

III Glossary of terms and abbreviations

Term	Meaning
A	
AAQNEPM	National Environment Protection (Ambient Air Quality) Measure
Aboriginal cultural heritage	The tangible (objects) and intangible (dreaming stories, song lines and places) cultural practices and traditions associated with past and present day Aboriginal communities
Aboriginal object	Any deposit, object or material evidence (not being a handicraft made for sale), including Aboriginal remains, relating to the Aboriginal habitation of NSW
Aboriginal place	Any place declared to be an Aboriginal place under section 94 of the <i>National Parks and Wildlife Act 1974 (NSW)</i>
ABS	Australian Bureau of Statistics
Abutment	A support structure at the end of a bridge
Acid sulfate soils	Naturally occurring soils, sediments or organic substrates (eg peat) that are formed under waterlogged conditions. These soils contain iron sulfide minerals (predominantly as the mineral pyrite) or their oxidation products. In an undisturbed state below the water table, acid sulfate soils are benign. However if the soils are drained, excavated or exposed to air by a lowering of the water table, the sulfides react with oxygen to form sulfuric acid
Acoustic louvre	Equipment that provides ventilation and reduces noise from operational facilities
ACTAQ	Advisory Committee on Tunnel Air Quality
Acute exposure	Contact with a substance that occurs once or for only a short time (up to 14 days)
ADT	Average daily traffic
AECOM	AECOM Australia Pty Ltd
AFMP	Ancillary Facilities Management Plan
AHD	Australian Height Datum The standard reference level used to express the relative height of various features. A height given in metres AHD is the height above mean sea level
AHIMS	Aboriginal Heritage Information Management System A register of NSW Aboriginal heritage information maintained by the NSW Office of Environment and Heritage
Airshed	A part of the atmosphere that shares a common flow of air and is exposed to similar influences
Alignment	The geometric layout (eg of a road) in plan (horizontal) and elevation (vertical)
Alluvium	Soil or sediment left by flowing water
AM peak hour	Unless otherwise stated, this refers to vehicle trips arriving at their destination during the average one hour peak in the AM peak period between 7.00 am and 9.00 am on a normal working weekday
ANZECC	Australian and New Zealand Environment Conservation Council

Term	Meaning
Approved Methods	Updated Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (NSW EPA 2016)
Aquifer	A groundwater bearing formation sufficiently permeable to transmit and yield groundwater or water bearing rock
Archaeological potential	The likelihood of undetected surface and/or subsurface archaeological materials existing at a location
ARI	Average recurrence interval An indicator used to describe the frequency of floods. The average period in years between the occurrence of a flood of a particular magnitude or greater. In a long period of say 1,000 years, a flood equivalent to or greater than a 100 year ARI event would occur 10 times. The 100 year ARI flood has a one per cent chance (ie a one-in-100 chance) of occurrence in any one year. Floods generated by runoff from the study catchments is referred to in terms of their ARI, for example the 100 year ARI flood
Arterial roads	The main or trunk roads of the state road network that carry predominantly through traffic between regions
AS	Australian Standard
ASTER	Advanced Spaceborne Thermal Emission and Reflection Radiometer
At-grade	A road at ground level, not on an embankment or in a cutting
ATN	Active transport network
AWT	Average weekday traffic
B	
Background concentration (air quality)	Describes all contributing sources of a pollutant concentration other than road traffic. It includes, for example, contributions from natural sources, industry and domestic activity
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
BaP	Benzo(a)pyrene
Benefit cost ratio	A measure of the magnitude of net benefit to society derived from the capital investment in the project
Bioretention facility	Landscaped depression designed to treat stormwater runoff to remove contaminants and sediment
Blasting	Rock blasting is the controlled use of explosives and other methods such as gas pressure blasting pyrotechnics or plasma processes, to excavate, break down or remove rock
BoM	Australian Government Bureau of Meteorology
Bore	Constructed connection between the surface and a groundwater source that enables groundwater to be transferred to the surface either naturally or through artificial means
BS	British standard
BTEX	Benzene, toluene, ethylbenzene and xylenes
BTEXN	Benzene, toluene, ethylbenzene, xylenes and naphthalene
BTS	NSW Bureau of Transport Statistics

Term	Meaning
Bus lane	A traffic lane dedicated to buses, but which can also be used by taxis, bicycles and motorcycles
C	
Campbell Road civil and tunnel site	A construction ancillary facility for the M4-M5 Link project at St Peters
Campbell Road motorway operations complex	An area where operational ancillary facilities are established. Located within the St Peters interchange, south of Campbell Road at St Peters, on land occupied during construction by the Campbell Road civil and tunnel site
Campbell Road ventilation facility	Ventilation supply and exhaust facilities, axial fans, ventilation outlets and ventilation tunnels. Located at St Peters, within the St Peters interchange site
Capacity	The nominal maximum number of vehicles which has a reasonable expectation of passing over a given section of a lane or roadway in one direction during a given time period under prevailing roadway conditions
CAQMP	Construction Air Quality Management Plan
Carcinogen	A substance that causes cancer
Carriageway	The portion of a roadway used by vehicles including shoulders and ancillary lanes
CASA	Civil Aviation Safety Authority
Catchment	The land area draining through the main stream, as well as tributary streams, to a particular site. It always relates to an area above a specific location
CBD	Central business district
CEMP	Construction Environmental Management Plan A plan developed for the construction phase of the project to ensure that all contractors and sub-contractors comply with the environmental conditions of approval for the project and that the environmental risks are properly managed
CFFMP	Construction Flora and Fauna Management Plan
Chief Scientist	NSW Office of the Chief Scientist and Engineer
CHMP	Construction Heritage Management Plan
Chronic exposure	Contact with a substance or stressor that occurs over a long time (more than one year) [compared with acute exposure and intermediate duration exposure]
City Centre Access Strategy	Sydney Centre Access Strategy (Transport for NSW 2013)
Climate change	A change in the state of the climate that can be identified (eg by statistical tests) by changes in the mean and/or variability of its properties, and that persists for an extended period of time, typically decades or longer (CSIRO and BoM 2015)

Term	Meaning
Climate projection	A climate projection is the simulated response of the climate system to a scenario of future emission or concentration of greenhouse gases and aerosols, generally derived using climate models. Climate projections are distinguished from climate predictions by their dependence on the emission/concentration/radiative forcing scenario used, which in turn is based on assumptions concerning, for example, future socio-economic and technological developments that may or may not be realised (CSIRO and BoM 2015)
CLM Act	<i>Contaminated Land Management Act 1997</i> (NSW)
CNVG	<i>Construction Noise and Vibration Guideline</i> (Roads and Maritime, 2016)
CNVIS	Construction Noise and Vibration Impact Statements
CNVMP	Construction Noise and Vibration Management Plan
CO	Carbon monoxide
CO ₂	Carbon dioxide A naturally occurring gas, also a by-product of burning fossil fuels from fossil carbon deposits, such as oil, gas and coal, of burning biomass, of land use changes and of industrial processes (eg cement production). It is the principle anthropogenic greenhouse gas that affects the Earth's radiative balance (CSIRO and BoM 2015)
CO ₂ -e	Carbon dioxide equivalents
Concept design	Initial functional layout of a road/road system or other infrastructure. Used to facilitate understanding of a project, establish feasibility and provide basis for estimating and to determine further investigations needed for detailed design
Construction	Includes all physical work required to construct the project
Construction ancillary facilities	Temporary facilities during construction that include, but are not limited to construction sites (civil and tunnel), sediment basins, temporary water treatment plants, precast yards and material stockpiles, laydown areas, workforce parking, maintenance workshops and offices
Construction fatigue	Impact on receivers in the vicinity of concurrent and/or consecutive construction activities
CPI	Consumer price index
CPTED	Crime Prevention Through Environmental Design
CR	Community receptors
CSELR	CBD and South East Light Rail
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSWMP	Construction Soil and Water Management Plan
CTAMP	Construction Traffic and Access Management Plan
Cul-de-sac	A street or road that is open for vehicular traffic at one end only
Culvert	A structure that allows water to flow under a road
Cumulative impacts	Impacts that, when considered together, have different and/or more substantial impacts than a single impact assessed on its own
Cut-and-cover	A method of tunnel construction whereby the structure is built in an open excavation and subsequently covered

Term	Meaning
Cutting	Formation resulting from the construction of the road below existing ground level, the material is cut out or excavated
CWMP	Construction Waste Management Plan
D	
Darley Road civil and tunnel site	A construction ancillary facility for the M4-M5 Link project located at Leichhardt
Darley Road motorway operations complex	An area where operational ancillary facilities are established. Located at Leichhardt, south of City West Link and the Inner West Light Rail line on land occupied during construction by the Darley Road civil and tunnel site
dB	Decibel - sound level measurement
dBA	A-weighted decibels A-weighting is applied to instrument-measured sound levels in effort to account for the relative loudness perceived by the human ear, as the ear is less sensitive to low audio frequencies
DECC	NSW Department of Environment and Climate Change (now OEH)
DECCW	NSW Department of Environment, Climate Change and Water (formerly DECC, now OEH)
Design speed	A nominal speed which determines the geometric design features of a road
Detailed design	The phase of the project following concept design where the design is refined, and plans, specifications and estimates are produced, suitable for construction
Detour	An alternative route, using existing roads, made available to traffic
Differential settlement	Small discrete areas of settlement which may impact the relative level of one component of a structure more than compared to a different component
DIN	German standard
DIRD	Australian Government Department of Infrastructure and Regional Development
Discharge	The rate of flow of water measured in terms of volume per unit time, for example, cubic metres per second (m ³ /s). Discharge is different from the speed or velocity of flow, which is a measure of how fast the water is moving (eg metres per second (m/s))
Do minimum	A model scenario that does not incorporate the proposed project infrastructure
Do something	A model scenario that incorporates the proposed project infrastructure
Do something cumulative	A model scenario that incorporates the proposed project infrastructure and other relevant project infrastructure
DP&E	NSW Department of Planning and Environment
DPI	NSW Department of Primary Industries
DPI-Fisheries	NSW Department of Primary Industries (Fisheries)
DPI-Water	NSW Department of Primary Industries (Water)
Drainage	Natural or artificial means for the interception and removal of surface or subsurface water

Term	Meaning
Drawdown	Reduction in the height of the water table caused by changes in the local environment
DS	'Do-Something' scenario
DSC	'Do-Something Cumulative' scenario
E	
Earthworks	All operations involved in loosening, excavating, placing, shaping and compacting soil or rock
EB	Eastbound
Ecological community	An ecological community is a naturally occurring group of native plants, animals and other organisms that are interacting in a unique habitat
Egress	Exit
EIS	Environmental Impact Statement
Embankment	An earthen structure where the road (or other infrastructure) subgrade level is about the natural surface
EMF	Electromagnetic field
Emission factor	A quantity which expresses the mass of a pollutant emitted per unit of activity. For road transport the unit of activity is usually either distance (ie g/km) or fuel consumed (ie g/litre)
Emission rate	A quantity which expresses the mass of a pollutant emitted per unit of time (eg g/second)
Emissions scenario	A plausible representation of the future development of emissions of substances that are potentially radiatively active (eg greenhouse gases, aerosols) based on a coherent and internally consistent set of assumptions about driving forces (such as demographic and socio-economic development, technological change) and their key relationships (CSIRO and BoM 2015)
Enabling works	Works which are required to enable the commencement of the main construction works
Entry ramp	A ramp by which one enters a limited-access highway/tunnel
Environment	As defined within the <i>Environmental Planning and Assessment Act 1979</i> (NSW), all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EOI	Expressions of interest
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EP&A Regulation	Environmental Planning and Assessment Regulation 2000 (NSW)
EPA	NSW Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPL	Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> (NSW)
Erosion	A natural process where wind or water detaches a soil particle and provides energy to move the particle
EU	European Union
Exit ramp	A ramp by which one exits a limited-access highway/tunnel

Term	Meaning
Extreme rainfall	There is no consistent global definition for extreme rainfall. It can be defined by either relative rainfall at a location (amount relative to averages), or absolute rainfall amounts (eg over 100 millimetres in a single day). In this report, an extreme rainfall event is defined as the wettest day in 20 years
Extreme temperature	Definitions vary, however this report refers to extreme temperature as hot days (days above 35°C) and very hot days (days above 40°C)
F	
F6 Extension (previously referred to as SouthLink)	A proposed motorway link between the New M5 at Arncliffe and the existing M1 Princes Highway at Loftus, generally along the alignment known as the F6 corridor. The project is being delivered by NSW Roads and Maritime Services and would be subject to separate assessment and planning approval
FBA	<i>Framework for Biodiversity Assessment</i> (Office of Environment and Heritage 2014)
Feasible and reasonable	Consideration of standard or good practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. 'Feasible' relates to engineering considerations and what is practical to build. 'Reasonable' relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community expectations and nature and extent of potential improvements
Fill	The material placed in an embankment
Flood	Relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with major drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunami
Flood prone land	Land susceptible to flooding by the probable maximum flood. Note that the flood prone land is also known as flood liable land
Flood storage area	Those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. The extent and behaviour of flood storage areas may change with flood severity, and loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation. It is necessary to investigate a range of flood sizes before defining flood storage areas
Floodplain	Area of land which is inundated by floods up to and including the probable maximum flood event (ie flood prone land)
Floodplain Risk Management Plan	A management plan developed in accordance with the principles and guidelines in the NSW Floodplain development manual (DIPNR 2005). Usually includes both written and diagrammatic information describing how particular areas of flood prone land are to be used and managed to achieve defined objectives
FM Act	<i>Fisheries Management Act 1994</i> (NSW)
Form letter	An identical standardised letter that is lodged by multiple people or groups (NSW Government 2017d)

Term	Meaning
Freeboard	A factor of safety typically used in relation to the setting of floor levels, levee crest levels, etc. It is usually expressed as the difference in height between the adopted flood planning level and the peak height of the flood used to determine the flood planning level. Freeboard provides a factor of safety to compensate for uncertainties in the estimation of flood levels across the floodplain, such as wave action, localised hydraulic behaviour and impacts that are specific event related, such as levee and embankment settlement, and other effects such as 'greenhouse' and climate change. Freeboard is included in the Flood Planning Level
Freight Strategy	NSW Freight and Ports Strategy (Transport for NSW 2013b)
G	
GDE	Groundwater dependent ecosystem Refers to communities of plants, animals and other organisms whose extent and life process are dependent on groundwater, such as wetlands and vegetation on coastal sand dunes
Geotechnical investigation	Below ground investigation including soil and groundwater sampling and testing
GHG	Greenhouse gas
Global Sydney	As defined in A Plan for Growing Sydney (NSW Government 2014), Global Sydney includes the Sydney CBD, North Sydney CBD, Barangaroo, Darling Harbour, The Bays Precinct, Pyrmont-Ultimo, Broadway and Camperdown Education and Health Precinct, Central to Eveleigh, Surry Hills and City East
GMA	Greater Metropolitan Area
GPS	Global positioning system
Grade	The rate of longitudinal rise (or fall) with respect to the horizontal expressed as a percentage or ratio
GRAL	Graz Lagrangian (dispersion model) An air quality modelling package
GRAMM	Graz Mesoscale Model
Greenhouse gas	Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself, and by clouds. Water vapour (H ₂ O), carbon dioxide (CO ₂), nitrous oxide (N ₂ O), methane (CH ₄) and ozone (O ₃) are the primary greenhouse gases in the Earth's atmosphere (CSIRO and BoM 2015)
Groundwater	Water that is held in rocks and soil beneath the earth's surface
H	
ha	Hectare
Haberfield civil and tunnel site/Haberfield civil site	Construction ancillary facilities for the M4-M5 Link project located at Haberfield
Habitat	An area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community, including any biotic or abiotic component (OEH 2014a)
HAMU	Historical archaeological management unit
HARD	Historical archaeological research design

Term	Meaning
Hazard	A source of potential harm or a situation with a potential to cause loss of human life or damage to physical assets
HCA	Heritage conservation area
Heavy vehicles	A heavy vehicle is classified as a Class 3 vehicle (a two axle truck) or larger, in accordance with the Austroads Vehicle Classification System
Heritage Act	<i>Heritage Act 1977</i> (NSW)
Heritage Council	Heritage Council of NSW
Heritage item	Any place, building or object listed on a statutory heritage register
HGV	Heavy goods vehicle (truck)
HHRA	Human health risk assessment
HIA/HIS	Heritage impact assessment/heritage impact statement
Hydraulic conductivity	A characteristic of soil that describes how easily water moves through it
Hydrogeology	The area of geology that deals with the distribution and movement of groundwater in soils and rocks
Hydrology	The study of rainfall and surface water runoff processes
I	
IAQM	Institute of Air Quality Management
ICAC	Independent Commission Against Corruption
ICNG	<i>Interim Construction Noise Guideline</i> (NSW DECC 2009a)
Impact	Influence or effect exerted by a project or other activity on the natural, built and community environment
In situ	In the natural or original position. Applied to a rock, soil, or fossil when occurring in the situation in which it was originally formed or deposited
Infiltration	The downward movement of water into soil and rock. It is largely governed by the structural condition of the soil, the nature of the soil surface (including presence of vegetation) and the antecedent moisture content of the soil
Ingress	Enter
Inner West Council	The amalgamation of the former local government areas of Ashfield, Leichhardt and Marrickville, proclaimed on 12 May 2016
Inner West subsurface interchange	A subsurface interchange at Leichhardt and Annandale that would link the mainline tunnels with the Rozelle interchange and the Iron Cove Link
INP	Industrial Noise Policy
Interchange	A grade separation of two or more roads with one or more interconnecting carriageways
IPCC	Intergovernmental Panel on Climate Change
Iron Cove Link	Around one kilometre of twin tunnels that would connect Victoria Road near the eastern abutment of Iron Cove Bridge and Anzac Bridge
Iron Cove Link civil site	A construction ancillary facility for the M4-M5 Link project located at Rozelle

Term	Meaning
Iron Cove Link motorway operations complex	An area where operational ancillary facilities are established. Located south of the realigned Victoria Road carriageway between Callan Street and Springside Street at Rozelle, on land occupied during construction by the Iron Cove Link civil site
Iron Cove Link ventilation facility	Ventilation supply and exhaust facilities, axial fans, ventilation outlets and ventilation tunnels. Located at Rozelle
ISCA	Infrastructure Sustainability Council of Australia
J	
Just Terms Act	<i>Land Acquisition (Just Terms Compensation) Act 1991</i> (NSW)
K	
KGRIU	King Georges Road Interchange Upgrade A component of the WestConnex program of works. Upgrade of the King Georges Road interchange between the M5 West and the M5 East at Beverly Hills, in preparation for the New M5 project
kL	Kilolitre
kL/day	Kilolitres per day
km	kilometres
L	
L/s/km	Litres per second per kilometre
L _{A90}	The “background noise level” in the absence of construction activities. This parameter represents the average minimum noise level during the daytime, evening and night-time periods respectively. The LAeq(15minute) construction Noise Management Levels (NMLs) are based on the LA90 background noise levels
L _{Aeq}	The ‘energy average noise level’
L _{AFmax}	The maximum fast time weighted noise level from road traffic noise occurring at a particular location
LALC	Local Aboriginal land council
Landscape character	The aggregate of built, natural and cultural aspects that make up an area and provide a sense of place. Includes all aspects of a tract of land – built, planted and natural topographical and ecological features
Landscape design	The design of the natural and built environment. Soft landscape design involves design using vegetative materials such as trees, shrubs, groundcovers. Hard landscape design involves design using hard materials such as pavement, walls and ramps
Lane	A portion of the carriageway allotted for the use of a single line of vehicles
LCV	Light commercial vehicle
LCZ	Landscape character zone
LDV	Light duty vehicle
Leachate	Liquid that ‘leaches’ (drains) from a landfill or stockpile
LEP	Local environmental plan
LGA	Local government area
Local road	A road or street used primarily for access to abutting properties
LoS	Level of service

Term	Meaning
LTADEL	Long term average annual extraction limits
M	
m	Metres
m ²	Square metres
m ³	Cubic metres
M4 East mainline connection	The underground connection between the M4-M5 Link mainline tunnels and the M4 East mainline stub tunnels
M4 East mainline stub tunnels	Eastbound and westbound extensions of the M4 East mainline tunnel being built as part of the M4 East project (to connect with the M4-M5 Link)
M4 East Motorway/project	A component of the WestConnex program of works. Extension of the M4 Motorway in tunnels between Homebush and Haberfield via Concord. Includes provision for a future connection to the M4-M5 Link at the Wattle Street interchange
M4 Motorway	The M4 Motorway is a 40 kilometre motorway that extends from Concord in Sydney's inner west to Lapstone at the foothills of the Blue Mountains
M4 Widening	A component of the WestConnex program of works. Widening of the existing M4 Motorway from Parramatta to Homebush
M4-M5 Link	The project which is the subject of this EIS. A component of the WestConnex program of works
M5 East Motorway	Part of the M5 motorway corridor. Located between Beverly Hills and Sydney Airport (General Holmes Drive)
M5 motorway corridor	The M5 East Motorway and the M5 South West Motorway
M5 South West Motorway	Part of the M5 Motorway corridor. Located between Prestons and Beverly Hills
Mainline tunnels	The M4-M5 Link mainline tunnels connecting with the M4 East Motorway at Haberfield and the New M5 Motorway at St Peters
Median	The central reservation which separates carriageways from traffic travelling in the opposite direction
mg/L	Milligrams per litre
Mid-block	Section of road between two intersections
MLALC	Metropolitan local Aboriginal land council
Motorway	Fast, high volume controlled access roads. May be tolled or untolled
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
N	
NARCIIM	NSW/ACT Regional Climate Modelling
NATA	National Association of Testing Authorities, Australia
Naturalisation works	Restoring the natural values of a river by works such as replacing concrete walls with natural looking banks made of rocks and native plants to improve health and natural character
NCA	Noise catchment area
NCG	<i>Noise Criteria Guideline</i> (Roads and Maritime, 2015)
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure

Term	Meaning
New M5 mainline connection	The underground connection between the M4-M5 Link mainline tunnels and the New M5 mainline stub tunnels
New M5 mainline stub tunnels	Northbound and southbound extensions of the New M5 mainline tunnel being built as part of the New M5 project (to connect with the M4-M5 Link)
New M5 Motorway/project	A component of the WestConnex program of works. Located from Kingsgrove to St Peters (under construction)
NH ₃	Ammonia
NHL	National heritage list
NHMRC	National Health and Medical Research Council
NMG	<i>Noise Mitigation Guideline</i> (Roads and Maritime, 2015)
NML	Noise management level
NO	Nitric oxide
NO ₂	Nitrogen dioxide
Northcote Street civil site	A construction ancillary facility for the M4-M5 Link project located at Haberfield
NO _x	Oxides of nitrogen
NSW	New South Wales
NSW EPA	NSW Environment Protection Authority
NSW Health	NSW Department of Health
NZ	New Zealand
O	
O ₃	Ozone
OEHL	NSW Office of Environment and Heritage (Formerly DECCW)
OEMP	Operational Environmental Management Plan
ONVR	Operational Noise and Vibration Review
OOHW	Out-of-hours work
Overbridge	Bridge that conveys another road, rail or pedestrians over the described road
P	
PACHCI	<i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> (Roads and Maritime 2011)
PAH(s)	Polycyclic aromatic hydrocarbon(s)
Palaeochannel/palaeovalley	Ancient river systems eroded deeply into the landscape and infilled with saturated alluvial sediments
PANS-OPS	Procedures for air navigation systems operations
Parramatta Road corridor	The area from Parramatta CBD to Sydney CBD, generally between the Main Western Rail line in the south and the Parramatta River to the north
Parramatta Road East civil site	A construction ancillary facility for the M4-M5 Link project at Haberfield
Parramatta Road Transformation Strategy	<i>The Parramatta Road Corridor Urban Transformation Strategy</i> (UrbanGrowth NSW 2016a)

Term	Meaning
Parramatta Road ventilation facility	A ventilation facility located on the south-eastern corner of the Parramatta Road/Wattle Street intersection (referred to as the Eastern ventilation facility in the M4 East project EIS). The facility is being built as part of the M4 East project. As part of the M4-M5 Link project, fitout works would be carried out on a section of this facility
Parramatta Road West civil and tunnel site	A construction ancillary facility for the M4-M5 Link project at Ashfield
PASS	Potential acid sulfate soils
Pavement	The portion of a carriageway placed above the subgrade for the support of, and to form a running surface for, vehicular traffic
PCT	Plant community type
PCU	Passenger car unit
pH	Numeric scale ranging from zero to 14 used to specify the acidity or alkalinity of an aqueous solution. Solutions with a pH less than seven are acidic and solutions with a pH greater than seven are alkaline. Pure water has a pH of seven and is neutral
PIARC	Permanent International Association of Road Congresses
PM	(Airborne) particulate matter
PM peak hour	Unless otherwise stated, this refers to trips travelling on the network during the average one hour peak period between 3pm to 6pm on a weekday
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of less than 10 micrometres (µm)
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of less than 2.5 micrometres (µm)
PMF	Probable maximum flood The flood that occur as a result of the probable maximum precipitation on a study catchment. The probable maximum flood is 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 (ie the floodplain)
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
Pollutant	Any measured concentration of solid or liquid matter that is not naturally present in the environment
Portal	The entry and/or exit to a tunnel
Potential heritage item	Place identified in this report as potentially having heritage significance, which is not recognised on the heritage register
ppb	Parts per billion
ppm	Parts per million
Pre-construction	All work prior to, and in respect of the State significant infrastructure, that is excluded from the definition of construction
Priority List	Infrastructure Australia's <i>Australian Infrastructure Plan: The Infrastructure Priority List</i>

Term	Meaning
Project	A new multi-lane road link between the M4 East Motorway at Haberfield and the New M5 Motorway at St Peters. The project would also include an interchange at Lilyfield and Rozelle (the Rozelle interchange) and a tunnel connection between Anzac Bridge and Victoria Road, east of Iron Cove Bridge (Iron Cove Link). In addition, construction of tunnels, ramps and associated infrastructure to provide connections to the proposed future Western Harbour Tunnel project would be carried out at the Rozelle interchange
Project footprint	The land required to construct and operate the project. This includes permanent operational infrastructure (including the tunnels), and land required temporarily for construction
Property	Based on ownership, with the potential to contain more than one lot and DP
Proponent	The person or organisation that proposes to carry out the project or activity. For the purpose of the project, the proponent is NSW Roads and Maritime Services
Public transport	Includes train, bus (government and private), ferry (government and private) and light rail (government and private) services
Pyrmont Bridge Road tunnel site	A construction ancillary facility for the M4-M5 Link project at Annandale
Q	
R	
RAP	Remedial action plan
RBL	Rating background levels
RCP	Representative concentration pathways
RDE	Real driving emissions
REF	Review of environmental factors
Representative concentration pathways	Scenarios that include time series of emissions and concentrations of the full suite of greenhouse gases and aerosols and chemically active gases, as well as land use/cover (Dowdy et al 2015)
Residual land	Acquired land not required during operation of the project
Revegetation	Direct seeding or planting (generally with native species) within an area in order to re-establish vegetation that was previously removed from that area
Riparian	The part of the landscape adjoining rivers and streams that has a direct influence on the water and aquatic ecosystems within them
RLMP	Residual Land Management Plan
RNP	Road Noise Policy
Road reserve	A legally defined area of land within which facilities such as roads, footpaths and associated features may be constructed for public travel
Roadheader	A commonly used machine for excavation in sandstone using picks mounted on a rotary cutter head attached to a hydraulically operated boom
Roads and Maritime	NSW Roads and Maritime Services
Rozelle civil and tunnel site	A construction ancillary facility for the M4-M5 Link project located at Lilyfield and Rozelle

Term	Meaning
Rozelle East motorway operations complex	An area where operational ancillary facilities are established. Located at the western end of the Rozelle Rail Yards on land occupied during construction by the Rozelle civil and tunnel site
Rozelle interchange	A new interchange at Lilyfield and Rozelle that would connect the M4-M5 Link mainline tunnels with City West Link, Anzac Bridge, the Iron Cove Link and the proposed future Western Harbour Tunnel and Beaches Link
Rozelle Rail Yards	The Rozelle Rail Yards is bound by City West Link to the south, Lilyfield Road to the north, Balmain Road to the west, and White Bay to the east. Note that the project only occupies part of the Rozelle Rail Yards site
Rozelle ventilation facility	Ventilation supply and exhaust facilities, axial fans, ventilation outlets and ventilation tunnels. Located at the Rozelle Rail Yards, the ventilation supply facility is located at the Rozelle West motorway operations complex and a ventilation exhaust facility at the Rozelle East motorway operations complex
Rozelle West motorway operations complex	An area where operational ancillary facilities are established. Located at the central/eastern end of the Rozelle Rail Yards, on land occupied during construction by the Rozelle civil and tunnel site
RPAH	Royal Prince Alfred Hospital
RTA	NSW Roads and Traffic Authority (now NSW Roads and Maritime Services)
Runoff	The amount of rainfall that ends up as streamflow, also known as rainfall excess
RWR	Residential, workplace and recreational This term refers to all discrete receptor locations along the project corridor, and mainly covers residential and commercial land uses
S	
s	Second
S170	State Agency Section 170 Heritage and Conservation Register. Section 170 of the <i>Heritage Act 1977</i> (NSW) requires NSW Government agencies to keep a register of heritage items/assets owned, occupied or managed by that government agency
Salinity	The concentration of dissolved salts in water
SB	Southbound
SCATS	Sydney coordinated adaptive traffic system
Scour	Removal of sediment such as sand and gravel from around bridge abutments or piers caused by moving water
SEARs	Secretary's Environmental Assessment Requirements Requirements and specifications for an environmental assessment prepared by the Secretary of the NSW Department of the Planning and Environment under section 115Y of the <i>Environmental Planning and Assessment Act 1979</i> (NSW)
Sediment	Material, both mineral and organic, that is being or has been moved from its site of origin by the action of wind, water or gravity and comes to rest either above or below water level

Term	Meaning
SEIA	Socio-economic impact assessment
SEIFA	Socio-Economic Index for Areas
Sensitive receiver/receptor	Includes residences, educational institutions (including preschools, schools, universities, TAFE colleges), health care facilities (including nursing homes, hospitals), religious facilities (including churches), child care centres, passive recreation areas (including outdoor grounds used for teaching), active recreation areas (including parks and sports grounds), commercial premises (including film and television studios, research facilities, entertainment spaces, temporary accommodation such as caravan parks and camping grounds, restaurants, office premises, retail spaces and industrial premises)
SEPP	State Environmental Planning Policy
SEPP 19	State Environmental Planning Policy No. 19 – Bushland in Urban Areas
SEPP 33	State Environmental Planning Policy No. 33 – Hazardous and Offensive Development
SEPP 55	State Environmental Planning Policy No. 55 – Remediation of Land
Settlement	Refers to how ground can move due to the construction of new infrastructure
SHFWDCP	Sydney Harbour – Foreshores and Waterways Area Development Control Plan: Ecological Communities and Landscape Characters and Wetlands Protection Map
Shotcrete	The spraying of concrete and mortar onto a surface at high velocity
Shoulder	The portion of the carriageway beyond the traffic lanes adjacent to and flush with the surface of the pavement
SHR	State Heritage Register
Smart motorway operations	A Smart Motorway uses technology to monitor, provide intelligence and control the motorway to ease congestion and keep traffic flowing more effectively. Technology, including lane use management signs, vehicle detection equipment, CCTV cameras and on-ramp signals, allows road operators to manage, in real-time, traffic entering, exiting and traversing the motorway
SMC	Sydney Motorway Corporation
SO ₂	Sulfur dioxide
Socio-economic	Involving combination of social and economic matters
Soil salinity	Salt content of soil
Spoil	Surplus excavated material
SREP 26	<i>Sydney Regional Environmental Plan No. 26 – City West</i>
SSI	State significant infrastructure
SSIAR	State significant infrastructure application report
St Peters interchange	A component of the New M5 project, located at the former Alexandria Landfill site at St Peters. Approved and under construction as part of the New M5 project. Additional construction works proposed as part of the M4-M5 Link project

Term	Meaning
Staging	Refers to the division of the project into multiple contract packages for construction purposes, and/or the construction or operation of the overall project in discrete phases
State Infrastructure Strategy	State Infrastructure Strategy 2012–2032 (Infrastructure NSW 2012)
STM	Strategic Traffic Model
Stockpile	Temporary stored materials such as soil, sand, gravel, spoil/waste
Strata	Geological layers below the ground surface
Stub tunnel	Driven tunnels constructed to connect to potential future motorway links
Surface water	Water flowing or held in streams, rivers and other wetlands in the landscape
Sustainable development	Development which meets the needs of the present, without compromising the ability of future generations to meet their own needs (Brundtland 1987)
SVOC	Semi Volatile Organic Hydrocarbons
Sydney Gateway	A high-capacity connection between the St Peters interchange (under construction as part of the New M5 project) and the Sydney Airport and Port Botany precinct
Sydney Harbour Catchment SREP	<i>Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005</i>
T	
The Bays Precinct Transformation Plan	<i>Transformation Plan: The Bays Precinct, Sydney</i> (UrbanGrowth NSW 2015)
The Blue Book	<i>Managing Urban Stormwater – Soils and Construction Volumes 1 and 2</i> (NSW Government 2004 and 2006)
The Crescent civil site	A construction ancillary facility for the M4-M5 Link project located at Annandale
Threatened ecological community	Threatened ecological community A naturally occurring group of native plants, animals and other organisms living in a unique habitat at risk of extinction and listed under the EPBC Act and/or <i>Threatened Species Conservation Act 1995</i> (NSW)
TMC	Transport Management Centre
Topography	Surface features in an area of land
Total concentration (air quality)	The sum of the background, surface road and ventilation outlet concentrations. It may relate to conditions with or without the project under assessment
Toxicity	The degree of danger posed by a substance to human, animal or plant life
TPA	Transport Performance Analytics
TPH	Total petroleum hydrocarbons
Transport for NSW	NSW Government Department Transport for NSW
TRH	Total recoverable hydrocarbons
Truck-and-dog construction vehicle	A vehicle with 20 cubic metre capacity and maximum length of 19 metres

Term	Meaning
TSC Act	<i>Threatened Species Conservation Act 1995</i> (NSW)
Tunnel boring machine	An excavation machine that 'bores' through soil or rock to create a tunnel with a circular cross section (as opposed to drilling and blasting methods)
Turbidity	A measure of light penetration through a water column containing particles of matter in suspension
Typical cross section	A cross section of a carriageway showing typical dimensional details, furniture locations and features of the pavement construction
U	
UDLP	Urban Design and Landscape Plan
UDLP land	Project land that has been identified as subject to the UDLP
UDRP	Urban Design Review Panel
UFP	Ultrafine particles
UHI	Urban heat island
Ultrafines/Ultrafine particles	Particulate matter below 0.1 microns in diameter
Urban design	The process and product of designing human settlements, and their supporting infrastructure, in urban and rural environments
V	
V/C	Volume to capacity ratio
Ventilation facility	Facility for the mechanical removal of air from the mainline tunnels, or mechanical introduction of air into the tunnels. May comprise one or more ventilation outlets
Ventilation outlet	The location and structure from which air within a tunnel is expelled
Ventilation outlet concentration	Describes the contribution of pollutants from tunnel ventilation outlets
VHT	Vehicle hours travelled
VIA	Visual impact assessment
Victoria Road civil site	A construction ancillary facility for the M4-M5 Link project located at Rozelle
Visual amenity	Pleasantness or attractiveness of a place or area
VKT	Vehicle kilometres travelled
VMS	Variable message signs
VOCs	Volatile organic compounds
VTTS	Value of travel time savings
W	
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001</i> (NSW)
Water table	The surface of saturation in an unconfined aquifer at which the pressure of the water is equal to that of the atmosphere
Waterway	Any flowing stream of water, whether natural or artificially regulated (not necessarily permanent)
Wattle Street civil and tunnel site	A construction ancillary facility for the M4-M5 Link project located at Haberfield

Term	Meaning
Wattle Street interchange	An interchange to connect Wattle Street (City West Link) with the M4 East and the M4-M5 Link tunnels. Approved and under construction as part of the M4 East project. Additional construction works proposed as part of the M4-M5 Link project
Wayfinding	This refers to navigation signage or roadway markers such as in the tunnels or along surface roads
WDA	WestConnex Delivery Authority (now Sydney Motorway Corporation)
WestConnex program of works	A program of works that includes the M4 Widening, King Georges Road Interchange Upgrade, M4 East, New M5 and M4-M5 Link projects
Western Harbour Tunnel and Beaches Link program of works	The Western Harbour Tunnel and Beaches Link program of works includes the proposed future 'Western Harbour Tunnel and Warringah Freeway Upgrade' project (the Western Harbour Tunnel project), and the proposed future 'Beaches Link and Gore Hill Freeway Connection' project (the Beaches Link project). Both projects are currently in the early planning and design stage.
Wetland	Wetlands are areas of land that are wet by surface water or groundwater, or both, for long enough periods that the plants and animals in them are adapted to, and depend on, moist conditions for at least part of their lifecycle
WHO	World Health Organization
WQO	NSW Water Quality Objectives
WQO	Water quality objective
WRTM	WestConnex Road Traffic Model
WSA	Western Sydney Airport
WSUD	Water sensitive urban design
Other	
mg/m ³	micrograms per cubic metre
µg	microgram
µm	micrometres

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