

CHAPTER

25

INLAND
RAIL 

Abbreviations and glossary

HELIDON TO CALVERT ENVIRONMENTAL IMPACT STATEMENT

**ARTC**

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 Abbreviations and glossary

25.1 Units of measurement

Abbreviation	Definition
%	per cent
°C	degrees Celsius
µm	micrometre
µg/L	micrograms per litre
µg/m ³	micrograms per cubic metre
µs/cm	microsiemens per centimetre
CO ₂ e	carbon dioxide equivalent
dB	decibel ratio (a unit of sound level measurement)
dBA or dB(A)	A-weighted decibel (a unit of sound level measurement)
dBm	decibel per metre
dBV	vibration expressed as decibels (referenced level 1 nanometres/second)
dS/m	deciSiemens per metre
ha	hectare
Hz	hertz
kg	kilograms
kg/m	kilograms per metre
kL	kilolitre
km	kilometres
km/hour	kilometres per hour
km ²	square kilometres
kt	kilotonne
kV	kilovolt
kW	kilowatt
kWhr	kilowatt hours
L	litre
L/m ³	litres per cubic metre
L ₁₀	The sound pressure level exceeded for 10 per cent of the measurement period. For 10 per cent of the measurement period it was louder than the L ₁₀ .
L ₉₀	The sound pressure level exceeded for 90% of the measurement period. Typically used to described ambient (background) noise levels.
LA _{10(1 hour)}	The A-weighted sound pressure level that is exceeded for 10% of the measurement period (1 hour)
LA _{10(18 hour)}	The arithmetic average of the LA ₁₀ from 6.00 am to 12.00 am
LA _{eq(1 hour)}	The busiest 1-hour 'equivalent continuous noise level'. It represents the typical LA _{eq} noise level from all the proposal noise events during the busiest 1-hour of the assessment period.
LA _{eq(9 hour)}	The equivalent 'continuous sound level' for the 9-hour daytime period of 10.00 pm to 7.00 am

Abbreviation	Definition
$L_{Aeq(15\text{ hour})}$	The daytime 'equivalent continuous noise level'—it represents the cumulative effects of all the proposal noise events occurring in the daytime period from 7.00 am to 10.00 pm
$L_{Aeq(24\text{ hour})}$	The 'equivalent continuous noise level', sometimes also described as the 'energy-averaged noise level'—it represents the cumulative effects of all the proposed noise events occurring in one day
$L_{Aeq(\text{time})}$	The equivalent continuous sound level for a defined time period
L_{Amax}	The maximum sound level during the measurement or assessment period. The L_{AFmax} or 'Fast' is averaged over 0.125 of a second and the L_{ASmax} or 'Slow' is averaged over 1 second.
L_{eq}/L_{Aeq} (dB or dB(A))	Equivalent continuous sound level representing the constant sound pressure level that exhibits the equivalent acoustic energy of a fluctuating noise level. Otherwise known as the 'average' sound level.
L_{max}	The maximum sound pressure level measured over the measurement period
L_{min}	The minimum sound pressure level measured over the measurement period
m	metres
m/s	metres per second
m^2	square metres
m^3	cubic metres
mAHD	metres above AHD (Australian Height Datum)
Mbgs	metres below ground surface
Meq	milliequivalents
meq/100g	milliequivalents per 100 grams
mg/L	milligrams per litre
MJ	megajoule
ML	megalitre
Mm	millimetre
mm/s	millimetre per second
mN/m	millinewtons per metre
mm/yr	millimetre per year
Mtpa	million tonnes per annum
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)
Ppm	parts per million
Ppt	parts per thousand
T	tonne
Tpa	tonnes per annum
V_{ppv}	vector peak particle velocity, which is the peak particle velocity calculated from the sum of the vibration in three directions; longitudinal, transverse and diagonal

25.2 Abbreviations

Abbreviation	Definition
AADT	annual average daily traffic
AAToS	average annual time of submergence
ABS	Australian Bureau of Statistics
ACH Act	<i>Aboriginal Cultural Heritage Act 2003 (Qld)</i>
ADT	average daily traffic
ADWG	Australian Drinking Water Guidelines
AEP	annual exceedance probability
AGRDR	Austroroads Guide to Road Design
AHD	Australian Height Datum
AIAM	Adverse Impact Assessment Methodology
Air Quality NEPM	National Environment Protection (Ambient Air Quality) Measure
AL Act	<i>Acquisition of Land Act 1967 (Qld)</i>
ALCAM	Australian Level Crossing Assessment Model
AMP	Accommodation Management Plan
ANZECC	Australian and New Zealand Environment and Conservation Council
AoI	area of influence
AOI	areas of interest
AQIA	air quality impact assessment
AQMS	air quality monitoring station
ARD	acid rock drainage
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ARR	Australian Rainfall and Runoff
ARTC	Australian Rail Track Corporation Limited
AS	Australian Standards
ASC NEPM	<i>National Environment Protection (Assessment of Site Contamination) Measure 1999 (Cth)</i>
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 (Cth)</i>
AUSRIVAS	Australian River Assessment System
B2G	Border to Gowrie
BAMM	Biodiversity Assessment and Mapping Methodology
BCC	Brisbane City Council
BD	biodiversity
Biosecurity Act	<i>Biosecurity Act 2014 (Qld)</i>
Bod	biological oxygen demand
BoM	Bureau of Meteorology
BPA	Biodiversity Planning Assessment
BS	British Standards

Abbreviation	Definition
Building Act	<i>Building Act 1975</i> (Qld)
CAPEX	capital expenditure
C&D	construction and demolition
C&I	commercial and industrial
C2K	Calvert to Kagaru
CC	climate change
CCC	Community Consultative Committee
CE	critically endangered
CEMP	Construction Environmental Management Plan
Ch	chainage
CH ₄	methane
CHIMS	Cultural Heritage Information Management System
CHMP	Cultural Heritage Management Plan
CIA	cumulative impact assessment
CLR	Contaminated Land Register
CO	carbon monoxide
CO ₂	carbon dioxide
CoA	Commonwealth of Australia
COAG	Council of Australian Governments
CoP Vol 1	<i>Transport Noise Management: Code of Practice Volume 1—Road Traffic Noise</i> (Department of Transport and Main Roads, 2013a)
CoP Vol 2	<i>Transport Noise Management: Code of Practice Volume 2—Construction Noise and Vibration</i> . (Department of Transport and Main Roads, 2015a)
CPESC	Certified Professional in Erosion and Sediment Control
CPTED	Crime Prevention Through Environmental Design
CRG	Community Reference Group
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DAF	Department of Agriculture and Fisheries (Qld)
DAFF	Department of Agriculture, Fisheries and Forestry (Qld) (former)
DATSIP	Department of Aboriginal and Torres Strait Islander Partnerships (Qld) (former)
DAWE	Department of Agriculture, Water and the Environment (Cth)
DCDSS	Department of Communities, Disability Services and Seniors (Qld) (former)
DCHDE	Department of Communities, Housing and Digital Economy (Qld)
DCSYW	Department of Child Safety, Youth and Women (Qld) (former)
DCYJMA	Department of Children, Youth Justice and Multicultural Affairs (Qld)
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DEHP	Department of Environment and Heritage Protection (Qld) (former)
DEPW	Department of Energy and Public Works (Qld)
DERM	Department of Environment and Resource management (Qld) (former)

Abbreviation	Definition
DES	Department of Environment and Science (Qld)
DESE	Department of Education, Skills and Employment (Qld) (former)
DESBT	Department of Employment, Small Business and Training (Qld)
DET	Department of Education and Training (Qld) (former)
DEWSPaC	Department of Sustainability, Environment, Water, Population and Communities (Qld) (former)
DHPW	Department of Housing and Public Works (Qld) (former)
DILGP	Department of Infrastructure, Local Government and Planning (Qld) (former)
DIN	Deutsches Institut für Normung (German Institute for Standardisation)
DITCRD	Department of Infrastructure, Transport, Cities, Regional Development and Communications (Cth) (former)
DITRDC	Department of Infrastructure, Transport, Regional Development and Communications (Cth)
DLGRMA	Department of Local Government, Racing and Multicultural Affairs (Qld) (former)
DNRME	Department of Natural Resources, Mines and Energy (Qld) (former)
DRDM	Department of Regional Development and Manufacturing (Qld) (former)
DRDMW	Department of Regional Development, Manufacturing and Water (Qld)
DSDSATSIP	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (Qld)
DO	dissolved oxygen
DoH	Department of Health (Cth)
DOTARS	Department of Transport and Regional Services (Cth)
DotE	Department of the Environment (Cth) (former)
DotEE	Department of the Environment and Energy (Cth) (former)
draft Outline EMP	draft Outline Environmental Management Plan
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning (Qld)
DSDMIP	Department of State Development, Manufacturing, Infrastructure and Planning (Qld) (former)
DSDTI	Department of State Development, Tourism and Innovation (Qld) (former)
DSITI	Department of Science, Information Technology and Innovation (Qld) (former)
DSITIA	Department of Science, Information Technology, Innovation and Arts (Qld)
DTIS	Department of Tourism, Innovation and Sport (Qld)
DTMR	Department of Transport and Main Roads (Qld)
DTRS	Department of Transport and Regional Services (Cth)
E	endangered
EA	environmental authority
EC	electrical conductivity
EIS	Environmental Impact Statement
Electricity Act	<i>Electricity Act 1994</i> (Qld)
EMP	Environmental Management Plan
EMR	Environment Management Register
EMS	Environmental Management System
ENSO	El Niño–Southern Oscillation

Abbreviation	Definition
EO Act	<i>Environmental Offsets Act 2014</i> (Qld)
EO Regulation	Environmental Offsets Regulation 2014 (Qld)
EP Act	<i>Environmental Protection Act 1994</i> (Qld)
EP Regulation	<i>Environmental Protection Regulation 2008/2019</i> (Qld) (chapters distinguish which regulation is referred)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
EPP (Air)	<i>Environmental Protection (Air) Policy 2008/2019</i> (Qld) (chapters distinguish which policy is referred)
EPP (Noise)	<i>Environmental Protection (Noise) Policy 2008/2019</i> (Qld) (chapters distinguish which policy is referred)
EPP (Water and Wetland Biodiversity)	<i>Environmental Protection (Water and Wetland Biodiversity) Policy 2019</i> (Qld)
EPP (Water)	<i>Environmental Protection (Water) Policy 2008</i> (Qld)
ERA	environmentally relevant activity
ESA	environmentally sensitive area
ESD	Ecologically Sustainable Development
EVNT	endangered, vulnerable and near-threatened
EVs	environmental values
EX	extinct
Explosives Act	<i>Explosives Act 1999</i> (Qld)
FBW	Flash Butt Welding
FFJV	Future Freight Joint Venture
Fisheries Act	<i>Fisheries Act 1994</i> (Qld)
Forestry Act	<i>Forestry Act 1959</i> (Qld)
FRL	Fire Resistance Level
FRP	filterable reactive phosphorus
FTE	full-time equivalent workers
G2H	Gowrie to Helidon
G2K	Gowrie to Kagaru
GDE	groundwater dependant ecosystem
GDP	gross domestic product
GHG	greenhouse gas
GIS	Geographical Information Systems
GLVIA	Guidelines for Landscape and Visual Impact Assessment
GMMP	Groundwater Management and Monitoring Program
GRP	gross regional product
GTIA	Guidelines to Traffic Impact Assessment
GWIZ	Gatton West Industrial Zone
H2C	Helidon to Calvert
HDPE	High-density polyethylene
HES	high ecological significance
HEV	high ecological value

Abbreviation	Definition
HV	heavy vehicle
HVR	High-value regrowth
IAA	important agricultural area
IAQM	Institute of Air Quality Management
IAR	Impact Assessment Report
IAS	Initial Advice Statement
ICC	Ipswich City Council
ICOMOS	International Council on Monuments and Sites
IECA	International Erosion Control Association
IEO	Index of Education and Occupation
ILSAX	Hydrologic model (within the 12D Drainage Network Editor)
ILUA	Indigenous Land Use Agreement
Inland Rail	Melbourne to Brisbane Inland Rail
IRAS	Inland Rail Alignment Study
IRIG	Inland Rail Implementation Group
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IS	infrastructure sustainability
ISCA	Infrastructure Sustainability Council of Australia
ISO	International Organization for Standardization
K2ARB	Kagaru to Acacia Ridge and Bromelton Project
KRA	Key Resource Area
Land Act	<i>Land Act 1994</i> (Qld)
LC	least concern
LCA	Landscape Character Area
LCT	landscape character types
LDMG	Local Disaster Management Groups
LEP	Longitudinal Egress Passage
LGA	Local Government Area
LGIP	Local Government Infrastructure Plan
LGR	local government roads
LHR	Local Heritage Register
LOR	limit of reporting
LOS	level of service
LVIA	landscape and visual impact assessment
LVRC	Lockyer Valley Regional Council
M	migratory
MCA	Multi-Criteria Analysis
MCU	material change of use
MDL	mineral development lease
MEI	Multivariate ENSO Index
MLES	matter of local environmental significance

Abbreviation	Definition
MNES	matters of national environmental significance
MSES	matter of state environmental significance
MUTCD	Manual of Uniform Traffic Control Devices
NAA	National Archives of Australia
NATA	National Association of Testing Authorities
NC	no concern at present
NC Act	<i>Nature Conservation Act 1992 (Qld)</i>
NCA	Noise Catchment Area
NEPM	National Environment Protection Measure
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007 (Cth)</i>
NGO	(local or regional) Non-Governmental Organisations
NHMRC	National Health and Medical Research Council
NHVR	National Heavy Vehicle Regulator
NNTT	National Native Title Tribunal
NO	nitric oxide
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NPI	National Pollutant Inventory
NPV	net present value
NRLCSS	National Railway Level Crossing Safety Strategy
NRM	natural resource management
NRMMC	Natural Resource Management Ministerial Council
NSW	New South Wales
NT	near threatened
NT Act	<i>Native Title Act 1993 (Cth)</i> (NT Act) together with the <i>Native Title Act 1993 (Qld)</i>
NTU	nephelometric turbidity units
O ₃	ozone
OC	of concern
OCG	Office of the Coordinator-General
OEMP	Operational Environmental Management Plan
OLM	ozone limiting method
ONI	Oceanic Niño Index
ONRSR	Office of the National Rail Safety Regulator
OSOM	oversize and/or overmass
P&C	Parents and Citizens' Associations
PAH	polycyclic aromatic hydrocarbons
PCA	potential commercial area
PCNP	Principal Cycle Network Plans
PDA	Priority Development Area
PEA	potential expressions area
PHN	Primary Health Network

Abbreviation	Definition
Planning Act	<i>Planning Act 2016</i> (Qld)
Plumbing and Drainage Act	<i>Plumbing and Drainage Act 2018</i> (Qld)
PM ₁₀	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
PPV	peak particle velocity
Public Health Act	<i>Public Health Act 2005</i> (Qld)
PWMP	Pest and Weed Management Plan
QA/QC	quality assurance/quality control
QAS	Queensland Ambulance Service
QEOP	<i>Queensland Environmental Offsets Policy</i> (Qld)
QFES	Queensland Fire and Emergency Service
QGSO	Queensland Government Statistician Office
QH Act	<i>Queensland Heritage Act 1992</i> (Qld)
QLCSS	Queensland Level Crossing Safety Strategy
QLD	Queensland
QLUMP	Queensland Land Use Mapping Program
QPS	Queensland Police Service
QR	Queensland Rail
QRA	Queensland Reconstruction Authority
QRFS	Queensland Rural Fire Service
QSA	Queensland State Archives
QTRIP	Queensland Transport and Roads Investment Program
QWQG	Queensland Water Quality Guidelines
RAAF	Royal Australian Air Force
RAV	restricted access vehicles
RBL	rating background level
RCBC	reinforced concrete box culverts
RCP	reinforced concrete pipe
RE	regional ecosystem
RIDA	regional interests development approval
RL	reduced level
RLM	road landscape manual
RMAR	rail maintenance access road
RMS	Roads and Maritime Services (NSW) (part of Transport for NSW)
RNE	Register of National Estate
RPI Act	<i>Regional Planning Interests Act 2014</i> (Qld)
RSIS	Regional Skills and Investment Strategy

Abbreviation	Definition
RSNL	Rail Safety National Law
RTA	Roads and Traffic Authority (NSW) (now RMS (part of Transport for NSW))
SA1	Statistical Area Level 1
SA2	Statistical Area Level 2
SALM	Small Area Labour Markets
SAR	standard axle repetition
SARA	State Assessment and Referral Agency
SCA	Strategic Cropping Area
SCR	State-Controlled Road
SDA	State Development Area
SDAP	State Development Assessment Provisions
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i> (Qld)
SEC	Securities and Exchange Commission
SEIFA	socio-economic index for an area
SEQ	South East Queensland
SEORP	<i>South East Queensland Regional Plan (ShapingSEQ)</i>
SES	State Emergency Service
SFRC	Southern Freight Rail Corridor
ShapingSEQ	South East Queensland Regional Plan
SHR	State Heritage Register
SIA	Social impact assessment
SIA Guideline	<i>Social impact assessment guideline</i> (Queensland Coordinator-General, March 2018)
SIMP	Social Impact Management Plan
SLAM	State Land Assessment Management
SLC	special least concern
SLQ	State Library of Queensland
SRI	Significant Residual Impact
SN	strategy number
SO ₂	sulphur dioxide
SOI	Southern Oscillation Index
Soil Conservation Act	<i>Soil Conservation Act 1986</i> (Qld)
SPP	State Planning Policy
SPL	Sound pressure level
SRM Act	<i>Stock Route Management Act 2002</i> (Qld)
SSAN	security sensitive ammonium nitrate
SSRC Act	<i>Social and Sustainable Resources Communities Act 2017</i> (Qld)
STEM	Science, Technology, Engineering and Maths
SWL	sound power level
TAFE	Technical and Further Education
tal	tonne axle load
TAPM	The Air Pollution Model

Abbreviation	Definition
TCC	tunnel control centre
TCP	Traffic Control Plan
TDM	Travel Demand Management
TDS	total dissolved solids
TEC	threatened ecological community
TfNSW	Transport for New South Wales
THC	total hydrocarbons
the Audit	<i>Queensland Agricultural Land Audit 2013</i>
the Project	The Helidon to Calvert (H2C) Inland Rail Project
TI Act	<i>Transport Infrastructure Act 1994 (Qld)</i>
TIA	Transport Impact Assessment
TKN	Total Kjeldahl Nitrogen
TMP	Traffic Management Plan
ToR	Terms of Reference
ToS	time of submergence
TPC Act	<i>Transport Planning and Coordination Act 1994 (Qld)</i>
TRC	Toowoomba Regional Council
TSP	total suspended particulates
TSRC	Toowoomba Second Range Crossing (Project name, now operational and referred to as the Toowoomba Bypass)
TSS	total suspended solids
TWI	The Welding Institute
UK	United Kingdom
UQ	The University of Queensland
US EPA	United States Environmental Protection Agency
USL	Unallocated State Land
UXO	unexploded ordnance
V	vulnerable
VAM	Visibility Analysis Mapping
VDV	vibration dose value
VM Act	<i>Vegetation Management Act 1999 (Qld)</i>
VOCs	volatile organic compounds
Water Act	<i>Water Act 2000 (Qld)</i>
WEBS	wider economic benefits
WH&S	Workplace Health and Safety
WHO	World Health Organization
WHS Act	<i>Work Health and Safety Act 2011 (Qld)</i>
WIM	weight in motion
WMHHA	West Moreton Hospital and Health Service
WMRRS	Waste Management and Resource Recovery Strategy
WQMP	Water Quality Monitoring Program

Abbreviation	Definition
WQOs	water quality objectives
WRPs	Water Resource Plans
WRR Act	<i>Waste Reduction and Recycling Act 2011 (Qld)</i>
WSL	water surface level
WSSR Act	<i>Water Supply (Safety and Reliability) Act 2008 (Qld)</i>
WTP	water treatment plant
XPT	express passenger train

25.3 Glossary

Term	Definition
A-Weighted decibels (dBA)	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 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 dBA.
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 sulfides 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 bores	A term applied to groundwater bores that can 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 devices 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 on 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 (Qld)</i> includes those who have a registered interest in the land, or that which adjoins it, and the relevant local government.
A-horizon	See 'topsoil'.
Airborne noise	Sound (noise) that travels through the air and commonly describes noise experienced within the outdoor environment.
Airshed	Volume of air generally confined to a distinct geographic region.
Alignment	The exact positioning of track; may be compared with 'route', which gives only a very general indication of the location of a railway.
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 'alluvium'.
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 location in the absence of the noise source of interest.
Ambient noise	The total noise in the environment, often composed of sound from many sources.
Anaerobic	Process taking place in the absence of oxygen.
Annual daily traffic	The average traffic volume expected over a 24-hour period for a given year.
Annual exceedance probability	The chance of a flood of 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 average recurrence interval flood event.

Term	Definition
Anthropogenic	Associated with or relating to human influence (or impact) on the environment.
Approved methods	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (December, 2005).
Aquaculture	Cultivation of the food resources of the sea or inland waters.
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.
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.
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.
Assessment background level	The overall background level for each day, evening and night period for each day of the noise monitoring.
Australian Height Datum	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.
Auxiliary lane	An additional lane added to the carriageway for safety and/or intersection capacity purposes.
Average recurrence interval	The long-term average number of years between the occurrence of a flood of a nominated size.
Axle load	The load transmitted to the truck by two wheels or one axle of a bogie.
Back on Track species prioritisation framework (QLD)	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. While not legislated, Back on Track provides a useful framework for biodiversity assessment and species prioritisation when determining ecological values. Priority Back on Track species have been identified for each of the 14 NRM regions across QLD.
Background creep	The gradual increase in background noise levels in an area as a result of successive developments generating simultaneous noise levels at a location.
Background noise	The existing noise level in the area excluding the impacts from the Project.
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.

Term	Definition
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.
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.
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	<p>The number and variety of organisms found within a specified geographic region or within a given ecosystem. The biological diversity of life is commonly regarded as being made up of the following three components:</p> <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 QLD, the term used is 'environmental offsets'.
Biodiversity Planning Assessments (Qld) (BPAs)	<p>BPAs have been prepared for each of Queensland's bioregions based on the methodology outlined in the <i>Biodiversity Assessment and Mapping Methodology</i> (BAMM) (Queensland Government, 2014c). The BPAs draw on 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.</p> <p>There are three biodiversity significance levels to which an area can be assigned:</p> <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 <p>All remnant vegetation will qualify into one of the above three categories.</p>

Term	Definition
Biodiversity status	<p>Biodiversity status is used for a range of planning and management applications, including biodiversity planning assessments and to determine environmentally sensitive areas that are used for the regulation of the extractive industry through provisions in the <i>Environmental Protection Act 1994</i> (Qld). Biodiversity status is ascertained through assessing the condition of an ecosystem's remnant vegetation. An ecosystem's biodiversity status is listed according to classes, as defined in the <i>Vegetation Management Act 1999</i> (Qld).</p> <p>For biodiversity planning purposes the DES classifies a RE as 'endangered' if:</p> <ul style="list-style-type: none"> ▶ Less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss, or ▶ 10–30 per cent 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: ▶ 10–30 per cent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss. <p>For biodiversity planning purposes, a RE is listed as 'least concern' at present if:</p> <ul style="list-style-type: none"> ▶ The degradation criteria listed above for 'endangered' or 'of concern' REs are not met.
Biological oxygen demand	This is the amount of oxygen required by the aerobic biological organism to break down organic material that is present in a water sample, at a specific temperature, over a period of time.
Bioregion	Landscape pattern that reflects changes in geology and climate, as well as major changes in floral and faunal assemblages at a broad scale.
Biosecurity	Security measures against the transmission of disease to the plants or animals of a region.
<i>Biosecurity Act 2014</i> (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, landowners have an obligation under the Biosecurity Act 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, the requirements of all restriction categories for these restricted matter listings are to be followed.</p>
Bogie	Two axles with wheels and a sub-frame under each end of a wagon.
Bore	Artificially constructed or improved groundwater cavity used for the purpose of accessing or recharging water from an aquifer. Interchangeable with borehole, piezometer.
Break of gauge	Where a line of one-track gauge meets a line of a different-track gauge.
Brigalow Belt	The bioregion that spans inland from eastern QLD from Townsville in the north to northern NSW, 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.
Broad gauge	Railway track gauge of 1,600 mm.
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 en mass without packaging.
Bunching and stretching	Wagons can touch from coming together or make a noise when they stretch and pull apart.
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.

Term	Definition
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).
California Bearing Ratio	A penetration test used to evaluate the subgrade strength of roads and pavements. The results of these tests are used with the curves to determine the thickness of pavement and its component layers.
CALPUFF	The CALPUFF model was used to model all other open-air sections of the alignment (e.g. outside the tunnel).
Carbon dioxide equivalent (CO _{2-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	The area of land that collects and transfers rainwater into a waterway.
Chainage	A measure of distance along the rail corridor from Sydney. The nominated values are not exact distances as there are some local adjustments made to reflect progressive changes to the rail as works are progressively implemented to, for example, ease bends.
Chemical evolution (groundwater)	Changes and trends in the chemistry of groundwater as it moves through different aquifers and rock types over geologic time.
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, clearing 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 on 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.
Coastal route	The existing rail route from Melbourne to Brisbane via Sydney.
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.
Commissioning	Testing and commissioning (checking) of the rail line and communication/signalling systems will be undertaken to ensure that all systems and infrastructure are designed, installed and operating according to ARTC's operational requirements.
Compensated grade	Where a grade is eased on curves so the total resistance to a train is constant, irrespective of the degree of curvature of the track.
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.
Confined aquifer	An aquifer bounded above and below by impervious (confining) layers.

Term	Definition
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 provisions of the <i>Nature Conservation Act 1992</i> (Qld) (NC Act) and/or 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 'Threatened species'.
Consist	The set of wagons or carriages that form the train.
Construction	<p>Construction activities include:</p> <ul style="list-style-type: none"> ▶ Site set out and pegging, including establishing clearing limits ▶ Establishment of laydowns and compounds, including vehicle inspection/workshops, washdown facilities and temporary fencing, as required ▶ Installation of erosion and sediment control measures ▶ Clearing—using dozers, chainsaws, excavators, trucks and similar equipment ▶ Bulk earthworks—major cut-to-fill operations including winning suitable construction material from sections of cut along the railway alignment or from borrow areas external to the site ▶ Construction of drainage infrastructure—cut-off drains, table drains and culvert structures ▶ Construction or installation of concrete railway bridges and culverts ▶ Ballast—supply, delivery and installation ▶ Concrete sleepers—supply, delivery and installation ▶ Installation of rail track and other items of rail infrastructure using rail-mounted equipment ▶ Installation of railway signalling and communications equipment ▶ Construction of tunnel maintenance facilities, administration and amenities buildings, car and truck parking and bulk fuel provisioning and storage areas. <p>Other miscellaneous activities to complete the works, such as reinstatement and rehabilitation of temporary works areas and landscaping.</p>
Consolidated aquifer	Water-bearing rock aquifer, such as sandstone, coal, limestone and granite.
Constraints mapping	The processes used to assess the environmental framework for development, whereby 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.
Continuously welded rail	Continuously welded rail shall be constructed on Inland Rail, and due to there being fewer joints, trains can travel faster on continuously welded steel rails than on jointed rails. The continuously welded rail can reduce noise and vibration emissions from passing trains.
Contour plot	Graphical technique for representing a three-dimensional surface by plotting contours in a two-dimensional format.
Contractor	A company or individual engaged by ARTC to undertake a specific project, function or maintenance works in accordance with an agreement (e.g. construction, maintenance, installation, commissioning, consultancy and other specialist types of work).
Controlled action	A proposed action designated under the controlling provisions of the EPBC Act, which is likely to have a significant impact on a matter of national environmental significance, the environment, or Commonwealth land (even if the action is 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.

Term	Definition
Corridor	A strip of land with a width measured in kilometres that are suitable for a railway. Study of a corridor leads to the identification of route options. Corridor has another meaning for an operating railway: it describes the railway adjacent land between boundary fences, or if unfenced, to a distance of 15 metres from each outside rail.
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 defined under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth).
Critically endangered	Designated as critically endangered under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth). Refer to definition of EPBC Act conservation status for meaning of 'Critically endangered' under the Act.
Crossing loop	Crossing loops are lengths of track connected to the main line by switches at both ends to provide a facility that permits trains to both cross and pass each other.
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.
Crustacean	An arthropod with jointed appendages, a hard protective outer shell, two pairs of antennae and eyes on stalks (e.g. crabs, prawns).
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 water to flow under a road, railway, track, or similar obstruction.
Cumulative impact	The combined impact to one or more environmental values delivered by multiple projects being undertaken simultaneously within the same sphere of physical influence.
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.
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.
Day	The period from 7.00 am to 6.00 pm Monday to Saturday and 8.00 am to 6.00 pm Sundays and public holidays.
Decibel (dB)	A unit of sound level measurement.

Term	Definition
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 dBA Threshold of human hearing ▶ 30 dBA A quiet country park ▶ 40 dBA Whisper in a library ▶ 50 dBA Open office space ▶ 70 dBA Inside a car on a freeway ▶ 80 dBA Outboard motor ▶ 90 dBA Heavy vehicle pass-by ▶ 100 dBA Jackhammer/subway train ▶ 110 dBA Rock concert ▶ 115 dBA Limit of sound permitted in industry ▶ 120 dBA 747 plane take off at 250 m.
Deep groundwater	Groundwater resources associated with aquifers and resources at depths >100 m.
Demography	The range of different groups existing in a populace, as distinguished by factors such as age, ethnicity, and social background.
Depressurisation	The lowering of the groundwater elevation over an area.
Desalinate	To remove dissolved salts from saline water so that it becomes suitable for beneficial uses (e.g. drinking water or for agricultural irrigation) or release to the environment.
Detailed design	Detailed design is the process of developing the Project design up to an 'Approved for Construction' stage.
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	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	<p>The disturbance footprint can be described as either permanent or temporary:</p> <ul style="list-style-type: none"> ▶ Permanent disturbance footprint: The rail corridor includes the rail tracks and associated infrastructure as well as other permanent works associated with the Project (e.g. where changes to the road network are required) ▶ Temporary disturbance footprint: The permanent disturbance footprint and any temporary storage and laydown areas to be used on a temporary basis during the construction phase.
Diversion channel	A constructed waterway used to redirect drainage lines and watercourses around infrastructure areas.
Double stacking	Placement of one intermodal freight container on top of another in a specially designed well-wagon.
Drawdown	The decline in the groundwater level in a bore from the standing water level, when influenced by pumping.
Drilling rig	A machine that creates holes (usually called wells or bores) in the ground.

Term	Definition
Earth	The planet on which we currently live; the world.
Early works	Early works and pre-construction activities can occur prior to full mobilisation of the construction contractor. These may be undertaken under a separate contract, but must not start until the Outline CEMP has been approved by the Coordinator-General, and the relevant early works and pre-construction activities CEMP has been endorsed by the Environmental Monitor. Early works and pre-construction activities must be undertaken in accordance with any relevant imposed conditions.
Earthworks	All operations involved in loosening, excavating, placing, shaping and compacting soil or rock.
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 an area.
Ecological receptor	An ecological value or group of ecological values that has the potential to be adversely impacted by Project-related activities.
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.
Ecosystem	An organic community of plants, animals and bacteria and the physical and chemical environment they inhabit.
EIS investigation corridor	The base study area for the EIS. An approximate 2 km wide study area, 1 km either side of the proposed rail alignment. The EIS investigation corridor includes the disturbance footprint, which encompasses all areas where works are proposed, including both permanent and temporary works, and land within a 1 km radius either side of the proposed rail alignment.
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, VM Act. Refer to definitions of EPBC Act conservation status, NC Act conservation status, VM Act and EP Act conservation status for meaning of 'endangered' under each Act.
Endemic	Native to a country or a locality, although also found elsewhere.
Energy efficiency	Ratio of the transport task of the energy input; a measure of energy efficiency is tonne/km per megajoule.
Energy intensity	Ratio of energy input to transport task; the inverse of energy efficiency; a measure of energy intensity is MJ/net tonne/km.
Environmental authority	An authority issued in accordance with the <i>Environmental Protection Act 1994</i> (Old), that authorises the ERAs to which it applies subject to conditions; used by Queensland Department of Environment and Science to assess 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	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 enough detail to inform a decision on the proposal.
Environmental management plan	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.

Term	Definition
Environmental offsetting	If a project has a significant residual impact in one area, environmental offsetting facilitates an environmental gain in another area.
Environmentally relevant activity	An activity with potential to release contaminants into the environment defined in Schedule 2 of the <i>Environmental Protection Regulation 2019</i> (Qld).
Environmentally sensitive area	<p>Location, however large or small, that has environmental values recognised in the Environmental Protection Act 1994 (Qld), which contribute to maintaining biological diversity and integrity; has intrinsic or attributed scientific, historical or cultural heritage value; or is important in providing amenity, harmony or sense of community.</p> <p>As defined under the Environment Protection and Biodiversity Conservation Regulations 2000, a 'Category A' environmentally sensitive area is any of the following:</p> <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. <p>A 'Category B' environmentally sensitive area includes the following:</p> <ul style="list-style-type: none"> ▶ World Heritage Areas ▶ Queensland Heritage Register places ▶ Ramsar sites ▶ Cultural Heritage Registered Areas and DLAs other than Stanbroke Pastoral Development Holding ▶ 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 <p>A 'Category C' environmentally sensitive area includes any of the following:</p> <ul style="list-style-type: none"> ▶ Essential habitat ▶ Referable wetlands ▶ Declared catchment areas ▶ Nature refuges ▶ Resources reserves ▶ State forests ▶ Timber reserves ▶ 'Of concern' REs (remnant and mature regrowth (biodiversity status)).
Environmental values	Desirable characteristics, properties and behaviours or an aspect of the environment.

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>Environmental Protection Act 1994</i> (Qld).
Ephemeral	Temporary or short lived. An ephemeral waterway is one that flows following periods of heavy rainfall. 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 Part 2 of the <i>Planning Guidelines for Water Supply and Sewerage</i> , (April 2010), published by the Department of Energy and Water Supply.
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> <ul style="list-style-type: none"> ▶ That has at least three essential habitat factors for the protected wildlife, which must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database ▶ 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 Heritage Protection for the purposes of the <i>Vegetation Management Act 1999</i> (Qld).</p>
Estuarine	Formed in an estuary.
Evening	The period from 6.00 pm to 10.00 pm Monday to Sunday and public holidays.

Term	Definition
Existing rail corridor	The corridors within which existing rail infrastructure are located.
Extinct in the wild	Refer: <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act) conservation status; <i>Nature Conservation Act 1992</i> (Qld) (NC Act) conservation status.
Extreme event	Weather conditions that are rare for a 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, taken collectively.
Feral	Animal existing in a wild or untamed state, having escaped from domestication.
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 to 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, taken collectively.
Fluvial geomorphology	The study of river-related landforms and the processes that shape them.
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</i> (Qld).
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.
Fossil fuel	Hydrocarbon deposit, such as petroleum, coal, or natural gas, derived from alteration of living matter of a previous geologic time, and used for fuel.
Fracture	Any break in a rock, including cracks, joints and faults.
Fractured aquifer	An aquifer that owes its water-bearing properties to fracturing caused by folding and faulting.
Fragmentation	Discontinuities in an organism's preferred habitat.
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</i> (Qld).
Freight	Goods transported by truck, train, ship, or aircraft.
Freight task	The amount of freight transport, usually measured in tonnes or tonne-kilometres.
Frequency	The repetition rate of the cycle measured in Hertz. 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.
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.
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.

Term	Definition
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 shapes the landscape and its deposits.
Geomorphology	Study of the physical features of the surface of the Earth and their relation to underlying geological structures.
Global climate models	Computer-generated simulations developed to predict future weather and climate trends. This includes considering 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 with global warming potential of 1.
Good quality agricultural land	This is a two-class system in land evaluation, in which land is considered either good-quality agricultural land or not.
Greenfield	New development that occurs outside established urban areas where the site or development has not previously been used for urban development. Also applies for railway construction on new alignments.
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, methane, nitrous oxide and water vapour.
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	Total mass of a wagon and its payload.
Gross domestic/state/regional product	The market value of officially recognised final goods and services produced within a country/state/region in each period. Final goods and services are defined as those which are not used to produce other goods or services.
Ground-borne noise	Railway vibration in buildings at frequencies typically from about 30 Hz to about 200 Hz, can excite the floors and walls, which then radiate a rumbling noise directly into the rooms. This ground-borne (or structure-borne) noise is associated with track in tunnels, where it occurs without the masking from the airborne rail noise.
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.
Habitat	An area or areas permanently, periodically or occasionally occupied by a species, population or ecological community, including any and all biotic and abiotic features of the area or areas occupied.
Hazardous material	Substance that, if improperly treated, stored, disposed of, or otherwise managed, is likely to cause serious or material environmental harm because of its: <ul style="list-style-type: none"> ▶ Quantity, concentration, acute or chronic toxic effects, carcinogenicity, teratogenicity, mutagenicity, corrosiveness, explosiveness, radioactivity, or flammability; or ▶ Physical, chemical, or infectious characteristics.
Headway	The difference in time or distance between two trains traveling in the same direction.
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.

Term	Definition
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 several 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 ecosystem types; allows mapping of areas of vegetation that would normally be too small to map, to be shown at the scale at 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	Vegetation located: <ul style="list-style-type: none"> ▶ On freehold land, Indigenous land, or land subject of a lease issued under the <i>Land Act 1994</i> (Qld) for agriculture or grazing purposes or an occupation licence under that Act; and ▶ In an area that has not been cleared (other than for relevant clearing activities) for at least 15 years, if the area is: <ul style="list-style-type: none"> ▶ an 'endangered' regional ecosystem; or ▶ an 'of concern' regional ecosystem; or ▶ a 'least concern' regional ecosystem.
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 approximately 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.
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.
Indirect economic impact	The flow-on value generated in other sectors of the economy as a result of the demand stemming from a given event, organisation or industry.

Term	Definition
Indirect impacts	Impacts that are not a direct result of Project activities but that occur away from the original impact area, sometimes 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 chemicals that are washed or discharged into river systems ▶ Upstream impacts, such as impacts associated with the extraction of raw materials and other inputs that are used to undertake the action ▶ Facilitated impacts that 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 over the long term.
Initial advice statement	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	The Inland Rail Program 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.
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 that 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.
Jurassic	The geologic period that extends from 199.6 million to 145.5 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.
Lacustrine	Of or relating to a lake. Term is commonly used in reference to soils and ecosystems.
Lake	Permanent or ephemeral natural or artificial body of water of considerable size surrounded by land.
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 forms of land use such as cattle grazing, cropping, and forestry.
Landowner	The owner, occupier, manager, or controller of land or water, including anyone acting on their behalf.
Landscape	All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure.
Landscape character	The combined quality of built, natural and cultural aspects that make up an area and provide its unique sense of place.
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.

Term	Definition
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 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.
Leaching profile	Vertical change in chemical concentrations down the soil profile due to leaching.
Least concern or no concern present	See: <i>Vegetation Management Act 1999</i> (Qld) (VM Act) conservation status.
Lentic	Non-flowing or still water.
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 characteristics of a crossing. It generally falls into two categories: <ul style="list-style-type: none"> ▶ Passive protection (uses warning signage only); or ▶ 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 60 under Schedule 2 of the <i>Environmental Protection Regulation 2019</i> (Qld).
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.
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.
Little Liverpool Range tunnel	The approximately 850 m long tunnel proposed to be constructed through the Little Liverpool Range in order to facilitate the required gradient for the movement of freight trains through this section of the Project alignment.
Loading gauge	The maximum permissible height and width dimensions for a rail vehicle and its load; see also 'structure gauge'.
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.
Major flood risk areas	Land that is at risk of being inundated during major floods.
Matters of national environmental significance	Matters of national environmental significance listed under the EPBC Act; includes listed threatened species and ecological communities, migratory species protected under international agreements, Ramsar wetlands of international importance, the Commonwealth marine environment, World Heritage properties, National Heritage places, the Great Barrier Reef Marine Park, water resources, and nuclear actions.

Term	Definition
Matters of state environmental significance	<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 QLD legislation including the:</p> <ul style="list-style-type: none"> ▶ <i>Nature Conservation Act 1992</i> (Qld) ▶ <i>Fisheries Act 1994</i> (Qld) ▶ <i>Environmental Protection Act 1994</i> (Qld) ▶ <i>Vegetation Management Act 1999</i> (Qld). <p>Legally secured offset areas protected by a registered covenant or similar statutory mechanism.</p>
Median	The middle value of a discrete series.
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.
Microchiropteran bats	This report uses the term microchiropteran bats to refer to small, mostly insectivorous bats that use echolocation to navigate and find food.
Migratory	Species listed as 'migratory' under the EPBC Act. Refer to definitions of EPBC Act conservation status, for meaning of migratory under the Act.
Migratory species	Species listed as 'migratory' under the EPBC Act; refer to definitions of EPBC Act conservation status, for meaning of 'migratory' under the Act.
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.
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.
Mudstone	A clayey rock of nearly uniform texture throughout, with little or no lamination.
Multi-well lease	A well lease that hosts more than one production well.
Narrow gauge	Railway track gauge of 1,067 mm.
National Environment Protection Measure	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 aspects of the environment.
National park	Land reserved by the (former) Department of National Parks, Recreation, Sport and Racing now Department of Environment and Science 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, such as sunlight, wind, soil, or water.
Naturalness and ecological condition	<p>The apparent naturalness or health/condition of an ecological community, as assessed against the following criteria:</p> <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 (e.g. diurnal systems).

Term	Definition
<i>Nature Conservation Act 1992 (NC Act) (Qld) conservation status</i>	<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 ▶ The wildlife 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> <p>The wildlife is common or abundant and is likely to survive in the wild. Native wildlife may be prescribed as 'least concern' wildlife even if:</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	See: <i>Nature Conservation Act 1992 (Qld) conservation status</i> .
Negative impact	An impact that is considered to result in an unfavourable or adverse change to the receptor.
Net present value	The financial worth of a series of cash flows occurring over time, discounted to reflect the total dollar value in today's terms.
Night	The period from 10.00 pm to 7.00 am Monday to Saturday and 10.00 pm to 8.00 am Sundays and public holidays.
Nitrogen dioxide	An air pollutant, high concentrations of which can contribute to acid rain, eutrophication of watercourses and formation of photochemical smog.
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 that fails to meet DES's 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).

Term	Definition
Notifiable activity	An activity that could potentially result in land contamination.
Noxious	Harmful to the environment or ecosystem.
Of concern	See: <i>Vegetation Management Act 1999</i> (Qld) conservation status.
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	The greatest instantaneous particle velocity during a given time interval.
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.
Percolation	The movement and filtering of fluids through porous materials.
Perennial	Lasting or enduring for an indefinite amount of time. A perennial waterway has continuous flow all year round during years of normal rainfall.
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.
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).
Permian	Geological period from approximately 300 million years ago to approximately 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> (Qld) ▶ Declared under local government local laws ▶ That may become invasive in the future.
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.
Pioneer line	Rail lines constructed to a lesser standard than main rail lines, providing access to mainly agricultural areas.
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 during which a rail line is blocked to trains to permit work to be carried out on or near the line.
Potentiometric surface	A hypothetical surface representing the level to which groundwater would rise if not trapped in a confined aquifer (an aquifer in which the water is under pressure because of an impermeable layer above it that keeps it from seeking its level). The potentiometric surface is equivalent to the water table in an unconfined aquifer.

Term	Definition
Practicable	Relates to engineering considerations, what can practically be built (e.g. safety, access, site constraints).
Precautionary principle	Common principle of environmental management; where an activity has the potential to threaten or cause serious or irreversible damage to the environment or human health, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
Pre-construction	Refer early works.
Preferential flow	Movement of groundwater through a pathway of more permeable zones in the subsurface.
Primary Approval Document	Term used throughout this EIS process to collectively refer to any of the following: <ul style="list-style-type: none"> ▶ <i>Environmental Impact Statement</i> (New South Wales and Queensland) ▶ <i>Review of Environmental Factors</i> (Victoria, New South Wales and Queensland) ▶ <i>Environmental Assessment Report</i> (Queensland) ▶ <i>Ministerial Planning Scheme Amendment</i> (Victoria) ▶ <i>Environmental Effects Statement</i> (Victoria) ▶ <i>Documentation prepared for assessment under the Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act)
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.
Probable maximum flood	The largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation coupled with the worst flood-producing catchment conditions. Generally, it is not physically or economically possible to provide complete protection against this event. The probable maximum flood defines the extent of flood-prone land (i.e. the floodplain).
Project	The construction and operation of the Helidon to Calvert Project
Project cumulative impact area	The Inland Rail Project cumulative impact area encompasses the Inland Rail Project area and extends 50 km beyond the Project area boundary.
Project ecology study area	This includes the H2C Project area plus a nominal 1 km buffer area, wider in some areas where multiple design options required an increased investigation area.
Project MNES study area	This includes the H2C Project area plus a nominal 1 km buffer area, wider in some areas where multiple design options required an increase investigation area.
Putrescible waste	Refuse or other discarded material that is liable to become putrid or rotten through decay or decomposition.
Project works	Project works include early works and pre-construction activities, works described as pre-construction, construction and commissioning works. Project works exclude enabling works.
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 approximately 2 million to 3 million years ago and extending to present; encompasses the Pleistocene and Holocene time epochs.
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 dampers	Elements that are attached to the sides of the rails to improve the rail's ability to absorb and dissipate vibration energy that results from the rolling contact between the wheel and rail.
Rail level	The theoretical level of the running surface of the rails.
Rail maintenance access road	A road required to facilitate maintenance of critical infrastructure (e.g. turnouts), and to provide access for emergency recovery.
Rail pads	Rail pads are plastic or rubber mats that are inserted between the rails and the sleepers. Their purpose is to evenly distribute the load from passing trains onto the sleepers. They can also act to reduce noise and vibration emissions from passing trains.

Term	Definition
Ramsar wetland	An area designated as a wetland of international importance under the Ramsar Convention (also known as the Convention on Wetlands of International Importance signed by Australia in 1971) because of its role in preserving biological diversity, or because it is a representative, rare or unique wetland type.
Rating background level	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.
Reasonable	Selecting reasonable measures from those that are feasible involves judging whether the overall noise benefits outweigh adverse social, economic and environmental effects, including the cost of the measure.
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 <i>An Interim Biographic Regionalisation of Australia</i> (Thackway and Cresswell, 1995). The region subject to this report is the southeast QLD 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 combination of geology, landform and soil (Young et al., 1999). 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) conservation status for meaning of endangered, of concern and least concern under the Act.
Registered groundwater bore	Groundwater bore that is recorded in the (former) Queensland Department of Natural Resources, Mines and Energy now Department of Resources database.
Regrowth vegetation	Defined under the <i>Vegetation Management Act 1999</i> (Qld) as vegetation that is not remnant vegetation. Refer 'Remnant vegetation'.
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 vegetation means vegetation— (a) that is— (i) an endangered regional ecosystem; or (ii) an of concern regional ecosystem; or (iii) a least concern regional ecosystem; and (b) forming the predominant canopy of the vegetation— (i) covering more than 50% of the undisturbed predominant canopy; and (ii) averaging more than 70% of the vegetation's undisturbed height; and (iii) composed of species characteristic of the vegetation's undisturbed predominant canopy.
Reserve (tenure)	Land reserved by the Department of Environment and Heritage Protection for community or public purposes.
Residual impact	The effect remaining or left over, following implementation of mitigation measures.

Term	Definition
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 that 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.
River improvement trust asset area	Means an area within a river improvement area declared under the <i>River Improvement Trust Act 1940</i> (Old) that is or has been subject to restoration or flood mitigation works.
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.
Rollingstock	All rail vehicles operating on the rail lines.
Rolling noise	Noise emissions from the rolling of the wheels on the rail.
Route	In the context of the Project, primary description of the path that 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.
Safe working	Signalling system and associated rules that keep trains a safe distance apart.
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 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.
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 include: <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 receivers /receptors	Land uses that 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 m.
Significantly disturbed land or significant disturbance to land	Means disturbance to land as defined in Section 4 of Schedule 12 of the Environmental Protection Regulation 2008 (Old).

Term	Definition
Significant impact	A significant impact is an impact that 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 on the sensitivity, value, and quality of the environment that is impacted, and on the intensity, duration, magnitude and geographic extent of the impacts.
Siltstone	Consolidated silt; fine-grained sedimentary rock.
Social impact management plan	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 power level	The total sound emitted by a source, measured in logarithmic units. The acronym used for sound power level is SWL and is generally specified in decibels (dB).
Sound pressure level	Sound pressure is the measure of the level or loudness of sound. It is measured in logarithmic units. The acronym used for sound pressure level is SPL and is generally specified in decibels (dB).
Spatial extent	Impacts are considered with respect to the biologically meaningful spatial extents of local, regional, State, and national/international.
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 'affected person'.
Standard gauge	Railway track gauge of 1,435 mm; used on ARTC network and for NSW rail system.
State forest	Land reserved by a Queensland government department 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.
Sterile zone	Potentially hazardous zone to which uncontrolled entry is prohibited and that must be maintained free of combustible material; for example, the areas around the base of a flare stack.
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.
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> (Qld).

Term	Definition
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. Area defined by each of the relevant supporting studies and specific to the particular environmental aspect being considered for the purpose of environmental impact assessment.
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.
Technical study areas	Some technical assessments used a different study area to the EIS investigation corridor or disturbance footprint depending on the requirements of the environmental value being assessed.
Temporary construction disturbance footprint	The areas of the Project that will be directly impacted by the construction of the rail line, lay down areas, borrow pits, and other areas that will only be used during construction and will be rehabilitated prior to operation and will only be used temporarily.
Terms of Reference	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 ecological communities, regional ecosystems or species that are critically endangered, endangered, vulnerable or near threatened as listed under the NCA, VMA, EPBC Act. Also see NCA conservation significance, VMA conservation significance and EPBC Act conservation significance for the meaning of 'threatened' under these Acts.
Threatened species	Generic term for a plant or animal species listed as critically endangered, endangered, vulnerable or rare under either State or Australian Government threatened species legislation. The terms 'threatened' and 'conservation significant' are interchangeable in this context.
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 EPBC Act, a process can be listed as a key threatening process if it threatens, may threaten the survival, abundance or evolutionary development of a native species or ecological community. Such processes can be listed as a 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.
Topsoil	Usually referred to as the A-horizon and typically has the highest concentration of organic matter and microorganisms.
Track	The structure consisting of the rails, fasteners, sleepers and ballast, points and crossings which sits on the formation.

Term	Definition
Track formation	Refer to the definition of formation.
Train Control System	Communication-based safe working system currently being developed by ARTC.
Triassic	The geological time period extending from ~250 million 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.
Turbid	Opaque or muddy liquid with particles of extraneous matter.
Turnout	A combination of a set of points, V crossing and guard rails which permits traffic to turnout from one track to another.
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.
Value added	The difference between the sale price and the production cost of a good or service.
<i>Vegetation Management Act 1999 (Qld)</i> conservation status	<p>Under the <i>Vegetation Management Act 1999 (Qld)</i> (VM Act), regional ecosystems are assigned a conservation status of endangered, of concern and least concern/no concern present. Definitions of these terms under the Act are as follows.</p> <p>Endangered A regional ecosystem is listed as 'endangered' under the VM Act if:</p> <ul style="list-style-type: none"> ▶ Remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion, or ▶ Between 10–30 per cent of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares. <p>For biodiversity planning purposes a regional ecosystem is listed with a Biodiversity Status of 'endangered' if:</p> <ul style="list-style-type: none"> ▶ Less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss, or ▶ Between 10–30 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares, or ▶ It is a rare regional ecosystem subject to a threatening process. <p>Of concern A regional ecosystem is listed as 'of concern' under VM Act if:</p> <ul style="list-style-type: none"> ▶ Remnant vegetation is 10–30 per cent of its pre-clearing extent across the bioregion or ▶ More than 30 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares. <p>In addition to the criteria listed for an 'of concern' regional ecosystem under the <i>Vegetation Management Act 1999 (Qld)</i>, for biodiversity planning purposes a regional ecosystem is listed with a Biodiversity Status 'of concern' if:</p> <ul style="list-style-type: none"> ▶ Between 10–30 per cent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss. <p>Least concern/no concern present A regional ecosystem is listed as 'least concern' under the VM Act if:</p> <ul style="list-style-type: none"> ▶ Remnant vegetation is over 30 per cent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares. <p>For biodiversity planning purposes 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.
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 an object, particulate or mass is moving.

Term	Definition
Veneering	The application of a biodegradable, non-toxic binding agent onto the loaded wagon coal surface. The veneer forms a crust over the coal load and minimises coal dust lift-off when exposed to air passing over the surface in transit.
Vertosol	Soil type that is clayey and cracks when dry; its alternate shrinking and swelling produces gilgais.
View	The visual experience from the viewer's perspective.
Viewshed	Area frequently bounded by a ridge of land that defines the extent that is visible within the human field of view from a fixed vantage point. Synonymous with 'visual envelope' and typically represents the limit of the zone of theoretical visibility.
Visual amenity	The value of an area or view in terms of what is seen.
Visual catchment	Extent of potential visibility to or from a specific area, feature or proposal.
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	A measure of a joint consideration of both visual sensitivity and visual effect that considered together determines the visual impact of a development.
Visual sensitivity	Degree to which a change to the landscape will be perceived in an adverse way.
VM Act conservation status	<p>Under the <i>Vegetation Management Act 1999</i> (Qld) (VM Act), regional ecosystems are assigned a conservation status of endangered, of concern and least concern/no concern present. Definitions of these terms under the Act are as follows.</p> <p>Endangered: A regional ecosystem is listed as 'endangered' under the VM Act if:</p> <ul style="list-style-type: none"> ▶ Remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or ▶ Between 10–30 per cent of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares. <p>For biodiversity planning purposes a regional ecosystem is listed with a biodiversity status of 'endangered' if:</p> <ul style="list-style-type: none"> ▶ Less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss; or ▶ Between 10–30 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or ▶ It is a rare regional ecosystem subject to a threatening process. <p>Of concern: A regional ecosystem is listed as 'of concern' under VM Act if:</p> <ul style="list-style-type: none"> ▶ Remnant vegetation is 10–30 per cent of its pre-clearing extent across the bioregion; or ▶ More than 30 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares. <p>In addition to the criteria listed for an 'of concern' regional ecosystem under the <i>Vegetation Management Act 1999</i> (Qld), for biodiversity planning purposes a regional ecosystem is listed with a biodiversity status 'of concern' if:</p> <ul style="list-style-type: none"> ▶ Between 10–30 per cent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss. <p>Least concern/no concern present: A regional ecosystem is listed as 'least concern' under the VM Act if:</p> <ul style="list-style-type: none"> ▶ Remnant vegetation is over 30 per cent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares. <p>For biodiversity planning purposes 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.
Volatile organic compound	Any organic compound that participates in atmospheric photochemical reactions.

Term	Definition
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 <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) and/or <i>Nature Conservation Act 1992</i> (Qld). Refer to <i>Environment Protection and Biodiversity Conservation Act 1999</i> conservation status and <i>Nature Conservation Act 1992</i> (Qld) conservation status for meaning of 'vulnerable' under these Acts.
Waste	Waste is defined by the EP Act 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 <i>Waste Reduction and Recycling Act 2011</i> (Qld). 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 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</i> (Water Accounting Standards Board, 2010).
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	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: <ul style="list-style-type: none"> ▶ In a natural channel, whether artificially modified or not ▶ In an artificial channel that has changed the course of the stream ▶ It also includes weirs, lakes and dams.
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.
Weeds	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. 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.
Weeds of National Environmental Significance (WoNS)	Thirty-two (32) species of weeds are declared to be weeds of national significance, based on their invasiveness, potential for spread and environmental, social and economic impacts. The State Government is responsible for the legislation and administration of WoNS in Queensland and landowners are responsible for managing WoNS. The Australian Weeds Strategy provides a framework for establishing consistency between all stakeholders and identifies priorities for national weed management with the aim of minimising 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.
Well-wagon	A wagon where the central loading deck is lower than the bogies at either end, to allow higher loads to be carried within the loading gauge.

Term	Definition
Wetland	<p>Areas shown as a wetland on the <i>Map of Queensland Wetland environmental values</i>, which is a document made by the Chief Executive and published on the department's website</p> <p>Wetlands as defined under the <i>Queensland Wetlands Strategy</i> as 'areas of permanent or periodic/intermittent inundation, with water that is static or flowing <i>fresh, brackish or salt, including areas of marine water, the depth of which at low tide does not exceed 6 m</i>', and possess one or more of the following attributes:</p> <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>
Z-Weighted	<p>'Flat' or 'un-weighted' sound pressure levels designated as dB(Z) or dBZ.</p>