



Port of Gladstone Gatcombe and Golding Cutting Channel Duplication Project

Environmental Impact Statement

Gladstone Ports Corporation

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Gladstone Ports Corporation

Growth, Prosperity, Community.

aurecon

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Abbreviations

Abbreviation or Acronym	Definition
% sat	percent saturation
%S	percentage of oxidisable inorganic sulfur
°C	degrees Celsius
µg Sn/kg	micrograms tin per kilogram
µg/kg	micrograms per kilogram
µg/L	micrograms per litre
µg/m ³	micrograms per cubic metre
µm	micrometres
µmol/m ² /s	micromoles per square metre per second
µmol/m ² /s ⁻¹	micromoles per square metre per second (light)
µPa	micropascal
3D	three-dimensional
AADT	annual average daily traffic
AASS	actual acid sulfate soils
ABS	Australian Bureau of Statistics
ABSLMP	Australian Baseline Sea Level Monitoring Project
ACH Act	<i>Aboriginal Cultural Heritage Act 2003 (Qld)</i>
AD	Anno Domini (meaning the number of years since the birth of Jesus Christ)
ADCP	acoustic Doppler current profiler
AHD	Australian height datum
AIMS	Australian Institute of Marine Science
Air NEMP	<i>National Environment Protection (Ambient Air Quality) Measure</i>
ALA	Atlas of Living Australia
Amm N	Ammonia as N
AMSA	Australian Maritime Safety Authority
ANC _E	acid neutralising capacity
ANOSIM	analysis of similarity
ANOVA	analysis of variance
ANZECC	Australian and New Zealand Environment and Conservation Council
APHA	American Public Health Association
APLNG	Australia Pacific LNG
AQIS	Australian Quarantine and Inspection Service
AQMP	Air Quality Management Plan
ARCHAEO	ARCHAEO Cultural Heritage Services
ARI	average recurrence interval
ARMCANZ	Agriculture and Resources Management Council of Australia and New Zealand
As	Arsenic
ASS	acid sulfate soils

Abbreviation or Acronym	Definition
ASSMP	acid sulfate soil management plan
ATSHP Act	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> (Cth)
AUL	Auxiliary Left Turn treatment
AWQG	Australian Water Quality Guidelines
AWS	automatic weather station
AWT	average weekday traffic
BACI	Before-After, Control-Impact
BAMM	Biodiversity Assessment and Mapping Methodology
BAR	Basic Right Turn treatment
BH	borehole
BHD	backhoe dredger
Biosecurity Act	<i>Biosecurity Act 2014</i> (Qld)
BOD	Biochemical Oxygen demand
BoM	Bureau of Meteorology
BoM-SDM	BoM statistical downscaling model
BOS	Biodiversity Offset Strategy
BoT	Back on Track species prioritisation framework
BoT	Back on Track
BP	before present
BPA	Biodiversity Planning Assessment
BPAP	benthic photosynthetically active radiation
BRUVS	baited remote underwater video stations
BTEX	benzene, toluene, ethyl benzene, xylenes
BTEXN	benzene, toluene, ethylbenzene, xylene, naphthalene
BWMP	Ballast Water Management Plan
BUF	barge unloading facility
c.	circa
CCAM	Conformal-Cubic Atmospheric Model
CCIA	Climate Change in Australia
CCIMPE	Consultative Committee on Introduced Marine Pest Emergencies
CCP	Cyclone Contingency Plan
CCP	<i>Cyclone Contingency Plan – Port of Gladstone</i>
Cd	Cadmium
CEnvO	Contractor's Environmental Officer
CH ₄	methane
CHAG Project	Clean and Healthy Air for Gladstone Project
Chl-a	Chlorophyll <i>a</i>
CHMP	Cultural Heritage Management Plan
CLR	Contaminated Land Register
CMD	Coastal Management District
CMIP	Coupled Model Intercomparison Project

Abbreviation or Acronym	Definition
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ -e	carbon dioxide equivalent
Coastal Act	<i>Coastal Protection and Management Act 1995 (Qld)</i>
Coastal Regulation	<i>Coastal Protection and Management Regulation 2017 (Qld)</i>
CPCe	Coral Point Count estimates
CQPA	Central Queensland Port Authority
CQRP	Central Queensland Regional Plan
CQU	Central Queensland University
CRC	Cooperative Research Centre for Coastal Zone, Estuary and Waterway Management
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CSD	cutter suction dredger
CSG	coal seam gas
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
Cu	Copper
cum	cumulative
DA	development assessment
DA mapping	Development assessment mapping
DA Rules	Development assessment rules
DAF	Department of Agriculture and Fisheries
DAFF	Department of Agriculture, Fisheries and Forestry (now known as DAF)
DARLAM	Division of Atmospheric Research Limited Area Model
DATSIP	Department of Aboriginal and Torres Strait Islander Partnerships
dB	decibel
dBA	A-weighted decibel
dbMSL	depth below mean sea level
DCDB	Digital Cadastre Database
DDD	dichlorodiphenyldichloroethane
DDE	dichlorodiphenyldichloroethylene
DDT	dichlorodiphenyltrichloroethane
DEC	Department of Environment and Conservation
DECCW	Department of Environment, Climate Change and Water (NSW)
DEEDI	Department of Employment, Economic Development and Innovation (former)
DEH	Department of Environment and Heritage (former)
DEM	Digital Elevation Model
DERM	Department of Environment and Resource Management (former)
DES	Department of Environment and Science
DEWHA	Department of Environment, Water, Heritage and the Arts (Cth) (former)
DGT	Diffuse Gradients in Thin films

Abbreviation or Acronym	Definition
DIDO	drive-in/drive-out
DIWA	Directory of Important Wetlands in Australia
DLGIP	Department of Local Government, Infrastructure and Planning (Qld)
DLGRMA	Department of Local Government, Racing and Multicultural Affairs
DMP	Dredging Management Plan
DMPA	dredged material placement area
DMPOI	Dredged Material Placement Options Investigation
DNPSR	Department of National Parks Sport and Racing
DNRM	Department of Natural Resources and Mines (now known as DNRME)
DNRME	Department of Natural Resources, Mines and Energy
DO	dissolved oxygen
DoE	Department of the Environment (now known as DoEE)
DoEE	Department of the Environment and Energy (Cth)
DPA	Dugong Protection Area
DSDIP	Department of State Development, Infrastructure and Planning (now known as DSDMIP)
DSDMIP	Department of State Development, Manufacturing, Infrastructure and Planning
DSITIA	Department of Science, Information Technology, Innovation and the Arts (former)
DTMR	Department of Transport and Main Roads
DTP	Gladstone Region Destination Tourism Plan
DTRP	Dredging Technical Reference Panel
dwt	deadweight tonnage
EA	environmental authority
EAM	Environmental Assessment and Management
EC	electrical conductivity
ECL	Environmental concern level
EEO	Energy Efficiency Opportunities
EF	emission factor
EHMP	Ecosystem Health Monitoring Program
EHP	Department of Environment and Heritage Protection (now known as DES)
EIL	Environmental Investigation Level
EIS	Environmental Impact Statement
EMF	environmental management framework
EMP	environmental management plan
EMP Plan	Australian Emergency Marine Pest Plan
EMR	Environmental Management Register
EMS	Environmental Management System
ENSO	El Niño–Southern Oscillation
EP Act	<i>Environmental Protection Act 1994</i> (Qld)
EP Reg	<i>Environmental Protection Regulation 2008</i> (Qld)
EPA	Environmental Protection Agency

Abbreviation or Acronym	Definition
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPP (Air)	<i>Environmental Protection (Air) Policy 2008</i> (Qld)
EPP (Noise)	<i>Environmental Protection (Noise) Policy 2008</i> (Qld)
EPP (Waste)	<i>Environmental Protection (Waste Management) Regulation 2000</i> (Qld)
EPP (Water)	<i>Environmental Protection (Water) Policy 2009</i> (Qld)
EPPs	Environmental Protection Policies
ERAs	Environmentally Relevant Activities
ERMP	Ecosystem Research and Monitoring Program
ERMPAP	Ecosystem Research and Monitoring Program Advisory Panel
ESD	ecologically sustainable development
ESL	ecological screening level
ESRI	Environmental Systems Research Institute
EV	environmental value
EVNT	endangered, vulnerable, near threatened
EWMA	Exponentially Weighted Moving Average
FHA	fish habitat area
FIFO	fly-in/fly-out
Fisheries Act	<i>Fisheries Act 1994</i> (Qld)
FRDC	Fisheries Research and Development Corporation
FRP	Filterable Reactive Phosphate
FTE	full-time equivalent
g DWm ⁻²	grams dry weight per square metre
g/kWh	gallon per kilowatt per hour
g/L	grams per litre
g/m ² /month	ram per metres squared per month
g/s	grams per second
GAIRD	Guidelines for Assessment of Road Impacts of Development
GAMS	Gladstone Airshed Modelling System
GAWB	Gladstone Area Water Board
GBR Coast MP	Great Barrier Reef Coastal Marine Park
GBRMP	Great Barrier Reef Marine Park
GBRMP Act	<i>Great Barrier Reef Marine Park Act 1975</i> (Cth)
GBRMP Reg	<i>Great Barrier Reef Marine Park Regulations 1983</i> (Cth)
GBRMPA	Great Barrier Reef Marine Park Authority
GBRWHA	Great Barrier Reef World Heritage Area
GBRWQG	Water Quality Guidelines for the Great Barrier Reef Marine Park
GCM	Global Climate Models
GDDMP	Gladstone District Disaster Management Plan
GHG	greenhouse gases
GHHP	Gladstone Healthy Harbour Partnership
GIS	geographic information system

Abbreviation or Acronym	Definition
GJ	Gigajoule
GJ/kL	gigajoule per kilolitre
GLNG	Gladstone LNG
GOC Act	<i>Government Owned Corporations Act 1993 (Qld)</i>
GPA	Gladstone Ports Authority
GPC	Gladstone Ports Corporation
GPS	Global Positioning System
GRC	Gladstone Regional Council
GRP	gross regional product
GSDA	Gladstone State Development Area
GSDA Development Scheme	<i>Gladstone State Development Area Development Scheme</i>
GSP	Gross State Product
H ₂ S	hydrogen sulfide
ha	hectares
HAT	highest astronomical tide
HCB	Hexachlorobenzene
HD	highly disturbed
Heritage Act	<i>Queensland Heritage Act 1992 (Qld)</i>
HES	high ecological significance
HEV	High Ecological Value
HFCs	hydro fluorocarbons
Hg	Mercury
HIL	health investigation level
Hr	hour
HRG	hazard risk grade
HSD	Honest Significant Differences
HSEQ	Health, Safety, Environment and Quality
Hsig	significant wave height
HSL	health screening level
Hz	Hertz
IAR	Impact Assessment Report
IAS	Initial Advice Statement
IBTrACS	International Best Track Archive for Climate Stewardship
ILUA	Indigenous Land Use Agreement
IPCC	Intergovernmental Panel on Climate Change
ISQG	interim sediment quality guideline
IUCN	International Union for Conservation of Nature
JCU	James Cook University
Kd	attenuation coefficient
kg	kilograms

Abbreviation or Acronym	Definition
kgCO ₂ -e/GJ	kilogram of carbon dioxide equivalent per gigajoule
kHz	kilohertz
km	kilometre
km/h	kilometre per hour
km ²	square kilometre
kNm	kilonewton meter
KRA	key resource area
ktCO ₂ -e	kilotonnes of carbon dioxide equivalent
kts	knots
kW	kilowatt
L	litre
L/hr	litre per hour
L _{A1}	A-weighted sound pressure level, obtained using time-weighting 'F', that is exceeded for 1%
L _{A1,adj,1hr}	A-weighted sound pressure level, adjusted for tonal character or impulsiveness, that is exceeded for 1% of a 1 hour period when measured using time-weighting 'F'
L _{A10}	A-weighted sound pressure level, obtained using time-weighting 'F', that is exceeded for 10%
L _{A10,adj,1hr}	A-weighted sound pressure level, adjusted for tonal character or impulsiveness, that is exceeded for 10% of a 1 hour period when measured using time-weighting 'F'
L _{A90}	A-weighted sound pressure level, obtained using time-weighting 'F', that is exceeded for 90%
L _{Aeq}	A-weighted noise level equivalent continuous sound pressure level
L _{Aeq,1hr}	A-weighted sound pressure level of a continuous steady sound, that within a 1 hour period has the same mean square sound pressure of a sound that varies with time
L _{Aeq,adj,1hr}	A-weighted sound pressure level of a continuous steady sound, adjusted for tonal character, that within a 1 hour period has the same mean square sound pressure of a sound that varies with time
Land Act	<i>Land Act 1994 (Qld)</i>
LAT	lowest astronomical tide
LDMP	Local Disaster Management Plan
LDMP	<i>GRC Local Disaster Management Plan September 2013</i>
LG Act	<i>Local Government Act 2009 (Qld)</i>
LGA	Local Government Area
LHR	Local Heritage Register (Gladstone Regional Council)
LIDAR	Light Detection and Ranging
LIEMA	Landscape Institute and Institute of Environmental Management and Assessment
LNG	liquefied natural gas
London Protocol	<i>1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter</i>
LOR	Limits of reporting
LP Act	<i>Land Protection (Pest and Stock Route Management) Act 2002 (Qld)</i>
LSD	Lease Significant Difference
LTMMP	long term monitoring and management plan

Abbreviation or Acronym	Definition
LUP	Land Use Plan
LUP 2012	Gladstone Ports Corporation Land Use Plan 2012
m	metre
m/s	metres per second
m ²	square metres
m ³	cubic metres
m ³ /s	cubic metres per second
MANOVA	Multivariate Analysis of Variance
MARPOL	International Convention for the Prevention of Pollution from Ships
MCA	multi-criteria analysis
MCU	Material Change of Use
MD	moderately disturbed
MFO	marine fauna observer
mg/cm ² /day	milligrams per square centimetre per day
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
mg/m ² /day	milligrams per square metre per day
MHWN	mean high water neaps
MHWS	mean high water springs
ML	megalitre
MLES	matter of local environmental significance
MLMM	mean low water mark
MLWN	mean low water neaps
MLWS	mean low water springs
mm	millimetre
Mm ³	million cubic metres
MMP	Marine Monitoring Program
Mn	Manganese
MNES	matters of national environmental significance
Mo	Molybdenum
mol H ⁺ /tonne	number of moles of hydrogen ions produced per tonne
mol m ⁻² day ⁻¹	moles per square metre per day (light)
mol photons m ⁻² day ⁻¹	moles of light per square metre per day
MP Act	<i>Marine Parks Act 2004</i> (Qld)
mS/cm	millisiemens per centimetre
MSES	matters of state environmental significance
MSQ	Maritime Safety Queensland
Mt	million tonnes
MtCO ₂ -e	million tonnes of carbon dioxide equivalent
Mtpa	million tonnes per annum

Abbreviation or Acronym	Definition
Mya	Million years ago
n	dataset sample size
N	Nitrogen
N/A	not applicable
N ₂ O	nitrous oxide
NAGD	National Assessment Guidelines for Dredging
NAIDOC	National Aborigines and Islanders Day Observance Committee
NC Act	<i>Nature Conservation Act 1992 (Qld)</i>
NC Regulations	<i>Nature Conservation (Wildlife Management) Regulation 2006</i>
NCL	north coast line
NCN	no common name
NCRIS	National Collaborative Research Infrastructure for Australia
NDVI	Normalised difference vegetation index
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007 (Cth)</i>
NGO	non-governmental organisation
NHL	National Heritage List
Ni	Nickel
NIMPIS	National Introduced Marine Pest Information System
nm	nautical mile
nMDS	non-metric Multi-Dimensional Scaling
NNTT	National Native Title Tribunal
NO	nitric oxide
NO ₂	nitrogen dioxide
NODGDM	National Ocean Disposal Guidelines for Dredged Material
NO _x	oxides of nitrogen
NPI	National Pollutant Inventory
NPMEE	National Plan for Maritime Environmental Emergencies 2017
NPMEE	<i>National Plan for Maritime Environmental Emergencies 2017</i>
NPRSR	Department of National Parks, Racing, Sport and Recreation (now known as NPSR)
NPSR	Department of National Parks, Sport and Racing
NRM	natural resource management
NSW	New South Wales
NT Act	<i>Native Title Act 1993 (Cth)</i>
NTU	nephelometric turbidity units
NVMP	Noise and Vibration Management Plan
NWQMS	National Water Quality Management Strategy
OCP	Organochlorine pesticides
Offsets Act	<i>Environmental Offsets Act 2014 (Qld)</i>
Offsets Policy	<i>Queensland Environmental Offsets Policy</i>

Abbreviation or Acronym	Definition
Offsets Regulation	<i>Environmental Offsets Regulation 2014 (Qld)</i>
OPP	Organophosphate pesticides
OUV	outstanding universal value
Oxid N	Oxidised Nitrogen as N
P	Phosphorus
PAH	polycyclic aromatic hydrocarbon
PAR	photosynthetically active radiation
PASS	potential acid sulfate soils
Pb	Lead
PBS	Performance Based Standards
PCB	polychlorinated biphenyls
PCCC	Port Curtis Coral Coast
PCDD/Fs	polychlorinated dibenzo-p-dioxins and dibenzofurans
PCIMP	Port Curtis Integrated Monitoring Program Inc.
PCO	Principle Coordinates Ordination
PCPA CHAMP	Port Curtis and Port Alma Coastal Habitat archive and monitoring program
PDA	Priority Development Area
PDO	Pacific Decadal Oscillation
PDPO	Preliminary Draft Port Overlay
PEL	probably effect level
PERMANOVA	Permutational Multivariate Analysis of Variance
PFCs	perfluorocarbons
pg TEQ/g	picogram toxic equivalent per gram
pH	potential of hydrogen
Planning Act	<i>Planning Act 2016 (Qld)</i>
Planning Regulation	<i>Planning Regulation 2017 (Qld)</i>
PM ₁₀	particulates less than 10 micrometres in diameter
PM _{2.5}	particulates less than 2.5 micrometres in diameter
PMMs	priority management measures
PMST	protected matters search tool
PN	Particulate Nitrogen
Ports Act	<i>Sustainable Ports Development Act 2015 (Qld)</i>
PP	Particulate Phosphorus
PPDA	Priority Port Development Area
PPV	peak particle velocity
PQL	practical quantification limit
Project	Port of Gladstone Gatcombe and Golding Cutting Channel Duplication Project
PSD	particle size distribution
PTS	Permanent Threshold Shift
PTS	Permanent Hearing Threshold Shift
PWMP	Pest and Weed Management Plan

Abbreviation or Acronym	Definition
QA	quality assurance
QA/QC	Quality Assurance/Quality Control
QAL	Queensland Alumina Ltd
QC	quality control
QCCAP	Queensland Coastal Contingency Action Plan
QCLNG	Queensland Curtis LNG
QCPP	Queensland Coastal Passage Plan
QER	Queensland Energy Resources Pty Ltd
QGC	Queensland Gas Company
QGSO	Queensland Government Statisticians Office
QHR	Queensland Heritage Register
Qld	Queensland
QPS	Queensland Ports Strategy 2014
QWQG	Queensland Water Quality Guidelines
QWSG	Queensland Wader Study Group
R	reliability estimate
RBL	Rating Background Level
RCM	Regional Climate Model
RCP	Representative Concentration Pathway
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
Reef 2050	Reef 2050: Long Term Sustainability Plan
REEFVTS	Great Barrier Reef and Torres Strait Vessel Traffic Service
RGCT	RG Tanna Coal Terminal
RL	Relative Level
RMS	root mean square
RNE	Register of the National Estate (former)
RPI Act	<i>Regional Planning Interests Act 2014 (Qld)</i>
RWS	Rope, Wand or Shadow
SAP	Sampling and Analysis Plan
SARA	State Assessment and Referral Agency
SCR	State Controlled Road
SD	slightly disturbed
SDA	State Development Area
SDAP	State Development Assessment Provisions
SDPWO Act	<i>State Development and Public Works Organisation Act 1971 (Qld)</i>
se	standard error
Sea Dumping Act	<i>Environment Protection (Sea Dumping) Act 1981 (Cth)</i>
SEIFA	Socio-Economic Indexes for Areas
SEIFA	Socio-Economic Indexes for Areas
SEL	sound exposure level

Abbreviation or Acronym	Definition
SES	State Emergency Service
SEWPaC	Commonwealth Government Department of Sustainability, Environment, Water, Population and Communities (now known as the Department of the Environment and Energy)
SF ₆	sulfur hexafluoride
SLERA	screening level ecological risk assessment
SLR	sea level rise
SMART	Self-Monitoring Algorithm in Real Time
SMD	slightly to moderately disturbed
SMP	Species Management Plan
SO ₂	sulfur dioxide
SoOUV	Statement of OUV
SP Act	<i>Sustainable Planning Act 2009 (Qld)</i>
SP Reg	<i>Sustainable Planning Regulation 2009 (Qld)</i>
SPL	Strategic Port Land
SPOCAS	Suspension Peroxide Oxidation Combined Acidity and Sulfur
SPP	State Planning Policy
SPRL	safe PASS reinternment level
SR	standardised ratio
SRES	Special Report on Emissions
SRG	Stakeholder Representative Group
SRG	Stakeholder Representative Group
SS	Suspended Solids
SSC	State Suburb Code
SSRC Act	<i>Strong and Sustainable Resource Communities Act 2016 (Qld)</i>
SST	sea surface temperatures
Strategic Plan	Gladstone Ports Corporation's <i>50 Year Strategic Plan</i> (July 2012)
t	tonne
t/year	tonne per year
TBT	Tributyltin
TC	tropical cyclone
tCO ₂ -e	tonnes of carbon dioxide equivalent
TDP	Total daily PAR
TEC	Threatened Ecological Community
the Protocol	Cultural Heritage Protocol
TIA	<i>Transport Infrastructure Act 1994 (Qld)</i>
TJ	terajoule
TKN	Total kjeldahl nitrogen
TN	Total Nitrogen
TOC	total organic carbon
TOMPA	<i>Transport Operations (Marine Pollution) Act 1995 (Qld)</i>

Abbreviation or Acronym	Definition
TOMSA	<i>Transport Operations (Marine Safety) Act 1994</i> (Qld)
ToR	terms of reference
Total diss N	Total Dissolved Nitrogen
Total diss P	Total Dissolved Phosphate
TP	Total Phosphorous
TPH	Total Petroleum Hydrocarbon
TRH	total recoverable hydrocarbon
TropWATER	Centre for Tropical Water and Aquatic Ecosystem Research
TSHD	trailing suction hopper dredger
TSP	total suspended particulates
TSS	total suspended solids
TSSC	Threatened Species Scientific Committee
TTS	Temporary Threshold Shift
THTS	Temporary Hearing Threshold Shift
TUMRA	Traditional Use of Marine Resources Agreement
UCL	upper confidence limit
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
US EPA	United States Environmental Protection Agency
USL	Unallocated State Land
VE	Vision Environment
VET	vocational education and training
VIA	Visual Impact Assessment
VM Act	<i>Vegetation Management Act 1999</i> (Qld)
VMP	Vegetation Management Plan
VOCs	volatile organic hydrocarbons
VTS	vessel traffic service
WA EPA	Western Australian Environmental Protection Agency
Water Act	<i>Water Act 2000</i> (Qld)
WAV	worker accommodation village
WB	Western Basin
WBDDP	Western Basin Dredging and Disposal Project
WBE	Western Basin Expansion (reclamation area)
WG	Working Group
WHA	world heritage area
WHC	World Heritage Committee
WHL	World Heritage List
WHS Act	<i>Work Health and Safety Act 2011</i> (Cth)
WICET	Wiggins Island Coal Export Terminal Pty Ltd
WICT	Wiggins Island Coal Terminal
WMP	Waste Management Plan

Abbreviation or Acronym	Definition
WoRMS	World Register of Marine Species
WQMP	water quality management plan
WQOs	Water Quality Objectives
WRR Act	<i>Waste Reduction and Recycling Act 2011 (Qld)</i>
Zn	Zinc
Zoning Plan	<i>Great Barrier Reef Marine Park Zoning Plan 2003 (Cth)</i>
ZTV	zone of theoretical visibility

Glossary

Term	Meaning
A – weighted sound pressure	Human hearing responds to changes in sound pressure over a wide range and the range of sound pressure is not sensed equally. To account for the sensitivity of human hearing the A-weighted filter is applied to the sound frequencies so the loudness of the sound (expressed as decibels) corresponds to human hearing.
abundance	Relative numbers of animals for a species or community in a given area or sample size
accretion	Build up of material (e.g. sand as a result of coastal or fluvial processes)
acid sulfate soils	Soils containing metal sulfides when disturbed and exposed to oxygen undergo a oxidation to produce sulfuric acid
actual acid sulfate soil	Soils that are actually acidic i.e. pH of less than 4
adaptive capacity	The adaptive capacity of a particular sensitive value (receptor) is defined as the ability or potential to respond to a Project activity, action or processes (stressors) and change in a manner that reduces vulnerability
adaptive management	A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs
adverse impact	Adverse impact is defined as an impact that results in an unwanted and unanticipated result of taking a particular action. In an ecological context, an adverse impact means any change in the physical or biological conditions of the natural environment that results in a detrimental effect upon flora, fauna, air, water, minerals or other natural characteristic of the area
altimeter	Acoustic instrument used to obtain high precision seabed level measurements (millimetre scale) using a high frequency acoustic sensor and an inbuilt data logging device. Used to measure continuous loss/gain of sediments in addition to particle size.
anthropogenic	Produced or caused by humans
aquatic ecosystem	A community of organisms living within or adjacent to water, including riparian or foreshore area
baseline (water quality)	Ambient water quality conditions and natural variability
bathymetric	Underwater depth and topography of the seabed
bedload resuspension	Dislodging of bedded sediment material and disbursement into the water column
bed-shear stress	Forces exerted by the ocean on bed sediments (at rest). When bed shear stress exceeds the critical shear stress for the bed sediments, the sediments will become transported by the ocean.
benthic	The benthic zone is the region at the lowest level of a body of water, such as an ocean or sea, including the sediment surface and some sub-surface layers. Organisms living in this zone are referred to as benthos or benthic invertebrates
benthic photosynthetically active radiation	Benthic photosynthetically active radiation. Light that reaches the benthos that is available to primary producers (e.g. seagrass species) for photosynthesis. Can be effected by turbidity levels in water and cloud cover. Changes in the availability of light is the primary factor affecting the distribution of seagrasses in Queensland
bioavailable	Available for biological processes
biodiversity	The biological diversity of life is commonly regarded as being made up of the following components: <ul style="list-style-type: none"> ■ Genetic diversity – the variety of genes (or units of heredity) in any population ■ Species diversity – the variety of species ■ Ecosystem diversity – the variety of communities or ecosystems
biomass	Total mass of living organisms or of a particular subset of organisms; or organisms within a given area (e.g. seagrass biomass)

Term	Meaning
Bonn Convention	The Bonn Convention, also known as the Convention on the Conservation of Migratory Species of Wild Animals, aims to conserve terrestrial, aquatic and avian migratory species throughout their range.
BPAR	Benthic photosynthetically active radiation. Light that reaches the benthos that is available to primary producers (e.g. seagrass species) for photosynthesis. Can be affected by turbidity levels in water and cloud cover. Changes in the availability of light is the primary factor affecting the distribution of seagrasses in Queensland
bund wall	A constructed retaining wall designed to prevent inundation or breaches from a known source
China-Australia Migratory Bird Agreement	This agreement between the Government of Australia and the Government of the People's Republic of China was developed in 1986 for the protection of migratory birds and their environment
Capesize vessels	Large-sized bulk carriers and tankers typically above 100,000 deadweight tonnage
capital dredging	Dredging for navigation, to create new or enlarge existing channel, port, marina and boat harbour areas. Dredging for engineering purposes, to create trenches for pipes, cables, immersed tube tunnels, to remove material unsuitable for foundations and to remove overburden for aggregate
Chlorophyll a	A plant pigment which occurs in all marine phytoplankton. Can provide a useful proxy indicator of the amount of nutrients incorporated into phytoplankton biomass, because phytoplankton have predictable nutrient-to-chlorophyll ratios. Chlorophyll a is the most commonly used parameter for monitoring phytoplankton biomass and nutrient status, as an index of water quality
coastal ecosystems	Inshore, coastal and adjacent catchment ecosystems that connect the land and sea and have the potential to influence the health and resilience of the Great Barrier Reef
community	The biotic component of a habitat; grouping of populations of different species living together or sharing a habitat
condition	Refers to existing state, including state of health
connectivity	The extent to which a species or population can move among landscape elements in a mosaic of habitat types
consequence	The outcome of an event which has an effect on objectives. A single event can generate a range of consequences which can have both positive and negative effects on objectives. Initial consequences can also escalate through knock-on effects
conservation significant	A collective term used with reference to species that are listed as critically endangered, endangered, vulnerable, near threatened or migratory under the provisions of the <i>Nature Conservation Act 1992</i> (Qld) and/or the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
contaminant of concern	A contaminant that poses a risk to a human or ecological environmental values
critically endangered	Designated as critically endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
Curtis Coast region	Coastal areas from Bangalee, 10km north of Yeppoon, to Rodds Peninsula in the south
cutter suction dredger	Hydraulic dredgers with the ability to dredge nearly all kinds of soils (sand, clay, rock) and used where ground is too hard for trailing suction hopper dredgers.
daily light integral	The amount of photosynthetically active radiation received each day as a function of light intensity, expressed as moles per square metre per day
dBA	Sound energy is expressed as a measure of decibels on the A-weighted scale. A change of 1 dBA or 2 dBA in the level of sound is difficult for most people to detect. A change in sound of 10 dBA corresponds to an approximate doubling or halving or loudness.
delta	An accumulation of sediment at the mouth of a river extending beyond the trend of the adjacent coast is called a delta
demersal	The zone of the sea or ocean comprising the water column that is near to the seabed
density (species)	In relation to biota (e.g. seagrass) the extent or numbers of organisms within a given area

Term	Meaning
depauperate	In relation to biota, lacking in numbers or variety of species
depth below mean sea level (dbMSL)	The mean level of the sea over a long period (preferably 18.6 years) or the mean level which would exist in the absence of tides. The MSL value for the Port of Gladstone used during seagrass surveys was 2.349m
direct impact	An impact that results from a direct interaction between a Project activity and the sensitive value/receptor
directly adjacent	Areas within 500m of the Project direct disturbance areas
Directory of Important Wetlands in Australia	Nationally important wetlands are listed in the Directory of Important Wetlands in Australia (DIWA). It includes an inventory of wetlands assessed as meeting criteria for national importance.
distribution	The manner in which biota are spatially arranged
diversity (species)	A numerical measure combining the number of species in an area with their relative abundance
dredging – capital	Dredging for navigation, to create new or enlarge existing channel, port, marina and boat harbour areas. Dredging for engineering purposes, to create trenches for pipes, cables, immersed tube tunnels, to remove material unsuitable for foundations and to remove overburden for aggregate.
dredging footprint	The proposed dredging footprint includes the area to be dredged, rehandling pits and the dredger access path
dredging – maintenance	Dredging to ensure that previously dredged channels, berths or construction works are maintained at their designated dimensions
drivers	The underlying causes of change in the environment. For the purposes of this EIS, drivers consist of dredging and dredged material placement activities, including the construction of reclamation bund walls, dewatering process, and proposed operational land uses on the reclaimed land
dry season and wet season	EHP and DSITI have defined the seasons below for Gladstone in regards to water quality. Seasonal definitions may differ between projects. <ul style="list-style-type: none"> ■ Wet season: 1 November to 30 April ■ Dry season: 1 May to 31 October Rainfall during December, January, and February accounts for half the annual rainfall in the Curtis Coast region
ebb tide/flood tide	An ebb tide is a falling tide (outgoing), the phase of the tide between high water and the succeeding low water while a flood tide is a rising tide (incoming), the phase of the tide between low water and the next high tide
ecological community	An assemblage of species occupying a particular area
ecologically sustainable development	Conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased
El Niño	The extensive warming of the central and eastern tropical Pacific Ocean, often accompanied by cooler than normal sea surface temperatures in the western Pacific Ocean, and to the north of Australia. El Niño events are associated with an increased probability of drier conditions over much of Australia, but particularly eastern Australia
endangered	Designated as endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) and/or <i>Nature Conservation Act 1992</i> (Qld)

Term	Meaning
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) conservation status	<p>Under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth), listed species and ecological communities are assigned a conservation status of extinct in the wild, critically endangered, endangered or vulnerable. Definitions of these terms under the Act are as follows:</p> <p>Extinct in the wild</p> <ul style="list-style-type: none"> ■ It is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range, or ■ It has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a timeframe appropriate to its lifecycle and form <p>Critically endangered</p> <ul style="list-style-type: none"> ■ It is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria <p>Endangered</p> <ul style="list-style-type: none"> ■ It is not critically endangered, and ■ It is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria <p>Vulnerable</p> <ul style="list-style-type: none"> ■ It is not critically endangered or endangered, and ■ It is facing a high risk of extinction in the wild in the medium term future, as determined in accordance with the prescribed criteria <p>Migratory</p> <ul style="list-style-type: none"> ■ Migratory species are those animals that migrate to Australia and its external territories, or pass through or over Australian waters during their annual migrations. Examples of migratory species are species of birds (e.g. albatrosses and petrels), mammals (e.g. whales) or reptiles. Listed migratory species are those listed in the: <ul style="list-style-type: none"> – Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) – China-Australia Migratory Bird Agreement – Japan-Australia Migratory Bird Agreement – Republic of Korea-Australia Migratory Bird Agreement
environmental value	The qualities of water that make it suitable for supporting aquatic ecosystems and human water uses, e.g. irrigation, recreation, and cultural and spiritual values. Environmental values need to be protected from the effects of habitat alteration, waste releases, contaminated runoff and changed flows to ensure healthy aquatic ecosystems and waterways that are safe and healthy for human use.
epifauna	Referring to organisms occurring on the surface of the seafloor or other substrata
estuary	A semi-enclosed body of water where sea tides meet a river or stream's current
eutrophication	Increase in nutrients (e.g. phosphorus, nitrogen) in an aquatic ecosystem (e.g. lake)
evenness (species)	How evenly abundance is spread among the various taxa that make up an assemblage
exposure	Refers to the exposure of a sensitive value (receptor) to a Project activity, action and/or processes (stressors) that act on that sensitive value. Exposure may be direct or indirect, acute or chronic
extirpated	To remove or destroy totally
far field	Area of mixing region dominated by the ambient turbulent diffusion, i.e. ambient velocity and channel geometry
fauna corridor	<p>A fauna corridor is a link of wildlife habitat, generally native vegetation, which joins two or more larger areas of similar wildlife habitat</p> <p>A fauna corridor has been defined by the Queensland <i>Biodiversity Assessment and Mapping Methodology</i> (version 2.2) as "J: Corridors" (EHP 2014b) and have been mapped spatially under the relevant <i>Biodiversity Planning Assessment</i> for the specific bioregion. In the case of this EIS, this is Bioregion 12 (South-east Queensland) and Bioregion 11 (Brigalow Belt)</p>
fecundity	The capacity of abundant production

Term	Meaning
Gladstone Harbour	Generally known as the area in Port Curtis between the Boyne Wharf and APLNG Wharf. However, it may be used as a general term for the wider Port area in other documents such as in the EPP (Water) (e.g. 'coastal waters outside Gladstone Harbour').
Great Barrier Reef Marine Park	The area subject to protection under the <i>Great Barrier Reef Marine Park Act 1975</i> covering 344,400 square kilometres (km ²) including the subsoil beneath the seabed (1,000m below) and the airspace above (915m high). It is a multiple-use marine park area that supports a range of communities and industries that depend on the Reef for recreation or their livelihoods (including tourism, fishing, boating and shipping). The Great Barrier Reef Marine Park is a matter of national environmental significance and the Great Barrier Reef Marine Park Authority is responsible for its protection and management.
Great Barrier Reef World Heritage Area	The Great Barrier Reef World Heritage Area extends from the top of Cape York in north-east Australia to just north of Bundaberg, and from the low water mark on the Queensland coast to the outer boundary of the Marine Park, which is beyond the edge of the continental shelf. The area was declared a World Heritage Area in 1981 because of its 'outstanding universal value'. About 99 per cent of the World Heritage Area is within the Great Barrier Reef Marine Park but encompasses: <ul style="list-style-type: none"> ■ Some 980 islands which are under Queensland jurisdiction ■ Some internal waters or Queensland (for examples, some deep bays, narrow inlets or channels between islands) ■ Intertidal areas protected by Queensland legislation ■ A number of small exclusion areas (state waters) around major ports and urban centres.
habitat	An area or areas permanently, periodically or occasionally occupied by a flora and/or fauna species, population or ecological community, including any and all biotic and abiotic features of the area or areas occupied
HYCOM model	A data-assimilative hybrid isopycnal-sigma-pressure coordinate ocean model
hydrodynamics	The movement (dynamics) of water due to the action of tides, waves, winds and other influences
immunosuppression	Reduction in the immune system
impact	Section 527E of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) defines impact as: (1) <i>For the purposes of this Act, an event or circumstance is an impact of an action taken by a person if:</i> (a) <i>the event or circumstance is a direct consequence of the action; or</i> (b) <i>for an event or circumstance that is an indirect consequence of the action—subject to subsection (2), the action is a substantial cause of that event or circumstance.</i> (2) <i>For the purposes of paragraph (1)(b), if:</i> (a) <i>a person (the primary person) takes an action (the primary action); and</i> (b) <i>as a consequence of the primary action, another person (the secondary person) takes another action (the secondary action); and</i> (c) <i>the secondary action is not taken at the direction or request of the primary person; and</i> (d) <i>an event or circumstance is a consequence of the secondary action;</i> <i>then that event or circumstance is an impact of the primary action only if:</i> (e) <i>the primary action facilitates, to a major extent, the secondary action; and</i> (f) <i>the secondary action is:</i> (i) <i>within the contemplation of the primary person; or</i> (ii) <i>a reasonably foreseeable consequence of the primary action; and</i> (g) <i>the event or circumstance is:</i> (i) <i>within the contemplation of the primary person; or</i> (ii) <i>a reasonably foreseeable consequence of the secondary action.</i>

Term	Meaning
important habitat	In relation to the assessment against the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth) Matters of National Environmental Significance Significant impact guidelines 1.1</i> , important habitat is defined as: <i>Suitable habitat for a species is considered important if it is:</i> <ul style="list-style-type: none"> ■ <i>habitat where the species has been identified during a survey;</i> ■ <i>near the limit of the species' known range;</i> ■ <i>large patches of contiguous, suitable habitat and viable landscape corridors (necessary for the purposes of breeding, dispersal or maintaining the genetic diversity of the species over successive generations); or</i> ■ <i>a habitat type where the species is identified during a survey, but which was previously thought not to support the species</i>
important population	Under the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> an important population is defined as follows: <i>An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:</i> <ul style="list-style-type: none"> ■ <i>Key source populations either for breeding or dispersal;</i> ■ <i>Populations that are necessary for maintaining genetic diversity; and/or</i> ■ <i>Populations that are near the limit of the species range</i>
impulsive sound	Typically experienced as a sudden, almost instantaneous, peak sound level event or sequence of peak sound level events. The acute change in sound level, along with the high sound level, can be a potential source of disturbance.
indicator	A physical, chemical or biological property for an environmental value that can be measured or decided in a quantitative way
Indigenous heritage	Includes all places that are part of Aboriginal and Torres Strait Islander peoples' spiritual links to the land or which tell the story of Indigenous peoples from time immemorial to the present. It can include sacred sites, ceremonial sites like bora rings and rock art, fish traps, burials, middens, scarred trees, camp sites and semi/permanent settlements.
indirect impact	An impact that is not a direct result of Project activities but occurs away from the original impact or direct disturbance area via a pathway (e.g. alterations of conditions that increase the potential for non-native algae to colonise which reduces habitat quality). In accordance with the <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> , indirect impacts for example, include the following: <ul style="list-style-type: none"> ■ 'Downstream' or 'downwind' impacts, such as impact on wetlands or ocean reefs from sediment, fertilisers or chemical which are washed or discharged into river systems ■ 'Upstream impacts' such as impacts associated with the extraction of raw materials and other inputs which are used to undertake the action ■ 'Facilitated impacts' which result from further actions (including actions by third parties) which are made possible or facilitated by the action.
infauna	Aquatic animals that live in the sediment
integrity	For World Heritage properties, integrity relates to the 'wholeness and intactness' of the property and how it conveys the values it holds. Integrity can also relate to the size of the property (sufficient size to continue to represent the values) and to any threats affecting the property.
internesting	Marine turtles will lay several clutches of eggs in a single nesting season. Internesting refers to the period of time between a successful nest, and the next nesting attempt for an individual (clutches are laid typically at two week intervals). Internesting habitat refers to the habitat utilised during this period, which is generally shallow water habitat adjacent to a nesting beach.
intertidal	The area along the coast covered at high tide and uncovered at low tide
invertebrate	Animals without a backbone
irreversible impact	The impact cannot be removed even if deliberate action was taken to do so within a timeframe of 20 years

Term	Meaning
JAMBA	Japan-Australia Migratory Bird Agreement. This agreement between the Government of Australia and the Government of Japan was developed in 1974 for the protection of migratory birds in danger of extinction and their environment
L _{Aeq}	The sound level (sound energy) can fluctuate over the time (duration) of an event or activity. The L _{Aeq} is used as a measure of the total sound energy of the time varying event, whereby the L _{Aeq} represents a steady sound level for the event. The L _{Aeq} level has the same acoustic energy as the time-varying sound event and can be considered as an average noise level which accounts for all the fluctuations in sound level during the event
L _{aMax}	Maximum instantaneous sound level for an event and is commonly used in the assessment of potential sleep disturbance impacts during the night-time
La Niña	The extensive cooling of the central and eastern tropical Pacific Ocean, often accompanied by warmer than normal sea surface temperatures in the western Pacific Ocean, and to the north of Australia. La Niña events have been correlated with higher numbers of tropical cyclones during the cyclone season (November to April)
likelihood	The chance that something might happen. Likelihood can be defined, determined, or measured objectively or subjectively and can be expressed either qualitatively or quantitatively
low frequency noise	Commonly referenced as the sound energy at the frequency range 20 Hz to 160Hz, low frequency sound can be a source of disturbance as it is potentially perceptible as a low rumble. Low frequency sound waves can travel relatively long distances without much attention.
macroinvertebrate	Invertebrate fauna that can be captured by a 500µm net or sieve
magnitude	The nature and extent of the potential impacts to a value/receptor, including direct and indirect impacts
maintenance dredging	Dredging to ensure that previously dredged channels, berths or construction works are maintained at their designated dimensions
management monitoring site	Water quality monitoring sites that are linked to a management strategy with established trigger values and management response actions. Can be located at ecological receptors to prevent or minimise ecological impacts during dredging activities.
marine plants	Under the <i>Fisheries Act 1994</i> (Qld), marine plants include: <ul style="list-style-type: none"> ■ A plant (a tidal plant) that usually grows on, or adjacent to, tidal land, whether it is living, dead, standing or fallen ■ (Material of a tidal plant, or other plant material on tidal land ■ A plant, or material of a plant, prescribed under a regulation or management plan to be a marine plant. <p>Marine plants do not include declared pest species under the <i>Biosecurity Act 2014</i>.</p>

Term	Meaning
<i>Nature Conservation Act 1992 (Qld)</i> conservation status	<p>Under the <i>Nature Conservation Act 1992 (Qld)</i>, protected species are assigned a conservation status of extinct in the wild, endangered, vulnerable, near threatened, or least concern. Definitions of these terms under the NC Act are as follows:</p> <p>Extinct in the wild</p> <ul style="list-style-type: none"> ■ There have been thorough searches conducted for the wildlife, and ■ It has not been seen in the wild over a period that is appropriate for the lifecycle or form of the wildlife <p>Endangered</p> <ul style="list-style-type: none"> ■ There have not been thorough searches conducted for the wildlife and the wildlife has not been seen in the wild over a period that is appropriate for the lifecycle or form of the wildlife, or ■ The habitat or distribution of the wildlife has been reduced to an extent that the wildlife may be in danger of extinction, or ■ The population size of the wildlife has declined, or is likely to decline, to an extent that the wildlife may be in danger of extinction, or ■ The survival of the wildlife in the wild is unlikely if a threatening process continues <p>Vulnerable</p> <ul style="list-style-type: none"> ■ Its population is decreasing because of threatening processes, or ■ Its population has been seriously depleted and its protection is not secured, or ■ Its population, while abundant, is at risk because of threatening processes, or ■ Its population is low or localised or depends on limited habitat that is at risk because of threatening processes <p>Near threatened</p> <ul style="list-style-type: none"> ■ The population size or distribution of the wildlife is small and may become smaller, or ■ The population size of the wildlife has declined, or is likely to decline, at a rate higher than the usual rate for population changes for the wildlife, or ■ The survival of the wildlife in the wild is affected to an extent that the wildlife is in danger of becoming vulnerable <p>Least concern</p> <ul style="list-style-type: none"> ■ The wildlife is common or abundant and is likely to survive in the wild ■ Native wildlife may be prescribed as least concern wildlife even if: <ul style="list-style-type: none"> – The wildlife is the subject of a threatening process, or – The population size or distribution of the wildlife has declined, or – There is insufficient information about the wildlife to conclude whether the wildlife is common or abundant or likely to survive in the wild
neap tide	The tides which occur around the first and last quarter of the moon, when the difference between high and low water is lower than average
near field	Area of mixing region dominated by the initial momentum of discharge
negative impact	An impact that is considered to result in an unfavourable or adverse change to the value/receptor
nekton	Aquatic animals that are able to swim and move independently of water currents (generally refers to macroinvertebrates for the purposes of this report)
net benefit	The purpose of net benefits is to enhance the condition of matters of national environmental significance, including the Reef's Outstanding Universal Value. While offsets are focused on addressing residual impacts associated with development actions, net benefits are focused on delivering actions (above and beyond offset actions) which will restore or improve the Great Barrier Reef to a good condition.
noise and sound	The term 'sound' and 'noise' are almost interchangeable, except that 'noise' commonly refers to unwanted sound. Sound (or noise) consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing
offshore area	Areas located outside the Port and away from the shoreline
Operational Guidelines	Operational Guidelines for the implementation of the World Heritage Convention
offshore area	Areas located outside the Port and away from the shoreline

Term	Meaning
Outer Harbour (Gladstone)	Areas outside the protection of Facing Island i.e. to the south of Gatcombe Head
Outlook Report 2014	<i>Great Barrier Reef Outlook Report 2014</i>
Outstanding Universal Value	Cultural and/or natural heritage which is so exceptional as to transcend national boundaries and to be of such significance to humanity as a whole to make it worthy of special protection. (Adapted from Operational guidelines for the implementation of the World Heritage Convention).
Peak-to-Peak Sound Pressure Level	The peak-to-peak sound pressure level is the logarithmic ratio of the difference between the maximum and minimum pressure over the impulsive signal event to the reference pressure
Peak Sound Pressure Level	The peak sound pressure level is the logarithmic ratio of the peak pressure over the impulsive signal event to the reference pressure
pelagic	Refers to any water in a waterbody such as a sea, lake or ocean that is neither close the bottom or near the shore. Species predominantly inhabiting this environment may be referred to as pelagic organisms (e.g. pelagic birds such as petrels)
percentile	A statistical term meaning the value below which a certain percent of observations fall e.g. the 30th percentile is the value (or score) below which 30% of the observations may be found
permanent impact	The impact will last indefinitely
Permanent Threshold Shift	Describing the effect of more severe sudden or cumulative noise exposure, causing permanent loss of hearing sensitivity in fauna species due to tissue damage in the auditory system
photosynthetically available radiation	The amount of light available for photosynthesis, which is light in the 400 to 700 nanometer wavelength range. Changes seasonally and varies depending on the latitude and time of day. Can be reduced by cloud cover and pollution.
physical impact	The measurable change to a receptor arising from a Project activity
pneumatophores	Erect roots that are some form of upward appendage or extension of the underground root system (e.g. root system on mangroves includes pneumatophores). Because these roots are exposed at least part of the day and not submerged underwater, the root system can obtain oxygen in an otherwise anaerobic substrate
potential acid sulfate soil	Soils that have not been oxidised by exposure to air, but would become acidic upon exposure
Port Curtis region	The marine and coastal region between Port Alma and Rodds Peninsula, including Port Curtis, Curtis Island, Facing Island, Wild Cattle Island, other islands within Port Curtis and all related estuaries
Port limits	The maritime limits of Queensland ports are defined in Schedule 1 of the <i>Transport Infrastructure (Ports) Regulation 2005</i> under the <i>Transport Infrastructure Act 1994</i> (Qld). Ports within and adjoining the Great Barrier Reef World Heritage Area are located at Gladstone, Rockhampton (Port Alma), Hay Point, Mackay, Abbot Point, Townsville, Lucinda, Mourilyan, Cairns, Cooktown, Cape Flattery, and Quintell Beach
Port of Gladstone	The area defined by the Port of Gladstone Port Limits together with adjoining islands and landside areas, including reclamation areas, that support existing or consented industrial developments or are proposed to cater for future port-related industrial activities and supporting infrastructure
positive impact	An impact that is considered to represent an improvement to the existing condition of the value/receptor or introduces a positive change (i.e. benefit to sensitive values/receptors)
Power Spectral Density	Power Spectral Density described how the power of a signal is distributed with frequency
PPV	Peak Particle Velocity is used to describe ground vibrations. It is a measure of the movement (displacement) within the ground, associated with the movement of the molecular particles as the energy waves propagate through the ground
Project direct impact areas	Areas located within the boundaries of the Project dredged material placement area, the areas to be dredged, and the location of the new navigational aids

Term	Meaning
Project impact areas	Includes both the direct and potential indirect impact areas
Project potential indirect areas	Areas adjacent to, and outside of, the Project direct impact areas, that may potentially be indirectly impacted by Project activities
protists	A group made up of protozoa, unicellular algae, and slime molds
Ramsar Convention	The Ramsar Convention, also known as the Convention on Wetlands of International Importance, is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources
receptor	A receptor is a sensitive value. Receptors may be subject to impacts as a result of stressors
reclamation area	The reclamation of land under tidal water means the raising of land above the high-water mark, whether gradually and imperceptibly or otherwise, by carrying out works, including dredging and dredged material placement
reference monitoring site	A reference site is a site whose condition is considered to be a suitable baseline or benchmark for assessment and management of sites in similar water bodies. The condition of the site is reference condition and values of individual indicators at that site are the reference values. Reference values can encompass not only physicochemical characteristics but also the biological and habitat characteristics of a system. Most commonly, reference condition refers to sites that are subject to minimal/limited disturbance.
Regional Ecosystem	Vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil
residual impact	A residual impact is defined as an impact that remains direct and/or indirect following the implementation of mitigation measures
residual risk	Residual risk is the risk left over after the implementation of a risk treatment option. It is the risk remaining after reducing the risk, removed the source of the risk, modified the consequences, changed the probabilities, transferred the risk, or retained the risk
residual significant adverse impact	A residual significant adverse impact is the impact which has been deemed to be 'significant' as defined by the 'Matters of National Environmental Significance – Significant Impact Guidelines Version 1.1' (DoE 2013), which remain after avoidance and mitigation measures have been implemented
resilience	Ability of a value/receptor to return to existing condition or state following exposure to a project activity, action or processes (stressors)
resuspension	Sediment that was previously deposited on the seabed is entrained back into suspension in the water column
reversible impact	The impact can be reversed either spontaneously or through deliberate action/active mitigation within a timeframe maximum of 20 years
richness (species)	The number of species present in a sample, community or taxonomic group
risk	Is the effect of uncertainty on objectives, and an effect is a positive or negative deviation from what is expected
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement. This agreement between the Government of Australia and the Government of the Republic of Korea was developed in 2006 for the protection of migratory birds
Root-Mean-Square Sound Pressure Level (RMS SPL)	The mean-square sound pressure is the average of the squared pressure over the pulse duration. The root-mean-square sound pressure level is the logarithmic ratio of the root of the mean-square pressure to the reference pressure. Pulse duration is taken as the duration between the 5% and the 95% points on the cumulative energy curve
senescent	The growth phase in a plant or plant part (as a leaf)
sensitive receptors (marine)	Certain key reef marine organisms, habitats and communities that are sensitive to dredging and at-sea dredge material placement activities. Coral reefs, seagrass, macroalgal and macroinvertebrate communities are 'sensitive receptors' that occur within the Great Barrier Reef World Heritage Area. Impacts can result from both direct effects (e.g. burial by dredge material) and indirect effects (e.g. reductions in light availability to seagrasses due to elevated suspended sediment concentrations in the water column).

Term	Meaning
sensitive value	An aspect of the environment that is of conservation value
sensitivity	In relation to a value/receptor, is defined as the degree to which the sensitive value will change or respond to a change that has resulted from a Project activity, action and/or processes (stressor)
sentinel monitoring site	Sites located at the boundaries of modelled zones of impact. Particularly important for large projects, especially if a zone of high impact is predicted, it may be useful to place sensitive receptor monitoring sites within 'sentinel sites' at the boundaries of model-predicted zones of influence and impact.
significant impact	In accordance with the <i>Environment Protection and Biodiversity Conservation Act 1999</i> , a significant impact is an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts
sound exposure level	Sound exposure level is a measure of energy. Specifically, it is the dB level of the time integral of the squared instantaneous sound pressure normalised to a 1-s period
sound power level	This is a measure of the rate at which a source emits acoustic energy. The sound power level is expressed in decibels and is the overall acoustic energy of the source.
sound pressure	A deviation from the ambient hydrostatic pressure caused by a sound wave
sound pressure level	The logarithmic ratio of sound pressure to the reference pressure. The reference pressure underwater is $P_{ref} = 1\mu Pa$
sound speed profile	A graph of the speed of sound in the water column as a function of depth
source level	The acoustic source level is the level referenced to a distance of 1m from a point source
Southern Oscillation Index	Provides an indication of the development and intensity of El Niño or La Niña events in the Pacific Ocean and is calculated using the pressure differences between Tahiti and Darwin.
spatial extent	Impacts are considered with respect to the biologically meaningful spatial extents of local, regional, state, and national
spring tides/neap tides	Spring tides are the tides with the biggest range from low to high tide that are associated with new and full moon events which occur approximately every 14 days. This tidal range in Port Curtis is > 4m. Neap tides occur when the difference between high and low tide is the least.
stressor	A stressor is a chemical or biological agent, environmental condition, external stimulus or an event that causes stress or impact to a sensitive value (receptor). For the purposes of this EIS a stressor includes, but are not limited to Project activities that have the potential to result in a direct and/or indirect impact
study area for the sensitive value/receptor	Spatial extent of the potential impacts which includes the combination of the direct impact area and the potential zone of impacts from indirect impacts from the Project activities
substrate	The benthic habitat or surface material (e.g. rock, sand)
subtidal	The area below the level of the lowest astronomical tide
SWAN	3 rd generation spectral wave modelling software
taxa	Any unit used in the science of biological classification or taxonomy
temporary impact	The impact is confined to a defined period consisting of no more than 1 to 2 seasons (i.e. no greater than 6 months in duration)
temporary threshold shift	Describing the potential for temporary hearing loss in fauna species due to underwater noise and/or vibration impacts
tonality	Tonal sound contains prominent tones (distinct frequency components) and is normally regarded as more offensive than broad band sound
toxicity	The inherent potential or capacity of a material to cause adverse effects in a living organism
trailer suction hopper dredger	A self-propelled sea going dredger equipped with a hopper. Dredging is undertaken via a draghead which is connected to a suction pipe to fill the hopper.

Term	Meaning
TUFLOW-FV	Hydrodynamic and advection-dispersion modelling software
turbidity	A measure of the degree to which the water loses its transparency due to the presence of suspended particulates
vulnerability	In relation to a value/receptor, is the potential for, or susceptibility to, harm from a Project activity, action and/or process (stressor). It is the degree to which an sensitive value and/or system (receptor) is sensitive to pressures and disturbances (stressors)
water quality guidelines	Numerical concentration levels or statements for indicators that protect a stated environmental value. Under the environmental values setting process contained in the EPP (Water), water quality guidelines are used as an input to the development of WQOs
water quality indicator	A property that is able to be measured or decided in a quantitative way. May include physical indicators (e.g. temperature), chemical indicators (e.g. nutrients), and biological indicators (e.g. seagrass).
water quality objective	The set of water quality guidelines for all indicators that will protect all environmental values selected for the water. Water quality objectives may be the same as technically derived water quality guidelines, or may be altered by consideration of the social and economic impacts of protecting the environmental values.
World Heritage Convention	A global instrument for the protection of cultural and natural heritage that aims to promote cooperation among nations to protect heritage around the world that is of such Outstanding Universal Value that its conservation is important for current and future generations
zones of impact	Established through predictive modelling of sediment plumes zones of high impact, moderate and low impact, and zone of influence based on quantitative threshold criteria for the boundary of each zone can be established
1/3 Octave Band Levels	The energy of a sound split into a series of adjacent frequency bands, each being 1/3 of an octave wide