none"> provide appropriate offsets for potential impacts on MNES comply with the requirements of the Queensland Vegetation Management Act 1999 and associated codes and policies be consistent with Recovery Plan for the Southern Cassowary provide tangible conservation benefits locally and within the wider Innisfail/Graham-Seymour Range area with an emphasis on threatened species conservation.

Table 20-4: Cumulative impacts of selected projects outside area of analysis

Sector	Scale	Proximity to Areas of Conservation Significance	Project	Commentary
Resort	State (greater than 128km)	Within GBRWHA	Capricorn Integrated Resort - located north of Yeppoon, within the GBRWHA. This project seeks to develop the southern portion of The Mercure Capricorn Resort Yeppoon's landholdings, featuring an integrated	This project is an OCG coordinated project was selected for comparison of assessment parameters. While the Capricorn resort is over 800km south of the KUR-World project, the Capricorn resort proposal is analogous (scale and features) to the KUR-World project.

Sector	Scale	Proximity to Areas of Conservation Significance	Project	Commentary
			<p>resort community to expand the tourism potential of the Capricorn Coast. The proposal includes the development of a 300-room five-star resort, a golf course, caravan and recreational vehicle park, Wagyu cattle farm including farm stays, cattle and sheep farming and educational activities, a residential community of 8000 dwellings a village centre, a conservation precinct and an airstrip - for tourism, charter flights and a potential fly-in, fly-out hub for mining. The project also intends to promote natural wetlands and reinforce the Central Coast as a focal point for tourism and recreation.</p> <p>Draft EIS in preparation</p>	<p>The project site adjoins the Great Barrier Reef and RAMSAR and Referable Great Barrier Reef Wetlands. Potential impacts on MNES will be investigated fully as part of the EIS. The majority of the site contains Remnant of Concern Regional Ecosystems (RE), with pockets of Remnant Endangered RE. The most notable REs include: microphyll vine forest on coastal dunes which is Endangered and a listed Threatened Ecological Community; Freshwater wetlands with permanent water and aquatic vegetation and; <i>Eucalyptus tereticornis</i> and/or <i>Corymbia tessellaris</i> and/or <i>Melaleuca</i> spp, this open woodland to open forest is often adjacent to estuarine areas and often co-located with the Great Barrier Reef Wetland areas. The site has Essential Habitat and Essential Habitat Species Records. The Essential Habitat database identified the following animal species of importance in these areas: Black breasted Button-quail (Vulnerable), Water Mouse / False Water-rat (Vulnerable) and Radjah Shelduck (Rare). The presence of 11 Rare and Threatened flora species was highlighted by desktop searches (currently under investigation for the EIS).</p>
Resort	State (greater than 128km)	Within GBRWHA	<p>The Lindeman Great Barrier Reef Resort Project - this recently approved project seeks to redevelop and expand the existing resort at Lindeman Island, within the GBRWHA in the Whitsundays. This project will include approximately 335 suites and villas across five resort precincts, a central village comprising retail outlets, restaurants, bars and facilities to support the complex and an upgrade of the existing private airstrip. This project also involves the reconfiguration of land tenure around the resort, including revocation of an area of National Park, environmental enhancements with coral planting, a Great Barrier Reef (GBR) educational centre, nature reserve and vegetation replanting programs. The central theme of this project is the marine environment and the GBR.</p> <p>Approved 27/3/18</p>	<p>This project is an OCG coordinated project and is selected to allow the comparison of assessment parameters.</p> <p>Lindeman Island lies within the GBRWHA and the MNES are associated with its World Heritage status. Most of the island's terrestrial area is protected as a National Park, with tourist leases at its southwest corner, providing the existing node of resort development. In terms of the five controlling provisions relating to Lindeman Island under the EPBC Act there will be significant residual impacts on the Broad Leaf Tea-tree woodland but no significant impacts on marine or migratory species. Impacts on the Tea-tree woodland are capable of being offset. The resort development will cause visible changes to only a small proportion of the island and associated clearing and earthworks are not considered to be significant impacts on World Heritage values. No Commonwealth-listed T&NT species were recorded.</p>

Table 20-5: Cumulative Impacts - Relationship between the KUR-World project and other significant projects within its sphere of influence.

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
Fauna	Chapter 8	<p>At its closest, KUR-World is ~8.5km from the GBRWHA and ~2km from the WTWHA.</p> <p>Eight T&NT fauna species were recorded during field surveys: Kuranda Tree Frog, Tapping Green-eyed Frog, Macleay's Fig-parrot, Bare-rumped Sheath-tail Bat, Greater Large-eared Horseshoe Bat, Spectacled Flying-fox and Tube-nosed Insectivorous Bat. (NB - A Gouldian Finch was also recorded, which is almost definitely an aviary escapee).</p> <p>Non-definitive evidence of Southern Cassowary and Red Goshawk was recorded. The Australian Lacelid Tree Frog and Northern Quoll were not found. Suitable habitat for the Common Mistfrog is not present on site. The Australian Lacelid, Red Goshawk, Northern Quoll and Southern Cassowary are unlikely to be resident.</p>	<p>Due to their distance from KUR-World, other projects outside the region will not affect fauna potentially impacted by the KUR-World project.</p>	<p>There are no known regional projects that are predicted to have an impact on Fauna</p> <p>The Mt Emerald Wind Farm listed potential cumulative impacts (additive mortality) on Bare-rumped Sheath-tail Bat; Sarus Crane; Spectacled Flying-fox. However, due to the very different nature of the Mt Emerald wind farm compared to the KUR-World project (Wind farm power generation vs Eco-resort), it is not predicted KUR-World will result in additional mortality.</p>	<p>There are no known local projects that are predicted to have an impact on Fauna.</p>	<p>Negligible risk of cumulative impacts</p>

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
		<p>Potential impacts on all T&NT taxa and others have been significantly mitigated by the environmentally-led master plan process and the retention and ongoing management of remnant vegetation and 100m buffers along creeks (also protecting water quality).</p> <p>No loss of Outstanding Universal Values or a decline in integrity of proximate Protected Areas is anticipated.</p>				
Flora	Chapter 8	<p>At its closest, KUR-World is ~8.5km from the GBRWHA and ~2km from the WTWHA.</p> <p>Three T&NT flora species were identified: Daintree Gardenia, Slender Ginger and Myola Palm.</p> <p>Potential impacts on all T&NT taxa and others have been significantly mitigated by the environmentally-lead master plan process and the retention and ongoing management of remnant vegetation and 100m buffers along creeks (also protecting water quality).</p> <p>No loss of Outstanding Universal Values or a decline in integrity of proximate Heritage Areas is anticipated.</p>	Due to their distance from KUR-World, other projects outside the region will not affect flora potentially impacted by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Flora	There are no known local projects that are predicted to have an impact on Flora	Negligible risk of cumulative impacts
Visual amenity	Chapter 6	<p>The aesthetic values of The Wet Tropics and Great Barrier Reef World Heritage properties will not be impacted.</p> <p>The proposed development occupies ~26% of the overall site; on historically disturbed areas and primarily at lower elevations - significantly reducing visibility. Built form will be carefully dispersed into a series of development precincts around existing creek lines and retained vegetation, and the 12-hole golf course and other rural uses will also assist in visually integrating the proposed built form into its setting.</p> <p>Overall, the proposed development will result in only minor localised impacts on visual amenity.</p> <p>Although the on-site changes to landscape character will be mainly seen by future users of KUR-World itself and will be generally concealed from external view, there may be a change in perception of the character of the Kuranda district as a result of the KUR-World development. However, the overall sense of place and identity of Kuranda village and the wider region will be maintained despite any perceived character change, as the proposed development has such limited external visibility.</p> <p>This assessment has identified that the proposed development will be visible to only a few nearby residents and then generally only as small areas of roofs; especially following the implementation</p>	Due to their distance from KUR-World, other projects outside the region will not affect visual amenity potentially impacted by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Visual amenity	There are no known local projects that are predicted to have an impact on Visual amenity	Negligible risk of cumulative impacts

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
		<p>of vegetation screening measures. These roofs will mainly be visible in the distance or mid-ground views, and visually integrated with surrounding trees and open space.</p> <p>Visual impacts of the proposed development are therefore considered minor and can be further reduced and managed by standard visual impact mitigation measures, as recommended in the VIA.</p>				
<i>Air</i>	Chapter 12	<p>The air quality impact of the KUR-World development is not predicted to cause or contribute to unacceptable ambient air quality levels in the vicinity.</p> <p>The retained vegetation at the site is important for controlling impacts of dust and odour emissions on the site.</p> <p>Mitigation measures including an Air Quality Environmental Management Plan have been proposed during the construction and operation phases of the development to reduce impacts on air quality and to ensure impacts are within relevant air quality criteria.</p>	Due to their distance from KUR-World, other projects outside the region will not affect air quality potentially impacted by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Air	There are no known local projects that are predicted to have an impact on Air	Negligible risk of cumulative impacts
<i>Water quality</i>	Chapter 10	<p>Potential impacts to surface water and groundwater are expected to be mitigated through appropriate on-site management of hazards (for example through a Hazardous Substances Management Plan and Environmental Management System, compared with SDS 2017), with spills contained and cleaned up.</p> <p>Potential impacts to the receiving environment will be further mitigated by the capture and treatment of site waters through stormwater management (WSUD) and a waste water treatment system.</p> <p>An ESCP will be developed for construction and operation to minimise erosion and sediment loss.</p> <p>Nutrient loads from the WWTP discharge will be offset by improving water quality through environmental works in the catchment that receives discharge and rehabilitation plans for improving frog habitat are expected to have a positive impact.</p> <p>Where on-site treatment alone is unlikely to allow direct discharge and achievement of the management intent as defined in the EPP (Water), additional mitigation measures have been proposed.</p>	Due to their distance from KUR-World, other projects outside the region will not affect water quality potentially impacted by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Water quality	There are no known local projects that are predicted to have an impact on Water quality	Negligible risk of cumulative impacts

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
Waste	Chapter 7.5 and 15	<p>In line with the Queensland Waste Avoidance and Resource (WAR) Productivity Strategy C&D target by 2024, a minimum of 80% of construction waste generated by the proposed development will be diverted from landfill through re-use, recycling and recovery on and off-site.</p> <p>The waste management assessment has predicted that during construction there is a medium risk of soil, and or surface/groundwater contamination from waste management activities. However, any contamination will be managed and mitigated in accordance with WMP. It is predicted there is a low risk of litter impacting on flora/fauna and a low risk of waste impacting on amenity from dust, noise or dust.</p> <p>During operations it is predicted there is a medium risk of soil, and or surface/groundwater contamination from waste management activities. However, any contamination will be managed and mitigated in accordance with WMP. It is predicted there is a low risk of litter impacting on flora/fauna and a low risk of waste impacting on amenity from dust, noise or dust.</p> <p>The predicted (and mitigated) volumes of operational waste (all solid waste) generated by the project represents between 2.07 – 9.66% of current Cairns regional disposal quantities.</p>	Due to their distance from KUR-World, other projects outside the region will not impact on waste generated by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Waste	There are no known local projects that are predicted to have an impact on Waste. However, as the project will create an overall increase in the local volume of solid waste, a medium risk of cumulative impact is possible.	Low to Medium risk of cumulative impacts
Noise & Vibration	Chapter 14	<p>The noise and vibration assessment has predicted exceedances of noise relevant limits for the construction and operation phases of the KUR-World development.</p> <p>The cumulative impacts are not considered to be of significance. Noise sources are located in different parts of the site near to different sensitive receivers.</p> <p>Each source will need to be limited (that is management measures instituted) to achieve compliance at the nearest sensitive receivers.</p> <p>General noise mitigation measures to manage noise impacts have been provided, and a Construction Noise and Vibration Management Plan will be prepared to address general construction and traffic noise during the construction phase.</p> <p>Noise impacts from the external pet resort and Billabong Hotel on sensitive receptors in the KUR-World development are expected to be compliant with noise limit criteria.</p> <p>Operational noise impacts exceeding relevant criteria were identified in the noise and vibration assessment.</p> <p>The sewage treatment plant is predicted</p>	Due to their distance from KUR-World, other projects outside the region will not affect noise and vibration potentially produced by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Noise & Vibration	There are no known local projects that are predicted to have an impact on Noise & Vibration	Low risk of cumulative impacts

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
		<p>to potentially exceed noise limit criteria. Operation of the sewage treatment plant requires completion of a detailed noise assessment during its design development to assess impacts with greater certainty and determine appropriate mitigation measures. The mechanical plant is determined to be potentially non-compliant; however, specifications for this operation are not yet available for thorough assessment.</p> <p>The operation of the zip line and operational phase vehicle traffic has been determined to be compliant with noise limit criteria under assumed operation conditions.</p> <p>The helipad and amplified music venues are predicted to be compliant with noise limit criteria under the conditions used for assessment.</p>				
Indigenous Cultural Heritage	Chapter 17	<p>Surveys undertaken reveal a possible occupation site and walking tracks that align with those identified in previous research and the DATSIP site database.</p> <p>A Cultural Heritage Management Plan (CHMP) was also developed with the Aboriginal party. The CHMP includes mitigation measures for the pre-construction, construction and post-construction phases of the project on Aboriginal cultural heritage. It is based on recommendations contained in the consultants' report and offers the opportunity to promote a broader understanding of rainforest Aboriginal cultural values to future visitors through culturally appropriate interpretative signage and guided tours.</p> <p>The highest priority for the Aboriginal party is the opportunity for future employment associated with the project and the proposed management of natural and cultural values during all stages of the project.</p> <p>During field surveys, a number of individual finds were recorded:</p> <ul style="list-style-type: none"> • 11 portable nut cracking rocks; • 5 quartz flakes associated with portable nut cracking rocks; • 2 nut cracking holes in the creek bed; • 1 axe blank; and • 1 circular top stone/pestle. <p>For details on individual artefacts refer to the complete Aboriginal Cultural Heritage Study (Appendix 15).</p> <p>To preserve the significant tangible and intangible heritage components the project site should be recognised as part of the living cultural landscape that includes significant story places, campsites, plants and animals. To achieve this, high, medium and low priority areas for cultural heritage have been identified; for each category, different recommendations have been made.</p>	Due to their distance from KUR-World, other projects outside the region will not affect indigenous cultural heritage values potentially impacted by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Indigenous Cultural Heritage	There are no known local projects that are predicted to have an impact on Indigenous Cultural Heritage	Low risk of cumulative impacts

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
		Once monitoring and management actions (outlined in Chapter 21) are implemented, the predicted residual risk is low.				
<i>Non-Indigenous Cultural Heritage</i>	Chapter 17	<p>Myola and Kuranda areas are culturally significant in terms of the early history of the Atherton Tablelands.</p> <p>Within the Study Area, there are at least 26 historic sites with potential heritage value.</p> <p>Of these sites, six require further research; two have archaeological potential; another two require further investigation and assessment for potential entry onto the Queensland Heritage Register; and one site requires further investigation and assessment for entry onto the Mareeba Shire Council's Local Heritage Register.</p> <p>Thirteen recommendations have been formulated to address the following heritage matters: managing sites with cultural heritage significance, the area's aesthetic qualities, archaeological potential, recording the area's history, interpreting the history of the area, and mitigating impact.</p> <p>Once monitoring and management actions (outlined in Chapter 21) are implemented, the predicted residual risk is low.</p>	Due to their distance from KUR-World, other projects outside the region will not affect non-indigenous cultural heritage values potentially impacted by the KUR-World project.	There are no known regional projects that are predicted to have an impact on Non-Indigenous Cultural Heritage	There are no known local projects that are predicted to have an impact on Non-Indigenous Cultural Heritage	Low risk of cumulative impacts
<i>Social</i>	Chapter 11	<p>The development will serve to benefit the Kuranda and Tablelands region throughout construction and operation phases.</p> <p>Chapter 11 indicates that some local and community services in Kuranda (eg retail, child care services, aged care, health, tertiary education and indigenous services) are close to saturation. The KUR-World proposals include a Health and Wellbeing Medical Retreat, a Rainforest Education Centre and a University Campus. These three facilities could create new opportunities for locals, as well as help to mitigate current needs and reduce pressure on services in Mareeba and Cairns.</p> <p>Analysis of past employment patterns within the study region (Kuranda and Tablelands) indicates that almost 60% (of Kuranda residents) work outside Kuranda, primarily in Cairns. Of those working in Kuranda, about 31% travel into Kuranda from outside (21% from Cairns). KUR-World has the potential to provide employment to local residents and reduce the need to work away from Kuranda and the Tablelands. KUR-World further intends to provide specific employment opportunities for the training and employment of local Indigenous people, reducing the significant current</p>	Due to their distance from KUR-World, other projects outside the region will not affect social issues potentially impacted by the KUR-World project.	Potential cumulative social benefit due to local and regional job creation and associated social benefits	There are no known local projects that are predicted to have an impact on social issues	High potential of positive cumulative impacts

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
		<p>employment disadvantages outlined in Chapter 11.</p> <p>It is predicted the KUR-world development employment practices will result in:</p> <ul style="list-style-type: none"> • Reduction in the currently high unemployment rates for locals, especially young, Indigenous people. • Reduction in currently high crime rates. • Access to training for young, unskilled locals. <p>It is estimated direct employment of 24% of the work force will sourced from the wider region, with 1,450 direct employment jobs generated by 2027-2028, and an estimated 1,900 jobs within the region (from flow on effects).</p> <p>Chapter 11 shows current visitation to Kuranda is in the order of one million visitors per year (mostly day trippers) with visitors staying overnight equating to approximately 80,000 visitor nights per year, which is low compared with the current number of Kuranda day visitors.</p> <p>The day visitor numbers projected for KUR-World are expected to build to about 500,000 per year by 2027-28 (a c.50% increase).</p> <p>Overnight visitor numbers are expected to build to 240,000 per year by 2027-28, with an average stay of three nights and therefore generating about 720,000 visitor nights - a ninefold increase on current numbers.</p>				
<i>Economic</i>	Chapter 11	<p>The development of a major signature resort on the Tablelands that will act as a catalyst to stimulating tourism development in the region.</p> <p>The KUR-World development will bring about progressive expansion of the range of accommodation available in the Cairns region, including special elements of health and well-being and university campus accommodation in the Tablelands area;</p> <p>KUR-World will also expand the range of day tripper attractions/opportunities in the Cairns tourism region, including recreation activities and a range of new rurality-related features not currently available</p> <p>At the state level it is predicted the KUR-World development will result in approximately \$400 million a year in gross state product, and add an additional 4,000 new jobs (at the state level). The flow-on effects are expected to generate approximately \$60-70 million a year in tax revenues.</p> <p>At the national level, the provision of a range of new facilities that will be especially attractive to new international growth markets, especially mainland</p>	Due to their distance from KUR-World, other projects outside the region will not affect economic issues potentially impacted by the KUR-World project.	Potential cumulative economic benefit due to local and regional job creation and associated economic benefits	There are no known local projects that are predicted to have an impact on economic issues	High potential for positive cumulative impacts

Attribute (VECs)	Relevant EIS chapter	Predicted Residual Risk from the KUR-World Project	Impacts from other Projects outside the Regional level – over 128km radius (i.e. Iwasaki Capricorn Integrated Resort, The Lindeman Great Barrier Reef Resort Project)	Impacts from other Projects at the sub-Regional and Regional Scale – 64 to 128 km radius (Wet Tropics Bioregion) (i.e. Woobadda Creek Crossing Upgrade, Tablelands Irrigation Project, Mt Emerald Wind Farm, Ella Bay Integrated Master Planned Community)	Impacts from other Projects at the Local/District scale – 32 km radius (i.e. Cairns Shipping Development, Aquis Resort at the Great Barrier Reef, Tropical North Global Tourism Hub Cairns)	Predicted Cumulative Risk
		<p>China. This will server to develop significant people to people contact in the tourism sector, as well as across a wide range of goods and services and helping to foster bilateral social and cultural relations.</p> <p>The strongly regional location of KUR-World will help consolidate the role of Far North Queensland in spreading the positive impacts of international tourism beyond major metropolitan centres, with benefits to the Red Centre and Top End tourism, linked by strong air services through the Cairns hub; as well as throughout regional Queensland.</p>				
Traffic	Chapter 13	<p>The results of the traffic assessment showed that the surrounding road network generally have sufficient capacity to accommodate future traffic volumes; with various upgrades/mitigation required to reduce the impacts on road link and intersection capacity and ensure the development traffic volumes can be accommodated.</p> <p>The addition of the development traffic results in LoS D being reached on this section of the Kennedy Highway between four and seven years earlier than in a 'without development' scenario. The increases in overall travel time due to the addition of the development traffic are anticipated to be minimal.</p> <p>Up to 10 flights per day are expected to service the resort's helicopter transfer requirement with adequate capacity at the Cairns Airport no adverse air transport impacts are anticipated.</p> <p>Public transport is not anticipated to be impacted by the development as limited services currently exist.</p> <p>Pedestrian numbers on the existing transport network will not increase and no adverse pedestrian impacts are anticipated.</p> <p>It is also anticipated that the pavement on the Kennedy Highway has sufficient capacity to accommodate the increase in heavy vehicles due to the development.</p>	Due to their distance from KUR-World, other projects outside the region will not affect traffic potentially impacted by the KUR-World project.	There are no know regional projects that are predicted to have an impact on traffic	There are no know local projects that are predicted to have an impact on traffic	Low risk of cumulative impacts

20.5 Cumulative impact mitigation

Proponents are responsible for determining how their own project is contributing to cumulative impacts and devising their own monitoring and management measures (IFC 2013). This has been achieved for the proposed KUR-World project, with Chapter 21 detailing the Environmental Monitoring and Management Plan (EMP) which includes the social and economic issues identified in this cumulative assessment.

The studies undertaken for this EIS and the EMP have been carefully developed taking critical matters, environmental, social and economic values into account. This CIA has summarised impacts that could result from other proposed developments in the Kuranda (local), Tablelands & Cairns (sub-Regional) and Regional areas over the next ten years. Collaborative efforts between Government Agencies and developers could ensure that the opportunities identified would be realised and the detrimental impacts managed in accordance with mitigation approach outlined in Figure 20-3.

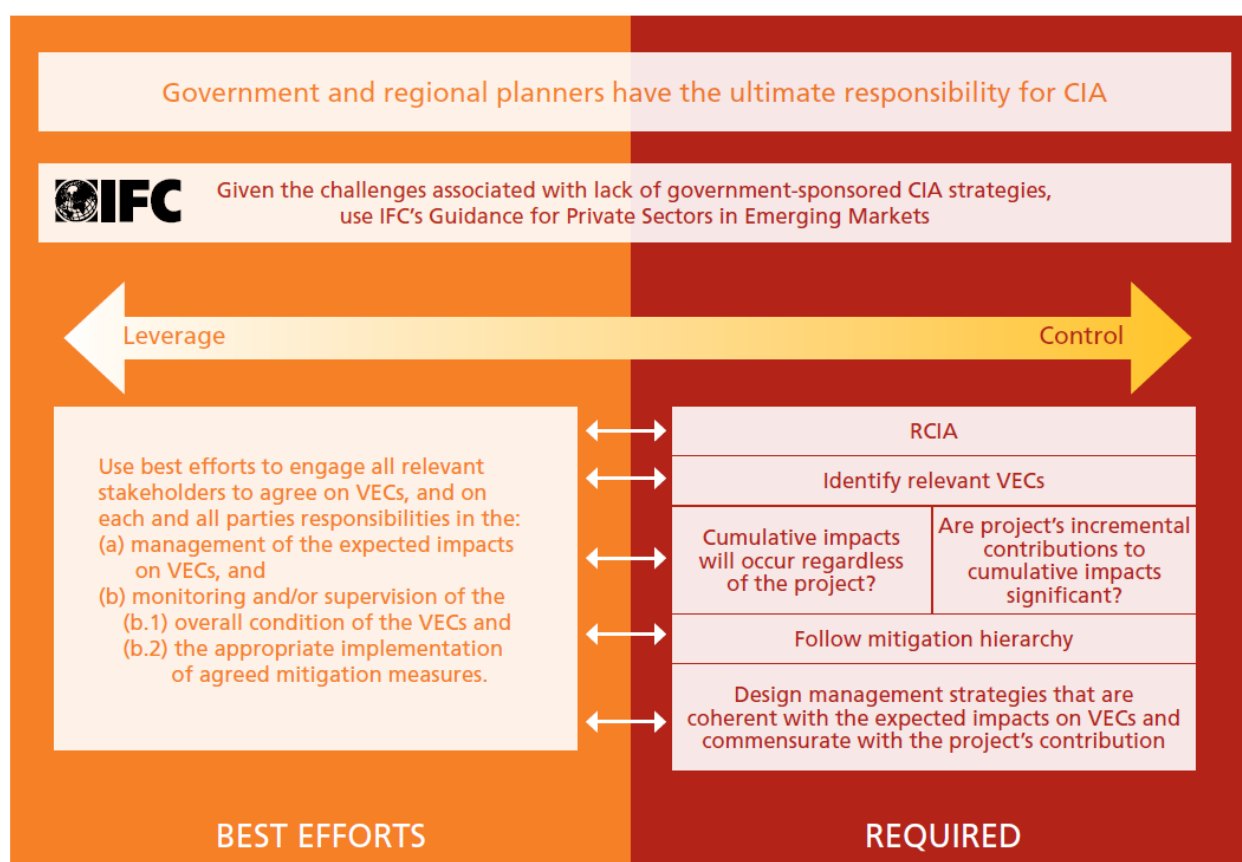


Figure 20-3: IFC Mitigation approach to CIA

Source: IFC (2013) *Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets*. Good Practice Handbook.

In summary, no significant negative cumulative impacts are predicted to result from the proposed KUR-World development. The site is ~8.5 km from the GBRWHA and ~2km from the WTQWHA. Although eight T&NT fauna species were recorded during field surveys and three T&NT flora species were identified, potential impacts on all T&NT taxa and others have been significantly mitigated by the environmentally-lead master plan process and the retention and ongoing management of remnant forest and 100m buffers along creeks (also protecting water quality). No loss of outstanding universal values or a decline in integrity of proximate Heritage Areas is anticipated and only positive cumulative impacts are predicted for social and economic matters.

20.6 References

International Finance Corporation, 2013, Cumulative Impact Assessment and Management: Guidance for the Private Sector in Emerging Markets. Good Practice Handbook.

Vanclay, F., Esteves, AM., Aucamp., Equispectives I and DM Franks, 2015, Social Impact Assessment: Guidance for Assessing and Managing the Social Impacts of Projects. International Association for Impact Assessment.

