KUR-World

Land Use

Chapter 6.0

Environmental Impact Statement

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Abbreviations used in this chapter are as follows:

Abbreviation	Meaning
ABLV	Australian Bat Lyssavirus *sample*
DSM	Digital Surface Model
DTM	Digital Terrain Model
GBRWHA	Great Barrier Reef World Heritage Area
LiDAR	Light Detection & Ranging
MNES	Matters of National Environmental Significance
OUV	Outstanding Universal Value
VAM	Visibility Analysis Map
VIA	Visual Impact Assessment
WTWHA	Wet Tropical World Heritage Area

6.0 LAND USE

6.1 Land Use

The purpose of Chapter 6.1 of the EIS is to:

- identify the existing and proposed land uses of the site;
- identify the land use context of the site, particularly the land use pattern of the surrounding area, and how this relates to the project;
- identify the statutory town planning framework that applies to the management of land use on the site and in the surrounding area, including the State Planning Policy, Far North Queensland Regional Plan and the Mareeba Shire Planning Scheme, and discuss how this framework relates to the project; and
- discuss specific matters raised in the Terms of Reference that are relevant to land use such as land ownership, tenure, titling and native title.

6.1.1 Land use context

6.1.1.1 Existing uses

The Barnwell homestead is the primary building on site. The site has been used for agricultural and grazing purposes since the 1900s. The Proponent has recently completed a refurbishment of the homestead and constructed various rural structures and tourism structures within its vicinity, to support the ongoing use of the site for various rural purposes. The site is presently used for the following purposes:

- KUR-Cow: The site is used for the grazing and husbandry of beef cattle as part of the KUR-Cow business that provides for the exporting of beef, as well as associated tourism activities.
- KUR-Organics: Part of the site, located to the south-west of the house, is used for the growing of organic produce.
- Animal Keeping: The site is used for the keeping of animals including miniature donkeys, alpacas, goats and miniature horses. These animals are kept within enclosures proximate to the homestead.

Lot 43, which is located in the south of the site, is also presently improved with a communications tower and ancillary infrastructure.

The site, and its existing improvements, are shown in Figure 6-1, with Figure 6-2 providing an enlargement showing the northern area of the site.

Figure 6-1: Site Plan

Figure 6-2: Site Plan (Enlargement)

The Proponent continues to undertake establishment works for the approved Tourist Attraction use on the site, which will provide a range of rural and environmental experiences for tourists including horse riding, quad bike tours, hiking, rural demonstrations/shows and interpretative displays.

The Proponent proposes to operate the new land use in accordance with a range of management controls intended to avoid environmental impacts from use of the site by tourists. These include ongoing maintenance of site improvements such as creek crossings and internal arrangements, including the supervision of all tourist activities within the site. The appreciation of the natural environment will also be promoted to visitors through the offered tourist experiences. The Tourist Attraction was approved 16 May 2018 (refer to Section 6.1.2).

The following land uses are identified in the area surrounding the site:

- Land to the north of the site, proximate to Barnwell Road, Kingfisher Drive and Mona Close, is used for a combination of rural and rural-residential purposes, generally characterised by single residential dwellings on larger lots.
- Further to the north is the settlement of Myola, which is comprised of a number of smaller lots (in the order of 2,000m^2) predominantly supporting single residential dwellings.
- To the north-east, the site adjoins a number of large rural holdings, which are primarily improved with native vegetation and support commercial (nursery/landscape supplies), residential and rural land uses.
- Further to the north-east is the Kuranda District State College, located on Myola Road, and a number of small rural residential subdivisions, including those located around Fairyland Road, Jarawee Road, Christensen Road and Kuranda Heights Road, generally to the east of Myola Road.
- Land to the east of the site is improved with rural residential land uses, generally comprising lots fronting Warril Drive, Punch Close, Hilltop Close, Hope Close and Shane Court. This area of development is located between the Kennedy Highway and the site. Some larger lots within this area are also subject to smaller rural uses such as cropping.
- To the immediate south-east of the site, land is used for the provision of tourist, outdoor recreational and entertainment activities at a facility known as 'The Billabong'.
- Land to the east of the Kennedy Highway is developed extensively for rural residential purposes, with some larger rural lots and vegetated areas present.
- Land to the immediate south and south-west of the site forms the Formartine State Forest, comprising an area of approximately 1,710 hectares.
- An area of land to the south of the site, fronting the Kennedy Highway, is used for extractive industries.
- Land to the west of the site primarily comprises larger rural lots, generally improved with dwellings, and containing retained vegetation.
- Land to the north-west of the site, generally surrounding Oak Forest Road, is used for rural-residential purposes.
- The township of Kuranda is located approximately two kilometres to the north-east of the site, on the eastern side of the Kennedy Highway. The township includes a range of commercial and community land uses that support the surrounding community, whilst also providing attractions and services for visiting tourists.

The site and the surrounding area are shown in Figure 6-3.

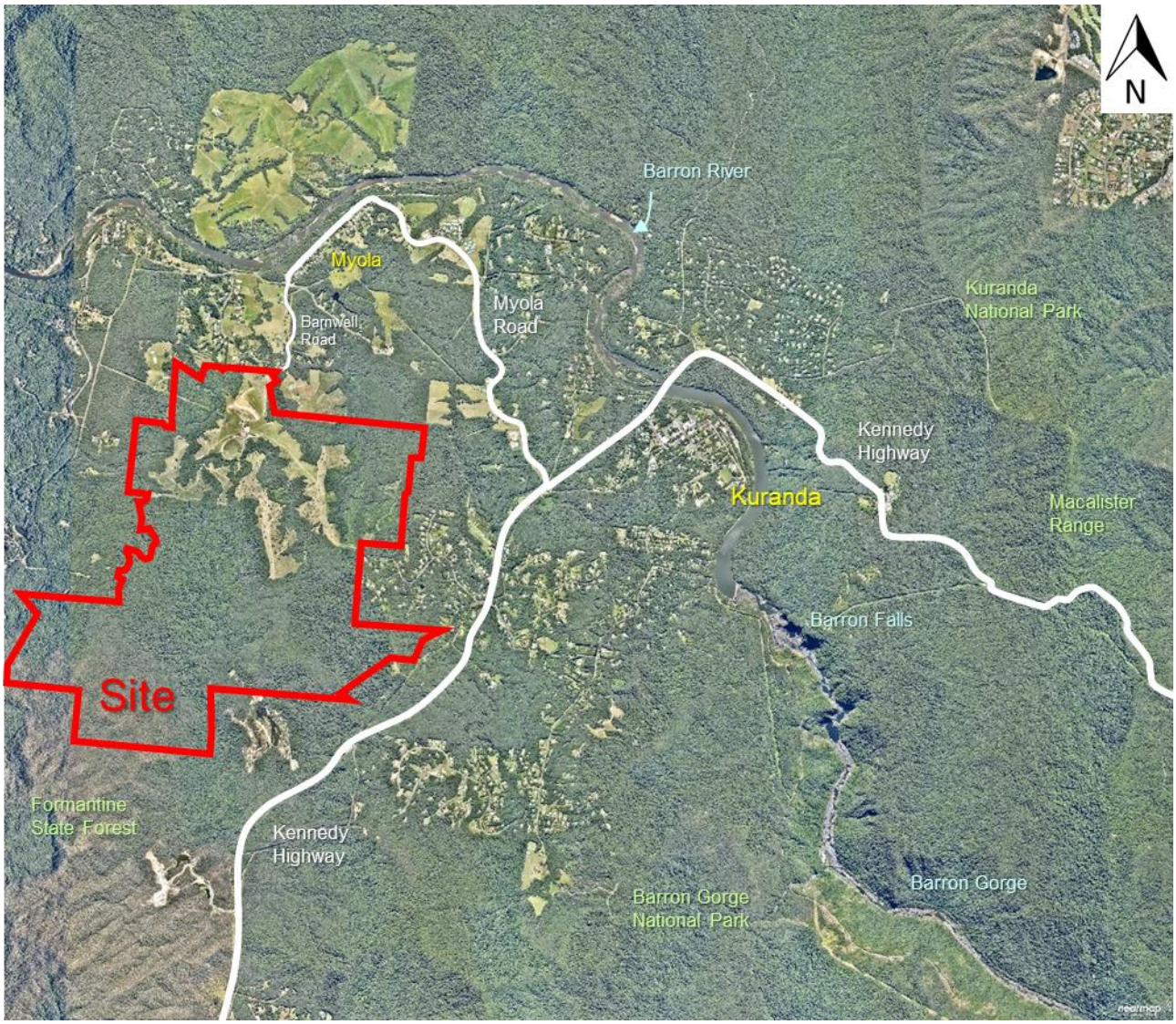

Figure 6-3: Locality Plan

6.1.1.2 Development approvals and applications

This site benefits from several development approvals that support existing and future land uses. Table 6-1 below summarises these approvals.

Table 6-1: Development Approvals

Development Description	Development Approval	Date Approved
Rural Dam	Development Permit for Operational Work – Earthworks	20 July 2016
	Change to Approval (Inclusion of additional reinforcing toe works)	7 June 2017
Animal Keeping The keeping of various animals (other than the existing cattle operation)	Development Permit for a Material Change of Use for Animal Keeping	9 February 2017
Maintenance Shed The construction of a maintenance shed to the south of the existing house associated with the established Animal Husbandry use.	Development Permit for Building Work	25 October 2017
Homestead Alterations Additions and alterations to the existing homestead.	Development Permit for Building Work	23 November 2017
Tourist Attraction The Tourist Attraction use will provide a range of rural and environmental experiences for tourists including horse riding, quad bike tours, hiking, rural demonstrations/shows and interpretative displays. The development to which this approval relates provides an alternative to KUR-World and is discussed in greater detail in Section 4.5 – Project Alternatives.	Development Permit for a Material Change of Use for Nature Based Tourism	16 May 2018
Boundary Realignment The approval relates to a boundary realignment between Lot 22 on SP296830 (site) and Lot 16 on N157227 (77 Barnwell Road) to include part of the 77 Barnwell Road property within the site, reflecting current access arrangements.	Development Permit for Reconfiguring a Lot	16 May 2018

Table 6-2 outlines development applications made over the site that are currently under assessment.

Table 6-2: Development Applications

Development Description	Development Approval	Date Made
Non-Urban Residential Subdivision The development application seeks approval to subdivide the site into 179 non-urban residential lots. The development provides an alternative to KUR-World and is discussed in greater detail in Section 4.5 – Project Alternatives.	Development Permit for Reconfiguring a Lot	16 February 2018

6.1.1.3 Future uses

KUR-World will comprise the following key land uses:

- Farm theme park and world class equestrian centre (including 110 bed farm stay accommodation)

- Queenslander lots (21 lots)
- Produce garden
- Lifestyle villas (56 lots)
- KUR-Village (including retail, restaurants, commercial offices and village market)
- Business and Leisure hotel and function centre (270 apartments)
- KUR-World university campus (including 330 bed accommodation, administration and learning and research areas)
- Sporting precinct (for football, tennis, basketball and gym)
- Golf clubhouse and function centre
- 12-hole golf course
- Premium villas (286 lots and two multi-unit lots comprising 60 units)
- Five-star eco-resort (200 rooms/villas)
- Health and wellbeing retreat (including 70 rooms/villas)
- Glamping areas (for 25 tents)
- Environmental areas
- Services/infrastructure (including roads and access points, sewerage treatment plant, water storage and service connections)
- Rainforest education centre and adventure park (including 350 bed student accommodation, adventure activities and zip lines, and helipad)

Further discussion in relation to the activities proposed as part of KUR-World, including the staging of various land uses, is provided in Chapter 4 – Project Description.

6.1.1.4 Land tenure, Titling and Ownership

The existing land tenure and titling arrangements of the site are discussed in greater detail in Section 3.1.1 of Chapter 3.

The site will be retained as freehold land, being reconfigured as required to reflect the development of the site (refer to Chapter 4 of the draft EIS) and provide for separate private ownership of components of the project, as may be appropriate at the time of development. Roads and other transport routes within the site will either be dedicated as public roads or held as private or common property, depending on the type, extent and scale of the specific transport infrastructure and the nature of adjoining and nearby land use. In certain instances, community title arrangements may be used for the ownership of road infrastructure, where this is appropriate having regard to the land uses that the infrastructure services. The proposed tenure arrangements, consisting of primarily freehold land supported by select road reserves, is consistent with the tenure arrangements within the surrounding area and is thus considered compatible.

6.1.1.5 Native title

Hopgood Ganim Lawyers were commissioned to determine the native title status of the project area, whom confirmed via legal advice on the 24 April 2017 (Refer to Appendix 3D) that native title has been extinguished over the lots and roads within the project area.

6.1.2 Land Use Planning

6.1.2.1 State interests identified in the SPP

The State Planning Policy ('the SPP') is the primary state planning instrument in the Queensland planning system, which articulates matters of state planning interest that are required to be considered and reflected in state and local planning decisions.

The SPP has effect throughout Queensland and sits above regional plans and planning schemes in the hierarchy of planning instruments under the PA.

The SPP identifies 17 State interests across five themes. These themes relate to liveable communities and housing, economic growth, environment and heritage, safety and resilience to hazards, and infrastructure. The SPP is also supported by mapping that identifies state interests. Table 6-3 identifies the State interests, including mapping layers that are applicable to the site and KUR-World.

Table 6-3: State Planning Policy

Theme	State Interest	Mapping Layer
Liveable Communities and Housing	Housing supply and diversity	-
	Liveable communities	-
Economic Growth	Agriculture	-
	Tourism	-
Environment and Heritage	Biodiversity (refer to Figure 6-4)	Site: • MSES - Regulated vegetation (essential habitat) • MSES - Wildlife habitat • MSES - Regulated vegetation (category B) • MSES - Regulated vegetation (category R) • MSES - Regulated vegetation (intersecting a watercourse) Off site: • MSES High ecological value waters (watercourse)
	Coastal environment	Off site: • High ecological value water areas
	Cultural heritage	-
	Water Quality (refer to Figure 6-5)	• Water resource catchments
Safety and Resilience to Hazards	Natural Hazards Risk and Resilience (refer to Figure 6-6)	• Bushfire Prone Area - Very High Potential Bushfire Intensity • Bushfire Prone Area - High Potential Bushfire Intensity • Bushfire Prone Area - Medium Potential Bushfire Intensity • Bushfire Prone Area - Potential Impact Buffer
Infrastructure	Energy and Water Supply	-
	Infrastructure Integration	-
	Transport Infrastructure (refer to Figure 6-7)	Off-site: • State controlled road (Kennedy Highway) • Active transport corridor (Myola Road, Kennedy Highway) • Railway corridor
	Strategic Airports and Aviation Facilities (refer to Figure 6-8)	• Aviation Facility - Building restricted area - Area of interest

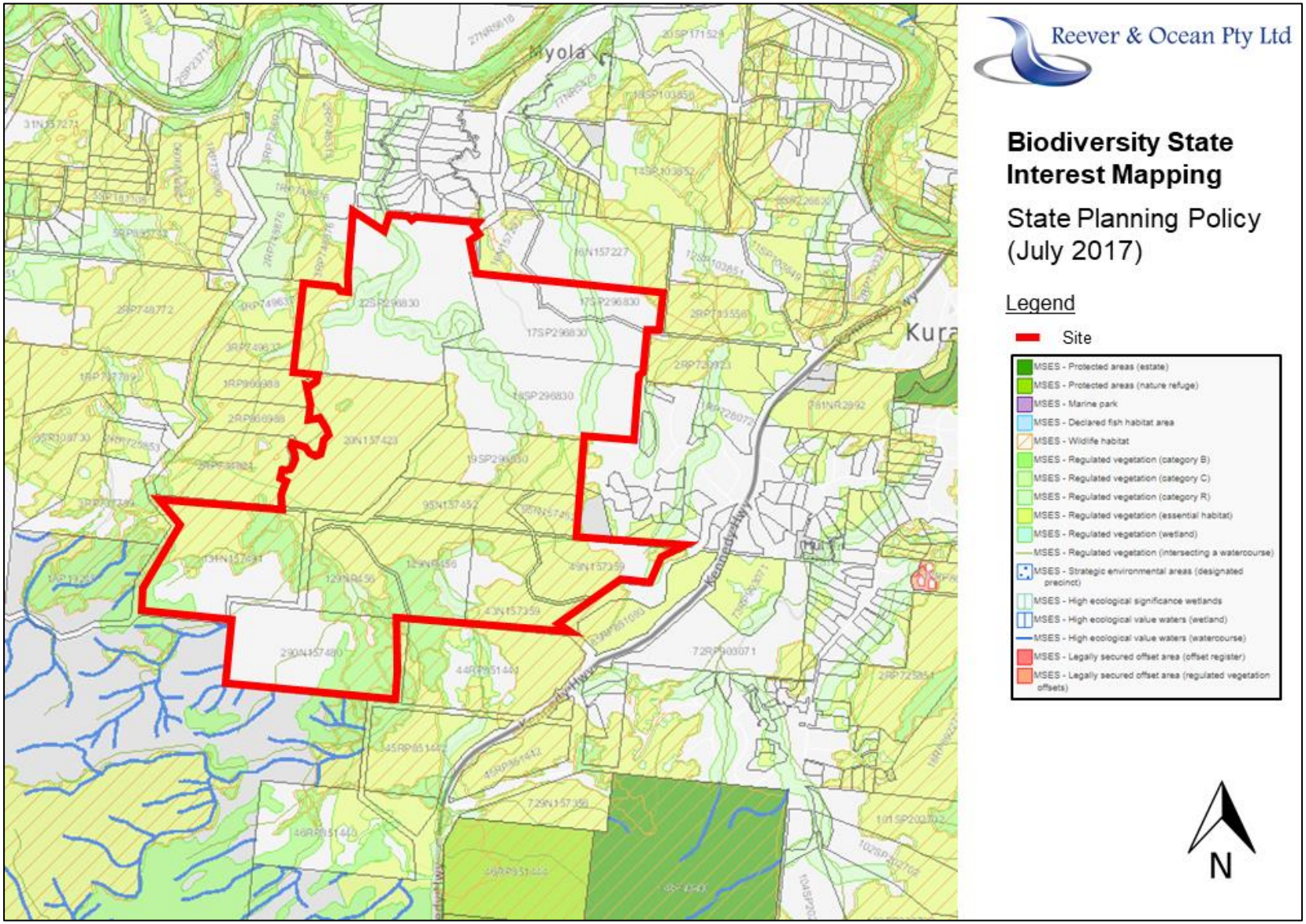

Figure 6-4: SPP Biodiversity Mapping

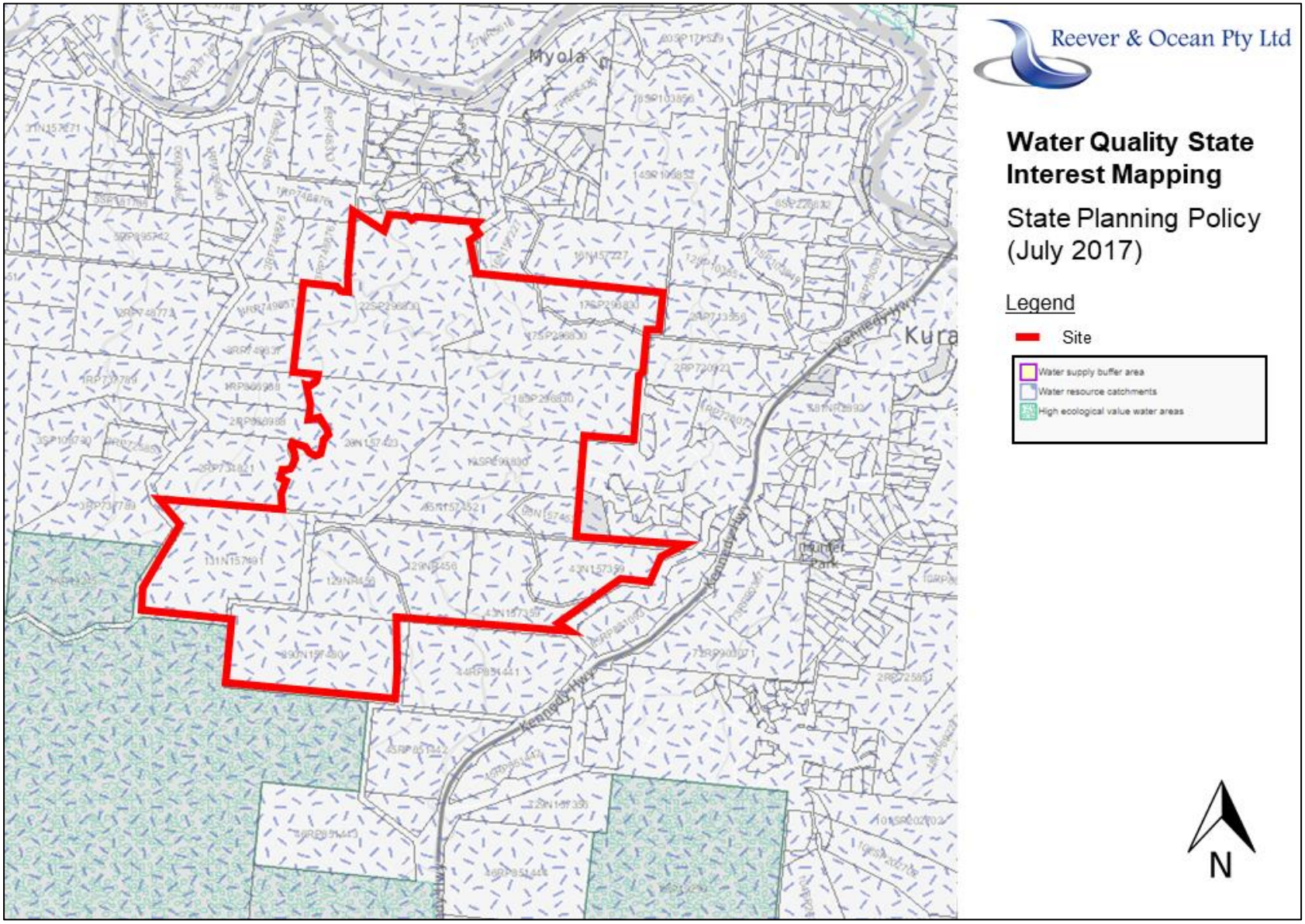

Figure 6-5: SPP Water Quality Mapping

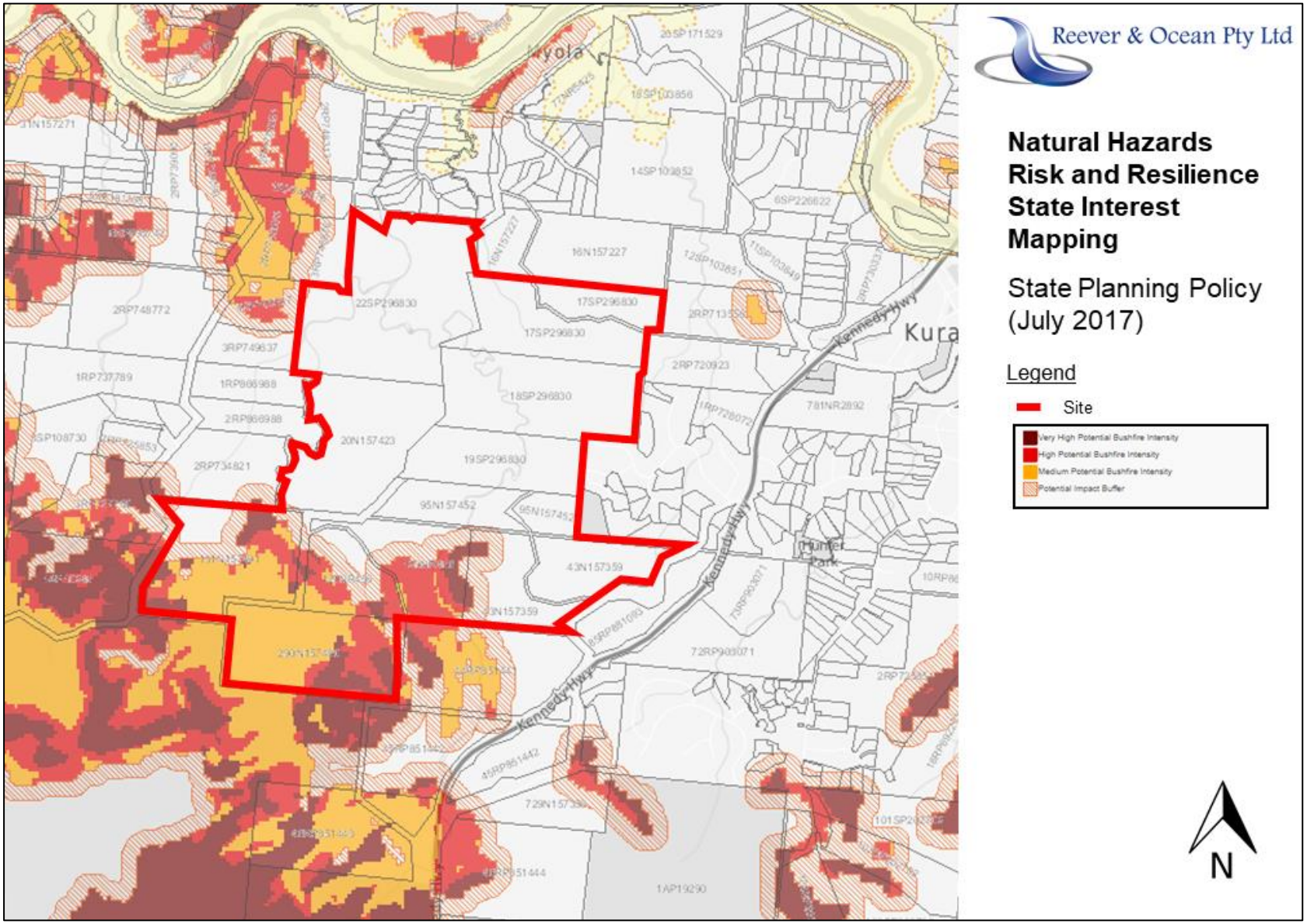

Figure 6-6: SPP Natural Hazards Risk and Resilience Mapping

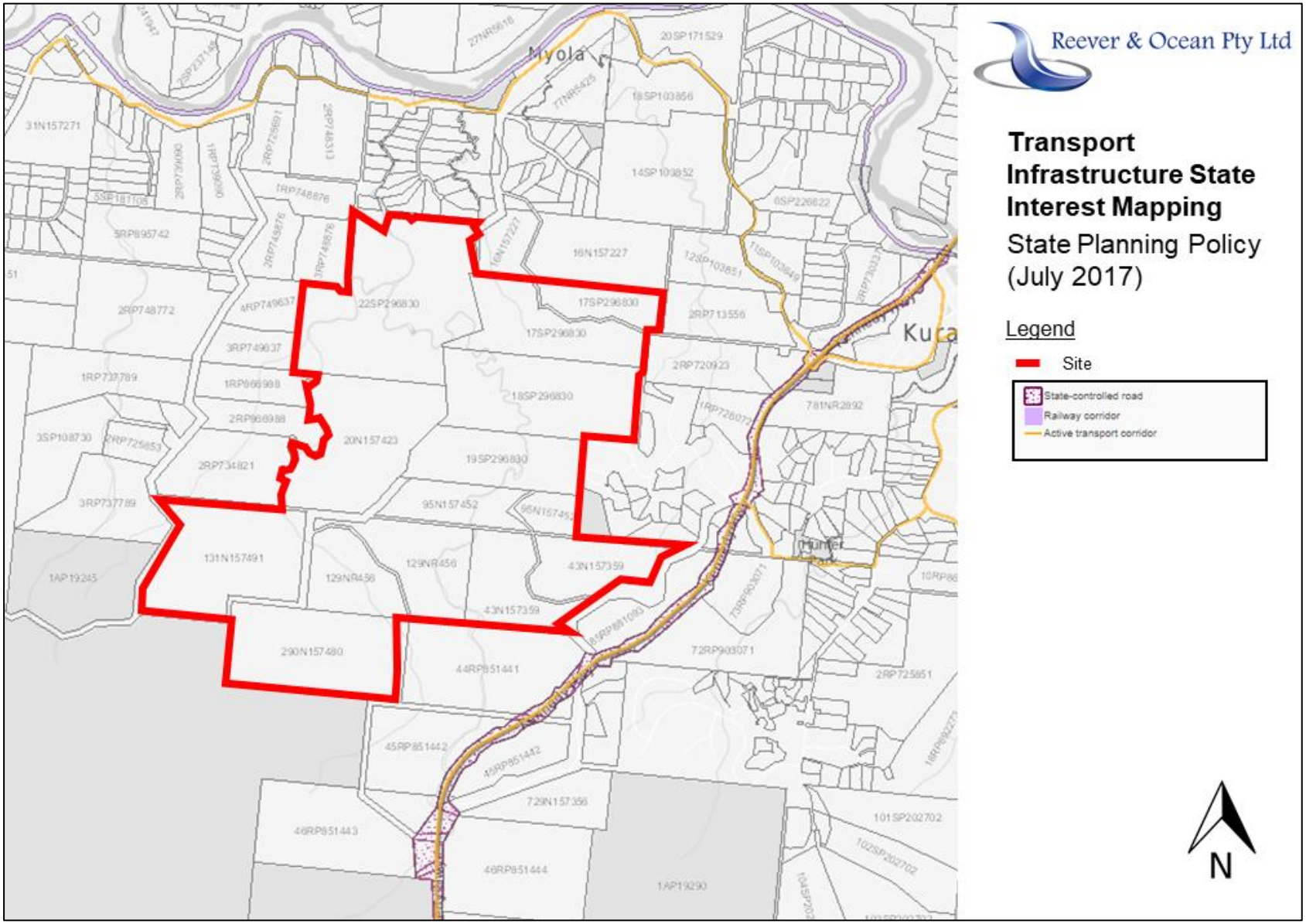

Figure 6-7: SPP Transport Infrastructure Mapping

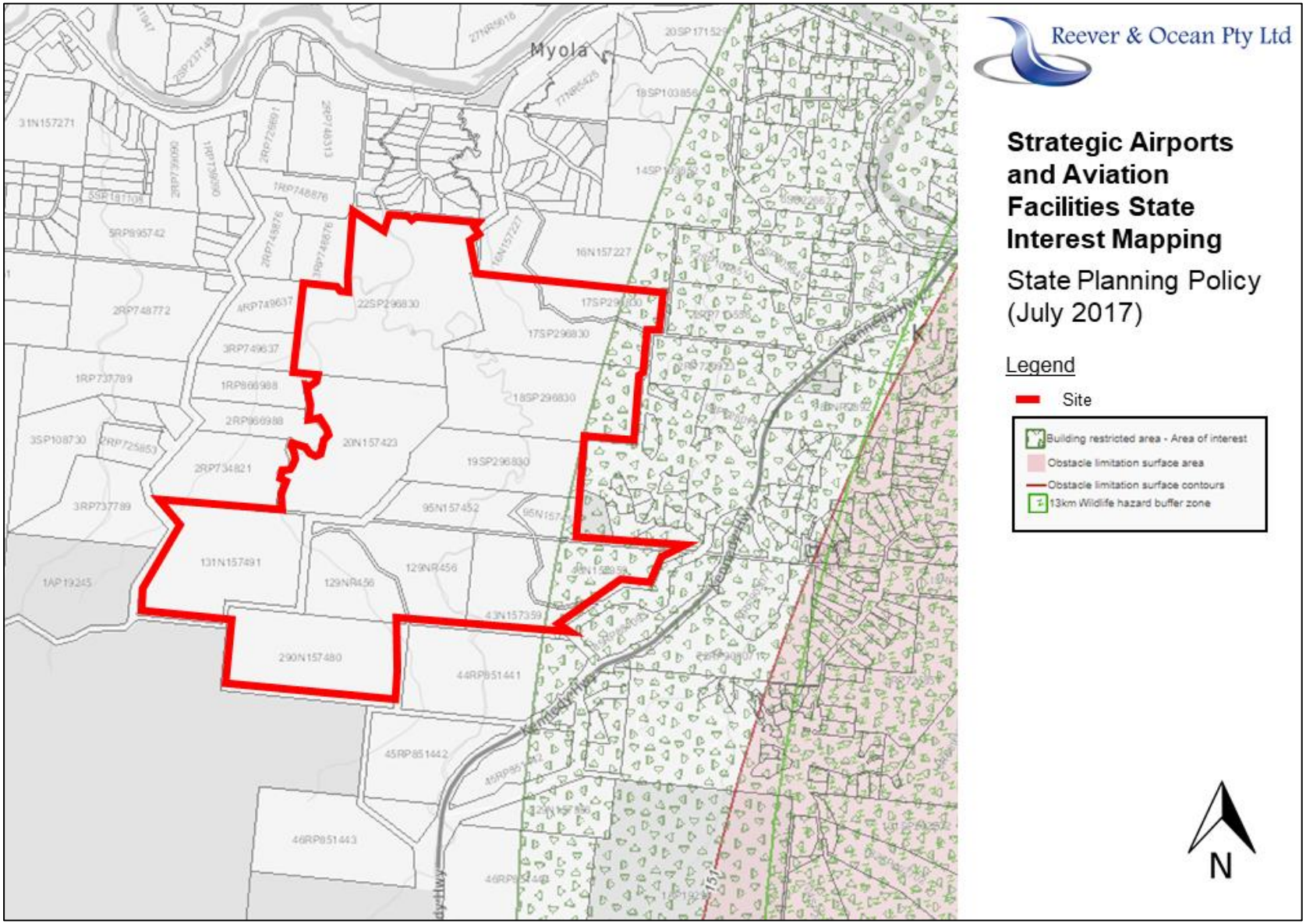

Figure 6-8: SPP Strategic Airports and Aviation Facilities Mapping

KUR-World has been located and designed having regard to the State interests identified in the SPP. Table 6-4 identifies the manner in which KUR-World responds to each state interest and its associated policies. Further consideration of the SPP will be given as part of Mareeba Shire Council's assessment of the Plan of Development (further discussion is provided in Chapter 5).

Table 6-4: State Planning Policy Response

State Interest	KUR-World Response
Housing Supply and Diversity	KUR-World will provide a range of permanent residential and short-term tourist accommodation that will increase the diversity of housing options available in the local area for both permanent residents and tourists/visitors. KUR-World will include a variety of detached and attached housing proximate to a range of commercial and community land uses provided as part of the project (further detail is provided as part of Chapter 4). The mix of land uses supports the provision of day to day services to residents and visitors while also providing various sources of employment to permanent residents, proximate to their place of residence. Residential development will be serviced with all necessary urban infrastructure, as discussed in Chapter 7, and will have access to the major road network, namely through a new road connection to the Kennedy Highway, further details of which are provided in Chapter 13. High quality, responsive housing design is promoted through the provisions of the proposed Plan of Development, provided as **Appendix 2B**.
Liveable Communities	KUR-World comprises a mix of land uses that are proposed to be developed across 16 defined precincts. The arrangement of these precincts and different land uses has regard to the compatibility of intended land uses, as well as an intention to create a tourism focussed community. The development of KUR-World within each of these precincts will be guided by the provisions of the proposed Plan of Development (refer to **Appendix 2B**), which promotes the creation of interesting, attractive and active environments for a range of land uses in a manner that maintains and protects the surrounding natural character of the site.
Agriculture	The site is not identified as forming part of an Important Agricultural Land Area and is not designated as Agricultural Land Classification A or B under the SPP. Further, the site is not mapped as Strategic Cropping Land under the *Regional Planning Interests Act 2014*. Therefore, whilst the site is presently used for agricultural/rural uses, the site is not considered high quality agricultural land from a State perspective. KUR-World will showcase agricultural and rural activities to tourists and visitors at a local (Tablelands) as well as regional (Far North Queensland) scale.
Tourism	KUR-World supports the diversification and expansion of tourism activities at a local, regional and state level. KUR-World is considered to be a game-changing development for the tourism sector, in that it offers an integrated tourist experience not presently available at a local or regional level. The combination of tourist experiences with supporting land uses as part of a high-quality integrated resort, immersed within the natural/rural setting that is being showcased is a type and style of tourism product not presently provided. KUR-World is anticipated to significantly benefit the established tourist economy, as discussed in greater detail in Chapter 4 and Chapter 11, through the addition of another keystone tourist attraction for the region.
Biodiversity	Detailed discussion of environmental considerations associated with the project is provided in Chapter 8 and Chapter 19 of the EIS. KUR-World is proposed to be predominantly located within existing disturbed areas of the site, including those currently used for rural activities such as grazing and cropping. This design approach allows for areas of environmental significance to be maintained and rehabilitated. KUR-World will result in the use of the site being subject to greater environmental management controls when compared with existing rural operations, resulting in improved conditions for the surrounding natural environment. A range of mitigation measures are recommended in Chapter 8, which are intended to mitigate impacts on biodiversity. These include recommendations relating to restoration works, construction management and vegetation clearing approaches, the preparation of management plans for construction and operational phases of the project, detailed design of various on-site features (such as

State Interest	KUR-World Response
	lighting, pathways and roads), on-site animal control, education programs and ongoing monitoring.
Coastal Environment	Whilst the site is not located proximate to the coastal environment, being situated on the Atherton Tablelands near Kuranda, the site is located within the Barron River Catchment, which flows to the coast and into the Great Barrier Reef. Water quality is considered in Chapter 9 of the EIS. An assessment of KUR-World's relationship with the Great Barrier Reef is provided in Chapter 19.
Cultural Heritage	Chapter 17 documents cultural heritage matters in relation to both Indigenous and non-Indigenous cultural heritage. In relation to Indigenous cultural heritage, a Cultural Heritage Management Plan has been prepared in association with local Aboriginal people, to provide measures to support cultural heritage protection during the construction and operational phases of the project. In relation to non-Indigenous cultural heritage, a survey of the site was undertaken to determine features that may be of cultural heritage significance. Features such as the existing homestead, the grave of James Hamilton, an historic weir and the "mango grove" were identified as having a level of cultural significance and included recommendations for the management of any cultural heritage interests. It is important to note that none of these existing features are identified on the Queensland Heritage Register or Council's Local Heritage Register.
Water Quality	A detailed assessment of water quality is provided in Chapter 9. In summary, the assessment identifies that water quality objectives are not currently being achieved for affected waterways, with waterways being categorised as moderately disturbed. KUR-World will seek to progressively improve the water quality of waterways in seeking to achieve the relevant water quality objectives. Water Sensitive Urban Design (WSUD) principles are proposed to be implemented as part of the project. A localised waste water treatment system, consisting of an on-site waste water treatment plant will ensure the treatment and management of wastewater prior to discharge. Construction and operational phases of the project will be undertaken in accordance with an Erosion and Sediment Control Plan while a number of other on-site management controls will be implemented to ensure stormwater quality is managed. Further detail is provided in Chapter 9.
Natural Hazards Risk and Resilience	Chapter 18 provides a detailed assessment of the natural hazards and risks that are potentially applicable to KUR-World including (but not limited to) those associated with earthquakes, cyclones, severe storms and rainfall events, flooding, bushfire, landslide, heatwaves, drought, climate change, animal and human diseases, structural fires, disruptions to infrastructure services, hazardous chemicals, accidents and missing persons. The assessment undertaken identifies each risk, provides an analysis of the nature and level of the risk, evaluates the acceptability or tolerability of the risk, considers measures to modify the risk to mitigates its impacts, identifies measures for the ongoing monitoring of risks and provides mechanisms for communication and consultation. With respect to the natural hazards and risks considered by the SPP, it is noted that: • The substantive components of the development are located outside identified bushfire hazard areas; • The site is not identified as being subject to flooding; • The site is not proximate to the coast and is therefore not subject to coastal hazards; and • Appropriate management and design controls have been recommended to avoid risks associated with steep land such as landslide.

State Interest	KUR-World Response
	The assessment identifies the need for KUR-World to implement an Integrated Emergency Management Framework, a core component of which is an Emergency Management Plan. The Emergency Management Plan will be supported by a number of sub-plans including a Media and Communications Sub-Plan, a Shelter & Evacuation Sub-Plan, a Bushfire Mitigation Sub-Plan, a Hazardous Substances Sub-Plan, a Health Sub-Plan, an Environmental Management Plan and a Farm Biosecurity Management Plan.
Energy and Water Supply	The proposed methods for energy and water supply are articulated in Chapter 8. Water will be supplied by way of an expansion to Council's existing water reticulation network, through increased reservoir capacity and new service connections to the site. New electricity connections will be provided from Ergon Energy's existing network, with upgrades undertaken where required to ensure sufficient capacity. Alternative energy sources, such as solar power, will also be utilised. Analysis and planning of infrastructure connections and energy/water demand has been undertaken to ensure that the existing service networks, combined with identified upgrades, have sufficient capacity to service KUR-World without detrimentally impacting on the service quality of existing connections.
Infrastructure Integration	Chapter 7 discusses the infrastructure requirements for KUR-World and integration with existing water, wastewater, energy and telecommunications networks. KUR-World seeks to utilise a combination of existing, expanded and new infrastructure networks to deliver an urban level of services to the proposed land uses. The delivery of KUR-World as an integrated resort, comprising a mix of land uses, allows infrastructure delivery to be combined for all proposed land uses, delivering a level of efficiency in infrastructure works proposed.
Transport Infrastructure	Transport infrastructure is specifically discussed in Chapter 13 of the EIS. The assessment undertaken considers the potential impacts of the development on nearby intersections, the local road network, State controlled roads (Kennedy Highway), road safety, road pavement, Kuranda Scenic Rail, Kuranda Skyrail, pedestrians, public transport and air transport. The assessment recommends a range of upgrades, safety treatments and mitigation measures to promote the safe and efficient operation of the transport network with the proposed development.
Strategic Airports and Aviation Facilities	The project will not negatively impact identified airports and aviation infrastructure. KUR-World comprises a low scale of development that is not anticipated to affect aviation operations or interfere with operational airspace. The project is also consistent with the Airport Environs Overlay of the Mareeba Shire Planning Scheme 2016, which reflects this state interest, as discussed in Table 6-6.

6.1.2.2 Far North Queensland Regional Plan 2009 - 2031

The site is located within the Far North Queensland region, to which the Far North Queensland Regional Plan 2009-2031 ('the Regional Plan') applies. The Regional Plan is intended to guide and manage the development of the region, addressing key regional, environmental, social, economic and urban objectives.

The Regional Plan provides a regional land use pattern to guide development within the region, supported by more detailed regional policies. The regional land use pattern comprises three land use categories:

- Urban Footprint: This area is intended to provide land to support the region's urban development needs to 2031.
- Rural Living Area: This area comprises land currently designated for rural residential development in local government planning schemes where further rural residential development is permitted under the regional plan.
- Regional Landscape and Rural Production Area: This area includes land that has regional landscape, rural production or other non-urban values and is intended to protect these areas from encroachment by inappropriate development, particularly urban or rural residential development.

The site is included in the Regional Landscape and Rural Production Area (RLRPA) of the Regional Plan, as shown in Figure 6-9. The Regional Plan identifies that the RLRPA is intended to identify land with one or more of the following values:

- good quality agricultural land and other productive rural areas
- natural resources such as mineral and extractive resources and native and plantation forests
- water catchment and groundwater areas
- areas of ecological significance
- endangered and of concern regional ecosystems
- Wet Tropics World Heritage Area and other protected area tenures
- essential wildlife habitat of the southern cassowary and mahogany glider
- wetlands
- beaches, islands and other coastal areas
- outdoor recreation and regional open space areas
- inter-urban breaks

The site's designation in the RLRPA, in the context of the categories discussed above, is considered to reflect the site's:

- historic use for non-urban purposes including grazing and cropping;
- areas of ecological significance, including:
    - Water catchment and groundwater area (Barron River Catchment);
    - Endangered and of concern regional ecosystems (Category A or B area containing of concern regional ecosystems);
    - Essential wildlife habitat of the southern cassowary and mahogany glider; and
- natural character.

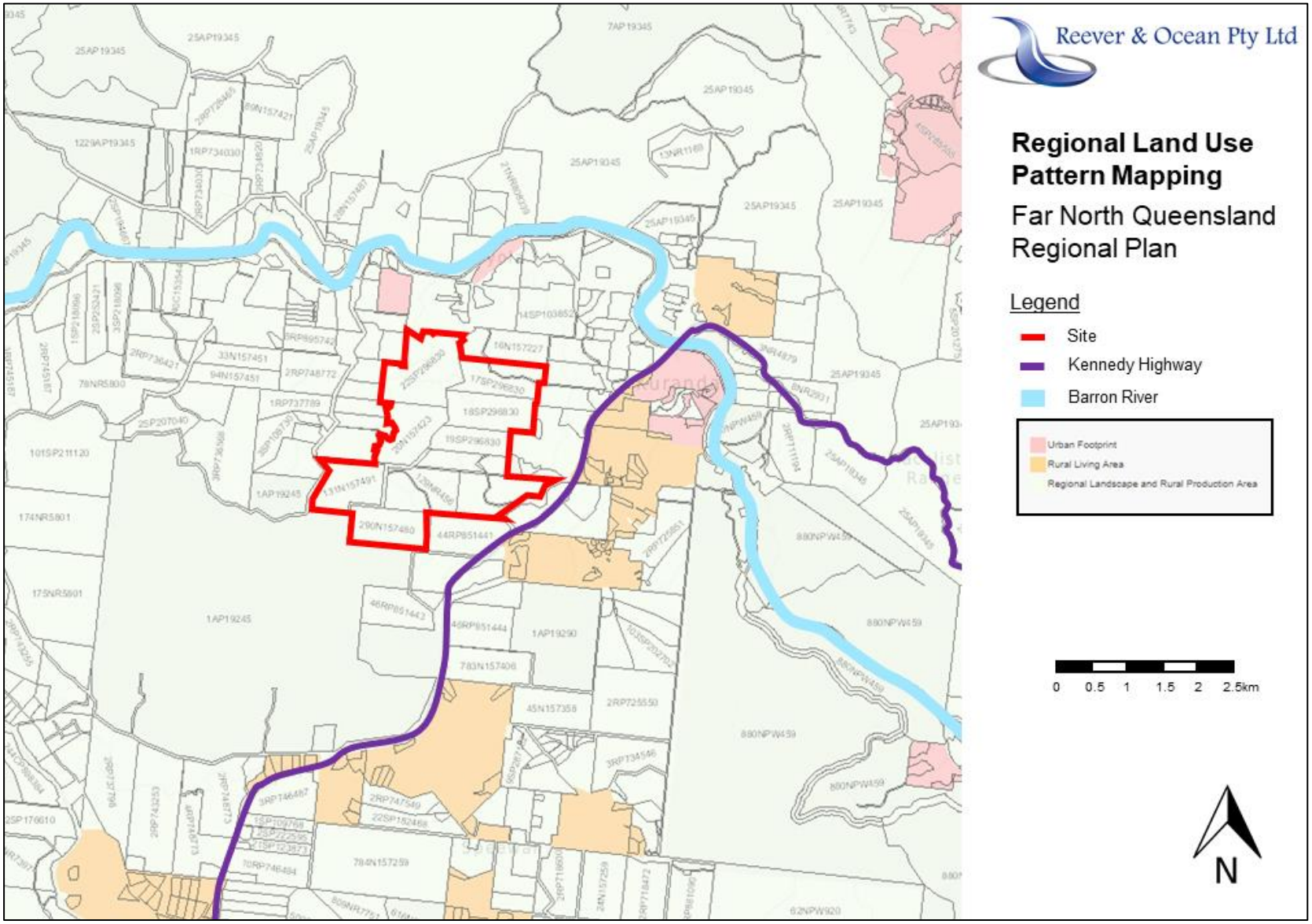

Figure 6-9: Far North Queensland Regional Plan Regional Land Use Pattern Mapping

The KUR-World development concept is intrinsically linked to the site's ecological significance and rural character. KUR-World involves the establishment of an integrated eco-resort, the premise of which is to promote the protection and appreciation of the unique environmental features of the site and its environs. KUR-World will also deliver tourism experiences focussing on the rural nature of the site, through the Farm Theme Park and Equestrian Centre, to showcase the history of rural operations on the site and the nature of rural activities on the Tablelands and more broadly through the region and State. To improve the visitor experience, the primary tourist activities are proposed to be supported by a range of uses including a discrete retail centre, a sporting complex, golf course, university campus and various accommodation facilities. The inclusion of these supporting land uses provides for the delivery of an integrated tourist experience, where visitors have easy access to a range of high-quality services. KUR-World is considered to represent an evolution in the tourist experience of the Tablelands.

The inclusion of outdoor-focussed activities such as the golf course, commercial precinct and sporting complex is intended to provide visitors with a platform to experience the surrounding natural environment. The proposed university campus is intended to support research and educational activities directly associated with the surrounding natural environment. These activities will also be supported by the rainforest education centre.

KUR-World will comprise a low-rise built form, contained within a development footprint limited to existing disturbed areas; allowing for the retention, protection, management and rehabilitation of significant natural areas, including substantial areas of remnant vegetation in the south and natural areas within the vicinity of waterways throughout the site. KUR-World will also support and enhance the protection of habitat of *Litoria myola* and *Archontophoenix myolensis* through greater protection and management of natural areas. The project's low-rise built form, sensitive scale and site responsive layout is reinforced in the provisions of the Plan of Development (refer to **Appendix 2B**), which will regulate the development of the various aspects and components of KUR-World.

The primary driver of the location of KUR-World is the ability to deliver immersive experience of environmental features and rural operations to visitors to the region. To deliver the intended type of experience, it is necessary to locate KUR-World in the RLRPA having regard to:

- the location of key environmental areas which are intended to be showcased, being located outside the Urban Footprint (as is intended by the Regional Plan);
- the location of rural/agricultural land uses/operations which are intended to be showcased, being located outside the Urban Footprint (as is intended by the Regional Plan);
- the development over a significant land area (outside significant environmental areas);
- the unavailability of a sufficient area of land within the Urban Footprint; and
- the intent to avoid altering the established character of the Kuranda township which, distinct to KUR-World, has a 'Village in the Rainforest' character that is sought to be maintained.

The regional land use pattern is supported by sub-regional narratives for each local government within the region. At the time of the drafting of the Regional Plan, the site was located within the Tablelands Regional Council local government area. The sub-regional narrative for the Tablelands, relevantly describes that Kuranda will continue to support a specialist tourism focus with a low scale development intended to retain the village character and maintain significant areas of ecological significance. The sub-regional narrative also specifically discusses the Myola area, noting that it is not intended for urban development within the life of the Regional Plan. Notwithstanding, KUR-World is considered to be compatible with the sub-regional narrative, to the extent it is relevant, as it:

- supports the ongoing development of tourism in the Kuranda area;

- maintains the village character of the Kuranda township, by locating new significant tourism development outside the established village centre, avoiding the intensification of activities within the village area which would likely alter its existing and desirable character;
- protects and promotes areas of environmental significance through the location of development within existing disturbed areas, the use of extensive on-site management controls, greater regulation of on-site activities (when compared with the existing rural environment), tourist experiences that provide environmental appreciation and the rehabilitation of select areas. Further discussion of environmental matters is provided in Chapters 8 and 19; and
- does not prejudice the preferred urban development pattern for the Tablelands, being located outside the identified growth area, meaning land identified for urban development continues to be available for this purpose.

It is acknowledged that the Regional Plan discusses the limited capacity of the Kuranda Range Road as being a constraint on the future development of the northern Tablelands. Further discussion in relation to KUR-World's relationship with the surrounding road network, including the Kuranda Range Road, is provided in Chapter 13 – Transport; however, in broad terms KUR-World provides alternative traffic management solutions to that originally considered by the State government.

The Regional Plan comprises a suite of regional policies to support the implementation of the regional land use pattern. These regional policies provide desired regional outcomes, supported by objectives, land use policies and aligned strategies, across eight primary themes. Table 6-5 summarises the relationship between KUR-World and these regional policies.

Table 6-5: Regional Policies

Theme	KUR-World Response
Natural Environment	KUR-World is considered to be generally consistent with the regional policies of the Natural Environment theme as: • The project has been predominantly restricted to existing cleared, or otherwise disturbed areas of the site. • The project will retain and protect areas of remnant vegetation. • Buffers have been provided to areas of significance, such as waterway corridors. • The proposed development will result in the imposition of various management controls on future construction and operations on the site. • Development is not proposed within the known or likely habitat of the *Litoria myola*. • A range of ecological impact mitigation measures have been recommended as part of the Flora and Fauna Assessment discussed in Chapter 8. • The proposed development will result in the enhancement of areas of the existing natural environment through rehabilitation and management works. • The proposed development will promote visitor awareness and appreciation of the importance of the local environment through informal tourist activities. • The site is well separated from the coastal environment. • The quality of water within, and discharged from, the site will result in an improvement of the water quality of local waterways.
Regional Landscape and Natural Resources	KUR-World is considered to be generally consistent with the regional policies of the Regional Landscape and Natural Resources theme as: • The proposed development has been located in existing disturbed areas, allowing existing natural and scenic areas of the site to be retained, managed and rehabilitated. • The proposed development promotes the retention and appreciation of the natural character of the site and the region through its tourist experiences.

Theme	KUR-World Response
	• The proposed development provides a low scale and character, as promoted through the provisions of the Plan of Development (refer to **Appendix 2B**), allowing for the natural character of the site to be retained and reinforced. • The proposed development will be constructed and operated in accordance with the findings of cultural heritage investigations for Indigenous and non-Indigenous cultural heritage, discussed in Chapter 17. The proposed tourist experiences will promote the greater appreciation of the cultural heritage features of the site. • The proposed development is considered to have limited visual impacts which can be further reduced through mitigation measures, as discussed in Section 6.4. • The proposed development is discretely removed from major public viewpoints, such as the Kennedy Highway, and therefore maintains the natural character of the local area. • The proposed development promotes local and regional agricultural industries through its tourist experiences, providing a showcase for this economic sector. • The proposed development is not located on Good Quality Agricultural Land. • The proposed development does not impact on any identified extractive or mineral resource areas.
Strong Communities	KUR-World is considered to be generally consistent with the regional policies of the Strong Communities theme as: • The proposed development will provide additional and enhanced facilities that will be accessible to the local community (such as the golf course, commercial centre, university, parkland, sporting facilities and meeting places). • The proposed development will provide improved access to the natural environment of the site for local residents, noting at present the entire site is privately owned, with no public access available. • The proposed development will support increased local economic activity, within the site, the local area and the broader region, supporting both direct and indirect employment. • The proposed development will be serviced by all required infrastructure including water, waste water, stormwater, transport, telecommunications and power, as discussed in Chapter 7 of the draft EIS. • Crime prevention through environmental design principles will be incorporated into the development, as demonstrated through the provisions of the Plan of Development (refer to **Appendix 2B**). • The proposed development provides a range of facilities that promote resident and visitor exercise. • The proposed development, providing a mix of land uses, will promote active transport usage for local movements. • The provisions of the Plan of Development (refer to **Appendix 2B**) support the development of a quality urban environment. • The proposed development will be constructed and operated in a manner that is respectful of cultural heritage, as discussed in Chapter 17. • The proposed development will provide direct and indirect employment opportunities (as discussed in **Appendix 8B**), particularly for the local community, providing an ability to reduce unemployment, which is 20% greater in Kuranda when compared to the Queensland average (refer to **Appendix 8A**).
Urban Development	KUR-World is considered to be generally consistent with the regional policies of the Urban Development theme as: • The proposed development is capable of being serviced by necessary infrastructure, as discussed in Chapter 7. • The proposed development supports a range of housing types. • The proposed development will not impact the ongoing operation of existing activity centres such as Kuranda and Mareeba.

Theme	KUR-World Response
	• The proposed development is a specialised land use that cannot be located within an existing or future activity centre. • The proposed development will be constructed generally in accordance with the master plan, implemented through the Plan of Development (refer to **Appendix 2B**). • The proposed development is intended to be designed and constructed in a manner that is responsive to the surrounding natural environment, including its tropical climate, as reinforced in the provisions of the Plan of Development (refer to **Appendix 2B**). • The proposed development will incorporate water sensitive urban design principles. • The proposed development is appropriately located in consideration of natural hazards, with appropriate management controls proposed, as discussed in Chapter 18.
Economic Development	KUR-World is considered to be generally consistent with the regional policies of the Economic Development theme as: • The proposed development will support employment during construction and operational phases of the project. • The proposed development is a world class eco-resort that will inject new energy into the tourist market and guide tourist visitation. • The proposed development will expand the tourist offering within the region, by providing tourist experiences that are not currently available in Far North Queensland. • The proposed development will maintain the village character of Kuranda, which is a key part of its attraction to tourists. • The proposed development will improve tourist access, and appreciation of, the natural environment of Far North Queensland, which is a 'hero' experience[1] for tourists. • The proposed development will promote local and regional agricultural industries through tourist experiences, fostering the development of increased economic activity and new economic partnerships within the regional economy. • The proposed development supports the provision of local employment opportunities proximate to a local residential catchment, both on and off site. • The proposed development seeks to promote the efficient use of existing tourist infrastructure in the local area and the broader region. • The proposed development includes a university inclusive of research facilities.
Infrastructure	KUR-World is considered to be generally consistent with the regional policies of the Infrastructure theme as: • The proposed development will be provided with an urban level of infrastructure with respect to water, wastewater, stormwater, power, telecommunications and transport networks, as discussed in Chapter 7. • The proposed development will facilitate upgrades to existing infrastructure, where required, to ensure the efficient delivery of services to the site and the existing supply network, as discussed in Chapter 8. • The proposed development will not impact on the quality of existing services provided to the local and regional infrastructure catchments. • The proposed development involves the location and design of infrastructure in a manner that is responsive to the environmental qualities and ecological significance of the site.

[1] A hero experience is defined by Tourism and Events Queensland as the 'essence' of a destination and are those:
- world-class iconic experiences that provide a destination with a real competitive advantage over other destinations
- experiences that focus on what is truly unique or memorable or engaging about a destination
- experiences which meet the needs of our target markets

Theme	KUR-World Response
	• The proposed development will utilise a combination of the existing electricity supply network and on-site solar power generation system to service the electricity demand of the project. • The proposed development will be constructed and operated in accordance with the waste management strategies discussed in Chapter 15.
Water Management	KUR-World is considered to be generally consistent with the regional policies of the Water Management theme as: • The proposed development will incorporate water sensitive urban design principles to promote improved water quality. • The proposed development will include a range of water quality treatment measures to improve offsite water quality, as discussed in Chapter 9. • The proposed development will not negatively impact on the water quality of the Great Barrier Reef. • The proposed development will not impact on any existing major water supply infrastructure. • The proposed development will implement a best practice, integrated approach to total water cycle management, as discussed in Chapter 10. • The proposed development has been separated from existing on-site waterways, other than where crossings are necessary.
Transport	Transport infrastructure is specifically discussed in Chapter 13 of the EIS. The assessment undertaken considers the potential impacts of the development on nearby intersections, the local road network, State controlled roads (Kennedy Highway), road safety, road pavement, Kuranda Scenic Rail, Kuranda Skyrail, pedestrians, public transport and air transport. The assessment recommends a range of upgrades, safety treatments and mitigation measures to promote the safe and efficient operation of the transport network with the proposed development.

The development, on balance, represents an alternative vision to the Regional Plan in respect to land use category. However, KUR-World is first and foremost a tourism development that exemplifies the best that the region offers by way of natural and rural experiences. The development will contribute positively to the economic and social vibrancy of the community whilst also supporting the protection of the natural environment. The development is considered to meet the objectives of the Regional Plan in a way that could never have been foreshadowed by a Regional Plan, in that the drafting of a Regional Plan is not able to contemplate game-changing development such as KUR-World.

6.1.2.3 Interaction of project with regional council planning scheme

The site is located within Mareeba Shire, to which the *Mareeba Shire Council Planning Scheme 2016* ('the planning scheme') is applicable. It is important to note that the planning scheme will be considered in detail by Mareeba Shire Council in its assessment of the Draft Plan of Development (further detail is provided in Chapter 5 and **Appendix 2B**). The decision rules of the *Planning Act 2016* provide that, in deciding a development application, Council may approve or refuse the application. Whilst such a decision must be based on the assessment of the proposed development against the applicable town planning framework, there is no limitation on a decision conflicting, or being alternative to, part of the applicable town planning framework. It is considered that KUR-World has sufficient planning merit to justify a decision of approval, despite any non-compliance with the applicable town planning framework.

The planning scheme includes the site wholly within the Rural Zone, as shown in Figure 6-10. The Rural Zone is intended to support rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping and other primary production activities whilst also providing opportunities for the location of appropriate non-rural uses that are compatible with land use (such as low-impact tourism and recreation activities), environmental and character considerations. The Rural Zone is also intended to support the protection and management of significant natural resources and processes to maintain capacity for primary production.

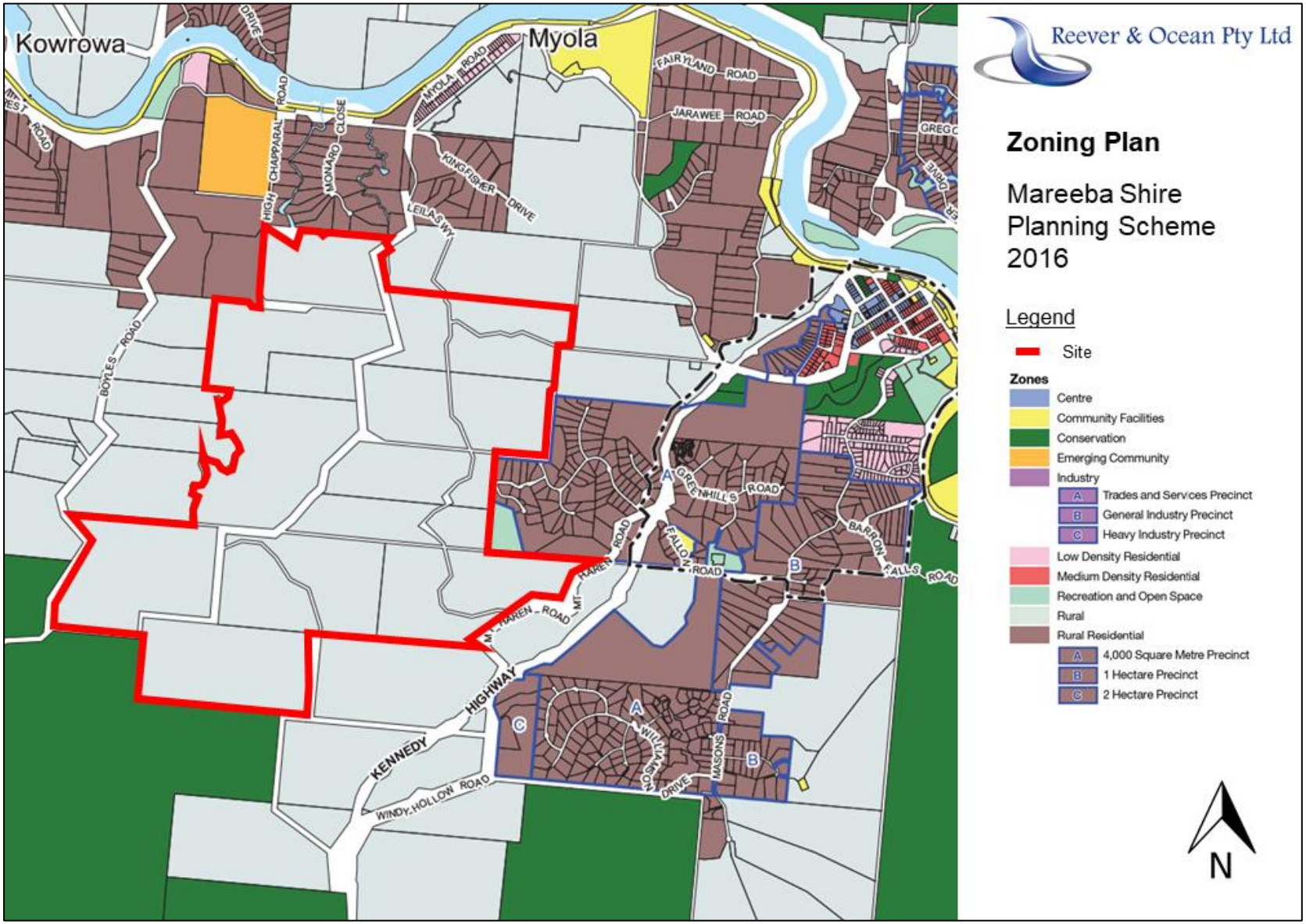

Figure 6-10: Zoning Plan

It is acknowledged that KUR-World comprises primarily non-rural uses. However, the location of KUR-World in the Rural Zone is necessitated by the nature of the tourist experiences proposed. KUR-World seeks to showcase the rural/agricultural enterprise and unique natural environment of the Tablelands. To achieve authentic tourist activities, where visitors can experience first-hand both rural life and environmental features a development such as KUR-World can only be located in the Rural Zone.

The location of KUR-World improves the accessibility of authentic experiences to tourists, by allowing visitors to experience the natural/rural environment in a high level of comfort.

The site is affected by a number of planning scheme overlays, which identify specific local, regional and state level constraints and areas of interest. Table 6-6 identifies the overlays applicable to the site, the site's designation in respect to each overlay and a summary of the relationship of KUR-World to the overlay.

Table 6-6: Planning Scheme Overlays

Overlay	Site Designation	KUR-World Response
Airport Environs Overlay (refer to Figure 6-11)	Area of Interest (15,000 metre buffer) – Redden Creek Radar (PSR)	The site's designation within the Airport Environs Overlay relates to a buffer area associated with the Redden Creek Radar facility. KUR-World will comprise a low scale of development that is not anticipated to interfere with the operations of any airports or other aviation facilities.
Bushfire Hazard Overlay (refer to Figure 6-12)	• Very High Potential Bushfire Intensity • High Potential Bushfire Intensity • Medium Potential Bushfire Intensity • Potential Impact Buffer (100 metres)	The extent to which the KUR-World site is located in the Bushfire Hazard Overlay is primarily limited to the south-western corner of the site, which is wholly located within the proposed Environmental Area precinct. The proposed development is considered to be appropriately separated from areas of bushfire risk, noting that the primary improvements of KUR-World are located in the north of the site, which is well separated from the area of bushfire risk. To the extent that the proposed activities are proximate to the areas of bushfire risk, namely the Rainforest Education Centre and Adventure Park, appropriate mitigation and risk management measures can be implemented to maintain safety. Further discussion is provided in Chapter 18.
Environmental Significance Overlay (refer to Figure 6-13 and Figure 6-14)	• Wildlife Habitat • Regulated Vegetation • Waterway • Waterway 100 metre buffer • Ecological Corridor • Habitat Linkage	The Environmental Significance Overlay identifies that the site supports various areas of environmental significance and importance. The technical environmental assessments documented in Chapter 8 and Chapter 19 provide greater detail in relation to the mitigation of environmental impacts.
Hill and Slope Overlay (refer to Figure 6-15)	Hill and Slope Area	The Hill and Slope Overlay identifies land with a slope that has the potential to be unstable. KUR-World has been designed to avoid areas of sloping land. Appropriate construction methods will be implemented to ensure ground stability is maintained.

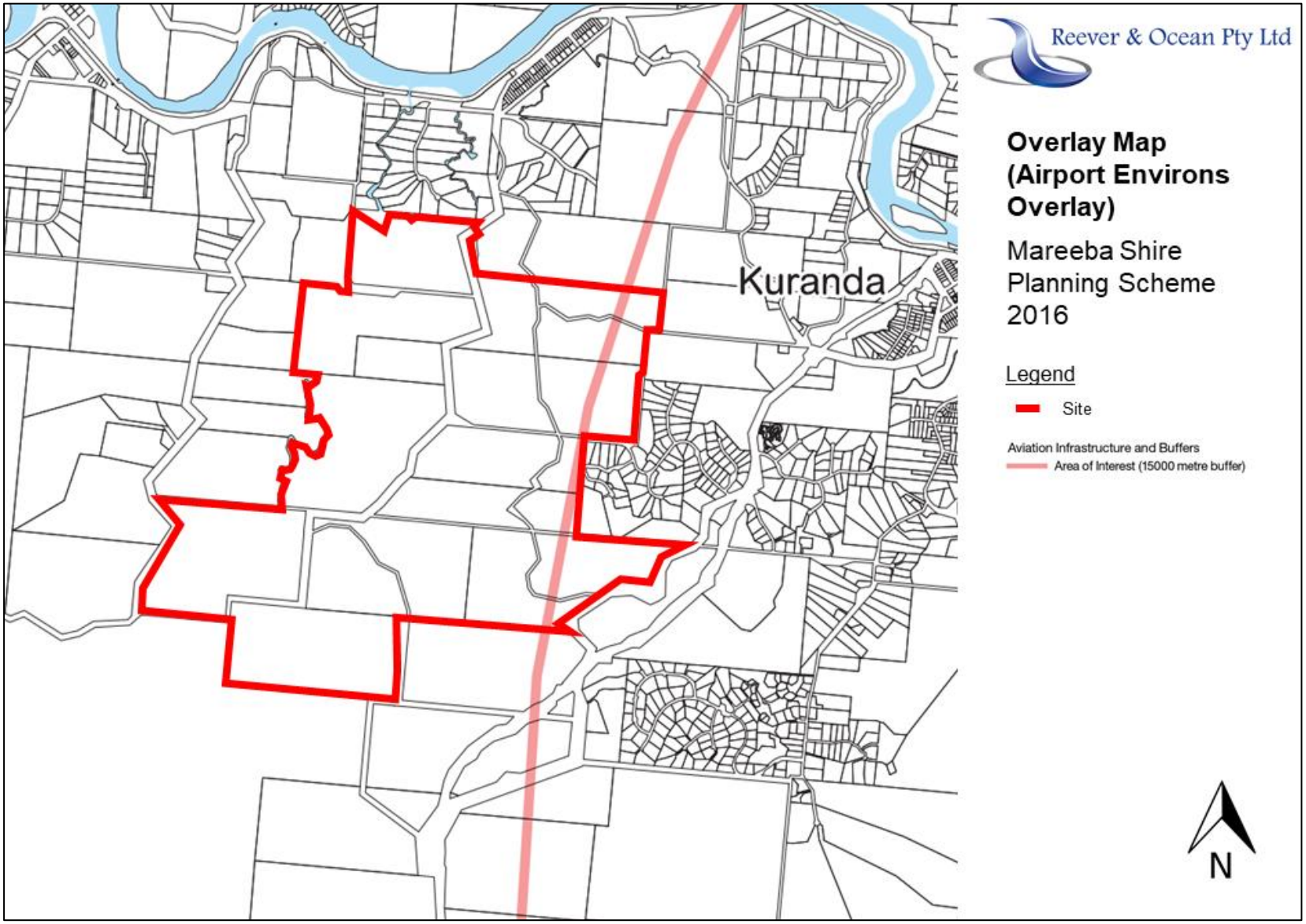

Figure 6-11: Airport Environs Overlay (Aviation Infrastructure)

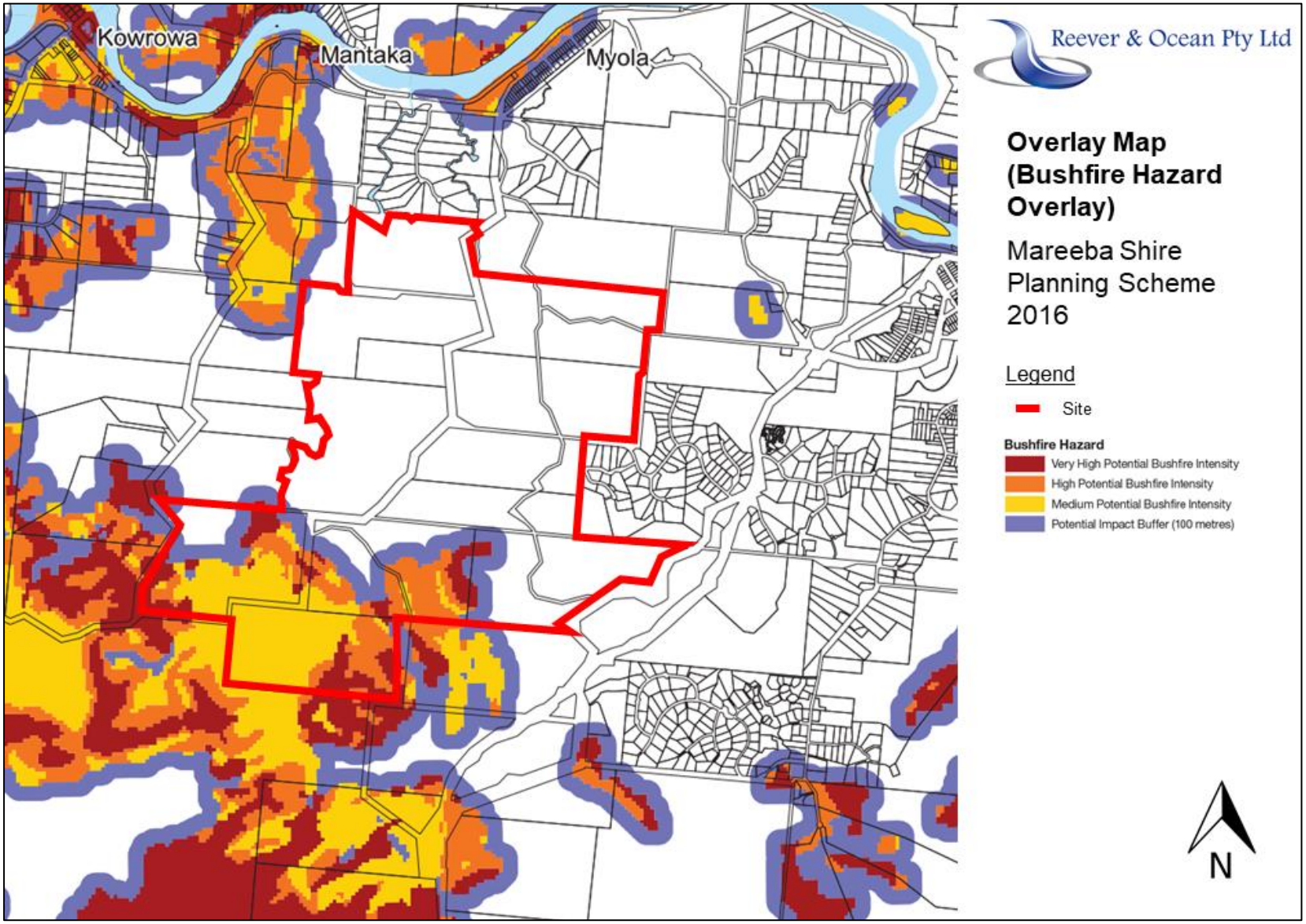

Figure 6-12: Bushfire Hazard Overlay

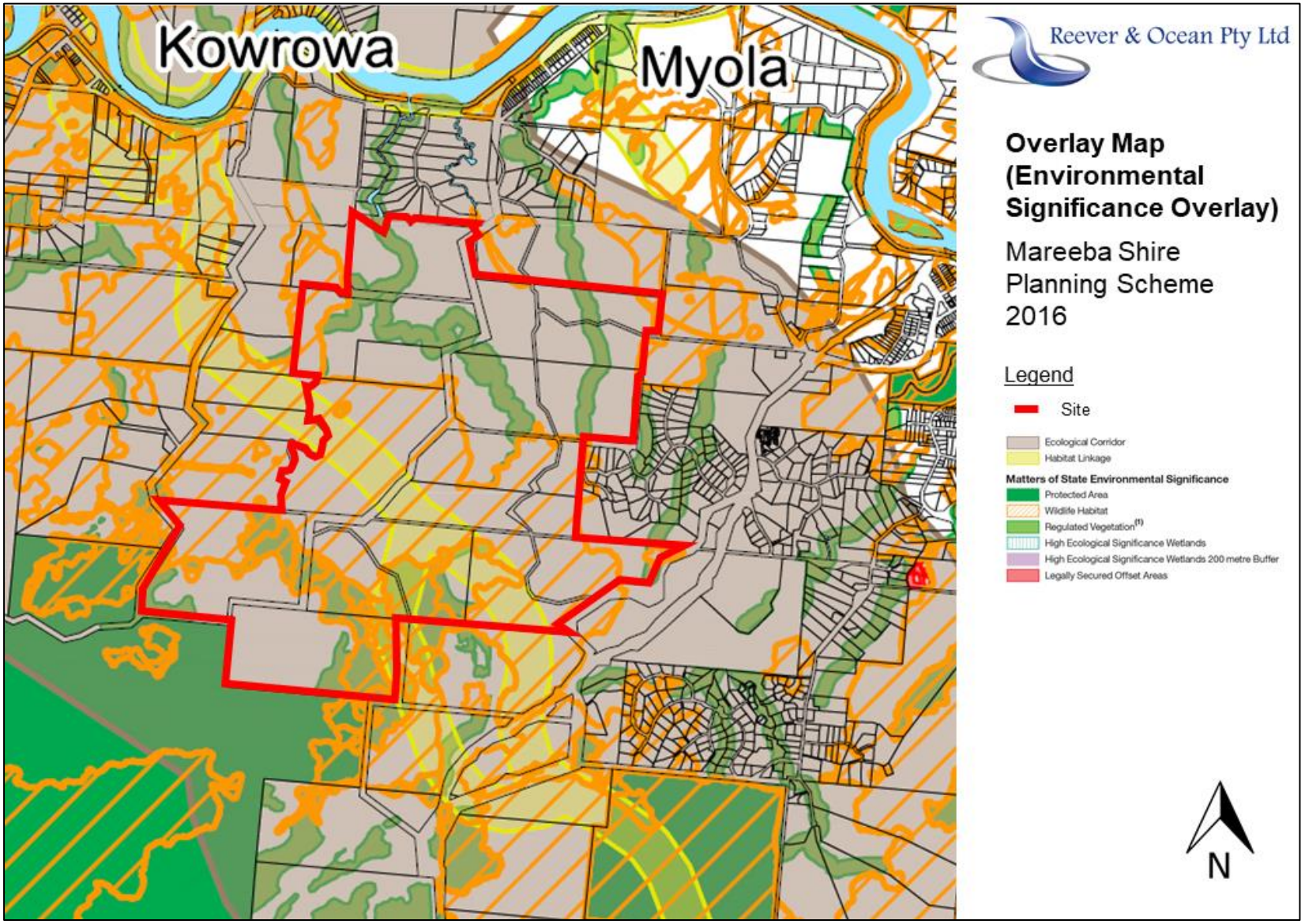

Figure 6-13: Environmental Significance Overlay

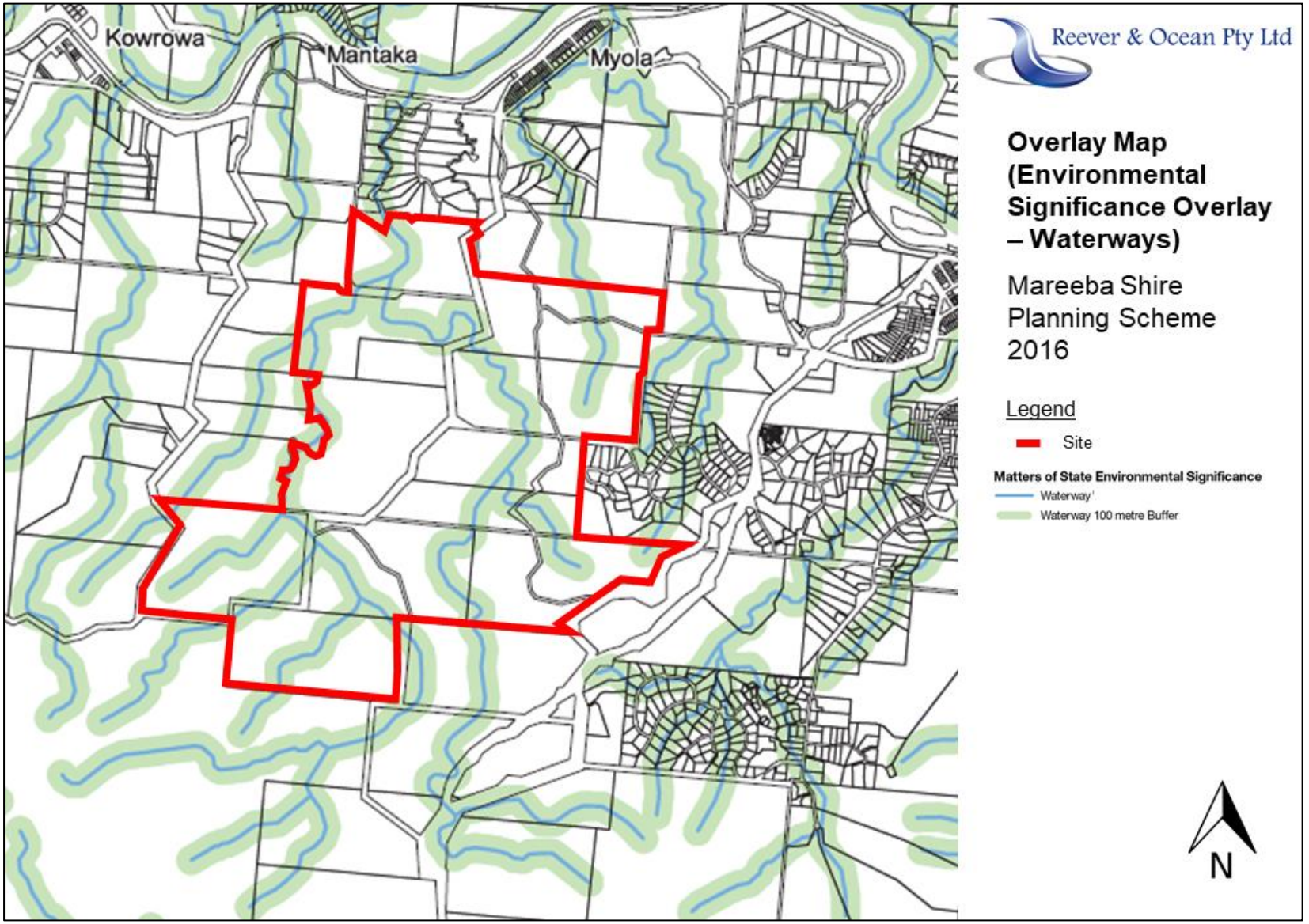

Figure 6-14: Environmental Significance Overlay (Waterways)

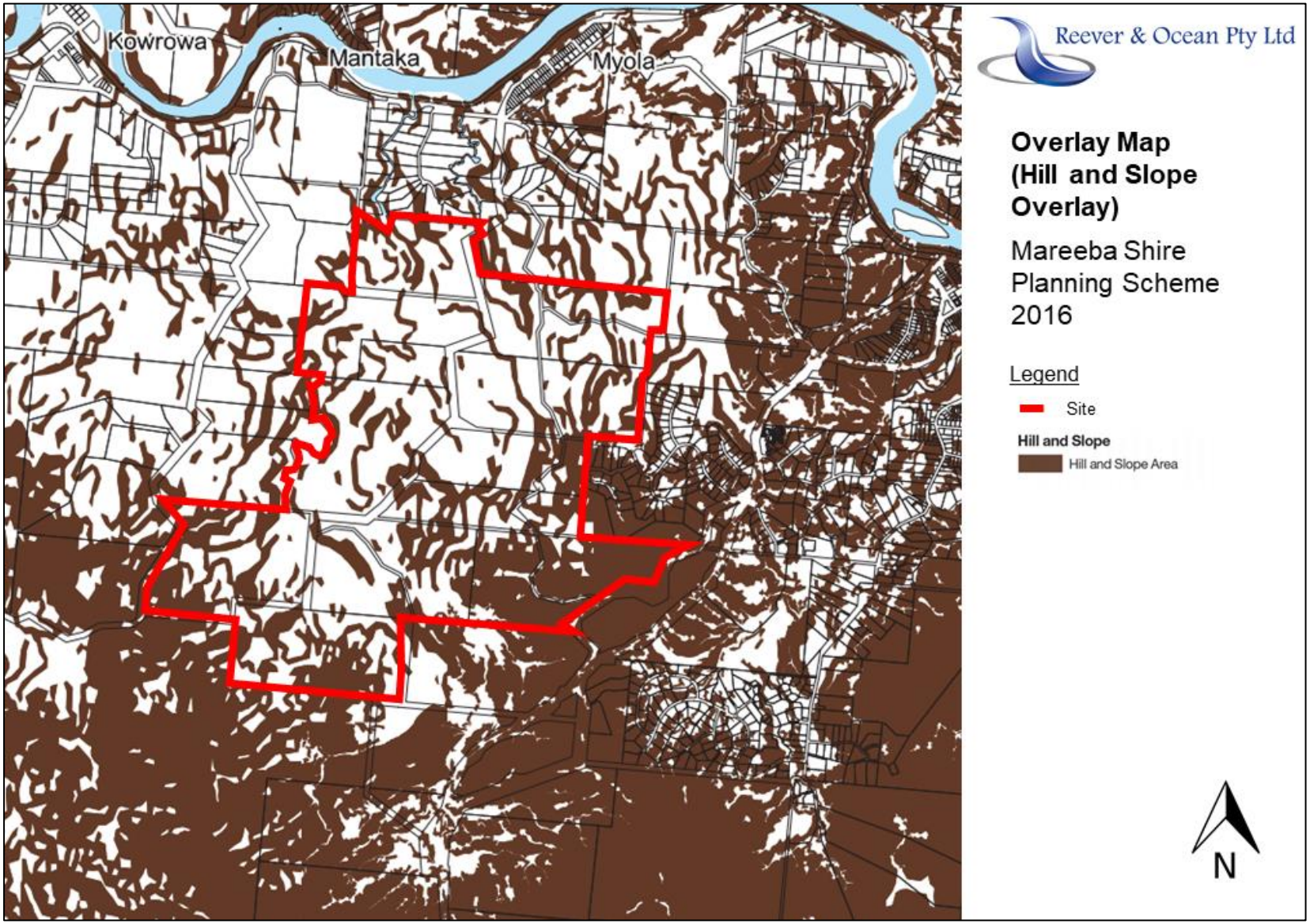

Figure 6-15: Hill and Slope Overlay

KUR-World involves land uses that are consistent with the following land use definitions, included in Schedule 1 of the planning scheme.

- Animal Husbandry
- Animal Keeping
- Bar
- Caretaker's Accommodation
- Community Use
- Cropping
- Dwelling House
- Educational Establishment
- Environment Facility
- Food and Drink Outlet
- Function Facility
- Health Care Services
- Hospital
- Hotel
- Indoor Sport and Recreation
- Intensive Horticulture
- Market
- Multiple Dwelling
- Nature Based Tourism
- Outdoor Sport and Recreation
- Park
- Place of Worship
- Research and Technology Industry
- Resort Complex
- Rooming Accommodation
- Shop
- Short-Term Accommodation
- Substation
- Telecommunications Facility
- Theatre
- Tourist Attraction
- Utility Installation
- Warehouse

The complete definition of the above land uses is provided in **Appendix 3B**.

The development of KUR-World is supported by a Draft Plan of Development, provided as **Appendix 2B**, which outlines the manner in which KUR-World will vary the effect of the planning scheme. As discussed in Chapter 5, approval will be sought from Mareeba Shire Council to apply this Draft Plan of Development to future development for KUR-World, as part of a variation approval.

6.1.2.4 Other matters

The site is not identified as containing Strategic Cropping Land under the *Regional Planning Interests Act 2014*.

The site is not subject to any permit, claim, licence, lease or other authority held under the *Mineral Resources Act 1989*, the *Petroleum Act 1923* or the *Petroleum and Gas (Production and Safety) Act 2004*

6.1.3 Compatibility with Kuranda

In considering the relationship between KUR-World and Kuranda, the core structural components of the land use pattern of Kuranda must first be appreciated. Kuranda is centred by a township area focussed on the loose grid street pattern primarily formed by Coondoo Street, Thongon Street, Theooree Street and Therwine Street. This township area provides a combination of primary retail, commercial and community services for the local community and tourist attractions for visitors. The Kuranda Railway Station and Kuranda Skyrail Terminal are located at the north-eastern end of the Kuranda township area and represent a key arrival point for tourists. The Barron River bounds the township area to the east/north-east.

The Kuranda township is a primary attraction for tourists visiting the area, due to its distinct character expressed through its village style streetscapes and small-scale buildings, being marketed as the 'Village in the Rainforest'. Dedicated tourism uses, such as Birdworld and the Kuranda Butterfly Sanctuary are located on the periphery of the established township. The economy and land use characterisation of the town is heavily linked to the presence of tourists, who largely visit the township during daylight hours, a feature further reinforced by the day time operating hours of the Kuranda Scenic Railway and the Skyrail.

Immediately adjoining the township to the south-west and south-east are low density urban areas supporting primarily residential land uses, which reinforce the village character and local service function of Kuranda. The broader area is improved with pockets of residential development of varying scales, primarily of a rural residential nature. These residential areas are separated by dense areas of retained vegetation and are linked by various roads to the township. A combination of the Barron Gorge National Park and the Kuranda National Park sit to the north and east of Kuranda and provide a clear boundary to the urban/peri urban area.

The Kennedy Highway is the primary connection between Cairns and Mareeba and affords access to Kuranda from both these localities. The Kennedy Highway does not pass directly through the township area of Kuranda, instead being located to the immediate west and generally not visible from the town. The intersection of the Kennedy Highway, Myola Road and Rob Veivers Drive, located to the south-west of the settlement, forms the primary intersection for traffic associated with Kuranda. Rob Veivers Drive is the sole direct road connection between the Kennedy Highway and the Kuranda township, allowing traffic from Mareeba and Cairns (and more distant locations) to enter the township.

Myola Road extends to the west of the Kennedy Highway intersection and provides access to various rural land holdings located within the Barron River valley. The hamlets of Myola and Kowrowa are located along Myola Road which provide small areas of primarily residential land use at a more rural scale.

The locality plan included as Figure 6-3 provides a visual representation of the general area described above. The zoning pattern of the Mareeba Shire Planning Scheme, which is depicted in Figure 6-10, generally reflects and reinforces the existing land use pattern, with the township and low density urban areas of Kuranda included in the Centre Zone and the Medium Density Residential Zone respectively, while peri-urban areas are located in the Rural Residential Zone.

KUR-World is located to the west of the Kuranda township and urban areas of Kuranda on a large land holding historically and currently used for rural purposes. Over time the prevailing character of the area has changed, and agricultural land uses are now not characteristic of the surrounding area; although it is noted that nearby land holdings are of a much smaller size. The site is located within the valley that is traversed by Owen Creek, Haren Creek, Cain Creek and Warril Creek, which are tributaries of the Barron River.

KUR-World is distinct and separated from the township of Kuranda, being physically separated by over two (2) kilometres. The separation of Kuranda and KUR-World is further emphasised by the local visual environment, where land between the two areas separated by dense native vegetation. The KUR-World site and ultimately KUR-World is not visible or discernible from the Kuranda settlement (see Chapter 6.2 Visual Impact Assessment).

Primary access to KUR-World will be by way of a new access road connecting to Myola Road proximate to its intersection with the Kennedy Highway. As discussed previously, this intersection provides for a primary arrival and interchange point for local and regional level vehicular traffic. KUR-World will thus be provided with immediate access to the Kennedy Highway, meaning a direct interface between traffic generated by KUR-World and the Kuranda township/urban area is not created.

KUR-World is complementary to the existing and intended role of the Kuranda township with respect to both tourism and residential development. In relation to tourism, KUR-World does not intend to challenge the attraction of the Kuranda township. Instead, KUR-World seeks to provide new tourist facilities that are unable to be offered in the Kuranda township, promoting the diversification of the regional tourist offering, most notably through the provision of resort facilities in a rural setting. It is intended that KUR-World, through its diversification of tourist attractions and services, will increase the number and type of tourists visiting the local area, with flow on benefits to both the Kuranda township and the wider Tablelands region. The land uses provided as part of KUR-World are intended to support the needs of the immediate tourist population and new residential rather than forming a new commercial centre. KUR-World will maintain the primacy of the Kuranda township as the commercial centre for the local area, as intended by the regional plan and the planning scheme.

A key intent of KUR-World is to provide for the showcasing of the local natural environment and rural enterprise. The location of KUR-World on an existing grazing property, which supports areas of environmental significance, allows this intent to be achieved. The location of such a development in an existing urban area, for example the Kuranda township, would not allow a direct linkage between the development, the natural environment and rural operations to be achieved. KUR-World provides an immersive experience for tourists in a natural and rural environment. The approach to locate a tourist facility separate to the existing urban area is well established in the Kuranda area. Rainforestation and The Billabong, provide two examples of existing local tourist facilities separated from the township, although both are readily accessible from the Kennedy Highway. Similar to KUR-World, the attractions and facilities provided by these two enterprises are directly linked to the natural environment, necessitating their location outside the urban area.

As noted in the above discussion, the rural area within which KUR-World is situated has been subject to gradual fragmentation through historic subdivisions; with much of the rural land in the surrounding area now formed by smaller land holdings in the order of two (2) hectares in size, akin to rural residential and hobby farming land uses, rather than larger scale agricultural production activities as intended in the Rural Zone. The site represents the last significant land holding in the immediate local area.

With respect to the need for the proposed scale of residential components of KUR-World, forecasting has been undertaken as part of the Social and Economic Impact Assessment Report prepared by Cummings Economics (refer to Appendix 8B) that identifies:

- A total of 247 additional dwellings will be required in Kuranda to support the increased resident population resulting directly from resort activities up to 2027/2028.
- A total of 107 additional dwellings will be required in Kuranda to support the increased resident population resulting from secondary increases in business activities associated with the project up to 2027/2028.
- Over the last five years, average dwelling construction in Kuranda has been 30 dwellings per year.
- Kuranda is anticipated to have a capacity to deliver 264 additional dwellings, based on suitably zoned and located land, to cater for new demand.

- KUR-World will provide capacity for up to 402 dwellings as part of the development of the Lifestyle Villa and Premium Villa components. It is envisaged that up to 30% of Villas and Queenslanders, will be used for permanent residential purposes.

6.1.4 Summary

The proposed development of KUR-World is consistent with State, regional and local planning frameworks and offers the opportunity to create significant socio-economic opportunities for both Kuranda and the wider region.

6.2 Visual impacts during construction and operation phase

6.2.1 Purpose of the Visual Impact Assessment

This Visual Impact Assessment (VIA) responds to the Terms of Reference Sections 11.10 and 13 (Matters of National Environmental Significance (MNES) (October 2016).

Specifically, this VIA:

- Identifies the existing landscape and scenic attributes of the area, including the surrounding Outstanding Universal Values (OUV) of the Wet Tropics of Queensland World Heritage Area (WTWHA).
- Describes the existing visual environment and regulatory frameworks regarding scenic amenity and landscape character considerations, in addition to assessing scenic integrity and natural landscape values.
- Assesses the potential visual impacts of the project and the potential for impact on World Heritage properties under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) as MNES, the World Heritage values of the Great Barrier Reef World Heritage Area (GBRWHA) and the values of the Wet Tropics of Queensland National Heritage Place and the Great Barrier Reef National Heritage Place.
- Recommends impact mitigation measures (where appropriate).

As required by the Terms of Reference, this VIA describes and illustrates the possible visual impacts of project construction and operation with respect to viewsheds, major views, outlooks and features contributing to the amenity of the area, including assessment from private residences.

For the purpose of this VIA, the study area includes Kuranda and the Barron River and parts of the surrounding mountain ranges (Figure 6-16).

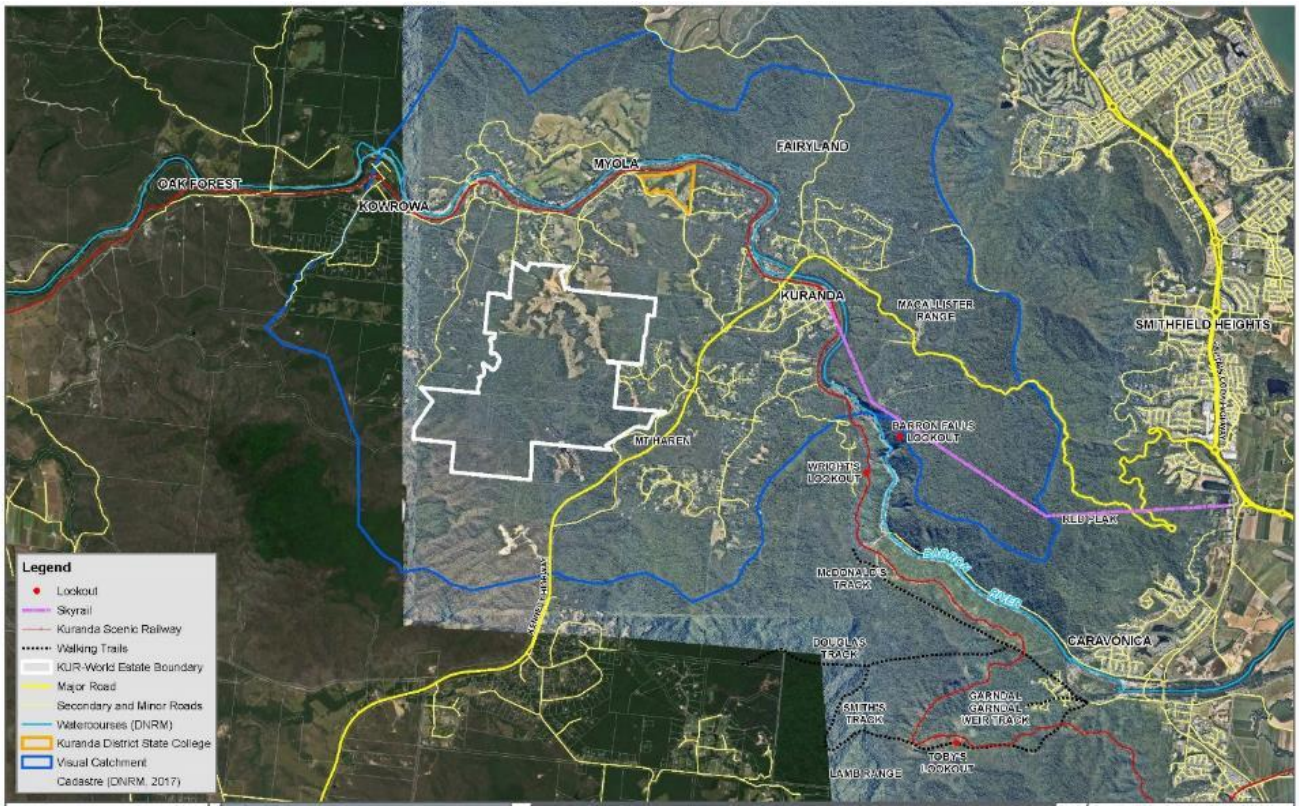

Figure 6-16: Study Area

6.2.2 Approach and methodology

The landscape values of the study area were assessed by desktop review of air photos and topographic data and then validated or amended by field inspection and information from previous studies undertaken in the region. The landscape character of the study area is described based on landform, land cover and dominant visual elements and categorisation as landscape character types. Visibility of the site was modelled in a GIS software environment (ArcMap), based on a Digital Surface Model (DSM) using Light Detection and Ranging (LiDAR) contour and tree canopy height data. The existing landscape features, character, values, views and view corridors relevant to the site and study area are described in a district and regional context and in the context of the nearby World Heritage properties.

Such features are based on desktop review of air photos, topographic data and information from previous studies undertaken in the broader locality.

The documents reviewed include:

- The Mareeba Shire Council Planning Scheme, January 2016;
- Cairns Region Scenic Amenity Study (Cardno Chenoweth 2012, undertaken for Cairns Regional Council as an input to the Cairns Planning Scheme);
- Determination Regarding Listing of National Heritage Value Following Assessment of National Heritage Values for A National Heritage List Place - Wet Tropics of Queensland;
- Wet Tropics Coastal Management Plan;
- Great Barrier Reef World Heritage nomination;
- Matters of National Environmental Significance - Significant Impact Guidelines 1.1 (DEWHA, 2009);
- Great Barrier Reef World Heritage nomination;

- The GBRWHA Statement of Outstanding Universal Value (GBRMPA, 2012);
- The Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO, 2011);
- Defining the Aesthetic Values of the Great Barrier Reef: Final Report for DSEWPaC (Context, February 2013);
- Australia's National Heritage List Criteria and Thresholds (Australian Government, Heritage Division);
- UNESCO Statement of Outstanding Universal Value for the Wet Tropics of Queensland, Property ID 486 (Department of Sustainability, Environment, Water, Population and Communities); and
- Values for A National Heritage List Place - Wet Tropics of Queensland.

6.2.2.1 Visibility and sensitivity

The site is located approximately 2 km to the west and south of the WTWHA, which is concentrated along the main coastal ranges of Lamb and Macalister Ranges. Although the site and immediate surrounds, including Kuranda, are located outside the WTWHA boundary, the project viewshed and site context includes much of the surrounding Kuranda State Forest as well as local character and features, and is framed by the rainforest-clad mountain ranges of Formartine State Forest and Barron Gorge Forest Reserve in the south, the Kuranda National Park in the north, and Macalister Range to the east.

Preliminary mapping of the study area identified major roads, residential areas and areas of high public usage (e.g. lookouts, walking tracks and the Skyrail) likely to have views over the site, and these were confirmed or amended by drive-around survey photographs (including highway views), taking note of screening vegetation and existing built form, as well as local character and features.

Following the field survey of the district, the following groups of receptors were selected for Visibility Analysis Map (VAM) modelling in the DSM:

- Views from Skyrail (approaching Kuranda);
- Views from Kuranda Scenic Railway;
- Views from Kennedy Highway and local roads;
- Views from residences to the north, west, east and south-east of the site including areas on the opposite side of the Barron River;
- Views from lookouts, including Glacier Rock (488 m), Wrights Lookout, Barron Falls Lookout, and Toby's Lookout;
- Walking tracks including Douglas Track, Smith's Track, MacDonalds Track (although views from this track and the lookouts are mainly to Barron River Gorge and eastwards); and
- Recreational users including Cairns Quads and Adventures, Billabong Horseback Adventures, Cairns Paintball and 'The Billabong Kuranda'.

Existing landscape sensitivity was assessed by identifying ridges and hillslopes of the site visible to external observers (roads and selected elevated nearby houses), rated high, medium and low sensitivity according to viewing distance, elevation, prominence and number of viewers. The ToR (s.11.10) requires "assessment from private residences" and this was undertaken by VAM modelling, which identified houses likely to be within view of the proposed development.

6.2.2.2 Assessing the future visual environment

Although the various elements of the project have not yet been subject to detailed design, the Masterplan and conceptual layouts for each development precinct, in conjunction with the proposed earthworks design,

provide a suitable basis for this VIA. The future visual environment is assessed through focusing on those elements of the project likely to cause changes in character and scenic amenity of the study area. In particular, the visibility of the proposed development and built form, and its relationship to skylines, sensitive receptors and viewsheds is considered. This is based on the premise that visible built form and disturbance have higher visual impacts on viewsheds and skylines of a region that are currently perceived as undeveloped, and lower visual impacts where they are screened from view and/ or are below the tree canopy or skyline.

In order to undertake this VIA, a Digital Terrain Model (DTM) and DSM were compiled within a GIS software environment (ArcMap) using the best available geographic data. A preliminary analysis of the study area was first undertaken using coarse but readily available elevation contour information (5 m and 50 m) and then analysed with the DSM derived from LiDAR data obtained from the Department of Natural Resources and Mines (for approximately 80% of the study area) which was supplemented with elevation derived from 5 m contours where LiDAR was not available (for the remaining 20%).

The DTM represents landform, without vegetation or buildings, while the DSM represents the surface of the highest features of the study area including built form and tree canopies, which in many cases provides screening or obstructs the sightlines. The DSM was derived from LiDAR data for most of the study area and tree height conservatively estimated at 22 m above terrain for the remainder. This estimate was based on an average of vegetation heights in the study area where LiDAR was available. The LiDAR-based VAM modelling represents the 'worst case' visibility in that it identifies all ground plane (rather than eye level) places within a hypothetical sightline of any part of the proposed built form which are visible (roof peaks) and takes into account view screening, but with 'false-positive records' filtered out post-analysis.

The extent of current vegetation was first mapped from several LiDAR data captures (from between 2009 - 2013) plus recent aerial photography (June 2016 in Nearmap), then the existing DSM was amended by mapping the areas to be cleared for the proposed development (including roads and the golf course). Areas within the golf course were assumed to be proposed for clearing where they were further than 50 m from a creek centre line, which was interpreted from the LiDAR derived ground elevation model. Potential visual screening/interference from proposed landscaping and vegetation to be retained within the proposed development was not taken into account.

Ground heights for proposed built form were derived from the 3D earthworks design and where insufficient information was available, the base height of proposed built form was taken from the mid-point from an elevation model which was derived from LiDAR. Proposed on site infrastructure including a waste water treatment plant were included in the model, however the proposed reservoir adjacent to the existing Myola Road reservoir was not taken into account but potential visual amenity impacts associated with this were addressed separately. Potential clearing for the proposed access road to Myola Road was not included as part of the VAM modelling.

Areas likely to be within view of the proposed built form (including sensitive visual receptors[2]) were analysed by VAM modelling, using visibility points in each proposed development area to represent the intended range of built form elevations and aspects. In total 617 visibility points were modelled for the various precincts. As building forms have not yet been finalised the VAM modelling was assessed based on building height (to the roof peak and not taking into account the proposed variation in roof style and design), rather than number

[2] Receptors are places, routes, viewer audiences or interest groups, which may require assessment.

of building storeys. For the purposes of the modelling, built form has been categorised as follows taking into consideration heights of buildings and structures:

- Built form up to 10 m in height (including an assumption of 6.4 m for the residential premium and lifestyle villas, 4 m for the waste water treatment plant, 5 m for the Ridge Top Yarning place and 10 m for the Refectory);
- Built form between 11 to 20 m in height;
- Built form greater than or equal to 21 m (up to 23 m or 5 storeys in height); and
- The two zip line towers, which were modelled at 20 m in height.

A composite map was prepared to provide an overlay of the visibility from all four VAMs to represent visibility of all built form, proposed zip line towers and the pump station. This model was also used to check sightlines and views to the site from identified receptors in elevated positions in the local landform by using viewsheds and long cross sections. Representation of the existing forest canopy in the long cross section from Red Peak Station was developed by combining available LiDAR data of vegetation heights and assuming a canopy height of 22 m for areas with no available LiDAR data[3]. Skyline analysis was also undertaken using LiDAR from a number of sensitive receptors to show sightlines to the proposed development and identify potential visual impacts, including changes in view to the background forested mountain frame.

6.2.2.3 Assessment of visual impacts

This VIA is based on the likely visibility of the proposed building forms, as seen by potentially affected viewers as well as effects on the landscape and scenic values of the area. A development of the scale proposed, even if dispersed, represents a change from the existing situation. This VIA recognises that the proposed groups of buildings and areas of landscape modification will, where visible, contrast with the existing landscape character, as well as differ from current Planning Scheme intentions. Accordingly, the project has been assessed in relation to the landscape values (features, character and scenic amenity attributes) which will potentially be affected. It also considers the cumulative impacts of the proposed development based on the 'worst case' scenario in terms of its scale and intensity, and as a permanent and irreversible scenario with respect to its impacts on landscape values.

The landscape features and values assessed are similar to those identified in the 2012 Cairns Scenic Amenity study, (i.e. an accepted methodology for categorisation of landscape features and values in the vicinity of regional World Heritage Areas). This includes views from lookouts, scenic routes, Skyrail and town entry gateways and important features (such as the Barron River Gorge) and the many mountain ranges and peaks recognised as Valued Landscape Character Types. Potential impacts on character were also assessed; particularly any contrast or compatibility with the current character and setting of the site and that of Kuranda and the forested hills and mountains of the study area.

The potential visual impacts on the WTWHA and the GBRWHA and their aesthetic OUV attributes are also examined as MNES. This VIA considers the relevant scenic attributes listed for the WTWHA and GBRWHA (under Criterion (vii) of the OUV criteria), their presence or absence in areas within view of the site and the proposed development and the extent to which they contribute to the OUV of the relevant WHA. Relevant criteria under the National Heritage Places (WTQNHP, GBRNHP) are also considered.

[3] LiDAR data indicates that the average height of trees between the subject land and Kuranda varies from approximately 15m -26m.

6.2.3 Description of Environmental Values

6.2.3.1 Landscape Values and character

The Kuranda region is located on an elevated plateau framed by iconic forested mountains which form the backdrop to Cairns and form the background landscape frame to parts of the Mareeba Shire. The region is characterised by spectacular scenery comprising tropical rainforest, mountains, gorges and waterfalls, and is surrounded by national parks, conservation areas and remnant forest. The Kuranda region is a highly scenic part of the Mareeba Shire.

The village of Kuranda is surrounded by extensive natural areas including conservation reserves; Formartine State Forest and Barron Gorge Forest Reserve in the south, Kuranda National Park in the north and east, over the Barron River, and the Barron Gorge National Park to the south of Kuranda Village (Figure 6-17**)**. This contributes to its 'Village in the Rainforest' branding as a popular tourist getaway, for both its sense of tropical serenity, and seclusion.

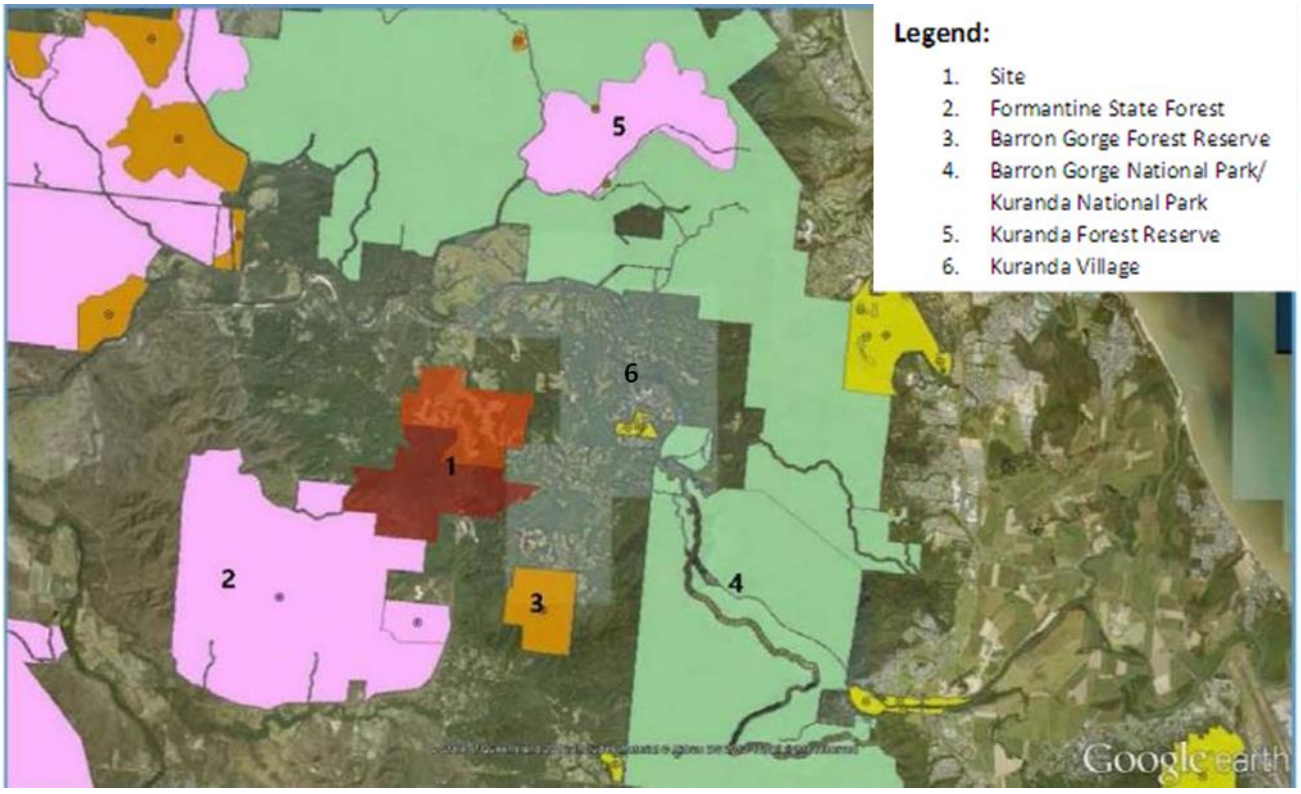

Figure 6-17: Location of Natural Areas Surrounding the Site

The Mareeba Shire is framed, in part, by the Macalister and Lamb Ranges, which also divide the landform and visual catchments into a series of valleys and gorges. The Barron River is the main river system in the region, and the Kennedy Highway the main roadway. The topography and vegetation patterns are typical of the hinterland area, which separates it from the Cairns coast, in that the peaks, ridges and steeper hillslopes are densely vegetated with native vegetation, while the lower slopes and valleys are a mosaic of clearing and rural production areas, including small settlements, infrastructure, and a mixture of gardens, regrowth vegetation and remnant forest, reflecting a history of disturbance (agriculture, forestry and dairying). Kuranda village is located within the undulating plateau valley of the Barron River. The landscape character varies from flat terrain beside the Barron River through to gently undulating topography to the south, north and east of the Barron River, to the foothills of the surrounding mountains.

Adopting the Landscape Character Types (LCT) of the CairnsPlan 2016 Planning Scheme Policy SC6.7 (Landscape Values), the site is predominantly part of the 'Bushland' and 'Rural' LCT (with some 'Forested Mountains' fringing the south east). The site is framed by the 'Forested Mountains' LCT to the south and west and Rural Residential LCT to the north and east (Figure 6-18).

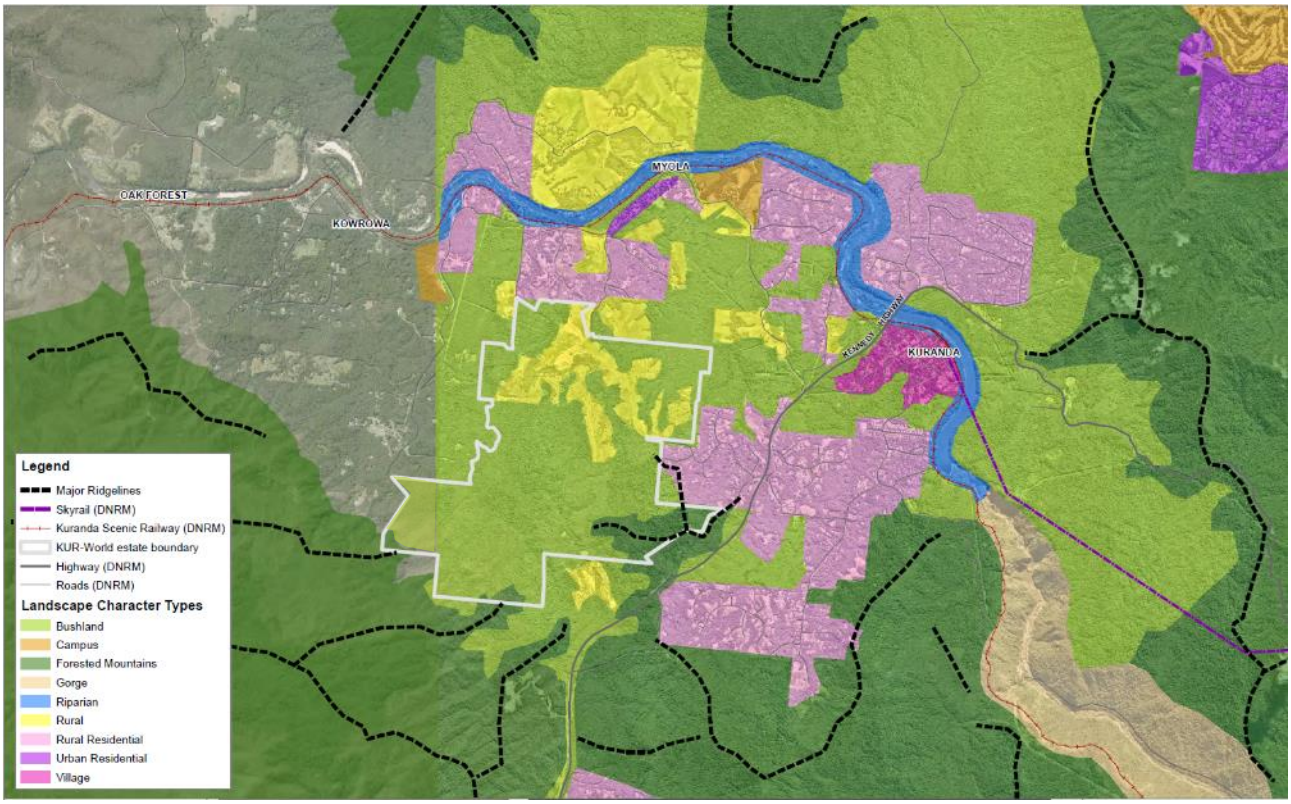

Figure 6-18: Landscape Character Types

Key natural features which contribute to the character of the area, and its sense of place, are the Barron River and Barron Gorge and the surrounding mountain ranges; which enclose and frame Kuranda. The mountains and ridgelines form the background to most views from within the Kuranda area retaining wooded skylines that are distinctive to the region (Refer to Figure 6-19, Images A and B). This vegetation also helps to screen houses and built form from many public roads and lookouts.

Although the Barron River and Gorge are visible from only a limited number of nearby viewpoints (the Kennedy Highway bridge crossing, Skyrail, Kuranda Scenic Railway and Barron Gorge National Park), they are significant features and iconic landmarks for tourists and visitors to Far North Queensland (Refer to Figure 6-19, Images C and D). The rural areas are characterised by a landscape pattern of cleared areas for productive rural uses and mosaic patches of retained vegetation along roadways, creek lines and often adjacent homesteads (Refer to Figure 6-19, Image E).

There are three identifiable areas of low-rise built form within the region:

- Kuranda village - located immediately beside the Barron River in proximity to the Barron Falls and which serves as a tourist destination for Skyrail visitors from Cairns and visitors travelling along the Kuranda Scenic Railway, accessing and viewing the natural areas of this region. Kuranda is widely known as the 'village in the rainforest'.

- Myola - a discrete area of development with smaller lot sizes, partly surrounded by rural land uses, larger lot rural residential development and bands of tropical vegetation to the west of Kuranda and also beside the Barron River.
- Rural residential development on larger holdings immediately to the north, south and east of the Barron River and also to the south-west of Kuranda in the vicinity of Mount Haren; set primarily within forested bushland areas but also open areas with patches of retained vegetation (Refer to Figure 6-19, Image F).

This combination of landscape elements forms particularly attractive patterns of rural and natural landscapes, and significantly contribute to the character and scenic landscape qualities of the region as shown in the images in Figure 6-19.

A – Mountains and Ridges LCT (View from Red Peak and looking northwest to the Kuranda Range and Formartine)

B - Bushland LCT (View from site looking east to Saddle Mountain and Macalister Ranges)

C – Gorge LCT (Barron Gorge as seen from Skyrail)

D – Riverine LCT (Barron River as seen from Skyrail)

E – Rural LCT

F – Rural Residential LCT

Figure 6-19: Landscape Character Types - Kuranda Region

6.2.3.2 Site description

The site comprises 10 titles and encompasses an overall area of approximately 648 ha (including resumed road), with an existing homestead located at the end of Barnwell Road close to Haren Creek and Cain Creek as depicted in Figure 6-20.

Figure 6-20: Existing Homestead with entry from Barnwell Road - Kuranda National Park in the background

The site comprises regrowth, rainforest, watercourses, open woodland and farmlands and has a history of farming, agricultural cropping, and coffee plantations. The land is generally undulating and includes the vegetated peak of Mount Haren (approximately RL470m) in the south-east of the site near the Kennedy Highway and a number of high points ranging from approximately RL400m to RL430m.

The southern area of the site has significant aesthetic values relating to its diversity of landform and comparatively undisturbed vegetation, which lends to the high scenic qualities and visual amenity of the area, particularly appreciable from the Kennedy Highway; where the forested hills and skyline provide a semi-enclosed vista.

Four natural watercourses traverse the site flowing from south to north toward the Barron River including Owen Creek, and its tributary Haren Creek, extending from Kennedy Highway in the south. A minor tributary of Warril Creek bisects the north-eastern area of the site whilst Cain Creek is located along the northern boundary.

6.2.3.3 Landscape Sensitivity

6.2.3.3.1 *Views Outwards*

A site high point in proximity to Owen Creek in the west of the site offers a distant view toward the Macalister Range and Saddle Mountain (with Red Peak and the Skyrail obscured behind vegetation), as well as a telecommunications tower on Myola Road, as shown in Figure 6-21. From this location, the existing tower at Mount Haren (133 Mt Haren Road) is also visible to the south-east, together with the nearby existing homestead on the site.

Figure 6-21: View from the site toward Saddle Mountain and Macalister Range, and Inset; the Myola telecommunications tower on Myola Road (zoomed in view)

Figure 6-22 shows the rooftops of elevated residences on Hilltop Close, visible through the forested canopy, to the east of the site.

Figure 6-22: View from existing cleared eastern section of site toward Hilltop Close (residence at number 9 identified) and the ridgeline of Mount Haren. This cleared area can be seen from Figure 6-24 and corresponds to the proposed Stage 2 golf course and villa development.

Figure 6-23: View from KUR World (Barnwell Road entrance) looking north along Barnwell Road. Paddocks of the property located at 62 Barnwell can be glimpsed through trees in the middle ground

6.2.3.3.2 *Views Inwards*

Parts of the site are visible from a nearby local road (Barnwell Road) to the north on approach to the site (Figure 6-23) but most of the local roads are screened by a combination of vegetation and topography (Figure 6-26). The site is visible as glimpses between residences from Hilltop Close to the east, as well as from a

limited number of private residences on Hilltop Close (Figure 6-24 and Figure 6-25). Distant views toward the site are also available from higher elevated sections of Skyrail (Figure 6-27).

Figure 6-24: Views toward site (in mid-ground) from 9 Hilltop Close residence (as seen in Figure 6-22)

Figure 6-25: Views toward site (in mid-ground) from 10 Hilltop Close residence looking northwest (owned by applicant)

Figure 6-26: View from elevated part of Barnwell Road heading south towards the site

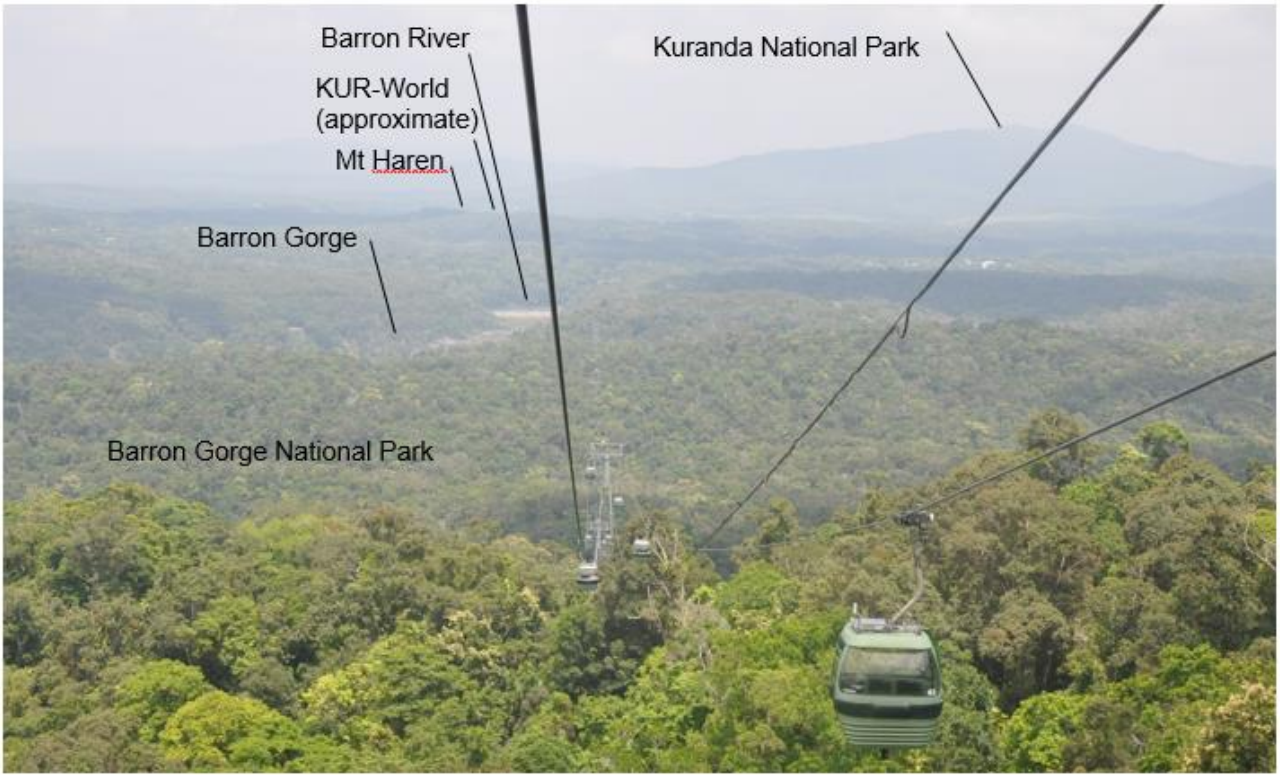

Figure 6-27: Views toward site (in mid-ground) from higher elevated sections of Skyrail.

6.2.3.4 Sensitive Receptors

The following groups of sensitive receptors were identified from desktop analysis as potentially being able to view the site (incorporating viewpoints in Figure 6-24, near Figure 6-26 and Figure 6-27, and Figure 6-28):

- Skyrail (approaching Kuranda Village);
- Kuranda Scenic Railway;
- Kennedy Highway and local roads;
- Kuranda District State College (Receptor J);
- Residential Receptor Groups: Boyles Road South (Receptor A), Boyles Road North (Receptor B), Oak Forest Road (Receptor C), North Barron River (Receptor D), High Chapparal Road (Receptor E), Monaro Close (Receptor F), Barnwell Road (Receptor G), Kingfisher Drive (Receptor H), Myola (Receptor I), Fairyland Road (Receptor K), Christensen Road (Receptor L), Kuranda Heights Road (Receptor M), Myola Road South (Receptor N), Kennedy Highway (Receptor O), Mount Haren (Receptor P), North Barron River (Receptor Q), Kuranda Village (Receptor R) and South Kuranda (Receptor S);
- Lookouts: Glacier Rock (488m), Wrights Lookout, Barron Falls Lookout and Toby's Lookout;
- Walking tracks: Douglas Track, Smith's Track, MacDonalds Track; and
- Recreational users: clients and staff of Cairns Quads and Adventures, Billabong Horseback Adventures and Cairns Paintball, together with a private wedding/ conference facility ('The Billabong Kuranda') immediately adjoining the southern boundary of the site near Haren Creek.

6.2.3.5 Visibility

Although the site is extensive, it does not occupy a significant part of the viewshed as seen from any significant public locations (such as walking tracks, lookouts and recreational sites), nor is it noticeable from most adjoining properties. Where it does form part of a viewshed, such as from Skyrail, it is seen as part of the cableway with scattered built forms partly screened by vegetation. Disturbances from urban development and previous grazing and clearing are evident in all viewsheds, which reduce the perceived naturalness of the site.

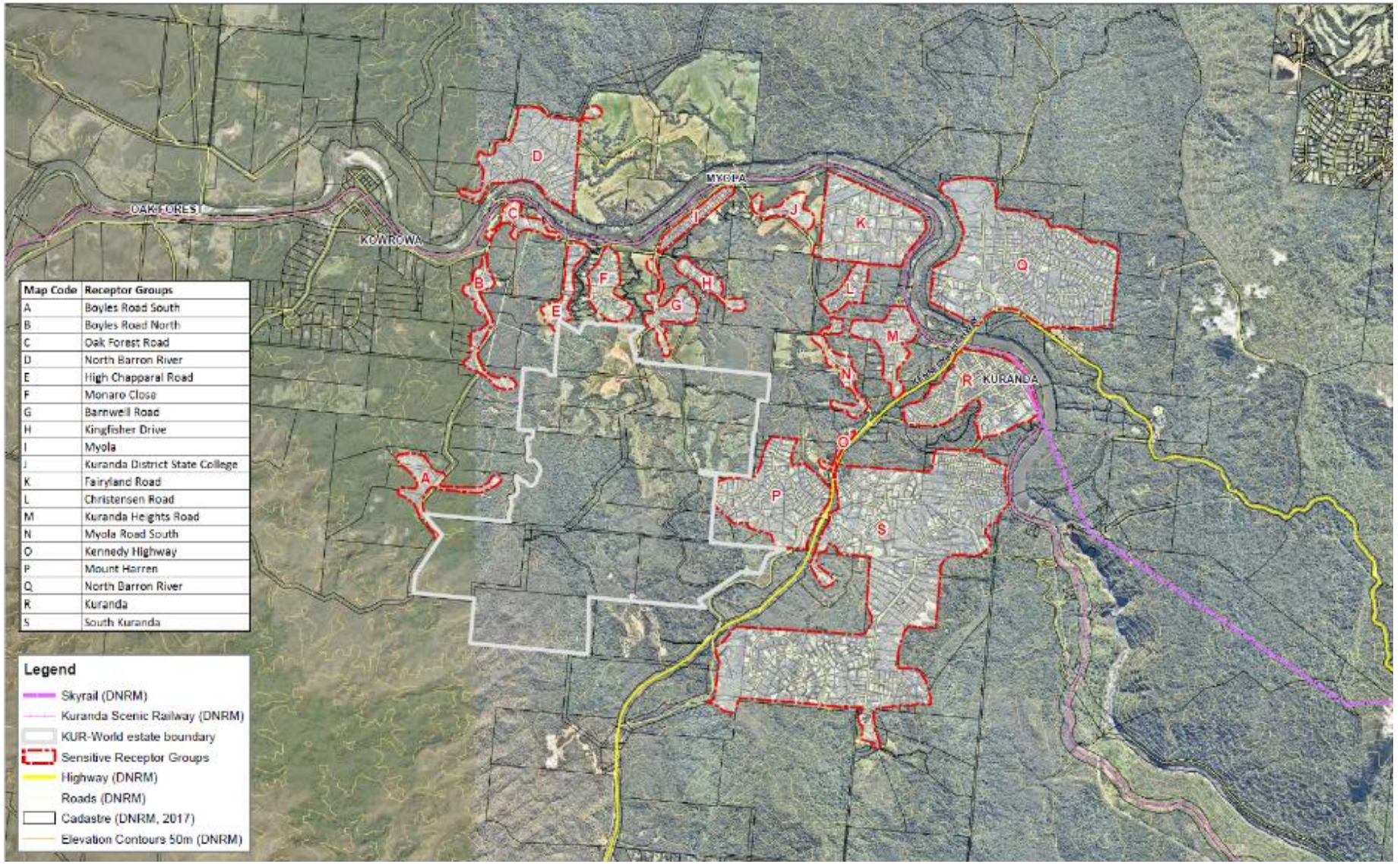

Figure 6-28: Sensitive Receptors

Figure 6-29: View opening from Kennedy Highway looking southwest (site is setback behind roadside trees and Mt Haren)

6.2.3.6 Visual Sensitivity

As described above, although the site includes a number of elevated areas, with high and moderate landscape sensitivity, most of the site is hidden from external view by topography and vegetation; and is considered as low landscape sensitivity. The south-eastern sides of Mount Haren are also visible from Kennedy Highway (a scenic route) as openings in vegetation, as shown in Figure 6-29, although the site itself is concealed from view by roadside vegetation and the forested hillslopes of Mt Haren.

Although most of the development footprint is proposed in areas of low landscape sensitivity, some development is proposed in parts of the medium and high sensitivity areas, such as the zip line in the south, and parts of the and the golf course, villas and roadways in the central and eastern border areas (Figure 6-22).

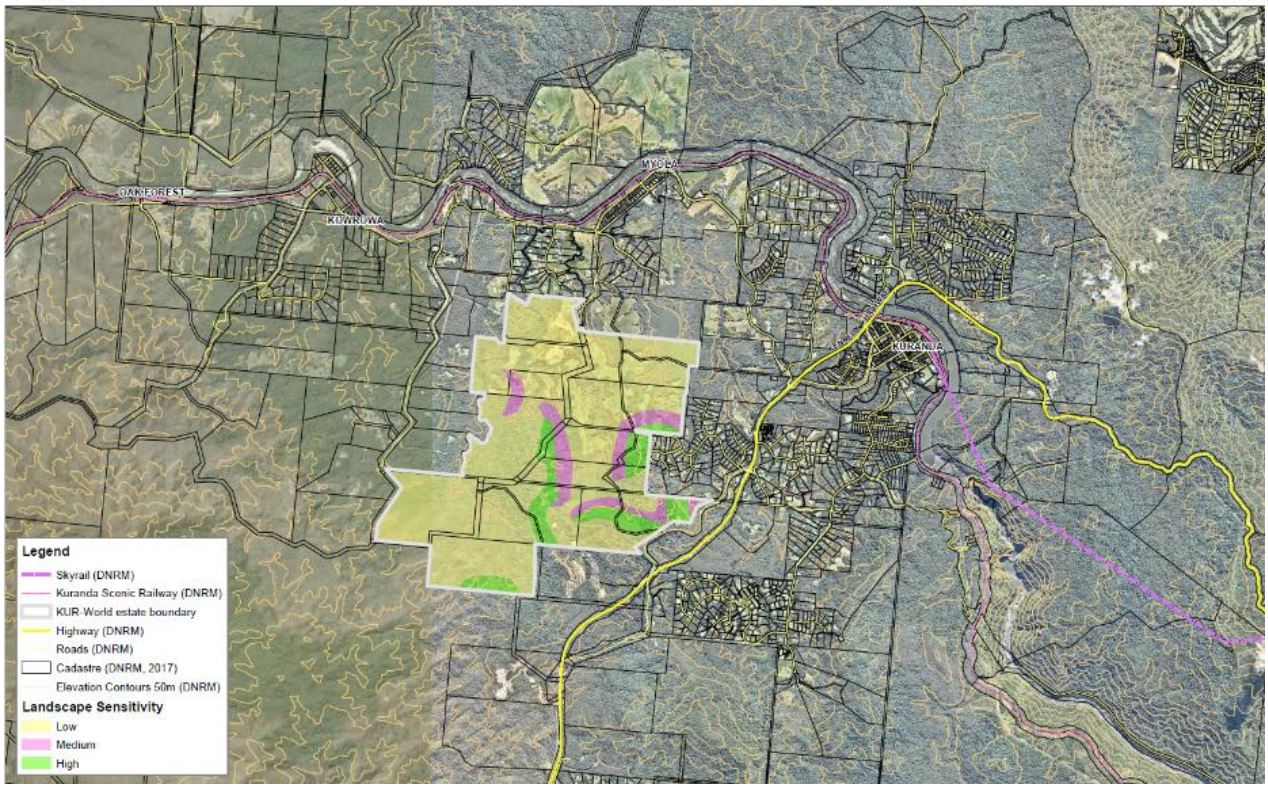

Figure 6-30: Visual Sensitivity

6.2.4 Regulatory Framework

6.2.4.1 Assessment of Critical Matters and MNES

The site is located 2 km west and south of the WTWHA, and 8.5 km west of the coastline edge of the GBRWHA. Water from the site flows toward the Great Barrier Reef Marine Park (GBRMP) and GBRWHA via the Barron River and its tributaries. The proposed development therefore requires assessment of a number of visual amenity related issues as MNES (s13.2), including assessment of aesthetic values of the World Heritage Properties under the EPBC Act (including the WTWHA and the GBRMP and GBRWHA)

6.2.4.2 World Heritage

The assessment of impacts to the GBRWHA has been informed by a literature review and the following key sources:

- The Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO, 2011);
- The Matters National Environmental Significance - Significant Impact Guidelines 1.1 (DEWHA, 2009); and
- The GBRWHA Statement of Outstanding Universal Value (GBRMPA, 2012).

UNESCO Guidelines define the concept of Outstanding Universal Value (OUV) as "*cultural and/or natural significance, which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity*". For a World Heritage Property to be considered to have OUV, it must meet one or more of ten criteria listed in the Guidelines, as well as meeting several other requirements.

6.2.4.3 GBRWHA

The GBRWHA is defined in the Statement of OUV (GBRMPA, 2012) as meeting all four of the natural environment criteria, of which the key criterion of relevance to this VIA is (vii) *"to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance."* The approach taken in assessing project impacts on GBRWHA scenic values is to identify the relevant aesthetic attributes listed in the GBRWHA Statement of OUV, and their presence / expression within the study area, as the basis for considering visual impacts.

6.2.4.4 WTWHA

The WTWHA is defined in the UNESCO Statement as meeting all four of the natural environment criteria. Similar to the GBRWHA, the key criterion of relevance to this VIA is that it is held *"to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance."*

6.2.4.5 Wet Tropics of Queensland National Heritage Place

The Wet Tropics of Queensland National Heritage Place (WTQNHP) is considered to have outstanding heritage values nationally. The key criterion of relevance to this VIA is criterion (vii) *"the place's importance in the course, or pattern, of Australia's natural or cultural history".*

6.2.4.6 Great Barrier Reef National Heritage Place

The Great Barrier Reef is taken to meet the National Heritage Criterion E Aesthetic characteristics, due to the World Heritage Committee's determination that it meets World Heritage criterion (vii) *"the place has outstanding heritage value to the nation because of the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group".*

6.2.4.7 Far North Queensland Regional Plan

The Far North Queensland Regional Plan is the over-arching plan for the region and sets key themes for Queensland communities. The vision for the Far North Queensland region builds on these elements and defines the community's long-term aspirations for the region. The Regional Plan also includes specific policies relating to the protection and management of the region's landscape values and scenic amenity, including:

- "2.1 The region's landscape values are identified, protected and managed through an integrated planning approach." (page 46)
- "2.3 The visual amenity of the region's natural landscapes, seascapes and productive rural lands is protected and enhanced." (page 50)
- "2.3.1 The visual amenity of the region's landscapes and seascapes is protected and enhanced by assessing proposed developments on landscapes that are vulnerable to visual impact due to their prominence, topography or degree of naturalness." (page 50)
- "2.3.4 Public access to significant popular viewpoints is retained, and views protected from development that diminishes the scenic values." (page 50)

The policy demonstrates a clear objective to retain and protect areas of high scenic amenity value in the region.

6.2.4.8 Mareeba Shire Planning Scheme 2016

6.2.4.8.1 *Strategic Framework*

The Strategic Framework of the Mareeba Shire Planning Scheme identifies the site as containing conservation areas, biodiversity areas, an ecological corridor and habitat linkage (Figure 6-31). The Planning Scheme incorporates specific provisions and an overlay relating to scenic amenity which broadly address the desired landscape character and settlement pattern in a regional sense, but this overlay does not specifically identify values on the site. Nevertheless, the Strategic Framework and landscape provisions of the Planning Scheme are relevant to the project, as set out in Table 6-7.

Table 6-7: Mareeba Shire Planning Scheme Strategic Framework

Planning Scheme	Applicability to Project and Values Present
Strategic Framework	
Strategic intent	***Provisions*** The Strategic Intent, Section 3.2, envisages that in 2031, Mareeba Shire *'thrives as a vibrant and diverse community comprising a range of urban, semi-urban, natural and rural settings, which together provide a unique local and regional character….' and* *'…Kuranda, Mareeba Shire's 'Village in the Rainforest' capitalises on its proximity to Cairns and continues to attract visitors in its own right… Tourism continues to strengthen for the savannah areas of the Shire… further solidifying Mareeba Shire's place on the tourism trail of Far North Queensland by capitalising on its unique hinterland tourism culture and array of small and large-scale tourist experiences*'. *Mareeba Shire provides a diverse collection of landscape settings within the rural areas, from productive agricultural land to internationally significant rainforests, open grazing country to dry savannah. These rural areas continue to contribute to the shire's unique character through their preservation and enhancement.* This is reflected in the strategic outcomes of the settlement pattern and built environment theme (3.3.1) which identifies generally that the region is intended to support a dispersed population in a variety of settings, including rural towns, small rural settlements, villages, rural residential areas, cropping lands, grazing lands and broad hectare grazing. Future development is to maintain this settlement pattern and the distinct character that it provides to the shire.

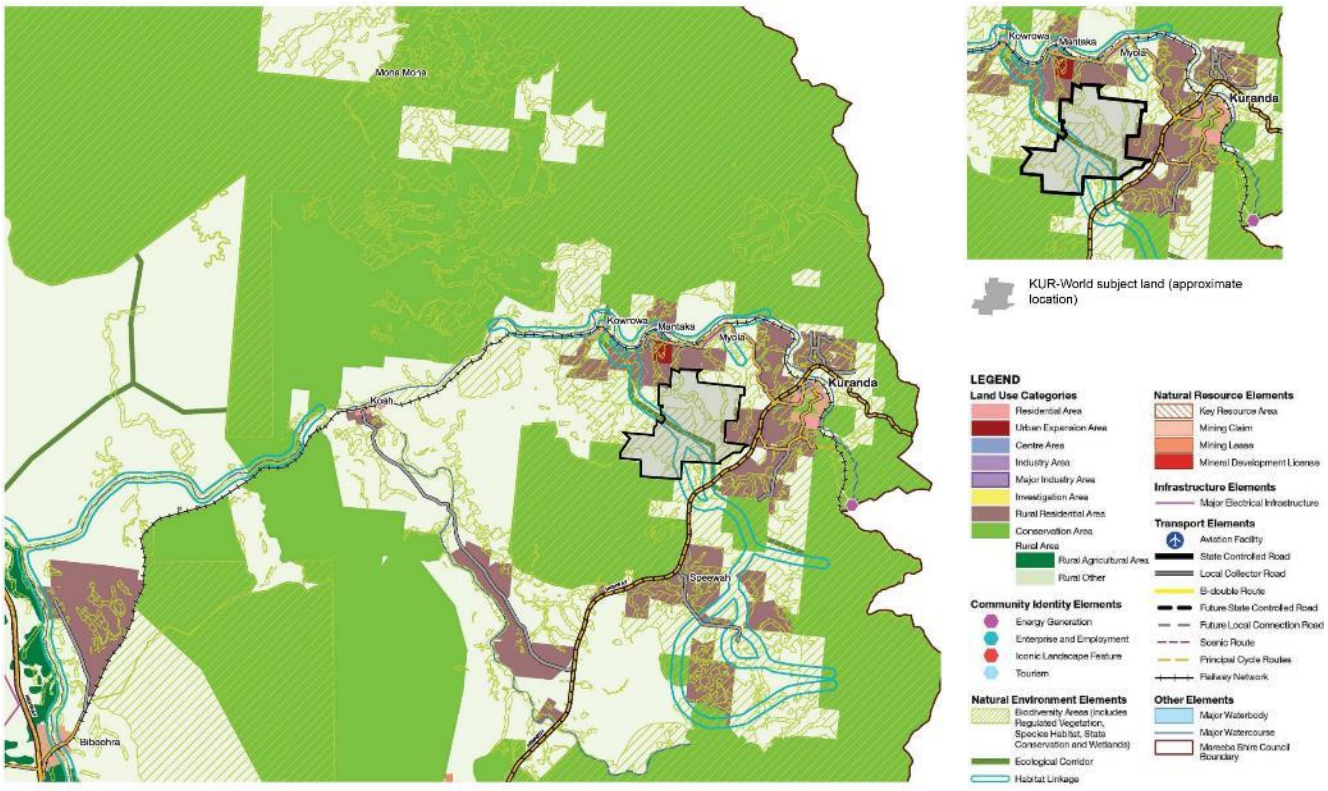

Figure 6-31: Extracts from the Strategic Framework Plan for Kuranda

6.2.4.8.2 *Scenic Amenity*

The Scenic Amenity Overlay in the Planning Scheme identifies a number of scenic routes which are to be "protected from development which is visually inappropriate, obtrusive, unattractive or insensitive". Scenic routes near the site are shown on Figure 6-32 and include:

- Barron Falls Road (Local Scenic Route); and
- Kennedy Highway (Local and Shire Scenic Route) which has a 500 m buffer to either side south of Kuranda Village extending to Mount Haren.

In accordance with Specific Outcome 3.5.4.1(3) of the Scenic Amenity Overlay Code, forested hill slopes visible from scenic routes and residential areas are required to be maintained in their natural state as these natural elements contribute to the shire's scenic amenity.

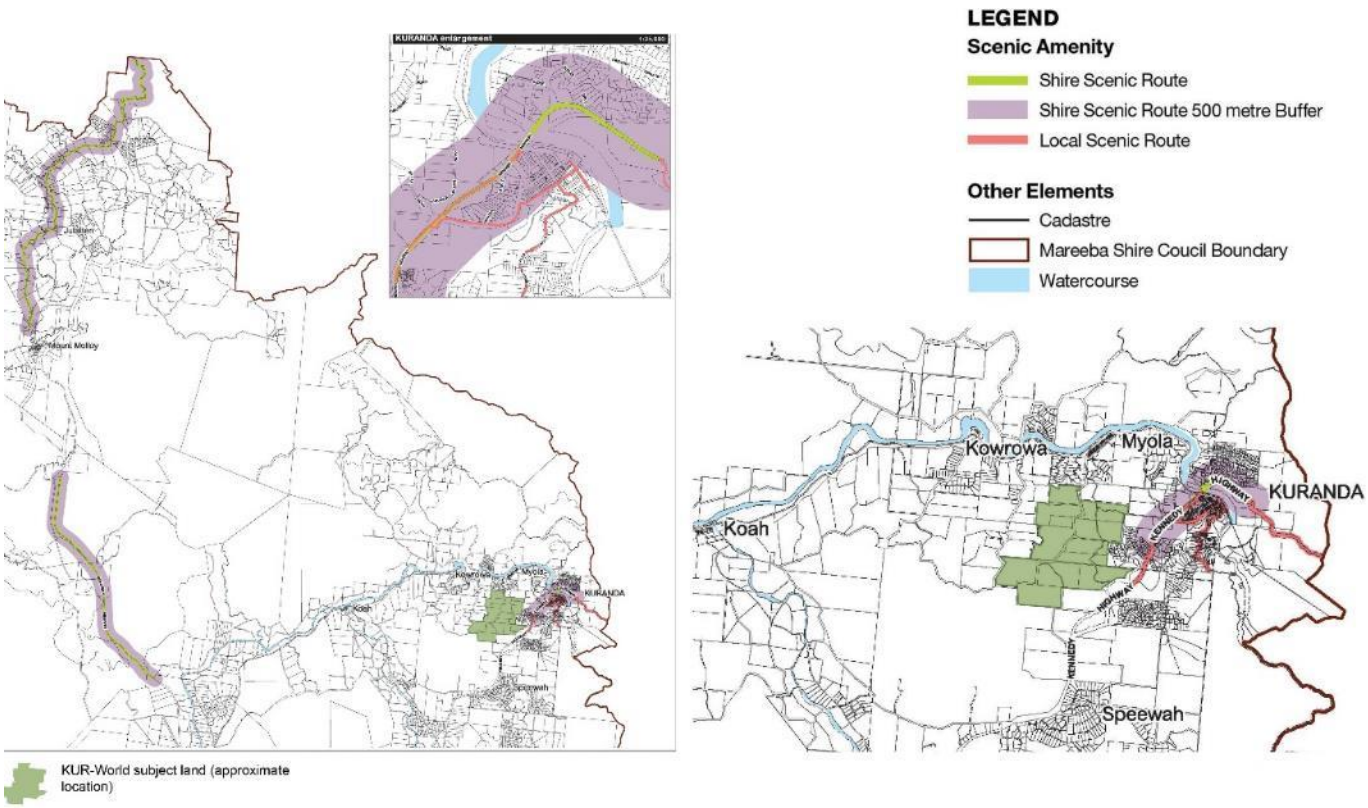

Figure 6-32: Mareeba Shire Scenic Amenity Overlay Extracts

6.2.5 Visual Impacts

6.2.5.1 Project Visibility

The visibility of the proposed built form likely to be within view from places outside of the site was modelled using a DSM which includes existing vegetation, buildings and landform. The VAM for the project is presented in Figures 6.2-7 to 6.2-11 (visible areas are shown in purple) and contained in the Appendix. Of note is that Figure 6.2-7 combines all of the proposed KUR-World built form, however not all aspects of the development will be visible from all purple-shaded areas. Figures 6.2-8 to Figure 6.2-10 provide a further level of assessment based on building and structure height ranges.

The VAM indicates that as development will be located mainly in the valleys and lower slopes, it will, with few exceptions, be screened from surrounding areas by the surrounding landform and intervening vegetation. Buildings and structures greater than 11 m in height associated with KUR-Village Eco Resort, KUR-World Campus and Sporting Precinct, Business and Leisure, Hotel, and Function Centre precincts are located in a relatively confined precinct at low elevation, and will be only marginally visible from surrounding residential areas, especially when compared with buildings less than 10 m in height, which are dispersed in several areas across the site, including more elevated land.

The top of the proposed eastern zip line tower will be visible from a broader visual catchment as shown in Figure 6.2-11. The tower will be visible from several residences and also the Kuranda District State College to the north, east and south-east of the site as discussed in detail in Table 7-1.

Table 6-8: Assessment of Project Visibility

Receptor Group	Assessment of Project Visibility
Skyrail (approaching Kuranda Village)	The modelling indicates that proposed buildings may be visible in the background from Skyrail gondolas at their highest elevation (Red Peak) but are at such a distance (6.5 km) as to be almost indiscernible amongst the surrounding mountains and forest. In general, buildings at such distances are distinguishable only if and when they reflect sunlight off roofs or windows, or at night when lights may be visible 'twinkling' above or through trees. However, it is noted that Skyrail does not operate at night, so this potential source of visual impact is not applicable.
Kuranda Scenic Railway	VAM modelling indicates that the proposed top section of the eastern zip line tower may be seen as fleeting glimpses from the Kuranda Scenic Railway at a distance of approximately 3 km (in proximity to Monaro Close and Oak Forest Road) but will not detract from the overall experience of the rail journey for visitors due to the viewing distance and nature of the structure.
Kennedy Highway and local roads	Although the site is located within proximity to a major public road and scenic route identified under the Planning Scheme (being the Kennedy Highway), the proposed development (with the exception of the proposed eastern zip line tower) will not be visible from this road as the development area is primarily located in the northern part of the site. However, the upper portions of the eastern zip line tower will be visible as glimpses from small sections of Kennedy Highway. Possible views from Kennedy Highway near the intersection of Myola Road (approximately 1 km to the east of the site) toward the proposed development will be screened by existing vegetation and the undulating landform. Views toward the proposed development including the proposed towers from Barron Falls Road, which is identified as a Local Scenic Route, will also be mostly concealed by vegetation. In addition, parts of the proposed development will potentially be visible from the following public roads in Kuranda: ▪ The proposed development, including the top section of the proposed eastern zip line tower, may be visible for short sections and therefore short travel periods from Rosewood Drive. This road is located approximately 1.9 km from the proposed development and is a low traffic volume gravel road, servicing a limited number of rural properties. ▪ Proposed built form including the top of the proposed eastern zip line tower may be visible from minor sections of Hilltop Close approximately 250 m to the east of the site. This road provides access to only a few properties. ▪ Proposed built form may be visible from a short section of Saddle Mountain Road approximately 4.8 km away and at an elevation of approximately 460 m. This is a minor road leading to a series of telecommunication towers located at the peak of Saddle Mountain. ▪ The proposed upper section of the eastern zip line tower may be visible from a wider visual catchment) and may be glimpsed from roads to the north and north-east of the site including Oak Forest Road) and Myola Road (between approximately 700 m to 1.5 km away), roads to the east of the site including Mount Haren Road and Punch Close (between approximately 700 m to 1.5 km away), roads to the south-east including Jumrum Close, Hillview Close, Masons Road, Williamson Drive, Wattle Close and Spring Crescent (between approximately 800 m to 1.7 km away) and Kennedy Highway. ▪ With respect to the potential views from public roads, the proposed built form will be seen at mid to long range distances, with the exception of closer range potential views from Hilltop Close. ▪ In general, any buildings associated with the proposed development will be in the mid-ground, in the context of existing rural landscape in the foreground and framed by distant mountains. The top section of the proposed eastern zip line tower, however,

Receptor Group	Assessment of Project Visibility
	will be visible from a range of short to long distance views from several public roads surrounding the site. The degree of visual dominance of the proposed structure will be dependent upon the proposed design, however, it is anticipated that from mid to long range distances the tower will not be overly discernible as demonstrated in the view of the existing tower in Figure 6-21.
Residential Receptor Groups (refer Figure 6-28	
Boyles Road South (Receptor A),	Views of the proposed development from residences in rural residential areas to the west in Boyles Road South will be screened by existing vegetation and undulating landform.
Boyles Road North (Receptor B),	Views of the proposed development from residences in rural residential areas to the northwest in Boyles Road North will be screened by existing vegetation and undulating landform.
Oak Forest Road (Receptor C)	Views of the proposed development from residences in rural residential areas to the northwest Oak Forest Road will be screened by existing vegetation and undulating landform.
North Barron River (Receptor D)	Views of the proposed development from residences in rural residential areas to the northwest in North Barron River will be mostly screened by existing vegetation and undulating landform. The residence on the rural property at 51 Rosewood Drive approximately 2.2 km north of the site and at an elevation of approximately RL370m may view some buildings >20 m in height from views to the south.
High Chapparal Road (Receptor E)	Residences within rural residential areas north of the site at 76 High Chapparal Road at viewing distances ranging from approximately 60 m from the site and elevation of approximately RL340m viewing west may view some buildings >20 m in height. Residents at 31 High Chapparal Road may view the top section of the proposed eastern zip line tower.
Monaro Close (Receptor F)	Residences within rural residential areas north of the site at 68 and 78 Monaro Close at viewing distances ranging from approximately up to 325 m from the site and elevation of approximately RL340m viewing south may view some buildings >20 m in height. Residences at 8/22 and 23 Monaro Close may view the top section of the proposed eastern zip line tower.
Barnwell Road (Receptor G)	Residences within rural residential areas north of the site at 62 and 77 Barnwell Road at viewing distances ranging from approximately 60 m to 500 m from the site and elevations of approximately RL340m viewing south may view some buildings up to 23 m in height and also the top section of the proposed eastern zip line tower.
Kingfisher Drive (Receptor H)	Views toward proposed built form in Kingfisher Drive will be screened by intervening vegetation and undulating landform.
Myola (Receptor I)	Views toward proposed built form in Myola will be screened by intervening vegetation and undulating landform due to the low elevation of this residential area. However, the top section of the proposed eastern zip line tower will be visible from minor areas within Myola (refer Figure 6-37).
Kuranda District State College (Receptor J)	Views toward proposed built form in Kuranda District State College will be screened by intervening vegetation and undulating landform due to the low elevation of this residential area. However, the top section of the proposed eastern zip line tower will be visible from minor areas within this receptor group (refer Figure 6-37).
Fairyland Road (Receptor K)	Views toward proposed built form in Fairyland Road will be screened by intervening vegetation and undulating landform due to the low elevation of this residential area.

Receptor Group	Assessment of Project Visibility
Christensen Road (Receptor L)	Views toward proposed built form in Christensen Road will be screened by intervening vegetation and undulating landform.
Kuranda Heights Road (Receptor M)	Views toward proposed built form in Kuranda Heights Road will be screened by intervening vegetation and undulating landform due to the low elevation of this residential area.
Myola Road South (Receptor N)	The residence on the rural property at 47 Myola Road approximately 1 km north-east of the site may have views to the tallest buildings >20 m in height and the top section of the proposed eastern zip line tower.
Kennedy Highway (Receptor O)	Views toward proposed built form in Kennedy Highway will be screened by intervening vegetation and undulating landform.
Mount Haren (Receptor P)	Views to some parts of the proposed built form in Mount Haren may potentially be available from a small number of existing residences including: Residences on elevated land along Hilltop Close (6, 8 and 10) at elevations of approximately RL400m to RL430m, and viewing distances ranging from approximately 100 m to 250 m viewing north. Some tall buildings up to 24 m in height may be visible from these receptors. Nearby residences at 22 and 50 Mount Haren Road at an elevation of approximately RL400m and approximately from 25 m to 300 m from the site viewing west. Some buildings >20 m in height may be visible from these receptors. Views toward the top section of the proposed eastern zip line tower will also be visible from some residences within Mount Haren.
North Barron River (Receptor Q)	Views toward proposed built form in North Barron River will be screened by intervening vegetation and undulating landform due to the low elevation of this residential area.
Kuranda Village (Receptor R)	Views toward proposed built form in Kuranda Village will be screened by intervening vegetation and undulating landform due to the low elevation of this residential area. However, the top section of the proposed eastern zip line tower will be visible from minor areas within Kuranda village (refer Figure 6-37).
South Kuranda (Receptor S)	Views of the majority of the proposed development from residences to the east of Kennedy Highway will be concealed by Mount Haren and its associated ridgelines. However, the upper portions of the proposed eastern zip line tower will be visible from these areas (refer Figure 6-37).
Lookouts: Glacier Rock (488m), Wrights Lookout, Barron Falls Lookout and Toby's Lookout	The proposed development will not be visible from any public lookouts.
Walking tracks: Douglas Track, Smith's Track, MacDonalds Track	The proposed development will not be visible from any walking tracks.
Recreational users: Cairns Quads and Adventures, Billabong Horseback Adventures and Cairns Paintball, The Billabong Kuranda'	The proposed eastern and western zip line towers may be potentially visible to recreational users on elevated areas to the south of the site at 186 Mt Haren Road (Cairns Quads and Adventures and Billabong Horseback Adventures), at distances between, approximately 550 m and 1.2 km. At these distances, the prominence of the structures above the surrounding vegetation will be dependent upon the proposed design and clearing.

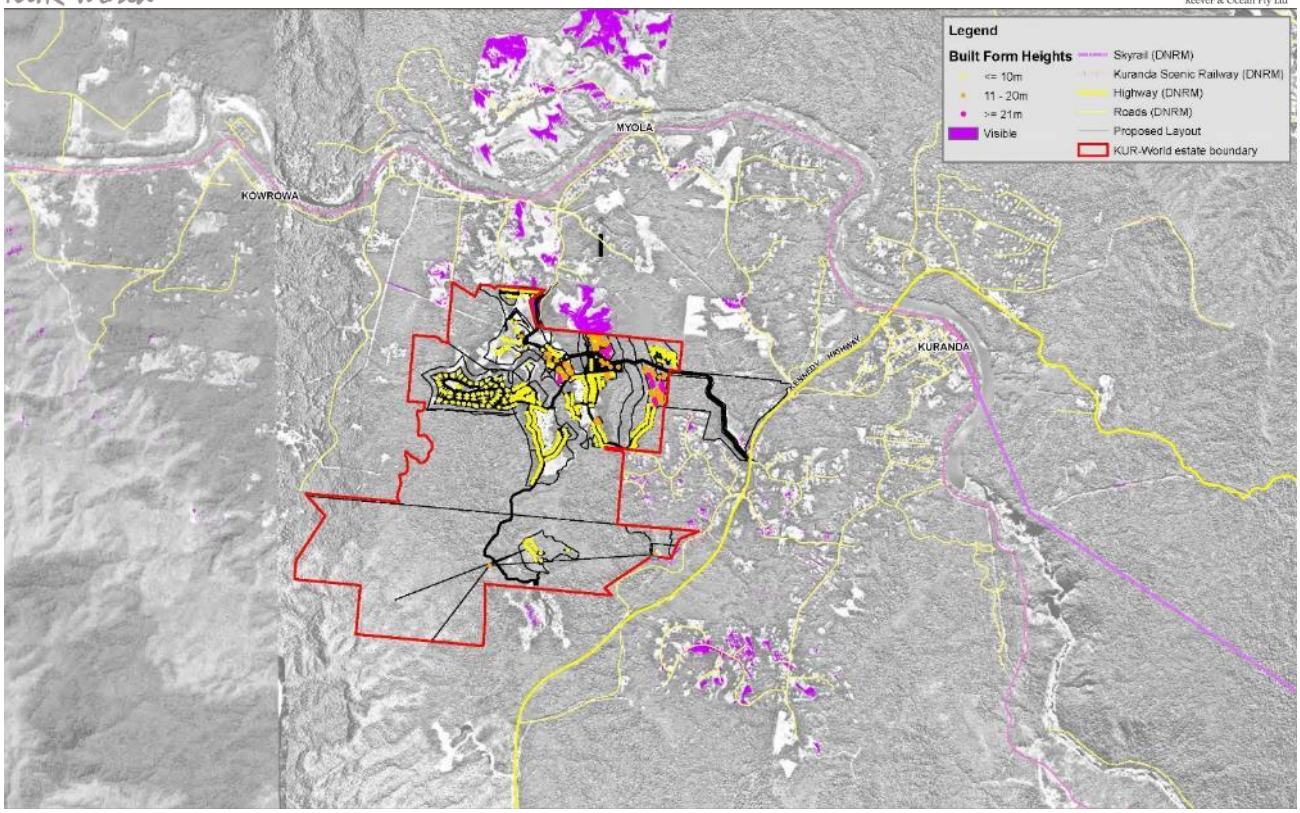

Figure 6-33: Visual Analysis Map – Built Form - Combined

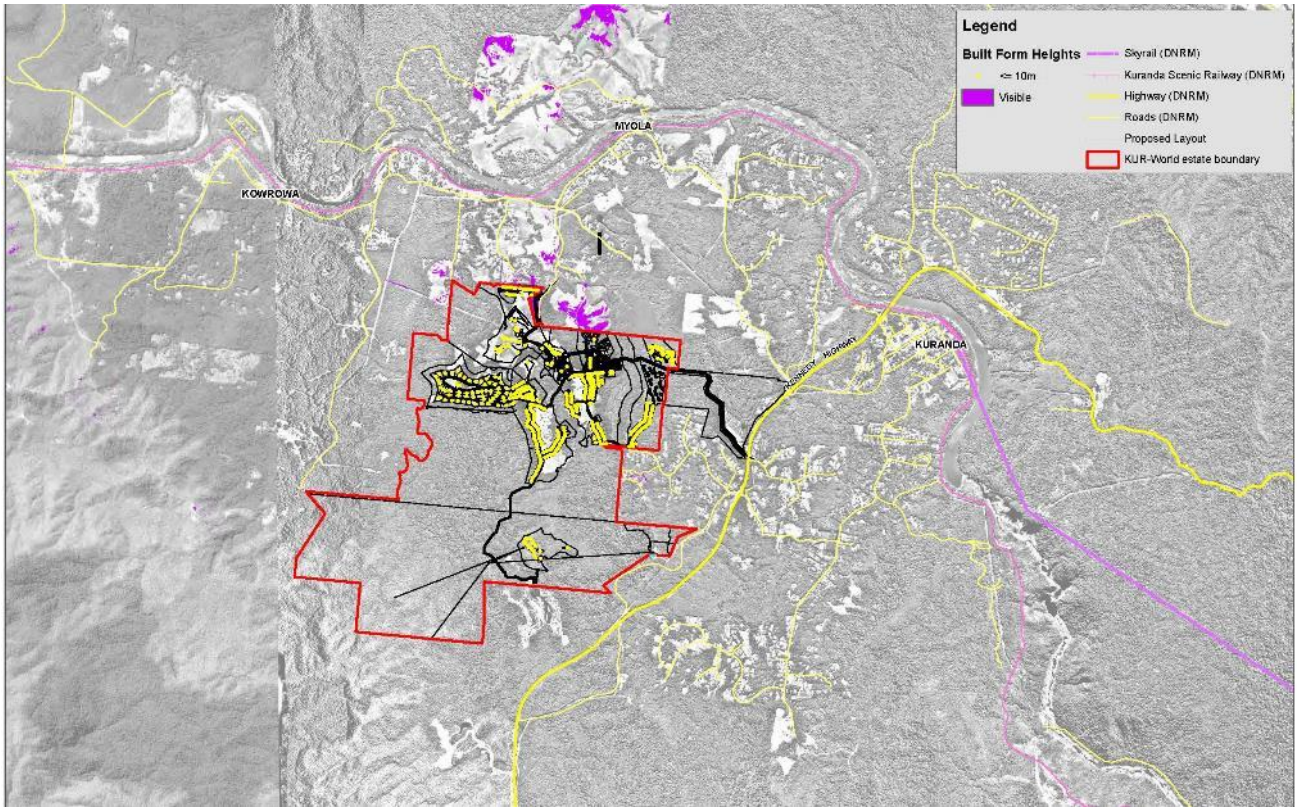

Figure 6-34: Visual Analysis Map – Built form up to 10 metres in height

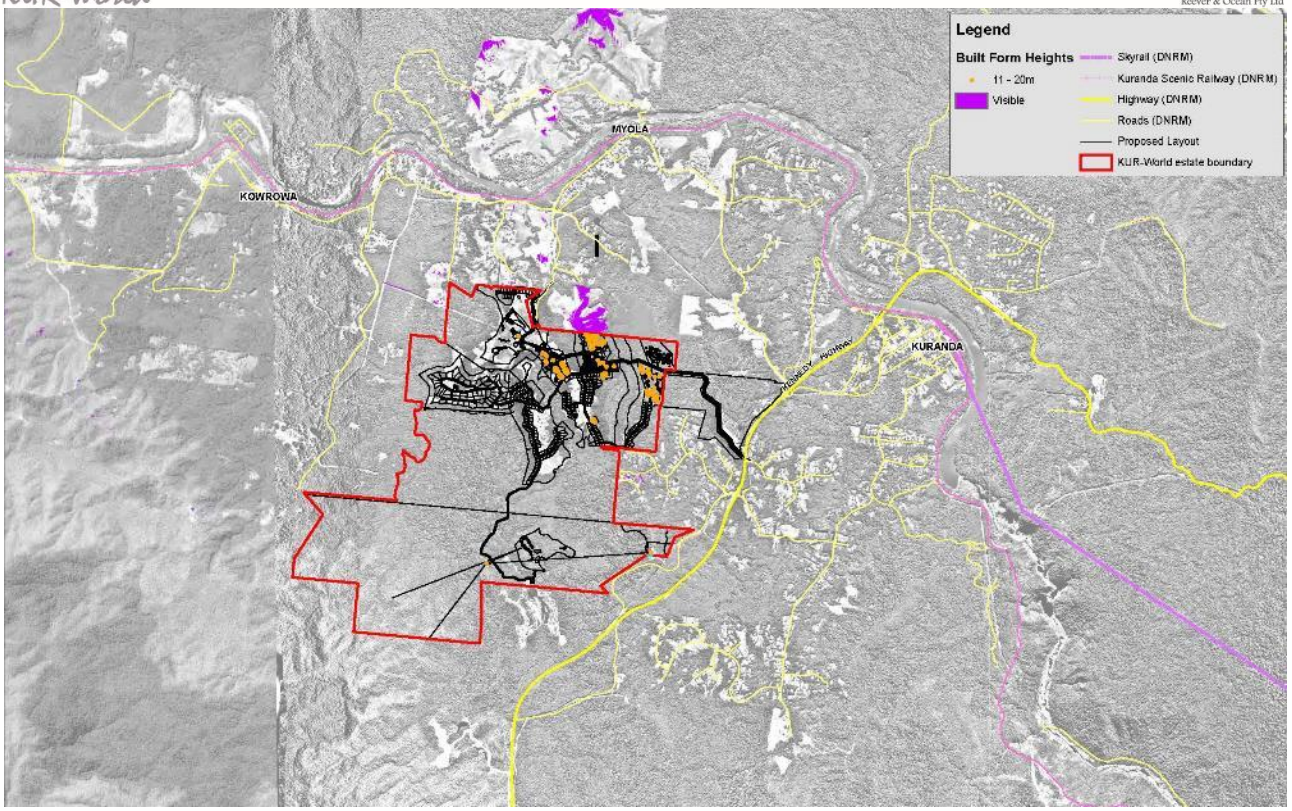

Figure 6-35: Visual Analysis Map – Built form from 11 to 20 metres in height

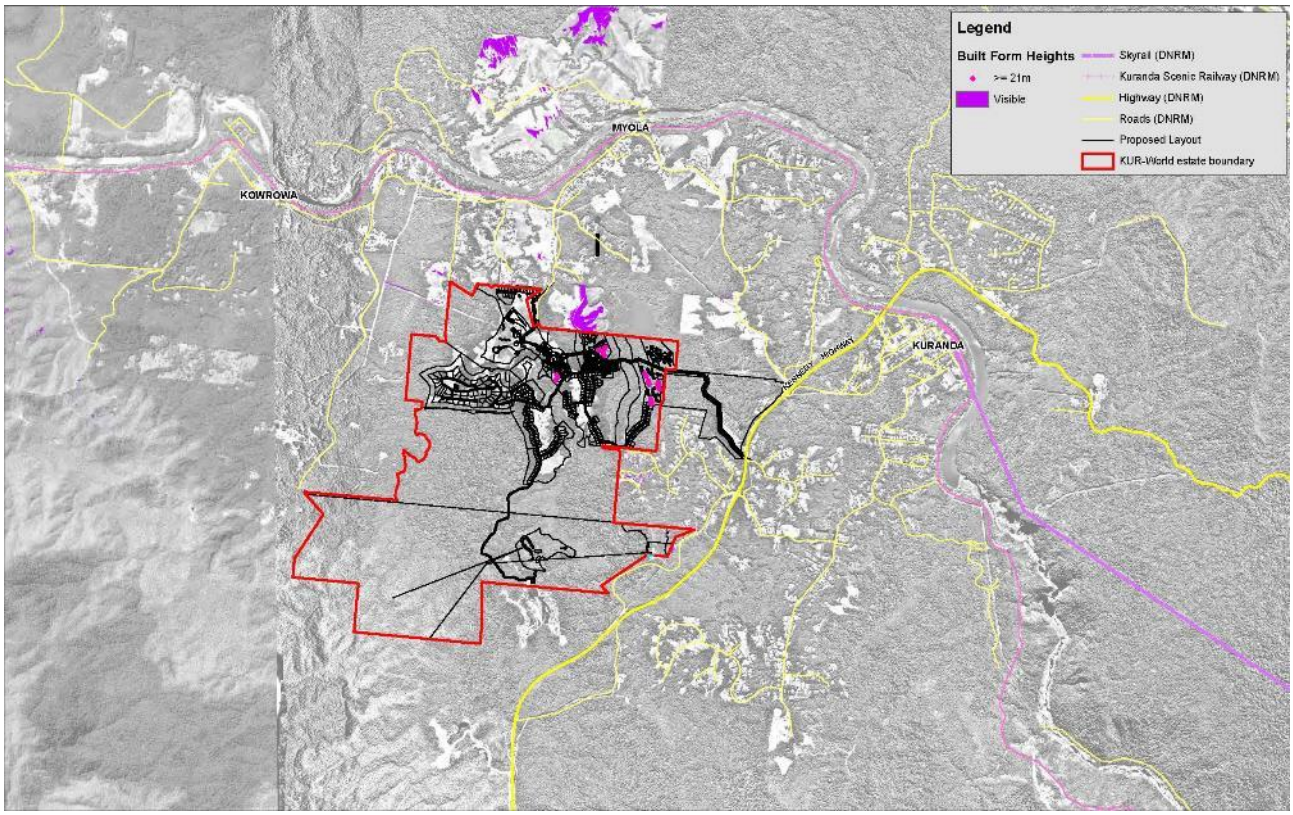

Figure 6-36: Visual Analysis Map – Built form greater than 20 metres in height

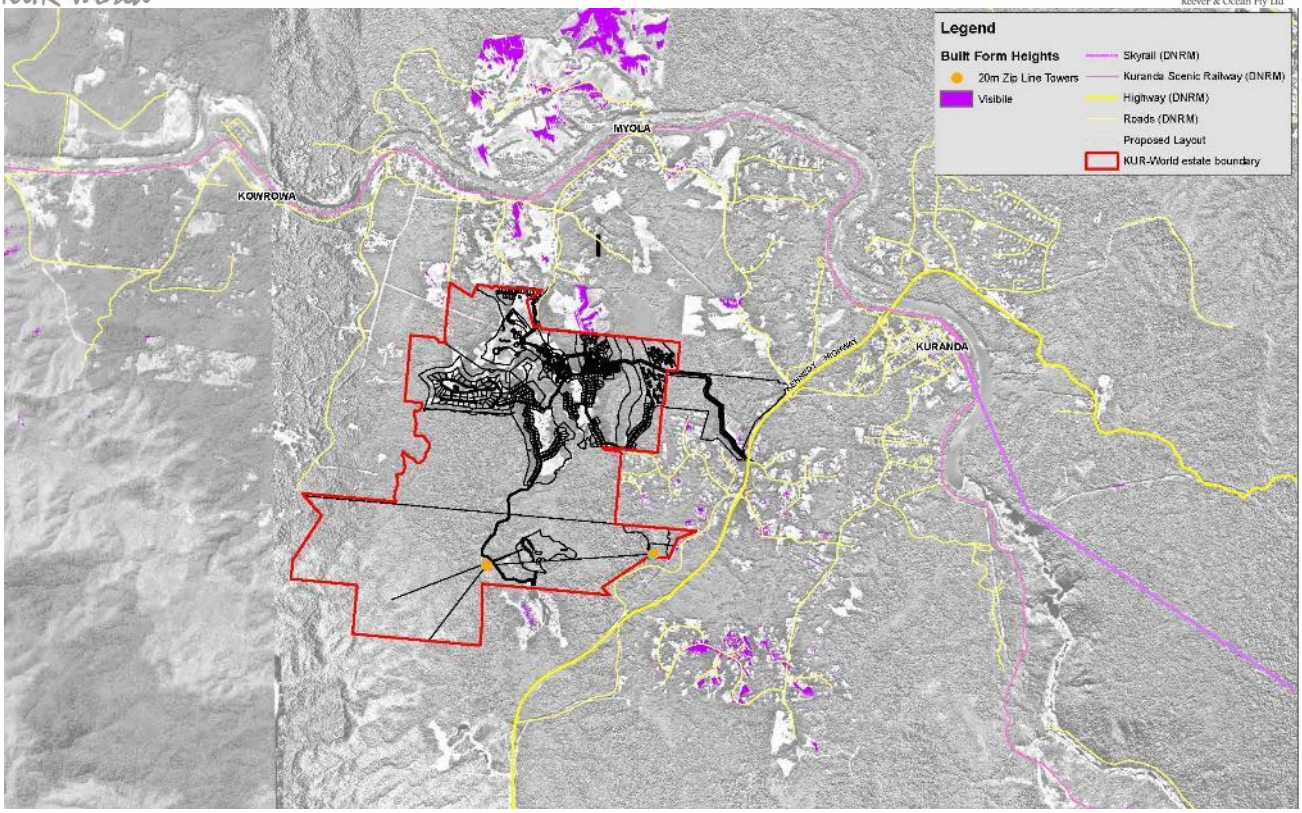

Figure 6-37: Visual Analysis Map – Zip line towers

6.2.5.2 Sightline Analysis

Cross sectional sight line analysis was undertaken from a number of sensitive receptors, including the existing Skyrail Red Peak Station north-west across the Barron River toward the site, as representative of the district topography and one of the few public viewpoints potentially affected (Figure 6-38)

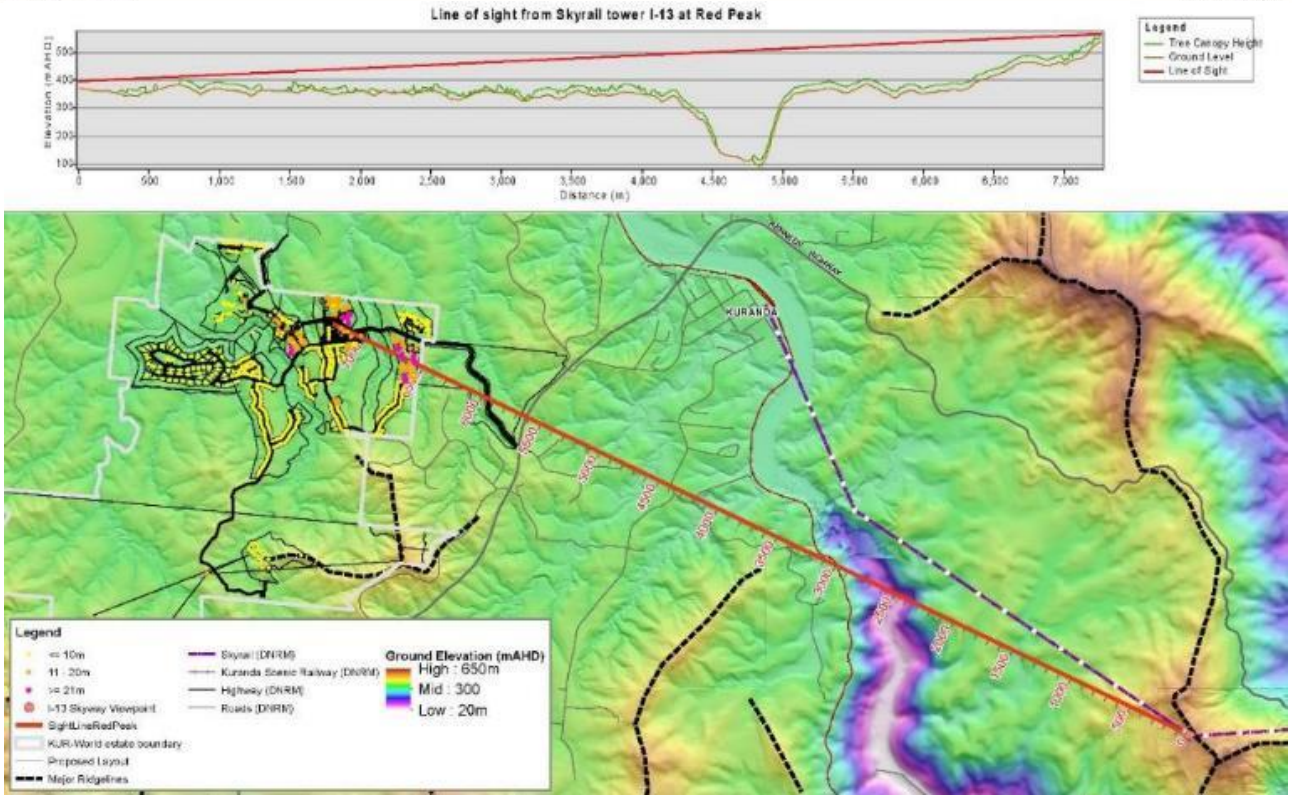

Figure 6-38: Sightline Cross Section from Red Peak toward Site

At an elevation of 594 m, Red Peak Station affords panoramic views across Kuranda (from near Red Peak Station looking north-west toward the northern mountains of Kuranda National Park and Barron River) (Figure 6-38). From this view, the site is partially visible as mid and background elements although it is largely screened by topography and intervening vegetation (including Mt Haren), and appears indistinct as part of the wider panorama as seen from this part of Skyrail.

This is reinforced in the cross section (Figure 6-38) which shows that most of the development will be concealed by existing vegetation and local ridgelines immediately to the east of the site. However, portions of the taller structures will potentially be visible in KUR-Village (at an elevation of approximately 360 m) including the 24 m viewing tower. These structures will not be visually prominent due to the viewing distance (approximately 6.5 km from Red Peak Station).

Sightline analysis was also undertaken from the private residences located at 62 Barnwell Road and 8 Hilltop Close (see Figure 6-25 indicating the general direction of view from neighbouring number 10). These also consider the mountain frame and forested skyline views, which are significant visual elements and form part of the distinctive character of the region.

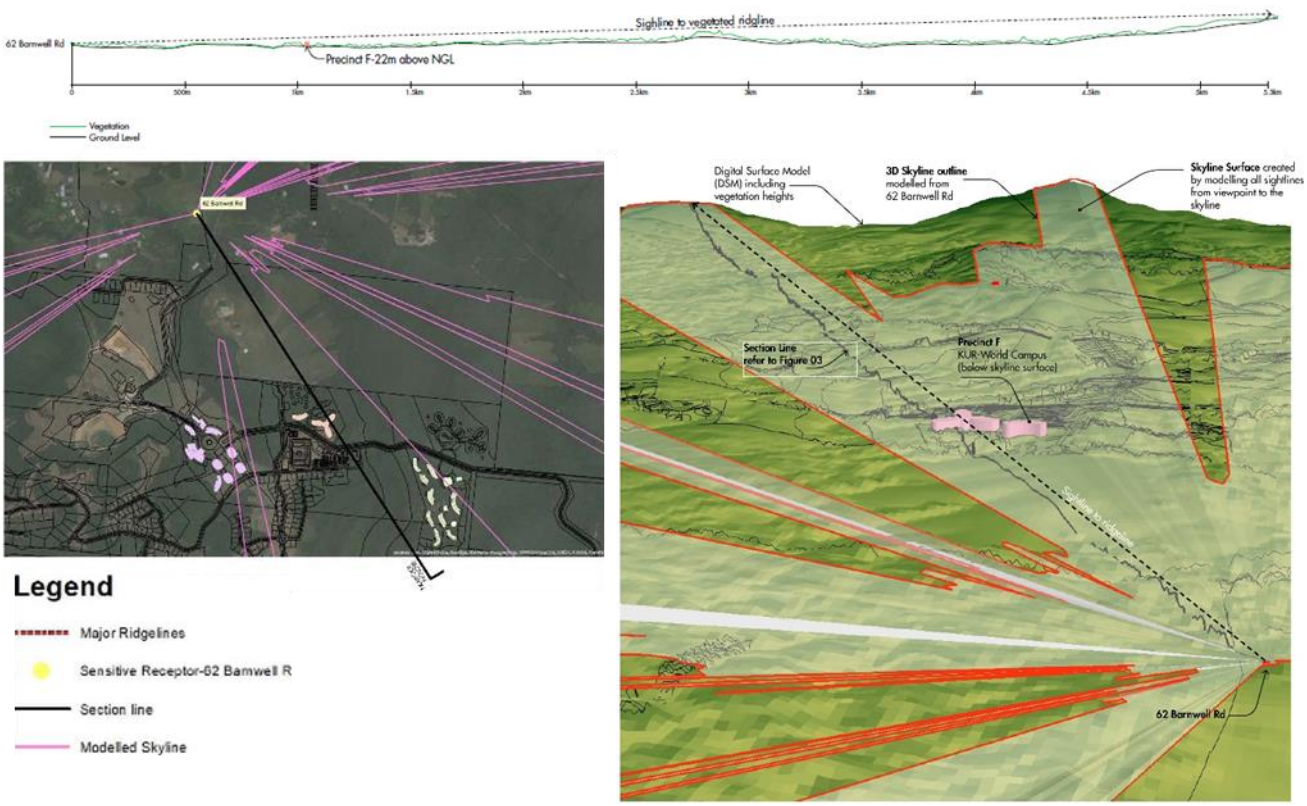

Figure 6-39: Sightline analysis from 62 Barnwell Road through KUR-World campus (Precinct F) and views to skyline (3D view)

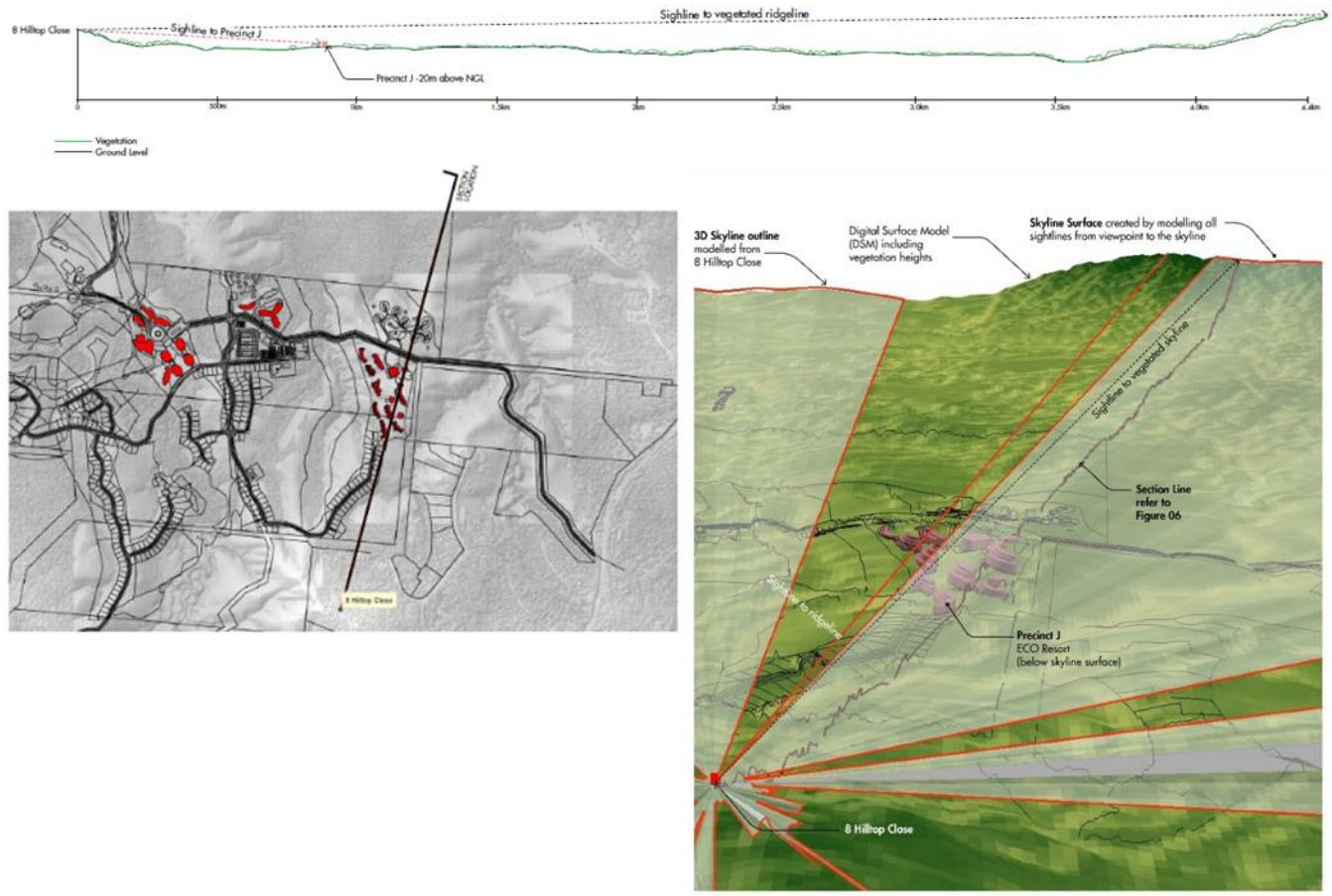

Figure 6-40: Sightline analysis from 8 Hilltop Close (top) through sensitive landscape areas to the Eco resort (Precinct J) and Skyline analysis (3D view) towards Kuranda National Park

As shown in the sightline analyses in Figure 6-39 and Figure 6-40, the development will be concealed by existing vegetation and topography from the Barnwell Road residence. The sightline from Hilltop Close indicates that portions of the taller buildings may be visible over the forested hillside vegetation, however, these will be seen over a distance of approximately 1 km. Importantly, the skyline analysis indicates that no part of the proposed development will intrude on the forested skyline behind.

6.2.5.3 Landscape Character

The proposed KUR-World development will be different from the nearby village of Kuranda and the surrounding predominantly rural residential and natural landscape character in terms of scale. However, the development will be mostly concealed from external view as a result of its location and topography within the lower areas of a valley framed by the mountain range of Formartine State Forest to the south and west and Mount Haren to the south-east. The proposed development will have a different character to that of the remainder of Kuranda, although the extent to which it could impact on existing landscape character depends largely on its visibility.

Development will be generally limited to the northern area of the site (approximately 171 ha) and concentrated within previously-cleared areas. As such, most (approximately 75%) of the site will retain its existing vegetation and landform. Preliminary earthworks design has indicated that earthworks will be required for roads, infrastructure, sporting facilities and to create building pads for proposed built form within the KUR-Village Business and Leisure Hotel and Function Centre, Eco-Resort, Health and Wellbeing Retreat and KUR-World Campus. Earthworks will also be associated with proposed roads within the residential lot areas and necessary profiling for the golf course areas.

The changes to the existing landscape character of the site and the differences to the existing district character will be mostly concealed from external views with the exception of some built form, including the upper portions of the proposed eastern zip line tower, which will be visible from several locations. The degree of landscape intrusion associated with the tower will be dependent upon the detailed design of the structures. Although largely well-contained, it is accepted that there may be perceptions of change to the existing character as a result of the development, as well as increased visitor and residential traffic on local roads and the Kennedy Highway during both the construction and operational phases; as well as increased visitor numbers in Kuranda. Generally, however, the overall sense of place and identity of the Kuranda region will be maintained.

Community expectations are likely to be influenced by the Planning Scheme intentions for Kuranda, which are for a 'village in the rainforest' surrounded by rainforest, rural uses and dispersed small scale settlements. Perceptions of the Kuranda region being one of scattered rural settlement surrounded by and integrated with outstanding natural areas and greenery, may be affected by a development of the scale proposed. However, as most of the proposed built form will be concealed from external view, the operational (post-construction) impacts on and incompatibility with the existing landscape character will be largely perceived rather than seen.

6.2.5.4 Visual Sensitivity

The proposed development (excluding the eastern zip line tower) is only likely to be visible from a limited number of nearby residences, such as the elevated housing to the south-east on Hilltop Close. As viewed from these residences, the proposed development will appear as areas of low to medium rise buildings, surrounded by trees and open space and will form only a minor component of their overall view. However, from a few immediate residents to the north on Barnwell Road and Monaro Close, the proposed development will be visible at close range. The extent of this visibility will depend on the proposed landscape design and vegetation buffering bordering the site.

Figure 6-41 provides an overlay of the proposed development with Landscape Visual Sensitivity and demonstrates that most of the proposed development occupies land of low landscape visual sensitivity. Proposed low density residential development will intrude on sensitive areas on a minor ridgeline in the north-west and central area of the site. Some buildings within the Rainforest Education Centre and Adventure Park will also be affected together with sensitive areas on the hillslopes (to the west and north of) elevated land at Hilltop Close. However, most residential views to the north and west from elevated houses at Hilltop Close will be over the top of any proposed development precincts on the middle hillslopes.

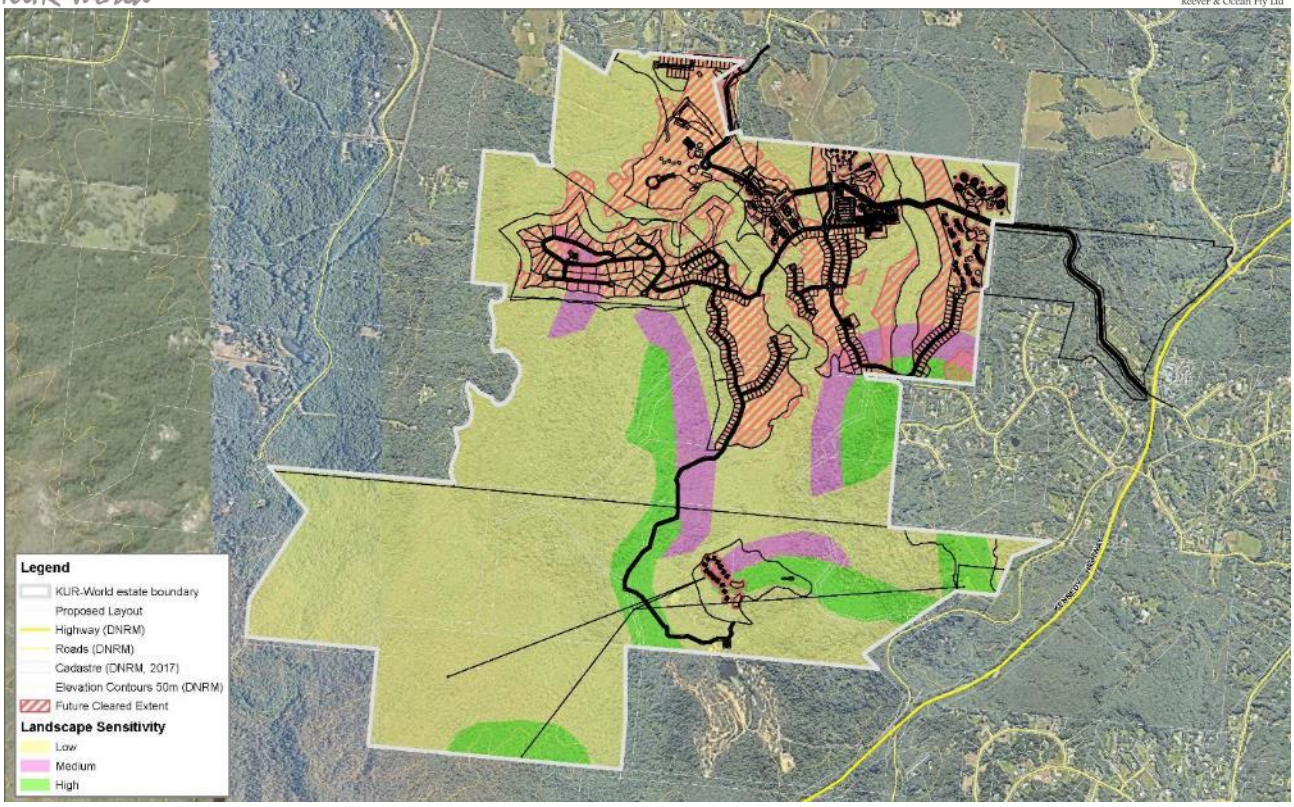

Figure 6-41: Landscape Visual Sensitivity

6.2.5.5 Summary of Visual Impacts

With the exception of possible views to the top of the eastern zip line tower, the proposed development will not impact upon the scenic experience of motorists and passengers travelling along the scenic route of Kennedy Highway and will not significantly impact upon passengers on the Kuranda Scenic Railway or panoramic views from tourists on the Skyrail looking north-west across Kuranda and the Barron Gorge to the distant mountain ranges. Views from the Skyrail to Kuranda's highly valued natural scenery will be generally maintained. Thus, the image of the regions unique and distinctive landscape character will generally be preserved for residents and visitors to the area.

Similarly, the proposed development will not be visible on the skyline of major ridgelines from surrounding areas, although sections of the proposed access road from Myola Road have the potential to be visible on the side of local hillsides and may require further visual assessment following detailed design. Nevertheless, this access road will only be potentially visible by a select few receptors looking north-east from near Hilltop Close.

Views to forested ridgelines from within the urban areas of Kuranda and rural residential areas surrounding Myola will not be affected by the proposed development, provided that sensitive ridges and hillsides have no buildings visible above the tree canopies. However, the VAM suggests that for some receptors (D, E, F, G and N in Table 6-8) views to built form may be available as glimpses between trees, although more detailed analysis indicates that the viewpoints are isolated to parts of a property such as paddocks, stables or sheds (for example) rather than houses *per se*, with the exception of 76 High Chaparral Road, 51 Rosewood Road and 62 Barnwell Road.

The sightline section from the house at 62 Barnwell Road (Figure 6-39) indicates that intervening vegetation helps screen taller buildings (in Precinct F) and any vegetation retained on campus will further help to screen built form. Similarly, some taller parts of the eco resort (up to 4 storeys, Precinct J) might also be

within view from Hilltop Close (Figure 6-40) as seen over the top of hillslope vegetation and the golf course. Retention of vegetation and/or additional revegetation around the resort buildings will (over time) be capable of screening most of the built form in this precinct given the sloping topography of the area.
The potential visual amenity impacts of the upper parts of the proposed eastern zip line tower upon local views will not be substantial. Importantly, as shown in the Figure 6-39 and Figure 6-40 the surrounding forested ridgelines will continue to dominate the skyline, even with built form up to 5 storeys (22-23 m).

6.2.5.6 Lighting Impacts

The proposed development will include buildings which, when lit at night, will be visible from a limited number of residents in nearby elevated houses. These receptors will probably see lights twinkling between trees, even where the buildings themselves may not be visible by day. There may also be a localised 'night glow' associated with the medium rise area of development near KUR-Village, which will represent a change to the current night-time character of the valley areas of the site. Such lighting effects will be seen by only a limited number of nearby residents and are not considered to pose a significant visual impact although it will be one of the indicators of change in the Kuranda region and represent the presence of a large-scale development.

6.2.5.7 Community Expectations and Values

Community expectations for development are largely based on the extent to which development meets the statutory and regulatory requirements, particularly at local and state government levels. At the Commonwealth level, the Matters of National Environmental Significance (MNES) are addressed below.
The proposed development is generally consistent with the statutory requirements of the FNQRP and the local Mareeba Shire Plan with respect to visual amenity and landscape values. The proposed development seeks to protect and manage the landscape values of the site, by not developing the southern part of the site, nor developing on sensitive ridgelines. This helps to maintain the forested mountain views on the skyline[4], from most receptors, and contributes to the FNQRPs objectives to retain and protect areas of high scenic amenity value within the region.

In the Mareeba Shire Planning Scheme, the scenic amenity overlay identifies Barron Falls Road and Kennedy Highway as being scenic routes to be protected from development which is visually inappropriate, obtrusive, unattractive or insensitive. The proposed development is not visible from these scenic routes (Figure 6-29), and also does not form part of the designated 500 m buffer in the Scenic Amenity Overlay (Figure 6-32).

Although there is no 'right' to a view under the Mareeba Shire Planning Scheme, residents who enjoy an existing view are likely to interpret codes such as SO 3.5.4.1 (3) of the Scenic Amenity Overlay Code as offering some protection for views to forested hillslopes, and their contribution to the shire's scenic amenity.
The modelling (including sightline sections) indicates that the surrounding mountain frame will continue to dominate the skyline, as seen from all receptors, and therefore satisfies the outcomes of the Scenic Amenity Overlay code.

6.2.6 Visual Impact on Matters of National Environmental Significance

The site is 8.5 km from the Great Barrier Reef Marine Park, GBRWHA and GBRNHP. However, the site can be seen in the distance by Wet Tropics World Heritage Area visitors using Skyrail in Kuranda National Park, hence the aesthetic attributes which contribute to its OUV are relevant considerations. The UNESCO Guidelines define the concept of OUV as "*cultural and/or natural significance, which is so exceptional as to*

[4] Comprising Kuranda National Park, Formartine State Forest, Mt Haren and the Macalister Range

transcend national boundaries and to be of common importance for present and future generations of all humanity."

The relevant aesthetic attributes and their presence or representation in the WTWHA, WTQNHP, GBRWHA or GBRNHP viewsheds is addressed in Table 6-9.

Table 6-9: Relevant MNES Criteria Represented in the Site

Relevant Criterion	Representation in the Site
GBRWHA – OUV Aesthetic Attributes criterion (vii) *"to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance."*	The GBRWHA will not be visually impacted by this project because: ▪ The site is located 8.5km west of the coastline edge of the GBRWHA. ▪ Water from the site flows toward the GBRWHA via the Barron River and its tributaries, chiefly Owen Creek. ▪ Best practice sediment and erosion management measures will be implemented to ensure that the proposed development does not impact on the quality of coastal waters or the GBRWHA
GBRWHA - Statement of OUV, Relevant Aesthetic Attribute *"4. The rich variety of landscapes and seascapes including rugged mountains with dense and diverse vegetation and adjacent fringing reefs"*	Attribute 4 is not represented at site. The GBRWHA will not be visually impacted by this project because: ▪ The site will not impact on nearby rugged mountains with dense rainforest or diverse native vegetation are present within the nearby Kuranda National Park. ▪ The eastern and southern side of these mountains do not from part of the viewshed to the GBRWHA.
WTWHA – OUV Aesthetic Attributes criterion (vii) *"to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance."*	The WTWHA will not be visually impacted by this project because: ▪ The site is located approximately 6.5 km to the west of the Barron Gorge National Park and Kuranda National Park, which form part of the WTWHA. It is also 2km south of the Kuranda National Park as the forested mountains that frame the Kuranda region form part of the national park. ▪ The site will be seen by World Heritage Area visitors using the Skyrail in the Kuranda National Park, however, the proposed development will not be readily distinguishable from any readily accessible location within the WTWHA. The only part of the WTWHA within view, the Skyrail Red Peak Station is approximately 6.5km from KUR-World. At this distance, it will form a minor component of the overall view (see Section 7.5.2) and will not impact upon the aesthetic values of views toward the Kuranda National Park and Macalister Range. ▪ The site is located in the transition zone or ecotone, between the wetter rainforest communities of the Lamb and Macalister Ranges to the east, and the dryer sclerophyll dominated woodland communities to the west, such that the south western lots of the subject land (lots 131 and 290 in particular) contain extensive areas of ironbark and forest red gum open forest.
WTQNHP criterion (e) *the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.*	The WTQNHP will not be visually impacted by this project for reasons outlined under the WTWHA.
GBRNHP Criterion *(e) the place has outstanding heritage value to the nation because of the place's*	The GBRNHP will not be visually impacted by this project for reasons outlined under the GBRWHA.

Relevant Criterion	Representation in the Site
importance in exhibiting particular aesthetic characteristics valued by a community or cultural group	

6.2.7 Mitigation Measures

6.2.7.1 Site Planning

A range of visual amenity mitigation measures have been incorporated in the site planning and design of the proposed development, including:

- Limitation of the overall development footprint on the site to approximately 171 ha (26% of the overall site); with proposed development areas carefully sited in the northern areas on lower elevations which had been previously cleared and ensuring the retention of existing vegetation on steeper and more visually exposed areas in the southern part of the site.
- The siting of built form on areas with lower visual sensitivity to allow greater visual integration into the surrounding rural and natural landscape, reduces potential visual impacts upon sensitive areas such as major roads (Kennedy Highway), surrounding rural residential uses, Kuranda Village and Skyrail. It also ensures that the majority of the site will retain its existing vegetated character and natural landform consistent with nearby vegetated areas.
- The retention of waterway corridors, riparian buffers and other vegetation to visually screen, soften and integrate the proposed low to medium-rise built form of the eco-resort into the existing vegetation and landscape.
- The layout of the development disperses the proposed built form into a series of development clusters, significantly reducing its intensity. The development areas will be buffered from surrounding uses and both visually and physically separated through the proposed golf course, pockets of open space, rural uses and the retention of riparian buffers and other vegetation.
- The proposed development is intended to be constructed in three stages over a 7.5-year timeframe, with most of the built form developed within the first five years, ensuring early commencement of proposed rehabilitation and landscape works to soften and integrate the proposed development. The planting of suitable species is likely to ensure effective screening within five years.

6.2.7.2 Built Form

The site Concept Master Layout incorporates best practice sustainable development principles from design to operation. Built form will be visually subordinate and sensitively integrated with the natural landform and vegetation by adopting the following measures:

- Bulkier and taller buildings will incorporate design features to break-up building mass and height, reduce reflectivity and visually integrate with their natural and open space setting, with landscape planting to screen or soften built forms as seen from external viewpoints where possible;
  - Dense tall vegetated screening buffers will be provided adjacent to the northern boundary in the proximity of affected residences along Barnwell Road and Monaro Close (immediately adjacent to the boundary with the proposed KUR-World campus and Farm Theme Park and Equestrian Centre precincts);
  - A vegetated buffer will be provided along the boundaries of the site within the golf course precinct to mitigate possible views from nearby residences to the east at Hilltop Close and Mount Haren Road.

- Retention of existing vegetation wherever possible and additional screen planting of trees will visually integrate the proposed built form areas into the surrounding landscape. This will also reduce potential impacts on surrounding nearby residences.
- Proposed building materials and external finishes will be compatible with the visual amenity and the landscape character of the surrounding area;
- The colours of external walls and roofs of buildings and structures will be from a subdued non-reflective palette (i.e. not reflective white or silver) to enhance visual integration with surrounding vegetation.
- Reduced roof mass by incorporating flat or low-pitched open gables;
- The proposed built form will be architecturally designed to a high standard with sufficient detailing and articulation to be visually interesting;
- Articulated facades, balconies and deep overhangs will be used to increase shadowing and reduce building size and mass;
- Recessed dark glazing and low reflectivity solar panels will be used to reduce potential glare;
- Any visually exposed retaining walls will be appropriately treated with screening shrubs and vines planted at the base - plus height restrictions for retaining walls in visible locations; and
- The Lifestyle Villa lots (2000 m² to 4,000 m² in area) and Premium Villa lots will be sited within nominated building envelopes. Sufficient intervening space between buildings to allow for retention of some existing trees and landscape planting of additional trees will also be provided. Slope-responsive construction techniques will be used to reduce earthworks and possible visible impacts of retaining walls.

6.2.7.3 Roads and Infrastructure

Specific visual impact mitigation measures to be incorporated into the detailed design process are:

- Roads and earthworks will conform with the natural landform and vegetation and be integrated into the proposed built form design, wherever possible. Access routes to the site will not be located directly perpendicular to existing contours or run directly up hillsides where they will be visually exposed. Appropriate changes in alignment will be provided in proposed roads around existing vegetation so that they appear to meander up hillsides with less overall visibility.
- Roadside vegetation will be retained wherever possible and any clearings for earthworks and infrastructure (including clearing for the proposed access road to Myola Road, the additional water reservoir adjacent to the existing Myola Road reservoir and proposed zip line towers) will be rehabilitated using appropriate locally native species.
- An appropriate vegetated screening buffer will be provided adjacent to the northern boundary in the proximity of affected residences along Barnwell Road (immediately adjacent to the boundary with the proposed services and infrastructure precinct).
- An appropriate vegetated screening buffer will be provided adjacent to the proposed services and infrastructure areas (including the proposed wastewater treatment plant and pump stations) west of the KUR-Village precinct.
- Underground power will be provided wherever possible throughout the site.
- Areas of bare earth exposed during construction will be minimised.
- Irregular native planting will be located along both sides of each roadway and golf course buggy paths within the development.
- The scale, extent and visual prominence of any advertising signage to the proposed development will be sympathetically located and minimised.

- The detailed design of the proposed zip line towers will ensure that the tower structures are visually unobtrusive and additional tree planting will be investigated within the vicinity of the eastern tower, to reduce possible views to the upper portions of the tower.

6.2.7.4 Golf Course

Specific visual impact mitigation measures for the proposed golf course include:

- The golf course design will conform with the natural landform and vegetation, wherever possible.
- Proposed planting areas will be sympathetic with existing vegetation communities and utilise locally native species.

6.2.7.5 Lighting

Specific visual impact mitigation measures for the proposed lighting include:

- Vegetation retention and proposed screen planting adjacent to proposed built form structures, in particular the proposed medium-rise built forms near KUR-Village;
- Use of downward lighting with minimal glare spillage;
- Movement sensitive lighting, and/or timers to be used where appropriate;
- Rooms fitted with light dimmers and timers; and
- Use of warm (yellow) lights rather than cool (white) bulbs and lamps.

6.2.8 Conclusions

The proposed development will represent a new built form that is different in scale and intensity to the existing character of the Kuranda region. However, the extent to which these differences affect the character and visual amenity of the region depend largely on visibility. The proposed development has been designed to have limited overall visibility from surrounding areas, with the minor exception of the upper portions of the proposed eastern zip line tower which will be more widely visible, due to its location on elevated land.

This VIA assessed the likely impacts on visual amenity and landscape character of the site. As detailed site planning and building design details (including building location envelope, bulk and scale, and material finishes) will be further refined as part of subsequent approvals, VAM modelling is the most effective visualisation tool to illustrate potential impacts based on conservative 'worst case' assumptions. Together with photographs and sight line sections across the site, modelling indicates that some buildings may be visible from a few public local roads (Barnwell Road, Hilltop Close, Saddle Mountain Road and Rosewood Drive), and some nearby rural residences and elevated houses. Apart from possible foreground views available from the end of Barnwell Road, visible buildings will generally occupy only a minor proportion of the view and background views of tall forested mountains will remain dominated by vegetated skylines. Views toward the eastern zip line tower will be possible from a greater visual catchment to the north, east and south of the site, at short to long range. However, views towards the tower are not considered to substantially reduce the visual amenity of the local area due to the nature of the structure and minor portion of the tower that will be visible.

Distant views from Red Peak Station (Skyrail) are theoretically possible but at great distance (6.5 km), and views across the Kuranda landscape from Skyrail will not be significantly impacted. Sections of the proposed site access road from Myola Road also have the potential to be visible on the side of local hillsides, depending on the extent of clearing and the ultimate landscape works.

The proposed development will only marginally impact on the scenic experience of motorists travelling along the Kennedy Highway approaching Kuranda (a scenic route designated in the planning scheme), nor

impact upon views to surrounding forested ridgelines and distant mountains; apart from possible views of the eastern zip line tower. The proposed development is therefore consistent with the FNQRP and the intent of the Mareeba Planning Scheme, and the predicted outcomes are consistent with maintaining the scenic amenity of the region.
The aesthetic values of The Wet Tropics and Great Barrier Reef World Heritage properties will not be impacted.

The proposed development has been sited within only approximately 25% of the overall site, on historically disturbed areas and primarily at lower elevations, to reduce visibility; whilst low impact uses are proposed for sensitive areas in the south of the site. 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. Overall, the proposed development will result in only minor localised impacts on visual amenity.

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 as a result of the type and scale of proposed 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 visibility.

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 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.

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 this VIA.