



Westlink M7 Widening Modification Report

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Transport for NSW

Modification 6 | August 2022

Table of Contents

Glossary of terms and abbreviations		i
Executive Summary		xii
1.0	Introduction	1-1
	1.1	Approved project
		1-3
	1.2	The proposed modification
		1-3
	1.3	Structure of this report
		1-4
2.0	Approved project	2-1
	2.1	Introduction
		2-1
	2.2	Overview of the approved project (Westlink M7)
		2-1
	2.2.1	Overview of approved modifications
		2-6
	2.2.2	Conditions of Approval
		2-6
	2.2.3	Approved management plans
		2-7
3.0	Need for the modification and strategic context	3-1
	3.1	Need for the modification
		3-1
	3.1.1	Importance and role of the Westlink M7 within Western Sydney
		3-1
	3.1.2	Increasing capacity of the Westlink M7
		3-3
	3.1.3	Public transport infrastructure
		3-4
	3.1.4	Concurrent construction with the approved M12 Motorway
		3-4
	3.2	Strategic context
		3-4
	3.2.1	The Infrastructure Priority List
		3-5
	3.2.2	State Infrastructure Strategy
		3-5
	3.2.3	Future Transport Strategy 2056
		3-6
	3.2.4	Greater Sydney Services and Infrastructure Plan
		3-6
	3.2.5	Greater Sydney Region Plan – A Metropolis of Three Cities
		3-7
	3.2.6	Western City District Plan
		3-10
	3.2.7	Central City District Plan
		3-11
	3.2.8	NSW Freight and Ports Plan 2018 – 2023
		3-12
	3.3	Options and alternatives
		3-13
	3.3.1	Objectives of the proposed widening
		3-13
	3.3.2	Initial options assessment
		3-13
	3.3.3	Design options considered
		3-14
	3.4	Selection of preferred option
		3-20
	3.4.1	Westlink M7/M4 Motorway (Light Horse) Interchange and ‘Old Wallgrove Road Weave Area’
		3-20
	3.4.2	Design development and refinements to the preferred option
		3-21
	3.4.3	Alternative construction methodologies
		3-21
4.0	Proposed modification	4-1
	4.1	Overview of the proposed modification
		4-1
	4.2	Operational features
		4-7
	4.2.1	Design criteria
		4-7
	4.2.2	Alignment and interchanges
		4-8
	4.2.3	Road grade and lane widths
		4-9
	4.2.4	Pavement works
		4-10
	4.2.5	Bridge works
		4-10
	4.2.6	Drainage and stormwater management
		4-11
	4.2.7	Noise mitigation
		4-12
	4.2.8	Active transport changes
		4-13
	4.2.9	Public transport changes
		4-14
	4.2.10	Fencing
		4-14
	4.2.11	Cuttings and embankments
		4-14
	4.2.12	Utilities
		4-14
	4.2.13	Roadside furniture, line marking and lighting
		4-14
	4.2.14	Operational ancillary facilities and traffic management
		4-15
	4.2.15	Landscaping and urban design
		4-15
	4.2.16	Property access, adjustments and acquisition
		4-18
	4.3	Construction
		4-18

	4.3.1	Construction footprint	4-18
	4.3.2	Overview of construction activities	4-24
	4.3.3	Construction ancillary facilities	4-25
	4.3.4	Site establishment and pre-construction activities	4-28
	4.3.5	Vegetation clearing	4-29
	4.3.6	Earthworks	4-29
	4.3.7	Demolition	4-31
	4.3.8	Utility works	4-31
	4.3.9	Bridge widening construction	4-33
	4.3.10	Water management infrastructure	4-34
	4.3.11	Pavement widening works	4-36
	4.3.12	Temporary works	4-36
	4.3.13	Finishing works	4-37
	4.3.14	M12 Motorway integration	4-38
	4.3.15	Construction workforce	4-38
	4.3.16	Construction work hours	4-38
	4.3.17	Traffic management and access	4-40
	4.3.18	Construction plant and equipment	4-47
	4.3.19	Construction resources and waste management	4-47
	4.3.20	Construction program	4-49
	4.4	Operational management	4-50
	4.5	Conditions of Approval	4-50
5.0		Statutory context	5-1
	5.1	Planning approval process	5-1
	5.1.1	Westlink M7 project approval	5-1
	5.1.2	Modification application	5-1
	5.2	Commonwealth legislation	5-2
	5.2.1	Environment Protection and Biodiversity Conservation Act 1999	5-2
	5.2.2	Other Commonwealth legislation	5-3
	5.3	NSW legislations and regulations	5-4
	5.3.1	Environmental Planning and Assessment Act 1979	5-4
	5.3.2	Biodiversity Conservation Act 2016	5-8
	5.3.3	Aboriginal Land Rights Act 1983	5-8
	5.3.4	Biosecurity Act 2015	5-8
	5.3.5	Contaminated Land Management Act 1997	5-8
	5.3.6	Western Sydney Parklands Act 2006	5-9
	5.3.7	Waste Avoidance and Resource Recovery Act 2001	5-9
	5.3.8	Protection of the Environment Operations (Waste) Regulation 2014	5-9
	5.3.9	Fisheries Management Act 1994	5-9
	5.3.10	Crown Land Management Act 2016	5-10
	5.4	Environmental Planning Instruments	5-10
	5.4.1	State Environmental Planning Policies	5-10
	5.4.2	Local Environmental Plans	5-12
6.0		Consultation	6-1
	6.1	Objectives of consultation	6-1
	6.2	Stakeholder identification	6-2
	6.3	Consultation tools and methodology	6-3
	6.4	Ongoing consultation and outcomes	6-3
	6.4.1	Aboriginal cultural consultation	6-4
	6.4.2	Consultation with stakeholders for the artwork at the Light Horse Interchange	6-4
	6.4.3	Public exhibition of Modification Report	6-5
	6.4.4	Submissions report	6-5
	6.5	Future consultation	6-5
	6.5.1	During construction of the proposed modification	6-5
7.0		Environmental assessment	7-1
	7.1	Traffic and transport	7-1
	7.1.1	Introduction	7-1

	7.1.2	Method of assessment	7-3
	7.1.3	Study area	7-4
	7.1.4	Existing environment	7-7
	7.1.5	Impact assessment	7-11
	7.1.6	Management and mitigation	7-33
7.2		Noise and vibration	7-35
	7.2.1	Introduction	7-35
	7.2.2	Method of assessment	7-38
	7.2.3	Study area	7-44
	7.2.4	Existing environment	7-45
	7.2.5	Impact assessment	7-47
	7.2.6	Management and mitigation	7-78
7.3		Air quality	7-85
	7.3.1	Introduction	7-85
	7.3.2	Method of assessment	7-85
	7.3.3	Study area	7-90
	7.3.4	Existing environment	7-96
	7.3.5	Impact assessment	7-100
	7.3.6	Management and mitigation	7-104
7.4		Hydrology and flooding	7-107
	7.4.1	Introduction	7-107
	7.4.2	Method of assessment	7-109
	7.4.3	Study area	7-111
	7.4.4	Existing environment	7-111
	7.4.5	Impact assessment	7-116
	7.4.6	Mitigation measures	7-123
7.5		Surface water and groundwater	7-126
	7.5.1	Introduction	7-126
	7.5.2	Assessment methodology	7-129
	7.5.3	Study area	7-133
	7.5.4	Existing environment	7-133
	7.5.5	Impact assessment	7-139
	7.5.6	Mitigation measures	7-149
7.6		Biodiversity	7-155
	7.6.1	Introduction	7-155
	7.6.2	Method of assessment	7-157
	7.6.3	Study area	7-158
	7.6.4	Existing environment	7-164
	7.6.5	Impact assessment	7-195
	7.6.6	Management and mitigation	7-211
7.7		Aboriginal heritage	7-215
	7.7.1	Introduction	7-215
	7.7.2	Method of assessment	7-215
	7.7.3	Study area	7-217
	7.7.4	Existing environment	7-221
	7.7.5	Impact assessment	7-236
	7.7.6	Management and mitigation	7-236
7.8		Non-Aboriginal heritage	7-238
	7.8.1	Introduction	7-238
	7.8.2	Method of assessment	7-239
	7.8.3	Study area	7-239
	7.8.4	Existing environment	7-240
	7.8.5	Impact assessment	7-248
	7.8.6	Management and mitigation	7-254
7.9		Land use and property	7-255
	7.9.1	Method of assessment	7-255
	7.9.2	Study area	7-256

	7.9.3	Existing environment	7-258
	7.9.4	Impact assessment	7-267
	7.9.5	Management and mitigation	7-273
7.10		Landscape character, visual amenity and urban design	7-274
	7.10.1	Introduction	7-274
	7.10.2	Method of assessment	7-275
	7.10.3	Study area	7-277
	7.10.4	Existing environment	7-279
	7.10.5	Impact assessment	7-294
	7.10.6	Management and mitigation	7-302
7.11		Soils and contamination	7-304
	7.11.1	Introduction	7-304
	7.11.2	Method of assessment	7-305
	7.11.3	Study area	7-307
	7.11.4	Existing environment	7-307
	7.11.5	Impact assessment	7-356
	7.11.6	Management and mitigation	7-358
7.12		Social	7-362
	7.12.1	Introduction	7-362
	7.12.2	Method of assessment	7-362
	7.12.3	Study area (social locality)	7-364
	7.12.4	Existing environment	7-367
	7.12.5	Impact assessment	7-370
	7.12.6	Management and mitigation	7-375
7.13		Sustainability	7-377
	7.13.1	Introduction	7-377
	7.13.2	Method of assessment	7-377
	7.13.3	Study area	7-379
	7.13.4	Current policy, goals and guidelines	7-379
	7.13.5	Impact assessment	7-383
	7.13.6	Management and mitigation	7-386
7.14		Climate change	7-388
	7.14.1	Introduction	7-388
	7.14.2	Method of assessment	7-389
	7.14.3	Study area	7-389
	7.14.4	Existing environment	7-389
	7.14.5	Impact assessment	7-390
	7.14.6	Management and mitigation	7-392
7.15		Greenhouse gases	7-394
	7.15.1	Introduction	7-394
	7.15.2	Method of assessment	7-394
	7.15.3	Study area	7-395
	7.15.4	Existing environment	7-395
	7.15.5	Impact assessment	7-395
	7.15.6	Management and mitigation	7-396
7.16		Waste	7-398
	7.16.1	Introduction	7-398
	7.16.2	Method of assessment	7-399
	7.16.3	Existing environment	7-400
	7.16.4	Impact assessment	7-402
	7.16.5	Management and mitigation	7-410
7.17		Hazards and risk	7-413
	7.17.1	Introduction	7-413
	7.17.2	Method of assessment	7-413
	7.17.3	Study area	7-414
	7.17.4	Existing environment	7-414
	7.17.5	Impact assessment	7-415
	7.17.6	Management and mitigation	7-420

7.18	Cumulative impacts	7-423
7.18.1	Introduction	7-423
7.18.2	Overview of cumulative impacts	7-425
7.18.3	Method of assessment	7-425
7.18.4	Construction impact assessment	7-431
7.18.5	Operation impact assessment	7-437
7.18.6	Management and mitigation	7-439
8.0	Conditions of Approval	8-1
8.1	Introduction	8-1
8.2	Conditions to be amended, added or removed	8-1
9.0	Synthesis of the Modification Report and Conclusion	9-1
9.1	Introduction	9-1
9.2	Existing environment	9-2
9.3	The proposed modification for which approval is sought	9-2
9.4	Avoidance or minimisation of impacts through design	9-16
9.5	Uncertainties of the proposed modification and approach to design refinements	9-18
9.6	Compilation of adverse impacts	9-20
9.7	Compilation of mitigation measures	9-22
9.8	Residual risk analysis	9-23
9.8.1	Methodology	9-23
9.8.2	Risk table	9-24
9.8.3	Residual risks	9-37
9.9	Compilation of performance outcomes	9-37
9.10	Justification of the proposed modification	9-42
10.0	References	10-1

List of Tables

Table 1	Glossary of terms and abbreviations	i
Table 3-1	Key public transport infrastructure projects since approval of the Westlink M7	3-2
Table 3-2	Planning priorities of the Western City District Plan	3-10
Table 3-3	Planning priorities of the Central City District Plan	3-11
Table 3-4	Performance of alternatives against project objectives	3-15
Table 4-1	Design criteria for road operation under proposed modification	4-7
Table 4-2	Road cross-section features (existing and proposed)	4-9
Table 4-3	Proposed bridge widening locations (from south to north)	4-10
Table 4-4	New and adjusted noise walls proposed	4-13
Table 4-5	Key construction activities	4-24
Table 4-6	Location and description of proposed 'zone' construction ancillary facilities	4-27
Table 4-7	Estimated earthworks quantities required for the proposed modification	4-30
Table 4-8	Utilities likely to require adjustment or protection for the proposed modification	4-32
Table 4-9	Potential properties subject to temporary leases during construction of the proposed modification	4-37
Table 4-10	Indicative haulage arrangements at key locations along the construction footprint	4-43
Table 4-11	Overview of estimated vehicle movements at ancillary facilities (by type)	4-45
Table 4-12	Materials for construction of proposed modification	4-47
Table 4-13	Indicative program of works for construction of the proposed modification	4-50
Table 5-1	Impacts on MNES as a result of the proposed modification	5-2
Table 5-2	Applicable Commonwealth legislation relevant to proposed modification	5-3
Table 5-3	Approvals and permits not required for SSI projects under section 5.23 of the EP&A Act	5-5
Table 5-4	Approvals that must be applied consistently under section 5.24 of the EP&A Act	5-7
Table 5-5	Relevant State Environmental Planning Policies	5-10
Table 6-1	SEARs - Consultation	6-1
Table 7-1	SEARs – Traffic and transport	7-1
Table 7-2	Assessed Westlink M7 segments	7-4

Table 7-3	Workday traffic volumes on the Westlink M7 (May 2021)	7-7
Table 7-4	Rail services surrounding the study area	7-8
Table 7-5	Mid-block level of service of the Westlink M7 – 2021	7-9
Table 7-6	AM and PM peak hour intersection performance - 2021	7-10
Table 7-7	Existing Westlink M7 traffic volumes and proportional increases due to construction vehicles	7-12
Table 7-8	Construction traffic volumes and proportional increases from existing traffic volumes	7-13
Table 7-9	Westlink M7 temporary road closures and detour routes	7-16
Table 7-10	Impacts of Westlink M7 closures on the surrounding road network	7-19
Table 7-11	2021 workday traffic volumes at 9:00 pm and 10:00 pm	7-21
Table 7-12	2021 weekend peak hour traffic volumes	7-22
Table 7-13	Summary of bus services and potential impacts due to road closures	7-22
Table 7-14	AM and PM peak hour travel time between M5 Motorway and Richmond Road with and without the modification	7-25
Table 7-15	AM peak intersection performance – 2026 and 2036 with and without proposed modification	7-28
Table 7-16	PM peak intersection performance – 2026 and 2036 with and without proposed modification	7-30
Table 7-17	Mitigation measures	7-33
Table 7-18	SEARs – Noise and vibration	7-35
Table 7-19	Construction NMLs	7-40
Table 7-20	Operational road traffic noise assessment criteria	7-43
Table 7-21	Approximate number of residential buildings where noise levels may exceed NMLs for all construction scenarios	7-48
Table 7-22	Recommended minimum working distances for vibration intensive plant	7-60
Table 7-23	Detour road traffic noise	7-62
Table 7-24	Residential receivers where modelled noise levels are exceeding criteria	7-64
Table 7-25	Design noise wall heights	7-65
Table 7-26	Mitigation measures	7-78
Table 7-27	SEARs – Air quality	7-85
Table 7-28	Risk of dust impacts (for dust soiling and human health impacts)	7-87
Table 7-29	Modelled scenarios for operation of proposed modification	7-88
Table 7-30	Characteristics of assumed background concentrations	7-90
Table 7-31	Characteristics of assumed background concentrations	7-97
Table 7-32	Stage 2 IAQM assessment construction activity magnitudes	7-100
Table 7-33	Summary of unmitigated risk assessment for proposed modification	7-101
Table 7-34	Mitigation measures	7-104
Table 7-35	SEARs – Hydrology and flooding	7-107
Table 7-36	Catchments relevant to the proposed modification	7-114
Table 7-37	Potential flood risks at construction work areas and ancillary facilities	7-117
Table 7-38	Summarised results of the operational flood model	7-119
Table 7-39	Mitigation measures	7-123
Table 7-40	SEARs – Surface water and groundwater	7-126
Table 7-41	Select water quality objectives relevant to the proposed modification	7-131
Table 7-42	Summary of stormwater controls along the Westlink M7	7-135
Table 7-43	Registered groundwater bores used for extraction purposes within 1 kilometre of the study area	7-136
Table 7-44	Comparison of pollutant concentrations against the WQOs - Cabramatta Creek catchment	7-145
Table 7-45	Comparison of pollutant concentrations against the WQOs – Ropes Creek catchment	7-146
Table 7-46	Comparison of pollutant concentrations against the WQOs – Eastern Creek catchment	7-146
Table 7-47	Additional mitigations measures	7-149
Table 7-48	SEARs - Biodiversity	7-155
Table 7-49	High threat and priority weed species recorded in the study area	7-179
Table 7-50	Assessment of construction impacts on terrestrial biodiversity	7-195

Table 7-51	Direct impacts on native vegetation in the study area	7-198
Table 7-52	Assessment of construction impacts on TECs at risk of SAIL	7-200
Table 7-53	Potential construction impacts to aquatic habitat	7-202
Table 7-54	Potential impacts on biodiversity values during operation of the proposed modification	7-206
Table 7-55	Potential operational impacts to aquatic habitat	7-209
Table 7-56	Mitigations measures	7-211
Table 7-57	Impacted areas that require credit offsetting	7-213
Table 7-58	SEARs – Aboriginal cultural heritage	7-215
Table 7-59	Aboriginal stakeholders	7-217
Table 7-60	Study area precincts	7-218
Table 7-61	AHIMS search results	7-223
Table 7-62	Survey results	7-228
Table 7-63	Mitigation measures	7-236
Table 7-64	SEARs - Non-Aboriginal heritage	7-238
Table 7-65	Recorded heritage items within and adjacent to the study area	7-240
Table 7-66	Summary of significance for heritage-listed items	7-247
Table 7-67	Summary of direct and indirect impacts	7-253
Table 7-68	Mitigation measures	7-254
Table 7-69	Land use zoning within the construction footprint (and ancillary facility accesses)	7-264
Table 7-70	Activities and features of the proposed modification in each study area section	7-267
Table 7-71	Temporary impacts to land use from proposed construction ancillary facilities	7-269
Table 7-72	Mitigations measures	7-273
Table 7-73	SEARs – Landscape character, visual amenity and urban design	7-274
Table 7-74	Overall significance of landscape character and visual effects	7-277
Table 7-75	Description of LCZ 1a: Transport Corridor	7-279
Table 7-76	Description of LCZ 1b: M4 Motorway (Light Horse) Interchange	7-280
Table 7-77	Description of LCZ 2: Industrial	7-280
Table 7-78	Description of LCZ 3: Recreation and Bushland	7-281
Table 7-79	Description of LCZ 4: Residential	7-281
Table 7-80	Description of LCZ 5: Rural	7-282
Table 7-81	Landscape character assessment summary	7-295
Table 7-82	Visual impact assessment summary	7-296
Table 7-83	Mitigation measures	7-302
Table 7-84	SEARs – Soils and contamination	7-304
Table 7-85	Study area precincts	7-307
Table 7-86	Summary of geologies within and surrounding the study area	7-307
Table 7-87	Summary of soil landscapes within and surrounding the study area	7-308
Table 7-88	Current potentially contaminating land uses within 100 metres of the study area	7-326
Table 7-89	NSW RFS sites within 500 metres or within the water catchment and up-gradient of the study area	7-328
Table 7-90	Potential areas and contaminants of concern along the Westlink M7 median	7-330
Table 7-91	Potential areas and contaminants of concern at the bridge widening areas	7-334
Table 7-92	Potential areas and contaminants of concern at proposed construction ancillary facilities outside Westlink M7	7-338
Table 7-93	Potential areas and contaminants of concern at other sites within the construction footprint	7-339
Table 7-94	Mitigation measures	7-358
Table 7-95	SEARs – Social	7-362
Table 7-96	Social impact significance matrix (DPIE, 2021b)	7-364
Table 7-97	Resident survey outcomes	7-369
Table 7-98	Business survey outcomes	7-370
Table 7-99	Mitigation measures	7-376
Table 7-100	SEARs – Sustainability	7-377
Table 7-101	Categories considered in the IS rating	7-378

Table 7-102	Relevant policy, goals and guidelines	7-379
Table 7-103	Sustainability objectives and target themes	7-384
Table 7-104	Mitigation measures	7-387
Table 7-105	SEARs – Climate change	7-388
Table 7-106	Greater Sydney's baseline [1961-1990] climate (AdaptNSW, 2014)	7-389
Table 7-107	Climate change construction risks to proposed modification identified as medium or higher	7-390
Table 7-108	Climate change operational risks to proposed modification identified as medium or higher	7-391
Table 7-109	Mitigation measures	7-392
Table 7-110	Mitigation measures	7-396
Table 7-111	SEARs – Waste	7-398
Table 7-112	Existing waste management approaches for the Westlink M7	7-400
Table 7-113	Construction waste types and classification	7-402
Table 7-114	Estimated spoil and other waste during construction	7-404
Table 7-115	Construction waste classification and management strategies	7-405
Table 7-116	Potential waste and recycling facilities located near the proposed modification	7-409
Table 7-117	Mitigation measures	7-411
Table 7-118	Existing hazards associated with operation of Westlink M7	7-414
Table 7-119	Bushfire prone land vegetation categories (NSW RFS, 2015)	7-417
Table 7-120	Mitigations measures	7-420
Table 8-1	Key CoA proposed to be added or modified	8-1
Table 9-1	SEARs – Synthesis of the Modification Report and Conclusion	9-1
Table 9-2	Key features of the proposed modification	9-3
Table 9-3	Adverse construction impacts avoided or minimised through design	9-16
Table 9-4	Resolution of key uncertainties	9-18
Table 9-5	Summary of adverse construction impacts	9-20
Table 9-6	Summary of adverse operational impacts	9-21
Table 9-7	Likelihood of environmental risks	9-23
Table 9-8	Consequence of environmental risks	9-24
Table 9-9	Risk matrix	9-24
Table 9-10	Residual risk analysis	9-25
Table 9-11	Demonstration of how the proposed modification will achieve the desired performance outcomes	9-37
Table 9-12	Proposed modification justification with consideration of the objects of the Environmental Planning and Assessment Act 1979	9-43

List of Figures

Figure E-1	Extent of the approved project and the proposed modification	xiv
Figure E-2	Key features (Sheet 1 of 5)	xv
Figure E-3	Key features (Sheet 2 of 5)	xvi
Figure E-4	Key features (Sheet 3 of 5)	xvii
Figure E-5	Key features (Sheet 4 of 5)	xviii
Figure E-6	Key features (Sheet 5 of 5)	xix
Figure 1-1	Extent of the approved project and the proposed modification	1-2
Figure 2-1	Overview of the approved project (Figure 1 of 2)	2-4
Figure 2-2	Overview of the approved project (Figure 2 of 2)	2-5
Figure 2-3	Typical cross section of the approved project (RTA, 2000)	2-6
Figure 3-1	Greater Sydney Region Plan (Source: Greater Sydney Commission, 2018a)	3-9
Figure 4-1	Key features (Sheet 1 of 5)	4-2
Figure 4-2	Key features (Sheet 2 of 5)	4-3
Figure 4-3	Key features (Sheet 3 of 5)	4-4
Figure 4-4	Key features (Sheet 4 of 5)	4-5
Figure 4-5	Key features (Sheet 5 of 5)	4-6
Figure 4-6	Impacted areas of the Australian Light Horse Sculpture Parade (South of M4 Motorway Interchange)	4-16

Figure 4-7	Impacted areas of the Australian Light Horse Sculpture Parade (North of M4 Motorway Interchange)	4-17
Figure 4-8	Construction footprint for the proposed modification (Sheet 1 of 5)	4-19
Figure 4-9	Construction footprint for the proposed modification (Sheet 2 of 5)	4-20
Figure 4-10	Construction footprint for the proposed modification (Sheet 3 of 5)	4-21
Figure 4-11	Construction footprint for the proposed modification (Sheet 4 of 5)	4-22
Figure 4-12	Construction footprint for proposed modification (Sheet 5 of 5)	4-23
Figure 4-13	Example of a temporary waterway crossing (indicative only)	4-35
Figure 7-1	Study area used for the traffic and transport assessment	7-6
Figure 7-2	Change in traffic volumes in 2026 for the with and without proposed modification – AM peak period	7-24
Figure 7-3	Change in traffic volumes in 2026 for the with and without proposed modification – PM peak period	7-24
Figure 7-4	Noise catchment areas and noise sensitive receivers	7-46
Figure 7-5	Highly affected noise sensitive receptors (Sheet 1 of 11)	7-49
Figure 7-6	Highly affected noise sensitive receptors (Sheet 2 of 11)	7-50
Figure 7-7	Highly affected noise sensitive receptors (Sheet 3 of 11)	7-51
Figure 7-8	Highly affected noise sensitive receptors (Sheet 4 of 11)	7-52
Figure 7-9	Highly affected noise sensitive receptors (Sheet 5 of 11)	7-53
Figure 7-10	Highly affected noise sensitive receptors (Sheet 6 of 11)	7-54
Figure 7-11	Highly affected noise sensitive receptors (Sheet 7 of 11)	7-55
Figure 7-12	Highly affected noise sensitive receptors (Sheet 8 of 11)	7-56
Figure 7-13	Highly affected noise sensitive receptors (Sheet 9 of 11)	7-57
Figure 7-14	Highly affected noise sensitive receptors (Sheet 10 of 11)	7-58
Figure 7-15	Highly affected noise sensitive receptors (Sheet 11 of 11)	7-59
Figure 7-16	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 1 of 11)	7-67
Figure 7-17	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 2 of 11)	7-68
Figure 7-18	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 3 of 11)	7-69
Figure 7-19	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 4 of 11)	7-70
Figure 7-20	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 5 of 11)	7-71
Figure 7-21	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 6 of 11)	7-72
Figure 7-22	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 7 of 11)	7-73
Figure 7-23	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 8 of 11)	7-74
Figure 7-24	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 9 of 11)	7-75
Figure 7-25	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 10 of 11)	7-76
Figure 7-26	Receivers eligible for consideration of additional feasible and reasonable noise mitigation measures (Sheet 11 of 11)	7-77
Figure 7-27	Air quality assessment construction study areas	7-92
Figure 7-28	Air quality assessment construction study areas	7-93
Figure 7-29	Air quality assessment operational study area – southern domain	7-94
Figure 7-30	Air quality assessment operational study area – northern domain	7-95
Figure 7-31	Location of Identified Highly Sensitive Receptors	7-99
Figure 7-32	Flood catchments in the study area	7-112
Figure 7-33	Pre-proposed modification conditions – 1% AEP	7-113
Figure 7-34	Post-proposed modification conditions – 1% AEP	7-121
Figure 7-35	Westlink M7 catchment plan, water quality sampling locations and surface water and groundwater assessment study areas	7-132
Figure 7-36	Location of mapped groundwater dependent ecosystems	7-138

Figure 7-37	Biodiversity assessment study area and survey effort (Sheet 1 of 5)	7-159
Figure 7-38	Biodiversity assessment study area and survey effort (Sheet 2 of 5)	7-160
Figure 7-39	Biodiversity assessment study area and survey effort (Sheet 3 of 5)	7-161
Figure 7-40	Biodiversity assessment study area and survey effort (Sheet 4 of 5)	7-162
Figure 7-41	Biodiversity assessment study area and survey effort (Sheet 5 of 5)	7-163
Figure 7-42	PCT vegetation zones and TECs at risk of SAIL (Sheet 1 of 13)	7-166
Figure 7-43	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 2 of 13)	7-167
Figure 7-44	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 3 of 13)	7-168
Figure 7-45	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 4 of 13)	7-169
Figure 7-46	PCTs, vegetation zones and TECs at risk of SAIL (sheet 5 of 13)	7-170
Figure 7-47	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 6 of 13)	7-171
Figure 7-48	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 7 of 13)	7-172
Figure 7-49	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 8 of 13)	7-173
Figure 7-50	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 9 of 13)	7-174
Figure 7-51	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 10 of 13)	7-175
Figure 7-52	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 11. of 13)	7-176
Figure 7-53	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 12 of 13)	7-177
Figure 7-54	PCTs, vegetation zones and TECs at risk of SAIL (Sheet 13 of 13)	7-178
Figure 7-55	Aquatic habitat in the vicinity of the proposed modification (Sheet 1 of 13)	7-182
Figure 7-56	Aquatic habitat in the vicinity of the proposed modification (Sheet 2 of 13)	7-183
Figure 7-57	Aquatic habitat in the vicinity of the proposed modification (Sheet 3 of 13)	7-184
Figure 7-58	Aquatic habitat in the vicinity of the proposed modification (Sheet 4 of 13)	7-185
Figure 7-59	Aquatic habitat in the vicinity of the proposed modification (Sheet 5 of 13)	7-186
Figure 7-60	Aquatic habitat in the vicinity of the proposed modification (Sheet 6 of 13)	7-187
Figure 7-61	Aquatic habitat in the vicinity of the proposed modification (Sheet 7 of 13)	7-188
Figure 7-62	Aquatic habitat in the vicinity of the proposed modification (Sheet 8 of 13)	7-189
Figure 7-63	Aquatic habitat in the vicinity of the proposed modification (Sheet 9 of 13)	7-190
Figure 7-64	Aquatic habitat in the vicinity of the proposed modification (Sheet 10 of 13)	7-191
Figure 7-65	Aquatic habitat in the vicinity of the proposed modification (Sheet 11 of 13)	7-192
Figure 7-66	Aquatic habitat in the vicinity of the proposed modification (Sheet 12 of 13)	7-193
Figure 7-67	Aquatic habitat in the vicinity of the proposed modification (Sheet 13 of 13)	7-194
Figure 7-68	Study area (sheet 1 of 2)	7-219
Figure 7-69	Study area (sheet 2 of 2)	7-220
Figure 7-70	Location of survey units across study area	7-227
Figure 7-71	Newly identified PAD site 'Pikes Lane PAD'	7-233
Figure 7-72	Sites of potential significance	7-235
Figure 7-73	Location of non-Aboriginal heritage items present within the study area.	7-241
Figure 7-74	Current view of the grassed areas and mature trees on the site of the Blacktown Native Institution	7-243
Figure 7-75	Rooty Hill Government Farm residence of the Superintendent of the stock farm, also known as "Thornleigh House" (Source: Blacktown City Council Libraries. Blacktown Memories; Ref. no. 004792)	7-244
Figure 7-76	Current view of The Rooty Hill site	7-244
Figure 7-77	View of the Tunnel shaft 4 entrance above the Upper Canal Tunnel located in the median of the Westlink M7 (looking south west from the southbound lanes of the Westlink M7) (Source: Google Earth, 2021)	7-245
Figure 7-78	Location of Tunnel Shaft 4	7-247
Figure 7-79	Proposed modification in the vicinity of 'Upper Canal System (Pheasants Nest to Prospect Reservoir)' (SHR 1373)	7-250
Figure 7-80	Proposed modification in the vicinity of 'The Rooty Hill' (SHR 01756) and 'Government Depot site (former)' (SHR 0345)	7-251
Figure 7-81	Proposed modification in the vicinity of 'Blacktown Native Institution' (SHR 1866)	7-252
Figure 7-82	Land use and property study area	7-257
Figure 7-83	Land use zones - Blacktown LGA	7-259
Figure 7-84	Land use zones - Fairfield LGA	7-261
Figure 7-85	Land use zones - Liverpool LGA	7-263
Figure 7-86	Study area for landscape and visual assessment	7-278

Figure 7-87	Landscape Character Zones within the study area (Sheet 1 of 5)	7-284
Figure 7-88	Landscape Character Zones within the study area (Sheet 2 of 5)	7-285
Figure 7-89	Landscape Character Zones within the study area (Sheet 3 of 5)	7-286
Figure 7-90	Landscape Character Zones within the study area (Sheet 4 of 5)	7-287
Figure 7-91	Landscape Character Zones within the study area (Sheet 5 of 5)	7-288
Figure 7-92	Representative viewpoints for visual impact assessment (Sheet 1 of 5)	7-289
Figure 7-93	Representative viewpoints for visual impact assessment (Sheet 2 of 5)	7-290
Figure 7-94	Representative viewpoints for visual impact assessment (Sheet 3 of 5)	7-291
Figure 7-95	Representative viewpoints for visual impact assessment (Sheet 4 of 5)	7-292
Figure 7-96	Representative viewpoints for visual impact assessment (Sheet 5 of 5)	7-293
Figure 7-97	Soil landscapes within study area (Sheet 1 of 5)	7-310
Figure 7-98	Soil landscapes within study area (Sheet 2 of 5)	7-311
Figure 7-99	Soil landscapes within study area (Sheet 3 of 5)	7-312
Figure 7-100	Soil landscapes within study area (Sheet 4 of 5)	7-313
Figure 7-101	Soil landscapes within study area (Sheet 5 of 5)	7-314
Figure 7-102	Salinity hazards within study area (Sheet 1 of 5)	7-315
Figure 7-103	Salinity hazards within study area (Sheet 2 of 5)	7-316
Figure 7-104	Salinity hazards within study area (Sheet 3 of 5)	7-317
Figure 7-105	Salinity hazards within study area (Sheet 4 of 5)	7-318
Figure 7-106	Salinity hazards within study area (Sheet 5 of 5)	7-319
Figure 7-107	Geology and registered groundwater bores within study area (Sheet 1 of 5)	7-320
Figure 7-108	Geology and registered groundwater bores within study area (Sheet 2 of 5)	7-321
Figure 7-109	Geology and registered groundwater bores within study area (Sheet 3 of 5)	7-322
Figure 7-110	Geology and registered groundwater bores within study area (Sheet 4 of 5)	7-323
Figure 7-111	Geology and registered groundwater bores within study area (Sheet 5 of 5):	7-324
Figure 7-112	Potential contaminating land uses and sources within study area (Sheet 1 of 16)	7-340
Figure 7-113	Potential contaminating land uses and sources within study area (Sheet 2 of 16)	7-341
Figure 7-114	Potential contaminating land uses and sources within study area (Sheet 3 of 16)	7-342
Figure 7-115	Potential contaminating land uses and sources within study area (Sheet 4 of 16)	7-343
Figure 7-116	Potential contaminating land uses and sources within study area (Sheet 5 of 16)	7-344
Figure 7-117	Potential contaminating land uses and sources within study area (Sheet 6 of 16)	7-345
Figure 7-118	Potential contaminating land uses and sources within study area (Sheet 7 of 16)	7-346
Figure 7-119	Potential contaminating land uses and sources within study area (Sheet 8 of 16)	7-347
Figure 7-120	Potential contaminating land uses and sources within study area (Sheet 9 of 16)	7-348
Figure 7-121	Potential contaminating land uses and sources within study area (Sheet 10 of 16)	7-349
Figure 7-122	Potential contaminating land uses and sources within study area (Sheet 11 of 16)	7-350
Figure 7-123	Potential contaminating land uses and sources within study area (Sheet 12 of 16)	7-351
Figure 7-124	Potential contaminating land uses and sources within study area (Sheet 13 of 16)	7-352
Figure 7-125	Potential contaminating land uses and sources within study area (Sheet 14 of 16)	7-353
Figure 7-126	Potential contaminating land uses and sources within study area (Sheet 15 of 16)	7-354
Figure 7-127	Potential contaminating land uses and sources within study area (Sheet 16 of 16)	7-355
Figure 7-128	Social locality	7-366

Figure 7-129	Bushfire risk surrounding the study area	7-418
Figure 7-130	Projects included in the cumulative impact assessment	7-430
Figure 9-1	Overview of the proposed modification (Sheet 1 of 5)	9-11
Figure 9-2	Overview of the proposed modification (Sheet 2 of 5)	9-12
Figure 9-3	Overview of the proposed modification (Sheet 3 of 5)	9-13
Figure 9-4	Overview of the proposed modification (Sheet 4 of 5)	9-14
Figure 9-5	Overview of the proposed modification (Sheet 5 of 5)	9-15

List of Appendices

Appendix A	Reference Tables - SEARs and EP&A Regulation 2021
Appendix B	Compilation of mitigation measures
Appendix C	Stakeholder Consultation Summary
Appendix D	Traffic and Transport Assessment
Appendix E	Noise and Vibration Assessment
Appendix F	Air Quality Impact Assessment
Appendix G	Hydrology, Flooding and Surface Water Assessment
Appendix H	Biodiversity Development Assessment
Appendix I	Aboriginal Heritage Assessment
Appendix J	Non-Aboriginal Heritage
Appendix K	Urban Design, Landscape Character and Visual Impact Assessment
Appendix L	Contamination Assessment
Appendix M	Social Impact Assessment
Appendix N	Climate Change Risk and Greenhouse Gas Assessment

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</i> (NSW)
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 (Commonwealth)</i>
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 (NSW)</i>
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</i> (NSW)
CMP	Conservation Management Plan
CNVG	<i>Construction Noise and Vibration Guideline</i> (Roads and Maritime Services, 2016b)
CNVS	<i>Construction Noise and Vibration Strategy</i> (Transport for NSW, 2019)
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 _{2e}	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 (NSW)</i>
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 (DECCW, 2011)</i>
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 (NSW)</i>
WM Act	<i>Water Management Act 2000 (NSW)</i>
WQO	Water quality objectives
X	
Y	
Z	