

12 Glossary of terms and abbreviations

Term	Definition
$\mu\text{g}/\text{m}^3$	Micrograms per cubic metre
AADT	Annual Average Daily Traffic — the total traffic in both directions at a specified location calculated from mechanically obtained axle counts.
Abutment	A structure that supports the end of a bridge.
AEP	Annual Exceedance Probability — the probability of a rainfall or flood event exceeding a nominated level in a year. A one percent AEP is the probability of an event exceeding a nominated level in 100 years.
AHD	Australian Height Datum — the standard reference level used to express the relative height of various features. A height given in metres AHD is essentially the height above sea level.
Alignment	The general route (eg of a roadway) in plan and elevation.
Alluvium	Unconsolidated deposit of gravel, sand or mud formed by water flowing in identifiable channels. Commonly well sorted and stratified.
AM peak period	6–10 am weekdays.
Amenity	The degree of pleasantness of an area or place.
ANZECC	Australian and New Zealand Environment and Conservation Council.
Aquifer	Geologic formation, group of formations, or part of a formation capable of transmitting and yielding quantities of water.
Arboreal	To live in, or be connected with, trees.
Archaeological site	A site with any material evidence of past Aboriginal activity that remains within a context or place that can be reliably related to that activity.
Archaeology	The scientific study of human history, particularly the relics and cultural remains of the distant past.
Artefact	An object, normally portable, made or modified by human hands.
AS 1940	Australian Standard — Guide to the Storage and Handling of Flammable and Combustible Liquids.
AS 2436-1981	Australian Standard — Noise Control on Construction, Maintenance and Demolition Sites.
AS 2922	Australian Standard — Ambient Air Guide for Siting of Sampling Equipment.
AS 3580.10.1-1991	Australian Standard — Methods for Sampling and Analysis of Ambient Air.
Asphalt or asphaltic concrete	A dense, continuously graded mixture of coarse and fine aggregates, mineral filler and bitumen usually produced hot in a mixing plant.

Term	Definition
Attenuation	The reduction in sound-pressure level magnitude during transmission (around a barrier or over a distance outdoors), measured in decibels (dB or dBA).
Auslink	The Australian government transport planning and funding mechanism focussing on a defined national network of important road and rail infrastructure links and their intermodal connections.
Background noise level	The ambient sound-pressure noise level in the absence of the sound under investigation exceeded for 90 per cent of the measurement period. Normally equated to the average minimum A-weighted sound pressure level.
Balanced cantilever	Balanced cantilever construction involves erecting the bridge deck in segments, alternating from one side to the other side of each pier, until the deck construction is complete and meets at midspan.
Balustrade	A railing supported by a series of posts.
Batter	The side slope of walls, embankments and cuttings or the degree of such slope, usually expressed as a ratio of horizontal distance to one vertical height.
Bedrock	The unweathered rock that lies below loose surface deposits of soil and alluvium.
Benefit-Cost Ratio	The ratio of the present value of benefits to the present value of costs of a project.
Bore	A cylindrical drill hole sunk into the ground from which water is pumped for use or monitoring.
Borehole	A hole produced in the ground by drilling for the investigation and assessment of soil and rock profiles.
Bridge alignment	The geometric layout, in plan and elevation, of a bridge.
Buffer	A physical barrier, structure or width of land which encloses, partially encloses or defines a particular environment. It serves to minimise the impacts of non-desirable external impacts on the adjoining environment.
Bund wall	A wall erected to prevent the escape of various emissions into the environment (liquids, noise or views).
Cable-stayed	A cable-stayed bridge consists of one or more columns (normally referred to as towers or pylons), with cables supporting the bridge deck. The towers support the bridge weight and vehicle loads.
Canopy	The uppermost layer of foliage formed by the crown of trees.
Cantilevers	Structures that project horizontally into space, supported at only one side.
Carriageway	The portion of a roadway devoted to vehicular traffic generally delineated by kerbs, a verge or a median. .
Cast in situ	The placement of wet concrete in forms at the construction site.

Term	Definition
Catchment	The area drained by a stream or body of water, or the area of land from which water is collected.
Centroid	The centre of mass of an element.
Clearway	Lengths of road along which vehicles are prohibited from parking or stopping.
Colluvial soils	Stony clays which have been moved downslope by soil creep and slopewash but may include a proportion of windblown red clay (pama) and higher terrace alluvium.
Concentration (air quality)	Vehicles emit pollutants to the air, which are transported and diluted resulting in a volume of pollutant per volume of ambient air. Ambient air quality goals are expressed in terms of concentrations, which are measured in parts per million or micrograms per cubic metre.
Concept design	Initial functional layout of a concept, such as a road or road system, to provide a level of understanding to later establish detailed design parameters.
Concrete box girder bridge	A concrete box girder bridge generally consists of a single box (sometimes twin boxes) and are made up of top and bottom flanges connected by two continuous vertical or sloped web members.
Concrete truss	A concrete truss bridge is similar to a box girder bridge. However, instead of continuous vertical webs, the top and bottom flanges are joined together by concrete truss members.
Conservation	The management of resources in a way that will benefit both present and future generations.
Contaminant	Any physical, chemical, biological or radiological substance or matter in water or soil that is not of natural origin.
Contamination	The degradation of the natural environment as a result of human activities.
Contra flow	Traffic travelling in the opposite direction to normal.
Crest 'K'	The K value is the length of a vertical curve (m) for a 1% change in grade.
Culvert	One or more adjacent, enclosed channels for conveying a stream below a road.
Cumulative impact	The sum effect on the environment resulting from the successive effects of several different impacts.
Concrete curing	A process where the cement in concrete is allowed to react with the water over time, increasing the concrete's strength and hardness.
Curved alignment	A route with which curves horizontally.
dBA	Decibels using the A-weighted scale measured according to the frequency of the human ear.
DEC	NSW Department of Environment and Conservation (now known as the Department of Environment and Climate Change).

Term	Definition
Decibel	A scale unit used in the comparison of powers and levels of sound energy.
Degree of saturation	The ratio of the traffic volume entering an intersection in a specific period to the capacity of the intersection during that period.
Dewater	To remove water from something.
Dioxin	A group of halogenated organic compounds, significant because they act as environmental pollutants.
DNR	NSW Department of Natural Resources (now known as the Department of Water and Energy).
DoP	NSW Department of Planning, which is responsible for planning.
Design speed	A nominal speed used for the design of geometric features of the road, such as curves.
Director-General's Requirements (DGRs)	Requirements and specification for the environmental assessment prepared by the Director-General of Planning under section 75F of the EP&A Act.
Earthworks	The process of extracting, moving and depositing earth during construction.
Eccentric load	A load imposed on a structural member at a location other than the centroid of the section.
ESD	Ecologically Sustainable Development
Ecology	The relationship between living things and their environment.
Ecosystem	A functional unit of energy transfer and nutrient cycling in a given place. It includes all relationships within the biotic community and between the biotic components of the system.
Embankment	A mound or bank of earth or stone formed to support a roadway incorporating sloping/battered faces.
Emission	Discharge of a substance to the environment.
EMP	Environmental management plan.
Environment	A term for all the conditions (physical, chemical, biological and social) in which an organism or group of organisms, including humans, exists.
Environmental assessment	An environmental assessment is a focussed analysis undertaken for the purposes of Part 3A of the Environmental Planning and Assessment Act 1979, written generally to comply with the requirements issued by the Director-General of the Department of Planning.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW).
EPA	NSW Environment Protection Authority (now part of the Department of Environment and Climate Change).
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth).

Term	Definition
Extradosed	The structure of an extradosed bridge consists of a concrete deck structure (either a box girder or a ribbed deck) and employs short towers and cables that are used to support traffic loads on a bridge. The deck structure of an extradosed bridge generally supports its own selfweight. (In contrast,, cable-stayed bridges rely on support from towers and cables, hence requiring much longer towers.)
Falsework	Temporary structures used in construction to support spanning structures until its construction is sufficiently advanced to support itself.
Flange	Horizontal top and bottom slab members.
Formwork	The term given to either temporary or permanent moulds into which concrete or similar materials are poured.
Frequency (sound)	Similar to the pitch of a musical note in sound pressure fluctuations of cycles per second (Hertz). Most sounds comprise a composite of frequencies of varying sound-pressure levels in the range of 20 Hertz to 20,000 Hertz.
Grade separation	The separation of road, rail or other traffic so that crossing movements, which would otherwise conflict, are at different levels.
Gradient	Slope.
Ground vibration	The combined speed of ground oscillation at a point from a source of vibration such as a blast or vehicle.
Groundwater	Subsurface water contained within the saturated zone.
Habitat	The place where an organism lives; habitats are measurable and can be described by their flora and physical components.
Heritage	Things of value which are inherited from the past.
Hydrocarbon	Any organic compound — gaseous, liquid or solid — consisting only of carbon and hydrogen.
Hydrogeology	The study of subsurface water in its geological context.
Hydrology	The study of rainfall and surface water runoff processes.
Impact	The effect of human-induced action on the environment.
Infiltration	The process of surface water soaking into the soil.
Infrastructure	Physical systems including roads, bridges, utilities, water, sewerage and so on, which are required by the community to function.
Introduced species	Plants and animals not native to Australia and known or thought to have been brought here by humans.
ITS	Intelligent transport system. This term refers to the addition of information and communications technology to transport infrastructure and vehicles in order to manage vehicles, loads, and routes to improve safety and reduce vehicle wear, transportation times and fuel consumption.
K value	The length of a vertical curve (m) for a 1% change in grade.

Term	Definition
L/s	Litres per second.
L _{A10}	The noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below L _{A10} level for 90% of the time. The L _{A10} is a common noise descriptor for environmental noise and road traffic noise.
L _{A90}	The noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below L _{A90} level for 10% of the time. This measure is commonly referred to as background noise level.
LAeq	The equivalent continuous sound level. This is the energy average of the varying noise over the sample period and is equivalent to the level of constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.
Landform	A specific feature of the landscape or the general shape of the land.
LED	Light-emitting diode. A small light source often used as indicator lights on electronic devices.
Lens	Geologic deposit or body bounded by at least one curved, converging surface, giving it a lens-like appearance.
Level of Service (LoS)	A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers.
Live load	The load on the bridge from moving traffic, pedestrians and cyclists.
Local road	A road or street used primarily for access to abutting properties.
Longitudinal section	The section drawn along the length of the route showing vertical elevation.
mg/L	Milligrams per litre
micron	One millionth of a metre.
Mitigation measures	Measures put in place to reduce an impact.
Modelling	Use of mathematical equations to simulate and predict real events and processes.
Monitoring	Regular measurement of components of the environment to understand their condition and establish if necessary standards are being met.
Native	Local inhabitant of a defined place.
NPWS	NSW National Parks and Wildlife Service (now part of the Department of Environment and Climate Change).
Off-peak	Anything outside of AM and PM peak times.
pH	A measure of acidity or alkalinity of a solution, numerically equal to 7 for neutral solution, increasing with increasing alkalinity and decreasing with increasing acidity. Originally stood for the words potential of hydrogen.
Pier	A structure that supports the bridge along its length, at the junctions of connecting spans.

Term	Definition
Piling — bored	A method of inserting piles using a drilling / boring motion.
Piling — driven	A method of inserting piles using a driving / hammering motion.
PM peak period	3–7pm weekdays.
Post-tensioning	The descriptive term for a method of applying compression after pouring concrete and the curing process (in situ).
Prestressing	Concrete which is exposed to compressive forces by the tensioning of prestressing cables. The cables may be pretensioned (tensioned before casting) or post-tensioned (after casting). Prestressed concrete enables larger spans between columns, greater loads, minimal cracking and fast construction cycles. It is more expensive than reinforced concrete and special considerations are essential for prestressed concrete.
Proponent	The person or organisation that proposes carrying out the project or activity.
Ramsar	An intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.
Rating background level (RBL)	This is the median value of the assessment background levels values for the period over all of the days measured. There is therefore an RBL value for each period — daytime, evening and night-time.
Receptor/receiver	An environmental modelling term used to describe a map reference point where the impact is predicted. A sensitive receptor is a home, work place, school or other place where people spend some time. An elevated receptor is a point above ground level.
Rehabilitation	Preparation of a final landform following extraction and its stabilisation with vegetation.
Remnant vegetation	Native vegetation remaining after widespread clearing has taken place.
Resource	Potentially usable material in a defined area that can be economically extracted.
RTA	Roads and Traffic Authority of New South Wales.
RTA MASM	RTA Guidelines for the Management of Acid Sulfate Materials.
Runoff	The proportion of precipitation discharged through surface water systems.
Sand	Sediment comprising particles ranging between 0.063 mm and 2 mm.
Sandstone	A fine-grained rock of sedimentary origin composed primarily of sand-sized particles.
Screen (water)	A type of lining tube or casing of special construction, with apertures or slots designed to permit the flow of water into a well while preventing the entry of aquifer or filter pack material.
Shale	A laminated sediment in which the constituent particles are predominantly in the clay size.

Term	Definition
Silt	Sediment comprising most particles between 0.004 mm and 0.063 mm.
Siltstone	A fine-grained rock of sedimentary origin composed primarily of silt-sized particles.
Soffit	The underside of a structure.
Span length	The distance between bridge piers.
Species	Taxonomic grouping of organisms that are able to interbreed with each other but not with other species.
Stakeholder	An individual or group with an interest in and/or the ability to influence an issue or project.
Steel truss	A steel truss bridge, (eg the existing Iron Cove bridge) consists of straight and slender steel beams that form triangular units, which are bolted or welded together.
Stockpile	Mound used to store material.
Stormwater	Rainwater which runs off catchments following rain events. The untreated water is carried into creeks, rivers and lakes.
Substructure	The supporting structure of the bridge, including piers, abutments, piles/pile caps and retaining walls.
Superstructure	The superstructure generally includes anything that is supported by the piers and abutments. On this project, it consists of the box girder and appropriate spans.
Terrestrial	Relating to the land as distinct from air or water.
Tertiary period	Geologic time at the beginning of the Cainozoic era, 65 million to 2 million years ago, after the Cretaceous and before the Quaternary.
The original bridge	The original bridge was opened in 1882 and replaced by the existing Iron Cove Bridge in 1955.
Tidal flow	A term to describe how lane configurations are altered daily during peak hours, so that more lanes are used by the predominant traffic flow.
Tie-in	The point where new roadwork connects (ties in) to the existing road pavement.
Topography	The physical relief and contours of the area.
Topsoil	The surface layer of a soil profile containing most of the organic material and viable life forms and seeds.
Turbidity	A measure of light penetration through a water column containing particles of matter in suspension.
Urban design characteristics	General description of landscape design and landscape characteristics.
USEPA	United States Environmental Protection Agency.
Visual catchment	The area from which an object is viewed.
VMS	Variable message sign.

Term	Definition
Water quality	Degree or lack of contamination in water.
Water table	The surface of saturation in an unconfined aquifer at which the pressure of the water is equal to that of the atmosphere.
Web (construction)	The side or structural portion of a structural beam that connects to top and bottom portions.