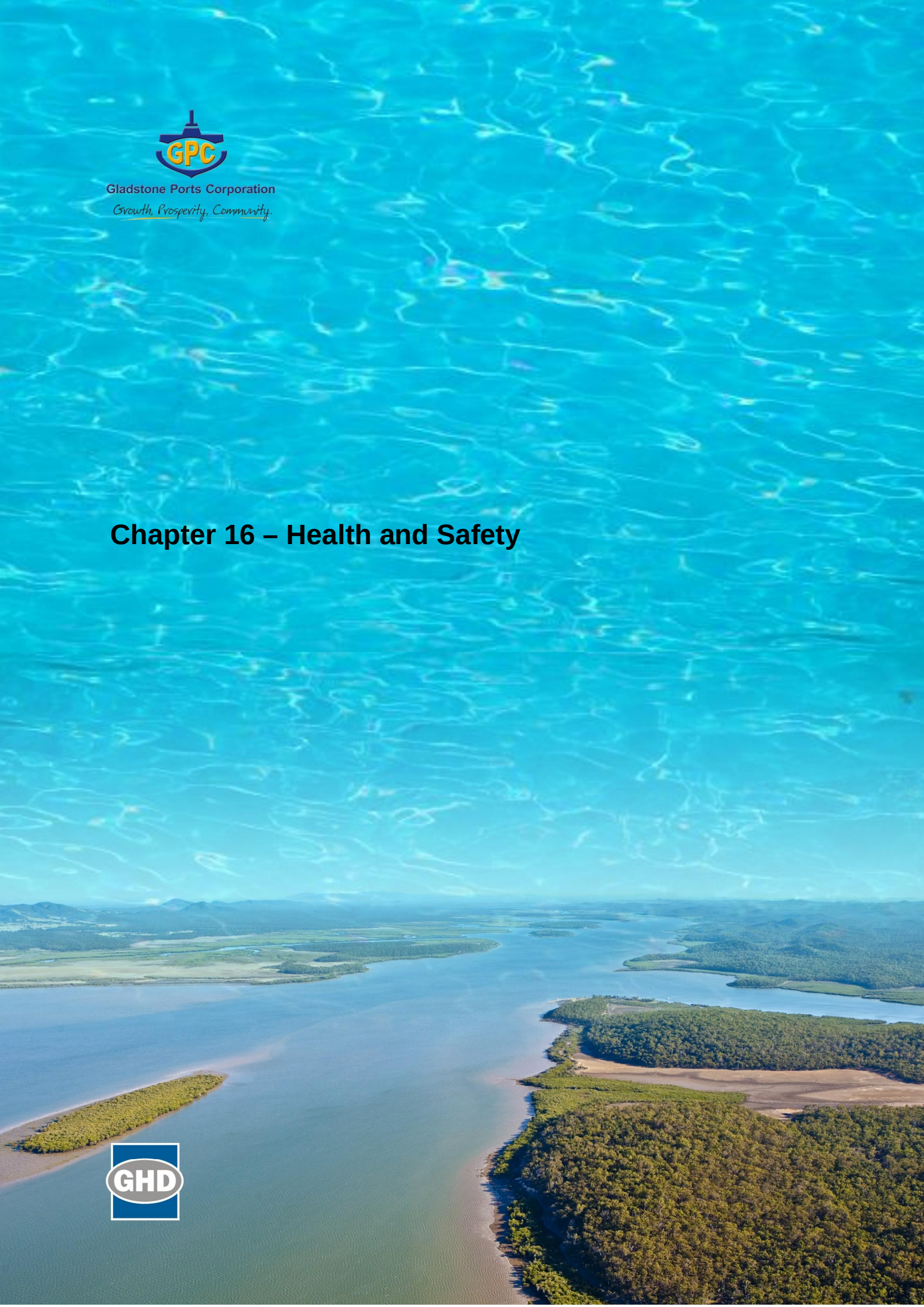
Gladstone Ports Corporation

Growth, Prosperity, Community.

Chapter 16 – Health and Safety



16. Health and Safety

Overview

This chapter addresses Section 4.2 Health and Safety of the ToR for the Project (Appendix A). The objective of this Health and Safety assessment is to describe existing community values for public health and safety that may be affected by the project and to identify actions for mitigating or reducing these.

The activity of quarrying and transportation of the quarried material is excluded from the scope as it is being addressed by GPC under a separate approvals process. The installation of services to the reclamation is also excluded from this assessment as this will be undertaken by future proponents wishing to establish facilities on the reclamation.

16.1 Description of Environmental Values

The main community values for public health and safety that may be affected by the dredging and disposal at the Project are air quality, noise levels, disease vectors and construction safety. The *Environmental Protection (Air) Policy 1998* and *Environmental Protection (Noise) Policy 2008* goals are described separately in Chapter 10.

The health and safety aspects for proposed activities include the following:

Environmental Variables	Environmental Values
Noise environment	◗ Qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to sleep, study or learn or be involved in recreation, including relaxation and conversation; and ◗ Qualities of the acoustic environment which are conducive to protecting the amenity of the community.
Air environment	◗ Qualities of the air environment that are conducive to human health and well being; ◗ Qualities of the air environment that are conducive to protecting agricultural, conservation and recreational use of the environment; and ◗ Dust and odour.

16.1.1 Baseline Conditions

Noise Environment

Baseline noise monitoring has been detailed in Chapter 10. Attended and unattended noise monitoring was carried out at selected locations with background noise sources including road traffic, industrial noise and birds.

Air Quality

Construction phase activities have the potential to affect the air environment through increased air borne particulates and contaminants. Nitrogen dioxide, sulfur dioxide and particulates potentially produced by construction phase activities are the main variables associated with the Project. Baseline air quality monitoring has been detailed in Chapter 10.

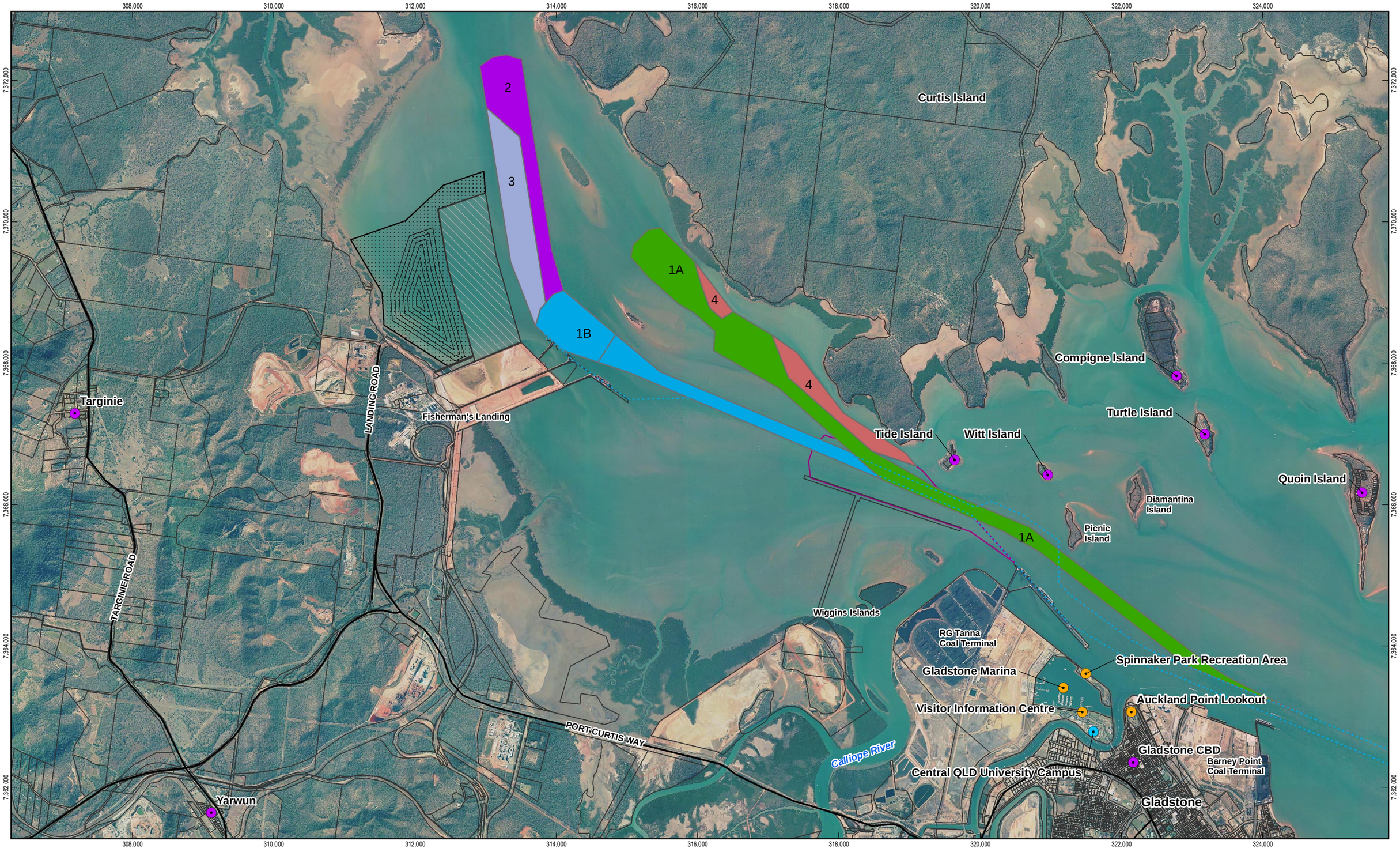
The closest ambient air quality monitoring location was at Swans Road, Targinie (Lat. -23.7758, Long. 151.1063) which has a rural setting and complies with AS/NZS 3580.1.1 siting criteria. Nitrogen dioxide was found to be a key air pollutant with an annual average ambient air concentration at Targinie of 0.003 ppm. The major source of nitrogen dioxide (NO_2) is the burning of fossil fuels, particularly coal, oil and gas. The main effect of breathing in raised levels of nitrogen dioxide is the increased likelihood of respiratory problems such as inflamed lungs causing wheezing, coughs, flu and other respiratory illnesses. Sulfur dioxide (SO_2) is another key air pollutant with an annual average ambient air concentration at Targinie of 0.002 ppm. The major source is industrial activity that processes materials that contain sulphur such as the production of electricity from coal and gas. Respiratory problems are the main health effects and are comparable to those effects caused by the inhalation of nitrogen dioxide. Lastly, particulate matter (PM_{10}) was recorded to have an annual average ambient concentration at Targinie of 13.4 µg/m^3 with the likely source of particulate similar to NO_2 and SO_2. The ambient visibility-reducing particle levels in terms of monthly maximum 1 hr average light scattering coefficient values (Mm^{-1}) for the period January 2007 to December 2007 was in the range of 21 Mm^{-1}(December) to 358 Mm^{-1} (January) (DERM 2007).

16.1.2 Sensitive Receptors

The nearest Human Sensitive Receptors to the Reclamation Area are as follows (Figure 16-1):

- Residential areas along Fisherman's Road 2500 m towards south;
- Gladstone Marina;
- Facing Island;
- South End;
- Witt Island;
- Picnic Island;
- Compigne Island;
- Turtle Island; and
- Diamantine Island.

For detailed descriptions please refer to Chapter 10.



1:50,000 (at A3)

0 0.5 1 1.5 2

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia
Grid: Map Grid of Australia 1994, Zone 56

N

LEGEND

Sensitive Receptor
- Education
- Residential Area
- Tourism

- Cadastre
- Fisherman's Landing Northern Expansion
- Western Basin Reclamation
- Wiggins Island (Approved)

- Stage 1A - North China Bay LNG Precinct
- Stage 1B - Fisherman's Landing LNG
- Stage 2 - Laird Point LNG
- Stage 3 - Fisherman's Landing
- Stage 4 - Hamilton Point

Port of Gladstone
Western Basin Dredging and Disposal Project

Job Number 42-15386
Revision A
Date 30 Aug 2009

Sensitive Receptor Locations

Figure 16-1

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Level 4 201 Charlotte Street Brisbane QLD 4000 Australia **T** +61 7 3316 3000 **F** +61 7 3316 3333 **E** bnemail@ghd.com **W** www.ghd.com

16.1.3 Disease Vectors

Mosquitos are known carriers of malaria, dengue fever, Ross River virus, Barmah Forest virus, Japanese encephalitis and Murray Valley encephalitis. Polluted waters, freshwater swamps, brackish waters, construction ground sites, water storage tanks and drains are breeding sites for mosquitos and are expected to occur at the reclamation area. Mosquito life cycle depends on environmental factors such as temperature and humidity. Gladstone area has many species of mosquitoes which are potential carriers of Ross River Virus, Barmah Forest Virus and Dengue Fever (Gladstone Council, website accessed on 23 March 2009).

Biting midges do not currently transmit human disease in Australia but can be a severe pest if adults are in abundance. They can impact on humans due to irritable bites and skin reaction from their saliva. Blisters and weeping serum may occur from the site of bite. Biting midges are attracted to human settlement and are found resting on screens, fences and vegetation. They are active during dull, still days with high humidity.

16.2 Potential Impacts and Mitigation Measures

16.2.1 Impacts on the Workforce and General Public

Table 16-1 provides a qualitative assessment of potential health and safety hazards to personnel on site and the general public during the dredging and disposal activities. Mitigation measures outlined are in addition to the engineering control measures which will be adopted by GPC. To increase site safety and to assist in preventing injuries during construction it is recommended that persons on site wear appropriate Personal Protective Equipment (PPE) such as hard hat, safety glasses, steel capped boots, high visibility vests, ear protection, dust masks or any other specific PPE as required.

Table 16-1 Qualitative Summary of Hazards, Consequences and Mitigation Measures Identified for the Western Basin Dredging and Disposal Project

Activity	Hazard	Consequence	Mitigation Measures
Construction dust	Workers at the construction site may get struck by wind blown particles, (e.g., from unloading trucks and traffic)	Injury to personnel, environment impact	Health, Safety and Environment (HSE) awareness, Job Safety Analysis (JSA), competent workers, dust suppression, signage, vehicle speed restrictions and watering of roads
Construction works (dredging and reclamation)	Noise - excessively noisy plant and equipment	Injury to personnel and environment damage	Competent workers, HSE awareness, JSA, PPE, in compliance with noise regulations and boundary noise criteria
Exposure to dangerous goods	Inappropriate handling, leaks, inappropriate storage of goods in potential dangerous goods storage areas	Fatality, injury to personnel and time delays.	HAZOP studies conducted before construction of the reclamation, maintenance to include inspection of the reclamation, any pipelines and connections at the reclamation area and refuelling areas as required, any potential storage areas designed in accordance with Australian Standards and *Dangerous Goods Safety Management Regulation 2001*, copies of Material Safety Data Sheets (MSDS) at site
Fitness for work	Drugs, alcohol, fatigue, mental state and stress	Injury to personnel, fatalities, environment damage and equipment damage	Pre-employment screening, drug and alcohol policy, fatigue awareness and induction training
General site work	Poor ‘housekeeping’	Slips, trips and falls for personnel. Obstruction to vehicle movements	JSAs, HSE awareness, supervisor monitoring, emergency response procedures and services

Activity	Hazard	Consequence	Mitigation Measures
Loading and unloading of equipment	Dropped objects, slips, trips, falls, moving loads and inappropriate rigging	Injury to personnel, damage to equipment and time delays	JSA, safe work instructions, competent and certified personnel, controlled laydown areas, supervision and training
Manual handling	Ergonomics, inappropriate body position, unstable footing, excessive loads and poor lifting practices	Injury to personnel, loss of working hours and time delays	Induction to workers and re-training on safe manual handling practices, increase awareness on health and safety issues and first aid training
Mosquito and biting midges	Biting to humans	Fever, fatigue, itching and skin reaction and time delays	Minimise areas of stagnant water or ponding of surface waters. Regular monitoring and control measures at breeding sites such as ponds, stagnant water and open channels where water may pond
Natural events	Lightning, strong winds, flooding and storm tides	Injury to personnel, equipment damage and time delays	Controls as per the Emergency Response Procedures (ERP), JSAs to specifically consider imminent weather conditions
Security	Unauthorised access	Injury to personnel, time delays and environment damage	Security fencing, security personnel, controlled access and perimeter patrols
Third Party onsite	Third parties are less familiar with site safety and environmental requirements and pose enhanced risk to themselves and others	Injury to personnel, fatalities, environment damage, equipment damage and time delays	Inductions for all visitors, escort all short term visitors. Develop Site entry procedures
Vehicle traffic on site	Vehicle collision, pedestrian and vehicle collision	Fatality, injury to personnel, time delays and damage to vehicle/ equipment	Vehicle movement plan for the site construction phase, signage, scheduling of larger deliveries. Only certified and authorised drivers authorised on work-site, lower speed limits on site and high visibility clothes

Activity	Hazard	Consequence	Mitigation Measures
Working in confined space on-board vessels	Asphyxiation	Injury to personnel, fatality and time delays	JSA, HSE awareness, competent workers and confined space entry procedures
Working on-board vessels	Working over water	Drowning and personnel overboard	JSA, HSE awareness, competent workers, emergency procedures and training
Working in wet weather	Wet conditions, slips, trips, falls and electrocution	Injury to personnel and time delays	Proper drainage at the construction working area, proper laying of cables, insulated hooks and stands and earth leakage circuit breakers
Working in hot conditions	Dehydration and sun exposure	Heat stress, heat stroke, sun burns and time delays	HSE awareness programs, induction to include working in heat, use of PPE, provision of drinking water and JSA
Working with equipment and tools	Faulty tools and defective equipment	Injury to personnel, damage to equipment and time delays	JSA, training to workers, competent workers, HSE awareness, inspection and maintenance programs
Reclamation containing dredged material	Failure of reclaimed area	Damage to structures constructed on or adjacent to the reclamation. Injury to personnel, damage to equipment, environmental damage and time delays.	Design to standards, proper drainage, inspection and maintenance programs

16.2.2 Impacts on the Community

Construction phase activities associated with dredging and disposal activities may affect noise, air quality, safety of personnel and have the potential to increase disease vectors such as mosquito and biting midges. These Project variables may potentially affect the wellbeing of the surrounding community and each is discussed in more detail below and section references made where appropriate.

Noise Level Impacts

People have widely varying reactions to noise. The key areas of concern to the community in relation to noise pollution from dredging and disposal activities are as follows (enHealth 2004) and are described in Appendix Z:

- Annoyance, reduced quality of life;
- Sleep disturbance;
- Performance and learning of school children;
- Cardiovascular disease;
- Mental health; and
- Neuro physiological stress.

Noise Modelling

Noise impacts have been detailed in Chapter 10. Results were presented as worst case with all equipment onsite operating simultaneously and are considered conservative.

Predicted noise levels generated from the construction of the Reclamation Area complies with site-specific noise criteria for all identified noise sensitive receivers and due to the distances between the site and any receivers, noise and vibration impacts will likely be insignificant.

The assessment indicated the key activity likely to have an effect on the surrounding environment was dredging. Results suggest that noise from dredging activities has the potential to exceed the adopted noise goals by 3 dB during the night time period during neutral meteorological conditions. However, dredging activities are considered transient in nature and any exceedance of noise goals is anticipated to be temporary. Further details are provided in Chapter 10.

Modelling suggests that noise levels experienced from activities associated with disposal of dredged material at the Reclamation Area may result in the maximum predicted noise levels of 20 dB(A) at the closest residential receptor. Dredging activity may result in predicted noise levels of 34 dB(A) at Witt Island and 23 dB(A) at Compigne Island. Similarly, dredging activities may result in predicted noise levels of 35 dB(A) at the closest human receptor (R9) at Gladstone. For further details refer to Chapter 10.

Received noise produced by anticipated activities during the dredging and disposal activities (i.e., with no noise barriers or acoustic shielding in place and with each plant item operating at full power) was calculated.

In general, the quietest equipment will be used in conjunction with appropriate management measures and monitoring mechanisms. Noise mitigation strategies will be considered and implemented during the evenings and night time work periods. AS 2436-1981 “Guide to Noise Control on Construction, Maintenance and Demolition Sites” will be applied where possible (Chapter 10). With control measures in place at the source and attenuation due to the walls at human receptors, the resultant noise levels indoors are not expected to cause sleep disturbances.

Air Quality Impacts

The main air quality impacts from dredged material reclamation activities will be vehicle emissions consisting of nitrogen oxide (NOx) compounds, dust and particulates due to vehicle movement on unsealed areas. Dredging will also result in exhaust emissions from the dredgers, however, these impacts will be transient and will not result in a permanent, long term change to air quality in a particular locality.

Particles are a broad class of chemically and physically diverse substances. They exist as discrete particles spanning several orders of magnitude in size, 0.005 to 100 µm. Epidemiological studies show a correlation between exposure to particles and adverse health effects. At this time there is no conclusive evidence regarding the role of particle size and health effects, however different sizes may be important for different health outcomes. There is no threshold concentration established for particulates or different size ranges amongst particulates below which adverse health effects will not be observed (NEPM 2000).

The nearest sensitive receptors are outlined in Section 16.1.2. Dust impacts to the sensitive receiver during construction of the reclamation area are unlikely to be of concern due to separation distances and the moist nature of the dredged material being used for the reclamation. Dust emissions from construction of the bund wall can be managed through processes such as road surface watering to ensure that adverse impacts do not occur at offsite sensitive locations. Mitigation measures for dust during construction are outlined in Chapter 10.

Exposure to nitrogen dioxide (NO_2) has been associated with increases in daily mortality, hospital admissions and emergency room attendances for cardiovascular and respiratory disease, increases in respiratory illness and symptoms and decreases in lung function. The elderly, asthmatics, children and people with existing disease are particularly susceptible to the effects of NO_2. These studies were conducted in an urban area with daily maximum 1 hr NO_2 levels ranging from 14.7 to 44 ppb (10th to 90th percentiles) with a maximum of 137 ppb (NEPM 2000). The Gladstone area has ambient air concentrations significantly lower than these values. Therefore, it can be assumed that current legislative restrictions on air quality levels will protect against potential increases in nitrogen dioxide produced from the Project construction activities. These restrictions will also help to maintain and create a safe environment for both adults and children in the Gladstone area during the Projects’ construction phase activities.

Material which has been dredged and relocated to the reclamation area may release odours. Hydrogen sulfide (H_2S) generated by the decay of organic material within the dredged material is the principal cause of potential odours. The nature of the material to be dredged and the proximity of the reclamation to populated areas and exposure of construction workers are the main aspects that will determine if odour is an issue for this project. The closest residential receptor is along Fisherman’s Road 2500 m to the south of the reclamation area. Annual wind rose for 9 am at Gladstone airport indicates wind predominantly blowing towards north-west direction (37 %). Similarly, wind rose for 3 pm indicates wind blowing towards the west (42 %) and south-west (33 %). Therefore, if hydrogen sulfide is released at

ground level, it is not expected to be blown by the prevailing winds to the receptor areas as it is heavier than air.

Impacts of Dredging Activities

Filling of the reclamation with dredged material is likely to be undertaken over a number of dredging campaigns at various locations in the inner harbour. Dredging will be done in stages using a CSD and TSHD, as discussed in the Project Description (Chapter 2). The dredged material will either be pumped to the Reclamation Area through underwater pipelines running along the seabed or directly via the dredger.

During dredging campaigns, there will be some impacts to the safety of recreational and commercial vessels utilising the harbour, however these will be managed through issuing of Notices to Mariners by the Harbour Master. Dredging regularly occurs in the Port; therefore this is not an unusual circumstance for harbour users.

Impacts of Reclamation Construction

Mosquitos

Mosquitos and bitting midges have public health implications, particularly since this project is near the coastal area, which will bring humans in close contact with them. Project activities associated with development of the reclamation area may also create potential mosquito and bitting midge breeding sites if this hazard is not recognised and controlled. GPC will ensure that it does not enhance mosquito breeding and disease transmission. Potential breeding areas include following:

- Temporary storage areas;
- Culvert crossings;
- Revetment bunds along the periphery of the reclamation area;
- Reclamation set back area consisting of a 40 m wide strip between the reclaimed area and existing shoreline. This set back has been provided for the maintenance of the mangrove communities and to assist with conveying overland flows and stormwater discharges from industries;
- The series of decant ponds proposed on the reclamation areas during construction phase; and
- The final decant pond, which will be retained as a wetland to which the stormwater will be discharged during operational phase.

Populated areas which are in the path of the dominant prevailing winds from mosquito and biting midge breeding sites may be regularly affected by biting insects. The range could be from a few metres to a few kilometres, depending on the climatic conditions and type of mosquito species. No residential areas are located in the predominant downwind direction.

Exposure of people, including workers, to mosquitos and biting midges will be managed by following the measures outlined in the management plan (refer section 16.2.3).

Sanitation

Sanitation has public health implications, particularly since permanent sewerage services will not be installed to the proposed reclamation area during the bund construction and infilling phase. The bund construction workforce will have offsite crib facilities and if a temporary office is set up at the reclamation site, temporary toilet facilities will be provided for the duration of construction. Sanitation will be managed

by a licensed contractor which would regularly collect waste from any temporary toilet facilities. Use of recycled waters is not considered as a part of this project. This will be the responsibility of future proponents who develop facilities on the reclamation site.

16.2.3 Management Plans for Health and Safety

The following section outlines the management plans for the construction of the Project to maintain Health and Safety, including incidents and hazards in the workplace and to control disease, including incidents and hazards as caused by mosquitos and biting midges. Management measures for noise and air quality are provided in Chapter 10.

Health and Safety

The Management Plan for health and safety is as follows:

Health and Safety Management Plan	
Elements	Incidents and hazards in the workplace
Management Objectives	To provide a healthy and safe workplace for employees, clients, contractors and visitors.
Performance Criteria	Adhere to applicable Australian standards, applicable code of practises and relevant statutory provisions, especially the *Dangerous Goods Safety Management Act, 2004* and *Workplace Health and Safety Act, 1995* Implementation of Identified Hazards Implementation of Safety Management System. Implementation of Emergency Response Plan. Preparation of JSAs to manage workplace risks.

Implementation Strategy	**Responsibility**
Implement a Hazard and Operability Study (HAZOP) system before construction of any required dangerous goods storage areas to identify all potential causes of leakage and spillage or hazards to workers and ensure that appropriate protective systems are implemented.	Gladstone Ports Corporation
Develop an Emergency Response Plan in conjunction with local authorities and emergency services prior to the commencement of construction.	Gladstone Ports Corporation
Prepare and implement a Safety Management System to address hazards associated with construction and specify safe working procedures.	Gladstone Ports Corporation
Maintain site security systems.	Gladstone Ports Corporation
Ensure contractors working on-site adhere to the Safety Management System and complete JSAs as appropriate.	Gladstone Ports Corporation

Health and Safety Management Plan	
Provide personnel with training in spill response and workplace health and safety.	Gladstone Ports Corporation
Provide personnel involved in Emergency Response with appropriate training.	Gladstone Ports Corporation

Monitoring	◗ Maintain a training register for all staff and contractors. ◗ Undertake regular monitoring of the performance of staff and contractors in terms of compliance with Safety Management Systems.
Reporting	◗ Daily or weekly reports (as appropriate) will be completed on-site and reviewed by each Supervisor and / or Superintendent. ◗ Immediately notify Superintendent and Queensland DERM in the event of an uncontained spillage. ◗ Report all incidents and investigate. ◗ Incident or non-compliance corrective action shall be closed out by senior management according to an agreed responsibility and timescale. ◗ Workplace Health and Safety representatives will be responsible for enforcing all occupational and public health directives and keeping all related records and communications.
Corrective Action	◗ The Construction Manager and the Environmental Representative are to be notified in the event of non-compliance. ◗ Redesign control measures, if inadequate. The following constitute incidents or failure to comply with occupational and public health policies: – directives and procedures contained in the site safety system are not being followed; – directives and procedures contained in the site safety system are not being enforced; – site safety system does not encompass all required topics and situations; – high rate of work-related injury and illness; or – the emergency response plan is not prepared or implemented. In the event of an incident or failure to comply, a selection of the following actions will be undertaken as appropriate: – investigate why the incident occurred and investigate and implement mitigating measures; – ensure safety information provided is adequate and up-to-date and revise regularly as appropriate; – ensure employees, contractors and visitors to the site are familiar with the procedures and policies relevant to their positions; and – ensure safety directives and procedures are enforced; and ensure safety documents are readily available to everyone on the site.

Mosquito and Biting Midge Management Plan

The Local Government Association of Queensland has produced a Mosquito Management Code of Practice (LGAQ 2002) which contains detailed advice to be followed for control of mosquitos in Queensland. It is necessary that this is followed by GPC and the construction contractor. Queensland Health (2002) has published guidelines to minimise mosquito and bitting midge problems in new development areas. This document provides advice on how to prevent or minimise the impact of mosquitoes and other biting insects in new development areas. Water storage tanks must be constructed and installed in accordance with Division 2, Part 1A, Public Health Regulation 2005.

If a potential health risk from mosquito breeding is identified, biological control using natural predations such as aquatic invertebrates or known fish that prey upon the larvae should be introduced.

The Management Plan for mosquito's and biting midges is as follows:

Mosquito/Biting Midge Management Plan	
Elements	Incidents and hazards due to mosquito and biting midges
Management Objectives	Policy: To prevent the occurrence of potential mosquito/biting midge breeding sites and the presence of adult mosquitoes/ biting midge.
Performance Criteria	The number of potential mosquito/biting midge breeding sites created on-site is to be minimised by preventing water from ponding.
Implementation Strategy	**Responsibility**
The following strategies will be implemented to achieve the objectives of the mosquito/ biting midge management plan:	
Depressions (natural or manmade) in the ground surface will be filled to prevent the ponding of water. Pools of stagnant water will be drained and/or the areas filled. Small channels will be monitored to prevent ponding and water stagnating.	Gladstone Ports Corporation
Storage containers capable of ponding water will be either discarded after use or stored in an inverted position (care will be taken to ensure that ponding does not occur in rubbish storage areas).	Gladstone Ports Corporation
Removal of all vegetation in the zone of water fluctuation in the stormwater disposal pond.	Gladstone Ports Corporation
Provide straight margins through cutting, deepening and filling of the final decant pond which will be retained as a wetland to which the stormwater will be discharged during the operational phase.	Gladstone Ports Corporation
Provision of paths and other means of access to the water storage areas for pesticide applications.	Gladstone Ports Corporation
Repair of open channels that collect and convey waters.	Gladstone Ports Corporation

Mosquito/Biting Midge Management Plan	
Consider avoiding creation of favourable habitats for biting midge species (e.g., stagnant water, ponds, and ponding open channel areas).	Gladstone Ports Corporation
All ponds and on-site excavations filled with water will be inspected for the presence of mosquito larvae on a weekly basis by the Environmental Representative.	Gladstone Ports Corporation
Erosion and wash down practices will be controlled to prevent sediment and debris forming standing water pools in natural water courses adjacent to the site. Mosquitoes will not breed in flowing water.	Gladstone Ports Corporation
If larvae are detected in large numbers, contact Queensland Health for assistance in choosing a suitable treatment method. Treatment could either be aerial, ground or adulticiding (fogging).	Gladstone Ports Corporation

Monitoring	The Environmental Representative will inspect any potential mosquito breeding areas following rain to monitor the presence of mosquito larvae. The representative will also monitor the frequency of mosquito bites on the site to identify where mitigation measures are not currently successful and to see whether adult eradication programs should be implemented. The Environmental Representative will inspect any potential biting midge breeding sites including boulder covered foreshores where boulders lie on a mud-sand-shell base and wave action is moderate in a band near high tide levels, clean sandy sores subject to moderate tidal actions, sandy shores in canal estate developments, muddy sand to pure mud areas and subterranean tunnels.
Reporting	◗ The Environmental Representative will record when and where any larvae or mature mosquitoes are found on-site, as well as when and where any incidences of bites have occurred. ◗ Should a large number of larvae or bites be experienced, the City Council will be contacted for advice on appropriate remedial measures.
Corrective Action	Should an incident or failure to comply occur, a selection of the following actions will be taken: ◗ An investigation will be undertaken into why directives are not being carried out; ◗ Employees will be re-educated on desired practices; and ◗ Work policies and procedures will be changed to improve the situation.

16.2.4 Conclusion

There are potential risks to health and safety of the workforce and community from the dredging and disposal activity including dust and odour, noise, mosquitos and biting midges and construction safety. The implementation of workplace health and safety procedures and the management plans will minimise the potential risks to acceptable levels.