



Westlink M7 Widening Modification Report

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Transport for NSW

Modification 6 | August 2022

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Glossary of terms and abbreviations

Table 1 Glossary of terms and abbreviations

Term	Meaning
A	
AADT	Annual average daily traffic
ABL	Assessment background levels
ABS	Australian Bureau of Statistics
ACM	Asbestos containing material
ACHMP	Aboriginal Cultural Heritage Management Plan
AEP	Annual exceedance probability
AHD	Australian height datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ALR Act	<i>Aboriginal Land Rights Act 1983 (NSW)</i>
Ambient noise	The all-encompassing noise at a point composed of sound from all sources near and far.
Annual exceedance probability	The chance of a rainfall or a flood event exceeding a nominated level in any one year, usually expressed as a percentage. For example, if a peak flood level has an AEP of five per cent, it means that there is a five per cent chance (that is one-in-20 chance) of being exceeded in any one year. The frequency of floods is generally referred to in terms of their AEP or ARI. In this report the frequency of floods generated by runoff from the study catchments is referred to in terms of their AEP, for example a 1% AEP flood.
ANZAST	Australian and New Zealand and Australian State and Territory Governments
ANZECC	Australian and New Zealand Environment Conservation Council
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)
Approved project	The Westlink M7 (previously referred to as Western Sydney Orbital) is an existing 39-kilometre-long toll road connecting the M5 Motorway at Prestons, the Hills M2 Motorway at Baulkham Hills and the M4 Motorway at Eastern Creek.
AQIA	Air quality impact assessment
ARI	Average recurrence interval
ARMCANZ	Agriculture and Resources Management Council of Australia and New Zealand
ARR	Australian Rainfall and Runoff publication. The third edition was released in 1987 (Institute of Engineers Australia, 1987), and a fourth edition was issued in 2019 (Geoscience Australia, 2019).
ARTG	<i>At-Receiver Treatment Guideline</i> (Roads and Maritime Services, 2016b)
AS	Australian Standards
ASC	Assessment of site contamination
ASS	Acid sulfate soils
Assessment background level [ABL]	The overall background level for each day, evening and night period for each day of the noise monitoring.

Term	Meaning
ASSMAC	Acid Sulfate Soils Management Advisory Committee
ASR	Archaeological Survey Report
ATSIHP Act	<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> (Commonwealth)
Average recurrence interval	An indicator used to describe the frequency of a rainfall or a flood event, expressed as an average interval in years between events of a given magnitude. For example, over a long period of say 200 years, a flood equivalent to or greater than a 20 year ARI event would occur 10 times. A 20 year ARI flood has a one-in-5 chance of occurrence in any one year.
Australian height datum	A common national surface level datum approximately corresponding to mean sea level.
B	
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.
BAM	Biodiversity Assessment Method
BC Act	<i>Biodiversity Conservation Act 2016</i> (NSW)
BDAR	Biodiversity Development Assessment Report
BIOMAP	Biodiversity Investment Opportunities Map
BMP	Biodiversity Management Plan
BoM	Bureau of Meteorology
BOS	Biodiversity Offset Scheme
Box culvert	A culvert of rectangular cross section.
BS	British Standard
BTEX	Benzene, toluene, ethylbenzene and xylene
C	
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.
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
CCRA	Climate change risk assessment
CEMP	Construction Environmental Management Plan
CERT	Carbon Estimate and Reporting Tool
Climate adaptation	Actions undertaken to manage or reduce the adverse consequences of climate change, as well as to harness any beneficial opportunities. Adaptation actions may include physical changes to an asset to achieve or facilitate adaptation including changes/upgrades to technology and equipment or design standards for particular project elements (e.g. flood protection designed to the Probable Maximum Flood (PMF)). Adaptation actions may also include changes to contracts, setting specific targets or objectives, scheduling regular reviews or inspections, development of an emergency management plan, development of design guidelines, etc.
Climate change	A change in the state of the climate that can be identified (e.g. using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer (IPCC).

Term	Meaning
Climate change mitigation	Climate change mitigation includes actions we take globally, nationally and individually to limit changes caused in the global climate by human activities. Mitigation activities are designed to reduce greenhouse emissions and/or increase the amounts of greenhouse gases removed from the atmosphere by greenhouse sinks.
Climate mitigation	Refers to efforts to reduce or prevent emission of greenhouse gases.
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 (IPCC 2007).
Climate resilience	Climate resilience is the capacity of organisations to survive, adapt, and grow no matter what kinds of climate-related chronic stresses and acute shocks they experience.
CO	Carbon Monoxide
Conditions of Approval (CoA)	These are the current conditions that apply to the approved project. Found at the following webpage: https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-663-MOD-5%2120190718T013836.398%20GMT
Construction ancillary facilities	Temporary facilities during construction that include, but are not limited to, construction work areas, sediment basins, material stockpile and laydown areas, parking, maintenance workshops and offices, and construction compounds.
Construction Environmental Management Plan	A site specific plan developed for the construction phase to ensure that all contractors and sub-contractors comply with the environmental conditions of approval and that environmental risks are properly managed.
Construction footprint	The area required for construction of the Proposed Modification
CoPC	Contaminants of potential concern
Corridor	A substantial segment of the transport network, in which parallel, possibly competing, transport routes (and modes, where appropriate) operate between two locations.
CHL	Commonwealth Heritage List
CLM Act	<i>Contaminated Land Management Act 1997 (NSW)</i>
CMP	Conservation Management Plan
CNVG	<i>Construction Noise and Vibration Guideline (Roads and Maritime Services, 2016b)</i>
CNVS	<i>Construction Noise and Vibration Strategy (Transport for NSW, 2019)</i>
CNVMP	Construction Noise and Vibration Management Plan
CPTED	Crime prevention through environmental design
CPW	Cumberland Plain Woodland in the Sydney Basin Bioregion
CRCIF	Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion
Critical infrastructure	The assets, systems and networks required to maintain security, health and safety, operations of the Westlink M7.
CSP	Community Strategic Plan
CSIRO	Commonwealth Scientific Industrial Research Organisation

Term	Meaning
CTAMP	Construction Traffic and Access Management Plan
CWRMP	Comprehensive Water Resource Management Plan
D	
DAWE	(Former) Commonwealth Department of Agriculture, Water and the Environment
Day (construction noise)	The period from 0700 to 1800 h Monday to Saturday and 0800 to 1800 h Sundays and Public Holidays. Road traffic noise: The period from 0700 to 2200 h every day of the week.
DEC	(Former) Commonwealth Department of Environment and Conservation
DECC	(Former) Commonwealth Department of Environment and Climate Change
Decibel [dB]	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).
Decibel scale	The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB(A) increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB(A) increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows: 0 dB(A) Threshold of human hearing 30 dB(A) A quiet country park 40 dB(A) Whisper in a library 50 dB(A) Open office space 70 dB(A) Inside a car on a freeway 80 dB(A) Outboard motor 90 dB(A) Heavy truck pass-by 100 dB(A) Jack hammer / subway train 110 dB(A) Rock concert 115 dB(A) Limit of sound permitted in industry 120 dB(A) 747 take off at 250 metres
DECCW	(Former) Commonwealth Department of Environment, Climate Change and Water
Detailed design	The stage of design where project elements are designed in detail, suitable for construction.
DIPNR	(Former) Commonwealth Department of Infrastructure, Planning and Natural Resources
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 (e.g. metres per second [m/s]).
DLWC	(Former) NSW Department of Land and Water conservation
DPE	NSW Department of Planning and Environment
DPI	NSW Department of Primary Industries
DPIE	(Former) NSW Department of Planning, Industry and Environment
Drainage	Natural or artificial means for the interception and removal of surface or subsurface water.

Term	Meaning
DRAINS	A computer simulation program which converts rainfall patterns to stormwater runoff and generates discharge hydrographs. These hydrographs can then be routed through networks of piped drainage systems, culverts, storages and open channels using the DRAINS software to calculate hydraulic grade lines and analyse the magnitude of overflows. Alternatively, discharge hydrographs generated by DRAINS can be used as inflows to alternative hydraulic models (such as the TUFLOW two-dimensional hydraulic modelling software) to calculate water surface levels and flooding patterns.
DUAP	(Former) NSW Department of Urban Affairs and Planning
E	
Earthworks	All operations involving the loosening, excavating, placing, shaping and compacting of soil or rock.
EESG	NSW Environment, Energy and Science Group
EHC	Environmentally hazardous chemicals
EHG	Environment and Heritage Group
EIS	Environmental impact statement
Embankment	An earthen structure where the road (or other infrastructure) is located above the natural surface.
ENM	Excavated natural material
ENMM	Environmental Noise Management Manual
Entry ramp	A ramp by which one enters a limited-access highway/tunnel.
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW). Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	<i>Environment Protection and Biodiversity Act 1999</i> (Commonwealth)
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2021</i> (NSW)
EPL	Environment protection licence
ESCP	Erosion and sediment control plan
Evening	Construction noise: The period from 1800 to 2200 h Monday to Sunday and Public Holidays. Road traffic noise: Not applicable.
Exit ramp	A ramp by which one exits a limited-access highway/tunnel.
F	
Fill	The material placed in an embankment.
Flash flooding	Flooding which is sudden and unexpected. It is often caused by sudden local or nearby heavy rainfall. Often defined as flooding which peaks within six hours of the causative rain.
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 tsunamis.
Flood affectation	The extent to which a property or area of land is affected by flooding.

Term	Meaning
Flood fringe area	The remaining area of flood prone land after floodway and flood storage areas have been defined.
Flood immunity	Relates to the level at which a particular structure would be clear of a certain flood event.
Flood Planning Area	The area of land below the Flood Planning Level and thus subject to flood planning controls.
Flood Planning Levels	The combination of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans.
Flood prone land	Land susceptible to flooding by the Probable Maximum Flood. Note that the flood prone land is synonymous with 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. Hence, it is necessary to investigate a range of flood sizes before defining flood storage areas.
Floodplain	Area of land which is subject to inundation by floods up to and including the probable maximum flood event (i.e. flood prone land).
Floodplain Risk Management Plan	A management plan developed in accordance with the principles and guidelines in the <i>Floodplain Development Manual</i> (FDM), (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.
Floodway area	Those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of flood flow, or a significant increase in flood levels.
Flow velocity	A measure of how fast water is moving, for example, metres per second (m/s).
FM Act	<i>Fisheries Management Act 1994</i> (NSW)
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.
G	
GDE	Groundwater dependant ecosystems
GHG	Greenhouse gas
GMA	Greater Metropolitan Area
GRCCC	Georges River Combined Councils Committee
GRAL Model	Graz Langrangian Model
Greenhouse gas (GHG)	Any various gaseous compounds (such as carbon dioxide or methane) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect.
GreenPower	GreenPower is a government accredited renewable energy product offered by most electricity retailers to households and businesses in Australia.
H	
HAZMAT	Hazardous building materials
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.
HIA	Heritage impact assessment

Term	Meaning
HRC	Healthy Rivers Commission
I	
IAQM	Institute of Air Quality Management
IBRA	Interim Biogeographic Rationalisation for Australia
ICNG	<i>Interim Construction Noise Guideline</i> (DECC, 2009)
ICOMOS	International Council on Monuments and Sites
IER	Index of Economic Resources
ILUA	Indigenous Land Use Agreement
Impact	Influence or effect exerted by a project or other activity on the natural, built and community environment.
Inundation	The spreading of a flood over an area.
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
IS	Infrastructure Sustainability
ISCA	Infrastructure Sustainability Council of Australia
ITS	Intelligent Transport Systems. Systems in which information and communication technologies are applied in the field of road transport, including infrastructure, vehicles and users, and in traffic management and mobility management, as well as for interfaces with other modes of transport.
J	
K	
KFH	Key fish habitat
KTP	Key threatening process
L	
L ₁₀	The sound pressure level exceeded for 10% of the measurement period. For 10% of the measurement period it was louder than the L ₁₀ .
L ₉₀	The sound pressure level exceeded for 90% of the measurement period. For 90% of the measurement period it was louder than the L ₉₀ .
LALC	Local Aboriginal Land Council
Lane	A portion of the carriageway allotted for the use of a single line of vehicles.
LCVIA	Landscape Character and Visual Impact Assessment
LCZ	Landscape character zone
LEP	Local Environmental Plan
LGA	Local Government Area
L _{max}	The maximum sound pressure level measured over the measurement period.
L _{min}	The minimum sound pressure level measured over the measurement period.
LoS	Level of Service
M	
M	Metres
Median	The strip of land between the carriageways of a motorway or other major road.
Mid-block	Section of road between two intersections.

Term	Meaning
Mitigation	Actions or measures to avoid or reduce the impacts of a project.
MMP	Microbat Management Plan
MNES	Matters of national environmental significance under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
Modification	Proposed changes to be made to the approved project.
Modification application	This report forms part of an application seeking to modify an SSI development consent under section 5.25 of the EP&A Act.
MtCO ₂ e	Metric tons of carbon dioxide equivalent
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
N	
NASF	National Airports Safeguarding Framework
NCA	Noise catchment area
NCG	<i>Noise Criteria Guideline</i> (Roads and Maritime Services, 2015a)
NEMP	National Environmental Management Plan
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHL	National Heritage List
Night (construction noise)	The period from 2200 to 0700 h Monday to Saturday and 2200 to 0800 h Sundays and Public Holidays. Road traffic noise: The period from 2200 to 0700 h every day of the week.
NMG	<i>Noise Mitigation Guideline</i> (Roads and Maritime Services, 2015b)
NO ₂	Nitrogen Dioxide
Noise management level [NML]	The level which represents the point above which there may be some community reaction to noise.
NPfI	<i>Noise Policy for Industry</i> (NSW EPA, 2017)
NPWS	National Parks and Wildlife Service
NSWALC	NSW Aboriginal Land Council
NSW	New South Wales
NTU	Nephelometric Turbidity Unit
NW	Noise wall
O	
OCP	Organochlorine Pesticides
OEH	NSW Office of Environment and Heritage
OEMP	Operational Environment Management Plan
OLS	Obstacle limitation surface
Operational footprint	The area required for operation of the proposed modification.
P	
PACHCI	<i>Procedure for Aboriginal Cultural Heritage Consultation and Investigation</i> (NSW RMS, 2011b)

Term	Meaning
PAD	Potential archaeological deposit
PAH	Polycyclic aromatic hydrocarbons
PANS-OPS	Procedures for air navigation systems – aircraft operations
PCB	Polychlorinated biphenyl
PCT	Plant community type
PFAS	Per- and poly-fluoroalkyl substances
pH	Potential of Hydrogen
Physical risks	Risks driven by physical changes in climate such as heatwaves, flooding, and sea level rise. These can be event driven (acute) or longer-term shifts (chronic) in climate patterns.
PM _{2.5}	Particulate matter of up to 2.5 micrometres
PMF	Probable maximum flood
PMST	Protected matters search tool
POEO Act	<i>Protection of the Environment Operations Act 1997</i> (NSW)
Probable maximum flood	The flood that occurs as a result of the Probable Maximum Precipitation (PMP) on a study catchment. The PMF 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 feasible to provide complete protection against this event. The PMF defines the extent of flood prone land (i.e. the floodplain).
Proposed modification	The addition of a trafficable lane in both directions within the existing median of the Westlink M7, from about 140 metres south of the Kurrajong Road bridge at Prestons (southern end) to the Westlink M7 Bridge at Richmond Road in Oakhurst/Glendenning (northern end), excluding at the M4 Motorway/Westlink M7 Light Horse Interchange.
Q	
R	
Rating background level [RBL]	The overall background level for each day, evening and night period for the entire length of noise monitoring.
RBL	Rating background levels
Receptor	Location where a modelling prediction is made. This may represent an actual location on the ground (such as residential premises or industrial development) or may represent an arbitrary point in space used to generate concentration contours.
Risk	The likelihood of an adverse event occurring.
RFS	NSW Rural Fire Service
RMS	(Former) NSW Roads and Maritime Services (now Transport for NSW)
RNE	Register of the National Estate
RNP	<i>NSW Road Noise Policy</i> (DECCW, 2011)
RSL	NSW Returned and Services League
Runoff	The amount of rainfall which actually ends up as stream flow, also known as rainfall excess.
RUSLE	Revised universal soil loss equation

Term	Meaning
S	
SA#	Statistical area
SAII	Serious and irreversible impacts
SAQP	Sampling, analysis and quality plan
Scope 1 Greenhouse gas emissions	Direct emissions: greenhouse gas emissions generated by sources owned or controlled by the project, for example emissions generated by the use of diesel fuel in project-owned construction plant, equipment or vehicles.
Scope 2 Greenhouse gas emissions	Indirect emissions: greenhouse gas emissions from the consumption of purchased electricity in project-owned or controlled equipment or operations. These greenhouse gas emissions are generated outside the project's boundaries, for example the use of electricity purchased from the grid.
Scope 3 Greenhouse gas emissions	Indirect upstream/downstream emissions: greenhouse gas emissions generated in the wider economy due to third party supply chains and road users as a consequence of activity within the boundary of the project, for example greenhouse gas emissions associated with the mining, production and transport of materials used in construction (referred to as the embodied energy of a material).
Scour	The erosion of material by the action of flowing water.
SEARs	Secretary's Environmental Assessment Requirements
Secretary's Environmental Assessment Requirements	Requirements and specifications for an environmental assessment prepared by the Secretary of the Department of Planning, Industry and Environment under the <i>Environmental Planning and Assessment Act 1979</i> (NSW).
SEIFA	Socio-economic index for areas
SEPP	State Environmental Planning Policy
SES	NSW State Emergency Services
Shocks	Acute shocks are sudden, short-term events that disrupt individuals, communities, institutions, business and systems. Examples include: major storms, floods, bushfires, heatwaves, disease outbreaks, terrorism and cyber-attacks.
SHR	State Heritage Register
SIA	Social impact assessment
SO ₂	Sulfur dioxide
SoHI	Statement of Heritage Impact
SSD	State Significant Development
SSI	State Significant Infrastructure
Stockpile	Temporarily stored materials such as soil, sand, gravel and spoil/waste.
Stresses	Chronic stresses weaken a systems and communities on a day-to-day or cyclical basis. Examples include: homelessness and housing affordability, lack of access to public transportation systems, family violence, climate change, structural inequity, and chronic food or water shortages.
Study area	The study area for this assessment, as defined in Section 1.2.
Surface water	Water flowing or held in streams, rivers and other water bodies in the landscape.
SVOC	Semi volatile organic compound
SWMP	Soil and Water Management Plan

Term	Meaning
T	
TAR	Terminal area radar
TBC	To be confirmed
TBDC	Threatened biodiversity data collection
TEC	Threatened ecological community
TN	Total Nitrogen
TOBAN	Total fire ban
TP	Total Phosphorus
TPZ	Tree protection zone
Trackout	Trackout refers to the transport of dust from the construction site onto the public road network where it can be deposited and resuspended by vehicles using the network.
Transport for NSW (Transport)	The proponent seeking approval for the modification.
Traffic noise	The total noise resulting from road traffic. The L_{eq} sound pressure level is used to quantify traffic noise.
TRH	Total recoverable hydrocarbons
TSS	Total suspended solids
TTIA	Traffic and Transport Impact Assessment
TUSTM	Transurban's Strategic Transport Model
U	
UD	Urban design
UXO	Unexploded ordnance
V	
VENM	Virgin excavated natural material
VMS	Variable message sign
VOC	Volatile organic compound
VSLs	Variable speed limit sign
W	
Westlink M7	M7 Motorway or formerly known as Western Sydney Orbital
WHL	World Heritage List
WHS	Work, health and safety
WHSMP	Work health safety management plan
WSO Co.	Westlink M7 Concessionaire
WSP Act	<i>Western Sydney Parklands Act 2006</i> (NSW)
WM Act	<i>Water Management Act 2000</i> (NSW)
WQO	Water quality objectives
X	
Y	
Z	