Australian Government

BUILDING OUR FUTURE

NSW GOVERNMENT

M12 Motorway

Amendment Report

October 2020

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Executive summary

Transport for New South Wales (TfNSW; formerly Roads and Maritime Services) is planning to construct and operate the M12 Motorway (the project) to provide direct access between the Western Sydney International Airport at Badgerys Creek and Sydney's motorway network. The M12 Motorway would run between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham for about 16 kilometres and is expected to be opened to traffic prior to opening of the Western Sydney International Airport.

The project is subject to an approval under Division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as Critical State Significant Infrastructure (CSSI). The project is also a controlled action under Section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), requiring a separate approval from the Australian Minister for the Environment.

An environmental impact statement (EIS) was prepared to describe and assess the project and recommend management measures to address impacts. The EIS was exhibited by the NSW Department of Planning, Industry and Environment (DPIE) for 34 days from 16 October 2019 to 18 November 2019 to give the community and stakeholders the opportunity to provide comment.

During the exhibition of the EIS, 50 submissions were received from government agencies, stakeholders and the community. The Secretary of DPIE provided copies of these submissions to TfNSW. In accordance with Section 5.17 of the EP&A Act, the Secretary requested TfNSW to provide a response to submissions on 29 November 2019 to address the identified issues. These responses are detailed in the M12 Motorway Submissions Report which is available on the DPIE website: ***https://www.planningportal.nsw.gov.au/major-projects/project/10226***.

Purpose of this report

TfNSW proposes to amend the project following further design development since exhibition of the EIS. The proposed amendments include design changes and construction updates. These provide functional improvements to the design and improved integration with surrounding major transport infrastructure projects and potential future development. They also respond to issues raised in community and stakeholder submissions, and in some instances, further reduce the potential impacts of the project as described in the EIS. In accordance with clause 192(2) of the Environmental Planning and Assessment Regulation 2000 (NSW) (EP&A Regulation), the Secretary of DPIE gave approval to amend the project in May 2020.

This amendment report has been prepared for the project in accordance with clause 192(3) of the EP&A Regulation. The report outlines the proposed design and construction changes to the project and assesses the associated environmental impact. Where required, the report has included additional or revised environmental management measures to manage or minimise environmental impacts.

Summary of proposed changes

The proposed changes to the project as described in the EIS are outlined below:

- Amendments to the motorway-to-motorway interchange at the M7 Motorway, including:
  - Changes to Elizabeth Drive and Cecil Road intersections, proposed exit ramps, the Wallgrove Road connection to Elizabeth Drive and proposed shared user path realignments
  - The widening of Elizabeth Drive under the M7 Motorway and approaches
- An option to provide a new connection between the M12 Motorway and Elizabeth Drive near the M7 Motorway interchange. The delivery of this option would be subject to available funding.
- Two new signalised intersections into the Western Sydney International Airport, with provisions for future connection to potential developments north of the Western Sydney International Airport
- Additional ancillary facilities to support the delivery of the project.

Refinements to the project have also been made as part of the ongoing development of the project since the EIS was exhibited. These refinements are considered to be consistent with the project as described in the EIS, however have been included in the amendment report for completeness. Refinements include both minor design changes and construction updates.

The project may be delivered in stages under multiple contracts, with the priority being to deliver the connection between the M7 Motorway and the Western Sydney International Airport prior to the Airport opening in 2026.

The project with all proposed changes and refinements is referred to as the amended project.

Key features of the amended project

The key features of the amended project are listed below and shown in **Figure A-1**.

- A new dual-carriageway motorway between the M7 Motorway and The Northern Road with two lanes in each direction with a central median allowing future expansion to six lanes
  - Motorway access via three interchanges/intersections:
  - A motorway-to-motorway interchange at the M7 Motorway and associated works (extending about four kilometres within the existing M7 Motorway corridor) with the following options:
    - Option 1 – without connection between the M12 Motorway and Elizabeth Drive
    - Option 2 – with connection between the M12 Motorway and Elizabeth Drive (Note: The decision on which option would be built is dependent on funding being available to include the Elizabeth Drive connection).
  - A grade-separated interchange referred to as the Western Sydney International Airport interchange, including a dual-carriageway four-lane airport access road (two lanes in each direction for about 1.5 kilometres) connecting with the Western Sydney International Airport Main Access Road
  - A signalised intersection at The Northern Road with provision for grade separation in the future
- Bridge structures across Ropes Creek, Kemps Creek, South Creek, Badgerys Creek and Cosgroves Creek
- A bridge structure across the M12 Motorway into the Western Sydney Parklands to maintain access to utilities, including the existing water tower and mobile telephone/other service towers on the ridgeline in the vicinity of Cecil Hills, to the west of the M7 Motorway

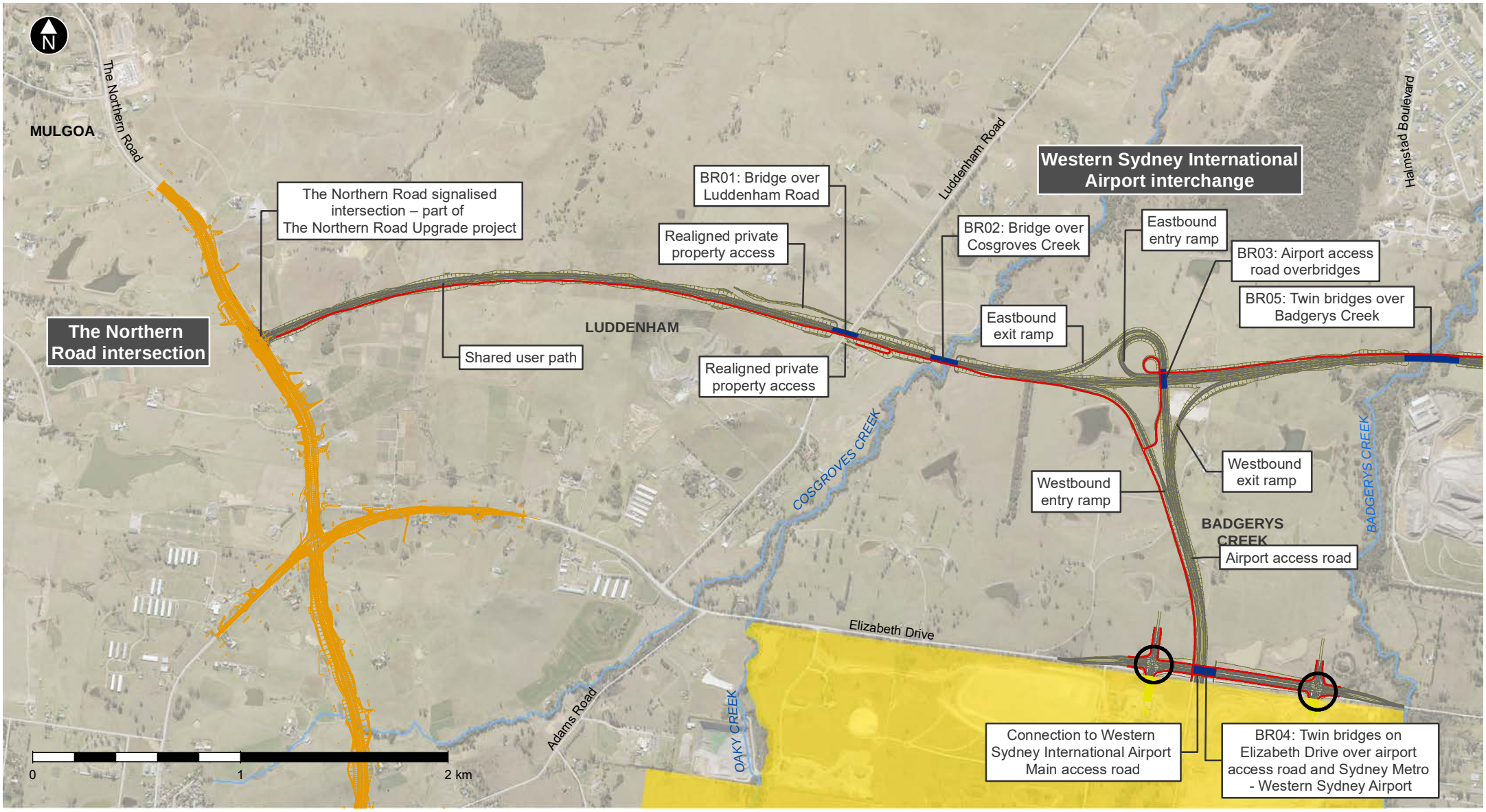
- Bridge structures at interchanges and at Clifton Avenue, Elizabeth Drive, Luddenham Road and other local roads to maintain local access and connectivity
- Inclusion of active transport (pedestrian and cyclist) facilities through provision of pedestrian bridges and an off-road shared user path, including connections to existing and future shared user path networks
- Modifications to the local road network, as required, to facilitate connections across and around the M12 Motorway including:
  - Realignment of Elizabeth Drive at the Western Sydney International Airport, with Elizabeth Drive overpassing the airport access road and rail infrastructure
  - Two new signalised intersections from Elizabeth Drive into the Western Sydney International Airport, with provisions for future connection to potential developments to the north
  - Widening of Elizabeth Drive under the M7 Motorway and approaches
  - Realignment of Clifton Avenue over the M12 Motorway, with associated adjustments to nearby property access
  - Relocation of Salisbury Avenue cul-de-sac, on the southern side of the M12 Motorway
  - Realignment of Wallgrove Road to connect to Cecil Road, including a connection between Elizabeth Drive and Wallgrove Road via Cecil Road with a signalised intersection with Elizabeth Drive
- Adjustment, protection or relocation of existing utilities
- Ancillary facilities to support motorway operations, smart motorways operation in the future and the existing M7 Motorway operation, including gantries, electronic signage and ramp metering
- Other roadside furniture including safety barriers, signage and street lighting
- Adjustments of waterways, where required, including Kemps Creek, South Creek and Badgerys Creek
- Permanent water quality management measures including swales and basins
- Establishment and use of temporary ancillary facilities, temporary construction sedimentation basins, access tracks and haul roads during construction
- Permanent and temporary property adjustments and property access refinements as required.

Assessment updates

The amended project was assessed against each of the key issues and other issues as set out in the Secretary's Environmental Assessment Requirements (SEARs) issued for the project on 30 October 2018 by the Secretary of DPIE. A request to amend the project was submitted to DPIE on 20 May 2020. In response, DPIE confirmed on 28 May 2020 that an amendment report is appropriate to address the environmental impacts associated with the amended project. No additional or updated SEARs were issued by DPIE. As a result, this amendment report and its appendices have been prepared in accordance with the SEARs issued for the project on 30 October 2018.

Updated technical reports have been prepared where there is likely to be a large number of changes, or a substantial change in the extent or type of impact for that technical discipline and the reports present a similar level of assessment and content as provided for the EIS. Supplementary technical memorandums were prepared where the expected changes to impacts is considered to be relatively minimal.

A number of assessments found there to be minimal variation in impacts from what was described in the EIS. These assessments included Aboriginal heritage, soil and contamination, air quality, waste, climate change risk and greenhouse gas, health and safety, sustainability and urban design, landscape character and visual amenity.



The amended project

Part of The Northern Road upgrade project

Shared user path

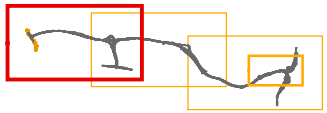
Bridges

Existing roads

Waterways

Western Sydney International Airport

Signalised intersections into the Western Sydney International Airport
Note: Indicative, subject to detailed design



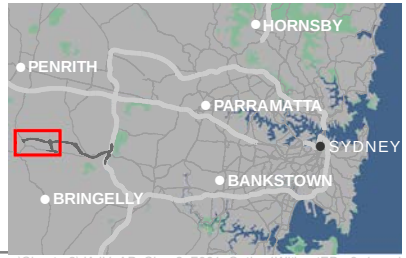


Figure A-1 Key features of the amended project

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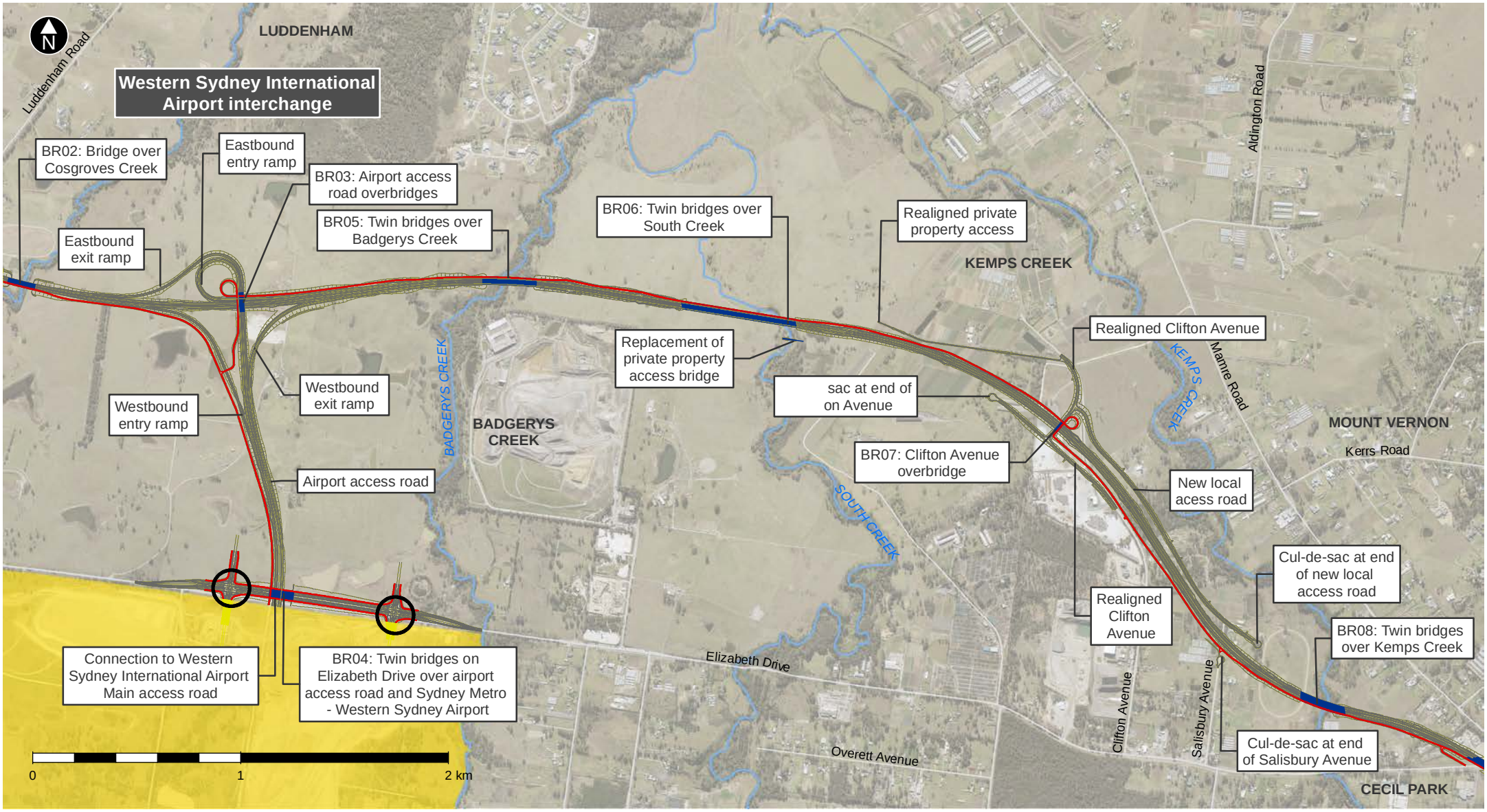

Figure A-1 Key features of the amended project

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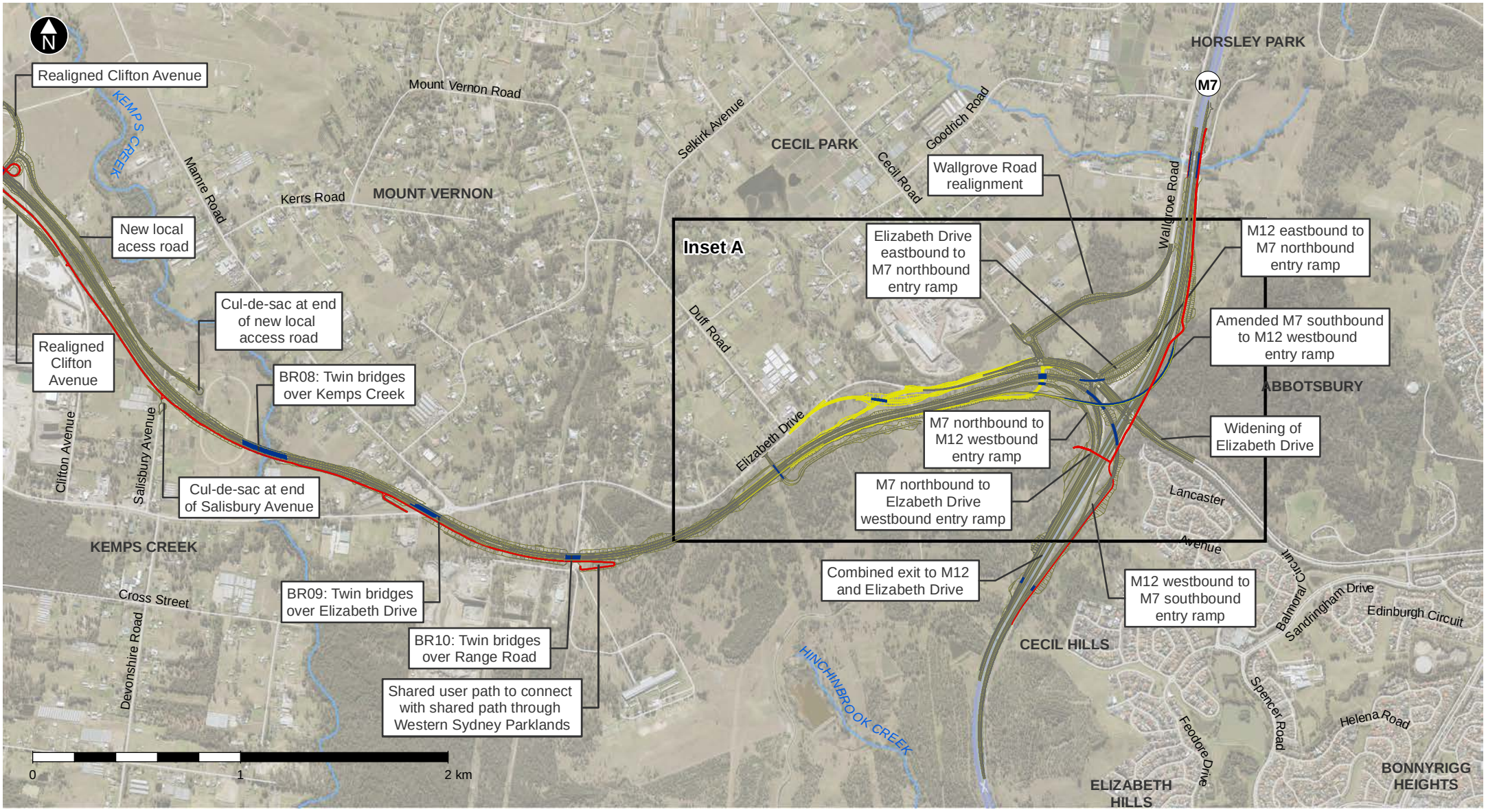


The amended project

The amended project (Elizabeth Drive connection)

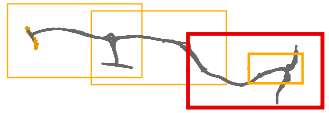
Shared user path

Bridges

Motorway

Existing roads

Waterways



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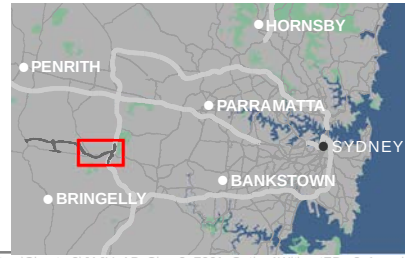

Figure A-1 Key features of the amended project

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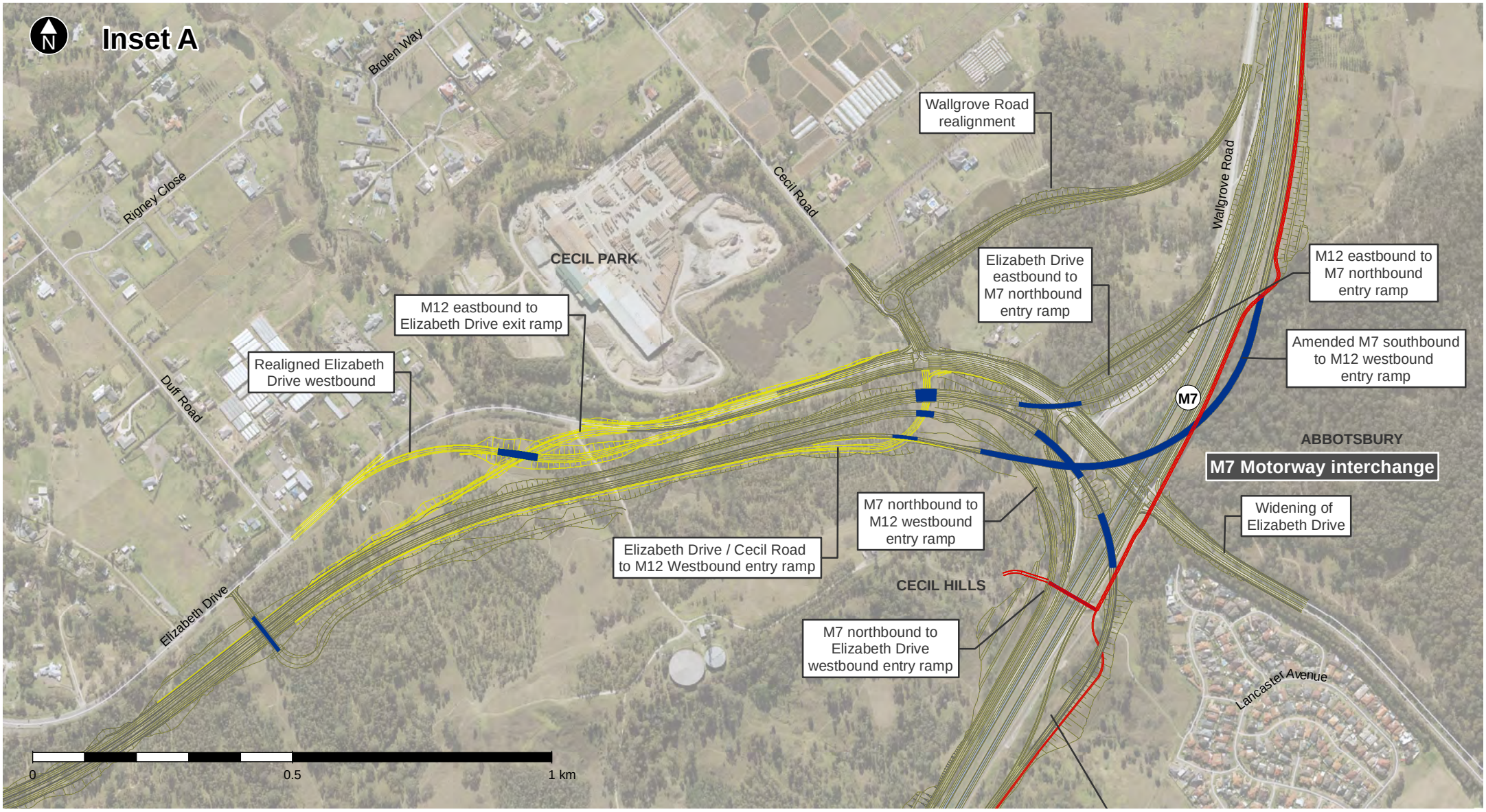


The amended project

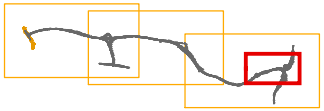
The amended project with Elizabeth Drive connection

Shared user path

Bridges

Motorway

Existing roads



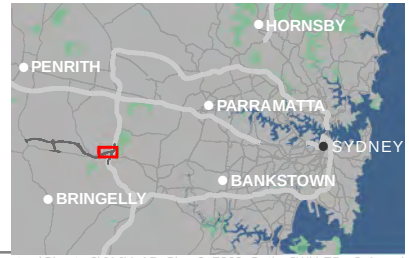


Figure A-1 Key features of the amended project

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While the amended project has aimed to avoid or reduce potential environmental impacts, impacts to the environment and community during construction and operation of the project would still be experienced. The EIS identified a range of comprehensive environmental management measures to avoid, manage, mitigate, offset and/or monitor these impacts. Where required, additional or revised environmental management measures are proposed to manage variations in impacts due to the amended project.

The key adverse and beneficial impacts identified which are different to those described in the EIS are outlined below.

Biodiversity

Where practicable, biodiversity impacts have been avoided and/or minimised during development of the amended project. However, some impacts could not be avoided due to design constraints such as existing and proposed land uses. The amended project would result in the following:

- Direct removal of an additional seven hectares of native vegetation (about 80.6 hectares in total)
- Direct removal of an additional 6.8 hectares of threatened ecological communities (TECs) listed under the *Threatened Species Conservation Act 1995* (about 80 hectares in total); this is inclusive of an additional 3.99 hectares of Commonwealth listed TECs
- Indirect impact to an additional 0.79 hectares of native vegetation through edge effects resulting in 13.52 hectares of indirect impact overall
- Impacts to two threatened plant species including:
  - Direct removal of an additional 10 individuals of *Pultenaea parviflora* (up to 100 individuals in total)
  - Indirect impact through edge effects to an additional 124 individuals of *Pultenaea parviflora* (about 142 plants in total) and an additional 801 individuals of *Dillwynia tenuifolia* (about 850 plants in total)
- Removal of an additional 9.83 hectares of fauna habitat (about 344.15 hectares in total) including woodland, riparian, native and exotic grassland and aquatic habitat. This is inclusive of the following threatened fauna habitat removal:
  - An additional 3.36 hectares of Cumberland Plain Land Snail habitat (5.22 hectares in total)
  - An additional 0.04 hectares of Southern Myotis breeding habitat (0.96 hectares in total) and an additional 0.84 hectares of foraging habitat (4.53 hectares in total)
  - An additional 7 hectares of foraging habitat for five threatened microbat species and the grey headed flying fox (62.58 hectares in total).

Additional exclusion zones have been incorporated into the environmental management measures for the amended project, particularly to minimise indirect impacts to threatened flora. Biodiversity offset requirements have increased slightly as a result of the amended project, from a total of 8,354 credits for the project as described in the EIS to 8,810 credits for the amended project.

Transport and traffic

The land use and demographics data used to inform traffic modelling for the amended project assessment has been updated to more recent and now available traffic data (based on 2016 land use forecasts by DPIE and adjusted to include Western Sydney International Airport forecast data).

The traffic forecasts for western Sydney utilised strategic models that were developed subsequent to the EIS that are considered to be more robust for the western Sydney area. With the updated models, land use and demographics data, the model indicates a reduction in future trips to the South West Growth Area in western Sydney. The forecast traffic volumes using the amended project and the surrounding network have reduced as a result.

Compared to the project as described in the EIS, most intersections would perform better during construction of the amended project. This change is a result of those updated (reduced) traffic forecasts.

The provision of a connection to the M12 Motorway from Elizabeth Drive in option 2 would generally improve network performance by allowing more traffic to access the high-speed M12 Motorway.

In 2036, the amended project would result in a decrease of total travel time in peak periods through the study area by up to eight per cent compared to existing conditions and an increase in average speeds through the study area by up to nine per cent. These changes reflect the change to the demand growth in the updated traffic model that has resulted in forecast traffic volumes being lower.

For the amended project all intersections would perform at a satisfactory Level of Service in 2026 and 2036. Compared to the project as described in the EIS, the performance of all intersections for the amended project improves. This is also due to the lower forecast traffic volumes associated with the updated traffic model. The exception to this is The Northern Road / M12 Motorway intersection under option 2. In this scenario the performance of this intersection is expected to be poorer as a result of more traffic using the M12 Motorway under option 2 and less traffic using Elizabeth Drive.

The environmental management measures established for the project as described in the EIS would continue to be implemented for the amended project. No additional or revised traffic management measures are proposed as part of the amendment report.

Socio-economic, land use and property

The amended project would directly impact on an additional eight properties (three temporary leases and five partial acquisitions) resulting in 49 properties being impacted overall. One additional dwelling would also be demolished resulting in a total of 10 dwellings being demolished by the amended project overall.

Changes to property access would be required due to realignment of Wallgrove Road in the amended project resulting in an increase to travel distance of up to 550 metres for some properties.

Changes to the construction and operational footprints for the amended project would result in an additional 86.8 hectares and 26.2 hectares of land being impacted respectively, with urban and rural residential land being the main land uses affected. The addition of ancillary facilities would increase the impact on three businesses identified in the EIS (TreeServe, a farm on Salisbury Avenue and Barra Lodge) and the Western Sydney Parklands).

The additional ancillary facilities are also likely to increase disruptions and local amenity for residents in Cecil Park, Luddenham and Kemps Creek as well as to a number of social infrastructure facilities in the vicinity of the amended project. Increased visual amenity impacts would also be expected for residents of Cecil Park due to the Wallgrove Road realignment.

The environmental management measures established for the project as described in the EIS would continue to be implemented for the amended project. No additional socio-economic, land use and property management measures are proposed as part of the amendment report.

Non-Aboriginal heritage

The amended project would extend about 18 metres further into the curtilage of the Cecil Park Complex archaeological site than the project as described in the EIS. However, the overall 'major' level of impact for this item remains unchanged from the EIS assessment. A salvage methodology for the site has been prepared and is included within the amendment report.

While the amended project would also encroach further (about 65 metres) into the locally listed Luddenham Road corridor, the overall impact is still considered to be 'negligible', which remains unchanged from the project as described in the EIS.

The environmental management measures established for the project as described in the EIS would continue to be implemented for the amended project. No additional non-Aboriginal heritage management measures are proposed as part of the amendment report.

Noise and vibration

Construction

The amended project is mostly consistent with the project as described in the EIS, however, both option 1 and option 2 would result in additional construction noise impacts to receivers situated in Noise Catchment Area (NCA) 02 in Cecil Hills, due to proposed widening works on Elizabeth Drive.

Additional construction activities at ancillary facilities were assessed for the amended project including the use of batching plants and crushing and screening equipment. These activities result in 'moderate' to 'high' construction noise impacts.

The receivers with 'high' or 'moderate' construction impacts during the day-time and night-time periods is generally consistent with the EIS, with the exception of a few discrete areas around the Wallgrove Road realignment in NCA04 (Cecil Park), the Elizabeth Drive works to the east of the M7 Motorway in NCA02 (Cecil Hills) and adjacent to the ancillary facility AF10 in NCA10 (Luddenham).

Eleven receivers (for option 1) and fourteen receivers (for option 2) may be highly noise affected due to the amended project. This is an increase of four and seven receivers respectively when compared to the project as described in the EIS. Irfan College may experience moderate (option 1) to high (option 2) construction noise impacts due to the amended project, which is an increase from the minor impact expected from the EIS assessment. The increase in impact is due to additional proposed work on Elizabeth Drive.

Operation

The amended project generally results in similar predicted day-time noise levels and a reduction in the predicted night-time operational noise levels when compared to the corresponding period in the EIS. Whilst the 'build' scenario (with the project) is generally predicted to reduce by up to four dB across all noise catchment areas (NCAs) in the night-time period, the 'no build' scenario (without the project) is also predicted to reduce by up to six dB to that compared in the EIS.

The reduction in noise levels is due to the reduction in forecast traffic volumes from the updated data used in both the traffic and noise modelling for the amended project.

Whilst the overall operational noise levels in the amended project are lower, there are some areas where the realignment or changes to localised traffic volumes (Wallgrove Road, Salisbury Avenue and Duff Road) result in increased levels to those presented in the EIS. Maximum noise levels are predicted to increase by up to 15 dB over existing levels at dwellings adjacent to the realigned

Wallgrove Road, compared with up to eight dB at these receivers in the EIS. This is due to the realigned Wallgrove Road moving closer to the dwellings under the amended project. The amended project also results in an increase of triggered receivers eligible for consideration of additional noise mitigation (212 buildings for option 1 and 220 buildings for option 2) when compared to the EIS (183 buildings). The increase is mainly due to an expansion of the operational assessment study area.

Three noise barriers have been identified for further reasonable and feasible consideration during detailed design. This is a decrease from the four barriers identified in the EIS. One barrier has been removed as updated noise modelling results for the amended project showed the barrier no longer met the noise benefit principles outlined under the TfNSW Noise Mitigation Guidelines. This is consistent for both option 1 and option 2.

The environmental management measures established for the project as described in the EIS would continue to be implemented for the amended project and feasible and reasonable design features implemented to mitigate operational and construction impacts. No additional noise and vibration management measures are proposed as part of the amendment report and these measures will apply to the expanded study area to account for the amended project.

Flooding

The modelling of the main creeks shows there is minimal increase to existing afflux levels as a result of the amended project and that surrounding land use would be unaffected by this minimal increase. However, modelling of the minor drainage lines indicates that an increase in volumes and rates of flow would potentially impact surrounding land use. This would be consistent with the project as described in the EIS and would be managed through mitigation such as detention basins and scour protection, which would be considered during detailed design.

The amended project would extend further into the Badgerys Creek floodplain than the project as described in the EIS and would result in an increase in flood levels on the upstream side of Elizabeth Drive of about 50 millimetres in the floodplain area in the 100-year annual recurrence interval (ARI) event. The maximum predicted flood level in Badgerys Creek channel upstream of the existing bridge would increase by about 75 millimetres. Downstream of Elizabeth Drive, a decrease in flood levels of up to 25 millimetres is predicted due to the reduced overtopping of the road.

During operation of the amended project, Elizabeth Drive at Badgerys Creek would have a flood immunity up to and including the five-year ARI flood event. It would be overtopped in the 20 year ARI event with a flood depth of about 160 millimetres above the crown of the road and depths of up to 350 millimetres on the west-bound carriageway.

Additional management measures have been included in the amendment report and involve refining the Elizabeth Drive design to minimise flood affectation at Badgerys Creek floodplain and further consultation with the Western Sydney International Airport regarding their flood management.

Groundwater quality and hydrology

Two additional areas of cut for the amended project around the Western Sydney International Airport interchange have been identified as having potential to interact with the groundwater table (overall this makes three areas of cut with potential for groundwater interaction). Potential groundwater inflows at these cuts are assessed to be low with a low level of accompanying groundwater level drawdown predicted. Consistent with the EIS, impacts to groundwater at these locations are anticipated to be minor and localised.

The environmental management measures established for the project as described in the EIS would continue to be implemented for the amended project. Additional management measures related to monitoring groundwater in the areas of newly identified cut are proposed as part of the amendment report.

Cumulative impacts

The main area that would experience adverse cumulative impacts, particularly construction fatigue, would continue to be the western portion of the project. The interaction with major projects including the Western Sydney International Airport and Sydney Metro - Western Sydney Airport (previously known as the Sydney Metro Greater West) would occur for much of the amended project construction program in this area.

In particular, the amended project would extend the use of an existing ancillary facility in Luddenham currently in use for The Northern Road Upgrade project. The use of this would prolong the duration of construction activities in this location by about four years. This would extend possible disruptions for residents of nearby rural residential properties at Gates Road and The Northern Road associated with construction noise, dust and traffic.

Extension of construction impacts at the existing ancillary facility at Luddenham would be managed through the Construction Fatigue Protocol and Community Communication Strategy being prepared for the project. Preparation of these documents was identified in the environmental management measures in the EIS. No additional or revised management measures for cumulative impact are proposed as part of the amendment report.

How can I comment on the amended proposal?

The Department of Planning, Industry and Environment (DPIE) will place this amendment report on public exhibition for a minimum of 14 days in accordance with the EP&A Regulation. This will give the community and other stakeholders the opportunity to provide comment on the amended project, assessment undertaken, and management measures proposed to minimise impacts from the amended project. During this period, the document will be available for inspection at the DPIE website ***https://www.planningportal.nsw.gov.au/major-projects/project/10226***, and on the TfNSW project website ***http://rms.nsw.gov.au/m12***.

To provide feedback on the amended project, a person may make submissions to the Secretary of the DPIE during the exhibition period. All submissions received will be placed on the DPIE website. To make a submission, use the online form available at ***www.planningportal.nsw.gov.au/major-projects/projects/on-exhibition***.

Glossary of terms and abbreviations

Term	Meaning
AEI	Area of environmental interest
AEP	Annual exceedance probability: the chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage. For example, if a peak flood discharge of 500 cubic metres per second has an AEP of 5 per cent, then there is a 5 per cent chance of that discharge event (or larger event) occurring in any one year.
AF	Ancillary facility
AHD	Australian height datum
AHIMS	Aboriginal Heritage Information Management System
airport access road	Part of the M12 Motorway connecting the Western Sydney International Airport interchange with the Western Sydney International Airport
ARD	Archaeological Research Design
ARI	Average recurrence interval: The long term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods with a discharge as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a flood event.
BAR	Biodiversity assessment report
BC Act	*Biodiversity Conservation Act 2016* (NSW)
BH	Borehole
BOD	Biological oxygen demand
BR	Bridge
BTEX	Ethylbenzene and xylene
CEEC	Critically endangered ecological community
CEMP	Construction environment management plan
CFFMP	Construction flora and fauna management plan
Construction footprint	The construction footprint is the area required to build the project. This includes the area required for temporary work such as sedimentation basins, drainage lines, access roads, construction ancillary facilities.

Term	Meaning
CPTED	Crime prevention through environmental design
CRD	Cumulative rainfall deviation
CTTMP	Construction transport and traffic management plan
DAWE	Department of Agriculture, Water and the Environment *Former Department of Environment and Energy (DoEE)*
DECCW	Department of Environment, Climate Change and Water
DGA	Dense graded asphalt
DoEE	Former Department of the Environment and Energy *Now Department of Agriculture, Water and the Environment (DAWE)*
DP	Deposited plan
DPC (Heritage)	Department of Premier and Cabinet (Heritage) *Formerly Office of Environment and Heritage (OEH)*
DPIE	Department of Planning, Industry and Environment *Formerly Department of Planning and Environment (DPE)*
DPIE (Regions, Industry, Agriculture & Resources)	Department of Planning, Industry and Environment (Regions, Industry, Agriculture & Resources) *Formerly Department of Primary Industries (DPI) – Agriculture* *Formerly Department of Primary Industries (DPI) – Fisheries*
DPIE (Water)	Department of Planning, Industry and Environment (Water) *Formerly NSW Office of Water / Natural Resources Access Regulator*
DSI	Detailed site investigation
ED	Elizabeth Drive
EEC	Endangered ecological community
EESG	Environment, Energy and Science Group of the Department of Planning, Industry and Environment *Formerly NSW Office of Environment and Heritage*
EIS	Environmental impact statement
EPA	Environmental Protection Authority

Term	Meaning
EP&A Act	*Environmental Planning and Assessment Act 1979 (NSW)*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth).
ESD	Ecologically sustainable development
Exclusion zones	Exclusion zones are areas of environmental importance (eg threatened vegetation or heritage items) that need to be protected. Exclusion zones are shown on figures throughout this amendment report where relevant. These exclusion zones are defined as no-go areas and are to be protected for the duration of construction in that particular footprint area.
FBA	Framework for Biodiversity Assessment
GDE	Groundwater dependent ecosystems
GHG	Greenhouse gas
HCP	Habitat compensation plan
ICOMOS	International Council on Monuments and Sites
Jacobs	Jacobs Group (Australia) Pty Ltd
LALC	Local Aboriginal Land Council
LCZ	Landscape character zone
LEP	Local Environmental Plan
LGA	Local government area
LoS	Level of Service
LU14	The 2014 version of land use (population and employment) projections for the Sydney Greater Metropolitan Area produced by the Transport and Performance Analytics section of TfNSW.
LU16	The 2016 version of land use (population and employment) projections for the Sydney Greater Metropolitan Area produced by the Transport and Performance Analytics section of TfNSW.
LUIIP	Land Use Infrastructure and Implementation Plan
the M12 Motorway	The proposed M12 Motorway which is the subject of this document (also known as ‘the project’)

Term	Meaning
the M7 Motorway	The M7 Motorway is a major connecting road on Sydney's orbital motorway network. It runs for 40 km and links the M5 Motorway with the M4 Motorway and the M2 Motorway
NCA	Noise catchment area
NCG	Noise Criteria Guideline
NML	Noise management level
NSW	New South Wales
OCP	Organochlorine pesticides
OEH	Office of Environment and Heritage
OGA	Open graded asphalt
Operational footprint	Generally includes the M12 Motorway and additional areas required for operation and maintenance of the project
OPP	Organophosphorus pesticides
PACHCI	Procedure for Aboriginal cultural heritage consultation and investigation (Roads and Maritime, 2011)
PAD	Potential archaeological deposit
PAH	Poly-aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PCT	Plant community type
PMA	Personal Manager - Acquisition
PMF	Probable maximum flood
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Proposed changes	The changes to the project as described in the EIS that are being proposed as part of the Amendment Report. Proposed changes include both include design changes and construction updates
PSA	Public safety area
RNP	Road Noise Policy

Term	Meaning
Roads and Maritime	Roads and Maritime Services; now known as Transport for NSW
SEARs	Secretary's environmental assessment requirements
SEPP	State environmental planning policy
shared user path	The area designated for active transport catering to both pedestrian and cyclists.
SMZ	Selected material zone
SMPM	Sydney Strategic Motorway Planning Model
SPT	Borehole Standard Penetration Test
STM	Sydney Strategic Travel Model
study area	The term study area is used to describe the locations investigated. The study area varies based on the specific areas of interest targeted for each environmental issue (eg ecology, heritage, noise, visual amenity etc). The study area relevant to particular environmental issues is shown on figures where relevant.
TECs	Threatened ecological communities
TfNSW	Transport for New South Wales
the project	M12 Motorway
TNR	The Northern Road
TRAQ	Tool for Roadside Air Quality
TRH	Total recoverable hydrocarbons
TSC Act	*Threatened Species Conservation Act 1995* (NSW) (repealed) but relevant for this assessment due to being saved under the BC Transitional arrangements
UDLP	Urban design and landscape plan
UIA	Horsley Park and Cecil Park Urban Investigation Area
UK IAQM	United Kingdom Institute of Air Quality Management
VOC	Volatile organic compound

Term	Meaning
Western Sydney Aerotropolis	As defined in the Western Sydney Aerotropolis Stage 1 Plan, the Aerotropolis surrounds the Western Sydney International Airport site at Badgerys Creek and will comprise industrial, commercial and residential development.
Western Sydney Parklands Biobank Site	Area shown on **Figure 6-1** (Biobanking Agreement Site ID 119).
WRTM	WestConnex Road Toll Model
WSA Co	WSA Co is a Government Business Enterprise that was established in August 2017 to build the Western Sydney International Airport in Badgerys Creek
WSAP	Draft Western Sydney Aerotropolis Planning Package
Wylde Mountain Bike Trail	The Wylde Mountain Bike Trail is a publicly accessible mountain bike riding trail located in the Western Sydney Parklands which caters for intermediate, competent and advanced standard mountain bike riders.