CHAPTER



30

Abbreviations and Glossary

NORTH STAR TO NSW/QUEENSLAND BORDER 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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30. Abbreviations and glossary

Abbreviations

Term	Definitions
°C	degrees Celsius
μg/L	microgram per litre
μs/cm	microsiemens per centimetre
AADT	annual average daily traffic
AAToS	Average Annual Time of Submergence
ABS	Australian Bureau of Statistics
AEP	annual exceedance probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
ALCAM	Australian Level Crossing Assessment Model
ANZEC	Australian and New Zealand Environment Council
ANZECC	Australian and New Zealand Environment and Conservation Council
ANZG	Australia and New Zealand Guidelines
AOI	area of influence
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ARTC	Australian Rail Track Corporation
AS	Australian Standard
ASS	acid sulfate soils
ATSB	Australian Transport Safety Bureau
AUSRIVAS	Australian River Assessment System
BAM	Biodiversity Assessment Method
BC Act	Biodiversity Conservation Act 2016 (NSW)
BDAR	Biodiversity Development Assessment Report
CEEC	critically endangered ecological community
CEMP	Construction Environmental Management Plan
Ch	Chainage
CII-1	Climate Change Risk Assessment
Cli-2	Climate Change Adaptation Options
CMA	catchment management authority
CO	carbon monoxide
Cth	Commonwealth
CVC	Clarence Valley Council
dB	Decibel
dB(A)	A-weighted decibel
DEC	Department of Environment and Conservation (NSW)
DECC	Department of Environment and Climate Change (NSW)
DECCW	Department of Environment, Climate Change and Water (NSW)

Term	Definitions
DEE	Department of the Environment and Energy
DEM	Digital Elevation Model
DIPNR	Department of Infrastructure, Planning and Natural Resources (NSW)
DLWC	Department of Land and Water Conservation (NSW)
DOI	Department of Industry (NSW)
DPI	Department of Primary Industries (NSW)
DPIE	Department of Planning, Industry and Environment (NSW)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DTMR	Department of Transport and Main Roads (QLD)
DUAP	Department of Urban Affairs and Planning (NSW)
DWE	Department of Water and Energy (NSW)
EC	Electrical conductivity (µS/cm)
EEC	Endangered Ecological Communities
EIS	Environmental Impact Statement
EMS	Environmental Management System
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
EPG	Emergency Procedure Guide
ESR	Department of Environment and Science
FFJV	Future Freight Joint Venture
FM Act	Fisheries Management Act 1994 (NSW)
FMP	Floodplain Management Plan
FSR	flood-sensitive receptor
GAB	Great Artesian Basin
GDEs	groundwater-dependent ecosystems
GHG	greenhouse gas
GIS	Geospatial Information System
GMMP	groundwater management and monitoring plan
GRC	Goondiwindi Regional Council
GSC	Gwydir Shire Council
GTEPG	Group Text Emergency Procedure Guide
GTIA	Guide to Traffic Impact Assessment
ha	hectare
Hz	hertz
IAQM	Institute of Air Quality Management
IBRA	Interim Biogeographic Regionalisation for Australia
ICOMOS	International Council on Monuments and Sites
ID	identification
Infrastructure SEPP	State Environmental Planning Policy (Infrastructure) 2007
IPCC	Intergovernmental Panel on Climate Change
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage

Term	Definitions
IRSEO	Indigenous Relative Socioeconomic Index
IS	Infrastructure Sustainability
ISCA	Infrastructure Sustainability Council of Australia
ISO	International Organization for Standardization
kg/m	kilograms/metre
kL	kilo litre
km	kilometres
km/hr	kilometres per hour
km²	square kilometres
KTP	key threatening process
kV	kilovolt
L/kg	litres/kilogram
L _{A1,1min}	the level exceeded for 1% of the specified time period of 1 minute
L _{A90}	A-weighted noise level exceeded for 90% of the measurement period
L _{Aeq(period)}	A-weighted equivalent noise level measured in decibels over a period
L _{Aeq} , 15mins	A weighted equivalent noise level measured in decibels over a period of 15 minutes
LALC	Local Aboriginal Land Councils
LCA	landscape character areas
LCT	landscape character types
LEP	Local Environmental Plan
LGA	local government area
Lidar	Light Detection and Ranging
LOR	Limit of Reporting
LOS	level of service
m	metres
m/s	metres per second
m ²	square metres
m^3	cubic metres
mAHD	metres above Australian Height Datum
mbgl	metres below ground level
MCA	multi-criteria analysis
mg/L	milligrams per litre
MJ/m ²	megajoules per square metre
mL	millilitres
ML/year	megalitre per yet
mm/s	millimetre per second
MNES	matters of national environmental significance
MPSC	Moree Plains Shire Council
MW	megawatts
NARCIIM	NSW and ACT Regional Climate Modelling Project
NCA	noise catchment area

Term	Definitions
NPW Act	National Parks and Wildlife Act 1974 (NSW)
NEPM	National Environment Protection Measure
NML	noise management level
NO ₂	nitrogen dioxide
NO _x	oxides of nitrogen
NSW	New South Wales
NSW EPA	New South Wales Environment Protection Authority
NTU	Nephelometric Turbidity Units
NZS	New Zealand Standard
O ₃	ozone
OCI	Office of the Chief Investigator—Regulatory Authority for transport safety investigations in Victoria
OEH	Office of Environment and Heritage (NSW)
ONRSR	Office of the National Rail Safety Regulator
OTSI	Office of Transport Safety Investigations
PAH	polycyclic aromatic hydrocarbon
PCT	plant community type
PEA	potential expression areas
PM ₁₀	particulate matter less than 10 microns
PM _{2.5}	particulate matter less than 2.5 microns
PMF	Probable Maximum Flood
POEO	Protection of the Environment Administration Act 1991 (NSW)
QLD	Queensland
RailBAM	rail bearing acoustic monitor
RailSQAD	Rail squeal acoustic detector
RAP	Registered Aboriginal Party
RBL	rating background level
RCP	Representative Concentration Pathway
RING	Rail Infrastructure Noise Guidelines
RMAR	Rail Maintenance Access Road
RMS	Roads and Maritime Services (NSW)
RRMP	Rehabilitation and Reinstatement Management Plan
RTA	Roads and Traffic Authority (NSW)
SA1	Statistical Area Level 1
SA2	Statistical Area Level 2
SA4	Statistical Area Level 4
SAII	serious and irreversible impacts
SCA	Sustainability Council of Australia
SCR	state-controlled roads
SDPWO	State Development and Public Works Organisation Act 1971 (Qld)
SEARs	Secretary's Environmental Assessment Requirements

Term	Definitions
SEIFA	socio-economic index for an area
SEPP	State Environmental Planning Policy
SEPP 33	State Environmental Planning Policy No 33—Hazardous and Offensive Development
SEWPAC	Department of Sustainability, Environment, Water, Population and Communities 2010
SFARP	so far as is reasonably practicable
SIAM	Significant Impact Assessment Methodology
SILO	Schools Industry Links Outreach
SIMP	Social Impact Management Plan
SO ₂	sulphur dioxide
SRES	Special Report on Emissions Scenarios
SSC	State Suburbs
SSI	state significant infrastructure
State and Regional Development SEPP	State Environmental Planning Policy (State and Regional Development) 2011
TDS	total dissolved solids
TEC	threatened ecological community
TfNSW	Transport for New South Wales
TRC	Toowoomba Regional Council
TSP	total suspended particulates
TSR	Travelling Stock Reserve
UXO	unexploded ordnance
VDV	vibration dose values
VOC	volatile organic compound
WQO	water quality objectives
WSP	Water Sharing Plan
μg/m³	micrograms per cubic metre of air

Glossary

Term	Definitions
A-weighted decibels [dB(A)]	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1 kHz 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 dB(A).
Aboriginal object	A place where physical remains or modification of the natural environment indicate past and 'traditional' activities by Aboriginal people. Site types include artefact scatters, isolated artefacts, burials, shell middens, scarred trees, quarries and contact sites. Includes sites listed on the Aboriginal Heritage Information Management System.
Aboriginal place	Declared by the Minister for the Environment, in accordance with Section 84 of the <i>National Parks and Wildlife Act 1974</i> (NSW) and by an order published in the Gazette, as a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture.
Aboriginal places of heritage significance	Defined in the Standard Instrument—Principal Local Environmental Plan as an area of land, the general location of which is identified in an Aboriginal heritage study adopted by the council, and that may be shown on the Heritage Map. The term may include (but is not limited to) places that are declared as Aboriginal places under section 84 of the <i>National Parks and Wildlife Act 1974</i> (NSW).
Aboriginal site	Declared by the Minister for the Environment, in accordance with Section 84 of the <i>National Parks and Wildlife Act 1974</i> (NSW) and by an order published in the Gazette, as a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture.
Absorptive capability	Absorptive capability relates to the ability of the landscape character zones to absorb the proposal within the existing landscape setting.
Active control (level crossings)	Where the movement of vehicular or pedestrian traffic across a railway crossing is controlled using devices such as flashing signals, gates or barriers (or a combination of these), with the device/s activated prior to, and during, the passage of a train through the crossing.
Ambient noise	The all-encompassing noise at a point composed of sound from all sources near and far.
Annual exceedance probability (AEP)	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 generally the reciprocal of the average recurrence interval (ARI). For example, the 1% AEP flood event is equivalent to the 100-year ARI flood event.
Approved methods	This document lists the methods that are legally approved for modelling and assessing air pollutants from industrial premises in NSW (DEC, 2005)
Average recurrence interval (ARI)	The long-term average number of years between the occurrence of a flood of a nominated size
Background noise	The underlying level of noise present in the ambient noise when extraneous noise (such as transient traffic and dogs barking) is removed. The L_{90} sound pressure level is used to quantify background noise.
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.
Basis of Assessment	Any formal direction from a responsible state or Commonwealth agency under a relevant act, instructing the assessment approach for a Primary Approval Document. This includes Terms of Reference (TOR) and Secretary's Environmental Assessment Requirements (SEARs).
Biobank site	A site to which a biobanking agreement applies. Relevant in New South Wales.
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.

Term	Definitions
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 masse, without packaging
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.
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.
Construction footprint	Temporary disturbance footprint where only temporary disturbance is proposed (e.g. laydown areas and construction camps).
Culvert	A structure that allows water to flow under a road, railway, track, or similar obstruction.
Dangerous goods	Dangerous goods are substances or articles that pose a risk to people, property or the environment, due to their chemical or physical properties. They are usually classified with reference to their immediate risk.
Decibel	The measurement unit of sound.
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.
Ecosystem credit	A measurement of the value of EECs, CEECs and threatened species habitat for species that can be reliably predicted to occur with a plant community type. Ecosystem credits measure the loss in biodiversity values as a result of a proposal, and the gain in biodiversity values at an offset site.
Emission	A substance discharged into the air.
Equivalent continuous sound level [L _{eq}]	The constant sound level which, when occurring over the same period of time, would result in the receiver experiencing the same amount of sound energy.
Existing rail corridor	The corridor within which existing rail infrastructure (including existing, non-operational rail infrastructure), subject to works as part of Inland Rail, are located. The existing rail corridor is defined by ARTC to mean everywhere within 15 m of the outermost rails; or within the boundary fence, where boundary fences are provided and are closer than 15 metres; or, if the property boundary is less than 15 metres, the property boundary; or a permanent structure such as a fence, wall or level crossing separating the operating rail corridor from other land.
Feasibility design	The NS2B design phase, which results in the creation of the reference design that forms the basis of the construction footprint and permanent footprint.
Formation	The earthworks/material on which the ballast, sleepers and tracks are laid.
Freight	Goods transported by truck, train, ship, or aircraft.
Freight task	The amount of freight transport, usually measured in tonnes or tonne-kilometres.
Frequency [f]	The repetition rate of the cycle measured in hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high-pitched sound and a low frequency to a low-pitched sound.
Heritage listed	An item, building or place included on statutory heritage lists maintained by local, state and/or Australian governments.
Greenfield rail corridor	A section of new track within a new rail corridor.
Infrastructure sustainability	Infrastructure that is designed, constructed and operated to optimise long-term environmental, social and economic outcomes. An Infrastructure Sustainability (IS) Rating Tool has been developed by the Infrastructure Sustainability Council of Australia (ISCA) in collaboration with the industry, to drive and measure sustainability within infrastructure projects and assets.
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.

Term	Definitions
Intermodal	The movement of freight using multiple modes of transport (rail, ship, truck) without handling of the freight itself when changing modes. For a railway, this usually refers to the transport of freight in containers, which may be double stacked on the wagons carrying them.
L _{A90(period)}	The sound pressure level exceeded for 90 per cent of the measurement period.
L _{Aeq} (time)	Typically used to described ambient (background) noise levels.
LAeq(1 hour)	The busiest 1-hour 'equivalent continuous noise level'—it represents the typical L_{Aeq} noise level from all the proposal noise events during the busiest 1-hour of the assessment period.
LAeq(15 hour)	The daytime 'equivalent continuous noise level' - it represents the cumulative effects of all the proposal noise events occurring in the daytime period from 7am to 10pm
LAeq(24 hour)	The 'equivalent continuous noise level', sometimes also described as the 'energy-averaged noise level'—it represents the cumulative effects of all the proposal noise events occurring in one day.
LAeq(9 hour)	The night-time 'equivalent continuous noise level'—it represents the cumulative effects of all the proposal noise events occurring in the night-time period from 10pm to 7am.
L _{Amax}	The maximum sound level recorded during the measurement period.
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	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately adjacent.
Landscape feature	A component, part or feature of the landscape that is prominent or eye-catching, e.g. hills, buildings, vegetation.
Landscape quality	Largely subjective judgement based on particular characteristics that influence the way in which the environment is experienced, including special interests such as cultural associations or heritage interests, the presence and/or type of elements and condition.
Level crossing	A place where rail lines and a road cross at the same elevation.
Level crossing protection	The level of control provided at level crossings, which is determined on a case-by-case basis and depends on the particular characteristics of a crossing. It generally falls into two categories: 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.
L _{max}	The maximum sound pressure level measured over the measurement period.
L _{min}	The minimum sound pressure level measured over the measurement period.
Local road	Road used primarily to access properties located along the road.
Maximum parameters approach	Defined by DPIE as the maximum extent of the project, e.g. spatial extent (project footprint), height, processing capacity or throughput. It could be considered as the realistic full extent of the project. This allows the proponent to clearly identify the maximum extent of elements of the project that require further design following EIS finalisation.
Metres above Australia Height Datum (mAHD)	The elevation in metres with respect to the Australian Height Datum (AHD). The AHD sets mean sea level as zero elevation. Mean sea level was determined from observations recorded by 30 tide gauges around the coast of the Australian continent for the period 1966–1968.
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.

Term	Definitions
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
Permanent footprint	The rail corridor, which includes the rail tracks and associated infrastructure, as well as other permanent works associated with the proposal.
Pioneer line	Rail lines constructed to a lesser standard than main rail lines, providing access to mainly agricultural areas.
PM ₁₀	Particulate matter 10 micrometres or less in diameter. Particles in this size range make up a large proportion of dust that can be drawn deep into the lungs. This is a classification of particles by size rather than chemical properties.
Possession	A period of time during which a rail line is blocked to trains, to permit work to be carried out on or near the line.
Proposal	The construction and operation of the North Star to Border section of Inland Rail.
Proposal site	The area that would be directly affected by construction works (also known as the construction footprint). It includes the location of proposal infrastructure, the area that would be directly disturbed by the movement of construction plant and machinery, and the location of the storage areas/compounds sites, etc., that would be used to construct that infrastructure.
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. The rail corridor for the proposal will have a minimum width of 40 m with some variation to cater for local topography and certain pieces of infrastructure. The rail corridor will be of sufficient width to encompass all infrastructure currently proposed for construction, as well as possible expansions in the future.
Rail level	The theoretical level of the running surface of the rails.
Rating background level	The overall background level for each day, evening and night period for the entire length of noise monitoring.
Reference design	The NS2B engineering design created during the feasibility design phase, which forms the basis of the construction footprint and permanent footprint.
Relic	A relic is defined by the Heritage Act 1977 (NSW) as, 'any artefact, object or material evidence which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and which is of State or local heritage significance'.
Section 170 Heritage and Conservation Register	Under section 170 of the <i>Heritage Act 1977</i> (NSW), all state government agencies must keep and administer a database of heritage assets, called a Section 170 Heritage and Conservation Register.
Sensitive receivers	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.
Single line track	Trains travelling in both directions share the same track.
Sound pressure level	The amount of sound at a specified point.
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.
Standard gauge	Gauge refers to how far apart the rails on a railway track are spaced. Standard gauge indicates that the rails will be spaced 1.435 m apart.
Strahler stream order	Classification system that gives a waterway an 'order' according to the number of tributaries associated with it.

Term	Definitions
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 to the nature and requirements of each impact assessment technical report.
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.
Track	The structure consisting of the rails, fasteners, sleepers and ballast, which sits on the formation.
Track formation	Refer to the definition of formation.
Traffic noise	The total noise resulting from road traffic. The L_{eq} sound pressure level is used to quantify traffic noise.
Travelling stock reserves	Travelling stock reserves are parcels of Crown land reserved under the <i>Crown Lands Act 1989</i> (NSW) for use by travelling stock.
Turnout	A junction point where a rail vehicle can leave a given track for a branching or parallel track.
View	The visual experience from the viewer's perspective.
Visual amenity	The value of a particular 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 impact	The impacts on the views from residences, workplaces and public places. This can be positive (i.e. benefit or an improvement) or negative (i.e. adverse or a detraction).
Waste	Waste is defined by the EPA as any matter (whether liquid, solid, gaseous or radioactive) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration to the environment.
Waste management hierarchy	The waste management hierarchy is a set of priorities for the efficient use of resources, which underpins the objectives of the <i>Waste Avoidance and Resource Recovery Act 2001</i> (NSW). The waste management hierarchy progresses from avoidance (most preferred), to reuse/recycling, to disposal (least preferred).