

CHAPTER

INLAND
RAIL 

25

Glossary and Abbreviations

Gowrie to Helidon Environmental Impact Statement



The Australian Government is delivering
Inland Rail through the Australian
Rail Track Corporation (ARTC), in
partnership with the private sector.

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25. Glossary and Abbreviations

25.1 Abbreviations

Abbreviation	Definition
%	Per cent
°C	Degrees Celsius
µg/L	micrograms per litre
µg/m ³	micrograms per cubic metre
µm	micrometres
µS/cm	micro siemens per centimetre
O ₃	Ozone
AADT	Annual average daily traffic
AASS	Actual acid sulfate soil
AAToS	Average annual time of submergence
ABS	Australian Bureau of Statistics
ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
ADT	Average daily traffic
ADWG	Australian Drinking Water Guidelines
AEP	Annual exceedance probability
AHD	Australian Height Datum
AILA	Australian Institute of Landscape Architects
AL Act	<i>Acquisition of Land Act 1967</i> (Qld)
ALCAM	Australian Level Crossing Assessment Model
AMP	Accommodation Management Plan
ANZECC	Australian and New Zealand Environment and Conservation Council
AoI	Area of Interest
AOI	Areas of Influence
AQIA	Air quality impact assessment
AQMS	Air quality monitoring station
AquaBAMM	Aquatic Biodiversity Assessment and Mapping Method
ARD	Acid Rock Drainage
ARMCANZ	Agriculture and Resources Management Council of Australia and New Zealand
ARR 2016	Australian Rainfall and Runoff 2016
ARTC	Australian Rail Track Corporation
AS	Australian Standard
ASC NEPM	<i>National Environment Protection (Assessment of Site Contamination) Measure 1999</i>
ASGS	Australian Statistical Geography Standard
ASRIS	Australian Soil Resource Information System
ASS	acid sulfate soils
ATP	Authority to prospect
ATSIHP Act	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> (Cth)
AUSRIVAS	Australian River Assessment System
B2G	Border to Gowrie
BCC	Brisbane City Council

Abbreviation	Definition
BD	Biodiversity
bgl	below ground level
Biosecurity Act	<i>Biosecurity Act 2014</i> (Qld)
BoM	Bureau of Meteorology
BPAs	Biodiversity Planning Assessments
BS	British Standard
Building Act	<i>Building Act 1975</i> (Qld)
C2K	Calvert to Kagaru
CBD	Central Business District
CBR	Californian Bering Ratio
CCC	Community Consultative Committee
CE	Critically endangered
CEMP	Construction Environmental Management Plan
Ch	Chainage
CHMP	Cultural Heritage Management Plan
CIA	cumulative impact assessment
CLR	Contaminated Land Register
CMB	Clarence-Moreton Basin
CNVMP	Construction Noise and Vibration Management Plan
CO	Carbon monoxide
CO₂e	Carbon dioxide equivalent
CoP Vol 1	DTMR's guideline <i>Transport Noise Management Code of Practice: Volume 2 – Construction Noise and Vibration</i>
CoP Vol 2	DTMR's guideline <i>Transport Noise Management Code of Practice: Volume 1 – Road Traffic Noise</i>
CPESC	Certified Practitioner in Erosion and Sediment Control
CPTED	Crime Prevention Through Environmental Design
CRG	Community Reference Group
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DA	Development Application
DA mapping	Development Application mapping
DAF	Department of Agriculture and Fisheries (formerly DAFF)
DAFF	Department of Agriculture, Fisheries and Forestry (former)
DATSIP	Department of Aboriginal Torres Strait Islander Partnerships (former)
DAWE	Department of Agriculture, Water and the Environment
dB	Decibel ratio
dB(A)	A-weighted decibel
dB(Z)	Z-weighted decibels
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DEHP	Department of Environment and Heritage Protection (former)
DEM	Digital Elevation Model

Abbreviation	Definition
DERM	Department of Environment and Resource Management (former)
DES	Department of Environment and Science (formerly DEHP)
DESBT	Department of Employment, Small Business and Training
DET	Department of Education and Training
DEWHA	Department of the Environment, Water, Heritage and the Arts (former)
DHPW	Department of Housing and Public Works (former)
DILGP	Department of Infrastructure, Local Government and Planning (former)
DIN	Deutsches Institut für Normung – the German national organisation for standardisation
DNRME	Department of Natural Resources, Mines and Energy (former)
DO	Dissolved oxygen
DoEE	Department of the Environment and Energy (formerly DotE)
DotE	Department of the Environment (former)
DRDMW	Department of Regional Development, Manufacturing and Water (formerly DNRME)
dS/m	deciSiemens per metre
DSDILGP	Department of State Development, Infrastructure, Local Government, and Planning (formerly DSDTI)
DSDMIP	Department of State Development, Manufacturing, Infrastructure and Planning (former)
DSDSATSIP	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (formerly DATSIP, DCDSS)
DSEWPaC	Department of Sustainability, Environment, Water, Populations and Community
DSITI	Department of Science, Information Technology and Innovation (former)
DSITIA	Department of Science, Information Technology, Innovation and the Arts (former)
DTMR	Department of Transport and Main Roads
E	Endangered
EA	Environmental authority
EC	Electrical conductivity
EEA	European Environment Agency
EH	Essential habitat
EIS	Environmental Impact Statement
EMEP	European Monitoring and Evaluation Project
EMP	Environmental management plan
EMR	Environment management register
EMS	Environmental Management System
ENSO	El Niño-Southern Oscillation
EO Act	<i>Environmental Offsets Act 2014</i> (Qld)
EP Act	<i>Environmental Protection Act 1994</i> (Qld)
EP Regulation	<i>Environmental Protection Regulation 2019</i> (Qld)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPP (Air)	<i>Environmental Protection (Air) Policy 2019</i> (Qld)
EPP (Noise)	<i>Environmental Protection (Noise) Policy 2019</i> (Qld)
EPP (Water and Wetland Biodiversity)	<i>Environmental Protection (Water and Wetland Biodiversity) Policy 2019</i> (Qld)
ERA	Environmentally Relevant Activity
ERIN	Environmental Resources Information Network (Australian Government)

Abbreviation	Definition
ESCP	Erosion and Sediment Control Plan
ESP	Exchangeable sodium percentage
EVNT	Endangered, Vulnerable and Near Threatened
EVs	Environmental Values
Explosives Act	<i>Explosives Act 1999</i> (Qld)
FBW	flash butt welding
FFJV	Future Freight Joint Venture
FIDOL	Frequency, intensity, duration, offensiveness, location
Fisheries Act	<i>Fisheries Act 1994</i> (Qld)
Forestry Act	<i>Forestry Act 1959</i> (Cth)
FRL	Fire Resistance Level
FTE	Full time equivalents
g/kWhr	grams per kilowatt hour basis
G2H	Gowrie to Helidon
GABORA	Great Artesian Basin and Other Regional Aquifers
GDE	Groundwater Dependant Ecosystems
GDR	Great Dividing Range
GIS	Geographical Information System
GMA	Groundwater Management Area
GMMP	Groundwater Management and Monitoring Plan
GNLVA	<i>Guidance Note for Landscape and Visual Assessment</i>
GPS	Global Positioning System
GRAL	Graz Lagrangian Model
GSP	Gross State Product
GTIA	Guidelines to Traffic Impact Assessment
H2C	Helidon to Calvert
ha	hectares
HES	High Ecological Significance
HEV	High ecological value
HHS	Health and Hospital Service
hp/tonne	horsepower per tonne
HVR	High Value Regrowth
HWMP	Healthy Waters Management Plan
Hz	Hertz
IAA	Important agricultural area
IAQM	Institute of Air Quality Management
IAS	Initial Advice Statement
IBRA	Interim Biogeographic Regionalisation for Australia
ICC	Ipswich City Council
ICOMOS	International Council on Monuments and Sites
ID	Identification
IECA	International Erosion Control Association
IEO	Index of Education and Occupation

Abbreviation	Definition
IRSAD	Index for Relative Socio-economic Advantage and Disadvantage
IS	Infrastructure sustainability
ISCA	Infrastructure Sustainability Council of Australia
ISO	International Standards Organisation
kg	kilograms
kg/m	kilograms per metre
kg/m³	kilograms per cubic metre
kg/yr	kilograms per year
kL	kilolitres
kL/day	kilolitres per day
km	kilometres
km/hr	kilometres per hour
km²	square kilometres
KRA	Key Resource Area
kt	Kilotons
kW	Kilowatt
L	litre
L/m³	litres per cubic metre
L/sec	litres per second
L_{A10}	The noise level equalled or exceeded for 10 per cent of the measurement period. The L _{A10} is commonly used to approximate the average maximum sound or noise level.
L_{A10(1 hour)}	The A-weighted sound pressure level which is exceeded for 10% of the measurement period (1 hour).
L_{A10(18 hour)}	The arithmetic average of the L _{A10(1 hour)} from 6:00 am to 12:00 am
L_{A90} (dB or dB(A))	The sound pressure level exceeded for 90% of the measurement period. For 90% of the measurement period it was louder than the L ₉₀ .
L_{Aeq(1 hour)}	The daytime 'equivalent continuous noise level' - it represents the cumulative effects of all the proposal noise events occurring in the daytime period from 7am to 10pm.
L_{Aeq(15 hour)}	The 'equivalent continuous noise level', sometimes also described as the 'energy-averaged noise level' - it represents the cumulative effects of all the proposal noise events occurring in one day.
L_{Aeq(9 hour)}	Typically used to described ambient (background) noise levels.
L_{Amax}	The maximum sound level recorded during the measurement period.
Land Act	<i>Land Act 1994</i> (Qld)
LC	Least Concern
LCAs	Landscape Character Area
LCTs	Landscape Character Type
LEP	Longitudinal Egress Passage
LGA	Local government area
LGIP	Local government infrastructure plan
LGRs	Local Government Roads
LOR	Limit of Reporting
LOS	Level of service
LVIA	Landscape and Visual Impact Assessment
LVRC	Lockyer Valley Regional Council

Abbreviation	Definition
LWR	Long Welded Rail
m	metre
M	Migratory
m AHD	metres above AHD
m/s	metres per second
m²	square metre
m³	cubic metre
MCA	Multi-Criteria Analysis
MCU	Material Change of Use
MDBA	Murray Darling Basin Authority
MEI	Multivariate ENSO Index
meq/100g	milliequivalents per 100 grams
mg/L	milligrams per litre
mg/m²/day	milligram per square metre per day
MJ	megajoule
ML	megalitres
ML/yr	megalitre per year
MLES	Matter of Local Environmental Significance
mm	millimetres
mm/s	millimetre per second
MNES	Matters of National Environmental Significance
MODFLOW	modular finite difference flow model
MRV	Main Range Volcanics
MSES	Matters of State Environmental Significance
Mtpa	Million tonnes per annum
MUTCD	Manual of Uniform Traffic Control Devices
MW	megawatt
NA	Not Applicable
NAASRA	National Association of Australian State Road Authorities
NATA	National Association of Testing Authorities
NC Act	<i>Nature Conservation Act 1992 (Qld)</i>
NCA	Noise catchment area
NCST	National Committee on Soil and Terrain
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007 (Commonwealth)</i>
NHMRC	National Health and Medical Research Council
NHVR	National Heavy Vehicle Regulator
NLCSS	National Railway Level Crossing Safety Strategy
NO	Nitric oxide
NO₂	Nitrogen dioxide
NOA	naturally occurring asbestos
NO_x	Nitrogen oxide

Abbreviation	Definition
NPI	National Pollutant Inventory
NRM	Natural Resource Management
NSW	New South Wales
NSW EPA	New South Wales Environmental Protection Authority
NT	Near Threatened
NT Act	<i>Native Title Act 1993 (Cth)</i>
NTU	Nephelometric Turbidity Units
OC	Of concern
OCG	Office of the Coordinator-General
Offsets Act	<i>Environmental Offsets Act 2014 (Qld)</i>
OGIA	Office of Groundwater Impact Assessment
OLM	Ozone Limiting Method
ONI	Oceanic Niño Index
ONRSR	Office of the National Rail Safety Regulator
OSOM	Oversize, over mass vehicles
Outline EMP	Outline Environmental Management Plan
PAH	Polycyclic aromatic hydrocarbons
PASS	Potentially Acid Sulfate Soils
PCA	Potential commercial area
PCNP	Queensland Principle Cycle Network Plans
PEA	Potential Expression Areas
PHA	Population Health Area
Planning Act	<i>Planning Act 2016 (Qld)</i>
Planning Regulation	<i>Planning Regulation 2017 (Qld)</i>
PM	Particulate Matter
PM₁₀	Particulate Matter less than 10 microns
PM_{2.5}	Particulate Matter less than 2.5 microns
PMF	Probable maximum flood
PPE	Personal Protective Equipment
PPL	Petroleum pipeline licence
ppm	parts per million
ppt	Parts per thousand
PPV	Peak particle velocity
PVC	polyvinyl chloride
QA/QC	Quality assurance and quality control
QAS	Queensland Ambulance Service
QFES	Queensland Fire and Emergency Service
QH Act	<i>Queensland Heritage Act 1992 (Qld)</i>
QLCSS	Queensland Level Crossing Safety Strategy
QLD	Queensland
QLUMP	Queensland Land Use Mapping Program
QPS	Queensland Police Service
QR	Queensland Rail

Abbreviation	Definition
QSPatial	Queensland Spatial Catalogue
QTRIP	<i>Queensland Transport and Roads Investment Program</i>
QWQG	<i>Queensland Water Quality Guidelines</i>
RAV	Restricted Access Vehicle
RBL	Rating background level
RCBC	reinforced concrete box culverts
RCP	reinforced concrete pipe
RDA	Regional development Australia
RE	Regional Ecosystem
REC	Regional Economic Clusters
RFGM	Regional Framework for Growth Management
RFI	Requests for information
RLSAC	Regional Landscape Strategy Advisory Committee
RMAR	rail maintenance access road
RMS	Roads and maritime services
RNE	Register of National Estate
RSIS	Regional Skills Investment Strategy
RSNL Act	<i>Rail Safety National Law Act 2017 (Qld)</i>
RTA	Roads and Traffic Authority
RUMP (RMP)	Road use management plans
SA	Statistical Area
SA EPA	Government of South Australia Environment Protection Authority
SAR	Standard axle repetitions
SCR	State-controlled roads
SDAP	State Development Assessment Provisions
SDPWO Act	<i>State Development and Public Works Organisation Act 1971 (Qld)</i>
SDS	Safety data sheet
SEIFA	Socio-Economic Index for Areas
SEIS	Supplementary EIS
SEQ	Southeast Queensland
SEQRP	<i>South East Queensland Regional Plan</i>
SES	State Emergency Service
ShapingSEQ	<i>South East Queensland Regional Plan 2017</i>
SIA	Social Impact Assessment
SIA Guideline	<i>Social Impact Assessment Guideline</i>
SIDRA	Signalised & Unsignalised Intersection Design and Research Aid
SIMP	Social impact management plan
SIP	<i>State Infrastructure Plan</i>
SLC	Special Least Concern
SO₂	Sulfur dioxide
SOI	Southern Oscillation Index
Soil Conservation Act	<i>Soil Conservation Act 1986 (Qld)</i>
SPP	State Planning Policy

Abbreviation	Definition
SSC	State Suburb Codes
SWL	Sound power level
t	tonne
t/yr	tonnes per year
TAFE	Technical and Further Education
TAL	tonne axle load
TAPM	The Air Pollution Model
TBM	tunnel boring machine
TDM	Travel Demand Management
TDS	Total dissolved solids
TECs	Threatened Ecological Communities
The Project	Gowrie to Helidon Project
The proponent	Australian Rail Track Corporation Ltd
TI Act	<i>Transport Infrastructure Act 1994</i> (Qld)
TIA	Traffic Impact Assessment
TLM	track laying machine
TMP	Traffic Management Plan
ToR	Terms of Reference
ToS	Time of submergence
TPC Act	<i>Transport Planning and Coordination Act 1994</i> (Qld)
TRC	Toowoomba Regional Council
TSMP	Track Stability Management Plans
TSP	Total Suspended Particulates
TSRC	Toowoomba Second Range Crossing
TSS	Total suspended solids
TV	Toowoomba Volcanics
UQ	University of Queensland
US EPA	United States Environmental Protection Authority
USL	Unallocated State Land
USQ	University of Southern Queensland's
UTS	Undifferentiated Tertiary Sediments
UXO	Unexploded Ordnance
V	Vulnerable
VAM	Visibility Analysis Mapping
VDec	Voluntary declaration
VDV	vibration dose value
Vic EPA	Victorian Environmental Protection Agency
VKT	vehicle kilometres travelled
VM Act	<i>Vegetation Management Act 1999</i> (Qld)
VMS	Variable Message Signs
VOCs	Volatile organic compounds
VWP	Vibrating wire piezometers
WA EPA	Government of Western Australia Environment Protection Authority

Abbreviation	Definition
Water Act	Water Act 2000 (Qld)
WCM	Walloon Coal Measures
WHS Act	Work Health and Safety Act 2011 (Qld)
WMRRS	Waste Management and Resource Recovery Strategy
WoNS	Weeds of national significance
WQMP	Water quality management plan
WQOs	Water quality objectives
WRP	Water Resources Plan
WRR Act	Waste Reduction and Recycling Act 2011 (Qld)
WSS	Water Supply Scheme
WTP	Water Treatment Plant

25.2 Glossary

Term	Definition
A Weighted decibel [dB(A)]	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1kHz and 4 kHz) which the human ear is most sensitive to and therefore places less emphasis on low frequencies at which the human ear is not so sensitive. When an overall sound level is A-weighted it is expressed in units of dB(A).
Absorptive capability	Absorptive capability relates to the ability of the landscape character zones to absorb the proposal within the existing landscape setting.
Access track	Cleared and graded track constructed where existing tracks are not available.
Acid sulfate soils	Soil that contains oxidised iron sulphides (actual acid sulfate soils) and/or soil that contains iron sulphides or other sulfidic material that has not been exposed to air and oxidised (potential acid sulfate soils). The term acid sulfate soil generally includes both actual and potential acid sulfate soils. Actual and potential acid sulfate soils are often found in the same soil profile, with actual acid sulfate soils generally overlying potential acid sulfate soil horizons.
Acoustics	The science of sound and sound waves.
Active	A term applied to groundwater bores that are able to continue to provide a reasonable yield of water in terms of quality and quantity for the bores authorised purpose or use.
Active control (level crossings)	Where the movement of vehicular or pedestrian traffic across a railway crossing is controlled using devices such as flashing signals, gates or barriers (or a combination of these), with the device/s activated prior to, and during, the passage of a train through the crossing.
Adverse impact	Adverse impacts are defined as those impacts that result in an unwanted and unanticipated result of taking a particular action. In an environmental 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.
Aerobic	Conditions that can exist only in the presence of free oxygen.
Affected person	An affected person under the <i>Environmental Protection Act 1992</i> (Qld) includes those who have a registered interest in the land or that which adjoins it and the relevant local government.
Aggloemeratic	Agglomeratic material is a result of the coarse accumulation of large blocks of volcanic material.
A-horizon	See <i>topsoil</i> .
Airshed	Volume of air generally confined to a distinct geographic region.

Term	Definition
Alignment	The line or lines that describe a linear-infrastructure route; it defines how linear infrastructure (such as a road, railroad or pipeline) will be located in relation to the features encountered along the route.
Alignment	The proposed rail line for the Project.
Alkaline	Having the properties of any of various bases; the hydroxides of the alkali metals and of ammonium, which neutralise acids to form salts.
Alluvial	Sediments deposited following a decrease in velocity of flowing water.
Alluvium	General term for unconsolidated deposits of inorganic materials (clay, silt, sand, gravel, and boulders) deposited following a decrease in velocity of flowing water.
Alluvium aquifer	An aquifer formed within alluvium. See <i>Alluvium</i> .
Ambient air quality	The state of quality of air as it exists in the environment.
Ambient background noise	The ambient noise present in the environment at a particular location in the absence of the noise source of interest.
Ambient noise	The all-encompassing noise at a point composed of sound from all sources near and far.
Amenity	The pleasantness of a place as conveyed by desirable attributes including visual, noise, odour etc.
Anaerobic	Process taking place in the absence of oxygen.
Annual daily traffic	The average traffic volume expected over a 24 hour period in a given year.
Annual exceedance probability (AEP)	The chance of a flood if a nominated size occurring in a particular year. The chance of the flood occurring is expressed as a percentage and, for large floods, is the reciprocal of the ARI. For example, the 1% AEP flood event is equivalent to the 100-year ARI flood event.
Anthropogenic	Associated with or relating to human influence (or impact) on the environment.
AquaBAMM	The Aquatic biodiversity assessment mapping method used to determine aquatic conservation assessments.
Aquaculture	Cultivation of the food resources of the sea or inland waters.
Aquascore	An overall conservation value of a wetland unit based on eight separate criteria of an AquaBAMM aquatic conservation unit.
Aquatic ecosystems	The physical and chemical environment that contains a community of organisms (plants, animals, and microbes), and ecological processes within rivers and their riparian zones and reservoirs, lakes, wetlands and their fringing vegetation.
Aquifer	Rock or sediment in a formation, group of formations or part of a formation that is saturated and sufficiently permeable to transmit economic quantities of water to wells and springs.
Aquifer testing	The process where an aquifer is subjected to pumping to assess the hydraulic parameters of the aquifer.
Aquitard	Saturated geological unit with a relatively low permeability that can store large volumes of water but does not readily transmit or yield significant quantities of water to bores or springs. An aquitard can sometimes, if completely impermeable, be called an aquiclude.
Arable	Capable of producing crops or grazing land.
Arboreal	Living in or among trees.
Archaeology	The systematic study of a culture by excavation and description of its remains.
Area of disturbance	The area where existing features of the environment are physically displaced, leading to potential impacts.
ARI	A term used to assess rainfall data, which describes the average or expected time periods between exceedances of a given rainfall total accumulated over a given duration. The periods between exceedances are generally random.

Term	Definition
Artesian aquifer	A confined aquifer whose water is pressurised i.e. if tapped by a bore, would flow naturally to the surface.
Artesian bore	A term commonly used to describe a bore that taps into an artesian aquifer.
Artist's impression	An indicative visual representation illustrating the appearance of a proposal. Typically to communicate a concept when photomontages are not available and/or when accuracy cannot be assured.
Assessment background level [ABL]	The overall background level for each day, evening and night period for each day of the noise monitoring.
Australian Height Datum (AHD)	A level datum that generally approximates mean sea level. The datum is treated as uniform throughout Australia.
Authorised person	A person holding office as an authorised person under an appointment under the <i>Environmental Protection Act 1994</i> (Qld) by the chief executive of a local government.
AutoCAD	Computer Assisted Drawing software.
Auxiliary lane	An additional lane added to the carriageway for safety and/or intersection capacity purposes.
Average recurrence interval (ARI)	The long term average number of years between the occurrence of a flood of a nominated size.
A-weighted	A term used in noise assessments, which describes the frequency filter that approximates the subjective response of human hearing. A-weighted sound pressure levels are designated as dB(A).
Back on Track species prioritisation framework (Qld)	<p>An initiative of the Department of Environment and Science (DES), the Back on Track species prioritisation program ranks species as Critical, High, Medium or Low priority for the State and for the Natural Resource Management (NRM) region (irrespective of their <i>Nature Conservation Act 1992</i> (Qld) (NC Act) or <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act) classification). There is also a data deficient category according to three sets of criteria: probability of extinction, consequences of extinction and potential for successful recovery.</p> <p>While not legislated, Back on Track provides a useful framework for biodiversity assessment and species prioritisation when determining ecological values.</p> <p>Priority Back on Track species have been identified for each of the 14 NRM regions across Queensland. The Gowrie to Helidon EIS disturbance footprint is located in south east Queensland and Condamine NRMs.</p>
Background creep	The gradual increase in background noise levels in an area as a result of successive developments generating simultaneous noise levels at a particular location.
Background noise	The underlying level of noise present in the ambient noise when extraneous noise (such as transient traffic and dogs barking) is removed. The L ₉₀ sound pressure level is used to quantify background noise.
Backwater	Upstream movement of water from a downstream catchment in flood.
Ballast	Crushed rock, stone etc used to provide a foundation for a railway track. Ballast usually provides the bed on which railway sleepers are laid, transmits the load from train movements, and restrains the track from movement
Basalt	The dark, fine-grained igneous rock of a lava flow, composed primarily of plagioclase and pyroxene. It sometimes displays a columnar structure.
Baseflow	The component of a watercourse that is derived from groundwater discharge to the river or stream.
Baseline	A basic standard or level, usually regarded as a reference point for comparison.
Basis of Assessment	Any formal direction from a responsible State or Commonwealth Agency under a relevant Act instructing the assessment approach for a Primary Approval Document. This includes the TOR.
Bed and banks	For a watercourse or wetland, this means land over which the water normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.

Term	Definition
Best practice environmental management	Management of an activity to achieve ongoing minimisation of the activity's environmental harm through cost-effective measures, assessed against the measures currently used nationally and internationally for the activity.
B-horizon	An intermediate layer of soil beneath the A-horizon containing organic matter and clay.
Biocondition	The degree to which the attributes of a patch of vegetation differ from the attributes of the same vegetation in its reference (undisturbed) state.
Biodiversity	The biological diversity of life is commonly regarded as being made up of the following three 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.
Biodiversity offsets	Biodiversity offsets are measures that benefit biodiversity by compensating for the adverse impacts elsewhere of an action, such as clearing for development. Biodiversity offsets work by protecting and managing biodiversity values in one area in exchange for impacts on biodiversity values in another. In Queensland the term used is Environmental Offsets, and in Victoria it is Native Vegetation Offsets. Different regulatory frameworks apply in each jurisdiction.
Biodiversity Planning Assessments (Qld) (BPAs)	BPAs have been prepared for each of Queensland's bioregions based on the methodology outlined in the Biodiversity Assessment and Mapping Methodology (BAMM) (Queensland Government 2014). The BPAs draw upon the EHP certified regional ecosystem (RE) mapping, database information, and expert panel reports and incorporate information about threatened ecosystems and/or species, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, as well as buffers to wetlands or other types of important areas for ecological processes. There are three biodiversity significance levels to which an area can be assigned: <ul style="list-style-type: none"> ▶ State significance—areas assessed as being significant for biodiversity at the bioregional or state scales ▶ Regional significance—areas assessed as being significant for biodiversity at the sub-bioregional scale ▶ Local significance and or other values—local values that are of significance at the local government scale. All remnant vegetation will qualify into one of the above three categories.
Biodiversity status	For biodiversity planning purposes the DES classifies a RE as Endangered if: <ul style="list-style-type: none"> ▶ Less than 10% of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss, or ▶ 10% to 30% of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 ha; or it is a rare Regional Ecosystem subject to a threatening process. For biodiversity planning purposes DES classifies a RE as Of concern if: <ul style="list-style-type: none"> ▶ 10% to 30% of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss. For biodiversity planning purposes a RE is listed as Least concern at present if: <ul style="list-style-type: none"> ▶ The degradation criteria listed above for Endangered or Of concern REs are not met.
Bioregion	A bioregion as defined in An Interim Biographic Regionalisation of Australia (Thackway and Cresswell, 1995). The bioregions subject to this report are the SEQ and Brigalow Belt bioregions.
Biosecurity	Security measures against the transmission of disease to the plants or animals of a particular region.

Term	Definition
Biosecurity Act 2014 (QLD) (Biosecurity Act)	<p>The Biosecurity Act lists declared plants and animals that have, or could have, serious economic, environmental or social impacts and are targeted for control. There are legal obligations associated with the control supply, sale, keeping and transport of declared species. Where these exotic pests and weeds are encountered, landholders have an obligation under the <i>Biosecurity Act</i> to control the declared weeds and pest animals, in accordance with relevant guidelines and local government area pest management plans.</p> <p>There are seven categories for restricted matter defined in the Biosecurity Act:</p> <ul style="list-style-type: none"> ▶ Categories 1 and 2 are restricted matters that have specific urgent reporting requirements ▶ Categories 3, 4, 5, 6 and 7 relate to restricted matter that is in a person's possession, under their control and is also about not feeding restricted matter. <p>Several restriction categories apply to some restricted matter. In such cases, you would need to follow the requirements of all restriction categories for these restricted matter listings.</p>
Bore	<p>Artificially constructed or improved groundwater cavity used for the purpose of accessing or recharging water from an aquifer.</p> <p>Interchangeable with <i>borehole</i>, <i>piezometer</i>.</p>
Borrow pit	Quarry pit created to provide soil, sand, gravel or rocks that can be used as fill or construction material at another location.
Brigalow Belt	The bioregion that spans inland and eastern Queensland from Townsville in the north to northern New South Wales, covering an area of 36,400,000 ha. The bioregion, as its name implies, is characterised by brigalows. The bioregion also supports a range of ecosystems including eucalypt forest and woodlands, grassland, dry rainforest, cypress pine and riparian communities.
Buffer	An area of land separating adjacent land uses that is managed for the purpose of mitigating impacts of one use on another. A buffer area consists of a separation distance and one or more buffer elements.
Bulk freight	Bulk freight generally involves large quantities of homogenous product, typically liquid or loose crushed solid material (such as cement, grains and ores), transported on mass without packaging.
Bund (or bunding)	Wall of a secondary containment system, usually in the form of an embankment, used to prevent sediment and liquids from entering the environment.
Cadastral	Relating to the official register of property, with details of boundaries and ownership.
Cainozoic	Relating to the geological era of rocks of most recent age (65.5 million years ago to present).
CALMET	A diagnostic three-dimensional meteorological model, which provides input for the CALPUFF air dispersion model.
CALPOST	A post-processing package used to process the output from CALPUFF.
CALPUFF	CALPUFF is an advanced non-steady-state air quality modelling system developed in the US.
Carbon dioxide equivalent (CO₂-e)	Greenhouse gas emissions unit used to provide a common unit of measure between the various greenhouse gases due to their differing global warming potential.
Carbon monoxide	Toxic, colourless and odourless gas produced by burning fuels.
Catchment	Catchment at a particular point is the area of land that drains to that point.
Chainage	A measure of distance along the rail corridor. The values are progressive from the start of each package (from Melbourne to Brisbane) with the terminus of each the alignment at the interface with the next package leading to Brisbane. For readability, chainage is noted in approximate kilometres (km) throughout the document and is noted in metres for figures.
Character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, and often conveys a distinctive sense of place. This term does not imply a level of value or importance.
Chemical evolution	Changes and trends in the chemistry of groundwater as it moves through different aquifers and rock types over geologic time.

Term	Definition
Chemical Transport Model	The CSIRO chemical transport model used in conjunction with The Air Pollution Model to model complex chemical transformations.
Clarence-Moreton Basin	The Clarence Moreton Basin is a Mesozoic sedimentary basin on the easternmost part of the Australian continent. It is located in the far north east of the state of New South Wales around Lismore and Grafton and in the south east corner of Queensland.
Clay	Deposit of particles with a diameter less than 0.002 millimetre (mm), typically contain variable amounts of water within the mineral structure and exhibit high plasticity.
Clearing	For vegetation—means removing, cutting down, ringbarking, pushing over, poisoning or destroying in any way including by burning, flooding or draining; but it does not include destroying standing vegetation by stock, or lopping a tree.
Climate	The average weather experienced at a site or region over a period of many years, ranging from months to many thousands of years. The relevant measured quantities are most often surface variables such as temperature, rainfall and wind.
Climate change	Any change in long term climatic conditions over time, whether due to natural variability or as a result of human activity.
Climate change adaptation	Actions in response to actual or projected climate change and impacts that lead to a reduction in risks or realisation of benefits.
Climate change projection	A projection of the response of the climate system to scenarios of greenhouse gas emissions or atmospheric concentrations of greenhouse gases; often based upon simulations by computer based mathematical models depending on assumptions and response of the climate system to changes in these variables and can therefore be distinguished from climate predictions.
Coffer dam	Watertight enclosure constructed in a watercourse and then pumped dry so that infrastructure may be constructed in the watercourse in the open.
Colluvium	General term applied to any loose, heterogeneous and incoherent sediment such as soil material and/or rock fragments transported by gravity and deposited or built up at the bottom of a low-grade slope.
Computable general equilibrium model	A whole of economy model that captures the interactions between different sectors of the economy through a series of simultaneous equations. Computable general equilibrium models can be used to estimate how an economy might respond to changes in government policy, technology, investments or other external factors relative to a baseline.
Conceptual project design	Proposed configuration, layout and timeframes for development of the Project, established for the purpose of environmental impact assessment.
Concurrence ERA	An activity is a concurrence ERA if the activity is a prescribed ERA and the threshold within which the activity is carried out is stated opposite the letter 'C' in the relevant table within Schedule 2 of the Environmental Protection Regulation 2019.
Condamine River Basin	The Condamine River Basin is located on the northeast corner of the Murray Darling Basin. The major towns in the Basin are Toowoomba, Warwick, Cecil Plains, Dalby and Chinchilla. The dominant land use in the Basin is irrigated cropping, dryland cropping and open grazing. Coal Seam Gas and coal extractive industries are also prevalent throughout the Basin.
Confined aquifer	An aquifer bounded above and below by impervious (confining) layers.
Confining layer	Layer of low permeability material underlying or overlying an aquifer, which restricts the vertical movement of water.
Conglomerate	Consolidated gravel consisting of rounded and waterworn pebbles. embedded in a finer cementing material.
Conservation significant	A collective term used with reference to species that are listed as Critically endangered, Endangered or Vulnerable under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act) (refer EPBC Act conservation significance for more details).
Conservation significant species	See <i>Threatened species</i> .
Consolidated aquifer	Water bearing rock aquifer such as sandstone, coal, limestone and granite.

Term	Definition
Constraints mapping	The processes used to assess the environmental framework for development where by areas of environmental sensitivity are graphically depicted to determine areas where development may be constrained.
Construction compound	An area used as the base for construction activities, usually for the storage of plant, equipment and materials and/or construction site offices and worker facilities.
Contamination	The introduction of a pollutant into the environment.
Contour plot	Graphical technique for representing a three-dimensional surface by plotting contours, in a two-dimensional format.
Controlled action	A proposed action designated under the controlling provisions of the <i>Environment Protection and Biodiversity Act Conservation Act 1999</i> (Cth) that is likely to have a significant impact on a matter of national environmental significance, the environment of Commonwealth land (even if taken outside Commonwealth land).
Controlling provision	Under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth): an action that a person proposes to take is a controlled action if the taking of the action by the person without approval under Part 9 for the purposes of a provision of Part 3 would be (or would, but for section 25AA or 28AB, be) prohibited by the provision. The provision is a controlling provision for the action.
Cover material	Soil, alluvium, weathered basalt or other suitable plant-growth medium, typically non-crusting and of low salinity, placed on reshaped spoil surfaces.
Cretaceous	Relating to the third period within the Mesozoic era beginning approximately 145.6 million years ago and ending approximately 65 million years ago.
Critical habitat	The whole or any part or parts of an area or areas of land comprising the habitat of an Endangered species, an Endangered population or an Endangered ecological community that is critical to the survival of the species, population or ecological community. Critical habitat is listed under the EPBC Act.
Critical priority	Rating associated with the Back on Track species prioritisation framework. Constitutes the highest total score/priority.
Critically endangered	Designated as Critically Endangered under the EPBC Act. Refer to definition of EPBC Act conservation status for meaning of Critically endangered under the Act.
Crowding out	When one activity competes with other sectors of the economy for a relatively fixed amount of inputs to the production process (e.g. labour, capital or other goods and services). It can also be caused by increased pressure on the output side, by competing in a market that displays relatively inelastic demand. This can create a displacement of economic activity towards the sector and region generating the excess demand.
Cultural heritage	Indigenous and non-Indigenous items and areas (commonly referred to as places) that are a significant indicator of historical and cultural events and practices.
Cultural significance	The meaning or value ascribed to the cultural landscape. It normally stems from a combination of association and integrity.
Culvert	A structure that allows fauna to move and/or water to flow under a road, railway, track, or similar obstruction.
Cumulative impact area of influence	The area of the Project that incorporates other projects for assessment of cumulative impact. In matters relating to water quality, cumulative impact area of influence is specifically in relation to intra-catchment interaction between identified strategic projects with the potential to be cumulative to current Project impacts.
Cumulative impacts	The impacts that result from the incremental impact of an activity when it is added to past, present, and reasonably foreseeable future activities. Cumulative impacts arise when several developments that may have insignificant effects but when taken together have a significant effect.
Dam	An engineered land-based structure that is designed to contain, divert or control liquid. A dam does not mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

Term	Definition
Dangerous goods	Dangerous goods are substances or articles that pose a risk to people, property or the environment, due to their chemical or physical properties. They are usually classified with reference to their immediate risk.
Decibel (dB)	A unit of sound level measurement.
Decibel (dB)A A-weighted	The method of frequency weighting the electrical signal from a noise measuring instrument to simulate the way the human ear responds to a range of acoustic frequencies. The symbols for the noise parameters often include the letter 'A' (e.g. LAeq) to indicate that frequency weighting has been included in the measurement.
Decibel scale	<p>The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows:</p> <ul style="list-style-type: none"> ▶ 0 dB(A) Threshold of human hearing ▶ 30 dB(A) A quiet country park ▶ 40 dB(A) Whisper in a library ▶ 50 dB(A) Open office space ▶ 70 dB(A) Inside a car on a freeway ▶ 80 dB(A) Outboard motor ▶ 90 dB(A) Heavy vehicle pass-by ▶ 100 dB(A) Jackhammer/subway train ▶ 110 dB(A) Rock concert ▶ 120 dB(A) 747 take off at 250 m.
Deep groundwater	Groundwater resources associated with aquifers and resources at depths >100 metres (m).
Demography	The range of different groups existing in a particular populace, as distinguished by factors such as age, ethnicity, and social background.
Depression (hydrogeology)	A cone of depression occurs in an aquifer when groundwater is pumped from a well. In an unconfined aquifer (water table), this is an actual depression of the water levels. In confined aquifers (artesian), the cone of depression is a reduction in the pressure head surrounding the pumped well.
Depressurisation	The lowering of the groundwater elevation over an area.
Developed case	Hydraulic modelling case with Project in place.
Dewatering	Draining, permanently or temporarily, partially or fully, a wet area of land or an aquifer.
Direct economic impact	A measure of the total value added in a defined geographical region directly attributable to a given event, organisation or industry.
Direct impacts	Impacts that result from a direct interaction between Project activities and the receptor (e.g. land clearing resulting in vegetation and habitat loss).
Directional drilling	Technique of non-vertical or horizontal drilling.
Discharge area	That part of the land surface where groundwater discharge produces a net movement of water out of the groundwater.
Dispersive	A characteristic of soil indicating the potential for the breakdown of clay material into single clay particles in solution.
Dissolved oxygen (DO)	The amount of oxygen dissolved in water.
Dissolved solids	Minerals and organic matter dissolved in water; a measure of salinity.
Disturbance	A physical displacement of existing features that leads to impacts.
Disturbance footprint	The Disturbance footprint is the disturbance footprint (both temporary and permanent) associated with the Project. The Disturbance footprint is the area subject to direct disturbance. It has sometimes been depicted as the EIS footprint.
Diversion channel	A constructed waterway used to redirect drainage lines and watercourses around infrastructure areas.

Term	Definition
Drainage feature	Drainage features are governed by topography forming patterns in the landscape from streams, rivers, lakes and drainage basins.
Drawdown (hydrogeology)	In subsurface hydrogeology, drawdown is the reduction in hydraulic head observed at a well in an aquifer.
Drilling rig	A machine that creates holes (usually called wells or bores) in the ground.
Easement	Legal term used to describe land over which a third party has rights to locate infrastructure and undertake certain activities.
Ecological	Relating to the relationships between organisms and their environment.
Ecological community	An assemblage of species occupying a particular area.
Ecological MNES	An ecological value or group of ecological values that has the potential to be adversely impacted by Project related activities.
Ecological receptor	A receptor is a feature, area or structure or grouping of the aforementioned that may be affected by direct or indirect changes to the environment.
Ecological sustainability	The capacity of a development to continue operating perpetually, and avoid adverse effects on ecology.
Ecologically sustainable development	Development that uses, conserves and enhances the resources of the community so that ecological processes on which life depends are maintained, and the total quality of life, now and in the future, can be increased.
Ecology	Scientific study of abundance, distribution and interactions between organisms and their natural environment.
Ecology study area	This includes the G2H EIS disturbance footprint plus a nominal 1 km buffer area, wider in some areas where multiple design options required an increase investigation area.
Ecosystem	An organic community of plants, animals and bacteria and the physical and chemical environment they inhabit.
Effect	The landscape or visual outcome of a proposed change. It may be the combined result of sensitivity together with the magnitude of the change.
EIS investigation corridor	Investigations for the purposes of the EIS and ongoing engineering design, including field surveys, were generally undertaken within a 1 km radius of the disturbance footprint of the Project, referred to throughout the EIS as the 'EIS investigation corridor'. Individual technical assessments that required specific assessment at a different scale to this corridor were defined as discipline-specific study areas.
Emission	A substance discharged into the air.
Emission factor	Calculation factor expressing greenhouse gas emissions per unit of activity.
Endangered	Designated as Endangered under the EPBC Act, NC Act, <i>Vegetation Management Act 1999 (Qld)</i> (VM Act). Refer to definitions of EPBC Act conservation status, NC Act conservation status, VM Act and <i>Environmental Protection Act 1994 (Qld)</i> (EP Act) conservation status for meaning of Endangered under each Act.
Endemic	Native to a country or a locality, although may be found elsewhere.

Term	Definition
Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) conservation status	<p>Under the EPBC Act, listed species and threatened 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 ▶ 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 ▶ 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 ▶ 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> <p>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 include birds such as albatrosses and petrels, mammals such as whales or reptiles. Listed migratory species appear in the:</p> <ul style="list-style-type: none"> ▶ Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) ▶ China–Australia Migratory Bird Agreement (CAMBA) ▶ Japan–Australia Migratory Bird Agreement (JAMBA) ▶ Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA).
Environmental authority (EA)	A licence to operate, issued in accordance with the <i>Environmental Protection Act 1994</i> (Qld), that imposes conditions on authorised activities to reduce or avoid potential environmental impacts; used by Queensland Department of Environment and Science to assess and administer regulatory environmental compliance of a project.
Environmental flow	Water flow regimes required to sustain freshwater and estuarine ecosystems e.g. to deliver nutrients and sediment downstream.
Environmental impact statement (EIS)	A document prepared to identify, describe and assess the potential impacts of a proposed action on the environment, and document ways to mitigate such impacts; it should provide sufficient detail to inform a decision on the proposal.
Environmental management plan (EMP)	Document that provides operational detail of how environmental management measures identified in the environmental impact statement will be implemented.
Environmental nuisance	An unreasonable interference or likely interference with an environmental value caused by noise, dust, odour or light; caused by an unhealthy, offensive or unsightly condition or in another way prescribed by regulation.
Environmental offsetting	If a project has a significant residual impact in one area, environmental offsetting facilitates an environmental gain in another area.
Environmental values	Desirable characteristics, properties and behaviours or an aspect of the environment.
Environmentally relevant activity (ERA)	An activity with potential to release contaminants into the environment defined in schedule 2 of the <i>Environmental Protection Regulation 2008</i> (Qld).

Term	Definition
Environmentally sensitive area (ESA)	<ul style="list-style-type: none"> ▶ As defined under the Environment Protection and Biodiversity Conservation Regulations 2000, a Category A ESA is any of the following: <ul style="list-style-type: none"> ▶ National Parks ▶ Conservation Parks ▶ Forest Reserves ▶ Wet Tropics World Heritage Area ▶ Great Barrier Reef Marine Park Area ▶ Marine Parks other than General Use Zones. ▶ A Category B ESA includes the following: <ul style="list-style-type: none"> ▶ World Heritage Areas ▶ QLD Heritage Register Places ▶ Ramsar Sites ▶ Cultural Heritage Registered Areas and DLAs other than Stanbroke ▶ Special Forestry Areas ▶ Fish Habitat Areas ▶ Coordinated Conservation Areas ▶ Endangered Regional Ecosystems (remnant and mature regrowth (biodiversity status)) ▶ Marine Parks other than General Use Zones ▶ Marine Plants. ▶ A Category C ESA includes any of the following: <ul style="list-style-type: none"> ▶ Essential Habitat ▶ Referable Wetlands ▶ Declared Catchment Areas ▶ Nature Refuges ▶ Resources Reserves ▶ State Forests ▶ Timber Reserves. <p>Of concern REs (remnant and mature regrowth (biodiversity status)).</p>

Term	Definition
EPBC Act conservation status	<p>Under the EPBC Act, listed species and threatened 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> <p>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:</p> <ul style="list-style-type: none"> ▶ Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) ▶ China–Australia Migratory Bird Agreement (CAMBA) ▶ Japan–Australia Migratory Bird Agreement (JAMBA) ▶ Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA)
EPBC threshold criteria	The rules or principles used to measure the significance of a plant, animal or ecosystem against the requirements of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth).
Ephemeral	Relates to the amount of time that surface water persists in a watercourse or wetland; ephemeral watercourses flow only during significant rainfall events and for a short-time following rainfall events.
Equivalent continuous sound level [L_{eq}]	The constant sound level which, when occurring over the same period of time, would result in the receptor experiencing the same amount of sound energy.
Equivalent person	An equivalent person under volume 1, section 2 of the <i>Guidelines for Planning and Design of Sewerage Schemes, October 1991</i> , published by the Water Resources Commission, Department of Primary Industries, Fisheries and Forestry.
Erosion	Wearing away of rock or soil caused by physical or chemical processes.
Erosion stability	The ability of an area to resist the natural forces of soil erosion.
Essential habitat	<p>For species of wildlife listed as endangered, vulnerable, rare, or near threatened under the <i>Nature Conservation Act 1992</i> (Qld), an area of vegetation shown on the regional ecosystem map or remnant map as remnant vegetation:</p> <ol style="list-style-type: none"> (a) That has at least three essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database (b) In which the protected wildlife, at any stage of its life cycle, is located. <p>Essential habitat areas are identified on a map certified by the chief executive of Queensland Department of Environment and Science for the purposes of the <i>Vegetation Management Act 1999</i> (Qld).</p>

Term	Definition
Existing rail corridor	The corridor within which existing rail infrastructure, subject to works as part of Inland Rail, are located. The existing rail corridor is defined by ARTC to mean everywhere within 15 metres of the outermost rails; or within the boundary fence where boundary fences are provided and are closer than 15 metres; or if the property boundary is less than 15 metres, the property boundary; or a permanent structure such as a fence, wall or level crossing separating the operating rail corridor from other land.
Extinct in the wild	See: <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i> (EPBC Act) conservation status; <i>Nature Conservation Act 1992 (QLD)</i> (NA Act) conservation status.
Extreme event	Weather conditions that are rare for a particular place and/or time such as an intense storm or heat wave.
Fault	Zone of displacement in rock formations resulting from forces of tension or compression in the earth's crust.
Fauna	The animals of a given region or period, considered collectively.
Feeder dyke	The term feeder dyke is used for a dyke that acted as a conduit for magma. Magma flowed along, then out of the dyke, then formed another feature. In contrast to magmatic dykes, a sill is a magmatic sheet intrusion that forms within and parallel to the bedding of layered rock.
Feral	Animal existing in a wild or untamed state, having escaped from domestication, or their offspring.
Fill	Any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse, wetland or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.
Floodplain	Flat or nearly flat land adjacent a stream or river that stretches from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high flow.
Flora	The plants of a given region or period, considered collectively.
Fluvial geomorphology	The study of river-related landforms and the processes that shape them.
Fold (geology)	In structural geology, a fold occurs when one or a stack of originally flat and planar surfaces, such as sedimentary strata, are bent or curved as a result of permanent deformation. Synsedimentary folds are those due to slumping of sedimentary material before it is lithified.
Footprint	See <i>Area of disturbance</i> .
Foreseeable future	The period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150-year foreseeable future with an acceptably low probability of failure before that time.
Forest reserve	Tenure of an interim nature for a maximum of five years and managed by the Environmental Protection Agency with associated conditions under the <i>Nature Conservation Act 1992 (Qld)</i> .
Forestry entitlement area	Land in a deed of grant or freeholding lease where the commercial timber and the land on which it stands is reserved by the State of Queensland.
Formation	The earthworks/material on which the ballast, sleepers and tracks are laid.
Freehold	Land held by the State in Fee Simple (freehold title) which includes titles surrendered to the State of Queensland (or Crown) in terms of Section 358 of the <i>Land Act 1994 (Qld)</i> .
Freight	Goods transported by truck, train, ship, or aircraft.
Freight task	The amount of freight transport, usually measured in tonnes or tonne-kilometres.
Frequency [f]	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high pitched sound and a low frequency to a low pitched sound.
Fresh water	Water that contains less than 1,000 milligrams per litre dissolved solids.

Term	Definition
Fugitive dust	Dust derived from a mixture of non-point or not easily defined sources; examples include dust from vehicular traffic on unpaved roads, materials transport and handling and disturbed (unvegetated) soils and surfaces.
Full-time equivalent (FTE)	A ratio of the total number of paid hours during a fixed time period by the number of hours worked in that period: $FTE = \frac{\text{Total paid hours worked in given period}}{\text{Normal working hours in given period}}$
Functional vegetation	Vegetation that consists of species able to survive and regenerate under specific conditions, providing soil erosion control and fauna habitat.
Geochemistry	The chemical characteristics of a soil or rock material.
Geographical information system (GIS)	Computer system that can capture, store, analyse, and present in various ways data that locates places on the earth's surface.
Geomorphic process	Chemical, physical or biological operation at the earth's surface that shape the landscape and its deposits.
Geomorphology	Study of the physical features of the surface of the earth and their relation to underlying geological structures.
Gley	A wetland soil (hydric soil) that, unless drained, is saturated with groundwater for long enough periods to develop a characteristic gleyic colour pattern
Global climate models	Computer generated simulations developed to predict future weather and climate trends. This includes taking into account changes in greenhouse gas concentrations in the atmosphere. Also referred to as general circulation models or climate models.
Global warming potential	Measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale that compares the gas in question to that of the same mass of carbon dioxide (CO ₂) with global warming potential of 1.
Good quality agricultural land (GQAL)	This is a 2-class system in land evaluation in which land is considered either good-quality agricultural land (GQAL) or not.
Grade separated/separation	Road rail interfaces where road and rail cross each other at different heights so that road traffic flow is not affected. Grade separations are either road over rail, or rail over road and also includes tunnels such as the proposed Toowoomba Tunnel.
Great Escarpment	The Great Escarpment in eastern Australia is an escarpment that runs east of the Great Dividing Range along most of the east of the continent. It was created due to formation of a new continental margin in the Mesozoic, followed by tectonic uplifting of the divide and then scarp retreat. The escarpment is estimated to be approximately 3,600 km in length, from north to south.
Greenfield	Of or relating to land that has not previously been developed or polluted.
Greenhouse gas	Any of the atmospheric gases that contribute to the greenhouse effect by absorbing infrared radiation produced by solar warming of the Earth's surface; including carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O) and water vapour (H ₂ O).
Greenhouse Gas Protocol	Corporate accounting and reporting standards for greenhouse gas emissions developed by the World Resources Institute and the World Business Council for Sustainable Development.
Gross domestic/state/regional product (GDP/GSP/GRP)	The market value of officially recognised final goods and services produced within a country/state/region in a given period. Final goods and services are defined as those which are not used to produce other goods or services.
Ground-borne noise	Noise generated by the vibration of a structure impacted by ground vibration.
Groundwater	Water found in the subsurface in the saturated zone below the water table or piezometric surface i.e. the water table marks the upper surface of groundwater systems.
Groundwater flow	The movement of water through openings and pore spaces in rocks below the water table, i.e. in the saturated zone.
Groundwater resource	Groundwater available for beneficial use, including human usage, aquatic ecosystems and the greater environment.
Groundwater vulnerability	The tendency or likelihood for contamination to reach a specified position in the groundwater system after introduction at some location above the uppermost aquifer.

Term	Definition
Habitat	The area or natural environment in which an organism or population normally lives. A habitat is made up of physical factors such as soil, moisture, range of temperature, and availability of light as well as biotic factors such as the availability of food resources and the presence of predators.
Habitat fragmentation	Discontinuities in an organism's preferred habitat.
Hazardous material	Substance that, if improperly treated, stored, disposed of, or otherwise managed, is likely to cause serious or material environmental harm because of (a) its quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity, or flammability, or (b) its physical, chemical, or infectious characteristics.
Heavy vehicle	Any vehicle with three or more axles or with dual tyres on the rear axle.
HERBRECS	Database maintained by the Queensland Herbarium that provides a list of specimens and collections for a specified search area.
Heritage listed	An item, building or place included on statutory heritage lists maintained by local, State and/or the Australian Government.
Heritage place	Any place that may be of cultural heritage significance, or any place with potential to contain archaeological artefacts that are an important source of information about Queensland's history.
Heritage precinct	A wider area that contains a number of historic and archaeological sites.
Heritage values	An object, site, area, or landscape that holds aesthetic, historic, scientific, social or spiritual value for past, present or future generations.
Heterogeneous regional ecosystem polygon	An area (polygon) comprising a mixture of regional ecosystems types; allows mapping of areas of vegetation that would normally be too small to map, to be shown at the scale which regional ecosystems are normally mapped.
High bank	The defining terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average annual peak flows in a watercourse.
High constraint area	The environmental value is at risk from the Project activity. The activity will only be allowed with a specific set of stringent mitigation measures.
High value regrowth	<p>According to the DNRME (2018), regulated regrowth vegetation includes vegetation that falls into one of the following categories:</p> <ul style="list-style-type: none"> ▶ Vegetation identified on a regulated vegetation map as High Value Regrowth vegetation (Category C; light blue) ▶ Vegetation located within 50 m of watercourses in priority reef catchment areas (Category R; yellow) ▶ Vegetation that is a Least concern, Of concern or Endangered RE. <p>High Value Regrowth vegetation is mature native vegetation that has not been cleared in the last 15 years.</p>
Highly erodible soils	Very unstable soils that are generally described as sodosols with hard-setting, fine sandy loam to silty clay loam surfaces (solodics, solodised solonetz and solonetz), soils with a dispersible layer located less than 25 centimetres deep or soils less than 25 centimetres deep.
Highway	High-order road of a high standard, facilitating connectivity between population centres.
Holocene	Holocene is the name of a geological time epoch commencing ~10,000 years ago and extending to present. Pre-Holocene is the time proceeding this epoch.
Homogeneous regional ecosystem polygon	An area (polygon) delineated on a map of regional ecosystems comprising a single regional ecosystem.
Hydraulic conductivity	Measure of the ease with which water will pass through earth material; defined as the rate of flow through a cross-section of one square metre under a unit hydraulic gradient at right angles to the direction of flow (metres per day).
Hydraulic gradient	Change in hydraulic head over a certain distance.
Hydraulic head	Elevation to which water will rise in a borehole connected to a point in an aquifer.

Term	Definition
Hydrogeology	The study of the interrelationships of geological materials and processes with water, especially groundwater.
Hydrograph	Graph that shows groundwater or surface water properties as a function of time.
Hydrology	The study of rainfall or runoff process.
Igneous rock	Rock formed from magma that has cooled and solidified either at the earth's surface (volcanic rock) or deep within the earth's crust (plutonic rock).
Impact	An event that alters ecosystem, community, or population structure and alters the physical environment, directly or indirectly. An impact may have a short or long duration.
Impermeable subsoil	Layer of soil below the topsoil that slows or stops infiltration.
Important habitat	Consists of habitat that: <ul style="list-style-type: none"> ▶ is used by a species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species, and/or ▶ is of critical importance to the species at particular life-cycle stages, and/or ▶ is used by a species that is at the limit of the species range, and/or ▶ is within an area where the species is declining.
In situ	Refers to on-ground.
Indirect economic impact	The flow-on value added generated in other sectors of the economy as a result of the demand stemming from a given event, organisation or industry.
Indirect impacts	Impacts that are not a direct result of Project activities but are encouraged to occur away from the original impact area via a complex pathway (e.g. soil disturbance during construction promoting weed and/or pest invasion that reduces habitat quality). In accordance with the EPBC Act, indirect impacts 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.
Infiltration	The downward movement of water from the atmosphere into the ground; not to be confused with percolation.
Infrastructure sustainability	Infrastructure that is designed, constructed and operated to optimise environmental, social and economic outcomes of the long term.
Initial advice statement (IAS)	Document prepared to provide preliminary information about the physical, ecological and socioeconomic environment of a project; for purposes of a 'coordinated project' declaration under the <i>State Development and Public Works Organisation Act 1971</i> (Qld).
Inland Rail Program (Inland Rail)	The Inland Rail programme encompasses the design and construction of a new inland rail connection between Melbourne and Brisbane, via Wagga, Parkes, Moree, and Toowoomba. The route for Inland Rail is about 1,700 km in length. Inland Rail will involve a combination of upgrades of existing rail track and the provision of new track.
Intergenerational equity	The principle of intergenerational equity is that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.
Intermediate input	Raw materials or semi-finished goods and services that are purchased from supply-industries and then used to produce other goods and services for final consumption.
Intermodal	The movement of freight using multiple modes of transport (rail, ship, truck) without handling of the freight itself when changing modes. For a railway this usually refers to the transport of freight in containers, which may be double-stacked on the wagons carrying them.
Intrusion	The solidified remnants of an igneous flow of rock into sedimentary strata.
Invertebrate	Animal without a backbone.

Term	Definition
Jurassic	The geologic period that extends from 201.3± 0.6 to 145± 4 million years ago. The period occurred within the Mesozoic era, following the Triassic and preceding the Cretaceous periods.
Kandosol	Non-texture contrast soils (with little or gradual increase in clay content with depth) that have weakly to non-structured subsoils (B horizons).
Kurosol	Soil type in which the B horizon is significantly more clayey in texture than the A horizon, the upper part of the B horizon being strongly acidic.
L₁₀	The sound pressure level exceeded for 10% of the measurement period. For 10% of the measurement period it was louder than the L ₁₀ .
L₁₀/L_{A10} (dB or dB(A))	The noise level equalled or exceeded for 10% of the measurement period. The L _{A10} is commonly used to approximate the average maximum sound or noise level.
L₉₀	The sound pressure level exceeded for 90% of the measurement period. For 90% of the measurement period it was louder than the L ₉₀ .
L₉₀/L_{A90} (dB or dB(A))	The noise level equalled or exceeded for 90% of the measurement period. The L _{A90} (in the absence of the noise source under investigation) is commonly used to approximate the background sound or noise level.
L_{A,10}	The A-weighted sound pressure level exceeded for 10% of the measurement period. For 10% of the measurement period it was louder than the L _{A,10} .
L_{A,90}	The A-weighted sound pressure level exceeded for 90% of the measurement period. For 90% of the measurement period it was louder than the L _{A,90} .
L_{A,max}	The A-weighted maximum sound pressure level measured over the measurement period.
L_{A,min}	The A-weighted minimum sound pressure level over the measurement period.
L_{A90(period)}	The sound pressure level exceeded for 90% of the measurement period.
Lacustrine	Of or relating to a lake. Term is commonly used in reference to soils and ecosystems.
L_{Aeq(15-hour)}	The daytime 'equivalent continuous noise level'—it represents the cumulative effects of all the proposal noise events occurring in the daytime period from 7am to 10pm.
L_{Aeq(1-hour)}	The busiest 1-hour 'equivalent continuous noise level' – it represents the typical L _{Aeq} noise level from all the proposal noise events during the busiest 1-hour of the assessment period.
L_{Aeq(24-hour)}	The 'equivalent continuous noise level', sometimes also described as the 'energy-averaged noise level'—it represents the cumulative effects of all the proposal noise events occurring in one day.
L_{Aeq(9-hour)}	The night-time 'equivalent continuous noise level'—it represents the cumulative effects of all the proposal noise events occurring in the night-time period from 10pm to 7am.
L_{Aeq(time)}	Typically used to described ambient (background) noise levels.
Lake	Permanent or ephemeral natural or artificial body of water of considerable size surrounded by land.
L_{Amax}	The maximum sound level recorded during the measurement period.
Land degradation	An adverse change in the characteristics of the Earth's surface that results in one or more of the following: soil erosion, rising water table, the expression of salinity, mass movement by gravity of soil or rock, stream-bank instability, or a process that results in declining water quality.
Land suitability	The capacity of land resources to sustain particular forms of land use such as cattle grazing, cropping, and forestry.
Landholder	The owner, occupier, manager, or controller of land or water, including anyone acting on their behalf.
Landscape	Landscape is an all-encompassing term that refers to areas of the earth's surface at various scales. It includes those landscapes that are: urban, rural, and natural; combining bio-physical elements with the cultural overlay of human use and values.

Term	Definition
Landscape and visual assessment	is an essential tool of reconciling development with landscape and scenic values and promoting better outcomes for our communities
Landscape Character Area	These are single unique areas and are the discrete geographical areas of a particular Landscape Character Type.
Landscape Character Type	Distinct types of landscape that are relatively homogeneous in character. They are generic in nature in that they may occur in different areas in different parts of the country, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical land use and settlement pattern
Landscape character zone	Areas of landscape that have similar topographic, vegetation and land use features that create areas of similar visual character. Landscape character units are smaller areas within landscape character zones, which have uniform vegetation, topography and land use that collectively make up the landscape patterns of the various landscape character zones.
Landscape feature	A component, part or feature of the landscape that is prominent or eye-catching, e.g. hills, buildings, vegetation.
Landscape quality	Largely subjective judgement based on particular characteristics that influence the way in which the environment is experienced, including special interests such as cultural associations or heritage interests, the presence and/or type of elements and condition.
L_{ASMax}	The A-weighted maximum sound pressure level with slow response.
L_{ASMax}	The A-weighted maximum sound pressure level with slow response.
Leaching profile	Vertical change in chemical concentrations down the soil profile due to leaching.
Least concern	Designated as Least concern under the VM Act. Refer to definition of VM Act conservation status for meaning of Least concern under the Act.
Least concern or no concern present	See: <i>Vegetation Management Act 1999</i> (QLD) (VM Act) conservation status.
Lentic	Non-flowing or still water.
L_{eq}/L_{Aeq} (dB or dB(A))	The constant sound pressure level that exhibits the equivalent acoustic energy of a fluctuating noise level. Otherwise known as the 'Energy-Average' sound level.
Level crossing	A place where rail lines and a road cross at the same elevation.
Level crossing protection	The level of control provided at level crossings, which is determined on a case by case basis, and depends on the particular characteristics of a crossing. It generally falls into two categories: <ul style="list-style-type: none"> ▶ passive protection (uses warning signage only) ▶ active protection (uses either signage and flashing lights only, or signage/flashing lights with boom gates).
Level of service	Defined by Austroads as a measure for ranking operating road and intersection conditions, based on factors such as speed, travel time, freedom to manoeuvre, interruptions, comfort and convenience.
Licence	Approval to operate; usually imposes conditions on authorised activities and is subject to regulations.
Licensed waste disposal facility	Facility approved under a development approval and operated by a holder of a registered certificate for environmentally relevant activity 75 under Schedule 1 of the <i>Environmental Protection Regulation 2008</i> (Qld).
LIDAR	A remote sensing method using light in the form of a pulsed laser to measure ranges.
Life cycle analysis	An analysis of the total environmental impact of a product or item including aspects of its existence from raw material production to ultimate disposal.
Light vehicle	Car, four wheel drive, motorcycle or car towing a caravan.
Likely maximum development scenario	Scenario for purposes of assessing the maximum impact of the proposed development.
Limit of reporting (LOR)	The smallest concentration at which the laboratory can quantify the presence of a particular parameter of interest. This is usually dictated by the test methodology.

Term	Definition
Linear infrastructure	Including but not limited to utilities (including low and high pressure gas and water transmission pipelines), power lines, communication, roads and access tracks.
Lithology	The physical character of rocks.
Litres per second (L/S)	A measurement of flow rate
L_{max}	The maximum sound pressure level measured over the measurement period.
L_{min}	The minimum sound pressure level measured over the measurement period.
Loam	Loose soil of clay and sand with organic matter, often very fertile.
Local road	Road used primarily to access properties located along the road.
Localised irrigation	Spray or low-pressure drip directed at a plant's base or root system.
Low frequency noise	Noise containing major components in the low-frequency range (20 to 250 hertz) of the frequency spectrum.
Magnitude of change	The extent of change that will be experienced by receptors. This change can be adverse or beneficial. Factors that could be considered in assessing magnitude are: the proportion of the view / landscape affected; extent of the area over which the change occurs; the size and scale of the change; the rate and duration of the change; the level of contrast and compatibility.
Major flood risk areas	Land that is at risk of being inundated during major floods.
Matters of local environmental significance (MLES)	A Matter of local environmental significance is a matter that is prescribed under a local planning instrument as a prescribed environmental matter. This includes MSES that are not prescribed environmental matters in urban areas (for example, remnant 'of concern' regional ecosystems) or "least concern" remnant vegetation.
Matters of national environmental significance (MNES)	<p>The nine MNES protected under the EPBC Act are:</p> <ul style="list-style-type: none"> ▶ World Heritage properties ▶ National Heritage places ▶ Wetlands of international importance (listed under the Ramsar Convention) ▶ Listed threatened species and ecological communities ▶ Migratory species protected under international agreements ▶ Commonwealth marine areas ▶ The Great Barrier Reef Marine Park ▶ Nuclear actions (including uranium mines). <p>A water resource, in relation to coal seam gas development and large coal mining development.</p>
Matters of state environmental significance (MSES)	<p>Matters of state environmental significance (MSES) are a component of the biodiversity state interest that is defined under the State Planning Policy (SPP). MSES includes certain environmental values that are protected under Queensland legislation including the:</p> <ul style="list-style-type: none"> ▶ <i>Nature Conservation Act 1992</i> ▶ <i>Fisheries Act 1994</i> ▶ <i>Environmental Protection Act 1994</i> ▶ <i>Vegetation Management Act 1999</i> ▶ Legally secured offset areas protected by a registered covenant or similar statutory mechanism.
Median	The middle value of a discrete series.
Megalitres (ML)	A unit of measure of fluid, indicating equivalence of 1,000,000 litres
Mesa	An elevated area of relatively level land, surrounded by steeper slopes or cliffs and smaller in extent than a plateau.
Mesozoic	The geological era from ~250 million to ~65 million years ago. It is the era between Palaeozoic and Cainozoic.
Meteorological	Relating to meteorology or to phenomena of the atmosphere or weather.
Micro Siemens per centimetre (µscm⁻¹)	A unit of electrical conductivity which is calculated as a dimension of mass, length, time and electric current and is a measurement of electrical conductivity, which is dependent on concentration of ion in solution.

Term	Definition
Microchiropteran bats	This report uses the term microchiropteran bats to refer to small mostly insectivorous bats that use echolocation to navigate and find food.
Micrograms per litre (μgL^{-1})	A measurement of mass concentration (as one part per billion) within a litre of a certain mixture (in this instance freshwater).
Migratory species	Species listed as 'migratory' under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth); refer to definitions of <i>Environment Protection and Biodiversity Conservation Act 1999</i> conservation status, for meaning of 'migratory' under the Act.
Milligrams per litre (mgL^{-1})	A measurement of mass concentration (as one part per million) within a litre of a certain mixture (in this instance freshwater).
Mitigation	To appropriately protect and maintain the existing environment in accordance with relevant legislation and best-management principles; taken to have the same meaning as management.
Mitigation	Measures to avoid, reduce and manage identified potential adverse impacts.
MODHMS	Modelling software providing a physically based, spatially distributed, integrated surface/subsurface modelling framework hydrologic system.
Monitoring bore	A bore used to monitor groundwater levels or quality, often containing a piezometer.
Morphology	Form and structure of organisms without consideration of function.
Mound (hydrogeology)	The surface representing the rise in water table or potentiometric surface caused by the injection of water.
Mudstone	A clayey rock of nearly uniform texture throughout, with little or no lamination.
Narrow gauge	Railway track gauge of 1,067 mm; used in Queensland except on the interstate line from Sydney to Brisbane.
National Environment Protection Measure (NEPM)	Broad framework-setting statutory instruments defined under the <i>National Environment Protection Council Act 1994</i> (Cth); outlines agreed national goals, standards, protocols, and guidelines for protecting or managing particular aspects of the environment.
National Park	Land reserved for a National Park, National Park (Scientific), Conservation Park or Resource Reserve.
Native Title	The legal recognition of some Indigenous people's rights and interests to land and water that comes from their traditional laws and customs under the <i>Native Title Act 1993</i> (Cth); bestows different rights to the holders. In cases where the land was Crown land, it may include the right to possess and occupy an area to the exclusion of others.
Natural resource	Resource that occurs naturally, including but not limited to sunlight, wind, soil, or water.
Naturalness and ecological condition	The apparent naturalness or health/condition of an ecological community, as assessed against the following criteria: <ul style="list-style-type: none"> ▶ Disturbance—described in terms of its cause (natural or human), its degree or severity, its extent and distribution within the community ▶ Weed content—description of species abundance, horizontal and vertical distribution of each species ▶ Ecological viability—measure of a community's ability to survive in the longer term ▶ Ecological health—measure of regeneration, size, structure and number of dead or dying plants within a community ▶ Ecological relationships—the sequential relationship of one community to another, such as diurnal systems.

Term	Definition
Nature Conservation Act 1992 (Qld) conservation status	<p>Under the NC Act, 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. <p>Native wildlife may be prescribed as least concern wildlife even if:</p> <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.
Near threatened	Designated as Near threatened under the NC Act. Refer to definition of NC Act conservation status for meaning of Near threatened under the NC Act. Capitalisation of the term Near threatened in this report refers to those species listed as such under the NC Act.
Negative impact	An impact that is considered to result in an unfavourable or adverse change to the receptor.
Net present value (NPV)	The financial worth of a series of cash flows occurring over time, discounted to reflect the total dollar value in today's terms.
Nitrogen dioxide	An air pollutant, high concentrations of which can contribute to acid rain, eutrophication of watercourses and formation of photochemical smog.
No concern at present	<p>An RE is listed as 'least concern' under the VM Act if:</p> <ul style="list-style-type: none"> ▶ remnant vegetation is over 30% of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000ha. <p>In addition to the criteria listed for 'least concern' regional ecosystems under the VM Act, for biodiversity planning purposes (under the EP Act) a regional ecosystem is listed with a biodiversity status of 'no concern at present' if:</p> <ul style="list-style-type: none"> ▶ the degradation criteria listed above for 'endangered' or 'of concern' regional ecosystems are not met.

Term	Definition
No habitat present	The presence of habitat to support self-sustaining populations of a species is absent.
Non-bulk freight	Non-bulk freight is generally characterised as any containerised, packaged or other unitised freight, such as: pallets; motor vehicles and trailers; laden transported vehicles and live animals. It is generally placed or lifted onto or into transport vehicles or holds. It often involves heterogeneous goods being moved between dispersed locations. Non-bulk freight varies in density, perishability and fragility.
Non-remnant vegetation	Vegetation that is not mapped as remnant vegetation by DES and/or which fails to meet DESs criteria for remnant vegetation (refer definition of remnant vegetation, below). This includes regrowth, heavily thinned or logged vegetation and significantly disturbed vegetation that fails to meet the structural and/or floristic characteristics of remnant vegetation. It also includes urban and cropping land. Non-remnant vegetation may retain significant biodiversity values (Neldner et al., 2012).
Notifiable activity	An activity that could potentially result in land contamination.
Noxious	Harmful to the environment or ecosystem.
Of concern	Designated as Of concern under the VM Act. Refer to definition of VM Act status for meaning of 'Of concern' under the Act.
Oxidation	The addition of oxygen to a compound; entails the loss of an electron.
Oxides of nitrogen	Nitric oxide and nitrogen dioxide.
Palaeontology	The study of fossils to determine the structure and evolution of extinct animals and plants.
Particulate matter	Particles (e.g. dust, vapour) that are introduced or resuspended into the air through certain activities, such as soil cultivation or vehicles operating on open fields or dirt roadways. PM ₁₀ is particulate matter 10 micrometres or less in diameter. PM _{2.5} is particulate matter 2.5 micrometres or less in diameter; generally described as fine particles.
Passive control (level crossings)	Where the movement of vehicular or pedestrian traffic across a railway crossing is controlled using signs or devices that are not activated by the approach or passage of a train, relying on the road user to detect the approach or presence of a train by direct observation
Peak particle velocity (PPV)	A measure of ground vibration magnitude, PPV is the maximum instantaneous particle velocity at a point during a given time interval in mm/s.
Perched groundwater systems	A locally developed, water saturated body located above the regional water table due to the presence of an underlying layer of low permeability.
Perennial	Lasting for an indefinite amount of time.
Perennial watercourse	A watercourse that has continuous flow in parts of its stream bed all year round during years of normal rainfall.
Permanent impact	The impact will last indefinitely.
Permanent operational disturbance footprint	The areas of the project that will be permanently and directly impacted by the operation of the rail line and associated facilities. Also known as the permanent footprint.
Permeability	The ease with which a fluid can pass through a porous medium and is defined as the volume of fluid discharged from a unit area of an aquifer under unit hydraulic gradient in unit time (metres per day). Likewise, the ease at which fauna can traverse through habitats and barriers.
Permian	Geological period from approximately ~300 million years ago to ~251 million years ago. The Permian period occurred between the Carboniferous period and Triassic period.
Pest	Means any species: <ul style="list-style-type: none"> ▶ Listed as Prohibited or Restricted under the <i>Biosecurity Act 2014</i> ▶ Declared under local government local laws ▶ That may become invasive in the future.
PET richness	The richness of pollution-sensitive invertebrate taxa Plecoptera (stoneflies), Ephemeroptera (mayflies) and Trichoptera (caddisflies) within an area.

Term	Definition
Pfafstetter coding system	A descriptive mechanism for the description of watershed/basin topology.
pH	The absolute value of the decimal logarithm of the hydrogen-ion concentration (activity), used as an indicator of acidity (pH less than 7) or alkalinity (pH greater than 7) or neutrality (pH 7).
Photochemical	Produced by the action of light triggering a chemical process.
Photochemical smog	Air pollution formed by chemical reactions that take place in the presence of sunlight between mono-nitrogen oxides and volatile organic compounds, which form ground-level ozone.
Photomontages/ Visualisations	A visual representation of a proposal from a particular receptor viewpoint, on a photographic base. The methodology for the preparation of any photomontage and its accuracy should be defined.
Pioneer line	Rail lines constructed to a lesser standard than main rail lines, providing access to mainly agricultural areas.
PM₁₀	Particulate matter 10 micrometres or less in diameter. Particles in this size range make up a large proportion of dust that can be drawn deep into the lungs. This is a classification of particles by size rather than chemical properties.
Pollution	The introduction into the environment of any substance by the action of humans, which results in significant harmful effects to man or the environment.
Possession	A period of time during which a rail line is blocked to trains to permit work to be carried out on or near the line.
Precautionary principle	The precautionary principle stipulates that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
Preferential flow	Movement of groundwater through a pathway of more permeable zones in the subsurface.
Prescribed ERA	A prescribed ERA is an environmentally relevant activity prescribed under Section 19 of the <i>Environmental Protection Act 1994</i> (Qld).
Primary view zone	Critical part of a view zone of significance to a homestead; part of a view that is within a horizontal arc of 300° either side of the centre line of a view and a vertical arc of 300° above the horizontal; seen with the greatest clarity.
Priority agricultural area	A priority agricultural area includes one or more areas used for a priority agricultural land use, whether it also includes other areas or features and is either shown on a map in a regional plan as a priority agricultural area or prescribed under a regulation according to the <i>Regional Planning Interests Act 2014</i> (Qld).
Priority living area	A priority living area is an area shown on a map in a regional plan as a priority living area and that includes the existing settled area of a city, town or other areas necessary or desirable for the future growth of the existing settled area or as a buffer between the existing or future settled area and resource activities. This is defined under the <i>Regional Planning Interests Act 2014</i> (Qld).
Project	The Inland Rail Gowrie to Helidon Project.
Project cumulative impact area	The Inland Rail Project cumulative impact area encompasses the Inland Rail EIS disturbance footprint and extends 50 km beyond the EIS disturbance footprint boundary.
Project disturbance footprint	The Project disturbance footprint is the area subject to direct disturbance (both temporary and permanent) associated with the project.
Putrescible waste	Refuse or other discarded material that is liable to become putrid or rotten through decay or decomposition.
Qualitative	Relating to or concerned with quality or qualities, rather than quantity or measured value.
Quantitative	An assessment based on quantities or quantifiable data.
Quaternary	The geological time period beginning ~2 to ~3 million years ago and extending to present; encompasses the Pleistocene and Holocene time epochs.

Term	Definition
Rail alignment	The exact positioning of the track, accurately defined both horizontally and vertically, along which the rail vehicles operate.
Rail corridor	The corridor within which the rail tracks and associated infrastructure are located.
Rail level	The theoretical level of the running surface of the rails.
Ramsar wetland	An area designated as a wetland of international importance under the <i>Ramsar Convention</i> (also known as the <i>Convention on Wetlands of International Importance</i> signed by Australia in 1971) because of its role in preserving biological diversity, or because it is a representative, rare or unique wetland type.
Rare	Defined as 'not occurring very often'.
Rating background level (RBL)	The overall background level for each day, evening and night period for the entire length of noise monitoring.
Raw water	Untreated water from the environment.
Receptor	That part of the environment that may be the recipient of environmental harm; receptors may include houses, schools, hospitals, surface waters, land, and ecosystems.
Recharge	Recharge is defined as the process by which water is added from outside to the zone of saturation of an aquifer, either directly into a formation, or indirectly by way of another formation.
Refugial pool	A pool of permanent water contained either within a watercourse, or on the floodplain of a watercourse, that persists when surrounding aquatic habitats become dry. Refugial pools are places where aquatic fauna can persist during dry periods (dry seasons through to droughts) and therefore enable recolonising of other aquatic habitats following rain.
Region	A bioregion as defined in An Interim Biographic Regionalisation of Australia (Thackway and Cresswell, 1995). The region subject to this report is the south east Queensland bioregion
Regional connecting road	High-order road of a high standard, facilitating connectivity between townships.
Regional ecosystem	A vegetation community, within a bioregion, that is consistently associated with a particular combination of geology, landform and soil. Regional ecosystems may be classified under schedules 1–3 of the <i>Vegetation Management Regulation 2012</i> (Qld) as endangered, of concern or least concern. Refer to <i>Vegetation Management Act 1999</i> (Qld) <i>conservation status</i> for meaning of endangered, of concern and least concern under the Act.
Registered groundwater bore	Groundwater bore that is recorded in the Queensland Department of Resources database.
Regrowth vegetation	Defined under the <i>Vegetation Management Act 1999</i> (Qld) as any vegetation that does not reach 70% of the height of an equivalent community of undisturbed vegetation, or 50% of what would be undisturbed foliage cover and a mix of species represented in undisturbed communities.
Regulated waste	Refuse or other discarded material, whether treated or immobilised, listed in schedule 7 of the <i>Waste Reduction and Recycling Regulation 2011</i> (Qld).
Regulatory framework	System of regulations and the means to enforce them, usually established by a government to regulate a specific activity.
Rehabilitation	Returning the land to its pre-disturbance state or providing the foundations for the land to return to its pre-disturbance state.
Relative humidity	The amount of water vapour in the air relative to the saturation point at a given temperature.
Remediation	Removal of pollution or contamination from the environment to restore to health; requires that impact is reduced to some acceptable level.
Remnant vegetation	Remnant woody vegetation is defined as vegetation where the dominant canopy has >70% of the height and >50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy (Neldner et al., 2012).
Reserve (tenure)	Land reserved by the Department of Resources for community or public purposes.

Term	Definition
Residual impact	The effect remaining or left over following implementation of mitigation measures.
Revegetation	Establishment of suitable plant species to support the agreed post project land use and stabilise soils.
Riffle zone	An area within a stream that is characterised by shallow water, rocky sediment and fast water flows.
Rilling	Type of erosion that removes soil by water from very small but well-defined, visible channels.
Riparian	Situated along or near the bank of a waterway.
Riparian land	Any land which adjoins, directly influences, or is influenced by a body of water. The body of water can be a creek or stream, a river, a lake or a wetland.
Riverine	Of or relating to a river.
Riverine area	The land confined to the flood-flow channel of a watercourse.
Road link	A section of public road, typically referring to a road excluding intersections.
Route	A primary description of the path which a railway will follow.
Rudosol	Soil types with rudimentary pedologic organisation apart from a minimal A horizon.
Runoff	All surface and subsurface flow from a catchment, but in practice refers to the flow in a river i.e. excludes groundwater not discharged into a river.
Rural access road	Low-order road predominantly facilitating access to local land users.
Rural connecting road	Lower-order road facilitating connectivity between higher-order roads.
Saline	Presence of salts, in water or spoil, at concentrations greater than 3,000 milligrams of total dissolved solids per litre.
Saline water	Water that is generally considered unsuitable for human consumption or for irrigation because of its high content of dissolved solids.
Salinity	Refers to the amount of salt present in the soil or aquatic solution,
Sanitation	The treatment and disposal of waste from the human body and grey water generated through household activity.
Scarp	A steep slope, ridge or escarpment of rock.
Scenic amenity	A measure of the relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public. (Department of Natural Resources, 2001).
Scope 1 emissions	A term used to define greenhouse gas emissions as a direct result of an activity, or series of activities (including ancillary activities) that constitute the facility. Examples of these would be: <ul style="list-style-type: none"> ▶ Manufacturing processes, such as gas emitted while making cement ▶ Transportation of materials, products, waste and people, such as a transport company burning diesel oil in its trucks.
Sensitive environmental receptor	A sensitive environmental receptor is a feature, area, structure or grouping that may be affected by direct or indirect changes to the environment. For the purposes of this assessment, sensitive environmental receptors are those that constitute MNES or MSES. Note that only MNES that have not been identified as a controlling provision of the project (e.g. migratory species) have been included within this technical document. MNES associated with the EPBC Act controlling provisions (i.e. EPBC Act listed threatened species and communities) are addressed in a separate stand-alone MNES technical report.
Sensitive receivers	Land uses which are sensitive to potential noise, air and visual impacts, such as residential dwellings, schools and hospitals.
Sensitivity	The sensitivity of a landscape character area or view and its capacity to absorb change. In the case of visual impact this also relates to the type of viewer and number of viewers.
Shallow groundwater	Groundwater resources not deeper than 100 metres.

Term	Definition
Significant impact	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 that is impacted, and on the intensity, duration, magnitude and geographic extent of the impacts.
Significantly disturbed land or significant disturbance to land	Means disturbance to land as defined in section 28 of the <i>Environmental Protection Regulation 2008</i> (Qld).
Siltstone	Consolidated silt; fine-grained sedimentary rock.
Social impact management plan (SIMP)	Document that details how social impact management strategies will be implemented.
Sodic	Of or relating to soils that have a high level of sodium.
Sodicity	The amount of sodium present.
Soil horizon	One of the series of distinct layers found in a vertical cross-section of any well-developed soil, grouped primarily into O, A, B, and C horizons.
Soil profile	Vertical section through all the constituent horizons, or relatively uniform layers, of a soil.
Sound	Vibration of the air, usually within the frequency range perceptible to normal human hearing but is (strictly) vibration of air at any frequency.
Sound pressure level – SPL (dB or dB(A))	Sound pressure is the measure of the level or loudness of sound. Like sound power level, it is measured in logarithmic units. The symbol used for sound pressure level is SPL, and it is generally specified in decibels (dB). Zero decibels is taken as the threshold of human hearing.
Spatial extent	Impacts are considered with respect to the biologically meaningful spatial extents of local, regional, state, and national/international
Special least concern	<p>Fauna: Means the following—</p> <ul style="list-style-type: none"> ▶ The Short-beaked echidna (<i>Tachyglossus aculeatus</i>) and Platypus (<i>Ornithorhynchus anatinus</i>) ▶ Non-threatened migratory bird species listed under the EPBC Act. <p>Flora: A category for flora and as prescribed by Schedule 3A of the Nature Conservation (Wildlife Management) Regulations 2006.</p>
Species credit	The class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates. Species that require species credits are listed in the threatened species profile database.
Spoil	Material generated by construction.
Stakeholder	Person or group affected by or concerned with an issue or enterprise. Also see: <i>affected person</i> .
Standard gauge	Railway track gauge of 1,435 mm; used on the ARTC network and for the NSW railway system.
State forest	Land reserved for state forest purposes.
State land	Land held by the State of Queensland as Unallocated State Land and other areas vested in the State (or Crown) but not held in Fee Simple or as a lease issued under the <i>Lands Act 1994</i> (Qld).
State wildlife corridor	An area identified as a state wildlife corridor on a map certified by the chief executive of Queensland Department of Environment and Science for the purposes of the <i>Vegetation Management Act 1999</i> (Qld).
State-controlled road	Road declared to be controlled by the Department of Transport and Main Roads, including all AusLink national roads in Queensland.
Statutory guideline	A document that provides direction for implementing the intent of legislation.
Stock route network	The network of facilities established to provide for the movement of livestock on foot between grazing areas and markets. The network includes areas for stock to travel along (often within existing road corridors, adjacent to roadways) and areas for livestock to rest overnight, as well as watering facilities and holding yards.

Term	Definition
Stockpile	Large supply of essential materials, held in reserve for later use.
Strahler stream order	Classification system that gives a waterway an 'order' according to the number of tributaries associated with it.
Strata	Single bed of sedimentary rock, generally consisting of one kind of matter representing continuous deposition.
Strategic cropping area (SCA)	Lands specifically identified as suitable for cropping as an ongoing land use based on the criteria outlined within the <i>Regional Planning Interests Act 2014</i> .
Strategic Environmental Area (SEA)	A strategic environmental area contains one or more environmental attributes for the area and is either shown on a map in a regional plan or prescribed under a regulation as per the definition provided in the <i>Regional Planning Interests Act 2014</i> (Qld).
Stratigraphy	Branch of geology dealing with the classification, nomenclature, correlation and interpretation of stratified rocks.
Stream order	A measure of the relative size of a waterway.
Structure gauge	Specification for the position of structures such as overhead bridges, tunnels and platforms relative to a railway track to allow adequate clearance for the passage of trains.
Study area	The study area is defined as the wider area including and surrounding the proposal site, with the potential to be directly or indirectly affected by the proposal (for example, by noise and vibration, visual or traffic impacts). The actual size and extent of the study area varies according the nature and requirements of each impact assessment technical report.
Subgrade	The soil or rock levelled off to support the foundation of a structure.
Subsoil	The B horizon within the soil profile, which lies immediately below the topsoil, or A horizon; it is not enriched or is less enriched with organic material than the topsoil and may be subject to clay or salt accumulation.
Sulfur dioxide	Toxic gas found in the emissions of volcanoes and those of burning coal or petroleum; dissolves in water to form sulfurous acid and, in the presence of oxygen, sulfuric acid.
Super T girder	A concrete bridge girder that is fully pretensioned, prestressed, and precast, and which incorporates the structural function of a box girder with permanent formwork in the deck.
Surface water quality receptor	Aspects of particular surface water quality values throughout the water quality study area. Sensitivity of the receptor is based on ecological values associated with intersecting watercourses (and related values).
Temporary construction disturbance footprint	The area that would be directly affected by construction works (also known as the construction footprint). It includes the location of proposal infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites etc, that would be used to construct that infrastructure. Also known as the temporary disturbance footprint.
Terms of reference (ToR)	Written document developed by the regulatory authority (i.e. Queensland Coordinator-General) that provides the minimum expectations for the scope of an environmental impact statement.
Terrestrial	Relating to, consisting of, or representing the Earth; relating to the land as distinct from the water.
The Air Pollution Model	Three-dimensional prognostic meteorological model used for air pollution modelling developed by the Commonwealth Scientific and Industrial Research Organisation.
Threatened	A collective term used with reference to species that are listed as Critically endangered, Endangered or Vulnerable under the provisions of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act) (refer EPBC Act conservation significance for more details)).
Threatened species	Generic term for a plant or animal species listed as critically endangered, endangered, vulnerable or rare under either State or Commonwealth threatened species legislation. The terms 'threatened' and 'conservation significant' are interchangeable in this context.

Term	Definition
Threatening process	Processes that threaten, or have the capability to threaten, the survival or evolutionary development of species, populations, or ecological communities. According to the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth), a process can be listed as a key threatening process if it can: <ul style="list-style-type: none"> ▶ cause a native species or ecological community to become eligible for inclusion in a threatened list (other than the conservation dependent category) ▶ cause an already listed threatened species or threatened ecological community to become more endangered ▶ adversely affect two or more listed threatened species or threatened ecological communities.
Track	The structure consisting of the rails, fasteners, sleepers and ballast, which sits on the formation.
Track formation	Refer to the definition of formation.
Travelling stock routes	Travelling stock routes and reserves are parcels of Crown land reserved under the <i>Crowns Lands Act 1989</i> for use by travelling stock.
Triassic	The geological time period extending from ~250 to ~200 million years ago. It is the earliest period of the Mesozoic era and occurred between the Permian and Jurassic periods.
Tributaries	A tributary is a stream or river which flows into another river (a parent river) or body of water but which does not flow directly into the sea.
Trigger level	The point at which some form of action is begun, such as exceedance of guidelines.
Tuffaceous	Tuffaceous material is a type of rock made of volcanic ash ejected from a vent during a volcanic eruption. Following ejection and deposition, the ash is compacted into a solid rock in a process called consolidation.
Turbid	Opaque or muddy liquid with particles of extraneous matter.
Turnout	A junction point where a rail vehicle can leave a given track for a branching or parallel track.
Unconfined aquifer	An aquifer with no confining layer between the water table and the ground surface where the water table is free to fluctuate.
Unconsolidated aquifer	Strata such as sand that has not been turned into rock.
Unweighted (linear) decibel	Unfiltered measured noise level are quantified by unweighted or linear decibels. These units are abbreviated as dB(Z) or dB(linear)
Value added	The difference between the sale price and the production cost of a good or service.
Values	Any aspect of landscape or views people consider to be important. Landscape and visual values may be reflected in local, State or federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed.
Vegetation Management Act 1999 (Qld) conservation status	Under the VM Act, REs may be classified as either Endangered, Of concern or Least concern. Definitions of these terms under the Act are provided below: <p>Endangered</p> <ul style="list-style-type: none"> ▶ Less than 10% of pre-clearing extent of remnant vegetation (see following definition) exists in the bioregion, or 10% to 30% of pre-clearing extent remains and the remnant vegetation is less than 10,000 ha. <p>Of concern</p> <ul style="list-style-type: none"> ▶ 10% to 30% of pre-clearing extent of remnant vegetation exists in the bioregion, or more than 30% of pre-clearing extent remains and the remnant vegetation is less than 10,000 ha. <p>Least concern</p> <ul style="list-style-type: none"> ▶ More than 30% of pre-clearing extent of remnant vegetation exists in the bioregion, and it is greater than 10,000 ha. <p>In addition, for biodiversity planning purposes DEHP also classifies a RE as No concern at present if the degradation criteria listed above for Endangered or Of concern REs are not met.</p>

Term	Definition
Vehicle kilometres travelled	Measure of traffic demand, calculated as the length of a section of road in kilometres multiplied by the annual average daily traffic on it. The yearly vehicle kilometres travelled is the daily vehicle kilometres travelled multiplied by the number of days in that year.
Velocity	The speed at which the waters are moving.
Vertosol	Soil type that is clayey and cracks when dry; its alternate shrinking and swelling produces gilgais.
View	Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.
Viewpoint	The specific location of a view, typically used for assessment purposes.
Viewshed	Areas visible from a particular location (may be modelled or field-validated).
Visual absorption capacity	Potential for a landscape or scene to absorb a particular change without a noticeable loss of valued attributes.
Visual amenity	The value of a particular area or view in terms of what is seen.
Visual audience	Groups of visual receptors with common attributes and sensitivities to changes in views (e.g. residents, golfers, road travellers, walkers, shoppers, beach goers, farmers, recreational users).
Visual catchment	Areas visible from a combination of locations within a defined setting (may be modelled or field-validated).
Visual character unit	Areas of landscape that have similar topographic, vegetation and land use features that create areas of similar visual character.
Visual effect	A measure of the visual interaction between the Project and the landscape setting within which it is located.
Visual impact	The impacts on the views from residences, workplaces and public places of both visual sensitivity and visual effect that considered together determines the visual impact of a development. This can be positive (i.e. benefit or an improvement) or negative (i.e. adverse or a detraction).
Visual sensitivity	Degree to which a change to the landscape will be perceived in an adverse way.
VM Act conservation status	Under the VM Act, REs may be classified as either Endangered, Of concern or Least concern. Definitions of these terms under the Act are provided below Endangered <ul style="list-style-type: none"> ▶ Less than 10% of pre-clearing extent of remnant vegetation (see following definition) exists in the bioregion, or 10% to 30% of pre-clearing extent remains and the remnant vegetation is less than 10,000 ha. Of concern <ul style="list-style-type: none"> ▶ 10% to 30% of pre-clearing extent of remnant vegetation exists in the bioregion, or more than 30% of pre-clearing extent remains and the remnant vegetation is less than 10,000 ha Least concern <ul style="list-style-type: none"> ▶ More than 30% of pre-clearing extent of remnant vegetation exists in the bioregion, and it is greater than 10,000 ha. In addition, for biodiversity planning purposes EHP also classifies a RE as No concern at present if the degradation criteria listed above for Endangered or Of concern REs are not met.
Volatile organic compound (VOC)	Any organic compound that participates in atmospheric photochemical reactions.
Vulnerability	The extent to which a system, asset or organisation can cope with the negative impacts of climate change, variability and extremes. It is a function of risk and adaptive capacity.
Vulnerable	Designated as Vulnerable under the EPBC Act. Refer to definitions of EPBC Act conservation status for meaning of Vulnerable under this Act.

Term	Definition
Waste	Waste is defined by the EPA as any matter (whether liquid, solid, gaseous or radioactive) that is discharged, emitted or deposited in the environment in such volume, constituency, or manner as to cause an alteration to the environment.
Waste management hierarchy	The waste management hierarchy is a set of priorities for the efficient use of resources, which underpins the objectives of the Waste Avoidance and Resource Recovery Act 2001. The waste management hierarchy progresses from avoidance (most preferred), to re-use/recycling, to disposal (least preferred).
Water management facility	The collective term to refer to the major infrastructure components involved in water storage and treatment.
Water Quality Objectives (WQOs)	Long terms goals for water quality management. Generally, indicators of criteria for receiving waters to protect relevant EVs.
Water quality study area	The water quality study area was based on a 1 km buffer extending horizontally from either side of the Project alignment, as such, increasing the extent where multiple design options exist. The water quality study area was established to delineate the spatial extent of potential intersection of water sources with temporary and permanent impact footprints of the Project.
Water resource	Water, or the rights or other claims to water, which the water report entity either holds, or for which the water report entity has management responsibilities, and from which an individual or organisation that is a water report entity, or a group of stakeholders of a physical water report entity, derives future benefits (as defined in <i>Exposure Draft of Australian Water Accounting Standard 1 (2010)—Water Accounting Standards Board</i>).
Water table	The surface in an unconfined aquifer or confining bed at which the pore water pressure is atmospheric; it can be measured by installing shallow wells extending a few feet into the zone of saturation and then measuring the water level in those wells.
Watercourse	<p>A river, creek, or other stream, including a stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events:</p> <ul style="list-style-type: none"> ▶ In a natural channel, whether artificially modified or not, or ▶ In an artificial channel that has changed the course of the stream. <p>It also includes weirs, lakes and dams.</p>
Waterlogging	The saturation of soil by soil water.
Watershed	Drainage basin.
Waterway	A flow path that may operate during times of surface runoff. Generally, the flow path will have a defined cross-sectional shape.
Waterway for waterway barrier works	Waterway barrier works encompasses any instream artificial structure that intersect a waterway including culverts, bridges, bed level crossings, causeways, tidal or flood gates, partial bunds, temporary waterway barriers, silt curtains, netting and screens, levee banks, litter booms, trash racks and riffle structures.
Weeds	<p>Plant species that invade native ecosystems and can adversely affect the survival of indigenous flora and fauna, often competing with indigenous plants for resources such as nutrients, moisture and light. They can prevent natural regeneration, reduce wildlife habitat, alter water flows, increase soil erosion, introduce poisons into the soil or poison animals, change fire behaviour and may introduce foreign genes into local plant populations.</p> <p>Weed species are not necessarily exotic non-indigenous species, but can also be non-endemic natives that are naturalised to areas outside of their natural distribution.</p>

Term	Definition
Weeds of National Environmental Significance (WoNS)	<p>Thirty-two species of weeds are declared to be weeds of national significance, based on their invasiveness, potential for spread and environmental, social and economic impacts.</p> <p>The State Government is responsible for the legislation and administration of WoNS in Queensland and landholders are responsible for managing WoNS.</p> <p>The Australian Weeds Strategy provides a framework for establishing consistency between all stakeholders and identifies priorities for national weed management with the aim of minimizing the environmental, social and economic impacts of weeds. A National Management Group has been established for each of the WoNS to manage the implementation of the respective National Strategic Plans.</p>
Wetland	<ul style="list-style-type: none"> ▶ Areas shown on the Map of Referable Wetlands which is a document approved by the chief executive on 4 November 2011 and published by the department, as amended from time to time by the chief executive under section 144D of the Environmental Protection Regulation 2008 (Qld); and ▶ Are wetlands as defined under the Queensland Wetlands Program as areas of permanent or periodic/intermittent inundation, with water that is static or flowing fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed 6 m, and possess one or more of the following attributes: <ul style="list-style-type: none"> ▶ At least periodically, the land supports plants or animals that are adapted to and dependent on living in wet conditions for at least part of their lifecycle; or ▶ The substratum is predominantly undrained soils that are saturated, flooded or ponded long enough to develop anaerobic conditions in the upper layers; or ▶ The substratum is not soil and is saturated with water, or covered by water at some time.
Wetland of high ecological significance	<p>Otherwise known as a high conservation value wetland, is a wetland that meets the definition of a wetland (above) and that is shown as a wetland of high ecological significance or high conservation value wetland on the <i>Map of Referable Wetlands</i>.</p>
Wildlife corridor	<p>Habitat linked to other habitats (often remnant patches) to allow natural migration or movement of wildlife.</p>
Yield (hydrogeology)	<p>Yield is a measure of how much and how quickly groundwater. It is stored in and can flow through layers known as aquifers and can be extracted from an aquifer.</p>
Z-Weighted	<p>'Flat' or 'un-weighted' sound pressure levels designated as dB[Z].</p>