



Gladstone Ports Corporation

Growth, Prosperity, Community.



Western Basin Dredging and Disposal Project

Biodiversity Offset Strategy

For the attention of: The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)

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1.0 Background

The Port of Gladstone is in a significant phase of development associated with the establishment of the Liquefied Natural Gas (LNG) industry and the construction of the Wiggins Island Coal Export Terminal (WICET). This development is occurring within the Great Barrier Reef World Heritage Area (GBRWHA) and is also adjacent to areas of significant ecological value. To allow for the development of port facilities required to service expansion, Gladstone Ports Corporation (GPC) sought approval to extend, deepen, and widen existing shipping channels and create new berth facilities.

In 2010, the State and Federal governments (EPBC 2009/4904) approved the Port of Gladstone Western Basin Dredging and Disposal Project (WBDDP) subject to numerous conditions with regard to extensive environmental legislation (Appendix A).

This document provides the Biodiversity Offset Strategy for the WBDDP in accordance with Condition 38 of the approval from the Federal Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) which states that *“The person taking the action must submit a Biodiversity Offset Strategy to the Minister for approval in order to offset unavoidable impacts to the values of the Great Barrier Reef World Heritage Area and National Heritage Place, and EPBC Act listed threatened and migratory species.”* The specifics of DSEWPaC Condition 38 are presented in Section 3.0.

2.0 Philosophy and Purpose of Biodiversity Offset Strategy

GPC recognises that there will be environmental effects from port developments. Under GPC’s Environmental Policy, “GPC is operating in a manner that allows for sustainable development with minimal environmental harm to the Port and surrounding areas”. GPC is also committed to conducting all current and future works within the Port of Gladstone in accordance with Commonwealth and State environmental obligations.

GPC is committed to developing a Biodiversity Offset Strategy for the region and wider bioregion as defined by DSEWPaC (see map in Appendix B). The overriding objective of the Biodiversity Offset Strategy is to provide for the long term conservation of threatened and migratory species, including their habitats, that may be impacted by activities associated with the WBDDP.

3.0 DSEWPaC Condition 38

The person taking the action must submit a Biodiversity Offset Strategy to the Minister for approval in order to offset unavoidable impacts to the values of the GRBWHA and National Heritage Place, and *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* listed threatened and migratory species. The strategy must include as a minimum the following requirements:

- a. Measures funded to not less than \$5 million including, but not limited to:
 - i. funding for listed threatened and migratory species protection, habitat enhancement and restoration actions in the region or the wider bioregion such as ‘seagrass friendly’ mooring systems, wetland rehabilitation projects and water quality improvement programs;

- ii. actions to reduce fisheries netting pressure in Port Curtis and in adjacent waters; and
 - iii. actions to reduce potential for coastal impacts such as commercial development in adjacent areas.
- b. Details of the management arrangements and a map of the 3,000 hectares of land at Port Alma proposed for protection in perpetuity as an Environment Preservation Area;
- c. A Strategic Vessel Management plan for Port Curtis that must include, but not be limited to:
- i. measures that will regulate boating speeds and movement in Port Curtis in perpetuity, including ongoing funding for enforcement of the program;
 - ii. the establishment of 'go slow' zones; and
 - iii. establish roles and responsibilities for implementation of the Plan.
- d. Development of a seagrass conservation plan that must include, but not be limited to:
- i. a map clearly illustrating the areas to be protected including the Wiggins/Mud Island seagrass beds, seagrass beds east of Quoin Island and seagrass beds in Pelican Banks;
 - ii. measures to ensure that the seagrass beds within the Port are protected from ongoing and future Port activity; and
 - iii. commitments to ensure no further direct seagrass removal of the areas referred to in 38(d) (i) above, accounting for any increases in size of the mapped seagrass areas.
- e. The strategy must include key milestones, performance indicators, actions and timeframes for the completion of all offsets outlined in the strategy.
- f. The strategy must be prepared with the advice of the Water Quality technical reference panel and the Ecosystem Research and Monitoring Program research advisory panel. The person taking the action must provide the written advice of these panels when submitting the strategy for approval.

4.0 Stages of Development of the Biodiversity Offset Strategy

The Biodiversity Offset Strategy has been, and will be further developed in a number of stages:

Stage 1: Initial consultation and development of a draft Biodiversity Offset Strategy for comment by the Dredge Technical Reference Panel (DTRP) and the Ecosystem Research and Monitoring Program Advisory Panel (ERMPAP);

Stage 2: Further development of draft Biodiversity Offset Strategy incorporating comments from DTRP (Appendix C) and ERMPAP (Appendix D) and additional consultation for lodgement with DSEWPaC;

Stage 3: Finalisation of Biodiversity Offset Strategy and approval by the Federal Minister for DSEWPaC; and

Stage 4: Implementation of Biodiversity Offset Strategy.

Stage 1: Initial Consultation and Development of Draft Biodiversity Offset Strategy

The GPC Biodiversity Offset Strategy has been developed in close consultation with key stakeholders and regulatory authorities.

Initial consultation was undertaken with:

- Australian Institute of Marine Science (AIMS);
- Australian National University (ANU);
- Central Queensland University (CQU);
- Queensland Department of Agriculture, Fisheries and Forestry (DAFF);
- Department of National Parks, Recreation, Sport and Racing;
- Environmental Sub Committee (ESC);
- Fitzroy Basin Association (FBA);
- Gladstone Regional Council (GRC);
- Maritime Safety Queensland (MSQ);
- Queensland Parks and Wildlife Service (QPWS);
- Department of Environment and Heritage Protection (DEHP); and
- Various environmental consultants, community groups and natural resource management organisations.

Consultation required under approval conditions:

- DTRP; and
- ERMPAP.

The purpose of these consultations was to:

- Identify key issues;
- Identify key needs of Biodiversity Offset Strategy;
- Identify possible projects/actions; and
- Identify environmental programs currently in place (locally and elsewhere).

Stage 2: Development and Lodgement of Draft Biodiversity Offset Strategy

Identified projects in the draft Biodiversity Offset Strategy and additional projects identified during further consultation, were selected on the basis of:

1. Compliance with conditions;
2. Ability to achieve objective of Biodiversity Offset Strategy as outlined in Section 2.0 within reasonable timeframes and in a cost effective and realistic manner;
3. DTRP and ERMPAP comments; and
4. Feedback from DSEWPaC.

Individual projects are described in Section 5.0 including conditional requirements, objective, actions, duration, estimated dates of commencement and completion, key milestones and key performance indicators. Some contingency has to be recognised for the duration of projects given delays from interim steps or success/failure of feasibility assessments.

DSEWPaC Condition 40 specifies the Biodiversity Offset Strategy must be submitted within 12 months of date of approval for WBDDP which was 22 October 2011. A draft biodiversity offset strategy was submitted on the 22nd October 2011

Stage 3: Finalisation and Approval of Biodiversity Offset Strategy

Clarification was needed for a number of conditions due to jurisdictional issues and feedback from DSEWPaC on components of draft Biodiversity Offset Strategy. DSEWPaC Condition 41 specifies that after 18 months from date of approval for WBDDP (22 April, 2012), GPC must not undertake any dredging activities, land reclamation or construction activities unless the Minister for DSEWPaC has approved the Biodiversity Offset Strategy in writing. An extension of time for this approval was requested on 28 March, 2012 and was approved by DSEWPaC on 18th April, 2012. The current date for approval of the Biodiversity Offset Strategy is 22 July, 2012. The final Biodiversity Offset Strategy was submitted to DSEWPaC on 22 June, 2012.

Stage 4: Implementation of Biodiversity Offset Strategy

Following approval of the Biodiversity Offset Strategy, scopes for projects will be implemented in a staged process. The total spend across the strategy with regard to abiding by DSEWPaC's Condition 38 will not be less than \$5 million AUD and the findings, including related data, of these studies will be made publicly available on request to interested parties.

Upon approval from DSEWPaC, the Biodiversity Offset Strategy will be at Stage 4.

5.0 Details of the Projects under Condition 38a

5.1 Project title: Signage and education

Condition: DSEWPaC approval 38(a) (i), (ii) and (c)

Objective: This addresses condition 38(a) (i) requiring funding for threatened and migratory species protection by raising awareness of listed threatened and migratory species and their habitats and maximising success of existing protection measures and those trying to be implemented in this strategy. In educating commercial and recreational fishers on threatened and migratory species and their habitats in the region, wider bioregion and adjacent areas a consequential reduction in netting pressures may occur pertinent to 38(a) (ii). Given that one of the desired outcomes is an approach similar to the "go slow for those below" initiative, this is aligned with the intent of condition 38(c).

Actions: Installation of signage identifying pertinent threatened and migratory species and their habitats in the area, development and implementation of education programs, and development and implementation of social surveys to determine effectiveness of signage and education campaigns.

Explanation: This project will provide the wider community (including recreational and commercial fishers) with a greater understanding of threatened and migratory species in the region and wider bioregion with the aim of protecting these species through appreciation of their habitats and behaviours, and hence reduce the risk of boat strike and damage to crucial habitats. The community education element could allow for the development of a similar initiative utilised for recreational boat users in Moreton Bay and Great Sandy Marine Park, called "go slow for those below". The message is to 'go slow' in marine habitats, which for recreational vessels means travelling off the plane and abiding to marked navigation channels. For small commercial vessels (e.g. fast cats transporting workers to Curtis Island), whilst GPC has no jurisdictional control, identification of sensitive habitats will inform and allow for compensatory actions where and when necessary. This would be an interim measure prior to establishment of enforced 'go slow' zones (See 5.3) or an alternative should enforced 'go slow' zones not eventuate. The aim of the social surveys is to determine the effectiveness of the signs and education programs and will also include questions regarding people's comprehension of and compliance to 'go slow' zones (if enforced) (See 5.3) and the use and practicalities of tangler bins (See 5.7). The project actions will be carried out by a tendering process.

5.2 Project title: Assessment of marine traffic

Condition: DSEWPaC approval 38(a) (i) and (c)

Objective: This provides an analysis of potential marine traffic hazards to threatened and migratory species which addresses condition 38(a) (i) and compliments a strategic vessel management plan outlined in condition 38(c).

Actions: Undertake a study to define and produce a map of all commercial and recreational boat traffic movements in the region and wider bioregion, to inform the project investigating establishment of enforced 'go slow' zones (See 5.3).

Explanation: During 2011, the region and wider bioregion experienced a significant increase in marine fauna strandings resulting from interactions with marine traffic. There is limited information on the dynamics of the interaction of marine traffic with habitat use by marine animals in the region and wider bioregion. This project aims to fill this knowledge gap by providing a foundation on which the interactions with key marine fauna species can be assessed in relation to vessel movements not only under this strategy but under other synergistic programs (e.g. Ecosystem Research and Monitoring Program (ERMP)). This information could potentially allow for the development of boat lanes or exclusion zones and provide valuable data to enable the establishment of enforced 'go slow' zones. The project actions will be carried out by a tendering process.

5.3 Project title: Assessment, implementation and compliance of 'go slow' zones

Condition: DSEWPaC approval 38(a) (i) and 38(c)

Objective: This addresses condition 38(a) (i) by potentially reducing the incidence of boat strikes to marine animals hence providing protection to threatened and migratory species in the region and wider bioregion and also addresses 38(c) (ii) which requires the establishment of 'go slow' zones.

Actions: Assessment of feasibility and establishment of enforced 'go slow' zones for recreational and commercial traffic.

Explanation: The predominant animals involved in boat strikes are turtles and dugongs which are most vulnerable to vessel strike when in the shallows of the seagrass feeding grounds with no deeper water in which to escape. Seagrass surveys already undertaken as part of the WBDDP, additional seagrass surveys planned for Port Alma under the ERMP as well as further ecological and habitat use information will assist in determining the most appropriate areas for 'go slow' zones combined with information obtained from the assessment of marine traffic detailed in 5.2. Maritime Safety Queensland (MSQ) has the jurisdictional control over vessel movements in Queensland and funding will be provided to MSQ to determine the feasibility and legality of reduced speed limits to all vessels utilising the region and wider bioregion, especially Gladstone Harbour. The primary concern of MSQ is the safety of crew and vessel and in this regard, certain types of vessels have a minimum speed at which they can maintain safe steerage, particularly in the highly tidal Gladstone Harbour. Any reduction in speed limits would have to be specific to the class of vessel and its operational limits. This may necessitate a tiered approach, whereby larger vessels may still need to operate at a higher speed to smaller commercial and recreational vessels. This project will be further bolstered through the provision of funding to Department of Agriculture, Fisheries and Forestry (DAFF) to fund additional boating and fisheries patrols to enforce these zones (See 5.12). New signage would be installed as a consequence of the establishment of the 'go slow' zones, detailing locations of 'go slow' zones and penalties for breaching conditions of the zones. The signage component actions will be carried out by a tendering process.

5.4 Project title: Support to Queensland Parks and Wildlife Service (QPWS) for marine animal strandings

Condition: DSEWPaC approval 38(a) (i)

Objective: This directly addresses condition 38(a) (i) to provide funding for listed threatened and migratory species protection by maximising the survival and/or prompt recovery of stranded marine animals and removing stranded marine animals from the environment to prevent double reporting.

Actions: Support QPWS in the collection of stranded or deceased marine animals and the transportation of sick or injured marine turtles to treatment facilities.

Explanation: Currently, there is no organisation required to retrieve stranded or deceased animals and transport those requiring rehabilitation at a suitable facility. QPWS have undertaken this task while being financially and resource limited and have struggled to retrieve all stranded or deceased animals. This can lead to double reporting (pers. comm., QPWS) or the unnecessary death of an animal. If an injured or sick animal cannot be treated in Gladstone, QPWS currently organise for the transportation of the animal to Sea World or Australia Zoo for treatment and rehabilitation. Providing QPWS with additional specific funding to assist with collection and transportation of animals may reduce incidences of double reporting and the death of an animal.

Note: Double reporting occurs when multiple sightings of a single stranded animal are reported. This can be avoided if the animal is marked or retrieved as soon as possible.

5.5 Project title: Habitat enhancement and restoration actions

Condition: DSEWPaC approval 38(a) (i)

Objective: This directly addresses condition 38 (a) (i) which requires funding for habitat enhancement and restoration actions.

Actions: Rehabilitation of habitats of high ecological significance (including wetlands) through such measures as cleaning up debris and rubbish, installing fencing and signage, flora planting and landscaping. Studies undertaken to assess the environment before and after restoration and enhancement activities to monitor the effectiveness of enhancement and restoration up to 3 years following actions.

Explanation: Advice from various government agencies and academic researchers has identified a need to enhance and restore habitats of high ecological significance in the region and wider bioregion. Priority areas for enhancement and restoration will be identified and then baseline monitoring undertaken to determine condition of areas prior to enhancement

and restoration. Restoration and enhancement actions will then be undertaken followed by 2 years of monitoring to determine the success of actions put in place. The project actions will be carried out by a tendering process.

5.6 Project title: Stormwater pollution control

Condition: DSEWPaC approval 38(a) (i)

Objective: Improve stormwater capture prior to stormwater discharge to the environment, thereby enhancing water quality. This addresses condition 38 (a) (i) which requires funding for water quality improvement programs which will be enabled in this project by an enhancement in stormwater pollution controls.

Actions: Provide funding to local authorities to improve stormwater management facilities in high priority areas.

Explanation: Water-sensitive, urban design, best practice, stormwater management systems (e.g. gross pollutant traps, bioretention swales, permeable pavers, drain stencilling, roadside sweeping) provide passive end-of-catchment treatment to reduce pollution discharge into aquatic environments and improve water quality. Stormwater catchments can be defined from a scale encompassing an entire housing estate to a single street. Specific projects and appropriate stormwater management systems will be identified with local authorities and funding provided to the local authorities for only those projects. A local researcher is already undertaking stormwater surveys in the region and they have identified the need to do additional stormwater surveys. The survey component actions will be carried out by a tendering process.

5.7 Project title: Distribution, maintenance and monitoring of tangler bins

Condition: DSEWPaC approval 38(a) (i)

Objective: This project addresses condition 38(a) (i) requirements for threatened and migratory species protection through reducing the amount of fishing line and associated material in the marine environment to reduce entanglement of and/or ingestion by marine animals.

Actions: Provide funding to purchase and distribute tangler bins for use on recreational fishing vessels and at boat ramps for disposal of fishing related products.

Explanation: A significant risk to marine megafauna is entanglement in and ingestion of fishing gear. These tangler bins provide an avenue to reduce the amount of fishing gear and other marine debris being disposed of in the water and reduce incidences of entanglement and/or ingestion by marine animals particularly threatened and migratory species. A local community group has already been active in constructing and distributing these bins in the Gladstone region through alternative funding. Discussions with members of this group have shown that there is a need for the distribution of additional tangler bins, especially outside of the Gladstone region, and for the larger tangler bins located at boat ramps. It is intended that this funding will further support the established work in tangler bin construction and

distribution in the region and wider bioregion. Marine debris tracking and marine debris surveys will help understand the effectiveness of tangler bin use in association with social surveys to determine their use by the community. The project actions will be carried out by a tendering or sole sourcing process.

5.8 Project title: Coral mapping and restoration

Condition: DSEWPaC approval 38(a) (i)

Objective: This project addresses condition 38(a) (i) which requires habitat enhancement and restoration actions by restoring coral reefs which provide basic necessities for EPBC Act listed species.

Actions: Undertake mapping and restoration of corals in the region and wider bioregion. Annual studies undertaken to monitor effectiveness of restoration activities for up to 3 years.

Explanation: The region and wider bioregion is included in the GBRWHA and also incorporates State Marine Park. The world heritage values of the GBRWHA include inshore coral communities of southern reefs, some of which lie within the region and wider bioregion. Various government agencies and universities have undertaken coral surveys; however comprehensive information on the distribution and health of corals in the region and wider bioregion is not publicly available. Coral reefs provide habitats for species of conservation significance and the biodiversity and interconnectedness between species and habitats makes the GBRWHA one of the richest and most complex natural ecosystems on earth. Several species of marine turtle (green, flatback and hawksbill turtles), listed as vulnerable, inhabit the waters of the region and wider bioregion. Two of these species, the flatback and hawksbill turtle, rely on reef organisms for nutrition. Coral reefs in the region and wider bioregion form part of a wider ecological community which enhances biodiversity and provides refuge for *EPBC Act 1999* listed migratory species such as dugongs, dolphins and whales that are known to inhabit or transit the area. Providing information on the coral communities in the region to the scientific and public domains will create a better awareness and understanding of this sensitive habitat and will enhance their protection. Concurrently, knowledge on their condition and health will allow for targeted restoration of compromised coral communities and this will strengthen the dependent species in the wider ecological community. The project actions will be carried out by a tendering process.

5.9 Project title: Integrated map of all protected areas and sensitive habitats in the region and the wider bioregion

Condition: DSEWPaC approval 38(a) (i) and (d) (i)

Objective: This project addresses condition 38(a) (i) by creating awareness of the important species and habitats and overlapping jurisdictional controls in place with aim of improving protection of threatened and migratory species and meets condition 38 d (i) with the inclusion of seagrass areas in the region and wider bioregion.

Actions: Compile any integrated map, within a GIS, combining all protected areas and sensitive habitats in the region and wider bioregion.

Explanation: The region and wider bioregion are part of the GBRWHA and include declared Fish Habitat Areas (FHAs), State Marine Park and a Dugong Protection Area (DPA) that are all under different jurisdictions and hence maps for each protected area (and other sensitive habitats), are not integrated, making the overall protective measures of the region and wider bioregion difficult to conceptualise. This map will include and be updated with data on the distribution and coverage of seagrasses in Port Curtis which are currently being funded under the WBDDP and which also are required under Condition 38(d), a seagrass conservation plan. Any other initiatives resulting from the Biodiversity Offset Strategy which can be represented in GIS format will also be included in this integrated map. It is also envisaged that this map with GIS layers could assist in highlighting future development constraints and alerting the wider community to the location of protected areas (including enforcement measures) and sensitive habitats. The project actions will be carried out by a tendering process.

5.10 Project title: Integrated environmentally friendly moorings (EFMs) program

Condition: DSEWPaC approval 38(a) (i) and (d)

Objective: This directly addresses condition 38(a) (i) requiring habitat enhancement and restoration actions such as “seagrass friendly” mooring systems and provides protection of seagrass under the seagrass conservation plan outlined in Condition 38 (d).

Actions: Install up to 20 environmentally friendly moorings to reduce impact on benthic environment of traditional mooring equipment.

Explanation: An EFM trial was undertaken in Moreton Bay and showed the improvement of the benthic communities surrounding EFMs following the removal of traditional moorings and the subsequent installation of EFMs. The benefits to the mooring owner and/or boat user were also highlighted during this trial. Please see report included in Appendix E. DAFF seeks to develop an integrated EFM mooring program in central Queensland to avoid impacts on seagrass and inshore coral reefs. Port Curtis has been selected as one of the candidate sites. DAFF are intending to source funding from various offset initiatives for this mooring program, including this strategy. A review will be undertaken on the use and benefit of environmentally friendly moorings. This will include an assessment of their potential use and benefit and identification of priority sites for installation of environmentally friendly mooring systems within the region and wider bioregion.

5.11 Project title: Development of a regional code of practice for inshore netting (Gladstone Region)

Condition: DSEWPaC approval 38(a) (ii)

Objective: This addresses condition 38(a) (ii) with the potential to reduce the incidence of capture and entanglement in fishing nets of marine megafauna in Port Curtis and adjacent waters.

Actions: Develop, promote and implement a regional code of practice for inshore netting (Gladstone Region).

Explanation: In Queensland, commercial net fishing is managed through various controls including restricted access (limited licence numbers); gear restrictions (net length and use); area, time and seasonal closures and some species quota. It is common for net fishers to develop codes of conduct as well as practices and methods to fish in their local area in an environmentally friendly, economically beneficial and socially conscious way. However, as these are not enforceable, not all fishers abide by them. For the Gladstone region, DAFF are seeking to work with commercial fishers to establish "best netting practices" which will focus primarily on minimising impacts to dugongs, dolphins and turtles. The major benefit to dugongs, dolphins and turtles will be from a decreasing incidence of animal entanglement in nets. It is further expected that this established Code of Practice will be made enforceable by DAFF. Funding will be provided to DAFF to develop the Code of Practice outside of DAFF's normal core business and specifically for the program arising from this strategy.

5.12 Project title: Funding of DAFF boating and fisheries patrols

Condition: DSEWPaC approval 38(a) (i), and 38(c) (i), (ii)

Objective: This project addresses condition 38(a) (i) by policing and regulating fishing and boating restrictions in the region and wider bioregion as without enforcement of the legislation the objectives of protective measures cannot be achieved. Additional boating and fisheries patrols also address condition 38(c) (i) and (ii) providing additional funding for enforcement of fishing and boating restrictions which may include 'go slow' zones.

Actions: This project will provide funding to DAFF, for either new boats and/or additional operational hours, to assist in patrolling the use of nets in region and wider bioregion and policing any outcomes from the commercial fisheries compensation process and potential enforceable 'go slow' zones.

Explanation: Boating and fisheries patrols are already in place in the region and wider bioregion due to standard speed restrictions and regulations for all marine traffic. In addition, there are legislative requirements associated with the State Marine Park and Dugong Protection Area. The introduction of enforced 'go slow' zones (see 5.3) and the development of a regional code of practice for inshore netting resulting (see 5.11) from this strategy as well as any possible fishing restrictions resulting from the process of the steering committee for compensation to commercial fishers will necessitate increased resources to administer compliance. Discussions with DAFF (the current regulatory authority for boating and fisheries patrols) identified their current resource limitations and requirements for additional resourcing should these programs eventuate. Funding will be provided to DAFF for either new boats and/or additional operational hours in existing boats, outside of DAFF's normal core business and specifically for programs arising from this strategy.

5.13 Project title: Acquisition of high value ecological land to protect from development

Condition: DSEWPaC approval 38(a) (iii)

Objective: This project addresses 38(a) (iii) by reducing potential for coastal impacts within the region and wider bioregion, and/or adjacent areas, by acquisition of high value ecological coastal land within the region and wider bioregion and granting to relevant authority for conservation and management.

Actions: Acquire high value ecological land.

Explanation: This project could help to protect ecologically significant coastal land from development pressures and in the process provide information on the biodiversity of the region and wider bioregion. It is common for developers to undertake desktop analyses to determine the ecological value of certain areas, that may or may not reside within their own land. This process also requires an investigation of possible future tenure arrangements for long term protection and management of the ecological values. It is envisaged that this project, via a similar process, will identify suitable areas in the region, wider bioregion or adjacent areas that are of ecological high value. The project actions will be carried out by a tendering process.

5.14 Project title: Upper to lower catchment water quality monitoring and improvement of water quality in the Boyne or Calliope Rivers

Condition: DSEWPaC approval 38(a) (i)

Objective: This project addresses condition 38(a) (i) as a water quality improvement program by providing funding to monitor land use practices and water quality in the upper catchments of the Boyne and Calliope Rivers and its concurrent effects on lower catchment water quality.

Actions: Engage landholders to undertake water quality monitoring to determine any potential impact on the lower catchments of the Boyne and Calliope Rivers and improve management practices on site.

Explanation: A local regional community based organisation is already involved with two types of water quality monitoring programs which engage landowners to monitor their land use practices and water quality with the aim of improving water quality in the lower catchments and along the coast. The Boyne and Calliope Rivers are not currently part of these programs. The first of these programs involves landholders being trained and contracted to sample flow events at the neighbourhood catchment scale (creeks) which are then collected and analysed. The data can then be reported back to the landholders in the neighbourhood catchment and used for water quality modelling and objective setting. Another approach is finer scale paddock monitoring where flow rates from creek to reef are modeled. Through a tendering or sole sourcing process the most appropriate and beneficial program will be identified and implemented for either the Boyne or Calliope Rivers.

5.15 Project title: Provide funding for a proposed marine rehabilitation facility in Gladstone

Condition: DSEWPaC approval 38(a) (i)

Objective: This addresses condition 38(a) (i) by providing protection for threatened and migratory species through maximising survival and/or prompt recovery of stranded animals.

Actions: Assist in the establishment and/or operation of a marine rehabilitation facility.

Explanation: There is a geographical gap for marine rehabilitation facilities along the Queensland coast. Currently most animals (turtles) are transported to Australia Zoo, if required. Currently in Gladstone, the LNG proponents are funding a temporary turtle rehabilitation facility at the Gladstone Area Water Board (GAWB) hatchery, the McCosker family are establishing a rehabilitation facility on Quoin Island, and CQ University is investigating a long-term marine research and rehabilitation facility. This funding could assist any of these facilities or others proposed in the near future.

If any of the proposed facilities do not proceed, then part of the funding could be provided to relevant parties (e.g. QPWS and Australia Zoo/Sea World) for the transportation and care of marine animals recovered from the region and wider bioregion.

5.16 Project title: Declared fish habitat area (FHA) investigations in the Central Queensland region

Condition: DSEWPaC approval 38(a) (iii)

Objective: This project addresses condition 38(a) (iii) as declared fish habitat areas aim to protect all habitat types (e.g. vegetation, sand bars and rocky headlands) within them from direct physical disturbance and coastal development.

Actions: Provide funding to Department of National Parks, Recreation, Sport and Racing to conduct an FHA investigation and consultation processes in the Central Queensland region according to Fish Habitat Management Operational Policies (FHMOP) 006 & 007.

Explanation: According to the Department of National Parks, Recreation, Sport and Racing, Queensland's declared fish habitat area (FHA) network provides long-term protection for fish habitats that are essential to sustaining our fisheries and aims to ensure fishing for the future by protecting selected inshore and estuarine fish habitats to sustain local and regional fisheries. Currently there are 70 declared FHAs along the Queensland coast that protect more than 1.1 million ha of high-quality fish habitats. While FHA investigations are a component of the Marine Fish Habitat Offset, under the Co-ordinator General's Report for an EIS for the WBDDP, consultations with DAFF provided valuable information on how FHAs can improve the biodiversity of the region and wider bioregion. This may allow for a refuge capable of replenishing biodiversity that may have been impacted by coastal development. Current declared FHAs in Central Queensland are Broad Sound, Colosseum Inlet, Corio Bay, Cawarral Creek, Eurimbula, Fitzroy River, Rodds Harbour and Seventeen Seventy-Round Hill. There are three known candidate areas suitable for investigation and possible declaration in the Central Queensland region: Calliope River, Leekes Creek and an

expansion of Fitzroy River declared FHA which could include sections of the 3000 ha of offset lands required in Condition 38(b). Please see relevant information in Appendices G and H.

Special note: The provider should consider key project assessments (i.e. Arrow Energy LNG Plant EIS and their findings of the Calliope River System) when selecting, assessing and consulting as part of the FHA declaration process to ensure all information is available for the selection and assessment of the FHAs.

6.0 Conditions 38b-d

Condition 38b

The 3000 ha of land at Port Alma, outlined in the conditions for the Biodiversity Offset Strategy, is included in the Co-ordinator General's report for an EIS for the WBDDP under the Marine Fish Habitat Offset which requires the protection of 5000 ha of coastal land currently within GPC's strategic port land at Port Alma. The handover of this land from GPC to the state is still in progress and GPC will send all relevant details, including management arrangements, when this process is finalised. A map of the area to be protected is included with this strategy (Appendix I).

Estimated date of commencement: August 2012

Estimated date of completion: July 2015

Condition 38c

MSQ and each LNG proponent have their own vessel management plans. GPC has no jurisdiction over these. Van Ord Dredging International, the contractor involved with managing all dredge and barge vessels for the WBDDP, is subject to the provisions contained within MSQ's Standard for Marine Construction Activities within Gladstone Harbour (Appendix J), which has to be adhered to in the interests of ship safety and harbour management.

For GPC vessels, according to the National Standard for Commercial Vessels, GPC must have a ship management plan for each vessel under their control. GPC is currently in the process of preparing these plans. However, 3 vessels are undergoing considerable modification and 2 vessels are being replaced with new vessels. The ship management plans cannot be completed until all modifications are done and the new boats are delivered and put into the water. It is anticipated that all ship management plans will be finished by end of 2012 and subsequently supplied to DSEWPaC.

Aspects of the preceding projects also meet this condition, namely 5.1, 5.2, 5.3 and 5.12.

Estimated date of commencement: August 2012

Estimated date of completion: July 2013

Condition 38d

GPC has provided information regarding the seagrass surveys undertaken by DAFF as part of the WBDDP (Appendix K) which include scope of works and timing. In addition, GPC has provided a summary of the outcomes of all seagrass surveys undertaken by DAFF, to date, as part of the WBDDP (Appendix K).

As requested by DSEWPaC to meet this condition, GPC commits to ensuring that the seagrass beds of Wiggins/Mud Island, east of Quoin Island and Pelican Banks are protected from ongoing port activity as outlined in the DSEWPaC approval for the WBDDP.

Aspects of the preceding projects also meet this condition, namely 5.9 and 5.10.

Estimated date of commencement: August 2012

Estimated date of completion: August 2012

7.0 Other Environmental Offset Programs

Ecosystem Research and Monitoring Program, Federal Approval for WBDDP

The Ecosystem Research and Monitoring Program (ERMP) has been developed and implemented to acquire a detailed ecological understanding of the marine environment of Port Curtis and Port Alma that can be used to monitor, manage and/or improve the regional marine environment and to offset potential impacts from the project on listed threatened and migratory species and values of the Great Barrier Reef World Heritage Area and National Heritage Place.

The most significant impact identified to date is the increase in incidence of boat strikes to marine animals inhabiting the region, in particular, turtles. While the ERMP will be investigating the effect on the animal's behaviour and habitat use, the valuable information obtained through an assessment of marine traffic will greatly assist the ERMPAP in providing advice to relevant authorities on how to mitigate and/manage any potential impacts.

Marine Fish Habitat, State approval for WBDDP

The Marine Fish Habitat Offset outlines Fisheries Queensland initiatives for future research and studies and/or appropriate works for fish habitat rehabilitation and enhancement in Port Curtis region. These initiatives include:

- creation of additional fish habitats
- rehabilitation works
- implement marine plant management plans
- declared fish habitat area (FHA) investigations
- enhanced FHA management
- applied fish habitat research
- fish habitat mapping

While rehabilitation of marine habitats is a requirement of the Marine Fish Habitat Offset, the geographical boundaries of this offset are broader than those required for the Biodiversity Offset Strategy and hence the Marine Fish Habitat Offset could focus their initiatives outside of the region and wider bioregion outlined for the Biodiversity Offset Strategy.

Three areas in the central Queensland region have been identified for declared FHA investigation, two of which lie within the geographical boundaries of the Biodiversity Offset Strategy. Due to the biodiversity benefits resulting from a declared FHA, it is reasonable for the investigations of the two areas to be included under the Biodiversity Offset Strategy and assist the Department of National Parks, Recreation, Sport and Racing in the costs of the investigation.

DAFF seeks to develop an integrated EFM mooring program in central Queensland to avoid impacts on seagrass and inshore coral reefs. Port Curtis has been selected as one of the candidate sites. This mooring program intends to draw funding from various offset programs including the Marine Fish Habitat Offset (under enhanced FHA management component) and the Biodiversity Offset Strategy.

Marine and Coastal Biodiversity Offset, State approval for WBDDP

In addition to DSEWPaC Condition 38, a Marine and Coastal Biodiversity Offset has been specified under the Co-ordinator General's report for an EIS for the WBDDP which should consist of funding and/or in-kind contributions towards measures including, but not be limited to:

- a. enhanced understanding of the displacement of key marine fauna species from affected habitat areas in Western Basin and any associated effects on regional populations
- b. contribution to species protection programs in the region or the wider bioregion. This may include funding of additional boating and fisheries patrols, education campaigns for recreational fishers on risks of marine fauna boat strike and improved management of key shorebird habitat areas
- c. contribution to habitat enhancement/restoration actions in the region or the wider bioregion such as 'seagrass friendly' mooring systems, wetland rehabilitation projects and water quality improvement programs.

Review of the conditions outlined for the Biodiversity Offset Strategy and the Marine Coastal Biodiversity Offset indicates there is significant overlap, providing the opportunity to combine funds of the shared conditions to obtain an improved overall biodiversity outcome. Permission has been sought from the Co-ordinator General's office to align shared condition and as such there is cost sharing advantages for education campaigns for risks of marine fauna boat strike targeting, in particular, recreational fishers; habitat enhancement/restoration actions; coral mapping and restoration; seagrass friendly mooring systems; additional boating and fisheries patrols; and water quality improvement programs.

DAFF seeks to develop an integrated EFM mooring program in central Queensland to avoid impacts on seagrass and inshore coral reefs. Port Curtis has been selected as one of the candidate sites. This mooring program intends to draw funding from various offset programs including the Marine Fish Habitat Offset (under enhanced FHA management component) and the Marine and Coastal Biodiversity Offset.

8.0 DSEWPaC Condition 46

According to the DSEWPaC approval for the WBDDP, GPC must provide a report to the Federal Minister for DSEWPaC addressing compliance with each of the conditions of the approval, including those under the Biodiversity Offset Strategy. The date of the first compliance report must be within 12 months from the date of this approval with each subsequent report 12 months from the previous report. The next annual compliance report is due 22 October, 2012.

9.0 DSEWPaC Condition 49

The Port of Gladstone is within the GBRWHA; however the proposed dredging and disposal activities do not encroach into State or Commonwealth Marine Parks. The values of the GBRWHA are attached in Appendix L. Also included in Appendix M, is the executive summary from the Environmental Impact Statement (EIS) for the WBDDP, which identifies the key species, particularly those of conservation significance, with the potential to inhabit the region and wider bioregion. The EIS also outlines the possible impacts the WBDDP may have upon their habitat, movements and behaviour.