



4. Environmental Issues

4.1 Existing Environment

The existing environmental conditions at Hummock Hill Island and surrounding areas are described below. A more detailed description is provided in Appendix E.

- » The site is currently unused and subject to Development Lease 19/52155. The only known previous use is grazing.
- » Current over Hummock Hill Island is an Exploration Permits Mineral (Tenure type EPM number 7164) and an application for a Mineral Development Licence (Tenure type MDL number 310).
- » The Department of Natural Resources and Mines identifies the mineral sands resource as being “small”, consisting of between 5,000 and 5,000,000 tonnes.
- » Hummock Hill Island lies within or adjacent to a number of coastal and marine areas with designated conservation status including Great Barrier Reef World Heritage Area and Marine Park, Fish Habitat Area and Dugong Protection Area
- » Hummock Hill Island has no permanent fresh water streams, natural lakes or permanent freshwater wetlands. A number of dams have been created, presumably for stock watering purposes, and continue to store water after rainfall.
- » A tidal inlet associated with the Boyne Creek estuary effectively divides the island into an east and west portion. There are several other tidal inlets of varying sizes.
- » The climate is subtropical with average annual rainfall at Gladstone is 918 mm and at Bustard Head is 1155 mm year. Rainfall is higher during summer months. Prevailing winds are generally from the south and east quarters.
- » Shallow unconfined groundwater aquifers exist in the sands at the eastern and western ends of the island. Groundwater flows are towards the coast.
- » The island is vegetated with remnant vegetation and regrowth. Vegetation includes Regional ecosystems classified as endangered, of concern and not of concern.
- » The range and diversity of bird species on Hummock Hill Island is similar to that found on nearby island and mainland coastal locations. The southern end of Hummock Hill is a significant high tide roosting site for migratory waders.
- » Ground dwelling fauna is scarcer and less diverse, reflecting the fact that Hummock Hill Island is cut off from the mainland at all but the lowest tides, when waters in Boyne Channel may be shallow enough for larger animals to traverse. Mammals include the Eastern Grey Kangaroo, several gliders, flying fox, bats and introduced rodents.



Figure 13: Open Woodland

- » Two bird species have been observed on Hummock Hill Island that are listed under the Queensland Nature Conservation Act 1993, being the Eastern Curlew *Numenius madagascarensis*, listed as rare and the Beach Stone Curlew *Burhinus neglectus/Esacus neglectus*, listed as vulnerable.
- » A number of migratory birds listed under EPBC Act have been identified on Hummock Hill Island, none of these are rare or threatened.
- » An extensive intertidal zone extends along the southern, eastern and western coastlines of Hummock Hill Island to the mainland coast. Key habitats include intertidal mangrove and salt pan, intertidal and subtidal mudflats, sandy substrate and beaches, offshore (subtidal) rocky reef.
- » Seagrasses have not been observed in close proximity to Hummock Hill Island. There are no coral reef communities in the immediate vicinity of Hummock Hill Island although coral reefs do occur to the southeast near Rodd's Peninsula.
- » Hummock Hill Island is not known as a turtle-nesting site. Although Hummock Hill Island is located within Rodds Bay Dugong Protection Area there is minimal seagrass habitat in the immediate vicinity.
- » Sea birds, including waders, herons, cormorants and oyster catchers are expected to be common users of the shallow marine areas.
- » A range of hills runs north-south across the middle of the development lease, ending with Hummock Hill at the northern end at an elevation of 135 m AHD. Undulating plains based on granodiorite bedrock lie at the base of the main range, merging into dune sand areas.
- » Soils include lithosols on the steeper slopes and crest of the main range, solodics on the undulating plains below the main range, red earth, on a small area east of the headland on the north shore and siliceous sands in the dune areas.



- » Soils on the site are not classified as good quality agricultural land.
- » Acid sulphate soils may occur in low-lying areas, particularly on the southern side of the island.
- » A cattle dip associated with former cattle grazing activities is located near the headland.
- » The landscape characteristics of Hummock Hill Island are a blend of natural scenery and rural (pastoral) scenery.
- » Regional landscapes include industrial and port development at Gladstone.
- » Shell middens and artefact scatters from former Aboriginal use have been found on Hummock Hill Island. European cultural heritage sites are associated with previous pastoral uses. A stone cairn of unknown origin exists on top of Hummock Hill.
- » Hummock Hill Island is not affected by air or noise emissions from the Gladstone industrial areas.
- » Cyclonic activity in the region occurs predominantly between January and March. Storm surge levels on the ocean side of Hummock Hill Island are estimated to be 3.3 to 3.6 m AHD (100 year average recurrence). The Gladstone area has one of the higher seismic activity levels in Australia.
- » Hummock Hill Island is located in the Wide Bay-Burnett region, although it is immediately south of the Central Queensland Region. This is one of the fastest growing regions in Queensland, with population increases in Calliope and Miriam Vale Shire thought to be largely associated with industrial and related development in Gladstone.
- » The 2004 population of Miriam Vale Shire is estimated at 5,113 persons and is predicted to grow to about 10,000 people in 2026.
- » Economic activity in Miriam Vale is based on agricultural activities with the northern end of the Shire being increasingly influenced by industrial development in Gladstone/Calliope, particularly in terms of residential development.
- » The closest urban centres to Hummock Hill Island are Miriam Vale and Bororen and the closest city to Hummock Hill Island is Gladstone, about 60 km by road from Hummock Hill Island.
- » Businesses in the agriculture, forestry and farming industry make up 61.1% of total businesses by industry in the Central Queensland shires of Miriam Vale, Calliope, Burnett and Fitzroy, this is compared with 17.2% average for the state.
- » The Bruce Highway provides the main north-south access route through the Gladstone Region. The Dawson Highway links Gladstone with the central and west regions.
- » Access to Hummock Hill Island is from Turkey Beach Road, Foreshores Road, and Clarks Drive.
- » The North Coast Rail Line links Gladstone with Brisbane and Cairns. Stations are at Miriam Vale and Gladstone.



- » Gladstone has an airport and is also one of Queensland's major sea ports.
- » Hummock Hill Island is not currently serviced by power, telecommunications, water or wastewater services. These services are all available in close proximity to Hummock Hill Island.
- » A major regional landfill is proposed for Calliope Shire.

4.2 Management of Environmental Impacts

4.2.1 Land Use and Tenure

Potential Impact	Response
Development of Lot 3 will preclude mining of the small mineral sands resource.	<ul style="list-style-type: none"> Hold discussions with exploration permit holder Review economic feasibility of extracting the resource.

Conservation Estate

Potential Impact	Response
Development will degrade world heritage values of the GBRWHA	<ul style="list-style-type: none"> » Development can be undertaken without impacting on world heritage values. Refer Appendix F for an assessment of potential impacts on world heritage area values. » Consultation will be undertaken with Department of the Environment and Heritage to discuss particular concerns and identify appropriate management measures
Development will degrade marine park/coastal marine park	<ul style="list-style-type: none"> » Zoning around Hummock Hill Island is General Use Zone with no particular sensitivities identified. » The proposal requires only minor structures in the marine park/coastal marine park with negligible habitat loss expected. » Consultation will be undertaken with Great Barrier Reef Marine Park Authority and Queensland Parks and Wildlife Service to discuss particular concerns and identify appropriate management measures
Development will increase boat traffic in marine park/coastal marine park	<ul style="list-style-type: none"> » Boat ramps will allow increased public access and enjoyment of the marine park in line with the goals and management philosophy for the park. » General Use Zone indicates that the area around Hummock Hill Island has reasonable tolerance to boating and related activities.



Potential Impact	Response
	<ul style="list-style-type: none"> » Boating levels are not likely to exceed sustainable use levels.
<p>Development may reduce the fish habitat value of Colosseum FHA</p>	<ul style="list-style-type: none"> » Disturbance to fish habitat within the FHA will be negligible. » The proposed boat ramp at Colosseum Inlet will avoid clearing of any mangroves and will be located in sandy substrate. The ramp structure itself may provide hard substrate for some marine flora and fauna » The proposed bridge and boat ramp at Boyne Channel is within an exclusion zone in the FHA. In any case, these structures will result in the clearing of a small area of mangroves and traversing of a small area of unvegetated salt flat. Once in place, the structures may provide hard substrate for marine flora and fauna. » Indirect impacts on water quality in the FHA will be managed through integrated stormwater and wastewater management such that the quality and quantity of runoff to coastal areas remains at pre-development conditions.
<p>The development may reduce the habitat value of the Rodds Bay Dugong Protection Area</p>	<ul style="list-style-type: none"> » The proposed development will not impact directly or indirectly on seagrasses on which dugong feed. » While the proposed development may increase boat traffic, there are no seagrass beds in the vicinity of Hummock Hill Island that are accessible to boats. Boat speeds in Boyne Channel will be naturally controlled due to the shallow nature of the channel and risk of running aground. Signs can be placed at boat ramps warning boaters of the need to watch for dugongs (and other marine species) and maintain safe speeds in shallow, enclosed waters. » The fishing controls imposed in a Dugong Protection Area will remain in force and signs can be placed at boat ramps informing boaters of these restrictions.



4.2.3 Water Resources

Potential Impact	Response
Development will alter quality and quantity of stormwater discharges to ephemeral freshwater ecosystems and coastal ecosystems	<ul style="list-style-type: none"> » Indirect impacts on water quality will be managed through integrated stormwater and wastewater management such that the quality and quantity of runoff to coastal areas remains at pre-development conditions. » Water sensitive urban design measures will be incorporated into stormwater management to maintain acceptable stormwater quality from developed areas. » Only a small proportion of each catchment is to be developed. » Changes to existing catchment sizes and drainage patterns will be minimal
Harvesting of surface water resources will alter freshwater runoff to ephemeral freshwater ecosystems and coastal ecosystems	<ul style="list-style-type: none"> » Harvesting of surface waters will be restricted to rainwater tanks. This will serve to balance effects of increased runoff from reduced infiltration due to development.
Harvesting of potable groundwater resources will result in increased salinisation of the shallow aquifer	<ul style="list-style-type: none"> » Groundwater resources are not to be utilised for water supply
Vegetation clearing will affect groundwater recharge and discharge zones.	<ul style="list-style-type: none"> » Vegetation will be retained in recharge and discharge zones as much as possible. » Vegetation clearing will be limited in discharge zones.
Discharge of treated wastewater and greywater will impact on water quality in adjacent marine zones.	<ul style="list-style-type: none"> » Treated wastewater and greywater will be disposed of via irrigation under all normal circumstances » Irrigation rates will be adjusted according to the soil type » Irrigation will not take place within 100m of high water mark or any ephemeral coastal or freshwater wetlands. » Discharges to the marine environment will only occur in high rainfall events. Only tertiary treated wastewater will be discharged.
Erosion from disturbed areas will impact on water quality.	<ul style="list-style-type: none"> » Erosion and sediment control measures will be incorporated into all construction activities.



Potential Impact	Response
	<ul style="list-style-type: none"> » Disturbed surfaces will be reinstated or otherwise stabilised as soon as possible after completion of earthworks. » Developed areas will incorporate stormwater management devices based on principles of water sensitive urban design to maximise removal of sediment from stormwater.
Accidental spills of fuels and toxic chemicals may impact on water quality in adjacent sensitive wetland ecosystems.	<ul style="list-style-type: none"> » Use of hazardous chemicals at the site will be minimal » Use of fuels at the site will be limited to refuelling of equipment during construction activities and fuel supplies for generators during operation. » Hazardous materials management plans will be developed for both construction and operation of the development. Storage, handling and transport will be in accordance with Australian Standards and accepted best practice.

4.2.4 Terrestrial Ecosystems and Species

Potential Impact	Response
The extent of endangered and of concern remnant vegetation will be reduced	<ul style="list-style-type: none"> » The proposed master plan has been developed to avoid impacts on endangered and of concern Regional Ecosystems. » Clearing of endangered and of concern Regional Ecosystems will be avoided except for minor access requirements. » Undeveloped areas within the development lease will be made available for protection as areas of conservation significance. Discussions will be undertaken with Miriam Vale Shire Council and Queensland Parks and Wildlife Service as to the most appropriate means to achieve this.
Endangered flora and fauna species will be impacted on.	<ul style="list-style-type: none"> » The only endangered species identified on Hummock Hill Island to date are shore birds » Habitat for endangered species is not likely to be directly or indirectly affected by the proposed development.



Potential Impact	Response
Protected migratory species will be impacted on.	<ul style="list-style-type: none"> » Habitat for protected migratory species will not be significantly diminished by the proposed development. » Protection of endangered and of concern regional ecosystems and coastal areas may enhance long term protection of migratory species.

4.2.5 Coastal and Aquatic Ecosystems

Potential Impact	Response
Direct loss of habitat due to development	<ul style="list-style-type: none"> » Direct disturbance of coastal habitat limited to boat ramps at Colosseum Inlet and Boyne Channel, and bridge crossing over Boyne Channel. Note that these structures will provide some hard substrate for marine flora and fauna. » No other development will take place within 100m of the high tide mark with the exception of a rocky headland (40m).
Indirect impacts on ecosystem health due to degradation of water quality or changes in freshwater flows.	<ul style="list-style-type: none"> » Refer Section 4.2.3 above.
Loss of habitat for sensitive species such as migratory waders, dugong and turtle	<ul style="list-style-type: none"> » No direct or indirect impacts on seagrass habitat or migratory wader habitat » Boat strikes not likely to increase significantly as boat speeds are naturally restricted in enclosed and shallow waters. » Suitability of beaches for turtle nesting remains unchanged. Turtle nesting has been demonstrated to be able to occur in proximity to urban areas with appropriate access controls.



4.2.6 Geology and Soils

Potential Impact	Response
Vegetation clearing and earthworks will increase erosion risk.	<ul style="list-style-type: none"> » Erosion and sediment control measures will be incorporated into all construction activities. » Disturbed surfaces will be reinstated or otherwise stabilised as soon as possible after completion of earthworks. » Developed areas will incorporate stormwater management devices based on principles of water sensitive urban design to reduce flow velocities and volumes.
Spills and leaks of hazardous materials and fuels will cause soil contamination	<ul style="list-style-type: none"> » Use of hazardous chemicals at the site will be minimal » Use of fuels at the site will be limited to refuelling of equipment during construction activities and fuel supplies for generators during operation. » Hazardous materials management plans will be developed for both construction and operation of the development. Storage, handling and transport will be in accordance with Australian Standards and accepted best practice.
Contamination arising from the cattle dip will present a health hazard.	<ul style="list-style-type: none"> » The cattle dip area will be remediated in accordance with Queensland EPA requirements.
Irrigation will increase salinity in soils or cause waterlogging	<ul style="list-style-type: none"> » Irrigation rates will be matched to soil types » Monitoring of areas regularly receiving large amounts of irrigation water will be carried out to check that irrigation rates are within the absorptive capacity of the system.
Agricultural productivity of the region and State will be diminished	<ul style="list-style-type: none"> » Agricultural suitability of soils on Hummock Hill Island is limited and the soils of the island are not classified as Good Quality Agricultural Land.

4.2.7



4.2.8 Visual Environment

Potential Impact	Response
Aesthetic quality of the Great Barrier Reef World Heritage Area will be diminished	<ul style="list-style-type: none"> » Building height restrictions and building design codes will be used to maximise integration with the existing landscape characteristics. » Clearing of beach littoral vegetation will not occur, and this vegetation will remain as screen to development behind the beaches » Development on the headland will be more prominent but will consist of stand along houses rather than a large complex such as a hotel » The waters offshore of Hummock Hill Island are not subject to particularly high recreation or tourism usage.
The quality of views over the coastline and island from the mainland will be degraded.	<ul style="list-style-type: none"> » Hummock Hill Island is not visible from Bruce Highway or most accessible locations along the mainland coast. » Building height restrictions and building design codes will be used to maximise integration with the existing landscape characteristics. » Retention of vegetation in the coastal strip will assist in screening buildings from view.

4.2.9 Cultural Heritage

Potential Impact	Response
Items and sites of Aboriginal Cultural Heritage Significance will be lost or degraded	<ul style="list-style-type: none"> » To date, artefacts and middens identified on Hummock Hill Island are not of particularly high conservation significance, with their main value as an indication of past usage of the island by Traditional Owners » Further archaeological survey can be undertaken in conjunction with Traditional Owners if desired. » A Cultural Heritage Management Plan will be prepared in consultation with the Port Curtis Coral Coast Claimants setting out the means by which Aboriginal cultural heritage items will be protected or otherwise managed. » Wherever possible, and subject to the wishes of the Traditional Owners, cultural heritage items will be left in situ.



Potential Impact	Response
Items and sites of European Cultural Heritage Significance will be lost or degraded	<ul style="list-style-type: none"> » Further investigation will be conducted into the potential significance of items located on Hummock Hill Island. » A Cultural Heritage Management Plan will be developed to minimise loss of cultural heritage material, and allow collection of relevant information from any sites that will be disturbed by the development.

4.2.10 Noise and Air Quality

Potential Impact	Response
The Wastewater Treatment Plant and Waste Transfer Station will give rise to offensive odours	<ul style="list-style-type: none"> » The selected location for these services is away from proposed residential areas and is generally downwind of areas proposed for activity. » These facilities will be designed and operated so as to minimise generation of odour.
Facilities and services such as power generation and wastewater treatment will generate noise levels that disturb future residents on Hummock Hill Island.	<ul style="list-style-type: none"> » These facilities have been located away from areas that may be particularly noise sensitive. » Design of these features will incorporate noise reductions measures as appropriate to the environment into which they are to be placed. » Noise emissions from these features will comply with requirements established in the State Environmental Protection (Noise) Policy 1997
Power generation may release contaminants to the atmosphere.	<ul style="list-style-type: none"> » Power generator(s) will have emissions control technology installed » Design and operation of power generator(s) will be such that emissions comply with the <i>State Environmental Protection (Air) Policy 1997</i> and the National Environmental Protection Measure for air quality.
Noise from the development may disturb native animals.	<ul style="list-style-type: none"> » Animals present on Hummock Hill Island and in surrounding waters are likely to be fairly tolerant to noise relating to human settlement. Many of the species observed on Hummock Hill Island are known to occur in urban areas.



Potential Impact	Response
Air pollutants associated with the Gladstone Industrial Area may result in poor ambient air quality at Hummock Hill Island.	<ul style="list-style-type: none"> » To date, ambient air quality in communities close to the Gladstone Industrial Area have remained within acceptable health limits. » Significant dispersion of air pollutants would occur before such pollutants reached Hummock Hill Island further reducing the ambient concentrations. » Prevailing winds will tend to blow air pollutants from the Gladstone Industrial Area away from Hummock Hill Island rather than towards it.

4.2.11 Hazard and Risk

Potential Impact	Response
Storm surge may lead to inundation of developed areas.	<ul style="list-style-type: none"> » The development footprint is set back from the coastline and adjacent low lying lands to ensure that development does not occur in the storm surge zone.
Intense rainfall associated with cyclonic conditions may cause flooding.	<ul style="list-style-type: none"> » Catchment areas on Hummock Hill Island are small and dangerous flooding or flash flooding is not likely to occur » The requirements of the <i>State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</i> will be addressed. » Stormwater systems will be designed to capture and disperse flows from major rainfall events
Strong winds from cyclonic events may cause damage to buildings and injury to inhabitants.	<ul style="list-style-type: none"> » Building design will comply with relevant building codes for Central Queensland, taking maximum wind speeds into consideration.
Earthquakes may cause building damage and injury to inhabitants.	<ul style="list-style-type: none"> » Buildings will be designed in accordance with relevant standards for the likely occurrence of earthquakes in the Gladstone area.
Bushfire may cause injury to inhabitants and property damage or loss. Bushfire may also impact on ecosystems.	<ul style="list-style-type: none"> » The requirements of the <i>State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide</i> will be addressed. » A bushfire management plan will be developed addressing both the human safety and ecological aspects of bushfires.



Potential Impact	Response
	<ul style="list-style-type: none"> » Fire fighting services will be provided in consultation with the Department of Emergency Services.
Emergency medical services are not available in close proximity to Hummock Hill Island.	<ul style="list-style-type: none"> » The airstrip will allow emergency evacuation by aeroplane or helicopter if required. This will also service nearby communities such as Turkey Beach and Foreshores. » Hummock Hill Island is 60 km by road from major hospitals at Gladstone.

4.2.12 Social and Economic

Potential Impact	Response
Hummock Hill Island is remote from commercial and activity centres	<ul style="list-style-type: none"> » Hummock Hill Island is 60km by road to Gladstone and slightly closer to Tannum Sands » Both Gladstone and Tannum Sands have extensive commercial and activity centres » The proposed development population of 4,000 people at Hummock Hill Island is adequate to support smaller commercial, retail and entertainment businesses » The proposed development will offer significant outdoor recreation activities not typically available in an urban environment.
The proposed development is remote from schools.	<ul style="list-style-type: none"> » Families will represent a relatively small proportion of the total population of Hummock Hill Island. » The proponent will dedicate a primary school site at Hummock Hill Island or other suitable location in consultation with Department of Education. In future, a primary school may support development at Hummock Hill Island as well as the existing/expanding communities at Turkey Beach and Foreshores. » There are existing primary schools at Bororen and Miriam Vale » There is a year 8 to 10 high school at Miriam Vale and complete high schools in Gladstone and Tannum Sands. These will be about 45 minutes drive from Hummock Hill Island once the access road is completed. The development population may be large enough to warrant a school bus service, especially if this can also service Turkey Beach and other smaller settlements in the area.



Potential Impact	Response
The proposed development will provide outdoor recreation and holiday facilities for the regional community.	<ul style="list-style-type: none"> » Access to swimming beaches and nature based recreation in the region will be considerably enhanced by the development of Hummock Hill Island. Currently, the only beach in close proximity to Gladstone is Tannum Sands. » The next nearest location with beaches and holiday accommodation is at Yeppoon, some 90 minutes drive north of Gladstone. » Day visitor facilities and parking will be provided in open space areas » Camping grounds and 3-4 star resort hotels will offer affordable and flexible options for overnight stays for residents in Gladstone and central Queensland communities, as well as travellers from outside the region. » The golf course and associated sporting facilities will provide venues for organised sporting activities.
Employment will be generated at Hummock Hill Island	<ul style="list-style-type: none"> » Employment in retail, commercial, hospitality, maintenance and recreation fields will be generated by the proposed development. » A range of medium and lower cost housing options have been included in the Master Plan so that those employed on Hummock Hill Island may have access to affordable housing close to their place of work.
Construction and operation workforce will put pressure on housing stock and community services	<ul style="list-style-type: none"> » The maximum number of construction employees is expected to be in the order of 60-80 persons in Stage 1. Adequate accommodation should be available in local communities. In subsequent stages, opportunities will also exist for construction workers to rent accommodation on Hummock Hill Island. » A range of housing types has been allowed for in the Master Plan including lower cost housing options for workers. » The Master Plan includes provision for community infrastructure facilities such as a primary school, emergency services and private medical facilities. These will be brought on line as population on the Island and neighbouring mainland areas requires.
Regional research and education facilities will be enhanced	<ul style="list-style-type: none"> » The proponent is committed to providing an educational facility at Hummock Hill Island as a focal point of the proposed development.



Potential Impact	Response
	<ul style="list-style-type: none"> » The activities of this facility have not been finalised but will be relevant to the Central Queensland region, focussing perhaps on mining or coastal development issues.
Economic activity in Miriam Vale and Central Queensland generally will be enhanced.	<ul style="list-style-type: none"> » The proposed development is centred on tourism and recreational activities which will boost diversification of the local and regional economies. » Residents of the Central Queensland region will have increased opportunity to remain within Central Queensland for their holiday and recreational activities, thus reducing leakage from the regional economy.

4.2.13 Infrastructure and Traffic

Potential Impact	Response
Traffic generation will exceed the capacity of local and regional roads	<ul style="list-style-type: none"> » A traffic impact assessment study will be undertaken » The proponent will fund necessary upgrades to the road network to ensure that it has adequate capacity for the traffic generated from the proposed development
Demand for water will exceed availability of water in the region	<ul style="list-style-type: none"> » Rainwater tanks will be mandatory on all buildings in the proposed development and are expected to make up about 70% of residential water demand » Discussions with Gladstone Area Water Board indicate that the additional demand from Awoonga Dam required to top up rainwater tanks is insignificant in the context of industrial users » Calliope Shire Council has indicated that top up water can be supplied to the development from Tannum Sands Reservoir without impact on its ability to supply existing and future customers. » The proponent will fund all necessary infrastructure to provide water supply to Hummock Hill Island. Opportunities may also exist to connect in other communities in northern Miriam Vale. » Water conservation measures will be mandatory for all internal and external uses of potable water.
Water supply for fire fighting will be inadequate	<ul style="list-style-type: none"> » Fire fighting requirements will be designed into the water supply system in accordance with Australian Standards » Consultation will be undertaken with Department of Emergency Services regarding the provision of fire fighting facilities and equipment.



Potential Impact	Response
Quality of water supply will not meet health requirements	<ul style="list-style-type: none">» Water for drinking, cooking and other “potable” uses will be supplied through a reticulated network where water quality can be monitored and controlled.» Where individuals use rainwater tanks for potable water supplies, filters and disinfection units can be installed to ensure adequate water quality.
Demand for power may exceed availability	<ul style="list-style-type: none">» Ergon has confirmed that adequate power supplies are available in the area.» Wind and solar power solutions are included in the overall power supply package to reduce dependence on fossil fuel power sources.
Waste generation from the site will put pressure on existing waste disposal facilities.	<ul style="list-style-type: none">» A new regional landfill is proposed to be constructed at a site in Calliope Shire. This landfill will have adequate capacity for future growth in Miriam Vale Shire.» A waste materials recovery facility will be installed on Hummock Hill Island requiring the segregation of waste in recyclable and non-recyclable components. Hazardous waste storage will also be provided at this facility.» There will be no solid or hazardous waste disposal on Hummock Hill Island.