Australian Government
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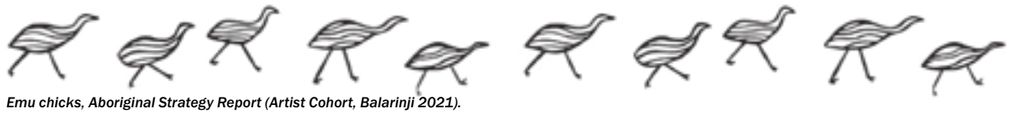
NSW GOVERNMENT

M12 MOTORWAY
PLACE, DESIGN AND LANDSCAPE PLAN

ACKNOWLEDGMENT OF COUNTRY

The M12 Corridor is located within Darug Country, where for many generations before us, Aboriginal cultural practices were used by the Darug people to care for and manage these lands and its natural resources. In acknowledging the Darug, we pay our respects to their ancestors as well as the current descendants, their Country and their cultural values. Furthermore, this acknowledgement raises our awareness to the areas of significance to the local Aboriginal community and our interaction with those areas and people.



Emu chicks, Aboriginal Strategy Report (Artist Cohort, Balarinji 2021).

M12 Place, Design and Landscape Plan (PDLP) team and contributors:

M12 Place, Design and Landscape Plan
M12 Urban Design Framework (UDF)

M12 Package 1 - West

M12 Package 2 - Central

M12 Package 3 - East

M12 Aboriginal Heritage Interpretation Plan, together with Balarinji and Aboriginal Artist Cohort

M12 Non-Aboriginal Heritage Interpretation Plan

M12 Seed collection and Propagation

Front cover image: Artist's impression: Aerial view west over Kemps Creek and interpretation node (landscape shown at full maturity and is indicative only).

Document Control

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GLOSSARY OF TERMS AND ABBREVIATIONS

Table 1. Glossary of terms and abbreviations

Term	Meaning
ACHAR	Aboriginal cultural heritage assessment report
AF	Ancillary facility
AFMP	Ancillary Facilities Management Plan
Airport access road	Part of the M12 Motorway connecting the Western Sydney International Airport interchange with the Western Sydney International Airport
AR	Amendment Report
BAR	Biodiversity Assessment Report
Batter	A receding slope of a wall, structure, or earthwork
BCA	Building Code of Australia
BR	Bridge
CALD	Culturally and linguistically diverse populations
CASA	Civil Aviation Safety Authority
CCRM	Contractor Community Relations Manager
CCS	Community communication strategy
CEMP	Construction Environmental Management Plan
CHL	Commonwealth Heritage List
CMP	Construction Management Plan to be prepared by the construction contractor
CMS	Complaints management system
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.
CPTED	Crime Prevention Through Environmental Design
CSEA	Communication and Stakeholder Engagement Advisor
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSSI	Critical State Significant Infrastructure
Cumulative Effects	Cumulative effects occur between projects, where the combination of effects created by multiple projects maybe greater than the sum of the individual effects.
DPE	Department of Planning and Environment
EEC	Endangered ecological community
EIS	Environmental Impact Statement
Embankment	A receding slope of a wall, structure, or earthwork
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
ER	Independent Environmental Representative nominated by TfNSW and approved by DPE
Landform	The shape and form of the land surface which is the result of the action and interaction of natural and/or human factors
Landscape Character	The combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place.
Landscape Character Zone	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately adjacent
LCVIA	Landscape Character, Visual Impact Assessment and Urban Design Report
LCZs	Landscape Character Zones
LEP	Local Environmental Plan
LUIIP	Western Sydney Aerotropolis - Stage 1 Land Use and Infrastructure Implementation Plan
M7 Motorway	The M7 Motorway is a major connecting road on Sydney's orbital motorway network. It runs for 40 kilometres and links the M5 Motorway with the M4 Motorway and the M2 Motorway
M12 Motorway	The proposed M12 Motorway which is the subject of this document (also known as 'the Project')
Magnitude	The measurement of the scale, form and character of a development proposal when compared to the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer. Combined with sensitivity, magnitude provides a measurement of impact.
NASF	National Airports Safeguarding Advisory Group
NSW	New South Wales
NSW CoA	NSW Planning Minister's Conditions of Approval
OEH	Office of Environment and Heritage
Operational footprint	Generally includes the M12 Motorway and additional areas required for operation and maintenance of the project
OSO	The Outer Sydney Orbital is a future transport corridor being investigated by the NSW Government which will provide for a connection between Box Hill in the north and the Hume Motorway near Menangle in the south. The OSO will provide for a major transport link (motorway and/or freight rail line) between Western Sydney's growth areas, connecting with the planned Western Sydney International Airport and future employment lands
Principal, the	Transport for NSW
The Project	M12 Motorway
REMM	Revised Environmental Management Measures
RTA	Roads and Traffic Authority
SEARs	Secretary's Environmental Assessment Requirements
Secretary	Secretary of the NSW Department of Planning & Environment (or nominee, whether nominated before or after the date on which the Infrastructure Approval was granted)
Sensitivity	The sensitivity of a landscape character zone or view and its capacity to absorb change of the nature of the proposal. In the case of visual impact this also relates to the type of viewer and number of viewers. Combined with magnitude, sensitivity provides a measurement of impact.
Sensitive receivers/ affected receivers	Community in close proximity to the construction and/or operation of the CSSI
SSI	State significant infrastructure
Study area	The term study area is used throughout this document to describe the locations investigated as part of the EIS. The study area varies based on the specific areas of interest targeted for each environmental issue (e.g. ecology, heritage, noise, visual amenity etc).
SWGC	South West Growth Centre
TECs	Threatened ecological communities
TfNSW	Transport for NSW
TNR	The Northern Road
UDF	Overarching Urban Design Framework
UDLP	Urban Design and Landscape Plan (this document)
USP	Un-Solicited Proposal
Visual amenity	The overall pleasantness of the views people enjoy of their surroundings, which provides attractive,visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area.
VEM	Visual Envelope Map
VMS	Variable message sign
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.
WSAGA	Western Sydney International Airport Growth Area is defined in the Western Sydney Infrastructure Plan, and will include industrial, commercial and residential development surrounding the Western Sydney International Airport site in Badgerys Creek.
WSIA	The future Western Sydney International Airport at Badgerys Creek
WSIP	The Western Sydney Infrastructure Plan involves major road and transport upgrades based on the development of the Western Sydney International Airport. This program includes upgrades of The Northern Road, the M12 Motorway, Bringelly Road, Werrington Arterial Road and a package for local roads upgrades.
WSP	Western Sydney Parklands
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

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View west from Western Sydney Parklands 'Beauty spot'

Where infrastructure was once deemed a separator of places and spaces, the M12 Motorway project has the opportunity to be a connector of cultures, people, places and future parkland spaces.

Existing site image of South Creek from University of Sydney farms.

EXECUTIVE SUMMARY

The people of the Western Parkland City wish to live close to work and places of leisure and entertainment, to move conveniently across the city and beyond, and comfortably navigate multiple modes of transport and enjoy beautiful spaces which are grounded in the essence of each place. They wish to live in connected communities which foster interaction, which retain a vibrancy, and which celebrate a unique western Sydney landscape.

The M12 Motorway will form a connection to existing and future landscapes within Western Sydney. The motorway corridor will enhance and retain landscapes, join ecological corridors, and provide new pathways for nearby communities.

The project will not only change the way people travel to and from the new Western Sydney International Airport and across the Aerotropolis precinct but also create expansive public open space opportunities and establish links for future development and suburbs.

The project must be a memorable and responsive motorway, but also needs to be resilient, sustainable and innovative in the face of a changing future land use with the future Western Sydney International Airport, Aerotropolis and surrounding development as the area transforms into the Western Parkland City.

Growth throughout Western Sydney around the new Western Sydney International Airport and Aerotropolis means change to the landscape — a landscape and Country of substantial significance to the local Darug people. This Connection to Country is now rightfully being recognised more and more by non-indigenous Australians, and this Connection to Country has opportunity to be further recognised through the M12 Motorway.

The approach to this Place, Design and Landscape Plan (referred to commonly as the PDLP) is to solidify the urban design concept for the project that is based on the vision of 'Connection to Country', which will create a distinctly unique and memorable piece of infrastructure that establishes a new gateway to Western Sydney.

TfNSW has prepared this PDLP to help capture an integrated engineering and urban design outcome for the M12 Motorway project that is exciting, innovative and represents international best practice.

Aerial view looking west from Mount Vernon over the study area. Image Source: TfNSW

Aerial view east over South Creek

A VISION FOR THE M12 - CONNECTION TO COUNTRY

The project is a rare opportunity to provide a well vegetated motorway that is integrated to both the natural landscape systems and the inherent cultural and historical values of Country. It would celebrate the unique sense of place and the journey from the mountains to the city through a considered alignment, views, art and interpretation.

The design aspirations are based on delivering high quality integrated design outcomes that display relevance, fit, durability and delight.

The notion of 'Connection to Country' represents the singular vision for the project which seeks to create a distinctly unique and memorable piece of infrastructure that establishes the gateway to western Sydney. This newly reinforced respect for Country has seen Transport for NSW propose a new approach to urban design on the M12 Motorway project, an approach that respects cultural heritage values.

The vision sets a new benchmark for road-related infrastructure in New South Wales, one which is grounded in a 'Connection to Country' from the earliest design thinking which would manifest collective aspirations of quality of life, accessibility, convenience and safety.

It is a vision that brings landscape to the fore, as a means of creating a connected and sustainable framework for this project and the future development of the parkland city.

Both Aboriginal and Non-Aboriginal heritage is woven into the corridor, engaging local communities to ensure that the past and stories buried within the surrounding landscape have an enduring legacy. The project will provide an authentic vehicle for the art outcomes and local cultural stories to be told, and for sites of significance to be respected.

It recognises that the project is only the latest change to a landscape which has been influenced by human settlement for tens of thousands of years. It aims to apply the best of the knowledge gained over our history.

'Connection to Country' prioritises the restoration of the Cumberland Plain woodlands for the length of the project footprint, maintaining access to the four main creeks and preserving these areas for future contiguous public open space corridors.

The design team has aimed to draw on the project vision of a Connection to Country as a methodology for an integrated landscape solution which reflects the complex layers of the regional landscape.

Emu footprints - Waterhole (Artist Cohort, Balarinji, 2021), existing creeklines and natural patterns from local flora across the project

OVERVIEW

The M12 Motorway will run between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham for a distance of about 16 kilometres and will be opened to traffic prior to the opening of the Western Sydney International Airport. The project will commence about 30 kilometres west of the Sydney central business district, at its connection with the M7 Motorway. The project traverses the boundaries between the local government areas of Fairfield, Liverpool and Penrith. The suburbs of Cecil Park and Cecil Hills are found to the east of the M12 Motorway, with Luddenham to the west.

The project is required to support the opening of the Western Sydney International Airport by connecting Sydney's motorway network to the airport. The project will also serve and facilitate the growth and development of which is expected to undergo significant development and land use change over the coming decades. The motorway will provide increased road capacity and reduce congestion and travel times in the future and will also improve the movement of freight in and through western Sydney.

The key sections of the PDLP, outline of key outcomes, design themes and where more information can be found are outlined following and further detail provided in the following pages.

1-2: INTRODUCTION, ANALYSIS, AND OBJECTIVES

FEATURES

- ◊ A new dual-carriageway motorway between the M7 Motorway, Elizabeth Drive and The Northern Road
- ◊ Motorway access via interchanges/intersections at the M7 Motorway, Western Sydney International Airport, and The Northern Road
- ◊ Bridge structures across a number of creeks, interchanges and roads
- ◊ Shared path (pedestrian and cyclist) facilities along the alignment
- ◊ Modifications to the local road network
- ◊ Integrated art embedded across infrastructure elements
- ◊ Standalone cultural art pieces.

M12 Shared path

The M12 shared path is a major feature of the project and will provide a shared path (pedestrian and cyclist) link along the corridor, including connections to existing and future shared user path networks.

Landscape works

The landscape design has a focus on reconnecting fragmented ecological communities and being resilient in a changing landscape. In addition, TfNSW have managed the Aboriginal cultural interpretation process to create a unique and distinct identity that includes reflecting local Aboriginal seasons through a 'Western Sydney Aboriginal seasons' planting scheme.

WHERE CAN I FIND OUT MORE?

- ◊ EIS urban design objectives - Section 4.2
- ◊ Standards and guidelines - Section 2.6
- ◊ Minister's Conditions of Approval - Table 2
- ◊ Objectives of the PDLP - Section 2.1

3: CONCEPT DESIGN

The overarching site wide strategy looks to embed the project principles of creating a design that is 'of place', that considers the change in land use from what is predominantly a rural and semi-rural landscape towards a 24-hour Aerotropolis, that promotes an active community and enhanced user experience, integrates art and culture, protects and re-establish natural systems, and creates a project identity.

KEY OUTCOMES

- ◊ Designing with the existing topography, creating a series of experiences
- ◊ Creating a shared path corridor to provide a pedestrian and cyclist link along the corridor through provision of pedestrian bridges and an off-road shared user path, including connections to existing and future shared user path networks
- ◊ Create an overarching project identity through consistent finishes, materiality and landscape works.

DESIGN THEMES

- ◊ Realising the project vision of 'Connection to Country' through creating a unique and distinct identity interpreting the rich sense of place and a project identity
- ◊ Enhancing the shared path user experience through the integration of art, cultural interpretation, heritage, wayfinding and signage
- ◊ Enhancing and strengthening EEC's, major parklands, agricultural land and creeks that intersect with the project.

WHERE CAN I FIND OUT MORE?

- ◊ Master plan - Section 4.5
- ◊ Shared path corridor - Section 4.6
- ◊ Aboriginal cultural interpretation - Section 4.7
- ◊ Non-Aboriginal heritage interpretation - Section 4.8

4: LANDSCAPE DESIGN

The landscape design will make a major contribution to open space and planting in the Western Parkland City, reinforcing the existing landscape character derived of species from the endemic endangered ecological communities that the alignment travels through.

KEY OUTCOMES

- ◊ Ecologically sound
- ◊ Integration with local setting
- ◊ Add character and value
- ◊ Plant for a changing climate.

DESIGN THEMES

- ◊ Reflect existing landscape character
- ◊ Respond to future landscape vision
- ◊ Provide a Connection to Country
- ◊ Reconnect fragmented EEC's
- ◊ Maintain view corridors.

WHERE CAN I FIND OUT MORE?

- ◊ Wildlife strike mitigation - Section 5.3
- ◊ Planting palette - Section 5.4
- ◊ Western Sydney Seasonal Planting - Section 5.5
- ◊ Seed collection - Section 5.7
- ◊ Maintenance - Section 5.11

5: BRIDGES AND WALLS

Bridges and wall structures are a prominent visual element and marker for road users, pedestrians and cyclists as they move along the corridor.

KEY OUTCOMES

- ◊ High standard of bridge architecture
- ◊ Bridges should be visually unobtrusive
- ◊ Bridges must have clean lines
- ◊ Maximise usability, permeability and visual transparency
- ◊ Robust and durable elements that are easily maintainable
- ◊ Bridge designs “float” above the landscape rather than being grounded on a large vertical abutment.

DESIGN THEMES

- ◊ Bridge elements to be elevated through feature lighting, interpretation and integrated art.

WHERE CAN I FIND OUT MORE?

- ◊ Bridge locations - Section 6.1
- ◊ Shared path connections - Section 6.6
- ◊ Retaining walls - Section 6.8

APPENDICES

Further detailed information about the project can be found in the following appendices:

- ◊ Appendix A: Landscape Plans - West
- ◊ Appendix B: Landscape Plans - Central
- ◊ Appendix C: Landscape Plans - East
- ◊ Appendix D: M12 Heritage Interpretation Plan
- ◊ Appendix E: M12 Aboriginal Heritage Interpretation Plan
- ◊ Appendix F: Tree Survey
- ◊ Appendix G: Advice and Recommendations.

FEEDBACK ON THE PDLP

The Place, Design and Landscape Plan has been prepared for the purposes of presentation and public display. The Plan will be exhibited for consultation with relevant councils, state government bodies and the local community, including affected landowners and businesses.

HOW IS FEEDBACK PROVIDED?

Feedback is welcomed and reviewed as part of the design process. Feedback received will be provided to TfNSW to consider. A revised document with feedback incorporated will then be forwarded to the Department of Planning and Environment as part of the Plan’s approval process.

Areas where you will have an opportunity to provide feedback include:

- ◊ Landscape design
- ◊ Species selection
- ◊ Public elements on shared path
- ◊ Materials and finishes
- ◊ Lighting and wayfinding.

WHERE CAN I FIND OUT MORE?

All information on the PDLP can be found at the following website: https://nswroads.work/m12pdlp

More broadly information on the M12 Project can be found : https://nswroads.work/m12

WESTERN SYDNEY INTERNATIONAL AIRPORT SITE

SYDNEY METRO – WESTERN
SYDNEY AIRPORT

Artist's impression: Aerial view south over Airport Interchange, illustrating the anticipated final built urban design outcome in its setting with established vegetation at approximately 10 years after planting.

1 INTRODUCTION

The M12 Motorway will form a vital connection with the Western Sydney International Airport, Western Parkland City, existing communities and the future Aerotropolis precinct.

The M12 Motorway will provide direct access to Western Sydney International Airport and connect to Sydney's motorway network, with the urban design concept for the project developed on the overarching vision of 'Connection to Country', which seeks to create a distinctly unique and memorable piece of infrastructure that establishes the gateway to western Sydney.

TfNSW has engaged with stakeholders and community feedback through the Environmental Impact Statement (EIS), Amendment Report and draft PDLP, undertaken further analysis and developed urban design strategies and outcomes for further collaborative implementation across the multiple project stages that will foster confidence and investment in the overall project outcome.

The PDLP has been a design-led methodology, balancing agendas of aesthetic outcomes, quality, cost, time and maintenance, and builds on the vision of a Connection to Country and TfNSW Urban Design Guidelines within the context of the changing landscape, land-use and infrastructure projects based on the Western Sydney International Airport and Western Sydney Aerotropolis.

The chapter will outline the design and documentation process of the M12 Motorway to date, a project description with key benefits and features, the purpose and context for the Project amongst existing standards and guidelines, compliance with the conditions of approval, and responses to stakeholder and community consultation and the outcome of the design review panel.

Images that reinforce the overarching objectives of the project

1.1 PURPOSE

The PDLP has been developed to submit to DPE, facilitate public consultation, and address the Ministers Conditions of Approval. This document has been updated and finalised following public consultation.

This document has been prepared to satisfy the relevant Minister's Conditions of Approval and builds on the vision of a Connection to Country and TfNSW Urban Design Guidelines within the context of the changing landscape, land-use and infrastructure projects based on the Western Sydney.

The PDLP follows the overarching Urban Design Framework, which provided an overall design intent across three design packages, with the PDLP addressing the Ministers Conditions of Approval and Urban Design Opportunities. The Conditions of Approval are in the Section 1.9 of this PDLP. Compliance with the Conditions and measures are noted and includes the location in this PDLP where each Condition is addressed.

The PDLP has been developed to submit to DPE and public consultation, and addresses the Ministers Conditions of Approval, and will be updated and finalised following public consultation.

1.2 THE TEAM

The M12 Motorway (The Project) is being designed and managed by TfNSW.

The integrated urban and landscape design for the Project has been prepared in collaboration with a multidisciplinary team of engineers, contractors, Aboriginal designers and artists, heritage consultants, seed collection specialists, stakeholder consultants, urban designers, landscape designers and 3D visualisers. The team includes:

M12 Urban Design Framework
M12 Place, Design and Landscape Plan

M12 Package 1 - West

M12 Package 2 - Central

M12 Package 3 - East

M12 Aboriginal Heritage Interpretation Plan, together with Balarinji and Aboriginal Artist Cohort:
Danny Eastwood
Jamie Eastwood
Barry Gunther
Danielle Mate Sullivan
Jasmine Seymour
Leanne Watson

M12 Non-Aboriginal Heritage

M12 Seed collection and Propagation

1.3 MINISTERS CONDITIONS OF APPROVAL

An Environmental Impact Statement (EIS) for the Project was submitted on 16 October 2019 for public exhibition and comment. In October 2020, a Submissions Report was prepared in response to submissions received during the EIS exhibition period. An Amendment Report was submitted taking into account the EIS submissions on 21 October 2020 and a Amendment Report Submissions Report was prepared in December 2020. The Plan was considered by the Department of Planning and Environment (DPE) and informed the Minister for Planning, in the projects approval assessment.

The EIS, Amendment Report and Submissions Report were considered by the Department of Planning, Infrastructure and Environment (DPE) and informed the Minister for Planning's assessment of the project's approval.

On 23 April 2021, planning approval for the project was received from the Minister for Planning. The approval was subject to Conditions of Approval, including E63-E73 which are specific to Urban and Landscape Design.

This Place, Design and Landscape Plan (PDLP) has been prepared to satisfy the clauses E27, E64, E65, E66, E68, E69, E70, E71, E72 and E73 of the Ministers Condition of Approval. The plan provides a comprehensive outline of the Urban Design and Landscape strategies for the Project.

These Conditions of Approval are contained in Section 1.9 of this Plan. Compliance with the Conditions is noted, and includes the location in this Plan where each Condition is addressed.

Aerial view east over Luddenham Road and Cosgroves Creek

1.4 PROJECT DESCRIPTION

The M12 Motorway will provide direct access to the Western Sydney International Airport and connect to Sydney's motorway network, with the urban design concept for the project developed on the overarching vision of 'Connection to Country', which seeks to create a distinctly unique and memorable piece of infrastructure that establishes the gateway to western Sydney.

The project is predominately located in greenfield areas. The topography in and around the project comprises rolling hills and small valleys between generally north–south ridge lines. The existing land uses are semi-rural residential, recreational, agricultural, commercial and industrial. The main residential areas are Kemps Creek, Mount Vernon and Cecil Hills.

PROJECT BACKGROUND

The M12 Motorway was announced in 2014 by the Australian and New South Wales Governments as part of the $4.1 billion Western Sydney Infrastructure Plan. Roads and Maritime Services commenced on a strategic route options analysis process and public consultation. The preferred corridor for M12 Motorway was announced in November 2016. A public display of the preliminary concept design and access strategy occurred in early 2018. The M12 EIS was displayed in October 2019.

The M12 Motorway will run between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham for a distance of about 16 kilometres and will be opened to traffic prior to the opening of the Western Sydney International Airport. The project will commence about 30 kilometres west of the Sydney central business district, at its connection with the M7 Motorway. The project traverses the boundaries between the local government areas of Fairfield, Liverpool and Penrith. The suburbs of Cecil Park and Cecil Hills are found to the east of the M12 Motorway, with Luddenham to the west.

The project is required to support the opening of the Western Sydney International Airport by connecting Sydney's motorway network to the airport. The project will also serve and facilitate the growth and development of western Sydney which is expected to undergo significant development and land use change over the coming decades. The motorway will provide increased road capacity and reduce congestion and travel times in the future and will also improve the movement of freight in and through western Sydney.

KEY BENEFITS

The M12 Motorway would provide the following benefits:

- ◊ Provide direct access to the new airport and from the M4 Motorway via the upgraded The Northern Road
- ◊ Provide access to the M7 Motorway (subject to the outcome of the Un-solicited Proposal)
- ◊ Improve access to the Aerotropolis and the South West Growth Area
- ◊ Increase road capacity for future growth and development and increase journey reliability for all road users
- ◊ Improve traffic safety for all road users
- ◊ Improve public transport and increase pedestrian and cyclist infrastructure
- ◊ Provide a better regional east west connection, linking to improved north south connections that benefit road users across western and south western Sydney
- ◊ Improve road freight movement to key commercial centres
- ◊ Provide a connection to Elizabeth Drive at the eastern end of the M12 Motorway, near the M7 interchange
- ◊ Provide direct access to WSIA and a connection to Elizabeth Drive at the airport entry
- ◊ Reduce the cost of congestion impact on the community and businesses.

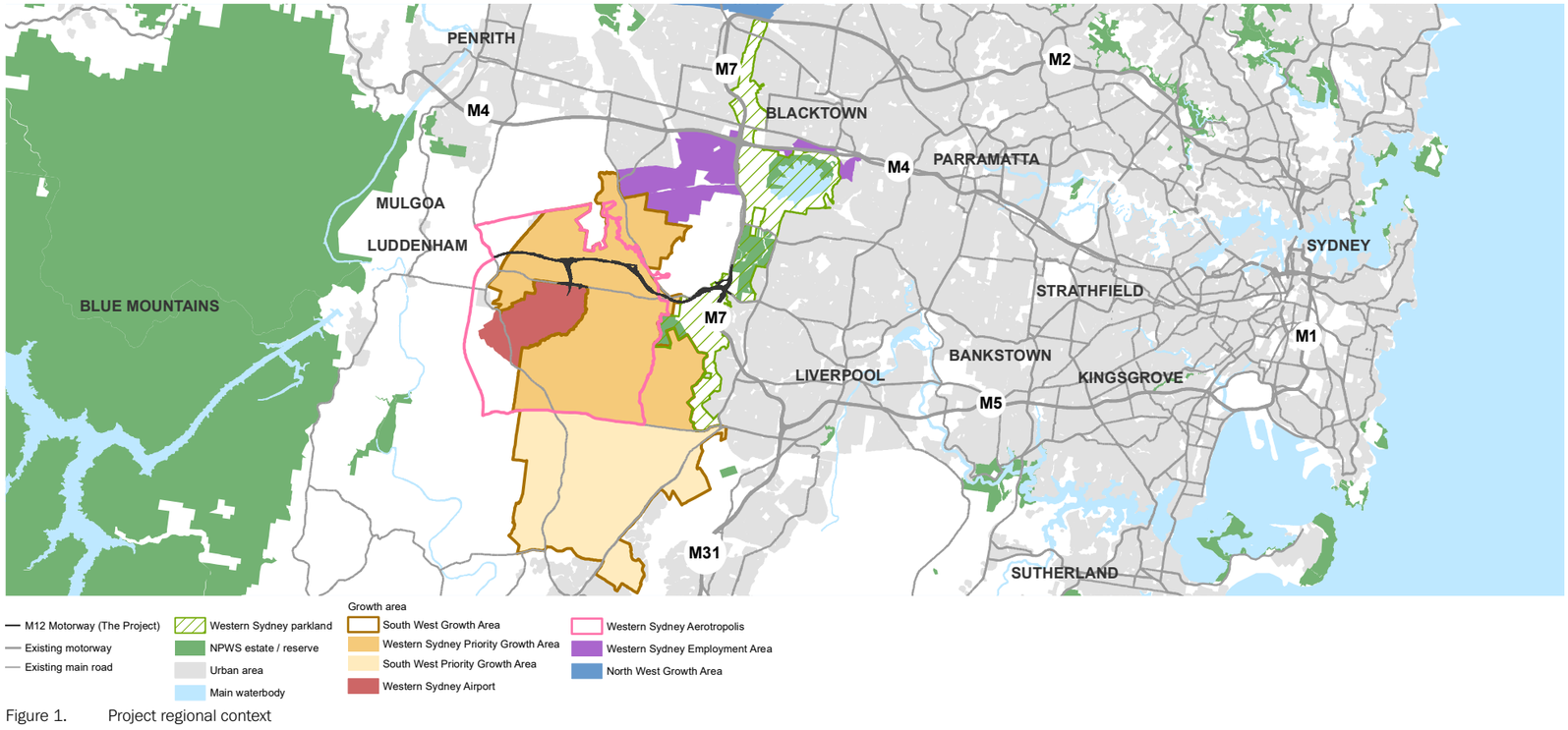


Figure 1. Project regional context

KEY FEATURES

The M12 Motorway's key features include:

- ◊ 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 interchanges/intersections:
  - A motorway-to-motorway interchange at the M7 Motorway and associated works (extending about four kilometres within the existing M7 Motorway corridor). This scope has currently been deferred pending the outcome of a submitted USP
  - 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 approximately 1.5 kilometres) connecting with the Western Sydney International Airport Main Access Road and Elizabeth Drive
  - A signalised intersection at The Northern Road with provision for grade separation in the future.
  - Access to Elizabeth Drive at Airport Access Road
  - Connection to the Elizabeth Drive near Wallgrove Road
- ◊ Bridge structures across a number of creeks, interchanges and roads (see Chapter 05)
- ◊ Inclusion of shared path (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.

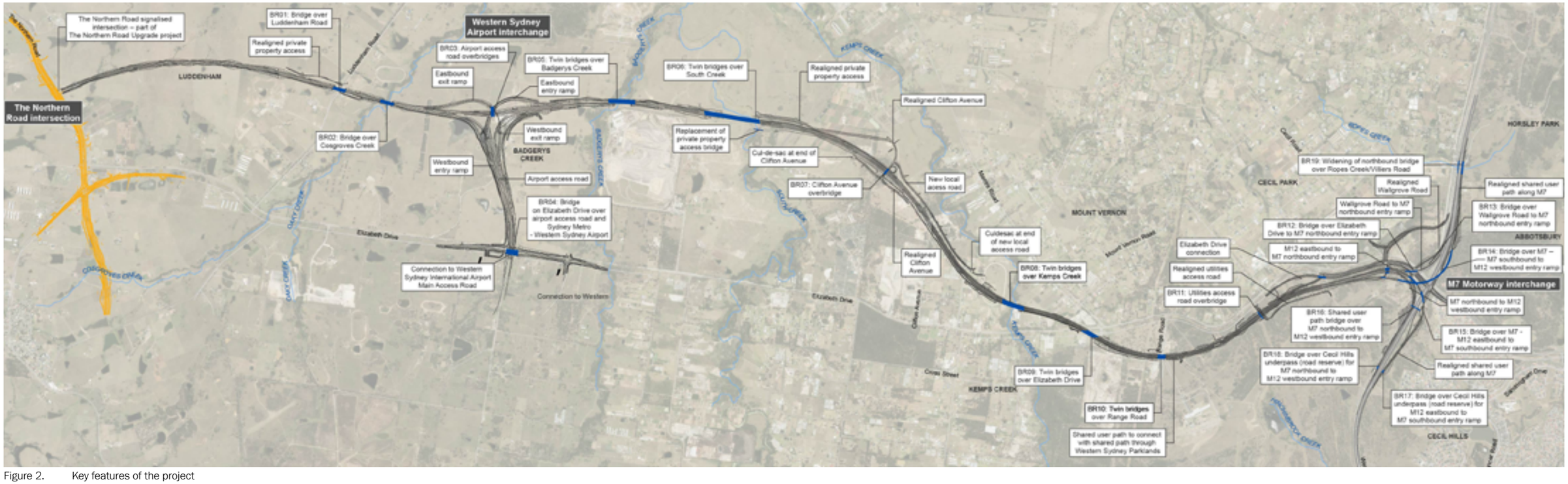


Figure 2. Key features of the project

1.5 STRUCTURE OF THE PDLP

This report describes the urban design response to the Project with a particular focus on the confirmation and development of the key themes of the EIS. Particular themes built upon include landscape design, public art/interpretation and materiality.

The design drawings visualise the design quality, technical understanding and commitment to delivering the urban design outcomes of the Project.

The suite of visualisations in this document illustrate a number of Project outcomes and distinct settings. These images illustrate the transformations proposed by the Project. The structure of this document is broadly outlined as follows.

EXECUTIVE SUMMARY

This section provides a vision for the Project and a brief overview of the Project and the PDLP process and content.

CHAPTER 1 - INTRODUCTION

This chapter provides a description of the Project, an outline of the PDLP purpose, the team developing the urban design outcomes and the process of the M12 urban design documents and process to date and ongoing.

The chapter also details the planning and policy setting that has influenced the urban design response, including TfNSW's Centre for urban design publications, DPE guidelines, Western Sydney International Airport and airport management documents, Western Sydney Parklands documents, technical and vegetation documents, and context to major adjoining Western Sydney projects.

The chapter then outlines compliance with the Conditions of Approval and EIS, and responses to stakeholder and community consultation and the outcome of the design review panel.

CHAPTER 2 - CONTEXTUAL ANALYSIS

This chapter outlines the contextual analysis of the route and environs that has been completed, including the following natural, built and community contexts:

- ◊ Existing landscape features, land uses & conditions
- ◊ Topography
- ◊ Landscape Character Zones
- ◊ Hydrology
- ◊ Soil
- ◊ Existing land-use
- ◊ Future land-use
- ◊ Native vegetation
- ◊ Aboriginal heritage
- ◊ Non-Aboriginal heritage
- ◊ Open space connectivity.

CHAPTER 3 - URBAN DESIGN CONCEPT

This chapter highlights the Project vision, the overarching urban design principles and objectives driving the outcomes, how the vision of Connection to Country has been integrated across the corridor, and site-wide strategies to influence the urban design outcomes.

This is followed by a project wide master plan and detailed plans of the urban design outcomes and features across the corridor.

Following this, the chapter examines the shared path corridor and associated works, Aboriginal cultural interpretation and non-Aboriginal heritage interpretation and how these outcomes are represented across the project, followed by a description of how crime prevention through environmental design principles have been integrated across the project and the motorway elements that contribute to the overall project identity.

CHAPTER 4 - LANDSCAPE DESIGN

This chapter builds upon the urban design objectives, principles and strategies, to outline the overarching landscape concept.

The concept responds to the endemic undulating Cumberland Plain landscape character and incorporates sound ecological principles and a strong connection with Country.

In this section, we provide a detailed approach to our strategies for water sensitive urban design (WSUD) across the Project, strategies to revegetate disturbed areas, including planting of replacement trees, seed collection, ongoing maintenance and wildlife strike mitigation.

CHAPTER 5 - BRIDGES AND WALLS

This chapter outlines the principles driving the design of bridges and walls across the project, their location, the design of bridge elements and the various bridge typologies visible across the corridor, integration of feature lighting and Aboriginal cultural interpretation embedded in the overbridge safety screen designs.

The chapter also details the shared path connectivity structures, fauna crossing designs, and the details on retaining wall types, finishes and Aboriginal cultural interpretation on selected integrated wall elements.

APPENDICES

There are seven appendices attached to the PDLP.

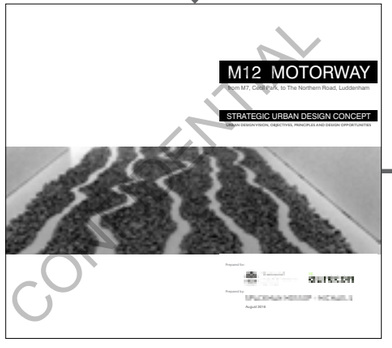
- ◊ Appendix A: Landscape Plans - West
- ◊ Appendix B: Landscape Plans - Central
- ◊ Appendix C: Landscape Plans - East
- ◊ Appendix D: M12 Heritage Interpretation Plan
- ◊ Appendix E: M12 Aboriginal Heritage Interpretation Plan
- ◊ Appendix F: Tree Survey
- ◊ Appendix G: Advice and Recommendations.

Example of current landscape character across the project.

1.6 M12 URBAN DESIGN DOCUMENTS AND PROCESS

Work leading to the preparation of this report has been an iterative process, developed across numerous years by varying design consultants to contribute to the overall design approach and project outcomes, and has included a review of related policy documents, TfNSW guidelines and standards including those listed in the EIS.

Following is a description of M12 project specific documents that have been developed and contributed to the PDLP and project urban design outcomes.



STRATEGIC URBAN DESIGN CONCEPT

SPACKMAN, MOSSOP AND MICHAELS

The document seeks to develop a strategic urban design concept to communicate a 'Connection to Country' for people from a broad range of cultural and social backgrounds.

An urban design concept and vision was prepared through a review of the context of the project including elements such as natural systems and Aboriginal heritage values, existing landscape patterns, changing land use, and landscape character:

The M12 Motorway would be a memorable, world class gateway from the planned western Sydney airport at Badgerys Creek to the Sydney metropolitan area, to New South Wales and to Australia. It will celebrate the unique sense of place and the journey from the Mountains to the City through considered alignment, views, art and interpretation.

The Strategic Urban Design Concept informed the options which were displayed during the options identification and selection process in 2015 and 2016.

LANDSCAPE CHARACTER, VISUAL IMPACT ASSESSMENT AND URBAN DESIGN REPORT

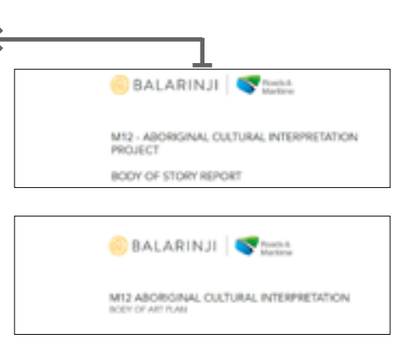
HASSELL

The urban design concept for the project was developed based on the overarching vision of 'Connection to Country', which aimed to create a distinctly unique and memorable piece of infrastructure that establishes the gateway to western Sydney.

The report provided the basis for an integrated design process for the project, to ensure the implementation of the urban design vision, principles and objectives into the detailed design process, which would ultimately be constructed and operational.

This report was then used to form part of the M12 EIS (Appendix G).

The preliminary urban design concept was presented to Fairfield, Liverpool and Penrith Councils, the Western Sydney Planning Partnership and DPE representatives in February 2019, ahead of it being put on display as part of the EIS in October 2019.

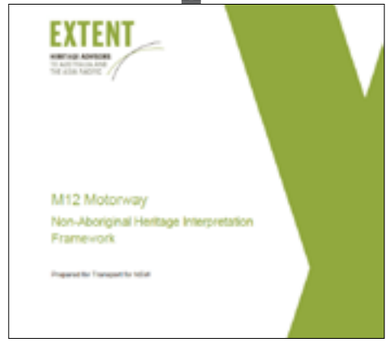


M12 ABORIGINAL CULTURAL INTERPRETATION - BODY OF STORY AND BODY OF ART PLAN

BALARINJI

Balarinji conducted research into the Aboriginal history of the M12 corridor and tested and augmented this narrative through stakeholder consultation. This process has seen Balarinji collaborate with artists, Elders and stakeholders within the Western Sydney Aboriginal community, to develop an Aboriginal narrative and indicative art design concepts for the Project.

The Body of Story and Body of Art were developed with input from the community at workshops in August 2018 and October 2018 respectively, and were presented to the project's Aboriginal Focus Group in February 2019, prior to a description of the interpretive elements being included in the EIS displayed in October 2019.



M12 NON-ABORIGINAL HERITAGE INTERPRETATION FRAMEWORK

EXTENT HERITAGE

This framework sets out a high-level options analysis of thematically appropriate interpretive approaches and outcomes for the project, to be followed by a period of community consultation and the preparation of a Heritage Interpretation Plan (HIP). This plan will include more finalised device designs, dependent upon which of the below device opportunities are pursued.

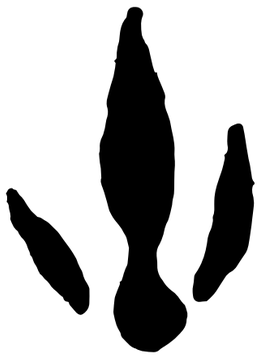


Figure 3. Emu footprint (Artist Cohort, Balarinji, 2021)

M12 PROJECT CONSTRUCTION

M12 URBAN DESIGN FRAMEWORK

HASSELL

This document provided an integrated urban design framework for the M12 project to ensure the implementation of the urban design vision, principles and objectives into the detailed design process across multiple stages and deliveries.

The urban design team, in collaboration with TfNSW, engaged with stakeholders and community feedback through the Environmental Impact Statement (EIS) and undertook further analysis and developed urban design strategies and recommendations for collaborative implementation across the multiple project stages that will foster confidence and investment in the overall project outcome.

The draft M12 Urban Design Framework was presented to Fairfield, Liverpool and Penrith Councils, the Western Sydney Planning Partnership, The Western Sydney Parkland Authority and DPE representatives in December 2020.

M12 PACKAGE 1 WEST DETAILED DESIGN

M12 PACKAGE 2 CENTRAL DETAILED DESIGN

M12 PACKAGE 3 EAST DETAILED DESIGN

M7 INTERCHANGE USP

M12 DETAILED DESIGN PACKAGES

GHD WOODHEAD, CONTEXT AND CM+

The M12 will be delivered in three design packages, dividing the project into east, west and central segments. The packages will be delivered by the following:

- M12 Detailed Design Package - (Central) GHD Woodhead
- M12 Detailed Design Package - (West) Context, CM+ and WSP
- M12 Detailed Design Package - (East) Connection with Elizabeth Drive Context, CM+ and WSP.
- M7 interchange USP

THIS PLACE, DESIGN AND LANDSCAPE PLAN

M12 PLACE, DESIGN AND LANDSCAPE PLAN

HASSELL

This Place, Design and Landscape Plan has been prepared by Hassell and TfNSW with detailed engineering, landscape and urban design information for the separate portions of the project delivered by the following teams:

- East and West Packages - WSP, CM+ & Context Landscape Architecture
- Central Package - GHD Woodhead
- Aboriginal Cultural Heritage and Aboriginal Art Strategy - Balarinji
- Non-Aboriginal Heritage - Extent Heritage Advisors
- Seed collection and propagation - Toolijooa.

This document has been prepared to satisfy the relevant Minister's Conditions of Approval and builds on the vision of a Connection to Country and TfNSW Urban Design Guidelines within the context of the changing landscape, land-use and infrastructure projects based on the western Sydney.

M12 ABORIGINAL ART STRATEGY

BALARINJI + ABORIGINAL ARTIST COHORT

Balarinji was re-engaged by TfNSW M12 Design team to further develop and specify selected concepts from the Body of Art plan to incorporate into the M12 Design as it continues to Detailed Design and procurement for construction. Balarinji has continued to co-design an interpretation of the M12 corridor that illuminates its Aboriginal history and its contemporary Aboriginal story established in the first stage of the project, with the appointed Artist cohort and local community stakeholders. This report showcases the integration of the varied indigenous artistic and storytelling aspects of the project.

The Balarinji + Aboriginal Artist Cohort comprise of:

- Danny Eastwood
- Jamie Eastwood
- Barry Gunther
- Danielle Mate Sullivan
- Jasmine Seymour
- Leanne Watson

The M12 Aboriginal Art Strategy forms the basis of the M12 Aboriginal Heritage Interpretation Plan and will be found at Appendix E.

M12 NON-ABORIGINAL HERITAGE INTERPRETATION PLAN

EXTENT HERITAGE

Extent Heritage was commissioned by Transport for NSW to prepare a non-Aboriginal Heritage Interpretation Plan for the M12 Motorway Project.

This report presents eighteen heritage interpretive devices over five locations. The locations are the Upper Canal System (Pheasants Nest Weir to Prospect Reservoir), the McGarvie Smith Farm, Fleurs Aerodrome, Fleurs Radio Telescope Site and the McMaster's Field Station. These five sites have then been categorised into three themes; water harvesting, agricultural research, and technological advancements.

This report proposes four interpretive device types for the M12 Motorway Project; signs located along the shared path, a series of inlays set into the shared path, an interpretive landscape device located on both sides of the carriageway indicating where the motorway intersects with what was once Fleurs Aerodrome, and an art installation located along the shared path to create an artistic representation to the large cross array installations that were present at the Fleurs Radio Telescope Site.

M12 SEED COLLECTION

TOOLIJOOA

Toolijooa nursery was engaged to collect a large diversity of native seed from both within and outside the M12 footprint area. The aim is to collect native seed and plant material for the use in future propagation of potentially 150,000 tubestock to use in and around the M12 motorway. Toolijooa commenced collection for this project in May 2020 and plans to continue collection for the first 3 years of the 5 year contract. Toolijooa is focusing on Cumberland Plain species and collecting both seeds for propagation and for direct sowing on to open areas.

The M12 Non-Aboriginal Heritage Interpretation Plan was provided to Heritage NSW and relevant councils and including a briefing in August 2021.

1.7 PLANNING AND POLICY SETTING

Work leading to the presentation of the PDLP has been an iterative process and has included review and incorporation of the following documents;

- ◊ A thorough review of briefing materials and associated working papers including the EIS Concept Design and M12 Urban Design Framework
- ◊ Inspections of the route and its environs
- ◊ Numerous design workshops and meetings involving the TfNSW project design team members and design packages teams and specialist consultants
- ◊ A review of TfNSW's design standards and industry construction methods.

The following key documents provide the policy context for the urban design outcome across the project.

TRANSPORT'S CENTRE FOR URBAN DESIGN PUBLICATIONS

BEYOND THE PAVEMENT URBAN DESIGN POLICY (2020)

In Beyond the Pavement, Transport nominates overarching urban design approach that should be adopted on all road and maritime related works. This approach should be an integrated part of the planning, developing, delivery and management of the transport assets. Transport infrastructure is a major part of our settlements. The full scope of projects cuts across administrative, physical and cultural boundaries as well as professional and contractual ones. Project teams need to think across these boundaries as to how infrastructure contributes to and fits into the whole NSW landscape.

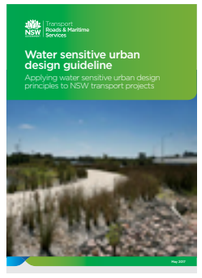
Urban design principles

Nine urban design principles govern the planning and design of road infrastructure:

- ◊ Contributing to urban structure and revitalisation
- ◊ Fitting with built fabric
- ◊ Connecting modes and communities
- ◊ Fitting with the landform
- ◊ Contributing to green infrastructure and responding to natural systems
- ◊ Connecting to Country and incorporating heritage and cultural contexts
- ◊ Designing an experience in movement
- ◊ Designing self-explaining roads that respond to their role and context
- ◊ Achieving integrated and minimal maintenance design.

LANDSCAPE DESIGN GUIDELINE (DEC. 2018)

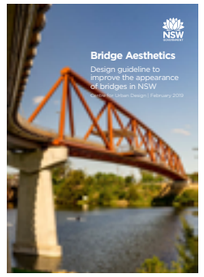
This document sets down the urban design approach and minimum landscape standards for all projects on road corridors.



WATER SENSITIVE URBAN DESIGN GUIDELINE - APPLYING WATER SENSITIVE URBAN DESIGN PRINCIPLES TO NSW TRANSPORT PROJECTS (2017)

The guideline describes the application of water sensitive urban design (WSUD) principles and techniques which are appropriate to the construction and operation of the NSW transport network.

The approach replicates the natural process and promotes the use of soft landscape areas for the conveyance, retention and treatment of stormwater.



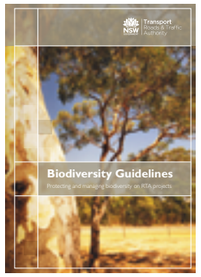
BRIDGE AESTHETICS - DESIGN GUIDELINE TO IMPROVE THE APPEARANCE OF BRIDGES IN NSW (FEB. 2019)

This document provides design objective, principles and practical guidance to produce bridges (of all types) of aesthetic value.

The guideline makes continuous reference to 'making bridges elegant' through the use of structurally expressive form that avoids clutter and fussy detailing.

NOISE WALL DESIGN GUIDELINE - DESIGN GUIDELINE TO IMPROVE THE APPEARANCE OF NOISE WALLS IN NSW (2016)

This document establishes best practice principles and technical guidance for the integration of well-designed noise walls.



BIODIVERSITY GUIDELINE - PROTECTING AND MANAGING BIODIVERSITY ON RTA PROJECTS (REV 0/2011)

These Biodiversity Guidelines are a tool for project managers and contractors to help minimise impacts on biodiversity during construction projects and maintenance works.

DESIGNING TO MINIMISE VANDALISM. AN INVESTIGATION INTO PLANNING AND DESIGN MEASURES TO AVOID OR MITIGATE VANDALISM

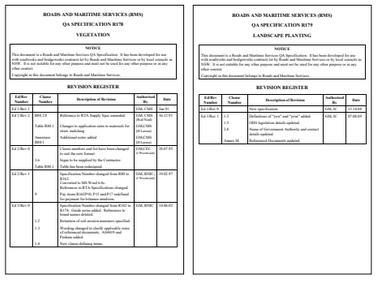
This report investigates how design might assist in preventing or at least minimising the incidence of vandalism with a focus on graffiti as the major vandalism problem.

DEPARTMENT OF PLANNING AND INDUSTRY AND ENVIRONMENT GUIDELINES

SUSTAINABLE DESIGN GUIDELINES VERSION 4.0 (ROADS AND MARITIME, 2017)

The Sustainable Design Guidelines seek to deliver sustainable development practices by embedding sustainability initiatives into the design and construction of transport infrastructure projects.

There are 14 compulsory requirements that project teams must consider where relevant to a project. Each compulsory requirement has a list of supporting initiatives that can be utilised to meet the compulsory requirements.



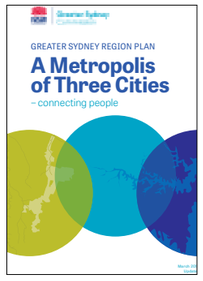
QA SPECIFICATION R178 - VEGETATION AND R179 - LANDSCAPE PLANTING

These specifications sets out the requirements for the vegetation of cut and fill batters, median areas, open drains and other areas within the site. Vegetation includes initial surface preparation, topsoiling, fertilising, sowing of seed and watering, and requirements for landscape works including site preparation, supply and planting of containerised plant materials (including mulching, fertilising and staking), turfing, watering and maintenance after planting.

BETTER PLACED (GOVERNMENT ARCHITECT, NSW, 2017)

Better Placed is a policy that seeks to capture the aspirations and expectations for the places in which we work, live and play. It creates a clear approach to ensure good design that will deliver the architecture, public spaces and environments we want to inhabit now and those we make for the future.

Better Placed serves as a high-level reference for spatial and strategic frameworks, master plans, urban design and landscape architectural projects. It forms part of the TfNSW terms of reference to support the delivery of State-led design excellence processes, including the design review panels that will are required during the delivery of the Project.



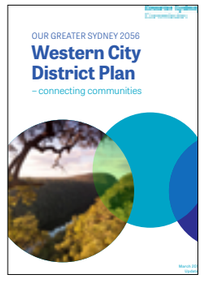
GREATER SYDNEY REGION PLAN. A METROPOLIS OF THREE CITIES (MAR 2018)

The plan sets a 40-year vision and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters.

This document has been prepared concurrently with *Future Transport 2056* and *State Infrastructure Strategy 2018–2038* to align land use, transport and infrastructure outcomes for Greater Sydney.

The plan is built on a vision of three cities where most residents live within 30 minutes of their jobs, education and health facilities, services and great places". These three cities are:

- ◊ The established Eastern Harbour City – building on its recognised economic strength and addressing liveability and sustainability.
- ◊ The developing Central River City – investing in a wide variety of infrastructure and services and improving amenity.
- ◊ The emerging Western Parkland City – establishing the framework for the development and success of an emerging new city.



OUR GREATER SYDNEY 2056 - WESTERN SYDNEY DISTRICT PLAN (MAR 2018)

The Western City District Plan covers the Blue Mountains, Camden, Campbelltown, Fairfield, Hawkesbury, Liverpool, Penrith and Wollondilly Local Government Areas. (LGAs) It is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. It outlines the planning priorities and actions for implementing the *Greater Sydney Region Plan, A Metropolis of Three Cities*, at a district level.

WESTERN SYDNEY AEROTROPOLIS PLAN NSW GOVERNMENT(2019)

The document sets the planning framework for the Western Sydney Aerotropolis, Australia's newest gateway, established around the Western Sydney International Airport.

One overarching objective is to guide the planning of the Aerotropolis:

- ◊ Recognise Country

Acknowledge Traditional Owners and provide opportunities to connect with Country, Design for Country and Care for Country when planning for the Aerotropolis.

A landscape-led approach is proposed to weave the demands and opportunities of urban planning, urban design and landscape.

Other objectives of the plan are to highlight

- ◊ The Structure Plan
- ◊ Precinct Planning
- ◊ SEPP
- ◊ Airport safeguarding including
  - Obstacle Limitation Surface
  - Wildlife Strike & Wildlife Buffer Zones
  - Lighting and Windshear

CYCLEWAY DESIGN TOOLBOX, TFNSW (2020)

This document provides technical guidance, standards and benchmarking for high quality bicycle transport facilities in NSW.

WESTERN SYDNEY AIRPORT AND AIRPORT MANAGEMENT DOCUMENTS

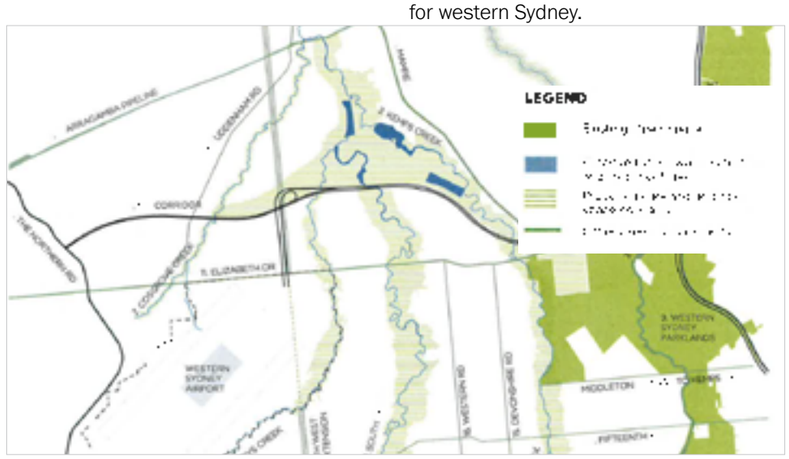
THE SYDNEY GREEN GRID, DEPARTMENT OF PLANNING AND ENVIRONMENT (2017)

This document provides a forensic review of existing and proposed open space projects and opportunities, which are then prioritised based on their performance potential and overlap with current urban development needs and priorities.

The Sydney Green Grid is composed of a combination of four of the fundamental landscape layers [or grids] which underpin the geographic and urban structure of Sydney. They are:

- ◊ The Hydrological Grid
- ◊ The Ecological Grid
- ◊ The Recreational Grid
- ◊ The Agricultural Grid.

The document identifies the importance of opportunities associated with this project as part of the South West District. It recognises the M12 Motorway as a key east-west connector that intersects with a number of major north-south green grid opportunities. The continuity of these north-south green grid corridors is noted as critical to the success and long term effectiveness of the open space network for western Sydney.



M12 Green Grid Project Overlap

FIVE MILLION TREES FOR GREATER SYDNEY, DEPARTMENT OF PLANNING AND ENVIRONMENT (2018)

Five Million Trees for Greater Sydney (5MT) program was created to expand the tree canopy across all 33 Local Government Areas (LGAs) within Greater Sydney. It is about planting more trees in our streets, parks, private yards, neighbourhoods and schools under the goal of increasing Sydney's urban tree canopy. Objectives of 5MT include:

- ◊ Five million more trees planted in Greater Sydney by 2030
- ◊ Increase Greater Sydney's urban tree canopy cover to 40%
- ◊ Ameliorate climate extremes by provide shade and cooling urban areas through tree planting
- ◊ Creating a healthier, more liveable and greener Greater Sydney.

The 5MT Grants Program has been created to support and increase tree planting in all LGAs across Greater Sydney.

Through collaboration with local and state government, organisations, community groups, schools and residents, the 5MT initiative will see millions of trees planted in Greater Sydney by 2030.

WESTERN SYDNEY AIRPORT PLAN (2020)

The document describes the staged development of the airport with operations proposed to commence around the mid 2020s. It will accommodate about 63,000 passenger and freight air traffic movements per year.

NATIONAL AIRPORT SAFEGUARDING FRAMEWORK. PRINCIPLES AND GUIDELINES. NATIONAL AIRPORTS SAFEGUARDING ADVISORY GROUP

The guideline emphasises the need to look beyond airport boundaries in order to successfully minimise the wildlife strike risk by managing and regulating adjacent incompatible land uses.

This framework includes recommendations in *Guideline C - Managing the Risk of Wildlife Strikes in the Vicinity of Airports* for wildlife hazard management within radial distances of 3km, 8km and 13km, as defined by the International Civil Aviation Organisation.

MANAGING BIRD STRIKE RISK. SPECIES INFORMATION SHEETS. AIRPORT PRACTICE NOTE 6. AUSTRALIAN AIRPORTS ASSOCIATION (SEPT. 2015)

The Australian Airport Association commissioned the preparation of this practice note to assist aerodrome operators in managing wildlife hazards in particular the risk of bird strike.

Airports attract birds for a range of reasons including:

- ◊ Areas of short grass or barren, rocky ground provides ideal environment for ground nesters. They provide easy access to food as well as enhanced detection of predators
- ◊ Airport lighting attracts insects, in consequence attracts insectivorous birds. Runways, taxiways and aprons are great food sources at night, in particular during the warmer months
- ◊ Ponds, lakes, creeks, drainage and retention systems on or near the airport provide access to food. This includes temporary pools which form after a rainfall
- ◊ Ideal foraging opportunities with minimal visual obstructions for scavenging raptors
- ◊ Plenty of perching opportunities are provided on fences, signs and buildings
- ◊ Airports attract bird traffic when located in transit routes, such as in between agricultural fields
- ◊ Thermals, created over sealed areas such as runways, attract birds.

WILDLIFE HAZARD MANAGEMENT AT AIRPORTS. AIRPORT PRACTICE NOTE 9. AUSTRALIAN AIRPORTS ASSOCIATION (SEPT. 2015)

This document is consolidating relevant international and local information to provide an Australian context for wildlife hazard management at airports. It is structured to provide an understanding of regulations, and guidance for an airport through the process of identifying wildlife hazards, developing a Wildlife Hazard Management Plan, implementing a wildlife management program, and evaluating program effectiveness.

Hazards & Procedures

Hazards present themselves either as habitats and activities that attract wildlife or as particular wildlife.

The practice note provides an overview of the typical landscape features that are of concern and follows on with recommended management procedures.

Of particular interest for this project are the recommendations on passive management for landscaping, grass and drains.

A detailed summary of risk areas and management procedures can be found in Chapter 2: Landscape, Flora and Fauna.

WESTERN SYDNEY PARKLANDS DOCUMENTS

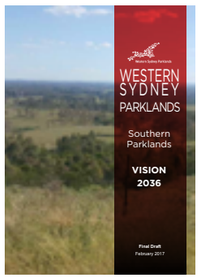
WESTERN SYDNEY PARKLANDS PLAN OF MANAGEMENT 2030 (2018)

The plan of management provides a framework and for the operation and development of Western Sydney Parklands. It is structured around four key Strategic Directions, each of which contain a number of outcomes and objectives.

The document indicates targets for long-term uses beyond 2030 and identifies substantial growth in long term infrastructure (22 per cent) and natural and cultural heritage conservation (37 per cent).

Of the 16 identified precincts, the project interfaces with the precinct 14 described as Cecil Park comprising of rolling hills, bush trails and includes the Sydney International Shooting Centre and Wylde Mountain Bike Trail.

The desired future character of precinct 14 is to become a major recreation, sport, entertainment and tourism destination includes continuing conservation and protection of natural landscape as a setting for a future regional park.

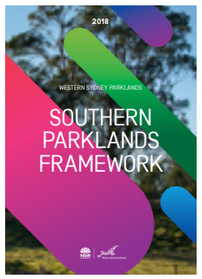


WESTERN SYDNEY PARKLANDS SOUTHERN VISION 2036 (2017)

The document provides a 20 year vision for the area of the Western Sydney Parklands referred to as the Southern Parklands. It gives guidance to the evolution of development, use and facilities, and informing the relationship with adjoining infrastructure and development.

The project directly interfaces with two zones identified in the document as follows:

- ◊ Northern Slopes - the vegetation slopes to Elizabeth Drive / future M12 Motorway to be conserved as a buffer to the adjoining infrastructure. The existing Wylde mountain bike course to be retained and extended with potential consolidation of further adventure sports through the slopes and valleys.
- ◊ Scenic Hills - lifestyle tourism and day facilities in the south facing slopes overlooking potential water bodies.



WESTERN SYDNEY PARKLANDS. SOUTHERN PARKLANDS FRAMEWORK (2018)

This framework sets the vision for 1500ha of land within the Western Sydney Parklands, which sit in between Elizabeth Drive, Cecil Hills and Bringelly Road, Leppington.

The proposed land management plan works "from the land up, fitting the different types of land use to the appropriate landforms".

The document indicates two access paths which will intersect with the M12 - Duff Road and Range Road.

Southern Parklands Framework

Source: Western Sydney Parklands. Southern Parklands Framework (2018)

WESTERN SYDNEY PARKLANDS DESIGN MANUAL (2018)

The document outlines the general approach to designing and implementing parkland infrastructure.

It sets out the overarching vision and design principles, followed by detailed descriptions of the various elements which make up the parkland experience.

- ◊ Entry Features
- ◊ Roads and Parking
- ◊ Barriers
- ◊ Signage
- ◊ Tracks
- ◊ Bridges and Boardwalks
- ◊ Furniture
- ◊ Shelters and Toilets
- ◊ Lighting
- ◊ Playspaces
- ◊ Public Art
- ◊ Planting and Landscape.

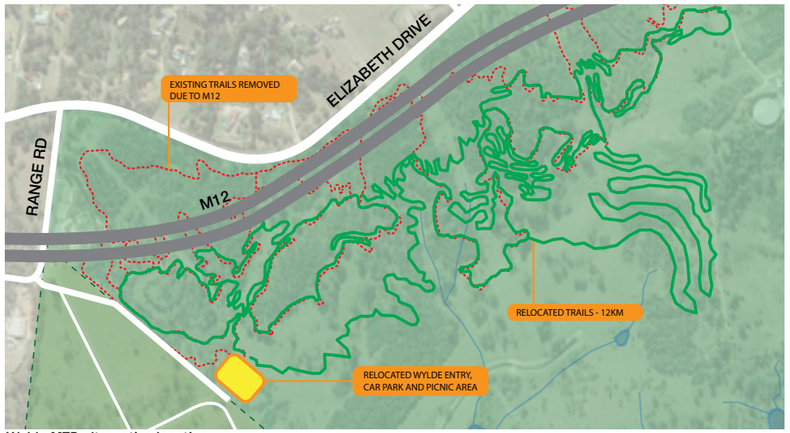
The manual concludes with an approach to events management and commercial partners.

WYLDE MOUNTAIN BIKE RELOCATION AND MIRROR DAM CYCLEWAY

The proposed M12 alignment overlaps with the existing Wylde MTB trail and requires its relocation south of the future motorway.

The future Mirror Dam Cycleway will run alongside and connect into the proposed M12 cycleway to the west and the existing M7 cycleway to the east.

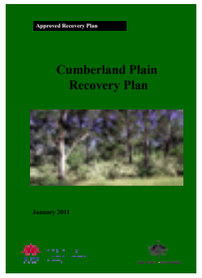
Wylde MTB entry precinct plan



Wylde MTB alternative location

Source: www.rms.nsw.gov.au/projects/01documents/m12-motorway/m12-motorway-wylde-mtb-boards.pdf

TECHNICAL AND VEGETATION DOCUMENTS



CUMBERLAND PLAIN RECOVERY PLAN (2011)

This recovery plan has been designed to provide for the long-term survival and protection of the threatened biodiversity of the Cumberland Plain.

It constitutes the formal New South Wales recovery plan for seven threatened species, four endangered populations and nine threatened ecological communities as listed on the NSW Threatened Species Conservation Act 1995 that are found only on the Cumberland Plain. Seven of these are also listed as threatened under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

TECHNICAL GUIDELINES FOR URBAN GREEN COVER IN NSW (OEH, 2015)

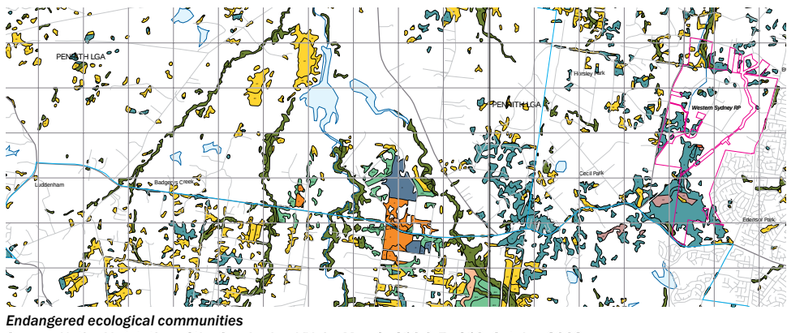
The Urban Green Cover Guideline provides a framework for the considered integration of vegetation with permeable and reflective surfaces to minimise local temperatures and encourage evaporation from landscaped areas into the urban environment.

This document outlines a broad range of relatively low cost strategies to integrate green, permeable and reflective surface into cities and towns which may include bushland, gardens, greenways, habitat corridors, street trees, and green roofs.

AUSTRALIAN STANDARD AS1428.1 DESIGN FOR ACCESS AND MOBILITY

This document specifies the design requirement of new building work, as required by the Building Code of Australia (BCA) and the Disability Standards (Access to Premises - Buildings) Standards (Premises Standards), to provide access for people with disabilities. Particular attention is given to:

- ◊ Continuous accessible paths of travel and circulation spaces for people who use wheelchairs
- ◊ Access and facilities for people with ambulatory disabilities
- ◊ Access for people with sensory disabilities.



Endangered ecological communities
Source: Native Vegetation of the Cumberland Plain. Map 4 of 16 & 7 of 16. October 2002.

Aerial view east from above Elizabeth Drive and Western Sydney Parklands

1.8 CONTEXT TO ADJOINING WESTERN SYDNEY PROJECTS

The M12 Motorway is an important link within Western Sydney between a number of significant existing and future projects. The surrounding projects that have informed the design of the M12 Motorway and how it will adapt to the changing landscape are as follows:

- ◊ Western Sydney International Airport
- ◊ Western Sydney Aerotropolis Masterplan
- ◊ Sydney Metro - Western Sydney Airport
- ◊ Outer Sydney Orbital
- ◊ Western Sydney Parklands and Wylde MTB Trail relocation
- ◊ The Northern Road Upgrade
- ◊ Elizabeth Drive Upgrade.

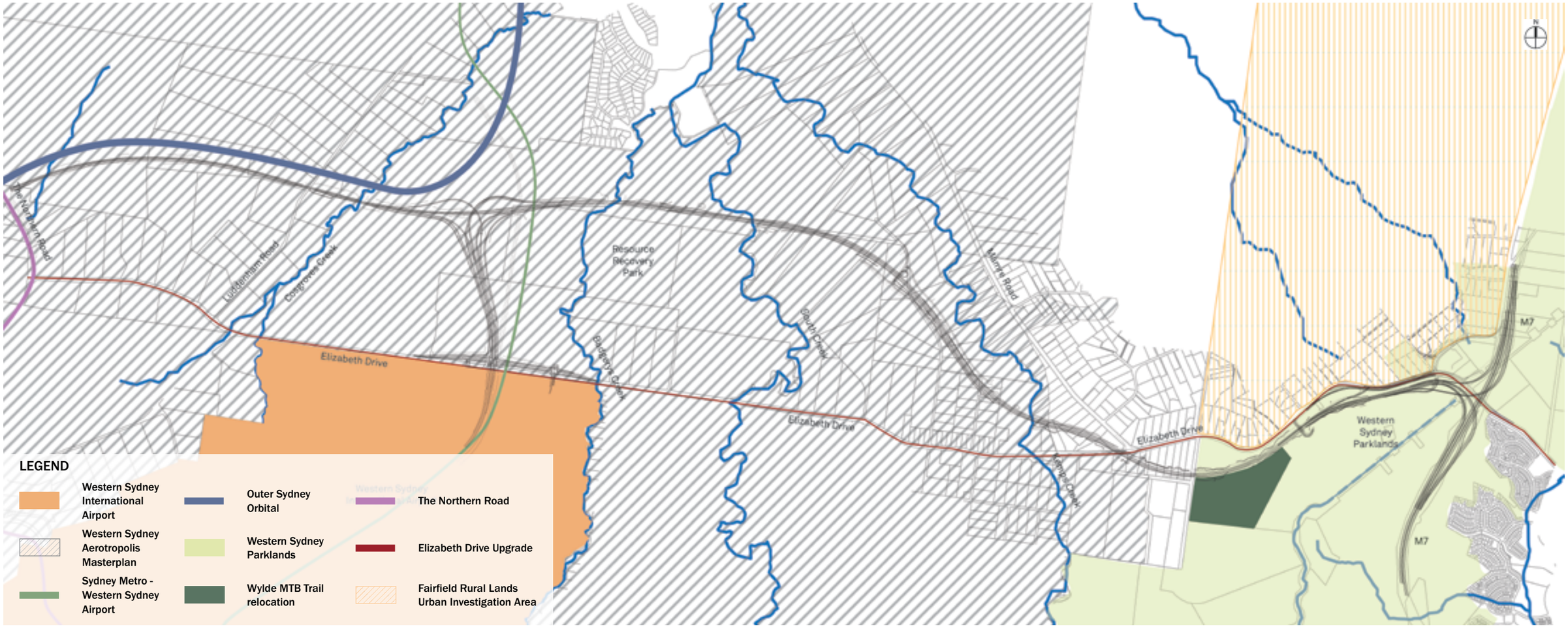


Figure 4. Contextual analysis - Surrounding context - Not to scale

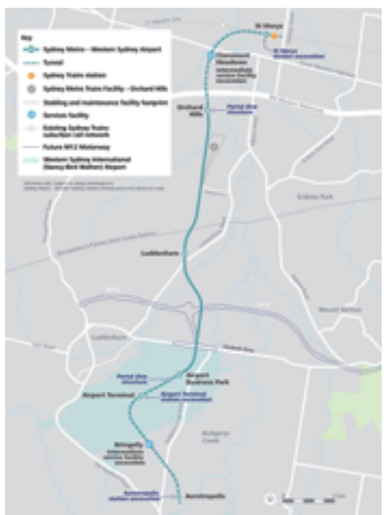
WESTERN SYDNEY INTERNATIONAL AIRPORT

Construction of Western Sydney International (Nancy-Bird Walton) Airport is underway and on track to begin operations in 2026. As part of the Western Sydney Infrastructure Plan (WSIP), the M12 Motorway will connect the airport to Sydney's motorway network. The design of the M12 will need to consider the approach sequence to and from the airport entry to create a memorable landscaped sequence.

WESTERN SYDNEY AEROTROPOLIS MASTER PLAN

The Western Sydney Aerotropolis Plan provides the vision and high-level planning framework for the Aerotropolis including objectives, strategic outcomes and implementation strategies for all precincts. The planning for and around the Western Sydney Aerotropolis is complex, involving a number of different federal, state and local level statutory plans and strategic policies.

The M12 corridor will need to respect the existing landscape character of the area, but designed with consideration of the changing context of the area to be resilient as the edges of the corridor change in land use within the Western Sydney International Airport Growth Area which will include industrial, commercial and residential development surrounding the Western Sydney International Airport site in Badgerys Creek.



SYDNEY METRO - WESTERN SYDNEY AIRPORT

Sydney Metro - Western Sydney Airport is the new railway line which will service Greater Western Sydney and the new Western Sydney International (Nancy-Bird Walton) Airport, with proposed stations at Western Sydney International Airport and the Western Sydney Aerotropolis. The Urban Design of the Airport interchange will need to consider the edge treatment with the Sydney Metro - Western Sydney Airport corridor, and the design of rail overbridges over the M12 alignment.

OUTER SYDNEY ORBITAL

The Outer Sydney Orbital (OSO) corridor will provide for future motorway and freight rail connection between Box Hill in the north, and the Hume Motorway near Menangle in the south. Within the Project, the western alignment from The Northern Road to Airport Interchange will be designed to accommodate a potential OSO alignment in the future, and the Airport Interchange would triple in scale to accommodate a potential future combined interchange. Therefore, the M12 design will need to consider how it may change in the future with a strong narrative and simple, refined concept.

WESTERN SYDNEY PARKLANDS AND WYLDE MOUNTAIN BIKE TRAIL RELOCATION

Western Sydney Parklands (WSP) is one of the largest urban parks in the world, with the Southern Parklands making up about 1500 hectares of that space that will become one of the key recreational and community resources for Western Sydney, whilst the relocation of the Wylde MTB Trail will upgrade the entrance from Range Road. The relocated Parklands entry on Elizabeth Drive near Duff Road will need consideration with the Western Sydney Parklands Southern Parklands Framework.

THE NORTHERN ROAD UPGRADE

The Northern Road upgrade between Narellan and South Penrith will open prior to the M12 Motorway. Therefore, consideration needs to be given to the design of infrastructure elements and planting that ties in with the proposed The Northern Road works so that there is a complementary aesthetic across both intersecting Projects.

ELIZABETH DRIVE UPGRADE

TfNSW is investigating upgrades to Elizabeth Drive between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham with the future projected and planned growth in the region with the development of the Western Sydney International Airport. The M12 Motorway will need to consider how the overlapping elements along the corridor will interact and look with Elizabeth Drive as it is upgraded in coming years.

1.9 MINISTER FOR PLANNING CONDITIONS OF APPROVAL COMPLIANCE MATRIX

Table 2. Relevant conditions of the Minister for Planning Conditions of Approval to place, design and landscape

Condition	Report / Notification / Approval Request	Timing	Purpose	Notes	Document Reference
Part A – Administrative					
General					
A5				Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken and submitted to the Planning Secretary, and the terms of this approval require the document, monitoring program or review to be prepared/undertaken in consultation with identified parties, evidence of the consultation must be submitted to the Planning Secretary with the relevant document, monitoring program or review. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party; (c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations; (d) outline of the issues raised by the identified party and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	(a) Refer to Chapter 01 - Introduction. (b) Refer to Appendix H - Submissions Report.
Part E – Key Issues					
Heritage					
E27	Heritage Interpretation Plan	Prior to finalising the Place, Design and Landscape Plan required by Condition E69	Information	A Heritage Interpretation Plan must be prepared that identifies and interprets the key heritage values and stories of the heritage items impacted by the CSSI. The Heritage Interpretation Plan must include, but not be limited to: (a) integration of heritage themes and values in the design of the CSSI; (b) design elements (form and fabric) and themes for the CSSI; (c) consideration of the design concepts for Western Sydney International Airport and Sydney Metro Western Sydney International Airport; and (d) opportunities for design responses for Aboriginal and non-Aboriginal heritage. The Heritage Interpretation Plan must be provided to Western Sydney International Airport and Sydney Metro Western Sydney International Airport to assist in guiding opportunities for integration of heritage themes and values into their design. The Heritage Interpretation Plan must be prepared in accordance with the *Interpreting Heritage Places and Items Guidelines* (NSW Heritage Office, 2005), and in consultation with Heritage NSW, Aboriginal Cultural Heritage Advisory Committee, LALC and relevant council(s). The Plan must be implemented and inform the Place, Design and Landscape Plan required by Condition E69. The Heritage Interpretation Plan must be submitted to the Planning Secretary and Heritage NSW for information prior to finalising the Place, Design and Landscape Plan required by Condition E69. Note: Nothing in this condition prevents the Proponent from preparing separate Heritage Interpretation Plans for Aboriginal and Non-Aboriginal Heritage.	(a) Refer to Appendix D - M12 Heritage Interpretation Plan. (b) Refer to Chapter 07 - Bridges (c) Refer to Chapter 02 - Contextual Analysis. (d) Refer to Chapter 03 - Urban Design Concept, Appendix D - M12 Heritage Interpretation Plan, and Appendix E - M12 Aboriginal Heritage Interpretation Plan.
Place, Design and Landscaping					
E62			Information	The CSSI must be constructed and operated with the objective of minimising light spillage to surrounding properties. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of A*ustralian Standard 4282-2019 Control of the obtrusive effects of outdoor lighting*, relevant Australian Standards in the series *AS/NZ 1158 –Lighting for Roads and Public Spaces*, and the *National Airports Safeguarding Framework (NASF) Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports*. Additionally, mitigation measures must be provided to manage residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	Detailed design packages for lighting incorporate methods to control the obtrusive effects of outdoor lighting to the level required by the nominated controls, including through the use of measures including flat-glass aero-screen visor or louvre type luminaries
E63				Active transport facilities must be designed, constructed and/or rectified in accordance with the *Guide to Road Design Part 6A: Paths for Walking and Cycling* (Austroads, 2017) and relevant Australian Standards (AS) such as *AS 1428.1-2009 Design for access and mobility*. The active transport links must also incorporate relevant Crime Prevention Through Environmental Design principles.	Detailed design packages for active transport packages reflect relevant standards. Refer to Chapter 03 - Urban Design Concept for information relating to CPTED information
E64	Advice on urban design opportunities	To be submitted with the Place, Design and Landscape Plan	Information	The place, design and landscape outcomes of the CSSI must be informed by and be consistent with the Urban Design Concept and have consideration of the Urban Design Opportunities as detailed in *Appendix G Landscape character, visual impact assessment and urban design report* of the EIS. Advice on how the Urban Design Opportunities have been considered and progressed must be provided to the Planning Secretary for information when submitting the Place, Design and Landscape Plan (as required by Condition E69) to the Planning Secretary. Where an Urban Design Opportunity has not progressed, advice as to why must also be provided to the Planning Secretary for information.	Refer to Chapter 01 - Introduction.
E65				Landscaping must improve parkland, open space and native vegetation and fauna connectivity, including between areas of existing parkland and open space adjacent to and intersecting the CSSI, and through the revegetation of areas with local provenance species, where practicable, between adjoining areas of remnant Cumberland Plain Woodland to re-link them. In implementing these requirements, the Proponent must have regard to wildlife strike risk in proximity to the Western Sydney International Airport	Refer to Chapter 04 - Landscape Design.
E66				All active transport infrastructure and facilities (including the connection through the Western Sydney Parklands or its alternative) must be completed prior to operation, unless otherwise agreed by the Planning Secretary.	Refer to Chapter 03 - Urban Design Concept.

Condition	Report / Notification / Approval Request	Timing	Purpose	Notes	Document Reference
E67				The CSSI must minimise impacts on useable open space. Impacts to the Western Sydney Parklands must be mitigated and offset by an agreed direct payment for improved recreation and access infrastructure and a land compensation payment for the Western Sydney Parkland Trust to use in expanding the parklands. These payments will be in accordance with an agreement established with the Western Sydney Parkland Trust. All offsets must be delivered prior to operation, unless agreed by the Planning Secretary.	Refer to Chapter 04 - Landscape Design.
E68	Advice and recommendations of independent and qualified practitioners	To be submitted with the Place, Design and Landscape Plan	Information	Place making, design and landscape outcomes must be informed by input and review by independent and qualified practitioners in the following fields (practitioners may cover more than one field if suitably qualified): a) Public art / cultural interpretation public art; b) Aboriginal cultural heritage; c) European cultural heritage; d) Landscape architecture; and e) Active transport. These practitioners must be approved by the Planning Secretary at least one (1) month before the commencement of construction and must hold current membership of a relevant professional body, unless otherwise approved by the Planning Secretary. These practitioners must be involved through participation in the Design Review Panel committed to by the Proponent in the documents listed in Condition A1, and in the development and review of the Place, Design and Landscape Plan. Advice and recommendations made by the practitioners must be provided to the Planning Secretary for information when submitting the Place, Design and Landscape Plan to the Planning Secretary. Note: The considerations that the Department will take into account when deciding to approve a practitioner are set out in 'Seeking Approval from the Department for the appointment of independent experts, Post approval guidance for Infrastructure Projects" (DPE, 2020).	Refer to Chapter 01 - Introduction.
E69				A Place, Design and Landscape Plan must be prepared to inform the final design of the CSSI and to give effect to the commitments made in the documents listed in Condition A1. The Plan does not apply to works, which for technical, engineering, or ecological requirements, or other requirements as agreed by the Planning Secretary, do not allow for alternate design outcomes.	Refer to Chapter 03 - Urban Concept Design.
E70				The Place, Design and Landscape Plan must be prepared by a suitably qualified and experienced person in consultation with relevant councils, Western Sydney Parklands Trust, Heritage NSW, the community and affected landowners and businesses. The Place, Design and Landscape Plan must include, but not be limited to: (a) an analysis of the built, natural, heritage and community context and the urban design objectives, principles and standards for the CSSI; (b) identification of opportunities for heritage interpretation during design and construction consistent with the Heritage Interpretation Plan required by Condition E27; (c) the design of the CSSI elements including their form, materials and detail; (d) the design of the CSSI landform and earthworks; (e) the location of existing vegetation, areas of vegetation to be retained and proposed planting and seeding details, including the use of local indigenous species for revegetation activities. (f) active transport infrastructure, including amenities to be provided along the shared user path; (g) developed visualisations, cross sections and plans showing the proposed design outcome; (h) demonstrated integration of Crime Prevention Through Environmental Design principles into the detailed design process; and (i) details of strategies to rehabilitate, regenerate or revegetate disturbed areas including riparian corridors and successfully establish and maintain the resulting new landscape and associated elements	(a) Refer to Chapter 02 - Contextual Analysis. (b) Refer to Chapter 03 - Urban Design Concept, Appendix D - M12 Heritage Interpretation Plan, and Appendix E - M12 Aboriginal Heritage Interpretation Plan. (c) Refer to Chapter 07 - Bridges, (d) Refer to Chapter 04 - Landscape Design. (e) Refer to Chapter 04 - Landscape Design. (f) Refer to Chapter 03 - Urban Design Concept, (g) Refer to Chapter 03 - Urban Design Concept. (h) Refer to Chapter 03 - Urban Design Concept. (i) Refer to Chapter 04 - Landscape Design.
E71	Tree Survey	To be submitted with the Place, Design and Landscape Plan	Information	Revegetation and the provision of replacement trees must be informed by a Tree Survey undertaken during detailed design. The Tree Survey must identify the number, type and location of any trees to be removed. The Tree Survey must be submitted to the Planning Secretary for information with the Place, Design and Landscape Plan. Where trees are to be removed, the Proponent must provide a net increase in the number of replacement trees at a ratio of 2:1, except trees that are offset under Condition E3. Replacement trees must have a minimum pot size consistent with the relevant authority's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant authority(ies). Note: For the purposes of this condition, the relevant authority is that State or local government authority that owns or manages the land on which the replacement trees will be planted.	Refer to Appendix F - Tree Survey.
E72	Place, Design and Landscape Plan	Prior to the construction of permanent surface built works or landscaping that are the subject of the Plan	Information	Construction of permanent surface built works or landscaping that are the subject of the Place, Design and Landscape Plan must not be commenced (in the area to which the Place, Design and Landscape Plan applies) until the Place, Design and Landscape Plan has been submitted to the Planning Secretary for information, after considering advice received from the Design Review Panel committed to by the Proponent.	Refer to Chapter 01 - Introduction.
E73				The Place, Design and Landscape Plan must be implemented during construction and operation.	Refer to Chapter 01 - Introduction.

1.10 EIS COMPLIANCE MATRIX

URBAN DESIGN OPPORTUNITIES FOR INVESTIGATION

Table 3. Summary of urban design opportunities for investigation

No.	Opportunities	Implementation
Opp-1	Investigate opportunities for the incorporation of local seed stock in the implementation of revegetation of Cumberland Plain Woodland vegetation communities along the project footprint.	Endemic seed has been collected and co-ordinated with detailed design packages to ensure optimum use of locally sourced and propagated trees and shrubs. This was done through an iterative process between Toolijooa and the design teams, with feedback and assistance from TfNSW.
Opp-2	Explore opportunities for implementation / enabling of *Sydney Green Grid* objectives and the creation of contiguous, vegetated parklands connecting the Western Sydney Parklands to the riparian corridors of Kemps Creek, South Creek and Badgerys Creek	The project will create a continuous vegetated and landscape corridor stretching from The Northern Road in the west to the M7 Motorway in the east. The project is also creating a continuous shared path network adjacent to the Motorway which includes provisions for future connectivity to the riparian corridors of Kemps Creek, South Creek and Badgerys Creek as the Aerotropolis precinct develops into the future.
Opp-3	Investigate opportunities to expand EEC communities of Cumberland Plain Woodland through prioritisation of local implementation of any biodiversity offsets required under the *Biodiversity Conservation Act 2016.*	Biodiversity offsets secured for M12 are located in the following LGAs - Horsley Park, Fairfield LGA, Cecil Park, Liverpool LGA, Mulgoa, Penrith LGA, Berkshire Park, Penrith LGA
Opp-4	Consider use of wire rope barriers in median to allow for non-frangible tree plantings.	Wire rope barriers have been incorporated however deflection zones have largely restricted tree planting.
Opp-5	Consider how the project can integrate with adjacent uses and characters by extending beyond the project boundary, for example, adjacent to the WWII air strip and Fleurs Radio Telescope	The project integrates into adjacent land uses in multiple ways. ◊ Planting through the Western Sydney Parklands corridor ties in with the remnant ecological communities and assists in re-connecting some fragmented EEC's. ◊ Revegetation of riparian corridors with in the corridor will act as a catalyst for the rehabilitation of the creeks and waterways of the surrounding precinct and add to the native character of the future parklands. ◊ Abstract tree planting at the site adjacent to Fleurs WWII Aerodrome signifies the historic site's location ◊ An abstract heritage pole installation and re-establishment of original heritage structures at the site of the Fleurs Radio-telescope site will provide interpretation of this adjacent significant heritage site
Opp-6	Consider implementation of feature lighting to amplify the night-time experience for motorists and views from above	Feature lighting is incorporated into the piers of BR09 (Elizabeth Drive), the threshold at the Western Sydney International Airport, the leaf shelters, as well as the Great Emu sculpture.
Opp-7	Explore low-maintenance methods of 'greening' retaining walls at the motorway interchanges.	Planting will be used to screen walls where available. As there are generally a small number of visible walls, and no walls causing considerable visual impact along the Motorway, 'greening' of walls was not considered reasonable or feasible given the cost and maintenance requirements.
Opp-8	Consider how the project responds and integrates with future land use changes. Monitor adjacent uses and assess impact to the project as a result of changing landscape and visual character.	Amplifying the landscape character adjacent to the future development will ensure that the scale of planting will sit comfortably within the scale of the new development. The corridor's width and proximity to parkland/creeks will be protected as much as possible from envisaged adjacent development through the landscape design approach. This approach will focus the user to the natural spaces by way of contrasting with development. In addition, strict planting requirements surrounding the proposed airport have been adhered to, to ensure the safety of future air travellers
Opp-9	Further develop and refine indicative concepts for the Aboriginal heritage interpretation ensuring they are seamlessly integrated into the project design	The project vision of 'Connection to Country' would seek to embed key interpretive themes into the project through the use of integrated art and approaches the plant selection. Six key cultural interpretation themes are incorporated into the project as the following elements - The Great Emu sculpture - The creation of a sophisticated landmark that celebrates the Darug Community's sacred creation stories of the Great Emu constellation. ◊ Eucalypt Canopies - Eucalypt leaf like canopy structures highlighting the diverse seasonal colouring to be predominantly located at interpretation nodes. ◊ Footprints on Country - Emu footprints of varying scales and materiality used to reflect the experiences of people travelling along songlines and singing Country ◊ Overbridge safety screens - 6 screens helping to tell the Great Emu story ◊ Wall panelling at the Elizabeth Drive Airport Access Road interchange to be embedded with indigenous language and storytelling ◊ Indigenous planting from the Western Sydney Aboriginal seasons calendar to be incorporated within the alignment, in particular at interpretation nodes.
Opp-10	Explore opportunities to activate and connect fragmented areas of Western Sydney Parklands through the introduction of additional pedestrian, cyclists and recreational infrastructure.	TfNSW is working with Western Sydney Parklands to assist in delivering the Mirror Dam Cycleway between Range Road and the M7 Motorway. This work sits outside the scope of the M12 project and will be delivered by Western Sydney Parklands.

1.11 STAKEHOLDER AND COMMUNITY CONSULTATION

This Plan, the Place Design and Landscape Plan (PDLP), and the series of illustrations and artist impressions have been prepared for the purposes of public display and feedback.

The place, design and landscape features included in the PDLP have been developed after extensive consultation with key stakeholders on the concept design, during refinement of the design and the Environmental Impact Statement and Amendment Report exhibitions to understand and address community concerns and questions.

During public exhibition, further consultation was undertaken with relevant councils, Western Sydney Parklands Trust, Heritage NSW, the community, and affected landowners and businesses. TfNSW recognises the diverse consultation and information needs of the community and stakeholders committed to a robust plan of consultation which was inclusive and participative in nature.

Due to the ongoing COVID-19 restrictions and following NSW Government health advice, traditional face-to-face consultation methods including information sessions were replaced with virtual engagement methods using digital communication channels. Every effort was made to accommodate the needs of stakeholders and the community to ensure information is relayed in a timely and comprehensible way.

Following the public display and consultation period, feedback received was reviewed and responded to in a Submissions Report (Appendix H).

CONSULTATION TO DATE

Key stakeholders have been consulted through a series of briefings and workshops at various stages of the M12 project development, attended by design teams as well as TfNSW representatives. Further discussion and consultation has also occurred during the development of the PDLP.

At the time of the release of the PDLP for public exhibition, the following stakeholders had been consulted with:

- Penrith City Council
- Fairfield City Council
- Heritage NSW
- Western Sydney International Airport
- Registered Aboriginal Parties for the project and the local Aboriginal community
- TfNSW Urban Design Review Panel including independent practitioners (refer to the following section)

The following stakeholders either declined or did not respond to consultation offers:

- Liverpool City Council
- Western Sydney Parklands Trust

PUBLIC EXHIBITION AND COMMUNITY CONSULTATION

Exhibition of the PDLP for public comment was undertaken in November 2021 for 28 days.

To promote the exhibition and to enhance stakeholder and the community understanding of the PDLP, a comprehensive program of engagement activities was undertaken including:

- The PDLP made available on the Transport for NSW M12 Project website
- A dedicated PDLP page on the M12 Motorway project portal
- A PDLP virtual engagement room housing all documents, videos, images and an interactive map
- A PDLP Community Guide sent to residents along the M12 project
- Social media campaign to drive awareness and generate interest in the PDLP
- Electronic copies of the PDLP sent to key stakeholders
- Electronic copies provided to the UDRP members for review and comment
- Virtual presentations with key stakeholder groups
- Two virtual information sessions with the community

RESPONSES TO PDLP CONSULTATION

Following exhibition, submissions and feedback received were reviewed and responses have been prepared for inclusion in the final PDLP. A summary of all consultation undertaken during public exhibition is also included in the PDLP.

1.12 DESIGN REVIEW PANEL

An Urban Design Review Panel (UDRP) has been established to provide advice and guidance during detailed design and the preparation of the Place Design and Landscape Plan and its component sub-plans as required by Planning Approval conditions E68-E70, respectively. Prior to receiving this condition, TfNSW established its own panel, which was then amended to meet the specific condition requirements.

The UDRP provided advice in relation to architecture, heritage values, urban and landscape design and artistic aspects of the SSI and were required to be independent and qualified practitioners in the following fields (practitioners may cover more than one field if suitably qualified):

- ◊ Public art / cultural interpretation public art
- ◊ Aboriginal cultural heritage
- ◊ European cultural heritage
- ◊ Landscape architecture
- ◊ M12 shared path.

At the time of release of this PDLP for public display, presentation and review sessions had been undertaken on the following dates:

- ◊ 11th December 2020 (TfNSW UDRP)
- ◊ 13th October 2021 (UDRP)

UDRP actions and recommendations were made during meetings. Approval for design panel practitioners was received from DPE 14 September 2021. The PDLP was also issued to the UDRP for review and comment.

OUTCOMES OF DESIGN REVIEW PROCESS

The panel at an initial meeting indicated general overall positive response and support for the project including

- ◊ Principles and objectives established during the EIS, including the connection to country
- ◊ the development of the project since the EIS submission
- ◊ the modification to the alignment through the Western Sydney parallel to Elizabeth Drive rather than through the centre of the planned Southern Parklands Precinct of the Western Sydney Parklands

Comments from the panel stressed the importance of the following which are part of the design illustrated in the PDLP or taken forward for elements whose design has not commenced

- ◊ Ensuring sufficient space for vegetation against planned built form
- ◊ Ensuring that by mitigating wildlife strike risk a sufficient amount of canopy is still able to be provided
- ◊ Ensuring that where possible steeper batters are able to be flattened
- ◊ Ensuring width of shared user paths meets a suitable standard
- ◊ Ensuring off-line sections of path do not create a CPTED issue
- ◊ Ensuring architectural resolution of structures, furniture and fixtures continues to reflect their prominence in the public domain
- ◊ Supporting the approach to noise mitigation
- ◊ Supporting the overall approach to interpretation
- ◊ Noting that the success of the artwork program will be realised through good attention to detail and three-dimensional resolution throughout detailed design and fabrication.

At the subsequent meeting the panel continued to indicate an overall positive response to the broad urban design direction of the project. Comments from the panel related to

- ◊ Ensuring detailed resolution around the pieces of artwork still conveys their intent
- ◊ Ensuring interpretive material supports the artworks so their meaning is able to be understood more fully by those wish to seek out additional material.

The Panel will continue to review additional material as it develops, outside the PDLP process as the nature of this exercise is more detailed than is covered in the PDLP.

Aerial view east over Kemps Creek

Sydney University Farms site

2 CONTEXTUAL ANALYSIS

The M12 Motorway will extend in an east-west direction, re-shaping the way people move through Sydney and generating urban renewal opportunities along the way. It will provide the critical link between neighbouring existing projects such as Elizabeth Drive and The Northern Road to future projects such as Western Sydney International Airport, Sydney Metro Western Sydney Airport and the Aerotropolis. While the character varies along the route, the Project will be sensitively integrated into the built and natural environments to reconnect and strengthen local communities and enhance the form, function, character and liveability of Sydney.

A contextual analysis of the route and environs has been completed. The purpose of this section of the report is to:

- ◊ Consider the route for the M12 Motorway and the surrounding local, environmental and landscape context of the project.
- ◊ Describe existing site conditions.
- ◊ Consider key natural, built and community elements and issues that will be addressed in the detailed design phase of the project.

The chapter will outline the existing conditions of and surrounding the M12 corridor as well as the planned and existing projects in that will join and interact with the Project, with the following natural, built and community contexts examined:

- ◊ Existing landscape features, land uses & conditions
- ◊ Topography
- ◊ Landscape Character Zones
- ◊ Hydrology
- ◊ Soil
- ◊ Existing land-use
- ◊ Future land-use
- ◊ Native vegetation
- ◊ Aboriginal heritage
- ◊ Non-Aboriginal heritage
- ◊ Open space connectivity.

Aerial view south over Airport Interchange location towards Elizabeth Drive and the location of the Western Sydney International Airport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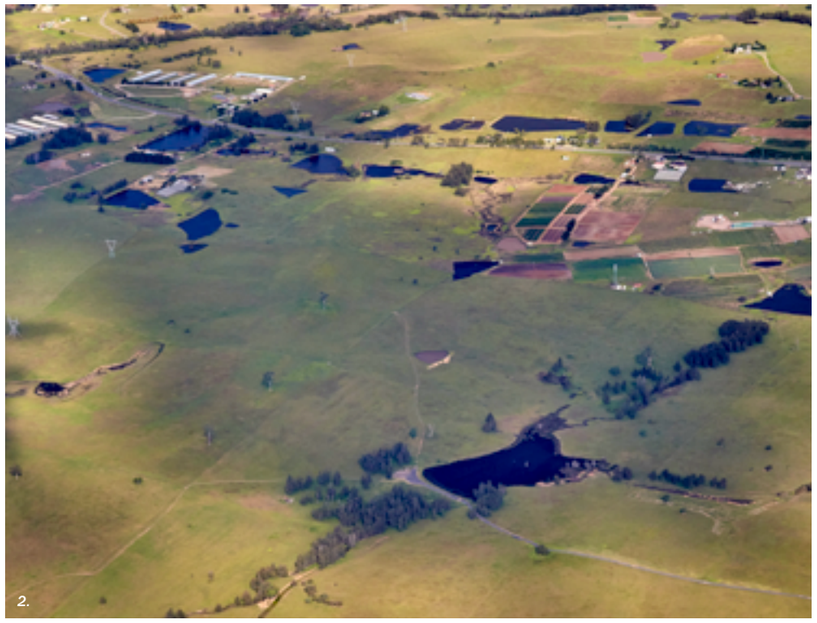
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Images:

1. Remnant Cumberland Plain Woodlands and swamps adjacent to Brandown Quarries
2. Aerial view over plains landscape character zone
3. Western panoramic views to the Blue Mountains
4. Roadside produce vendors along The Northern Road
5. Residential housing typically located in low-lying areas between ridge lines in Cecil Hills
6. View north along Luddenham Road
7. Rural/commercial frontages along Mamre Road
8. Remnant Cumberland Plain Woodlands in the Western Sydney Parklands
9. South Creek
10. Aerial view over Mount Vernon
11. Badgerys Creek
12. View south adjacent to engineered cuttings and embankments with limited vegetation along M7 Motorway.

2.1 EXISTING LANDSCAPE FEATURES, LAND USES & CONDITIONS

The existing landscape features, land uses and conditions vary greatly from across its length. The key features are summarised in the diagram below and described in more detail in the following sections of the report.

The analysis has assisted the development of the detailed design packages and an overall urban design response that is of its place.

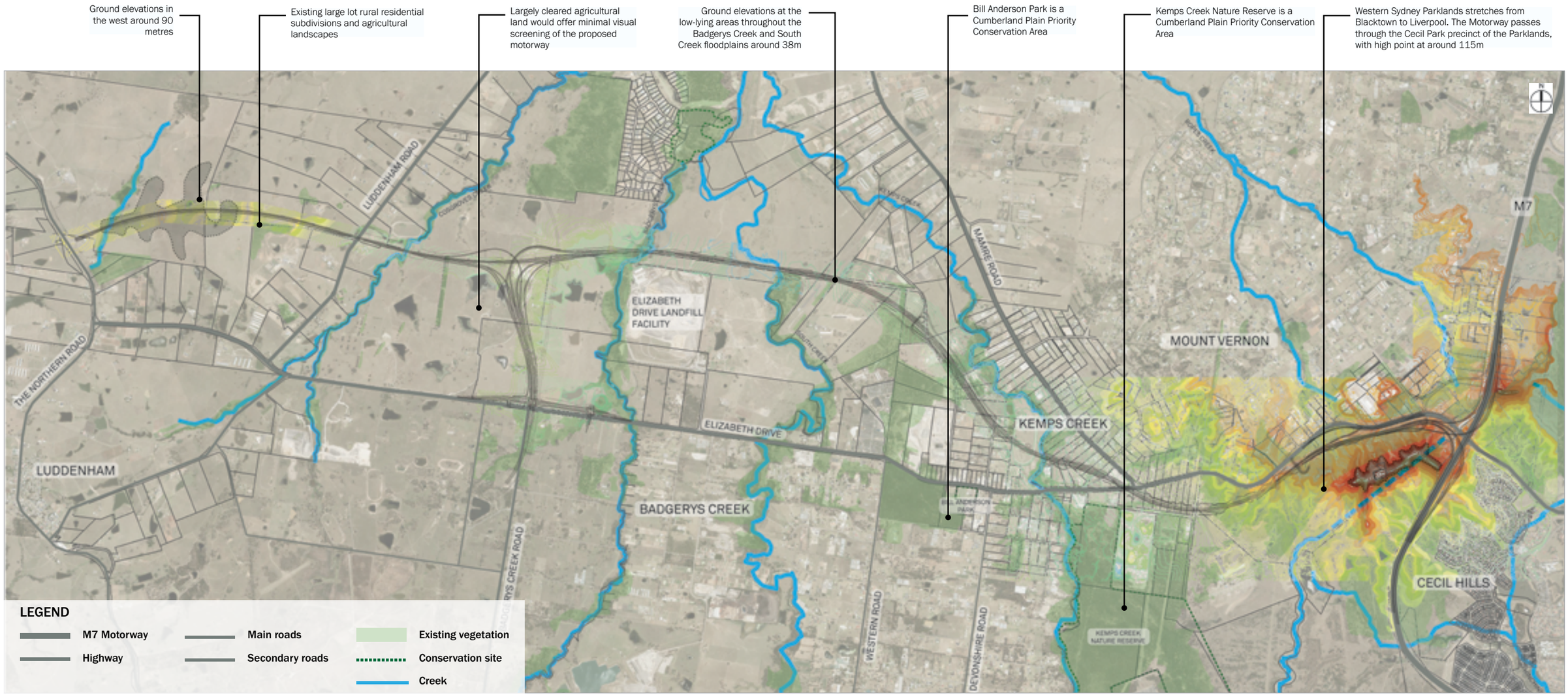

Figure 5. Contextual analysis - Corridor features - Not to scale

2.2 TOPOGRAPHY

Across the study area the landscape is generally that of the Cumberland Plain, with low lying areas around creek lines, and undulating topography between. From west to east, the study area transitions from gentle undulations and low lying areas across the western section, before a steep transition through Western Sydney Parklands near Cecil Hills.

The topography of the study area may be characterised into three general terrain types as follow:

- ◊ Rolling hills terrain, which occurs in the western and eastern portions of the proposed alignment
- ◊ Flat to gently undulating terrain, which occurs in the central portion of the alignment
- ◊ Creek channels/alluvial floodplain terrain, which dissects the flat to gently undulating terrain within the central portion of the alignment.

Within the rolling hills terrain, the topography typically comprises picturesque, rounded hills with slopes. The hills gently climb towards The Northern Road ridge line, which allows for panoramic views in all directions.

The topography of the flat to gently undulating terrain typically comprises gentle rises and undulations with broad rounded crests with slopes.

A number of creeks (Cosgroves Creek, Badgerys Creek, South Creek, Kemps Creek and Ropes Creek), dissect the terrain, with each creek flowing to the north.

The topography of the alluvial floodplains adjacent to the creeks comprises low slopes which extend from the creek channels out to a maximum distance of about 500 metres.

Toward the eastern end of the study area, through Cecil Hills and Western Sydney Parklands, the terrain comprises a distinctive set of elevated ridges, wooded hills and slopes, that climb to peaks of approximately RL 115 metres Australian Height Datum (AHD). There a multiple vantage points that follow the ridge line which offer panoramic views across the study area.

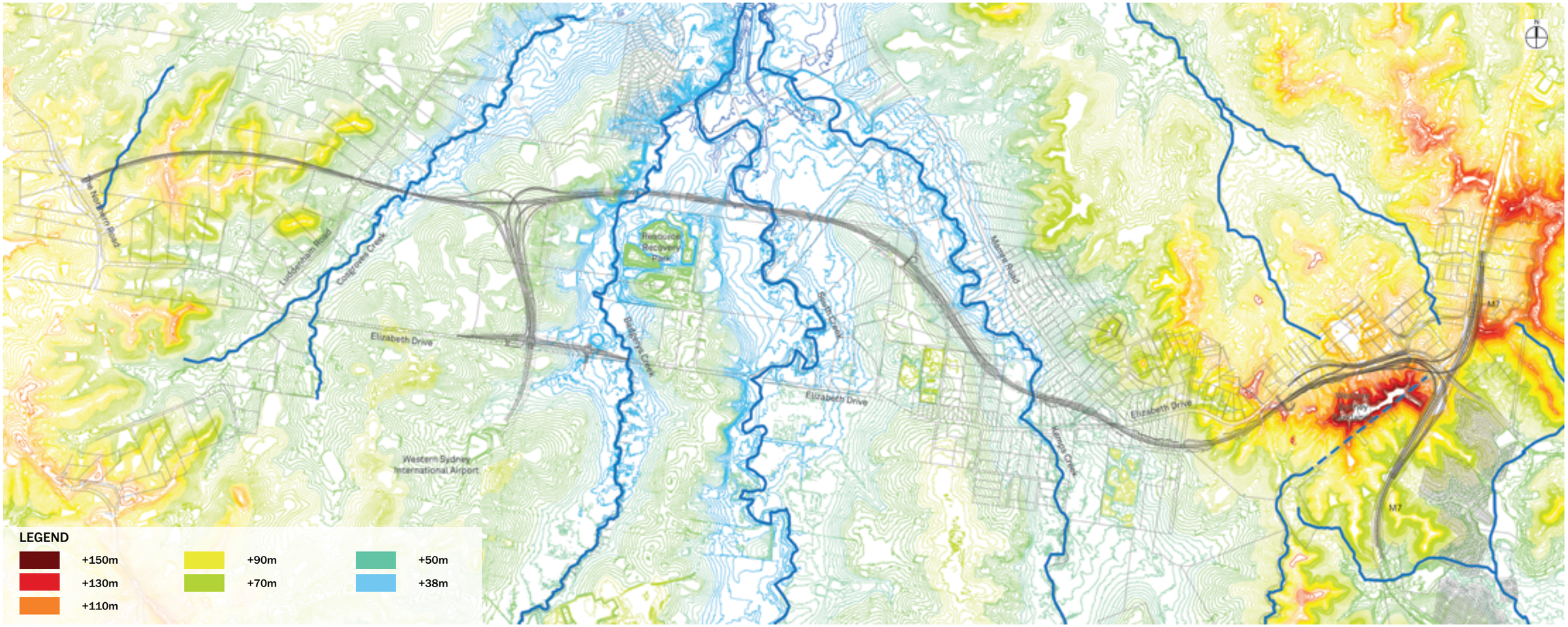

Figure 6. Contextual analysis - Topography - Not to scale

2.3 LANDSCAPE CHARACTER ZONES

Topography, soils, native vegetation, landscape vegetation typologies and human intervention in the landscape are all factors that have helped to define each character zone. Therefore, future planting choices must celebrate the unique elements of each character zone so traces of this landscape can remain long into the future.

The Project has been broadly broken down into three main zones to summarise the LCZ's identifies in the EIS. These zones are listed below and shown in the diagram below.

The character zones can be broken down into further sub-zones:

- ◊ The Rolling Hills
  - LCZ1 - The Northern Road ridge line
  - LCZ2 - Luddenham rolling hills
- ◊ The Plains
  - LCZ3- Rural plains
  - LCZ4- Kemps Creek
  - LCZ5- Rural residential
- ◊ The Ridgetop
  - LCZ6- Ridgetop woodlands
  - LCZ7-M7 Motorway
  - LCZ8- Cecil Hills residential.

Figure 7. Contextual analysis - Landscape character zones - Not to scale

2.4 HYDROLOGY

The broader landscape of the area has been shaped by the watercourses that flow from south to north into the Nepean River.

The following watercourses run through the study area:

- ◊ Cosgroves Creek
- ◊ Badgerys Creek
- ◊ South Creek
- ◊ Kemps Creek
- ◊ Ropes Creek
- ◊ Hinchinbrook Creek.

The main catchment within the study area is South Creek, which is listed as a sub-catchment of the Hawkesbury-Nepean system, with the other main creeks throughout the study area of Cosgroves Creek, Badgerys Creek and Kemps Creek. These creek systems eventually drain into South Creek further north of the project.

The South Creek Catchment is currently regarded as one of the most seriously degraded sub-catchments in the Sydney Region, largely due to long term clearing of vegetation and increased impervious areas due to urbanisation.

The creeks within the study area are all subject to flooding and generally have wide and relatively flat floodplains. Flooding extents will dictate much of the Motorway landform, structures, drainage, vegetation as well as the placement of paths and footbridges along the study area.

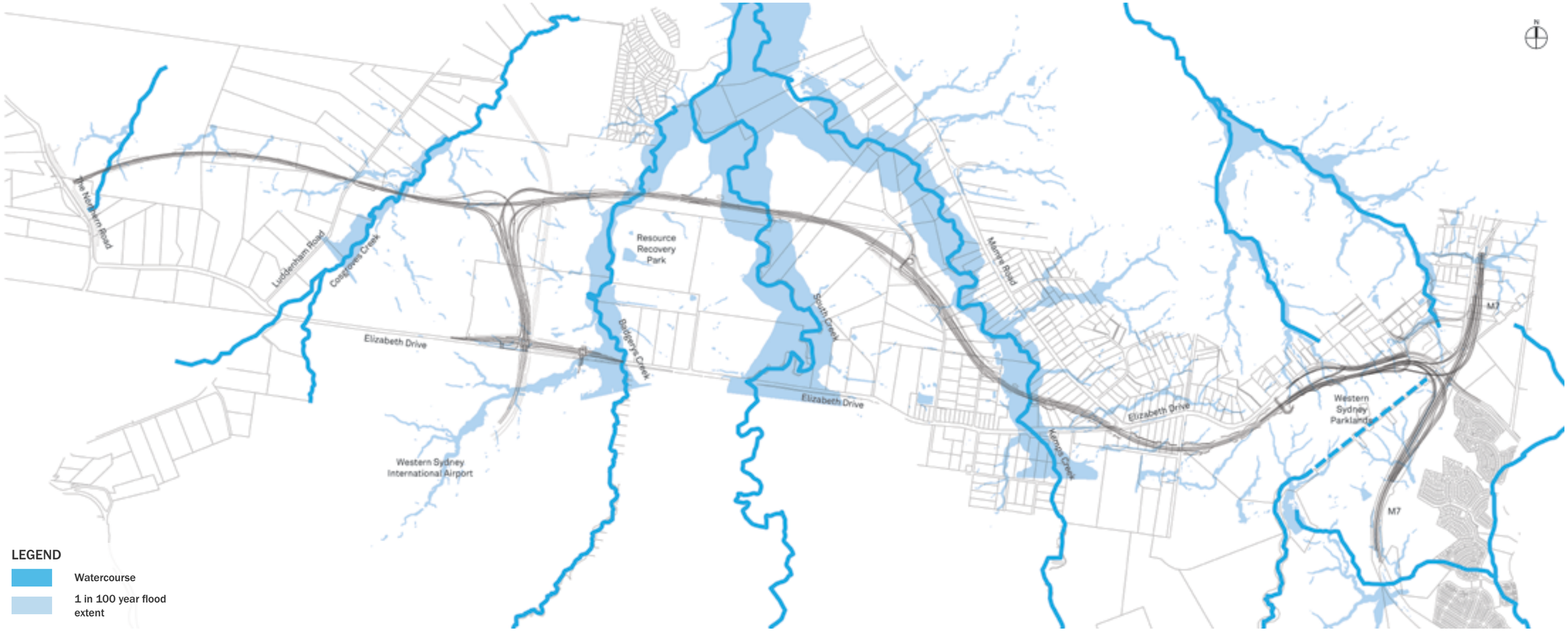

Figure 8. Contextual analysis - Hydrology / Flooding - Not to scale

2.5 SOIL

The study area is located on the Cumberland Plain, a relatively flat, low lying subregion of the Sydney Basin. The Cumberland Plain is a depression characterised by Wianamatta shales with interleaved Minchinbury sandstone. Weathering has given rise to a topography of flats and rolling hills. The Cumberland Plain is surrounded by the elevated Hawkesbury Sandstone ridges of the Blue Mountains, Hornsby Plateau and Woronora Plateau.

The Soils and Contaminations Assessment Report (Appendix O of the M12 EIS) identifies the following soil landscapes:

- South Creek: Fluvial deposits which are located along all four creek channels
- Blacktown: Residual soils which are located in the flat to gently undulating terrain between creek channels
- Luddenham: Residual soils which are located on the low rolling hills at both ends of the alignment
- Picton: Residual and colluvial soils located at the eastern end of the project.

The location and extent of each soil landscape is closely related to surface landform and topography.

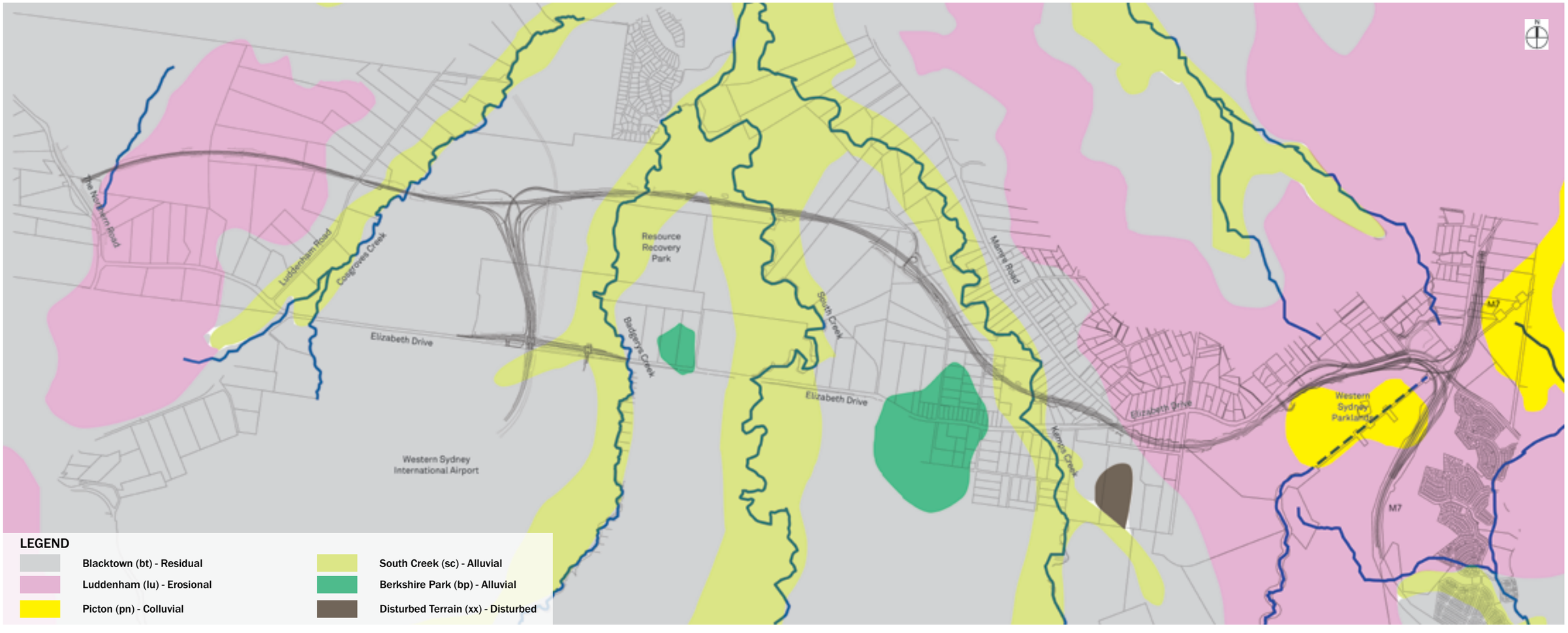

Figure 9. Contextual analysis - Soil - Not to scale

2.6 EXISTING LAND-USE

Land use patterns vary quite considerably across the study area, generally consisting of agriculture, residential, parklands, educational, rural and agricultural facilities or services such as quarries, waste management centres or nurseries.

Throughout the study area, much of the native vegetation has been cleared, generally for agriculture and more recently for development or housing.

Land use patterns are clearly defined by topographical features such as creek lines, hills and plains. From the east, Cecil Hills and Mount Vernon contain the highest proportion of residential properties. The flood plains, historically attributed as less desirable land, contain the highest proportion of commercial and industrial uses. Towards The Northern Road in the west, land uses are mostly attributed with rural and agricultural lands.

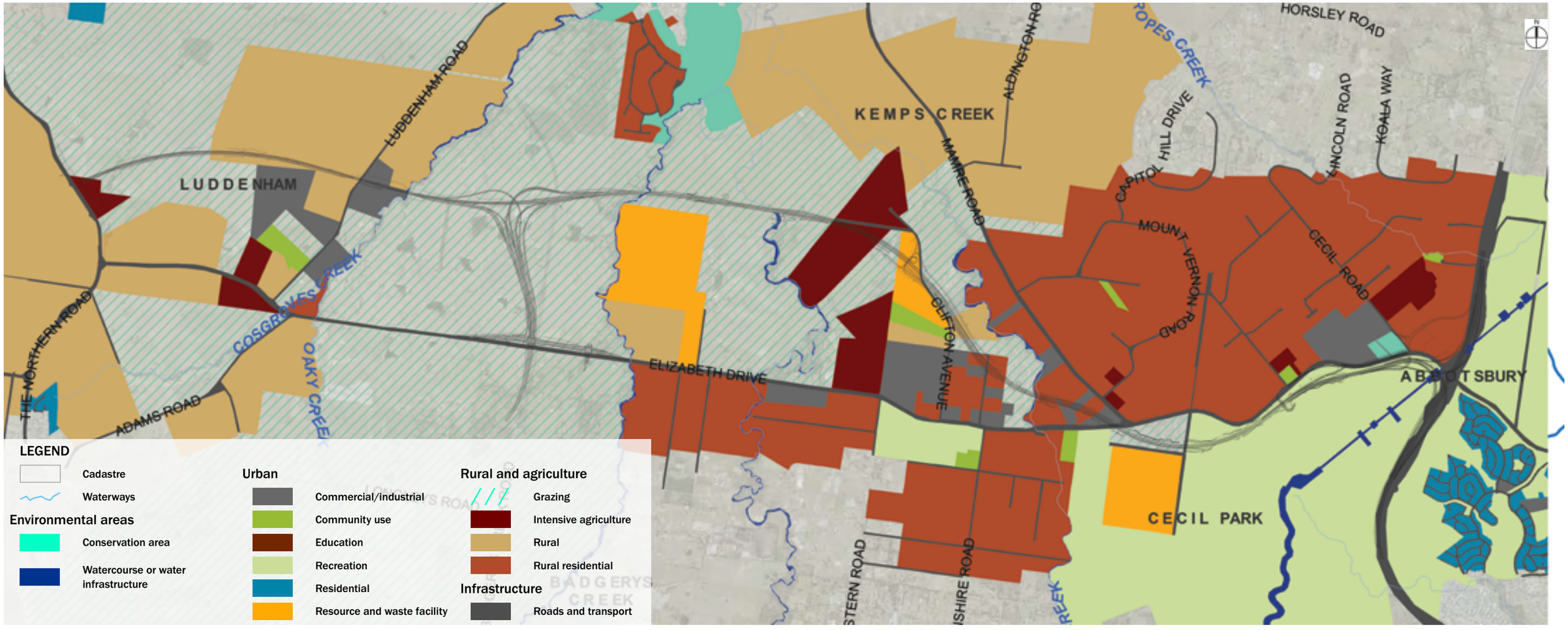

Figure 10. Contextual analysis - Existing Land-use - Not to scale

2.7 LAND-USE CHANGE

Across western Sydney, land use is rapidly changing to accommodate a growing population.

The project study area sits within the South West Growth Area, which will accommodate much of Greater Western Sydney's future housing and employment needs. These growth areas will provide better access to employment, infrastructure and services.

Existing land use across the rural and rural residential landscapes of the project area will change in response to the planned Western Sydney International Airport and the commercial, industrial and employment needs that will be required to support the Western Sydney International Airport.

Following the release of the Western Sydney Aerotropolis Plan (2019) and subsequent planning exercises, the Western Sydney Aerotropolis precincts and land zoning is a fundamental consideration of urban design concept for the project. The plan still identifies the project as the main entry point for the Western Sydney International Airport and surrounding development.

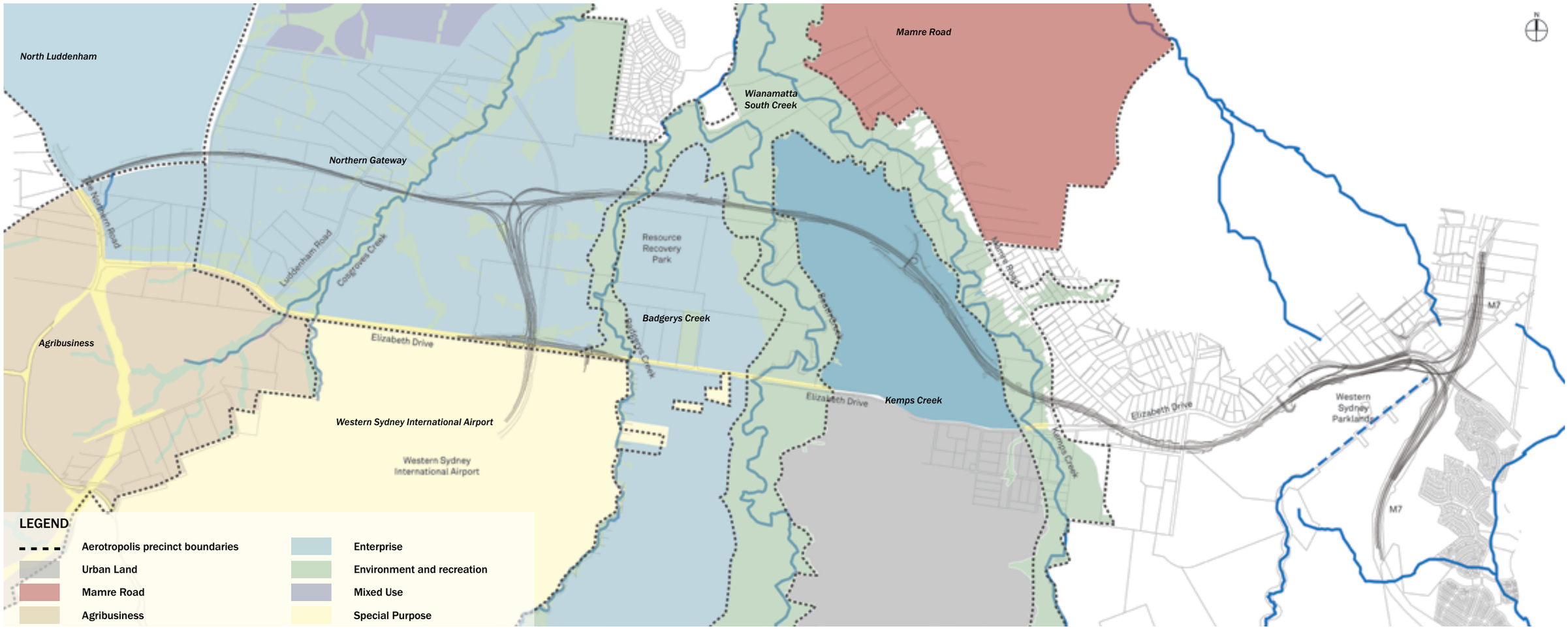

Figure 11. Contextual analysis - Future Land-use - Not to scale

2.8 NATIVE VEGETATION

Much of the endemic vegetation throughout the project area has been cleared and removed, generally for agricultural pursuits and then urban development.

Although much of the remaining vegetation is fragmented, these pockets do make a significant contribution to the scale and character of the study area as illustrated in the adjacent figure.

Cumberland Plain woodland is the dominant vegetation community, and includes 'Shale Hills Woodland, Shale Plains Woodland, Spotted Gum Forest, Grey Box Woodland and Grey Box / Ironbark Woodland'.

Several other ecological communities listed under the Biodiversity Conservation Act 2016 may integrate with Cumberland Plain Woodland. These include Cooks River/ Castlereagh Ironbark Forest Moist Shale Woodland Shale / Sandstone Transition Forest and Shale Gravel Transition Forest.

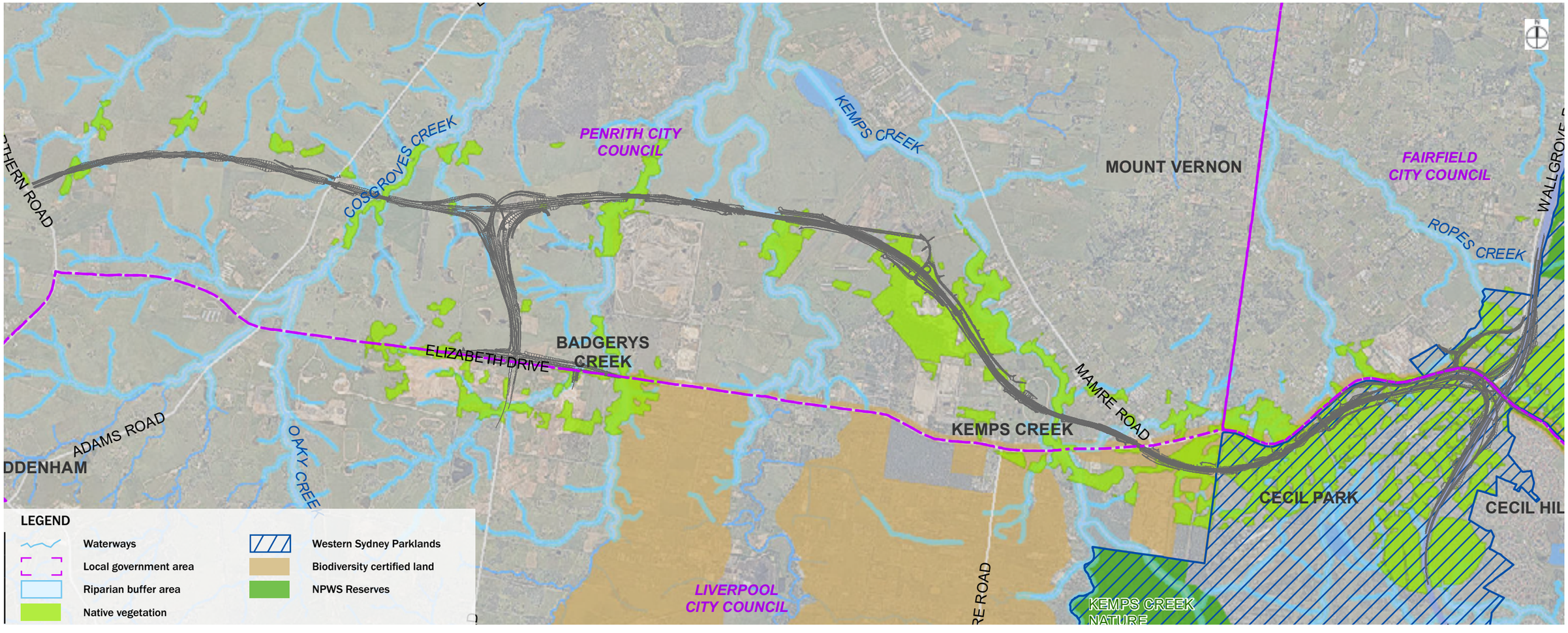

Figure 12. Contextual analysis - Native vegetation - Not to scale

2.9 ABORIGINAL HERITAGE

The project will be on the land of the Mulgoa, Cabrogal and Cannemegal of the Darug (Dharug, Daruk) language group. It will pass through the Deerubbin Local Aboriginal Land Council (LALC) area and the northern boundary of Gandangara LALC. The project study area was traditionally the cornerstone of the three cultural groups from the area; Darug, Dharawal and Gandangara, and was a place where these groups would come together for ceremony. Aboriginal people lived a fluid, resilient existence.

The study area has a 40,000-year history; it is a freshwater place; and the Country is on red silcrete foundations. The Darug Nation are custodians of the land, comprising 35 clans and five to six kin groups within each clan.

Aboriginal stories form part of this place and they live within the land and people. They are layered, nuanced and weave a tapestry of history and social information. They draw on Songlines that were once intimately known by Aboriginal people in the area.

Of key relevance, the area is heavily interspersed with creek systems. These creeks have emerged as a key Aboriginal theme of the area. They are freshwater places which are associated with local learning and feature in local stories. The creek systems provide a wealth of resources, ranging from food and medicine through to construction materials.

The Aboriginal Cultural Heritage Assessment Report (ACHAR) has identified four major landscape types for the purpose of investigating the Aboriginal cultural heritage values in the area. The landscape types are directly related to the varying topography along the project footprint. These are:

- ◊ Luddenham rolling hills - are an area of slightly higher relief in the west
- ◊ Cecil Hills - a distinctive set of elevated ridges in the east
- ◊ Creek Flats - flat to gently undulating terrain in the central part of the study area
- ◊ Gentle Slopes - landscape concentrated along the borders of the creek valleys.

DESIGN OPPORTUNITIES

The project presents opportunities to work with local Aboriginal communities, discover the inherent associative cultural values associated and explore how these could relate to the identity of place, then potentially identify key heritage sites for interpretation and develop an integrated art strategy that is reflective of Sydney's Aboriginal heritage and identity.

Balarinji, on behalf of TfNSW, has consulted with the local Aboriginal community as part of the design process, identifying key interpretive themes and an art strategy across the project. This is described further in the Appendices of this PDLP.

The project vision of 'Connection to Country' would seek to embed key interpretive themes into the project through the use of integrated art and approaches the plant selection.

2.10 NON-ABORIGINAL HERITAGE

The non-Aboriginal Heritage Assessment has identified the following registered or identified heritage sites considered to occur within the study area. These are:

- ◊ Item 1: McGarvie Smith Farm
- ◊ Item 2: Fleurs Radio Telescope
- ◊ Item 3: Luddenham Road Alignment
- ◊ Item 4: Upper Canal System (Pheasants Nest Weir to Prospect Reservoir)
- ◊ Item 6: McMaster's Field Station/McMaster's Farm
- ◊ Item 7: Fleurs Aerodrome
- ◊ Item 8: Cecil Park School, Post Office and School Church
- ◊ Item 10: Exeter Farm Archaeological Site
- ◊ Item 12: South, Kemps and Badgerys Creek Confluence Weirs Scenic Landscape

In addition, the non-Aboriginal heritage assessment considered the following four sites for potential heritage significance:

- ◊ Item 5: South Creek Bridge
- ◊ Item 9: Karingal
- ◊ Item 11: Artefact Scatter
- ◊ Item 13: Former Cecil Park Public Hall

Following assessment against criteria, these sites were considered to not hold any heritage significance.

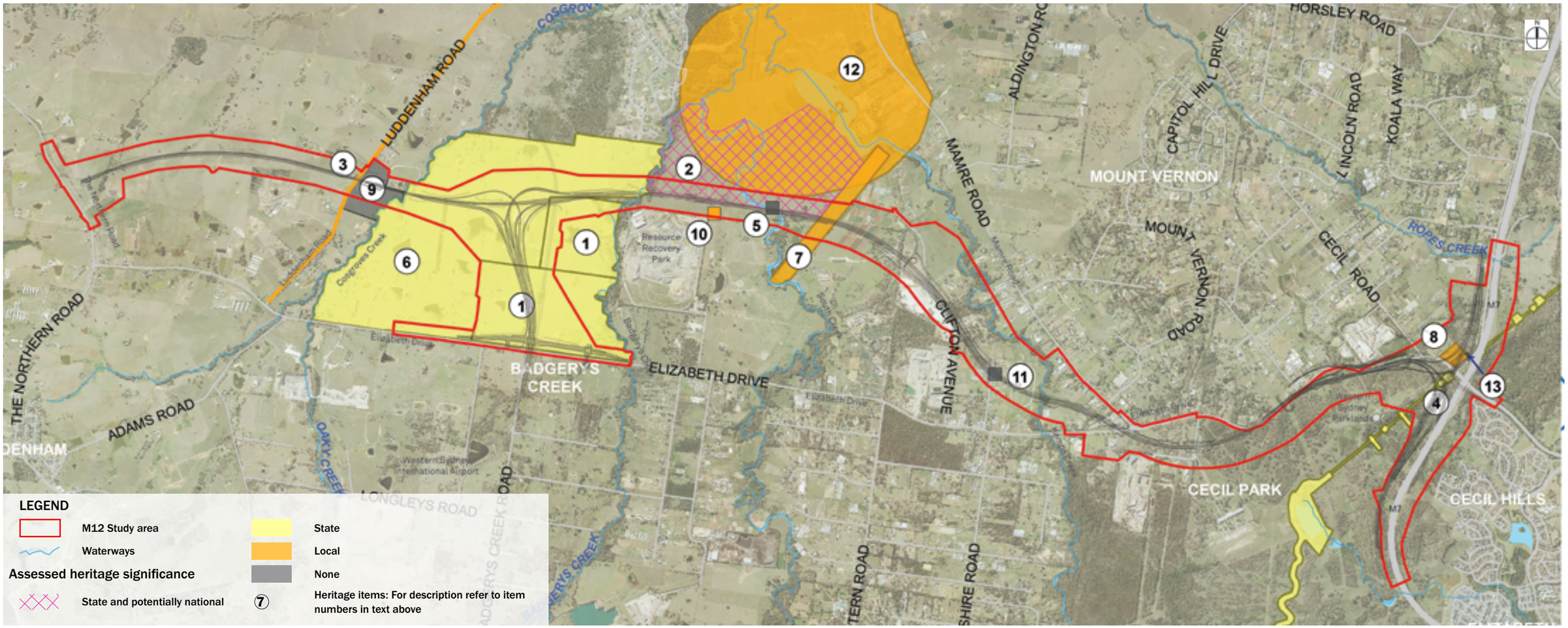

Figure 13. Contextual analysis - Non Aboriginal Heritage - Not to scale

2.11 OPEN SPACE CONNECTIVITY

EXISTING CONNECTIVITY

Within the study area, the Project will provide a clear east-west connection through the future Aerotropolis precinct, with care taken to preserve and enhance the north-south connections along the creek corridors. The Project will also tie-in with existing shared path networks along The Northern Road and M7 corridors.

WESTERN SYDNEY PARKLANDS

To the east of the Project sits Western Sydney Parklands, a crucial piece of open space for connecting the wider region of the western suburbs. The Project will provide access to the Parklands, and create a shared path connection known as Mirror Dam cycleway, that will connect it to other future sites as the region develops.

Figure 14. Contextual analysis - Connectivity - Not to scale

Aerial view east from The Northern Road at the proposed intersection with the M12 Motorway

Sydney University Farms site