9.0 Synthesis of the Modification Report and Conclusion

9.1 Introduction

This chapter provides a synthesis and conclusion of the findings of the Modification Report. The main body of the Modification Report and appendices should be referred to for further details.

Table 9-1 outlines the SEARs that relate to this chapter and identifies where they are addressed in this modification report.

Table 9-1 SEARs – Synthesis of the Modification Report and Conclusion

Desired Performance Outcome	SEAR	Where addressed within the Modification Report
1. Modification Report The modification is described in sufficient detail to enable clear understanding that the modification has been developed through an iterative process of impact identification and assessment and project refinement to avoid, minimise or offset impacts so that the project, on balance, has the least adverse environmental, social and economic impact, including cumulative impacts.	1. The Modification Report must include, but not necessarily be limited to, the following: q) a chapter that synthesises the environmental impact assessment and provides:	
	- a succinct but full description of the modification for which approval is sought;	**Section 9.3**
	- a description of any uncertainties that still exist around design, construction methodologies and/or operational methodologies and how these will be resolved in the next stages of the modification;	**Section 9.5**
	- a compilation of the impacts of the modification that have not been avoided;	**Section 9.6**
	- a compilation of the proposed measures associated with each impact to avoid or minimise (through design refinements or ongoing management during construction and operation) or offset these impacts;	**Section 9.7** and **Appendix B**
	- a compilation of the outcome(s) and criteria the modification will achieve and how these will be monitored; and	**Section 9.8**
	- the reasons justifying carrying out the modification as proposed, having regard to the biophysical, economic, and social considerations, including ecologically sustainable development and cumulative impacts.	**Section 9.10**

9.2 Existing environment

The Westlink M7 is an existing 39-kilometre-long toll road connecting the M5 Motorway at Prestons, the M4 Motorway at Eastern Creek, and the Hills M2 Motorway at Baulkham Hills. It is located within the Liverpool, Fairfield, and Blacktown Local Government Areas (LGA) and the Deerubbin and Gandangara Local Aboriginal Land Council areas. Approval for the construction and operation of the Westlink M7 project was granted on 28 February 2002 under the then Division 4, Part 5 of the EP&A Act. Specifically, the approval granted consent for the construction and operation of a 39-kilometre-long, four traffic lane motorway with a 15-metre-wide central median, from the F5/M5 Motorway at Prestons in the south to The Hills M2 Motorway atBaulkham Hills in the north. The potential to use the median for additional traffic lanes or public transport in the future was identified in the original Environmental Impact Statement (EIS) for the approved project (Roads and Traffic Authority (RTA), 2000).

Geology in the area is characterised by Triassic aged Bringelly Shale overlain by Quaternary sand, clay and silt. Eight waterbodies traversesthe proposed modification, including Cabramatta Creek, Hinchinbrook Creek, and Eastern Creek. Previously recorded bores in the area south of Elizabeth Drive indicate the presence of groundwater at 5.5 to 9.8 metres below ground level. There may be interaction between groundwater and surface water near the watercourses traversed by the indicative modification alignment. The Bureau of Meteorology Groundwater Dependent Ecosystems Atlas indicates that several areas beneath the Westlink M7, including within the proposed modification, are considered to have a high potential for terrestrial ground dependent ecosystems.

The Westlink M7 comprise predominantly modified areas; however, small areas of native vegetation are present below elevated portions of the Westlink M7. Six Threatened Ecological Communities (TECs) lie within the construction footprint, and of these, River-flat Eucalypt Forest and Cumberland Plain Woodland are considered highly likely to occur within the local area.

The area surrounding the proposed modification is considered to be highly modified and disturbed from previous construction works and ongoing motorway operations. Existing traffic, noise, vibration, and air quality influenced by the existing Westlink M7 and surrounding arterial road network. Existing noise walls are located along much of the M7 Motorway, which contribute to reducing impacts to nearby receivers. Other existing localised noise sources include commercial and industrial activities adjacent to the M7 Motorway, in suburbs such as Glendenning, Eastern Creek and Prestons.

The existing landscape and visual environment is also characterised by the existing Westlink M7 and surrounded by a variety of land uses, including low to medium-density residential areas, semi-rural areas, commercial and industrial areas, and large open space and recreational areas primarily at the Western Sydney Parklands. Sensitive receivers within the vicinity of the proposed modification includes residential dwellings, places of worship, childcare centres, educational facilities, and recreational facilities.

9.3 The proposed modification for which approval is sought

This Modification Report considers the potential impacts of constructing and operating the proposed modification summarised below.

The proposed modification would enable widening part of the existing Westlink M7 in response to current and projected future traffic growth, and to address reduced motorway efficiency, travel time performance and enhance safety. This would comprise widening into the existing median for a length of approximately 26 kilometres, from about 140 metres south of the Kurrajong Road overhead bridge at Prestons (the southern end) to the Westlink M7/ Richmond Road interchange in Oakhurst/ Glendenning (the northern end). In addition, a two-lane exit would be established from an existing one-lane exit from the Westlink M7 northbound to the M4 Motorway westbound. To facilitate this, existing bridges would be widened; noise walls, drainage infrastructure, and Intelligent Transport Systems (ITS) would either be upgraded or added; and a number of temporary construction ancillary facilities would be set up along and near to the Westlink M7. Widening would not occur through the Westlink M7/M4 Motorway (Light Horse) Interchange.

A summary of key features of the proposed modification is provided in Table 9-2.

Table 9-2 Key features of the proposed modification

Key features	Summary of design
Operational	
Alignment and interchanges	Southern (M5 Motorway) connection: • Travelling northbound, the entry ramp from the M5 Motorway becomes the rightmost lane on the Westlink M7, while the leftmost lane terminates. The proposed modification would provide three lanes from where the M5 Motorway ramp enters the Westlink M7 • Travelling southbound, the existing three lanes would continue to the dual lane exit to the M5 Motorway, after which the Westlink M7 would continue as a two-lane carriageway (as per current configuration) Northern (Richmond Road) connection: • Travelling northbound, the left lane would become the exit ramp, after which the remaining two lanes would shift laterally to tie into the existing two-lane carriageway • Travelling southbound, the existing southbound lanes would shift laterally toward the median and the entry ramp from Richmond Road would become the left lane.
Old Wallgrove Road to Westlink M7/M4 Motorway (Light Horse) Interchange	The proposed modification does not involve widening the Westlink M7/M4 Motorway (Light Horse) Interchange, however the works required include: • Northbound carriageway: - The carriageway would be a three-lane approach from the south due to the widening within the median - The entry ramp from Old Wallgrove Road would remain as it is currently - At the approach to the Westlink M7/M4 Motorway (Light Horse) Interchange and M4 Motorway exit ramp, the left lane would become an exit lane toward the M4 Motorway, while a second exit lane would be available from the middle lane, creating a dual-lane exit toward the M4 Motorway - From the exit to the M4 Motorway, the middle lane on the Westlink M7 would become the left lane and the northbound carriageway would become a two-lane carriageway - Both the right lane and left lane would shift laterally to the west to align to the existing road through the Westlink M7/M4 Motorway (Light Horse) Interchange prior to reaching the first bridge that passes over an unnamed access road - The northbound carriageway would continue as two lanes on the main carriageway north of the M4 Motorway exit through the entirety of the Westlink M7/M4 Motorway (Light Horse) Interchange. North of the bridges over the M4 Motorway, the widening into the central median would resume. At this point, the left and right lane would shift laterally to the east, with the new lane within the median becoming the right lane, and the former right lane becoming the left lane/eventual middle lane - The entry ramp from the M4 Motorway would join the northbound carriageway and become the left lane of the now three-lane carriageway - North of the entry ramp three lanes would be provided through to the Richmond Road bridge. • Southbound carriageway:

Key features	Summary of design
	- The southbound carriageway would be a three-lane approach from the north due to the widening within the median - On the approach to the M4 Motorway exit, currently an exit lane extends from the left lane of the southern carriageway. This configuration would remain the same - The middle lane would then become the left lane as the southern carriageway proceeds south as a two-lane carriageway through the Westlink M7/M4 Motorway (Light Horse) Interchange - The right lane created through widening the road into the median and the left lane would shift laterally to the east to align to the existing southern carriageway alignment through the Westlink M7/M4 Motorway (Light Horse) Interchange - Widening into the median would continue after the Westlink M7/M4 Motorway (Light Horse) Interchange with the entry ramp from the M4 Motorway forming the left lane. At this point, the Westlink M7 southbound carriageway would continue as three lanes until the M5 Motorway.
Road grade and lane widths	• Existing lane widths would generally be retained, except where minor adjustments are required to accommodate B-Triple vehicles • The median width would reduce from an average of 17 metres to 10 metres.
Pavement works	The proposed modification includes the following pavement works: • Widening of the carriageway into the median to provide a new lane in each direction • Modified entry and exit ramps • Intersections and interchanges • Widening of bridges to provide additional new lanes • Tie-ins with arterial and local roads, property access roads, shared user paths and footpaths, and median islands. Pavement treatments would generally be designed to match the existing pavement type (open graded asphalt wearing course). In some locations, different types of pavement construction may be needed to suit underlying ground conditions and based on material availability, local experience, any noise mitigation requirements, and whole of life cost.
Bridge works	• A total of 43 bridges (including northbound and southbound bridges) would require widening across 23 locations. The widening of bridges would occur towards the median. No widening of bridges would occur at the Westlink M7/M4 Motorway (Light Horse) Interchange.
Drainage and stormwater management	• Where road barriers are proposed to be provided, drainage pits around the barriers, or drainage slots within the barriers, would be required. • Inlets of drainage pits within the median would be modified to suit the raised level of the median. • Upgrades would be required to the drainage along the outer road shoulder to accommodate additional surface water runoff associated with the new impervious areas from the widening carriageway. This would include changes to existing pits to improve inlet capacity and/or installation of additional new pits as well as increasing drainage pipe sizes in some locations.

Key features	Summary of design
	• Bridge drainage would be impacted by the increased width of pavement. Existing drains and pipes on most of the widened bridges would need to be upgraded to accommodate the change in flows from the widened bridge structures. Runoff captured from the widened bridge deck would be captured in stormwater systems which discharge to water quality control and spill containment infrastructure, and typically any new or modified bridge drainage would be connected to the inground pavement drainage system. • Existing water quality and detention basins were typically designed to allow for a future widening into the median, and should therefore generally have adequate capacity to accommodate the proposed modification. However some would require upgrading to increase their capacity.
Noise mitigation	• Changes and additions to noise walls would be required, as is reasonable and feasible so as to achieve applicable operational noise level criteria at relevant, affected sensitive receivers • Around 250 properties would be eligible for at-property treatment consideration, this includes: - Scattered properties in Horsley Park, noting that these properties may potentially already have at-property treatment - Properties at housing estates in Middleton Grange and Elizabeth Hills, noting that these properties may potentially already have at-property treatment - Single receivers behind existing noise walls.
Active transport changes	• No operational changes are proposed to the location and overall alignment of the shared path along the Westlink M7 as part of the proposed modification. The only exception is at the M4 Motorway interchange where the proposed modification would create a dual lane exit to the M4 Motorway on the northbound carriageway. The proposed modification would introduce restrictions which would prohibit cycling on the Westlink M7 mainline between the M5 Motorway and Richmond Road.
Public transport changes	• No public transport facilities are proposed along the Westlink M7 as part of the proposed modification and existing public transport routes would not require changes.
Fencing	• No changes would be required to existing controlled access fencing along the Westlink M7 as part of the proposed modification.
Cutting and embankments	• Existing embankments at the bridge widening locations would require temporary re-profiling in some locations to establish the additional bridge substructures (piles). • Where space is limited or there is a need to reduce land disturbance or vegetation clearing, retaining walls would be constructed in place of earthworks batters to minimise the area of ground disturbance. • Existing retaining walls would also require reconstruction or relocation in some locations (subject to detailed design) and would generally be reinstated to their existing condition.
Utilities	• There would be no change in operational management of utilities for the Westlink M7 such as supply of water, electricity, telecommunications, and wastewater.

Key features	Summary of design
Roadside furniture, line marking, and lighting	• A new median barrier would be installed next to the additional lanes to match the existing design. A wire rope barrier would be installed along most of the median except at bridge approaches and departures, and other places where wire rope is not appropriate. • Median cross-overs would be reinstated at existing locations following construction. Stopping bays would not be affected • Existing road signs in the median and road shoulders would require relocation and/or adjustment where directly impacted by the proposed modification. Adjustments to existing signs would include replacement of existing signs or new signs on existing signposts and gantries. Additional signs on new signposts would also be installed. • The full width of the carriageways in each direction would be re-sheeted. All line and pavement marking would be reinstated. New line and pavement markings would also be installed. • Generally lighting poles along the Westlink M7 would not be directly impacted by the proposed modification. Widening of the bridge structures crossing over roads would impact street lighting within the affected roads, and similar impacts could occur to shared path lighting where extended bridge structures cross the shared path. Changes to road lighting in these locations would be undertaken in accordance with road lighting standards.
Operational ancillary facilities and traffic management	• The tolling gantries just north of the M5 Motorway would be fitted with equipment to accommodate three lanes in each direction. • The tolling gantry at the northbound exit to M4 Motorway would be replaced by a gantry suitable to the dual-lane exit. • ITS will be installed to cover the new lane configurations, including toll gantry adjustments, relocation of variable speed limit signs and variable message signs. • The Westlink M7 Operations Management and Control System would be updated to reflect the operational changes to the Westlink M7, including new traffic loops to cover the new lanes.
Landscaping and urban design	• A landscape and urban design strategy would be implemented which considers both the existing operational landscape and urban design strategy and changes to be made under proposed modification. • The existing vegetation within the median as well as the bridge abutments and piers would be required to be permanently removed to facilitate construction. Vegetation would be replanted in the remaining area, generally with indigenous species that are low maintenance, hardy to the local conditions, and take into account road safety requirements. • Sections of the existing Australian Light Horse Sculpture Parade (listed on the NSW War Memorial Register, a database of war memorials in NSW) and associated fig trees would be impacted by the proposed modification adjacent to the Westlink M7/M4 Motorway interchange.

Key features	Summary of design
Proposed access, adjustments, and acquisition	• Existing property access arrangements would be maintained following construction. Any property accesses impacted during construction would be reinstated to a similar condition. • Access to all existing and proposed infrastructure for maintenance purposes would be maintained or alternative maintenance access arrangements developed as required. • No permanent property acquisition would be required for the proposed modification. • Permanent property adjustments for the proposed modification would be limited to additional noise mitigation measures (at-receiver treatments).
Operational management	• Operation of the proposed modification would include the ongoing use and maintenance of the Westlink M7 by the Westlink M7 Concessionaire (WSO Co.). This would include required pavement upgrades undertaken in line with Transport standard road maintenance policies.
Construction	
Construction footprint	• The construction footprint includes those areas required for roadworks, bridge works, noise wall works, access for construction vehicles and plant, drainage infrastructure, temporary sediment basins/controls, utilities and services adjustments, temporary stockpiles, property adjustments and temporary construction ancillary facilities (including construction laydown areas).
Overview of construction activities	Key construction activities include: • Site establishment and enabling works, including vegetation clearance • Utility works • Earthworks • Demolition • Bridge works • Drainage works • Pavement works • Temporary works • Finishing works.
Construction ancillary facilities	Eight ‘zone’ construction facilities, including: • AF18 in Cecil Park (site approved under the M12 Motorway project) • AF17 in Cecil Park (site approved under the M12 Motorway project) • Zone A-1 in Hinchinbrook • Zone A-2 south of Elizabeth Hills • Zone A-3 south of Elizabeth Hills • Zone B in the Western Sydney Parklands • Zone C-1 in Eastern Creek • Zone D-2 in Hinchinbrook In addition, ‘site’ construction ancillary facilities would be provided at each of the work fronts.

Key features	Summary of design
M12 Motorway integration	Widening the Westlink M7 concurrently with the new interchange for the M12 Motorway would provide significant advantages compared to delivering these works separately, for example: • A consistent approach can be applied to the detailed design of the interface works. • The combined construction footprint of the M12 Motorway works and the proposed modification would provide more construction flexibility and space during construction. • The M12 Motorway interchange construction ancillary facilities would be able to be shared for both works to minimise the need for extra construction ancillary facilities which would reduce potential environmental impacts. • Avoiding conflicting requirements for access, traffic lane closures and nightworks. • The M12 Motorway interchange works allow for additional access to the Westlink M7, including verge access from Villiers Road and No Name Bridge No.1. • The M12 Motorway interchange works require extensive fill areas, potentially allowing material excavated from the proposed modification to be reused on site rather than exported off site for long term stockpiling or for disposal (subject to further investigation and construction planning). This would allow for more efficient cut to fill operations as materials excavated on site can be taken to the M12 Motorway interchange site rather than relying on tip sites to be available at night. • Construction works can be planned to minimise the combined traffic impacts of M12 Motorway interchange and the proposed modification. • Incident response can be more efficiently managed with a single design and construct contractor.
Construction workforce	• The estimated total workforce to be employed would be about 1,600 personnel over the total construction period which would be split across several locations. The workforce excludes part-time, offsite workers, and delivery truck drivers.
Construction work hours	• Where reasonable and feasible, construction would be carried out during standard working hours; however, construction would largely be undertaken outside of standard construction hours (which are considered to be 7am to 6pm on weekdays and 8am to 1pm on Saturdays).
Traffic management and access	Temporary road network changes are required to facilitate the construction of the proposed modification and the requirements of construction traffic and personnel: • Reduction in speed limits along the Westlink M7 from 100 km/h to 80 km/h, generally in the areas subject to and within the vicinity of the proposed modification (and lower speed limits outside of peak hours where feasible and reasonable). • Temporary traffic diversions and lane closures to allow for construction along the existing road alignment. • Temporary closure of Westlink M7 carriageways with off motorway detours or contraflow arrangements.

Key features	Summary of design
	• Under existing and diverted arrangements, all traffic lanes in each direction would generally be maintained with some short-term lane closures (outside of peak hours where feasible and reasonable) subject to road occupancy licences. • Two lanes in each direction on the Westlink M7 would be maintained during peak traffic periods.
Construction plans and equipment	The following plant and equipment listed is an indicative list of equipment that would be used during the construction phase of the proposed modification: • Vacuum sucker trucks • Water carts/ trucks • Backhoes • Small excavators (<20t) with hammer attachments • Excavators (20-45t) with hydraulic hammer (excavator mounted) • Tipper trucks • Articulated haulers (Moxy) • Semi-trailers • Floats • Hi-ab trucks • Franna cranes • Telehandlers • Small mobile cranes • Large mobile cranes (for example, 450t) • Generators to power site plant • Kibbles for removal of excavated materials • 40t Piling rigs • Rollers (10-16t) • Plate compactors • Wheel (front) loaders • Skid steer loaders • Scraper and graders • Pavement profilers • Asphalt milling machines • Asphalt pavers • Concrete pavers • Daymaker portable lights • Generators • Air compressors • Air tools • Elevated work platforms • Concrete/ pavement saws • Power/ hand tools • Pneumatic jack hammers • Line marking equipment • Utes and light vehicles • Concrete agitator trucks • Concrete pumps • Concrete vibrators • Concrete drills • Dozers.
Construction resource and management	A range of materials and pre-cast elements would be used to build the proposed modification, including, but not limited to: • Pavement materials including road base and sub-base • General fill material and selected material for earthworks • Sand, soils and aggregate for landscape works • Geotextile and lining materials • Pavement materials including road base and sub-base • Materials for lining drainage lines • Rock, aggregate (e.g. for drainage controls, concrete and asphalt) • Bitumen for asphalt • Cement for concrete or stabilising • Steel elements including reinforcement, girders, trusses, sign supports, gantries, bridge girders, and fencing

Key features	Summary of design
	• Wood, aluminium, and steel for use in formwork and other temporary structures • Water • Pre-cast concrete including girders, pipes, pits, wall segments, and roadside barriers • Mechanical and electrical materials/equipment • Various materials for utility works.
Construction programme	• A construction period of around three years (proposed to commence in 2023 and continue through to 2025). Construction at most locations would be of less duration and then the overall construction period, with some sites only being occupied for a number of months.

The proposed modification is presented in Figure 9-1 to Figure 9-5.

FIGURE 9-1: KEY FEATURES

N 0 400 800 m

AECOM

Legend

- Proposed widening
- Operational footprint
- Watercourse
- Existing noise wall
- New noise wall (NW####)
- Transport for NSW bridge number B9#### proposed to be widened

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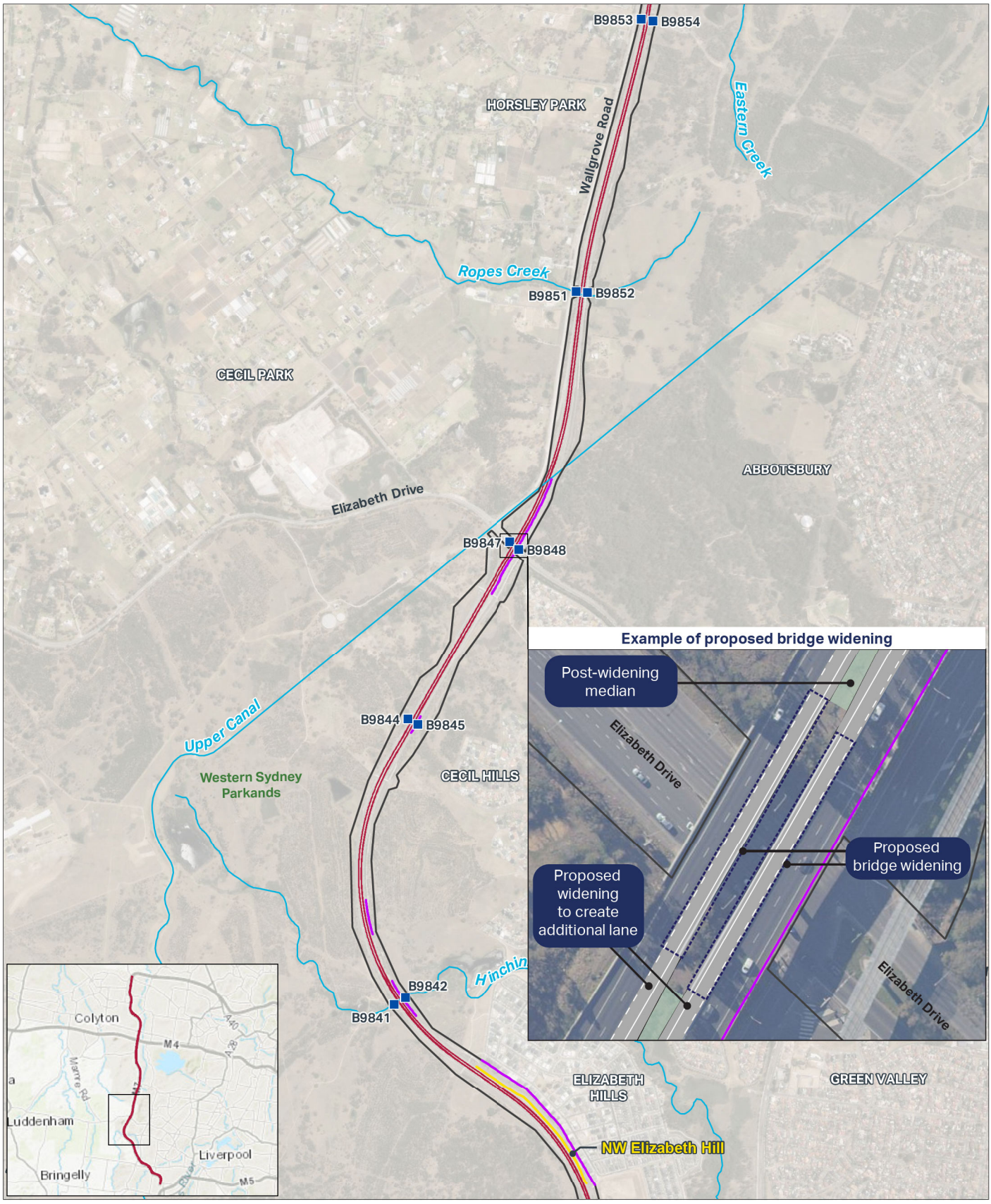

FIGURE 9-2: KEY FEATURES

0 400 800 m

Legend

- Proposed widening
- Operational footprint
- Watercourse
- Existing noise wall
- New noise wall (NW####)
- Transport for NSW bridge number B9#### proposed to be widened

Source: Imagery © Department of Customer Service 2020
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community.

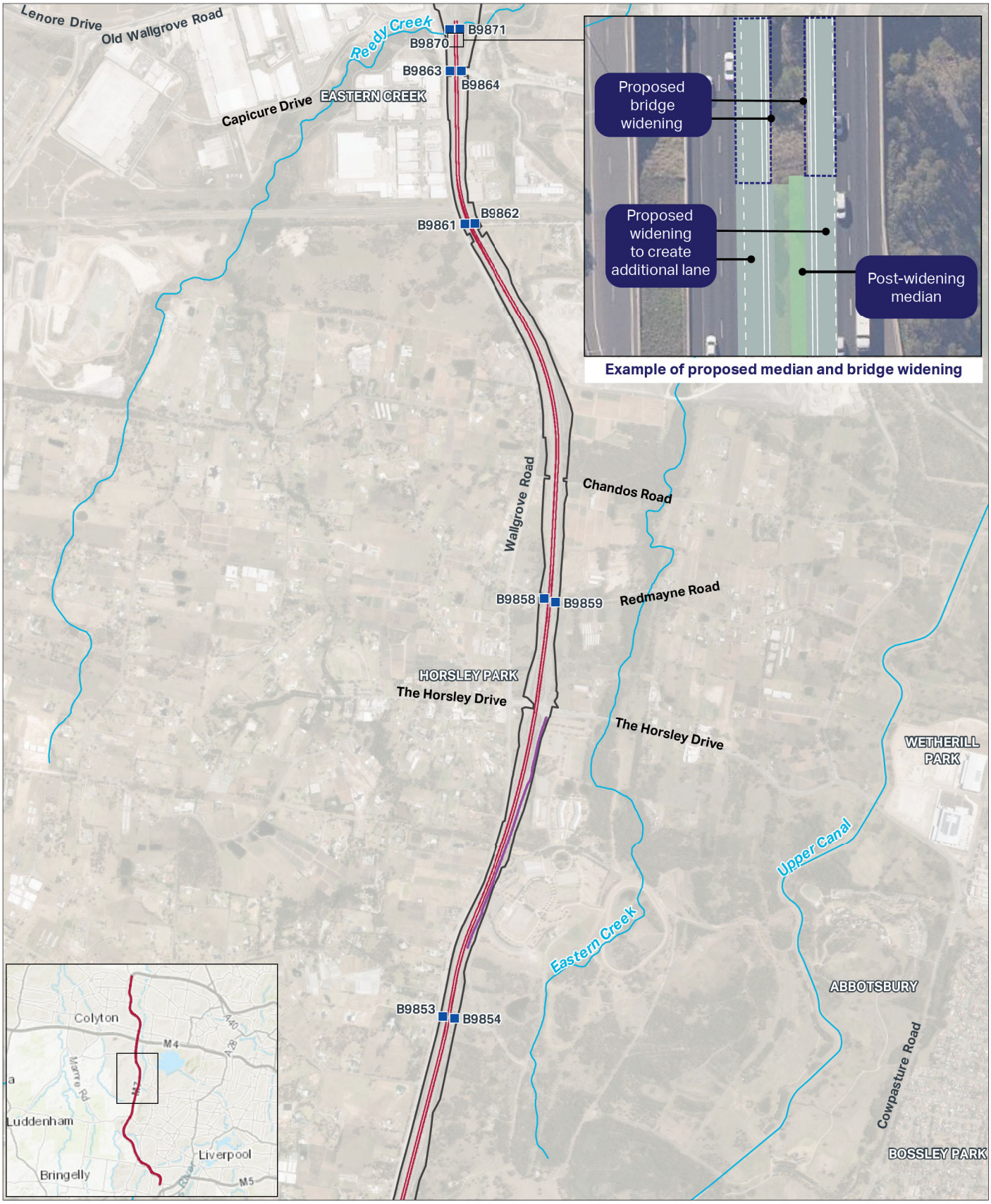

FIGURE 9-3: KEY FEATURES

N 0 400 800 m

AECOM

Legend

- Proposed widening
- Operational footprint
- Watercourse
- Existing noise wall
- Trransport for NSW bridge number B9#### proposed to be widened

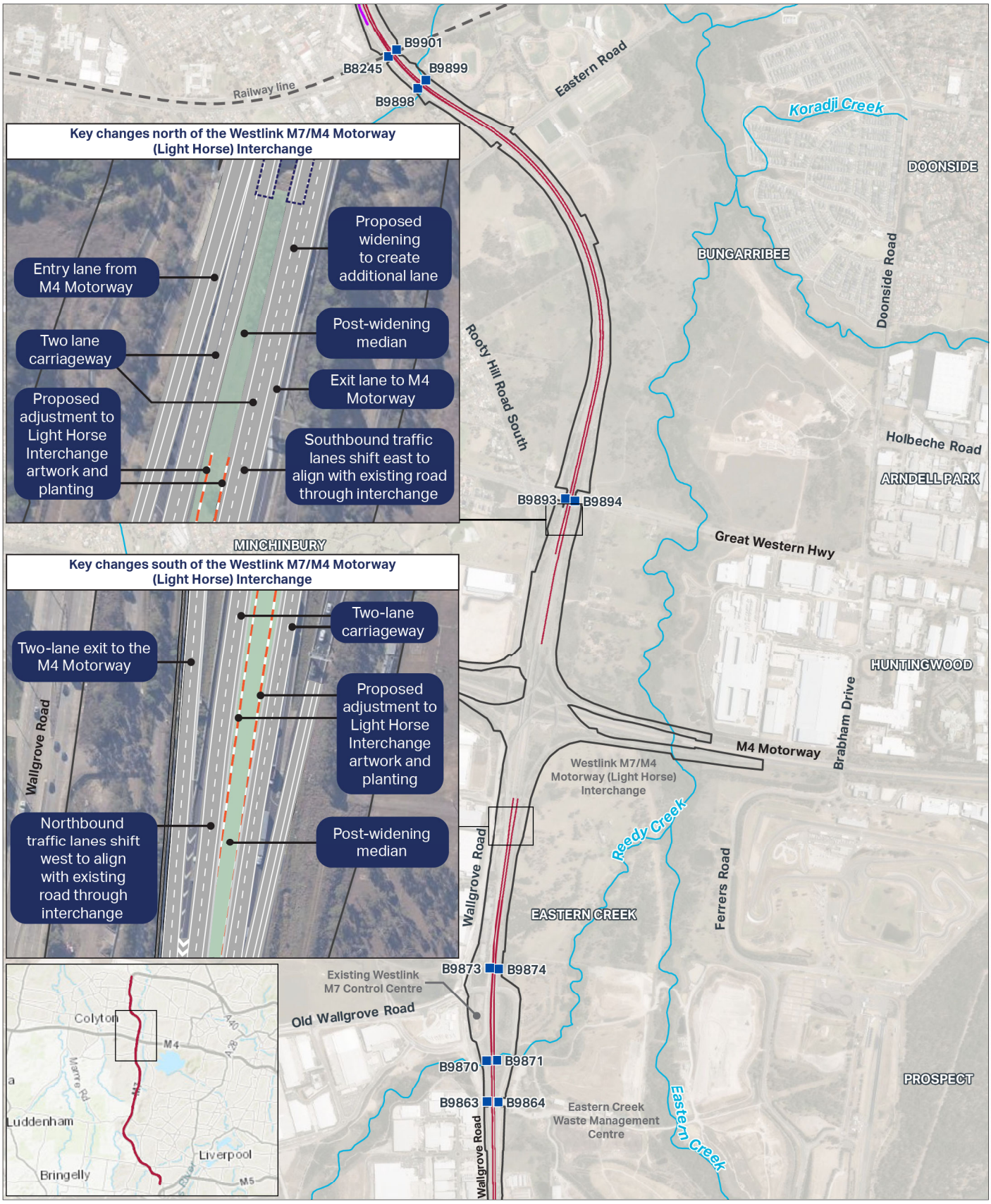

FIGURE 9-4: KEY FEATURES

N 0 400 800 m

AECOM

Legend

- Proposed widening
- Operational footprint
- Watercourse
- Existing noise wall
- Artwork potentially impacted by proposed modification
- Transport for NSW bridge number B9#### proposed to be widened

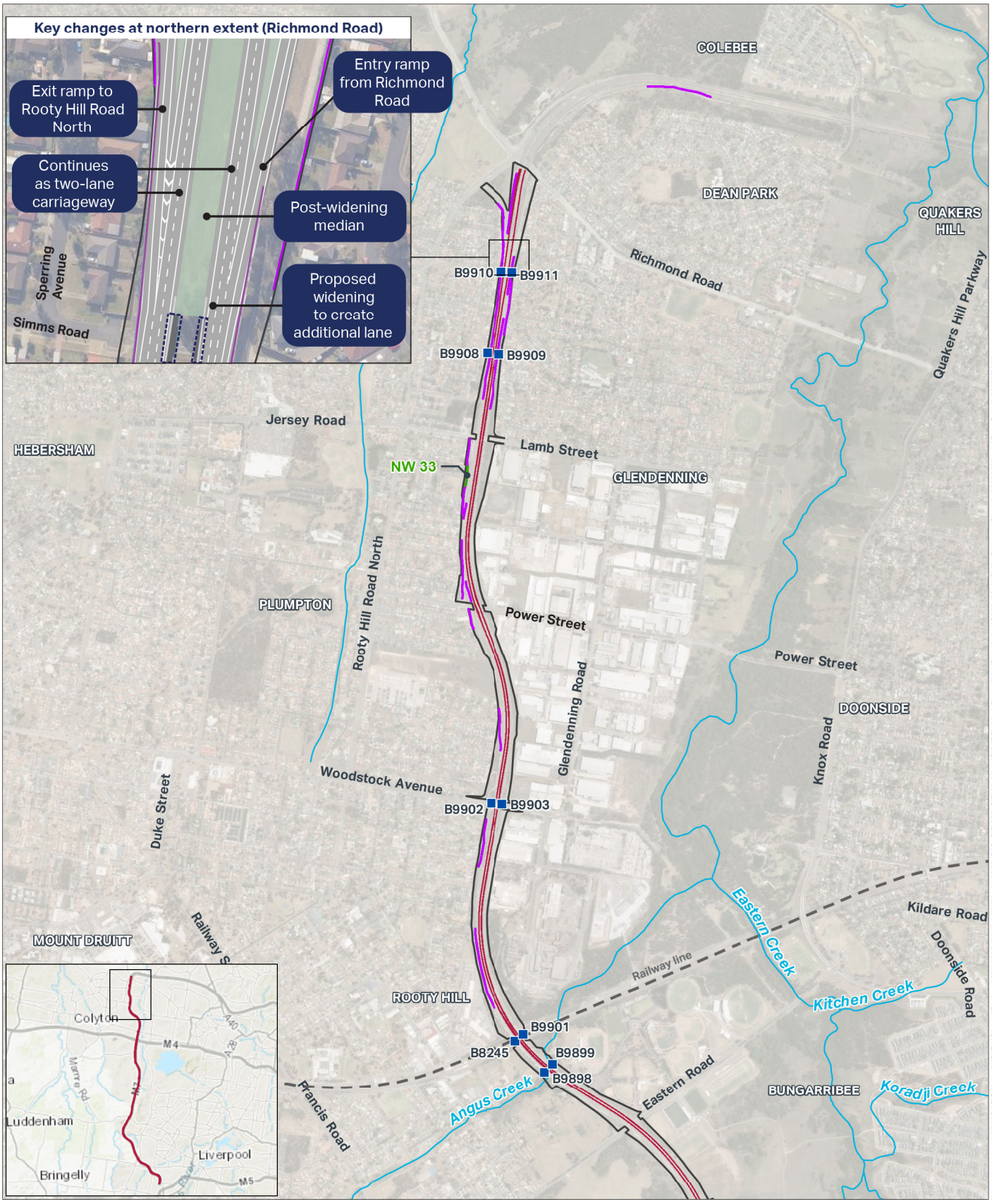

FIGURE 9-5: KEY FEATURES

Legend

- Proposed widening
- Operational footprint
- Watercourse
- Existing noise wall
- Existing noise wall height increase (NW####)
- Transport for NSW bridge number B9#### proposed to be widened

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9.4 Avoidance or minimisation of impacts through design

The environmental and social impacts of the proposed modification have been minimised through design and the construction methods chosen. Table 9-3 outlines design responses which have allowed for environmental impacts to be avoided.

Table 9-3 Adverse construction impacts avoided or minimised through design

Environmental aspect	Design response
Traffic and transport	• Construction traffic routes would be developed with the aim of minimising the impact to the local community as much as possible, by maximising the use of classified State and regional roads. • Construction ancillary facilities have been sited within or immediately adjacent to the Westlink M7 corridor, and thus haulage of construction materials to and from the construction footprint would primarily be via the Westlink M7 to avoid or minimise the use of the local road network. • Where the construction program allows, movements would be scheduled to avoid peak traffic periods. • Construction would largely be undertaken outside of standard construction hours (which are considered to be 7am to 6pm on weekdays and 8am to 1pm on Saturdays) to prevent congestion. • The construction of the proposed modification with occur concurrently with that of the M12 Motorway to prevent conflicting requirements for access, traffic lane closures, and nightworks.
Noise	• Construction traffic routes would be developed with the aim of minimising the impact to the local community as much as possible, by maximising the use of classified state and regional roads. • Construction ancillary facilities were sited at least 200 metres from nearest residences, where possible. • The use of less vibration intensive methods of construction or equipment will be considered where feasible and reasonable when working in proximity to existing structures, and be limited to the least sensitive times of day. • Noise walls would be upgraded or added where necessary.
Water resources	• Construction ancillary facilities were sited at least 50 metres from a waterway, except for the bridge sites in riparian areas, in areas below the one in 20-year ARI flood level, unless a contingency plan to manage flooding hazards is prepared and implemented. • Erosion and sediment controls would be implemented to minimise sediment laden run-off from entering drainage lines and waterways during construction. Standard erosion and sediment control measures would be used with consideration to the guidelines in the publication Managing Urban Stormwater: Soils and Construction Volumes 1 and 2d (the Blue Book).
Biodiversity	• The majority of the widening would be conducted within the median of the Westlink M7, as opposed to its shoulders where the majority of native vegetation occurs. • Construction ancillary facilities were sited in areas that would require minimal vegetation clearing. • The cleared and/or disturbed areas would be utilised for the widening as much as possible, as well as the existing shared pathway, within the Westlink M7 lease area for the construction ancillary facilities and access routes.

Environmental aspect	Design response
	• Preliminary vegetation mapping was conducted to identify areas that contained Threatened Ecological Communities (TECs) that were likely to conform to the national listing under the EPBC Act as well as any other significant or sensitive environments. This survey identified better condition areas of vegetation and TECs to avoid. • It was also proposed to clear the areas on the slow-lane side of the bridges for their inspection and maintenance; this approach was abandoned due to the additional clearing required in sensitive environments (i.e. TECs).
Aboriginal and non-Aboriginal heritage	• Construction ancillary facilities would be located in areas that would avoid and/or minimise impact on heritage items (including areas of archaeological sensitivity).
Land and property	• The construction of the proposed modification would occur concurrently with that of the M12 Motorway and two construction ancillary facilities (AF17 and AF18) would be used for both projects to minimise the need for extra facilities and temporary land take. • Construction ancillary facilities were sited in areas that would avoid unnecessary impacts to adjacent properties and land uses.
Landscape character, visual amenity, and urban design	• The urban design strategy included: • Road alignment, to ensure it optimises the retention of existing landscape character and minimises impacts to placemaking elements and features along the road corridor. • Interchanges, to ensure they are legible, distinctive and maintain simplicity in their arrangement, in particular at the Westlink M7/ M12 Motorway interchange and the M4 Motorway (Light Horse) Interchange. • Bridges, to ensure they retain their original design intent and appearance, without looking like they've been structurally altered / widened. • Integration at interfaces they have with the approved M12 Motorway interchange works. • Any requirement for new or modified noise walls, to ensure they are integrated with the surrounding context along the road corridor, do not become visual/ physical barriers and are aligned with Crime Prevention Through Environmental Design principles). • Integration of new and/or modified drainage infrastructure required to service the additional road pavement. • Safety barriers, signage, gantries, and other road furniture components such as lighting to ensure the maintenance of the visual simplicity and coordination of the original design.
Soils and contamination	• Construction ancillary facilities were sited on relatively level land, to minimise the need for earthworks to create a useable area.
Social	• Construction ancillary facilities were sited at least 200 metres from nearest residences, where possible, and to avoid reduced access to social infrastructure.
Sustainability, climate change, and greenhouse gases	• The proposed modification would be designed, constructed, and operated with the aim of achieving GHG emissions performance outcomes.

Environmental aspect	Design response
Waste	• Waste management procedures are to follow existing Westlink M7 guidelines, or better. • Treatment of contaminated materials (spoil and wastewater) encountered during construction to make suitable for reuse where feasible within or outside of the proposed modification.

9.5 Uncertainties of the proposed modification and approach to design refinements

The design presented in this Modification Report is indicative and subject to further detailed design which may further minimise impacts. The design serves to:

- Confirm that the proposed performance and technical requirements can be achieved
- Validate the feasibility and potential methodologies of the construction
- Identify key risks, constraints, and potential environmental impacts.

There remain some uncertainties relating to technical requirements and how the proposed modification would be constructed. These would be resolved during detailed design. A summary of the uncertainties that have the potential to impact on the environment, and how these would be resolved, is provided in Table 9-4. Considering the implementation of the proposed resolutions, the uncertainties listed are not expected to result in significant or unacceptable impacts to the environment that would not be capable of mitigation or management.

Table 9-4 Resolution of key uncertainties

Key uncertainties	Category	Proposed resolution
Location, siting, and number of noise walls and at-receiver architectural treatments	Detailed design	During detailed design the noise walls and at-receiver architectural treatments required will be confirmed, prior to installing during construction.
Flood risk during construction	Detailed design	Detailed construction planning is required to consider flood risk at construction sites and construction support sites. Aspects to consider include stockpile sites, location of ancillary sites, and flood emergency management measures. The key parameters of construction flood risk have been incorporated into the assessment.
Operational flood risk	Detailed design	The operational impact of the proposed modification on flood behaviour is to be confirmed during detailed design and include consideration of future climate change and a partial blockage of the stormwater drainage system. The key parameters of construction flood risk have been incorporated into the assessment.
Site specific water quality assessment	Detailed design	An updated water quality assessment will be undertaken during detailed design to inform site-specific discharge criteria to meet the objective of maintaining or improving water quality in the receiving watercourses.
Performance of the water quality management controls	Detailed design Construction Operation	The performance of the stormwater quality controls and spill control strategy will be verified at detailed design stage to ensure that waterways that receive runoff from the proposed modification meet the Water Quality Objectives (WQO).

Key uncertainties	Category	Proposed resolution
		In the instance that, during detailed design, it cannot be demonstrated that the water quality controls would be effective in mitigating potential impacts in accordance with the WQOs, then additional mitigation measures will be identified and implemented.
Utilities	Detailed design	Consultation with the relevant utility providers will be undertaken prior to construction to confirm the presence of utilities and refine potential utility adjustments and utility protection measures (with a view to avoiding impacts if possible, and protecting or adjusting if required) during detailed design.
Visual impacts	Detailed design	The detailed design of the proposed modification will consider how noise walls may look from outside the Westlink M7 corridor.
Public safety	Detailed design	To increase feeling of safety within the community, options will be explored to add additional street lighting to the shared path.
Westlink M7/M4 Motorway (Light Horse) Interchange	Detailed design	Sections of the existing Australian Light Horse Sculpture Parade (listed on the NSW War Memorial Register, a database of war memorials in NSW) and associated fig trees at the Westlink M7/M4 Motorway (Light Horse) Interchange would be impacted by the proposed widening. Detailed options for the removed fig trees and sections of the memorial are being explored in consultation with key stakeholders, and a reinstatement plan will be prepared. The final modification option and reinstatement plan would seek to maintain the integrity and significance of the memorial as whole and would be developed in consultation with the artist, NSW Returned Services League (RSL) and NSW Office of Veteran Affairs.
Aboriginal cultural values	Detailed design	Transport has undertaken an advertising campaign to engage with the Aboriginal community and gain an understanding of cultural values in the area. Transport will seek to embed these values in the detailed design of the proposed modification.
Waste generation	Detailed design Construction	Where the construction of the M12 Motorway interchange coincides with the proposed modification, consultation will occur with the relevant M12 Motorway project team during detailed design, construction planning and during construction, to identify opportunities for waste avoidance and re-use, and other efficiencies. This may include for example coordinated construction planning, co-management of relevant construction areas, sharing of resources, and spoil management/re-using spoil from excavations as fill material.
Operational noise	Operation	Operational traffic noise will be monitored at sensitive receivers between six months and one year after opening. If the traffic noise levels are above the levels as predicted during detailed design, additional feasible and reasonable mitigation measures will be considered.

9.6 Compilation of adverse impacts

Table 9-5 provides a summary of the potential construction impacts of the proposed modification, whilst Table 9-6 provides a summary of those during operation. Potential residual impacts would be further reviewed during detailed design development and construction planning and where necessary additional measures would be implemented to ensure these impacts are suitably mitigated.

Table 9-5 Summary of adverse construction impacts

Issue	Summary of key adverse impacts
Traffic and transport	• Temporary closures on the Westlink M7 and non-motorway roads, and off-motorway detours at night • Temporary increase in volume of traffic on the existing road network, due to presence of construction vehicles.
Noise	• Exceedances of the applicable noise management levels affecting sensitive receivers, with the highest levels of exceedances occurring at night • Road traffic noise increases of more than 2 dB(A) along accesses and detour routes.
Air quality	• Zones 1 and Zone 11 were found to have a high sensitivity to dust soiling and a high risk of dust (as PM10) due to the proximity of highly sensitive receptors close to the construction footprint • All other zones were found to have a moderate sensitivity to dust soiling and a moderate risk of dust (as PM10) due to the proximity of highly sensitive receptors close to the construction footprint.
Hydrology and flooding	• Two ancillary facilities associated with bridge construction and construction zone support are subject to flooding conditions during a 20% AEP event that would be considered hazardous, and seven during a 1% AEP event.
Surface and groundwater	• No significant adverse impacts anticipated following application of mitigation measures.
Biodiversity	• Direct removal of 7.48 ha of modified native vegetation containing seven Plant Community Types, aligning to six TECs, including 2.31 ha of roosting and foraging habitat for a species of bat, the Southern Myotis (Myotis macropus), and fauna habitat (native vegetation and drainage lines) • Disturbance to sections of 18 creeklines ranging from smaller first order unnamed creeks through to larger fifth order streams (Cabramatta Creek).
Aboriginal heritage	• No significant adverse impacts anticipated following application of mitigation measures.
Non-Aboriginal heritage	• Potential for impacts upon the stability of relevant air shaft known as ‘No. 4 Shaft’ in the Cecil Hills tunnel due to high vibration activities.
Land and property	• Temporary lease of land and properties for seven construction ancillary facilities.
Landscape character, visual amenity, and urban design	• High to moderate visual impact to visual receivers (including residential dwellings, and road and shared path users) during construction due to removal of vegetation and presence of construction activity and equipment within the views.

Issue	Summary of key adverse impacts
Soils and contamination	• Potential for contamination to be present at concentrations above the adopted assessment criteria and pathways for exposure to human and ecological receptors.
Social	• Changes in access to public transport services, the existing cycle and pedestrian network, the social infrastructure, and existing utilities • Increase in construction stress associated with temporary increased levels of traffic, noise, and vibration; decline in air quality; changes to visual amenity; and perceptions of safety.
Sustainability	• No significant adverse residual impacts anticipated following application of mitigation measures.
Climate change	• Climate change risks associated with increases of extreme rainfall and wind events leading to construction interruption resulting in construction delays for day to day works.
Greenhouse gases	• The proposed modification would generate approximately 130,701 tCO2e during construction, associated with construction materials (52%), followed by fuel use (21%) and waste (22%).
Waste	• Around of 30,000 cubic metres of fill would be likely to require stockpiling, and potential for re-use is expected to be limited.
Hazard and risk	• No significant adverse residual impacts anticipated following application of mitigation measures.
Cumulative	• Potential for construction traffic, air quality, and noise fatigue for sensitive receivers due to concurrent construction activities.

Table 9-6 Summary of adverse operational impacts

Issue	Summary of key adverse impacts
Traffic and transport	• Vehicle speeds for the northern and southern extents outside the proposed widening would experience increased traffic demands • Many of the intersections would operate at an undesirable Level of Service by 2026 and 2036 with and without the proposed modification.
Noise	• A total of 251 sensitive receivers, including residences, schools, and places of worship, are predicted to have exceedances of the applicable operational road traffic noise criteria following application of noise walls.
Air quality	• No significant adverse residual impacts anticipated following application of mitigation measures.
Hydrology and flooding	• During a 5% and 1% AEP design storm event, depths of flow at the outlet of the Government Road Basin would increase by 0.06 metres, and by a maximum of 0.10 metres in an area of the Western Sydney Parklands (downstream) of transverse drainage structure C16.60. • Minor impacts on the scour potential in the receiving drainage lines • Minor impact on the duration of flooding in the drainage lines downstream of the operational footprint for storms with AEPs of 20% and 1%. • Minor impact on flood behaviour due to additional piers obstructing overland flow and displacing floodwater in flood storage areas.
Surface and groundwater	• Retention efficiencies of the stormwater quality control basins will exceed local targets for gross pollutants and total phosphorus.

Issue	Summary of key adverse impacts
Biodiversity	• No significant adverse residual impacts anticipated.
Aboriginal heritage	• No significant adverse residual impacts anticipated.
Non-aboriginal heritage	• No significant adverse residual impacts anticipated.
Land and property	• No significant adverse residual impacts anticipated.
Landscape character, visual amenity, and urban design	• Overall moderate to low changes in Landscape Character Zones (LCZ): - LCZ 3: Recreation and Bushland would be negatively affected due to clearing of vegetation - LCZ 4: Residential would be negatively affected due to presence of noise walls along the Westlink M7 boundaries • Eleven viewpoints had a high to moderate-low adverse visual impact. This was mainly due to their presence within residential or recreational areas, and due to removal of vegetation, particularly trees.
Soils and contamination	• No significant adverse residual impacts anticipated.
Social	• No significant adverse residual impacts anticipated.
Sustainability	• No significant adverse residual impacts anticipated.
Climate change	• Low to medium climate change long term (2030 and 2090) risks to the proposed modification associated with increasing temperatures and number of hot days, extreme rainfall and flooding, bushfires, and storms.
Greenhouse gases	• The proposed modification would generate approximately 10,162 tCO2e during the nominal 100-year operational life, attributed to maintenance activities.
Waste	• No significant adverse residual impacts anticipated.
Hazard and risk	• No significant adverse residual impacts anticipated.
Cumulative	• Increases in traffic resulting in some intersections (such as those between the Westlink M7 and Horsley Drive) that are expected to experience increased delays.

Table 9-10 identifies those impacts that would remain after the application of mitigation measures (i.e. residual risks), and further opportunities for mitigation where required.

9.7 Compilation of mitigation measures

The proposed measures associated with each impact to avoid or minimise (through design refinements or ongoing management during construction and operation) or offset these impacts are provided in **Appendix B** (Compilation of mitigation measures).

Some mitigation measures would help address impacts of more than one environmental issue, for example noise and air quality mitigation measures would also address potential social and amenity related impacts. The implementation of some mitigation measures also have the potential to cause potential impacts of their own (as noted in **Section 7.1.6** and **Section 7.3.6**). The mitigation measures proposed have taken these interactions into account, as would the preparation and implementation of the CEMP.

Transport has developed, through its contract specifications, a model specification that requires construction contractors to implement an environmental management system in the form of a

Construction Environmental Management Plan (CEMP) during construction of the proposed modification. The CEMP provides a structured approach to the management of environmental issues identified in the Modification Report. Implementing the CEMP will effectively ensure that the proposed modification meets regulatory and policy requirements in a systematic manner and continually improves its performance. The strategies defined in the CEMP will be developed in consideration of the approval requirements of the proposed modification, and the mitigation measures presented in the Modification Report. The CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts of the proposed modification on the environment.

9.8 Residual risk analysis

An environmental risk analysis was carried out for the proposed modification as part of the Modification Report. This section outlines the environmental risk analysis process and identifies key environmental risks associated with the proposed modification that were identified through this process. This chapter also outlines management measures to address associated risks and assesses the potential for residual risk once measures were implemented.

9.8.1 Methodology

Residual environmental risks are those impacts that remain once mitigation has been applied to manage the impact. The process to assess residual risks associated with the proposed modification involved:

- Identification of potential environmental impacts associated with construction and operation of the proposed modification, as identified in the environmental assessments (see **Section 7.1** to **Section 7.18**)
- Identification of environmental mitigation measures to address the identified impacts (see **Section 9.7**)
- Identification of the adverse environmental risk of each environmental impact, before implementation of mitigation measures (beneficial environmental impacts were not assessed for their risk)
- Identification of residual environmental impacts that may remain following the implementation of mitigation measures.

Likelihood and consequence ratings

The risk analysis was carried out by assessing the likelihood and consequence of the impact occurring, using the descriptions presented in Table 9-7 and Table 9-8. These descriptions were adopted from the *Roads and Maritime Risk Framework* and the *Roads and Maritime Risk Analyser Project v2.0* (Roads and Maritime Services, 2018).

Table 9-7 Likelihood of environmental risks

Likelihood Level	Description
Almost certain	Almost certain to occur frequently in most circumstance within the lifecycle of the proposed modification.
Likely	Likely to occur often in most circumstance within the lifecycle of the proposed modification.
Possible	Likely to occur on occasions within the lifecycle of the proposed modification.
Unlikely	Could occur at some time but not often within the lifecycle of the proposed modification.
Rare	May occur at some time but unusual within the lifecycle of the proposed modification.
Improbable	Could occur but very improbable within the lifecycle of the proposed modification.

Table 9-8 Consequence of environmental risks

Consequence	Definition
Catastrophic	• Irreversible large-scale impact • Permanent damage • Regulatory intervention maximum fines and penalties
Severe	• Long-term (>5 years and <10 years) impact • Irreparable damage of cultural and/or environmental significance
Major	• Long-term (>24 months but <5 years) significant impact to the environment or community • Partial impairment of the ecosystem
Serious	• Short to mid-term (<24 months) impact • Notification to regulator
Moderate	• Short term repairable environmental damage or social impact on local population <12 months • Minor but long-term impact to environment or community
Minor	• Localised impacts rectified by on site resources • Isolated, easily contained, no lasting effects

Overall risk rating

Following the application of a likelihood and consequence rating, an overall risk rating was assigned for each identified environmental impact using the risk matrix presented in Table 9-9.

If a residual risk rating remains at a 'high' rating or above following the implementation of mitigation measures, additional mitigation measures were identified/proposed (see **Section 9.8.3**).

Table 9-9 Risk matrix

Likelihood							
	Almost certain	Medium	High	High	Very high	Very high	Very high
	Likely	Medium	Medium	High	High	Very high	Very high
	Possible	Low	Medium	Medium	High	High	Very high
	Unlikely	Low	Low	Medium	Medium	High	High
	Rare	Low	Low	Low	Medium	Medium	High
	Improbable	Low	Low	Low	Low	Medium	Medium
		Minor	Moderate	Serious	Major	Severe	Catastrophic
		Consequence					

Source: Adapted from the RMS Risk Framework 2018 *and the* RMS Risk Analyser Projects v2.0 *(Roads and Maritime Services, 2018)*

9.8.2 Risk table

The environmental risk analysis is presented in Table 9-10.

Table 9-10 Residual risk analysis

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Traffic and transport								
Construction related impacts on road network performance due to additional traffic, reduced speed limits, temporary lane/road closures, and impacts on public and active transport	Construction	Almost certain	Serious	High	• T1 to T4	Almost certain	Moderate	High
Temporary construction related impacts on property access including road closures	Construction	Almost certain	Serious	High	• T1	Almost certain	Moderate	High
Construction related impacts to surrounding on-street parking (associated with ancillary facilities and accesses)	Construction	Unlikely	Moderate	Low	• T1	Unlikely	Minor	Low
Operational intersection performance impacts and increased travel times due to increased traffic in some parts of the network as a result of the proposed widening.	Operation	Likely	Major	High	• T5 • T6	Likely	Moderate	Medium

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Noise								
Construction noise and vibration impacts associated with construction activities and ancillary facilities particularly on receivers that are located close to the construction footprint	Construction	Almost certain	Major	Very high	• NV1 to NV6 • NV8 to NV14	Likely	Serious	High
Noise impacts from construction vehicles on receivers near the construction routes, particularly on local roads	Construction	Unlikely	Serious	Medium	• NV1 • NV2 • NV6 • NV7	Unlikely	Moderate	Low
Westlink M7 detour road traffic noise impacting receivers near construction detour routes	Construction	Almost certain	Serious	High	• NV1 • NV2 • NV6 • NV11 • NV15 • NV16	Likely	Moderate	Medium
Increases in operational road traffic noise adversely impacting receivers directly adjacent to the Westlink M7 corridor.	Operation	Likely	Severe	Very high	• NV2 • NV17 • NV18	Possible	Moderate	Medium

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Air quality								
Mobilisation of pollutants, dust and odour during construction activities resulting in human health and ecological impacts	Operation	Almost certain	Major	Very high	• AQ1 to AQ13	Unlikely	Moderate	Low
Hydrology and flooding								
Adverse impacts to construction work areas and ancillary facilities due to flood risks	Construction	Unlikely	Serious	Medium	• FL1 • FL3 • FL4 • FL5	Unlikely	Moderate	Low
Adverse impacts on surrounding properties and infrastructure due to changes in flood behaviour associated with construction of the proposed modification	Construction	Unlikely	Moderate	Low	• FL1 to FL10	Unlikely	Moderate	Low
Adverse impacts on surrounding properties and infrastructure due to changes in flood behaviour associated with operation of the proposed modification	Operation	Unlikely	Minor	Low	• FL9 • FL10	Unlikely	Minor	Low
Scour impacts on creeks and minor drainage lines from stormwater runoff during construction	Construction	Unlikely	Serious	Medium	• FL1 • FL9	Unlikely	Moderate	Low

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Scour impacts on creeks and minor drainage lines from stormwater runoff during operation	Operation	Unlikely	Moderate	Low	• FL9	Unlikely	Moderate	Low
Increases in flood hazards for road users	Operation	Improbable	Major	Low	• FL1 to FL3 • FL6 to FL8 • FL10	Improbable	Minor	Low
Surface and groundwater								
Potential impacts to workers from exposure to contaminated groundwater	Construction	Unlikely	Major	Medium	• SW1	Rare	Serious	Low
Impacts on surface water quality from erosion	Construction	Unlikely	Moderate	Low	• SW1 • SW3 to SW10	Unlikely	Minor	Low
Impacts on surface water quality from accidental spills	Construction	Possible	Serious	Medium	• SW6 to SW11	Unlikely	Moderate	Low
Impacts on groundwater conditions due to construction activities	Construction	Rare	Moderate	Low	• SW1 • SW2	Improbable	Moderate	Low
Impacts on stormwater quality from the proposed modification	Operation	Rare	Moderate	Low	• SW1 • SW2 • SW8 • SW9 • SW11	Rare	Minor	Low

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Increase in the transport of road surface pollutants (i.e. brake dust, rubber, oils and fuels) to local waterways via the pavement drainage system.	Operation	Possible	Minor	Low	• SW1 • SW2 • SW8 • SW9 • SW11	Possible	Minor	Low
Biodiversity								
Removal or modification of native vegetation	Construction	Almost certain	Moderate	High	• B1	Almost certain	Minor	Medium
Removal of potential roosting and foraging habitat of the Southern Myotis	Construction	Likely	Severe	Very high	• B1 • B3 • B4	Likely	Moderate	Medium
Fauna injury and mortality during vegetation clearing and vehicle collision, particularly less mobile species	Construction and operation	Unlikely	Serious	Medium	• B1 to B7 • B11 • HR5	Rare	Serious	Low
Invasion and spread of pests and weeds	Construction	Possible	Serious	Medium	• B1 • B9 • B11	Unlikely	Moderate	Low
Impacts on aquatic habitat and hydrology from general construction, temporary stream adjustments, flood and flow paths during construction, leaks and spills, stockpiles and contaminants,	Construction and operation	Likely	Major	High	• B1 • B4 to B8	Likely	Moderate	Low

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
temporary waterway crossings and platforms in waterways.								
Aboriginal heritage								
Accidental construction-related impacts to known Aboriginal sites as well as unexpected finds	Construction	Unlikely	Severe	High	• AH1 to AH4	Rare	Severe	Medium
Impacts to nearby Aboriginal sites during construction	Construction	Unlikely	Severe	High	• AH1 to AH3 • AH5	Rare	Severe	Medium
Non Aboriginal heritage								
Potential direct impacts to the four identified non-Aboriginal heritage-listed items	Construction	Unlikely	Severe	High	• H1 to H4	Rare	Severe	Medium
Potential impacts on previously unidentified heritage items (unexpected finds)	Construction	Unlikely	Severe	High	• H1	Rare	Severe	Medium
Potential indirect impacts on heritage items such as vibration and visual impacts, on the State significant Upper Canal System	Construction and operation	Unlikely	Severe	High	• H1 to H4	Rare	Severe	Medium

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Land use and property								
Impacts on landowners, residents, and businesses as a result of temporary leases	Prior to construction	Possible	Major	High	• LUP1 to LUP3	Possible	Moderate	Medium
Alterations to property access for some properties due to the construction and operation of the proposed modification	Prior to and during construction	Almost certain	Serious	High	• LUP1 to LUP3	Almost certain	Moderate	High
Changes to land use within the construction footprint	Construction	Almost certain	Major	Very high	• LUP1 to LUP3	Almost certain	Serious	High
Impacts to utilities located within the construction footprint	Construction	Likely	Serious	Very high	• LUP4 • LUP5	Possible	Moderate	Medium
Landscape character, visual amenity and urban design								
Adverse visual impact from within the road corridor due to views of construction equipment and loss of trees	Construction	Almost certain	Major	Very high	• LV1 to LV4	Almost certain	Moderate	High
High adverse impact to *Landscape Character Zone (LCZ) 1b: M4 (Light Horse) Interchange* due to changes to the Light Horse Sculpture Parade and memorial fig planting	Operation	Likely	Serious	High	• LV5	Possible	Serious	Medium

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Moderate adverse impact to *LCZ 1a: Infrastructure Corridor* due to proposed widening and upgrade of an existing high speed transport corridor	Operation	Almost certain	Moderate	High	• LV6 to LV9	Likely	Moderate	Medium
Moderate to low adverse impact to *LCZ 3: Recreation and Bushland* due to potential effects on bushland from clearing vegetation	Operation	Almost certain	Minor	Medium	• LV6 to LV9	Likely	Minor	Medium
Low adverse impact to *LCZ 4: Residential* due to changes in noise walls	Operation	Almost certain	Moderate	High	• LV8	Possible	Moderate	Medium
Adverse visual impact due to change in views of the Westlink M7 (including increased prominence of the motorway and removal of vegetation within riparian corridors)	Operation	Almost certain	Major	Very high	• LV6 to LV9	Likely	Minor	Medium
Soils and contamination								
Potential disturbance of existing contaminated soils or groundwater within the Westlink M7	Construction	Possible	Major	High	• C1 to C4	Unlikely	Serious	Medium

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Impacts on local soil and water quality due to the disturbance of saline soils or acid sulfate soils	Construction	Rare	Moderate	Low	• C1 • C5 • C6	Rare	Minor	Low
The construction works could result in soil, surface water, and/ or groundwater contamination	Construction	Possible	Major	High	• C1 to C4	Unlikely	Serious	Medium
The construction works could result in erosion of exposed soils and/ or an increase in sediment loading	Construction	Possible	Major	High	• C1 • C7	Unlikely	Serious	Medium
Potential for erosion and exposure of contaminated soils	Operation	Possible	Minor	Low	• C4	Unlikely	Minor	Low
Social								
Impact to local communities due to disruptions to people's way of life (i.e. changes to traffic, leasing property)	Construction	Almost certain	Moderate	High	• SE1 • SE2	Likely	Minor	Medium
Changes to local people's sense of community from loss of access to social infrastructure and sense of safety	Construction	Possible	Moderate	Medium	• SE1 and SE2	Unlikely	Minor	Low

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Changes to accessibility	Construction	Likely	Minor	Medium	• SE1	Possible	Minor	Low
Impacts to the health and wellbeing of local communities from direct and/ or indirect impacts during construction	Construction	Likely	Moderate	Medium	• SE1 • SE2	Possible	Minor	Low
Changes to local amenity due to changes in traffic, noise, vibration, or air quality	Construction	Likely	Moderate	Medium	• SE1 • SE2	Likely	Minor	Medium
Negative impacts upon people's livelihoods due to construction activities	Construction	Likely	Minor	Medium	• SE1	Unlikely	Minor	Low
Negative impacts associated with health and wellbeing	Operation	Likely	Minor	Medium	• SE1	Possible	Minor	Low
Sustainability								
Desired sustainability outcomes not met	Construction and operation	Likely	Moderate	Medium	• SU1 • SU2	Unlikely	Minor	Low
Climate change								
Impacts related to increased rainfall and weather event intensities	Construction	Likely	Minor	Medium	• CC1	Possible	Minor	Low
Impacts related to increasing temperatures and number of hot days	Operation	Likely	Moderate	Medium	• CC2 to CC7	Possible	Minor	Low
Impacts related to extreme rainfall and flooding	Operation	Likely	Moderate	Medium	• CC8 • CC9	Possible	Minor	Low

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Impacts related to storms	Operation	Possible	Minor	Low	• C10	Possible	Minor	Low
Greenhouse gas								
Increase in greenhouse gas emissions from construction	Construction	Almost certain	Moderate	High	• GG1 to GG7	Almost certain	Minor	Medium
Increased energy use (and greenhouse gas emissions) due to the operation of the road (lighting, signals, and maintenance)	Operation	Almost certain	Moderate	High	• GG1 • GG8	Almost certain	Minor	Medium
Waste								
Inappropriate handling or disposal of waste	Construction	Possible	Serious	Medium	• W1 to W8	Unlikely	Moderate	Low
Hazard and risk								
Hazards and risks to public and worker safety during construction	Construction	Unlikely	Catastrophic	High	• HR1 • HR6 • HR8 to HR11	Improbable	Catastrophic	Medium
Potential for bushfire on adjacent land	Construction and operation	Rare	Catastrophic	High	• HR2 to HR4	Rare	Major	Medium
Loss of access for emergency vehicles	Construction and operation	Unlikely	Catastrophic	High	• HR12	Improbable	Catastrophic	Medium

Summary of key impacts	Construction/ operation	Likelihood	Consequence	Risk	Environmental mitigation measures	Residual likelihood	Residual consequence	Residual risk
Cumulative impacts								
Additional impacts arising from interaction with adjacent upgrade projects and other surrounding developments during the construction period.	Construction	Likely	Major	High	• Cu1 • Cu2	Possible	Serious	Medium

9.8.3 Residual risks

High and medium residual risk

The risk analysis outlined in Table 9-10 has identified several high and medium level residual risks. Opportunities will be identified during detailed design to:

- Resolve residual impacts and risks through design refinement
- Develop effective construction methodologies and planning to ensure that mitigation measures can be effectively implemented
- Implement a process of review, correction and audit for the mitigation measures that are identified in **Appendix B**. A process of continuous improvement will allow for mitigation measures to be updated and improved during construction and operation where feasible and reasonable.

Where high and medium level residual risks are still likely, additional and/or refined mitigation measures will be developed to address those risks as far is reasonable and feasible. If approved, the proposed modification would also be subject to the Conditions of Approval from DPE, and an Environmental Protection Licence (EPL) from the NSW EPA.

Low residual risk

Regardless of the low risk rating for some residual risks identified in Table 9-10, an appropriate process of review and continual improvement will be applied to address these potential impacts during construction and operation as far as is reasonable and feasible.

9.9 Compilation of performance outcomes

The proposed modification design has been prepared in consideration of the 'desired performance outcomes' provided in the SEARs. Table 9-11 outlines how each performance outcome will be achieved by the proposed modification.

Table 9-11 Demonstration of how the proposed modification will achieve the desired performance outcomes

Desired performance outcome	Proposed modification outcome
Modification Report The modification is described in sufficient detail to enable clear understanding that the modification has been developed through an iterative process of impact identification and assessment and project refinement to avoid, minimise or offset impacts so that the project, on balance, has the least adverse environmental, social and economic impact, including cumulative impacts.	The proposed modification has been described in detail in **Chapter 4** (Proposed modification). The merits of the proposed modification, staging options and concept design options were considered in the context of a range of alternatives based on how well they performed with reference to transport, environmental, engineering, social and economic factors (refer to **Chapter 3** (Need for the modification and strategic context)). The preferred design provides a combination of benefits compared with other options assessed, including improved access, minimised impacts on properties, and on future development potential.
Assessment of Key Issues* Key issue impacts are assessed objectively and thoroughly to provide confidence that the project will be constructed and operated within acceptable levels of impact or with appropriate offsets. * Key issues are nominated by the Proponent in the SSI modification application and by the Department in the SEARs. Key issues need to be reviewed throughout the preparation of the Modification Report to ensure any new key	The Modification Report has been prepared in accordance with Part 3 of Schedule 2 of the EP&A Regulation. The assessment of key issues has been conducted objectively and thoroughly. The implementation of environmental management and mitigation measures would ensure the proposed modification is constructed and operated within acceptable levels of impact. Key issue impacts are presented in **Sections 7.1** (Traffic and transport), **Section 7.2** (Noise and vibration), **Section 7.4** (Hydrology and flooding), **Section 7.5** (Surface water and groundwater) and

Desired performance outcome	Proposed modification outcome
issues that emerge are captured. The key issues identified in this document are not exhaustive but are key issues common to most SSI projects.	Section **7.6** (Biodiversity), of this report. Aboriginal heritage and soils and contamination were also listed as key issues in the SEARs however no impacts are expected in regard to Aboriginal heritage, and impacts related to soils and contamination would either be avoided through management or minor.
Key Appendices	Key appendices, upon which the Modification Report chapters were based on, are presented in **Appendices D** to **N**.
Consultation The modification is developed with meaningful and effective engagement during project design and delivery.	Consultation has been undertaken to inform the design process and will be ongoing during detailed design. The construction contractors will respond to complaints in a timely and appropriate manner so that stakeholders' concerns are managed effectively and promptly.
Transport, Traffic, and Movement Network connectivity, safety, and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained. Impacts on network capacity and the level of service are effectively managed. Works are compatible with existing infrastructure and future transport corridors. The project is well-designed and enhances the environment where it is located, including improved accessibility and connectivity for communities and public spaces. The project contributes to greener places through the enhancement and provision of green infrastructure.	The proposed modification has been designed to integrate with, and be compatible with, the existing Westlink M7 motorway and associated infrastructure, as well as the proposed M12 Motorway. The current active travel movements across and adjacent to the Westlink M7 corridor would be maintained, however the proposed modification does not directly improve active travel linkages and connections within the wider network surrounding the study area. A summary of the traffic and transport impact assessment is as follows: • The performance of the local traffic network would not be significantly impacted during construction as the majority of works will occur outside standard construction times • There will be temporary network changes, including reduced road speeds and traffic diversions • The CEMP will contain several site-specific plans in the Construction Traffic and Access Management Plan as required across the construction footprint • During operation, the proposed modification would present benefits to the users of the Westlink M7 in relation to road safety, cyclist safety, network performance, and travel times • During operation, there is potential for reduced vehicle speeds in the areas outside the proposed modification along the Westlink M7, due to increased traffic demands • A landscape and urban design strategy will be implemented. Good urban design was a key part of the proposed modification and prioritised maintaining character along the Westlink M7, enhancing connectivity between areas of

Desired performance outcome	Proposed modification outcome
	vegetation, and providing an enjoyable road user experience.
Noise and Vibration – Amenity Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity, and adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage. Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community. Increases in noise emissions and vibration affecting environmental heritage as defined in the Heritage Act 1977 during operation of the project are effectively managed.	A summary of the noise and vibration impact assessment is as follows: • All construction stages have the potential to affect residential receivers by producing noise levels above applicable noise management levels • 15 out of 34 noise catchment areas (NCAs) would be 'highly affected' by certain activities at some point during construction • The current design avoids direct impact to the heritage-listed 'No. 4 Shaft' in the Cecil Hills tunnel system, however vibration during construction has the potential to impact the stability of the air shaft. To mitigate any risk to this heritage item, structure-specific vibration criteria will be developed during detailed design and adhered to during construction • A CNVMP would be prepared as part of the CEMP, which will include procedures for extended and out-of-hours work • The proposed modification proposes the extension of some existing noise walls and the introduction of a new noise barrier to mitigate operational noise • During operation, 251 sensitive receivers would be eligible for the consideration of feasible and reasonable noise mitigation measures.
Flooding The project minimises adverse impacts on existing flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.	A summary of the hydrology and flooding impact assessment included: • Flood risk would be present during construction, but is considered to be manageable • Detailed construction planning will be undertaken to consider flood risk at construction sites • The impact of the proposed modification on flood behaviour during operation will be confirmed during detailed design. This should include consideration of future climate change and a partial blockage of the stormwater drainage system.
Heritage – Aboriginal Cultural Heritage The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation and management of the heritage significance of Aboriginal objects and places. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the	A summary of the aboriginal heritage impact assessment included: • Two Aboriginal sites were identified within the study area however impacts to these sites would be avoided during construction • The operation phase of the proposed modification would not give rise to any impacts upon Aboriginal heritage.

Desired performance outcome	Proposed modification outcome
heritage significance of Aboriginal objects and places.	
Soils and Contamination The environmental values of land, including soils, subsoils, and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	A summary of the soils and contamination impact assessment included: • Without mitigation measures applied, there is potential for existing or new contamination to be caused • Existing contamination not identified during construction or encapsulated during remediation could have impacts to future maintenance workers or future land users of redundant ancillary facilities • Mitigation measures including targeted Detailed Site Investigations (DSIs), implementation of a Soil and Water Management Plan (SWMP) and procedures for the management of saline soils and potential inland acid sulfate soils would minimise the risk of adverse impacts to ecological and human receptors during construction • Any adverse impacts from contamination during operation would be managed by the implementation of an Operational Environmental Management Plan (OEMP) and assessment of redundant construction areas for future land uses.
Biodiversity The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/ or supplementary measures are assured which are equivalent to any residual impacts of project construction and operation.	A summary of the biodiversity impact assessment included: • The proposed modification was designed to lessen impacts upon biodiversity values through widening into the median; utilising cleared or disturbed areas; and implementation of silt fences, temporary diversions, and bunding controls next to bridge and creek sites • Direct removal of 7.48 ha of modified native vegetation containing seven Plant Community Types, aligning to six Threatened Ecological Communities • All direct impact areas will be offset via the NSW Biodiversity Offsets Scheme, as required under the Biodiversity Assessment Methodology • A Biodiversity Management Plan will be developed that includes measures to avoid or minimise impacts on sensitive ecological areas and revegetate/ restore disturbed areas.
Water – Quality and Hydrology The project is designed, constructed, and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of	A summary of the surface water and groundwater impact assessment included: • Water Quality Objectives (WQOs) and criteria were based on the NSW WQOs and the Healthy Rivers Commission (HRC) WQOs • Surface water and groundwater interactions may be impacted in localised areas during construction activities due to specific areas of

Desired performance outcome	Proposed modification outcome
the project impact including estuarine and marine waters (if applicable). Assess the impacts of the development on hydrology and waterway health and develop measures to avoid and mitigate these impacts.	temporary dewatering and/ or due to the reshaping of waterways and embankments to accommodate the bridgeworks • With the application of appropriate controls and measures (e.g. in accordance with the Blue Book), the potential impacts to surface water and groundwater are considered to be minor and manageable • A Soils and Water Management Plan will be prepared to guide construction of the proposed modification.
Other Issues	Other issues assessed in the Modification Report were: • Air quality • Landscape character, visual amenity, and urban design • Non-aboriginal heritage • Land use and property • Social • Sustainability • Climate change • Greenhouse gases • Waste • Hazard and risk • Cumulative impacts.

9.10 Justification of the proposed modification

The Westlink M7 is a major road infrastructure corridor on Greater Sydney's orbital motorway network. Compared to other modes of transport, Greater Sydney's road network carries, and will continue to carry, most of the trips made across Greater Sydney. The arterial road network, including the orbital motorway network, provides connectivity between communities and to dispersed employment areas that are more difficult for customers to reach using public transport, walking, and cycling. The arterial road network also provides the primary connections to enable road-based freight movements. An efficient road network is therefore critical to ensuring the economic growth of Greater Sydney.

The Westlink M7 has a key role in providing connections to both existing and future transport infrastructure across Greater Sydney, as identified in the *Future Transport Strategy 2056* (Transport for NSW (Transport), 2018). The Westlink M7 connects the M5 South-West Motorway with the M4 Motorway and the Hills M2 Motorway. It is identified as a primary freight route in the Department of Infrastructure, Transport, Regional Development and Communications map of the National Land Transport Network, and is identified in the *NSW Freight and Ports Plan 2018-2023* (Transport, 2018a) as one of Greater Sydney's key freight corridors. The interchanges with the Westlink M7 and other major arterial roads also provide connectivity between Greater Sydney and regional areas. The Westlink M7 will also provide a connection to the approved M12 Motorway, enabling access to planned growth areas in Western Sydney and the future Western Sydney International (Nancy-Bird Walton) Airport.

Congestion across metropolitan Sydney is estimated to already cost up to $5 billion per annum and will rise to $8 billion if nothing is done. Population growth will place further pressure on the NSW transport network and the key travel demand corridors connecting regional cities and major centres across the greater Sydney metropolitan area. The Westlink M7 frequently reaches its capacity and as a result, experiences consistent, recurrent congestion during both the morning and evening peak periods, particularly along the southern section of the Westlink M7, between the M4 Motorway and M5 Motorway. This congestion can result in prolonged peak periods, for example with peak traffic flows occurring in off-peak hours.

The proposed modification would enable widening part of the motorway in response to current and projected future traffic growth, and to address reduced motorway efficiency, and enhance safety. Increasing the road capacity of the Westlink M7 through the delivery of the proposed modification would support the objectives of the strategic metropolitan and transport documents shaping Sydney's growth (refer **Chapter 3** (Need for the modification and strategic context)). Furthermore, the use of the wide central median to address congestion – through the provision of additional traffic lanes – aligns with the intent of the approved Westlink M7 EIS.

The merits of the proposed modification were considered in the context of a range of strategic alternatives in order to meet the objectives of the proposed development (refer to **Chapter 3** (Need for the modification and strategic context) for more details). The widening of the Westlink M7 from the M5 Motorway to Richmond Road, using the centre median, was chosen for the proposed modification as a whole; design options for the Westlink M7/M4 (Light Horse) Interchange were assessed separately given the complexity of the lane arrangements at this interchange. It was considered that the preferred design option provides a superior combination of benefits when compared to the other options examined, including reduced environmental and social impacts, better constructability, improved traffic flow and the provision of a more affordable and cost-effective solution.

Opportunities to reduce potential adverse social and environmental impacts of the proposed modification were investigated, in addition to the key objective of improving the efficiency and reliability of travelling on the Westlink M7.

The main beneficial outcomes include:

- Easing of congestion by enabling faster and more reliable connections between Sydney's South-West and North West
- Better and more reliable trips for road users, businesses, and freight
- Improved journey times to planned growth areas and the new Western Sydney International (Nancy-Bird Walton) Airport.

In addition, it has been proposed that the proposed modification is constructed at the same time as the interchange with the approved M12 Motorway to minimise disruption and achieve efficiencies during construction.

The construction and operation of the proposed modification would result in temporary and permanent impacts on the environment. These impacts would be minimised through the implementation of the mitigation measures which aim to ensure the best possible environmental outcomes are achieved during its construction and operation. There would be some potential residual impacts that would be further reviewed during detailed design development and construction planning and where necessary additional measures would be implemented to ensure these impacts are mitigated.

The proposed modification is consistent with the objectives of the proposed development, and is consistent with, or does not preclude, a number of strategic plans for transport (such as *Future Transport Strategy 2056* (Transport, 2020a) and *NSW Freight and Ports Strategy* (Transport, 2013)), development and freight that have been prepared at a national, State and regional level.

A consideration of the proposed modification against the objects of the EP&A Act is outlined in Table 9-12.

Table 9-12 Proposed modification justification with consideration of the objects of the Environmental Planning and Assessment Act 1979

Object of the Environmental Planning and Assessment Act 1979	Comment
a. To promote the social and economic welfare of the community and a better environment by the proper management, development, and conservation of the State's natural and other resources	Increasing the road capacity of the Westlink M7 through the delivery of the proposed modification would provide for smoother and more efficient movement of traffic on and off the Westlink M7 within the social locality, enable economic growth, and enhance public safety. Opportunities would be taken to reduce material use and maximise the use of materials with low embodied environmental impact, where practical. For example: • Recycled products would be used during construction of the proposed modification, where such materials are cost and performance competitive • Where possible, topsoil stripped would be reused on site • An energy efficiency and greenhouse gas management plan would be prepared as part of the proposed modification's Sustainability Management Plan. The plan would identify initiatives to be implemented during design and construction of the proposed modification to reduce carbon emissions, energy use and embodied life cycle impacts • Water efficiency measures would be implemented, with rainwater, stormwater, and groundwater would be reused, recycled or reclaimed where feasible during operation of the proposed modification. When compared to the non-modification scenario, the improved efficiency of the road network and the predicted travel time savings would result in a reduction in fuel use in the future. Additionally, the proposed modification would result in a long-term reduction in greenhouse gas emissions due to the smoother traffic flow. A reduction in emissions contributes to improved sustainability, including minimising the use of resources and supporting inter-generational equity and climate change outcomes. Where reasonable and feasible, the proposed modification has been designed to avoid impacts on the natural and built environment and to minimise the need for land acquisition. The proposed modification

Object of the Environmental Planning and Assessment Act 1979	Comment
	would provide improved traffic conditions, safety, and efficiency on parts of the surface road network and would result in improvements to local amenity.
b. To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment	The proposed modification is consistent with the four principles of ecologically sustainable development: • *Precautionary principle*: This Modification Report was prepared adopting a conservative approach, which includes an assessment of the worst-case impacts and scenarios • *Inter-generational equity*: The proposed modification would provide for a future level of service along the road that previous generations have enjoyed, as well as maintaining the shared path into the future, whilst also protecting heritage and biodiversity values for future generations. The proposed modification may also impact on inter-generational equity through the consumption of fuel resources and contributing to the decline of available fuel resources. However, the proposed modification would also result in improved vehicle fuel efficiency • *Conservation of biological diversity and ecological integrity*: The design and assessment of the proposed modification has been undertaken with the aim of identifying, avoiding, minimising and mitigating impacts to biodiversity and ecological integrity. Consistent with the *Biodiversity Conservation Act 2016* and the SEARs, a biodiversity offset strategy has been developed to compensate for the unavoidable loss of ecological values as a result of the proposed modification • *Improved valuation and pricing and incentive mechanisms*: The value placed on avoiding and minimising environmental impacts is demonstrated in the design features incorporated into the proposed modification. The cost of mitigation measures, including biodiversity offsets and noise mitigation measures, has been incorporated into the cost of the proposed modification , as well as the extent of investigations undertaken to inform this Modification Report.
c. To promote the orderly and economic use and development of land	• The proposed modification promotes the orderly and economic use of land by developing additional road lanes within the existing road corridor, thereby reducing the impact of the proposed works on neighbouring land road. It also delivers against the original vision for the future use of the median of the Westlink M7 (captured in the original EIS), being for the purpose of additional trafficable lanes or public transport, and contributes to facilitating the large-scale strategic planning decisions that are being implemented in south-western Sydney.
d. To promote the delivery and maintenance of affordable housing	Not applicable to the proposed modification.

Object of the Environmental Planning and Assessment Act 1979	Comment
e. To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities, and their habitats	Where impacts to native vegetation or planted vegetation are unavoidable, biodiversity offsets and mitigation measures have been proposed to address these impacts. Some threatened flora species would be impacted by the proposed modification. Consistent with the *Biodiversity Conservation Act 2016* and the SEARs, a biodiversity offset strategy has been developed to compensate for the unavoidable loss of ecological values as a result of the proposed modification
f. To promote sustainable management of built and cultural heritage (including Aboriginal cultural heritage)	The proposed modification has been designed to minimise impacts on heritage items during construction. Visual impacts to heritage items will be mitigated through individually tailored landscape treatments. Key heritage values and cultural stories will be incorporated into the final urban design and landscaping plan.
g. To promote the good design and amenity of the built environment	The proposed modification has been designed to minimise impacts to community facilities and open space. The proposed modification would provide an additional shared cycle and pedestrian pathway. An Urban Design and Landscaping Plan would be prepared and implemented.
h. To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants	The proposed modification would be completed in line with the applicable Australian and international safety standards, as well as any Roads and Maritime Safety in Design guidelines.
i. To promote sharing of planning responsibility between different levels of government in the State	Consultation has been undertaken with the relevant local councils and government agencies throughout the development of the proposed modification and the preparation of this Modification Report. All levels of government have been engaged to be actively involved in and to contribute to the evolution of the proposed modification through past and ongoing consultation activities.
j. To allow better community participation in environmental planning and assessment	Community consultation has been carried out through all stages of development of the proposed modification, with targeted consultation commencing in May 2022. Community feedback has been considered at each stage of the proposed modification development to inform the design development and refinements. Community consultation would continue through the detailed design, construction, and operational stages, should the proposed modification be approved.