18. Proponent's Commitments

General
The Proponent will construct HHI Development in accordance with the Environmental Management Plans developed for the Project which will be in accordance with the Eaton Place Pty Ltd *Safety, Health and Environment Policy*.
The footprint of the HHI Development will incorporate the following rationale: ■ all development is to be contained within the Special Lease Areas; ■ all development is outside the coastal management zone, except for the bridge over Boyne creek, the boat ramps and pedestrian access points to the northern a major east-west fauna movement corridor (minimum 300m in width) has been incorporated into the HHI Development design; ■ impacts on Endangered Regional Ecosystems in the western development precinct have been reduced by amending the HHI Development layout; and ■ firebreaks between development areas and surrounding open space have been accommodated internally.
Land
Development and implementation of an Acid Sulfate Soil Management Plan in accordance with Section 4.8 and 4.9 of the QLD State Planning Policy Guideline (2002). The plan will outline requirements to minimise potential acidification issues associated with construction works, handling methods and treatment requirements to reduce potential impacts from these activities such as: ■ minimising the disturbance of Potential Acid Sulfate Soil (PASS); ■ neutralisation of excavated soils with pure fine agricultural lime ($CaCO_3$) at the nominated rate outlined in Table 4 of the *SPP 2/02 Guideline;* ■ application of lime to open excavation faces; ■ storage of excavated PASS material in a dedicated bunded area to capture stormwater flowing from stockpiles; and ■ re-use of neutralised soils as general fill (pending geotechnical assessment).
Development and implementation of an Erosion and Sediment Control Plan for each development stage in accordance with the Department of Main Roads Road Drainage Design Manual (2002) and the Soil Erosion and Sediment Control Guidelines – Engineering Guidelines for Queensland Construction Sites (IEAust (Qld) 1996). The plan will include the following measures: ■ fit the HHI Development to the existing topography, soils, and vegetation as much as is possible; ■ schedule construction operations in order to minimise soil exposure during the rainy season; ■ minimise disturbance and soil exposure by retaining natural vegetation, adopting phased construction techniques, and using temporary cover; ■ vegetate and mulch all denuded areas to protect the soil from rainfall. The primary effort for controlling sediment pollution from construction sites should be to minimise raindrop impact on bare soil; ■ utilize proper grading, barriers, or ditches to minimise concentrated flows and divert runoff away from denuded slopes or other critical areas; ■ minimise the steepness of slopes and control the length of slopes by utilizing benches, terraces, contour furrows, or diversion ditches; ■ utilise riprap, channel linings, or temporary structures in the channel to slow runoff velocities and allow the drainage-ways to handle the increased runoff from disturbed and developed areas; ■ keep the sediment on-site by utilising sediment basins, traps, or sediment barriers; and ■ monitor and inspect sites frequently to assure the measures are functioning properly and correct problems promptly.

▪ no building will take place in erosion prone areas other than public beach access infrastructure.
During excavation the Proponent will commit to: ▪ ensure that any fill material brought on to the site meets the requirements of (Refer Waste): ▪ National Environmental Protection (Assessment and Site Contamination) Measure; ▪ Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (1998); ▪ all fill material must be virgin excavated natural material (soil, aggregate etc); ▪ ensure that the site source of the imported fill is not listed on the EMR/CLR Register; ▪ conduct visual inspections of the imported fill material to ensure that it contains no waste material; and ▪ obtain documentation from the fill provider, which must contain the following: ▪ date of arrival on site; ▪ volume/ quantity of fill material; ▪ provider; ▪ source of fill material; and ▪ documentation that the site of the fill material is not listed on the EMR/ CLR.
Limit the maximum building footprint to 50% for residential lots as required by both the Miriam Vale Shire Council Transitional Planning Scheme and the proposed Plan of Development.
Visual Amenity
Lighting will be managed in accordance with the EMPs for Land.
All external lighting of the site will conform to the following Australian standards: ▪ AS 1158 – Road lighting; and ▪ AS 4282 – Control of the obtrusive effects of outdoor lighting.
The Proponent will ensure the mitigation of visual amenity impacts by ensuring: ▪ bridge should be designed to achieve visual permeability. This means that the receptor should maintain some view of the landscape beyond the bridge; ▪ buildings and infrastructure including road cuttings should be sited below any prominent ridge line or hilltop so that there are no visible changes in the skyline; ▪ the location and design of access roads and driveways should conform to the landform and cause minimum visual impact or erosion hazard. Screen plantings on the sides of roads can mitigate any disturbance cause by initial loss of vegetation; ▪ the roof tops of buildings should not protrude above the canopy height of the surrounding vegetation; ▪ where the cladding of any part of a house (including the roof and rain water tanks) is proposed to be in metal sheet, this cladding be required to be colorbond or painted in muted tones to reduce reflection; ▪ where the wall cladding of a house is proposed to be in excess of 25% timber siding or fibre cement siding or metal sheet, the cladding can be required to be painted or stained in muted tones prior to occupation of the house or within a specified time thereafter; ▪ reflective factory finished metal sheets i.e. untreated galvanised sheet, aluminium, zincalume, or white, off white or silver paint finishes will not be permitted for roofs unless the slope of the roof is 10% or less; ▪ existing vegetation should be retained on site and selected clearing undertaken for building envelopes and public spaces; ▪ landscaped areas in public and private spaces planted using species that are native and occur locally on Hummock Hill Island;

▪ additional plantings can be undertaken including mature trees of a height above 10 metres increasing density and screening qualities of vegetation. A dense under storey can also be planted; ▪ restrict development on the elevated sections of Hummock Hill Island and cluster development on the lower plains; ▪ limit development on the hills and slopes to single storey residences reducing vertical bulk and scale; ▪ limit development to two storey dwellings or 8.5 metres above natural ground level allowing a greater diversity of housing types and design options; ▪ all lights in buildings and in public spaces will be focussed on the areas required and where possible be equipped with motion sensor switches to minimise light duration; ▪ external lighting will be shielded to limit extraneous light where necessary or faced away from costal and habitat areas; ▪ all external lighting of the site should conform to the following Australian standards: ▪ AS 1158 – Road lighting; and ▪ AS 4282 – Control of the obtrusive effects of outdoor lighting.
Infrastructure
The Proponent will enter into an operation and maintenance (O&M) agreement with the Local Government Authority (LGA) to maintain and operate the service infrastructure for a period of years to be agreed and until such operation and maintenance costs can be covered by income from rates and service charges applied to the developed land.
The master plan will include design elements that will minimise or mitigate impacts upon fauna communities by the incorporating the following: ▪ vegetated corridors within the master plan design which permit flora and fauna dispersal across Hummock Hill Island particularly the maintenance of riparian corridors adjacent ephemeral creeks. Three categories of wildlife corridor have been considered during master planning: ▪ Major Linkage – several hundred metres in width and containing no buildings or major structures. These areas provide significant opportunity for dispersal; ▪ Inter-urban Linkage – corridors of 100-200m in width through a predominantly urban matrix, but containing large areas of green space such as golf course; ▪ Local Linkage – corridors of less than 100m in width through urban and non-urban matrices; ▪ formal fauna crossing points at potential road-strike points, particularly within the proposed corridors described above; ▪ fauna crossings in designed ephemeral watercourse crossings; and ▪ maximisation of tree retention across the development area to increase landscape permeability for flora and fauna particularly in and around the proposed wild golf course.
The Proponent is committed to providing a significant level of connectivity through the street network by ensuring: ▪ extensive pedestrian and cycling networks including access between major activity centres; ▪ minimal use of cul-de-sacs; and ▪ the provision of public transport.
The Proponent is committed to the provision of a public bus service within the HHI Development and to the mainland. The Proponent recognises the need to construct streets to a width that accommodates buses and will undertake detailed design of the road network that is consistent with the requirements of the Disability Standard for Accessible Public Transport, 2002.

The Proponent will design the boat ramps and associated infrastructure to the standards required by Queensland Transport Proposed public boat ramps and boating infrastructures will be designed in accordance with the Australian Standard – *Guidelines for Design of Marinas (AS3962-2001).*
The Proponent will consult with Queensland Transport regarding the demand for and supply of public transport services for Hummock Hill Island residents.
Hummock Hill Island's airstrip will comply with Part 139 of the CASA Manual of Standards and CASA's advisory publication – Guidelines for aerodromes landing areas. The physical characteristics of the airstrip will be: ■ runway width – 15 m; ■ runway length – 1,000 m; ■ longitudinal slope of the runway – less than 2%; ■ traverse slope of the runway – 2.5%; ■ clearance at end of runway – objects less than 2 m within 100 m of end of the runway; and ■ clearance on side of runway – only low mass objects (frangible) within 80 m of the runway.
Climate
Develop and implement a Bushfire Management Plan prior to construction. The plan will be developed by a suitably qualified person in accordance with SPP 1/03.
Building design will comply with relevant building codes for Central Queensland, taking maximum wind speeds into consideration.
Building pad levels and public infrastructure will be located above the Q100 storm surge level reducing potential risks associated with climate change.
Risks associated with increased temperature and storm intensity will be incorporated into infrastructure and development design minimising potential risks associated with climate change.
Water Resources
Water Resources will be managed as set out in the EMPs.
Develop and implement an Erosion and Sediment Control Plan prior to commencing construction activities. The plan will be developed by a suitably qualified engineer in accordance with the *Soil Erosion and Sediment Control Engineering Guidelines for Queensland Construction Sites (IEAust, 1996)* or subsequent revisions.
Design and implement stormwater drainage measures in accordance with the *Queensland Urban Drainage Manual* (1993) and Healthy Waterways *Water Sensitive Urban Design Technical Guidelines for South East Queensland* (2006) (WSUD Guidelines). The objectives of permanent stormwater control measures will be: ■ achievement of the SPP (Water) requirements of: ■ minimising ecological impacts on waters in the locality (complying with required WQO); ■ acceptable health risks, aesthetics, protection from flooding, public safety and other social concerns; ■ making use of stormwater for recycling and water conservation; and ■ making use of drainage corridors for improved recreational values and open space or landscape areas (refer to Section 42 of the EPP (Water)
Storm water controls will be designed in accordance with *WSUD Technical Guidelines* (Healthy Waterways, 2006). ■ maintenance of existing runoff conditions; ■ maintenance of existing peak flow rates; and ■ preservation of existing drainage paths.
Culverts and crossings will be designed in accordance with *Queensland Urban Drainage Manual* (1993) with a climate change buffer in the relevant calculation of discharge (Q) and will incorporate fauna passages of appropriate height and including dry passage ways for fauna.
Develop and implement an Erosion and Sediment Control Plan (ESCP) in accordance with Queensland Urban Drainage Manual (1993) and WSUD Guidelines (2006) and Soil

Erosion and Sediment Control Guidelines – Engineering Guidelines for Queensland Construction Sites (IEAust (Qld) 1996). The ESCP should be designed around the following objectives: ■ minimisation of vegetation and soil disturbance within ephemeral watercourses during construction; ■ drainage control from cleared areas; ■ erosion control of exposed surfaces; ■ sediment control; and ■ revegetation of cleared areas to re-establish ground cover.
Develop and implement a Golf Course/Turf Management Plan in line with recommendations in the *Improving the Eco-efficiency of Golf Courses in Queensland (AGCSA & Qld EPA, 2001)* that incorporates management principles such as: ■ design of the course to include bioretention basins to "process" stormwater nutrient loads prior to release to existing drainage lines and ephemeral watercourses; ■ the use of in ground sensors to assess soil moisture and nutrients to manage recycled water application rates; ■ management of fertiliser use, limiting fertiliser applications, use of slow release natural organic fertilisers, application of fertiliser during forecast dry weather only; and ■ management of the course as a "wild" course retaining and utilising native vegetation to the maximum extent, limiting recycled water application to that available.
Develop and implement Integrated Pest Management Plans (IPMP) for pesticide management for the proposed HHI Development as recommended by the *Improving the Eco-efficiency of Golf Courses in Queensland (AGCSA, 2001)*. Components of the IPMP will include: ■ understanding course conditions and characteristics; ■ surveying pest species on the course; ■ defining pest management intervention thresholds; ■ development of a monitoring and record keeping program; and ■ development and implementation of pest control strategies.
Develop and implement a Water Quality Monitoring Plan (WQMP) to establish local water quality objectives (WQOs). The WQMP will be designed in accordance with the Queensland Water Quality Guidelines (QWQG) (EPA 2006) and the ANZECC/ARMCANZ (2000) Guidelines which outline monitoring strategies and guideline values for water quality parameters. The WQMP will measure nutrients (including iron), chlorophyll-a, herbicides, pesticides, copper, lead, total suspended solids, and possibly other analytes as determined during design of the monitoring program. WQOs will be established on the basis of a minimum of 24 data points over 12 months. The monitoring program will also include regular profiling of temperature, salinity, dissolved oxygen, pH, and turbidity. The WQMP will include water quality sampling at location W1, W2, W5, and W8 as shown on Figure 9-8 of the EIS, as well as an additional location in Sandfly Creek. Additional sites may be added during development of the WQMP.
Groundwater monitoring requirements will be conducted as specified in the EMP. Specific groundwater monitoring points will include: ■ groundwater monitoring will be undertaken during any dewatering activities during the lagoon construction to monitor recharge performance and potential changes

in groundwater quality; ■ groundwater monitoring will be undertaken in the vicinity of proposed effluent disposal areas to ensure land irrigation of treated effluent does not result in mounding, salinisation or contamination; ■ an investigation of existing groundwater contamination in the vicinity of the dip site should be undertaken. If groundwater contamination is identified opportunities for remediation as part of site development may improve groundwater quality and reduce potential risks to human health and the existing environment; ■ in the vicinity of proposed effluent disposal areas to ensure land irrigation of treated effluent does not result in mounding or contamination; and ■ adjacent any proposed bulk chemical storages.
Road drainage will be developed utilising both *Road Drainage Manual* (Main Roads, 2002) and the *Draft Water Sensitive Urban Design Engineering Guidelines: Stormwater* (BCC, 2006) with the aim to reduce contaminant loads to receiving estuarine and marine waters and meet WQO.
Air
Air quality will be managed as set out in the EMPs
Renewable energy and energy efficiency measures will be incorporated into the design to reduce energy demands and greenhouse gas emissions. These measures will include: ■ designing buildings to 5 star standards for energy conservation; ■ including solar hot water heating; ■ public awareness for programs focused on ways of avoiding the need for space cooling; and ■ architectural building design which maximises natural lighting and ventilation and incorporates energy efficient appliances.
The construction contractor will develop and implement a Dust Management Plan. The plan will include measures to limit dust emissions from the activities, such as: ■ construction of a sealed site access road will be undertaken during the initial stage of construction works and works will be staged to minimise the extent of disturbed land at any one time. ■ use on-site watering sprays to control visible dust emissions from disturbed and unsealed trafficked areas as required. This will be particularly important during dry and windy conditions. ■ use dedicated site entry and exit points, and defined roadways only and install truck wheel shaker pads or washer sprays at the access / egress points to unsealed trafficked areas in order to minimise tracking dirt onto the adjacent paved road network; ■ progressive rehabilitation of disturbed areas will be undertaken to minimise the potential for windblown dust; and ■ in the event of a valid complaint in relation to construction dust, perform dust investigation monitoring to assist with the development of more appropriate dust management measures.
Maintain adequate buffer distances between the residential (short and long term) areas and the wastewater treatment plant (odour)
Further investigation into the risk of odour nuisance and emissions controls during the detailed design phase.
Commercial facilities will be required to adequately maintain exhaust filters from cooking facilities and regulated devices, including emergency fuel burning equipment.
Any Environmentally Relevant Activities proposed will have emissions control technology installed and the design and operation of power generator(s) will be such that emissions comply with the State Environmental Protection (Air) Policy 1997 and the National Environmental Protection Measure for Air Quality (GHD 2006).
The Wastewater Treatment Plant will be located away from proposed residential areas and generally downwind of areas proposed for activity to minimise the potential risk of odour impacts.

Waste
Waste will be managed as set out in the EMPs
Development and implementation of a Construction Waste Management Plan incorporating the following mitigation measures: ■ wastes to be managed in accordance with the Environmental Protection (Waste Management) Regulation 2000; ■ waste avoidance, minimisation, reuse and recycling principles to be utilised wherever possible; ■ wastes to be segregated to assist in recovery and recycling; ■ provision of waste facilities in all break out areas; ■ construction and demolition wastes to be reused and recycled, wherever possible; ■ no disposal of solid or hazardous wastes on Hummock Hill Island; ■ materials to be fabricated off site where possible to minimise the generation of waste; ■ in order to reduce waste volumes, where possible, all wastes generated from construction and operational activities will be reused on site or sent to recyclers. Disposal to appropriately licensed waste facilities will only be undertaken where reuse or recycling is not possible or feasible; ■ where appropriate waste generators will be encouraged to segregate wastes at the source to minimise cross contamination of waste streams; ■ waste will only be transported by appropriately licensed waste transporters; ■ a centralised waste collection area will be provided as part of the HHI Development; ■ colour-coded and/or labelled bins will be provided for each waste stream to assist in the segregation of wastes and maximise waste recovery and recycling; ■ alternatives to plastic bags to be provided at retail outlets; ■ records of waste quantities removed from Hummock Hill Island are to be maintained; ■ a waste audit will be conducted when the development is operational and when each new stage of development becomes operational. The purpose of the waste audit will be to identify: ■ types and volumes of wastes generated; ■ further opportunities for waste avoidance, reuse reduction and recycling; ■ waste storage and segregation methods; ■ waste treatment and disposal techniques; and ■ destination of waste materials.
Implement community education program as part of waste management service.
Implement an education program for construction workers during induction.
Any construction waste that cannot be recycled or reused and requires disposal, will be transported to the Benaraby Landfill. A waste acceptance agreement will be sought from the Landfill Manager prior to dispatch of waste from Hummock Hill Island. Records of approval will be kept on file as part of the recording requirement of the Waste Management Plan.
All outgoing wastes from Hummock Hill Island will be transported by road using appropriately licensed waste transporters and a copy of the waste tracking documentation will be completed and retained, as per the Waste Management Plan outlined in Appendix A7.3. All waste loads transported off Hummock Hill Island will be covered, where practicable.
Noise and Vibration
Noise and vibration will be managed as set out in the EMPs

The construction contractor will develop and implement a Construction Noise Management Plan. The plan should incorporate the following mitigation measures: ■ all practical steps be taken to silence construction equipment; ■ works be restricted to the hours of 6:30 am – 6:30 pm Monday to Saturday, and no work outside these hours if audible at the nearest sensitive place; ■ tailgates of all vehicles transporting materials to and from the site would be securely fixed prior to loading and immediately after unloading; ■ all mobile plant equipment used on site shall be maintained in an efficient condition and operated in a proper manner; ■ all equipment used on site would have evidence of compliance with recommended noise levels outlined in AS2436-1981 *Guide to Noise Control on Construction, Maintenance and Demolition Sites;* ■ maintain a complaints register and investigate if a community complaint regarding excessive noise or vibration levels is received; ■ review the Construction Noise Management Plan periodically to ensure it remains appropriate to the current stage of construction activities; and ■ implement a community consultation program, informing residents of the construction schedule, progress and alerting them to times of unusually noisy activities or out of hours work. ■ During later stages of construction the following additional mitigation measures should also be incorporated into the plan: ■ no 'warming up' of plant and machinery would occur near residential dwellings before specified working hours; ■ ensure all noise suppression devices are maintained to manufacturers specifications; ■ fit all exhausts of mobile plant operating within close proximity to sensitive receivers, with suitable mufflers; ■ consider further limiting the allowable hours of operation; and ■ consideration to fitting adjustable reversing alarms (which are set at a margin above background level).
Noise from the use of boats and watercraft will be minimised by: ■ placing restrictions on the speed at which these vessels travel within Boyne Creek; ■ placing restrictions on the allowable times of use for boat ramps and associated facilities; ■ installing appropriate signage at locations around boat ramps and near sensitive areas, which request patrons to minimise undue noise between the specified night-time hours (10 pm-6 am); and ■ observation of the Qld Nuisance Laws, which restrict times of use for powerboat engines at residential premises.
Noise impacts from boat maintenance and repair activities, should these proceed as part of the Development, will be minimised through: ■ complying with the allowable time restrictions for use of regulated devices under the Qld Nuisance Laws; ■ complying with the allowable noise level restrictions for regulated devices; ■ performing high noise or tonal activities (tools using constant speed motors such as angle grinders) inside acoustic enclosures or appropriately designed buildings (to minimise breakout noise to nearest receivers); and ■ maximising shielding and buffer distances to nearest receivers, as part of the facility layout and design.
To reduce the potential for noise impacts from the commercial, retail and tourist areas the following recommendations will be made: ■ noise emissions and appropriate level restrictions from the operation of the proposed hotel and licensed facilities would be considered (in detail) as part of the Building Approvals for these facilities; ■ noise level restrictions to entertainment venues would apply during night-time hours (10 pm – 6 am); ■ PA systems and outdoor sound systems would be controlled to the levels outlined in Table 12.2 of the EIS;

■ layout of precinct areas should consider locating noisy plant and outdoor entertainment areas away from residential sleeping areas; ■ refrigeration units, ventilation fans, air conditioners, generators and the like would be required to comply with the levels outlined in Table 12.2; ■ consideration should be given to acoustically designed plant rooms, strategically positioned barriers, duct silencers and building layouts for the commercial, retail and accommodation areas, where necessary; and ■ use of appropriate buffer distances between the plant and receptor, where relevant.
Transport noise from vehicles travelling within Hummock Hill Island, and aircraft using the airfield, will be minimised through: ■ reducing road traffic speeds; ■ locating houses some distance from the main access roads across Hummock Hill Island; ■ facade treatments in high risk areas (window, ceiling, wall and roof treatments, air conditioning etc); ■ locating aircraft engine testing facilities in areas which maximise the distance to nearest receivers and shielding provided by intervening buildings; and ■ restricting aircraft maintenance activities and flights to and from Hummock Hill Island to daytime hours.
Noise impacts from external sources on the proposed development can be minimised through considering the following controls: ■ detailed design of the HHI Development within close proximity to sand mining lease areas should incorporate locating non-sensitive landuses such as open space and parklands, commercial activities adjacent to these areas; and ■ if residential development occurs within close proximity to sand mining areas the building design should consider incorporating façade treatments to minimise potential intrusive and amenity noise impacts.
Cultural Heritage
Comply with the requirements of the Environmental Management Plan
Utilise existing cleared areas for activities such as stockpiling and establishment of ancillary works areas as well as repairing any environmental damage directly resulting from activities associated with the project to minimise impacted areas.
Work crews will be specifically instructed of their obligations to look for cultural heritage material, including handing out educational leaflets at Workplace Health and Safety meetings. These leaflets will inform the workers what archaeological material may look like, and give them clear instructions on what to do if they find anything.
The following measures are proposed to manage Indigenous cultural heritage: ■ conduct cultural heritage awareness training for all on-site personnel indentifying areas and items of cultural heritage significance; ■ work crews will be specifically instructed of their obligations to look for cultural heritage material, including handing out educational leaflets at Workplace Health and Safety meetings. These leaflets should inform the workers what archaeological material may look like, and give them clear instructions on what to do if they find any items of (potential) cultural and heritage significance; ■ develop and implement a consistent system of site monitoring by the Aboriginal community at the planning stages for works in all areas deemed sensitive for heritage values; ■ for works that may impact directly on dense artefact scatters or midden material, or areas suspected to contain significant sub-surface archaeological deposits, establish a program of test excavations followed, if necessary, by full-scale excavation; ■ artefacts removed from a site should be analysed, and an artefact handling and a curatorial agreement negotiated between the Aboriginal community and the Queensland Museum; ■ utilising existing cleared areas for activities such as stockpiling and establishment of ancillary works areas as well as repairing any environmental damage directly

resulting from activities associated with the HHI Development; ■ establish exclusion zones for sites of particular significance in consultation with the Traditional Owners. The way in which this consultation process is undertaken with the Traditional Owners is specifically addressed in the CHMP or agreement required for the HHI Development; and ■ avoidance of areas that may contain intangible aspects of Indigenous cultural heritage.
Develop and implement an earthworks monitoring program involving the representatives of the participating Traditional Owners during initial vegetation removal and grubbing activities. These areas to be included in the monitoring program include: ■ a 250 metre wide strip extending inland from the lease boundary inclusive of and located both east and west of the headland (Area 1); ■ a 100 metre wide strip extending inland from that area of the HHI Development incorporating the high-water mark situated adjacent to tidal flats located southwest of the headland (Area 2); ■ the entire area to be developed in the immediate vicinity of the causeway (Area 3); ■ a 100 metre wide strip extending inland from the lease boundary and incorporating the lower reaches of the headland/ridgeline located to the west of the causeway and incorporating that area immediately south of the dammed watercourse identified in Section 13 (Area 4); ■ a 100 metre wide section of the development area incorporating elevated land immediately north of the dammed watercourse (Area 5); and ■ a 100 metre wide strip extending inland from that area of the proposed golf course incorporating the high-water mark situated adjacent to tidal flats located northwest of the causeway.
Establish exclusion zones for the following sites both during and following construction activities: ■ all sites noted in Appendix A7.10 that are situated outside the immediate development area [HH05 - HH07 and HH10-12, HH16 and sections of HH13]. ■ stone arrangements located at sites HH03 (S04) and HH09 (S12A-D); and ■ HH04 (S05). Traditional Owners will be consulted regarding the exact type, specifications and location of exclusion zones and have particularly emphasised the importance of this consultation process in relation to Sites HH03, HH05, HH06, HH07, HH09, HH10 and HH13.
Negotiate an artefact handling and a curatorial agreement between the Aboriginal community and the Queensland Museum.
All artefacts located during the survey within the confines of the HHI Development area, excluding Site HH04, will be collected by nominated representatives of the Traditional Owners prior to the commencement of the project. These include HH01, HH02, HH08, HH13 (S18) and HH17.
Flora and Fauna
The Proponent is committed to providing Environmental Management through: ■ protection of undeveloped areas of Hummock Hill Island through statutory covenant, nature refuge or other binding mechanism (The Proponent proposes to have the undeveloped parts of the island (84% - which includes the undeveloped parts of special lease area and Unallocated State Land) declared as Nature Refuge and protected under a formal agreement with the government agencies. The HHI Development boundary will be fenced and have a barrier to prevent vehicular access and uncontrolled pedestrian access to the Nature Refuge. The conserved areas will be maintained, protected and enhanced through a management contract between the Proponent and an appropriate environmental management company who will also be contracted to manage the offset areas.); ■ development of weed, pest management an fire management plans to maintain ecological integrity over the longer term; and ■ provision of a vegetation offset in the same subregion.
■ Prepare Landscape Masterplan(s) for the HHI Development prior to construction, dealing particularly with the management of existing vegetation and the design and management of the public areas such as urban or tourist areas as well as infrastructure such as roads. Particular attention should be given to the early establishment of suitable vegetation and the creation of special areas suitable for water based recreation and enjoyment. The Landscape masterplan(s) should

detail plant densities, species, schedules and timing will be specified on approved landscape plans. Details on fertilizer and chemical usage will be detailed on specifications attached to the approved landscaping plan.
A Weed Management Plan will be prepared and implemented for the HHI Development. Management measures to prevent the movement of declared weeds to and from the construction site include: ■ use of wash-down facilities for vehicles and equipment entering and leaving the construction site and those areas proposed for vegetation clearance; ■ all machinery, equipment and vehicles shall be certified as "clean" prior to entering the site by trained personnel in accordance with DERM practices; ■ weeds are not to be used as mulch for landscaping, but are to be disposed of and burnt to prevent reseeding; ■ soil, earth and landscaping material brought onto the site must be from a source that is clean and weed free; ■ the monitoring of revegetated areas to identify new infestations and eradicate any declared weeds found; and ■ weed monitoring to ensure that new weed species are not introduced into the immediate development area or surrounding sites.
Monitoring of riparian vegetation (where present) will be required to assess any potential impact to vegetation communities within ephemeral watercourses in the relict beach ridge system. This monitoring will be conducted in accordance with Qld Herbarium requirements.
Develop and implement Integrated Pest Management Plans (IPMP) for pesticide management for the proposed development as recommended by the *Improving the Eco-efficiency of Golf Courses in Queensland (AGCSA, 2001)*. Components of the IPMP will include: ■ understanding course conditions and characteristics; ■ surveying pest species on the course; ■ defining pest management intervention thresholds; ■ development of a monitoring and record keeping program; and ■ development and implementation of pest control strategies.
Clearing within supratidal salt flats and mangroves for the access road and public boat ramp will be restricted to the minimum width required to accommodate the road design and storm water controls.
Works on the causeway across salt flats at the northern end of Clarks Road will be restricted to the causeway alignment. Vehicle access will be controlled by use of temporary fencing delineating the works zone. Guard rails will be installed along the causeway and on approaches to the salt flat area to halt vehicle access to salt flats following construction.
Clearing of mangrove vegetation will be conducted under an appropriate permit issued by Qld DEEDI (and any other relevant permit) and will be conducted in accordance with the recommended mitigation required under the Qld DEEDI Fish Habitat Management Operational Policy 005 (2002): Mitigation and Compensation for Works or Activities Causing Marine Fish Habitat Loss.
Potential impacts from increased population pressures on estuarine and marine EVs, fauna and flora will be controlled by: ■ no access for vehicles to salt flats though the 100 m vegetation buffer zone. Community education programs and interpretative signs will raise public awareness of salt flats role in the estuarine system; ■ maintaining a 100m buffer zone between HAT and housing within the HHI Development to act as a buffer zone between residences and estuarine wetlands. This buffer zone will also raise house levels above the mangrove canopy minimising the potential for illegal trimming of mangroves for views; ■ clear interpretative signage will be placed on all boat ramps providing maps of seagrass meadow locations within the estuarine system and explaining the risks of dugong and turtle collisions within these areas to increase public knowledge of potential harm that may occur from boat propeller damage and that reduced speeds and increased awareness will reduce the risk of boat strikes; ■ speed restrictions will be recommended within Boyne Creek and high trafficked areas of Colosseum Inlet to reduce the occurrence of boat strike with marine

mammals and turtles in areas of seagrass meadows; and ■ consultation with Queensland Parks and Wildlife will be conducted with the view to designating special dugong and turtle areas within Colosseum Inlet and Seven Mile Creek where vessel operation restrictions will exist.
Implement water sensitive urban design (WSUD) principles for all permanent control measures to mitigate litter, sediment, nutrient, hydrocarbon and chemical releases to adjacent estuarine and marine environments. Proposed control measures will be constructed in accordance with *Draft Water Sensitive Urban Design Engineering Guidelines: Stormwater (Healthy Waterways, 2006)*.
Develop and implement a compensatory habitat strategy for the HHI Development. The strategy objectives will: ■ comply with the requirements of the Queensland *Vegetation Management Act 1999* and associated Codes and Policies; and ■ aim to provide tangible conservation benefits at the local and shire scale, with an emphasis on threatened species conservation. The compensatory habitat strategy will involve a combination of the following options: ■ securing advanced regrowth (near remnant) vegetation within the Gladstone Regional Council Area which is representative of the REs and essential habitat to be cleared for the HHI Development. The properties will be secured via registered covenant. The properties will be actively managed until such time as they reach remnant status; ■ securing REs of equivalent conservation status to those to be cleared for the HHI Development within and outside the shire and managing these areas until such time as they meet remnant status; ■ strategic purchase of key land parcels which have been identified as key linkages or habitats for EVR taxa at the local, sub-regional or regional scale; and ■ revegetation and rehabilitation of existing cleared areas of land within the study area, with a view to re-instating pre-clearing vegetation types.
Potential degradation to Hummock Hill Island by pests will be managed by: ■ targeted pest control (funded by the Special Area Environmental Levy); ■ inclusion of usage zones (including no-go zones for dogs); and ■ covenant restrictions preventing cats from entering Hummock Hill Island.
The management of impacts beyond the HHI Development will be managed by: ■ protecting these areas by declaring them as a Nature Refuge and protected under a formal agreement with the government agencies; ■ fencing of the entire HHI Development boundary (mitigate any potential indirect and direct impacts on surrounding State lands); and maintaining, protecting and enhancing these areas through a management contract between the Proponent and an appropriate environmental management company.
The Proponent will be responsible for ongoing land management within the HHI Development boundary. A "Special Area Levy" will be introduced to fund a maintenance team. The maintenance team will have the following responsibilities: ■ fire management; ■ weed management; ■ pest management; ■ fence maintenance; ■ incidental rubbish removal; ■ track maintenance; and ■ enforcement of access restrictions.

The maintenance team will have the authority to restrict access and the responsibility of maintaining fences and other infrastructure. It is intended that a permanent site manager be employed to enforce access restrictions
Development will be excluded from the Littoral Vine Scrub and Beachfront habitats in an effort to protect a range of values. These areas will be subject to access restrictions, including fences and bollards to prevent egress of persons and vehicles. These restrictions will be enforced by the maintenance team.
Impacts of habitat fragmentation will be minimised by providing: ■ a fully vegetated corridor of at least 300m in width will be conserved to allow fauna dispersal from east-west across the Hummock Hill Island. This corridor is in conflict with development at one single point where it crosses the major access road to the resort precinct. It is intended that a major fauna crossing be established at this point, including an underpass or land-bridge and extensive exclusion fences to prevent fauna entering the roadway;
In order to maintain ecological function, proposed buffers to waterways have been set at 30m across the proposed HHI Development area.
A Rehabilitation Plan will be conditioned on approval. Specific detail cannot be provided until the final form of the HHI Development is determined, however, the following general principles will apply: ■ species utilised will be native to Hummock Hill Island and present in the surrounding landscape; ■ planting densities and species composition will be determined by establishing reference sites on Hummock Hill Island, within which structural and floristic information will be measured; and ■ all disturbed areas which are to be returned to open space or bushland will be rehabilitated immediately following the cessation of construction works. Rehabilitation methods will vary according to specific site constraints.
The minimisation/mitigation of road strikes will be achieved through: ■ provision of formal road crossing infrastructure at key fauna corridor locations and identified major wildlife mortality points; ■ installation of reflectors designed to deter wildlife on roadside posts; ■ installation of fauna exclusion fencing in appropriate locations; and ■ installation of traffic calming devices in strategic locations.
The Proponent will develop and implement a Marine Ecological Monitoring Program (MEMP) to map and monitor key marine communities in the area including coral communities, seagrass beds and mangrove communities. Monitoring methodology including sites, frequencies, and specific techniques will be developed on the basis of field surveys, mapping and characterisation of existing communities in the area and specified in the plan. The plan will include baseline monitoring including at least two monitoring events (winter and summer) over at least 12 months and an ongoing monitoring campaign every 5 years.
The Artificial Light Management Plan (ALMP) will employ an integrated strategy incorporating a mix of measures, consistent with the approach recommended by Witherington & Martin (2003). In broad terms, the strategy will include a hierarchy of approaches as outlined in the EIS: ■ elimination of unnecessary lighting, including through building design; ■ technological measures to eliminate or reduce light cast to the beach (e.g. reduced brightness, shielding, directionality, lower height, motion sensors or timers to ensure short-duration lighting); ■ landscape design measures including the use of vegetation screens and curved roads and paths; ■ use of long-wavelength lights, which are less visible to turtles; and ■ education and awareness raising for designers and engineers as well as residents and visitors. The mitigation measures required will depend upon the visibility zone and specific lighting application, and will be specified in the ALMP after visibility mapping at the detailed design stage. Examples of specific expected measures include: ■ low-height, louvered bollard fixtures for road and car park lighting;

▪ louvered step lighting on balconies, coupled with solid outer balcony walls rather than railings and yellow light sources; ▪ opaque awnings over seaward-facing windows that eliminate lateral light cast, coupled with window tinting; ▪ elimination of all upward-directed lighting such as feature lighting on buildings and trees; ▪ planting or rehabilitation of screening vegetation; and ▪ use of "turtle-friendly" light sources (yellow and where possible red wavelengths) for all public lighting.
The following strategies will be employed prior to and during proposed construction works: ▪ prior to the commencement of any vegetation clearance, the Contractor shall identify all areas to be cleared on construction plans and in the field. ▪ prior to commencement of the works, the applicant shall arrange a pre-start meeting with Council Environmental Assessment Officers or other relevant Council Officer. ▪ prior to commencement of the Works, the applicant shall fence or clearly mark with tape, the limits of all protected vegetation. Within these zones the following activities shall not be permitted: ▪ storage and mixing of materials; ▪ vehicle parking; ▪ liquid disposal; ▪ machinery repairs and/or refuelling; ▪ construction site office or shed; ▪ combustion of any material; ▪ stockpiling of soil, rubble or debris; ▪ any filling or excavation including trench line, topsoil skimming and/or surface excavation, unless otherwise approved by the Project Manager; and ▪ unauthorized pesticide, herbicide or chemical applications.
Implement measures to minimise any damage to retained trees and/or the conserved area considering the following measures: ▪ identifying a Tree Protection Zone: All retained trees likely to be impacted upon by development works will be marked prior to construction works; and ▪ pruning: Prior to establishing a tree protection zone, trees to be protected will be pruned focusing on removal of dead or broken branches.
All activities in an area adjacent to any protected tree or area shall be carried out in such a manner as to minimise any damage to trees and/or the conserved area. The following procedures will ensure that retained trees adjacent to development areas will survive construction works and will remain in a healthy condition: ▪ establishing the Tree Protection Zone; ▪ fencing; ▪ trunk protection; ▪ mulching; ▪ maintenance of natural drainage patterns; and ▪ clearing shall occur in the sequence of cutting, shearing of felled vegetation and tub grinding. ▪ Upon completion, grubbing operations shall ensure the site is left free draining with no ponding of stormwater.
Prior to the selective clearing operations, habitat trees shall be identified. Habitat trees are defined as those trees that provide suitable foraging, refuge and nesting resources for arboreal and avian fauna. These include hollow-bearing trees, trees with fissures, trees with food resources (e.g. pollen, nectar, foliage, arthropods). Larger, old growth trees are also considered to be habitat trees as they are likely to provide greater amounts of foraging resources, cover, and a high number of

potential hollows. Dead (stag) trees are also regarded as important habitat trees as they provide roosting and nesting resources.
Once this has been completed, clearing shall be conducted using a staged approach where the smaller non-habitat trees are removed in the first stage with the larger remaining habitat trees removed three to five days after the initial clearing. This staged method provides a disturbance stimulus and provides fauna with time to leave the site thus maximizing the chances of fauna survival while reducing the need for human intervention for translocation or rescue purposes.
At least 14 days prior to the pre-start meeting, an appropriately qualified person (i.e. accredited by QPWS for capture and release) 'Spotter-catcher' shall be appointed and assess the site for wildlife habitat. Before this meeting, the 'Spotter-catcher's' curriculum vitae shall be provided to Council. After the pre-start meeting, the 'spotter catcher' shall provide a plan to Council indicating the broad range of fauna expected in the site, the proposed method of operation, and any expected constraints. All operational works involving habitat removal are to be supervised until satisfied that native fauna have been suitably relocated, and shall instruct the contractor when no further action is required. Council will confirm with the appointed person that no habitat removal occurred without supervision shall be present to inspect the trees and relocate remaining fauna where possible. The applicant shall be responsible for fees payable to the 'Spotter-catcher'.
If any denning, roosting or nesting animals are observed within hollow limbs, but cannot be readily removed by an ecologist, it is recommended that, where appropriate, the hollow end of the limb be blocked with porous material and a chainsaw be used to remove the limb. The limb should then be relocated to a suitable place, determined in consultation with QPWS and the hollow end unblocked at an appropriate time of day to minimise fauna predation. In the case that a colony of microchiropteran bats are located, then the roost will either be felled at night (once bats have vacated) or the entry points shall be blocked, and the roost will be moved to an appropriate area of vegetation to be retained on or adjacent to the site.
Prior to tree removal, an appropriately qualified ecologist shall attempt to "flush out" any denning or nesting animals not observed during the initial hollow inspection. This may involve hitting target trees with a sledgehammer or another similar technique.
Following felling, a second inspection of the relevant trees shall be carried out to relocate fauna disturbed by the clearing process or remaining within the felled timber to a suitable location determined in consultation with QPWS.
Where possible, the actual felling of the habitat trees shall be conducted in a manner that will maximize the chances of survival for any fauna remaining within the tree hollows. This shall involve pushing rather than cutting, and cushioning the tree fall with other felled timber and foliage.
All injured animals shall be immediately removed and taken to an appropriately qualified veterinary surgeon. Should any orphaned or injured native fauna be discovered at a later stage during operational works, then matter shall be immediately reported to the Central Moreton District Officer of the QPWS.
Following completion of the selective clearing stage, capture and release records shall be supplied to QPWS in accordance with their licensing conditions. A copy of these records, if requested, shall be supplied to Gladstone Regional Council.
Social
Provide a communication program targeted to local residents and visitors to Hummock Hill Island, and including: ■ regular construction updates; ■ advice on construction schedules; and ■ the results of monitoring required by the EMP.
Develop, promote and implement an effective complaints response system for receiving, handling and responding to complaints received during construction of the Project, including: ■ provision and promotion of a phone contact with construction management staff during hours of construction; and ■ a follow up procedure which notifies complainants within 24 hours of the intended response to the issue raised.
Recreational facilities of the HHI Development will be established, operated and maintained by the Proponent as part of the O&M agreement.
The Proponent will establish a bus service to link with existing school bus services to existing schools in the Region.

Develop monthly reports (publicly accessible on request) regarding communication activities, residents' complaints and resolution of complaints.
Consult with relevant Local and State Government agencies to identify and gain commitment for provision of and contribution to social infrastructure requirements to meet the expected increase in population, including upgrading of emergency services.
Consult with the Department of Emergency Services to identify and agree provision for emergency services.
Provides greater access to medical facilities for all residents of Hummock Hill Island including older residents, and adjoining communities.
Facilitate development of community groups, support networks and events to build social capital within the community.
Incorporate universal design and Crime Prevention through Environmental Design (CPTED) principles to into the design of residential, commercial and community facilities and outdoor spaces.
Consult with Surf Lifesaving Queensland to investigate and determine the level of provision of private, funded or volunteer surf lifesaving services.
Investigate and establish required beach safety measures, including lifeguard tower, and potential need for swimming enclosure to avoid marine stingers.
Health and Safety
Drinking water supplies from the proposed desalination plant will meet NHMRC Australian Drinking Water Quality Guidelines (2004)
Master Planning includes provision for Council and volunteer lifeguard services for public beaches.
All plant operators (including contractors) will be certified operators of their equipment.
Site management will be in accordance with Queensland OH&S Legislation and Policy which includes site security, warning signs prohibiting unauthorised access.
Construction activities will be conducted in accordance with the Construction OH&S Plan which outlines responsibilities for OH&S management, minimum OH&S standards to be met for the site, training (including contractors), reporting and compliance checks.
A site traffic management plan will address matters such as traffic flow, direction and speeds for construction traffic in residential areas and Clarks Road, in conjunction with the local Police Force and Local Government
Water storages and detention basins will be designed in accordance with Water Sensitive Urban Design Technical Design Guidelines for South East Queensland, (Healthy Waterways,2006)
Recycled water will be treated to Class A+ in accordance with the Queensland Recycled Water Guidelines (2005) as such waters will comply with the Guidelines for Managing Risks in Recreational Water (NHMRC, 2006)
Permanent water storages will be constructed in accordance with the Queensland Recycled Water Guidelines (2005) and the Australian Mosquito Control Manual (Mosquito Control Association of Australia 2002)
Temporary water storages will be constructed in accordance with the Draft Water Sensitive Urban Design Engineering Guidelines, (Healthy Waterways, 2006).
Develop and implement a Vector Management Plan which provides for: ■ breaks in any continuous vegetation lines leading to residential areas; ■ roadway embankment construction should be designed to eliminate (if possible) any standing water impoundment or redirection of water flows into potential mosquito breeding areas; and ■ stormwater drainage should be designed to avoid silt accumulation and be free draining. Exit points from drains into waterways or wetlands should be designed to avoid habitat changes at discharge points.
The handling, storage and separation distances be maintained in accordance with Australian Standards and industry codes of practice, such as: ■ AS 1692: Tanks for flammable and combustible liquids ■ AS 1940: The storage and handling of flammable and combustible liquids ■ AS 2187: Explosives - Storage, transport and use

■ AS 3780: The storage and handling of corrosive substances ■ AS 4452: The storage and handling of toxic substances
An Emergency Response Plan will be developed and implemented. The Plan will include provision for: ■ a team in the construction employees to provide a first response capability (e.g. occupational first aid and basic fire fighting); ■ an emergency controller, who will be the on-duty operations team leader, will control and coordinate emergency response actions on site until such time as the incident is either effectively managed or handed over to external emergency services; ■ stores, restaurants, commercial premises and offices will be fitted with approved and certified fire detection (smoke detectors) and sprinkler systems; ■ first aid fire fighting equipment (hand held extinguishers and fire hoses) will be installed at strategic points at the development; ■ all fire fighting facilities and equipment will be serviced, maintained and inspected by a certified body; ■ site induction training will include emergency response actions; ■ fire drills will be undertaken on a regular basis where necessary by construction personnel; ■ permanent facilities, such as fuel storage areas, will have a dedicated fire alarm, suppression and fire fighting systems; and ■ a permanent emergency services presence will occur after the third year of construction with inclusion of a Police, Ambulance and Fire Brigade building located in are adjacent the town centre. The Principal Contractor will liaise with local State Emergency Services and local ambulance and hospital services with respect to planning for Emergency Response.
A Bird and Animal Hazard Management Plan will be developed (included as part of the Airstrip Manual) and implemented. The Plan will be prepared by a suitably qualified person such as an ornithologist or a biologist, etc and will address: ■ hazard assessment, including monitoring action and analysis; ■ pilot notification; ■ liaison and working relationships with land use planning authorities; ■ on-airport bird and animal attractors which provide food, water or shelter; ■ suitable harassment methods; and ■ an ongoing strategy for bird and animal hazard reduction, including provision of appropriate fencing.