



# Alexandria to Moore Park Project — Stage 1

Urban Design & Landscape Strategy and Visual Impact Assessment

November 2019

# Alexandria to Moore Park Project - Stage 1 Urban Design Landscape Character and Visual Impact Assessment

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Prepared for

## Roads and Maritime Services NSW

By

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# 01 Introduction

## 1.1 Introduction

Roads and Maritime Services (Roads and Maritime) propose to upgrade four intersections and introduce clearways between the Euston Road/Maddox Street intersection in Alexandria and the Anzac Parade, Alison Road and Dacey Avenue intersection in Moore Park (the proposal). The proposal is located about three kilometres south of the central business district (CBD) in the suburbs of Alexandria, Waterloo, Moore Park within the City of Sydney local government area (LGA).

The proposal consists of:

- New clearways on both sides of Euston Road and McEvoy Street between Maddox Street and Bourke Street from 6:00am to 7:00pm Monday to Friday and 9:00am to 6:00pm on weekends
- New clearways at all times along Lachlan Street and Dacey Avenue between Bourke Street and Anzac Parade
- Right turn bans at most intersections without traffic signals and a right turn ban into Bunnings from McEvoy Street
- Improving intersection capacity at:
  - Fountain Street and McEvoy Street
  - Botany Road and McEvoy Street
  - Elizabeth Street and McEvoy Street; and
  - South Dowling Street, Lachlan Street and Dacey Avenue
- Minor kerb adjustments at:
  - Stokes Avenue and McEvoy Street
  - Kensington Lane and McEvoy Street
- Landscaping adjustments and replacement tree planting where works are undertaken
- Relocation of utilities and adjustments to traffic signals and street lights
- Property acquisitions, leases and adjustments

- Temporary construction facilities, including site compounds and stockpile sites at:
  - The Roads and Maritime car park on the south-west corner of the McEvoy Street/Stokes Avenue intersection, Alexandria (Site 1)
  - Road reserve at the southern end of Cope Street, Alexandria (Site 2)
  - Road reserve at the southern end of George Street, Alexandria (Site 3)
  - The vacant land (Lot 2 DP800705) at the corner of intersection of McEvoy Street and Bourke Street, Waterloo (Site 4)
  - Lot 1, 2 and 3 DP 76985, Lot 4 DP 86722 and Lot 14 DP80926 on the west corner of the Lachlan Street/Amelia Street intersection, Waterloo (Site 5).

The proposal would be constructed in four construction zones centred around the four main intersections that are to be upgraded. This approach would minimise traffic impacts on residents and businesses. The duration of construction impacts within each of the four construction zones would typically be between 12 – 36 months. Construction is expected to commence in early 2020 and would take around 36 months to complete.

## 1.2 Purpose & Scope of this Report

This Urban Design & Landscape Strategy, Landscape Character and Visual Impact Assessment has been prepared for Roads and Maritime by CONTEXT in October 2019 to assist with the upgrade of 4 intersections and introduce clearways between Euston Road/Maddox Street intersection in Alexandria and the Anzac Parade, Alison Road and Dacey Ave intersection in Moore Park. CONTEXT has worked in collaboration with Roads and Maritime's infrastructure development team, Roads and Maritime's Centre for Urban Design as well as specialist engineering and traffic consultants ARUP (the project team) with key Stage 1 detailed specific intersections at Fountain Street, Botany Road, Elizabeth Street with McEvoy Street and South Dowling Street with Lachlan Street.

The purpose of this report is to inform the development

of the concept design by analysing the study area, summarising the natural and built contextual qualities of the project.

## 1.3 Methodology

This design concept has been an iterative process in which urban design opportunities and constraints were integrated with the development of the road design in collaboration with the project team.

The process has involved:

- Site visits and photographic record of the study area, its landscape character and visual qualities
- Desktop review of relevant planning policies and procedures relating to the study area and its immediate and regional context
- Analysis of the study area and surrounding landscape including the built and natural qualities of the area
- Analysis of the study area's landscape character
- Development of urban design principles and an urban design concept
- Assessment of road design concept for the proposed upgrade, including various design options.
- Undertaking the Visual impact assessment for the project. The methodology follows the EIA Guideline for the Visual Impact Assessment.

This process has occurred in collaboration with the project team with the aim of achieving an integrated urban design and engineering outcome that realises the physical design outcomes described in Roads and Maritime's urban design policy.

## 1.4 Report Structure

The structure of this Stage 1 report reflects the design process adopted in collaboration with the project team to achieve an integrated engineering and urban design outcome.

This report is presented in the following sections:

**Section 01 Introduction** presents the background to the project, purpose and scope of this report




**Section 02 Landscape Analysis** provides an analysis of the project sites and its context.

**Section 03 Design Concept** presents the urban design drawings (including plans) and outlines relevant urban design principles that can be applied in each of the four road intersections segments of the project.

**Section 04 Visual Impact Assessment** outlines the potential visual impact the Stage 1 proposal might have, viewed from a series of different viewpoints.

**Section 05 References** lists all relevant references used in this report.

### LEGEND

-  Euston Street to McEvoy Street
-  Lachlan Street intersection with South Dowling Street
-  Street intersection upgrade sites
- Urban Renewal Precincts:
  - 1 Eveleigh Precinct (planning phase)
  - 2 Waterloo Precinct Interface (planning phase)
  - 3 Redfern Estate (planning phase)
  - 4 Lachlan Precinct Interface (2018)
  - 5 Green Square Town Centre (under development)
  - 6 Ashmore Precinct (under development)
  - 7 Northern Investigation Area (planning phase)
  - 8 Epsom Park (completed 2024)

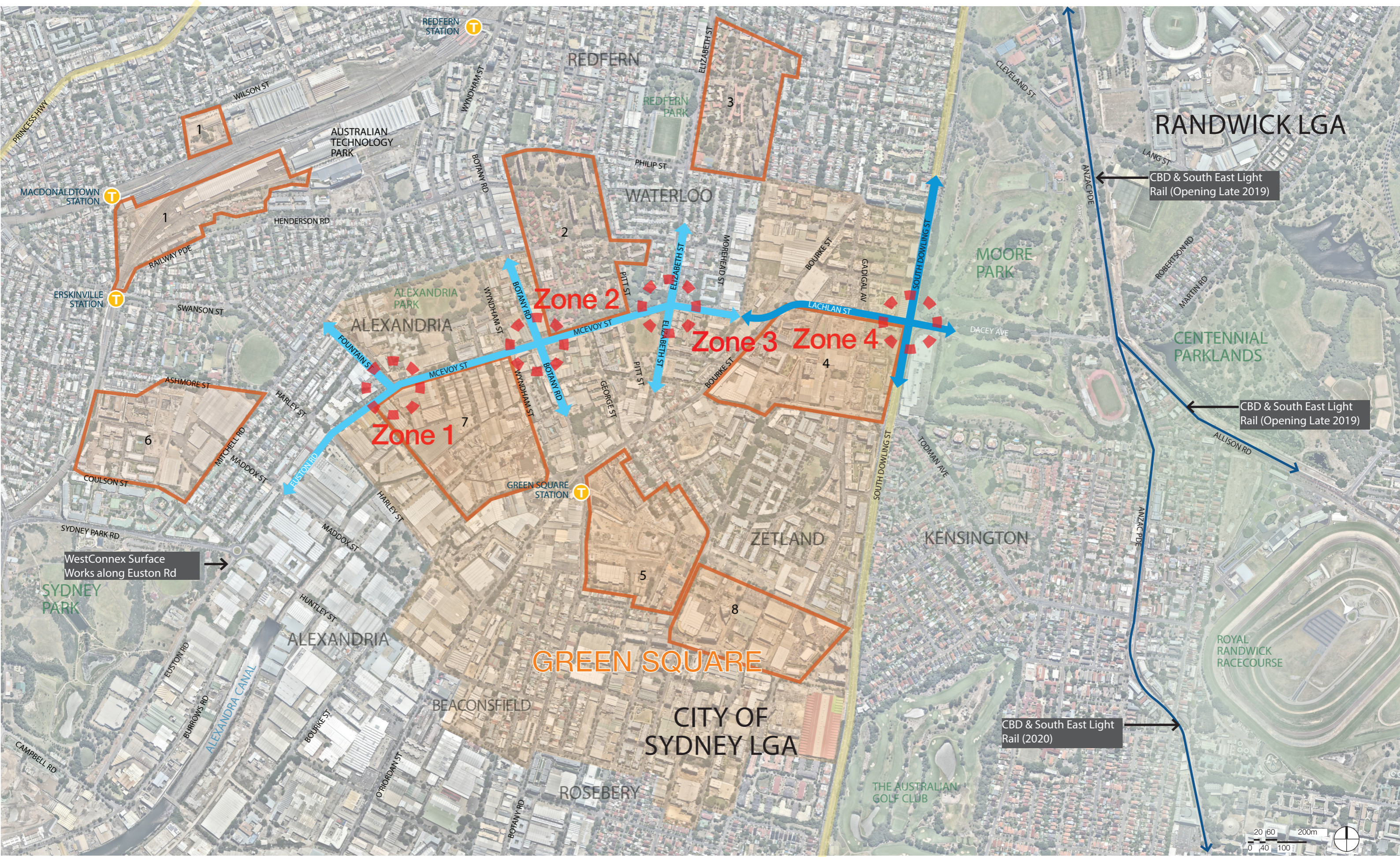


Figure 1-1. Alexandria to Moore Park Project (A2MP) Overview Map - Stage 1.

# 02 Landscape Analysis

## 2.1 Local Context

The main elements of the local context in which the Project is situated are:

### Sydney Park

Built on the former St Peters tip and brick works site, Sydney Park is located in St Peters, on the fringes of the city south. The 40 hectares of open space is made up of grass areas, playing fields, gardens, meandering pathways and picturesque wetlands. The Sydney Park brick kilns and chimneys have great cultural and historical importance.

### Waterloo Park

Waterloo Park is divided by McEvoy Street at the junction of Elizabeth Street. The southern portion with playing fields and skate park is known as Waterloo Oval. The northern portion of the park is characterised by informal sloping gardens and lawn, which is considered the actual 'Waterloo Park'. Given its proximity to larger parks including Redfern Park, Centennial and Moore Parks and Sydney Park, Waterloo Park is a peaceful park within the inner suburbs.

### Alexandra Canal

While south of the Project area, the Alexandra Canal is a future revitalised green corridor extending from Botany Bay and the Cooks River and part of a network connecting the open spaces of Sydney Park and other new small parks proposed as part of the Green Square Urban Renewal and Lachlan Street precinct. Ultimately a linked network could extend to Centennial Parklands, increasing access to open space and promote urban greening as proposed by the Green Grid, Creating Sydney's Open Space Network NSW Government Architect's Office.

## 2.2 Heritage

### Aboriginal Heritage

Historically the Project area was a series of freshwater swamps, salt marshes and creeks which were dominated by paperbarks in the swampy areas and Eastern Suburbs Banksia Scrub in the drier areas. The area was rich in animal life and was a valuable hunting ground for the local Gadigal people of the Eora nation who occupied the area for thousands of years. A complex network of pathways facilitated the frequent travel between Botany Bay and Sydney Harbour and it is likely that many of the early roads followed these pathways.

### European Heritage

The heritage items in close proximity to the specific sites. Of these items Moore Park, Moore Park Golf Course and the freestanding sandstone walls at Dacey Avenue would not be directly impacted by the project.

- Centennial Park, Moore Park Golf Course has State significance and Queens Park are listed on the State Heritage Register under the NSW Heritage Amendment Act 1988.
- Centennial Parklands is National Estate listed.
- Former Australian Glass Manufacturers Factory (c. 1940) Located on the corner of South Dowling Street and Lachlan Street
- Waterloo Pumping Station (c. 1923) Located on the corner of Bourke Street and Lachlan Street

## 2.3 Surrounding Land Use

### Green Square Urban Renewal Areas

West of South Dowling Street is Green Square which is developing into one of the fastest growing areas in Sydney and includes the suburbs of Beaconsfield and Zetland, and parts of Rosebery, Alexandria and Waterloo and would transform former industrial areas.

Green Square is divided into precincts with the Lachlan Precinct lying adjacent to South Dowling Street and Lachlan Streets and O'Dea Avenue. The landform at the north-eastern corner of the site changes from higher level land and drops to the low lying valley floors of O'Dea and Joynton Avenues.

Further Urban Renewal areas influencing the outcome of the Project and to which the Project should enable and improve connectivity are the Waterloo Estate Precinct, 600 Elizabeth Street, Redfern and the Northern Investigation Area which will drive the delivery of significant housing and generational social renewal of the area.

## 2.4 Urban Design Reference

Roads and Maritime currently has in place a series of design guideline documents and policy documents that aim to produce best practice design outcomes for road projects in NSW. Design guidelines that have been considered in the preparation of this report include:

- Beyond the Pavement (Roads and Maritime, 2014)
- Environmental Impact Assessment Practice Note – Guideline for Landscape Character and Visual Impact Assessment EIA-N04 (Roads and Maritime, 2018)
- Landscape Guideline (Roads and Maritime, 2018)
- Movement and Place Framework (Transport for NSW, 2017)

**Sydney Local Environmental Plan 2012**

**Land Zoning Map - Sheet LZN\_010**

- Zone**
- B1 Neighbourhood Centre
  - B2 Local Centre
  - B3 Commercial Core
  - B4 Mixed Use
  - B5 Business Development
  - B6 Enterprise Corridor
  - B7 Business Park
  - B8 Metropolitan Centre
  - IN1 General Industrial
  - R1 General Residential
  - R2 Low Density Residential
  - RE1 Public Recreation
  - SP1 Special Activities
  - SP2 Infrastructure
  - CW SREP 26 City West
  - DH Darling Harbour Development Plan No.1
  - GAHP Sydney LEP (Glebe Affordable Housing Project) 2011
  - GS1 Sydney LEP (Green Square Town Centre) 2013
  - GS2 Sydney LEP (Green Square Town Centre 2) 2013
  - GS21 Sydney LEP (Green Square Town Centre 2) 2013 & South Sydney LEP114
  - GS2P Sydney LEP (Green Square Town Centre 2) 2013 & Planning Scheme Ordinance
  - HP Sydney LEP (Harold Park) 2011
  - MD SEPP Major Development 2005
  - MPS SEPP 47 Moore Park Showground
  - SCRA Sydney Cove Redevelopment Authority Scheme
  - SHC SREP Sydney Harbour Catchment 2005
  - SLEP Sydney LEP 2005
  - SS South Sydney LEP 1998
  - WB SREP 16 Walsh Bay
- Cadastre**
- Cadastre 17/01/2015 © City Of Sydney

- LEGEND**
- LGA Boundary
  - A2MP Project intersection sites
  - State Heritage Register Building
  - LEP Item Building



Figure 2-1. Surrounding land use

- |   |   |   |   |   |  |  |
|---|---|---|---|---|--|--|
| <ul style="list-style-type: none"> <li>1 Water Board Pump House</li> <li>2 Industrial Building 'Frank G Spurway'</li> <li>3 Industrial Building 'Eclipse House'</li> <li>4 Warehouse</li> <li>5 Industrial Building</li> <li>6 Terrace Group Retreat Street</li> <li>7 Glenroy Hotel</li> </ul> | <ul style="list-style-type: none"> <li>8 Terrace Group Gorden Terrace</li> <li>9 Electrical Substation</li> <li>10 Waterloo Public School Group</li> <li>11 Our Lady of Mt Carmel Church &amp; School</li> <li>12 Waterloo Town Hall (Library)</li> <li>13 Commercial Building part of 'Federation Business Centre</li> </ul> | <ul style="list-style-type: none"> <li>14 Sydney Water Pumping Station &amp; Valve House</li> <li>15 Former ACI Grissell Building</li> <li>16 Former ACI Remnant Machinery</li> <li>17 Former ACI AGM Building</li> <li>18 Moore Park View Hotel</li> <li>19 Group of Art Deco Flat Buildings</li> <li>20 ES Marks Athletics Field</li> </ul> | <ul style="list-style-type: none"> <li>21 Relocated Toll House Fountain</li> <li>22 Freestanding sandstone wall on Dacey Avenue</li> <li>23 Two Storey Federation Duplex</li> <li>24 'Parkside' Federation Semi Detached Pair</li> <li>25 Robertson Road / Martin Road Residential Houses</li> <li>A House 'Dorchester'</li> <li>B House 'Elouera'</li> </ul> | <ul style="list-style-type: none"> <li>C House 'Warwick'</li> <li>D House 'New Court'</li> <li>E House 'Haurola'</li> <li>F House 'Camelot'</li> <li>G House 'Baltard'</li> <li>H House 'Meroo'</li> <li>I House 'St Austelle'</li> </ul> | <ul style="list-style-type: none"> <li>J House 'Namsnah'</li> <li>K House 'Windsor'</li> <li>L House 'Romahapa'</li> <li>M House 'Oakland'</li> <li>N House 'Kismet'</li> <li>O House 'Dorothy Manor'</li> <li>P House 'The Gables'</li> </ul> | <ul style="list-style-type: none"> <li>Q House 'Devon'</li> <li>R House 'Murrulla'</li> <li>S House 'Babington'</li> </ul> |
|---|---|---|---|---|--|--|

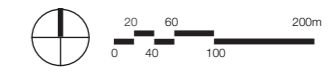


Figure 2-7. Heritage Map

# Landscape Analysis

## 2.5 Vegetation & Open Space

Eastern Suburbs Banksia Scrub (ESBS), an endangered ecological community protected under State and Commonwealth legislation originally extended across the Botany Sands to the southern shore of Botany Bay, but only a few small, isolated and disjunct fragments remain in the local area with none within the footprint of the A2MP Project. Remnants can be observed in the Centennial Parklands. Swampy low lying areas would have been dominated by sedges.

The current vegetation of the Project area is largely composed of native and exotic introduced streetscape species, as the current photos of existing prominent tree plantings show. These include:

1 Figure 2-2: Hills Weeping Figs (*Ficus macrocarpa* var. *hillii*) along Dacey Avenue

2 Figure 2-3: Hills Weeping Figs on South Dowling Street adjacent to the golf course tee near the corner of Dacey Avenue

3 Figure 2-4: Palm Grove (*Washingtonia robusta*) on the South Dowling Street near the corner of Dacey Avenue c. 1920s-50s (may have been associated with the former King Edward VII Home for Dogs)

4 Figure 2-5: Cabbage Tree Palms (*Livistona australis*) and Canary Island Date Palms (*Phoenix canariensis*) on the corner of Dacey Avenue and South Dowling Street.

5 Figure 2-6 :Kerbside street trees on McEvoy Street All kerbside street trees on McEvoy Street.





# 03 Design Concept

## Overview Plan

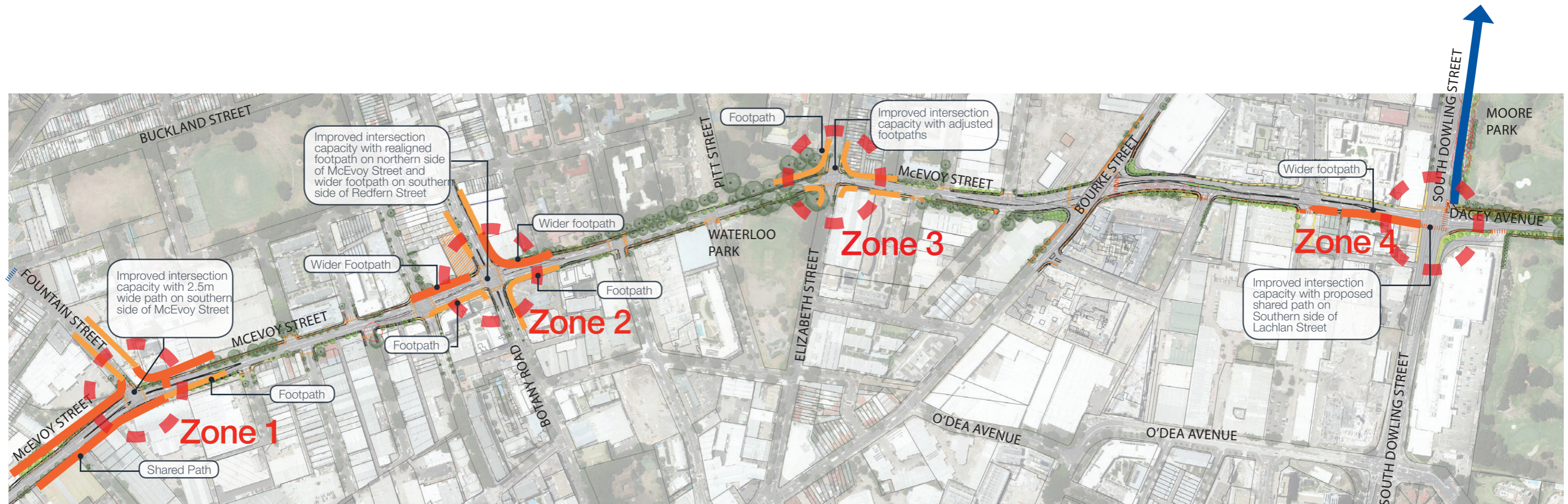







Figure 3-1. A2MP Stage 1 Site Map



### LEGEND

#### PROPOSED

-  Zones
-  Proposed 1.5m Footpath
-  Proposed 2.5m Footpath
-  Proposed Verge (0.3m - 5.5m)
-  Proposed pedestrian crossing

\*City of Sydney's Cycling Strategy and Action Plan does not explicitly define the type of the cycleways but state as their Priority 1: "Build the regional routes as separated cycleways where feasible and necessary."

## 3.1 The Proposal

The proposal would be constructed in four construction zones between 12 to 36 months and includes:

**Zone 1:** McEvoy Street and Fountain Street Intersection

**Zone 2:** McEvoy Street and Botany Road Intersection

**Zone 3:** McEvoy Street and Elizabeth Street Intersection

**Zone 4:** South Dowling Street / Dacey Avenue / Lachlan Street intersection

## 3.2 Zone 1: McEvoy Street / Fountain Street

### Description:

#### Footprint

- McEvoy Street to Fountain Street and to Botany Road.

#### Trees / Vegetation

- Street trees along northern side of McEvoy Street would be retained where possible.
- No Trees would be affected by any works conducted to Fountain Street and McEvoy Street
- McEvoy Street and Botany Road intersection will not impact on any tree plantings
- New street tree plantings would be undertaken along the front of the footpath.

#### Pedestrian / Cyclist Connections

- Realigned trafficable footpath to northern part of McEvoy Street, east of Fountain Street to vary between 1.6m and 4.2m, dependant on available space, with 1.9m verge.
- Realigned trafficable footpath to northern part of McEvoy Street, 2-3.6m trafficable path west of Fountain Street with a 1.7m to 5.5m verge
- Realigned 2.5m wide trafficable footpath on southern verge of McEvoy Street, at Fountain Street

### Design Response

Each site of this project is guided by a unique set of principles which should be applied in order to guide the treatments proposed:

#### Principles:

- Support the progressive conversion of existing industrial/commercial uses at the northern end of Euston Road/ McEvoy Street into mixed use development with ground floor retail uses and commercial and residential uses above.
- Establish shady tree-lined street character with

wide park-like lawn verge along Euston Road / McEvoy Street. Use remaining portion of road reserve for planting.

- Provide trafficable footpath where possible
- Retain existing trees, particularly mature fig trees
- Extend widened footpath away from existing trees to retain these trees as widened pedestrian paths should not result in the removal of trees and diminish the current amenity.
- Reflect the City of Sydney Street Tree Master plan when specifying new street trees use *Waterhousea floribunda* 'Green Avenue' (Weeping Lilly Pilly) in the southern section and *Lophostemon confertus* (Brush Box) north of Fountain Street, filling gaps in existing lines of trees by additional tree plantings in verge
- Ensure that the road upgrade addresses streets, through-site links and the 'Liveable Green Network' which forms part of the City of Sydney's pedestrian and cycling network ultimately connecting people to the City Centre and village centres.
- Water Urban Sensitive Design (WSUD) initiatives should be an important component of the green infrastructure of the A2MP project, given its low-lying condition of the area and propensity for flooding. Any system should provide RMS and Council with a repeatable WSUD planning and implementation strategy across the entire study area and LGA for future projects.
- The use of "Eco-Pits" should be considered.
- Select appropriate small to medium sized tree species and low maintenance plant species for the vegetated verges
- Use species that tolerate high winds conditions, limited sunlight during winter and poor soils.

## 3.3 Zone 2: McEvoy Street / Botany Road

### Description:

#### Footprint

- The proposed street alignment along the southern side of McEvoy Street from Botany Road follows the existing road alignment with minor localised widening at the Botany Road intersection. It does not affect the existing street trees or footpath.

#### Trees / Vegetation

- All trees would be retained along McEvoy Street as the proposed street alignment along the southern side retains the existing kerbs.

#### Pedestrian / Cyclist Connections

- Reinstatement of all existing pedestrian / cyclist crossings.
- Where possible, footpath widths with capacity to cater for the future implementation of shared paths have been provided -
- Eastern verge of Botany Road, north of McEvoy Street a 1 metre verge with a 2.5 metre footpath
- Northern verge of McEvoy Street, west of Botany Road a 1.6 metre verge with a 1.7 metre footpath
- Northern verge of McEvoy Street, east of Botany Road a 1 metre verge with a 2.5m footpath.

### Design Response

#### Principles:

- Support the progressive conversion of existing industrial/commercial uses at the eastern end of McEvoy Street into mixed use development with ground floor retail uses and commercial and residential uses above.
- Conform to the City of Sydney Street Tree Master plan when specifying new street trees
- Along the southern side of McEvoy Street, retain existing street trees in verge
- Maintain setbacks on the northern side between Botany Road and Waterloo Park to extend the

parklike character of this section, retain wide lawn areas and mature trees in front of existing buildings

- Retain all existing mature fig trees along Waterloo Park, align and construct widened footpath in a way that does not affect the mature fig trees or their roots. Maintain the visual connection between both sides of Waterloo Park, separated by McEvoy Street.
- Where possible along the northern and southern side of McEvoy Street, locate new tree planting in verge on back of kerb, remaining portion of acquired road reserve area, should be retained as open lawn area.
- Consider the use of WSUD initiatives and Eco-pits..
- Select appropriate small to medium sized tree species and low maintenance plant species for the vegetated verges
- Use species that tolerate high winds conditions, limited sunlight during winter and poor soils.
- Consider safe maintenance access requirements for median plantings

## 3.4 Zone 3: McEvoy Street / Elizabeth Street

### Description:

#### Footprint

- The proposed road alignment on the southern side of McEvoy Street follows the existing kerb along Waterloo Park (South).
- The proposed road alignment on the northern side of McEvoy Street follows the existing kerb along Waterloo Park (North).

#### Trees / Vegetation

- All of the existing mature fig trees along Waterloo Park would be retained as the proposed road layout retains the existing kerbs on each side of McEvoy Street.
- New tree plantings proposed at southern side of McEvoy Street, east of Elizabeth Street

#### Pedestrian / Cyclist Connections

- Realigned 1.5m wide footpath on northern side of Euston Road / McEvoy Street.
- Realigned footpath on southern side of Euston Road / McEvoy Street
- Reinstatement of all existing pedestrian / cyclist crossings.

### Design Response

#### Principles:

- Support the future function of Waterloo Park as a community node ensuring the road upgrade addresses the open space.
- Integrate the existing roadside fig plantings into the road upgrade.
- Roadwork should be undertaken with care to retain the existing mature fig trees where the proposed road alignment follows the existing kerb line.
- Northern verge of McEvoy Street, west of Elizabeth Street of 0.3 metre verge with a 1.8 – 1.3 footpath

- Northern verge of McEvoy Street, east of Elizabeth Street of 1.5 metre verge with a 2 metre footpath
- Improve footpath connections along Waterloo Park and improve pedestrian amenity
- Retain existing landscape character of Waterloo Park by retaining all mature fig trees
- Maintain wide vegetated park-like verges, particularly at the north side of McEvoy Street to maintain a visual extension of Waterloo Park towards to west.
- Consider the use of WSUD initiatives and Eco-pits as outlined and described in Zone 1.
- Select appropriate small to medium sized tree species and low maintenance plant species for the vegetated verges
- Use species that tolerate high winds conditions, limited sunlight during winter and poor soils.
- If elevated construction of the footpath between the existing fig trees is required to protect the tree roots, consider alternative materials to timber which are more durable and require lower maintenance.

## 3.5 Zone 4: Lachlan Street / South Dowling Street / Dacey Avenue

### Description:

#### Footprint

- Reconfiguration of the intersection of South Dowling Street with Lachlan Street, including extension of the westbound merge lane on Lachlan Street for vehicles departing the intersection
- New tree plantings proposed

#### Trees / Vegetation

- The state-heritage listed palms in continuation of the row of mature fig trees would be retained, as well as other existing trees east of South Dowling St.
- There are no other existing trees at the other three corners of the intersection.

#### Pedestrian / Cyclist Connections

- The proposed road layout retains the footpath on northern side of Lachlan Street.
- All existing pedestrian / cyclist crossings have been retained
- The shared path between the Fig tree avenue (either existing or newly planted) and the Moore Park Golf Course would be retained.
- Realigned Lachlan Street southern footpath

### Design Response

#### Principles:

- Retaining wall separating the Fig tree avenue from South Dowling Street has been retained. Existing trees with visual, urban and cultural heritage landscape values of the site have been retained
- The shared path between the Fig tree avenue (either existing or newly planted) and the Moore Park Golf Course is to be maintained.
- The existing retaining wall and fig trees, palms and other significant trees along South Dowling

# Design Concept

Street have been retained providing important amenity for pedestrians and cyclists.

- Retain the shared path between the Fig tree avenue and the Moore Park Golf Course.
- A wider footpath on southern side of Lachlan Street and Dacey Avenue should be installed.
- Consider the use of WSUD initiatives and Eco-pits.
- Select appropriate small to medium sized tree species and low maintenance plant species for the vegetated verges
- Use species that tolerate high winds conditions, limited sunlight during winter and poor soils.

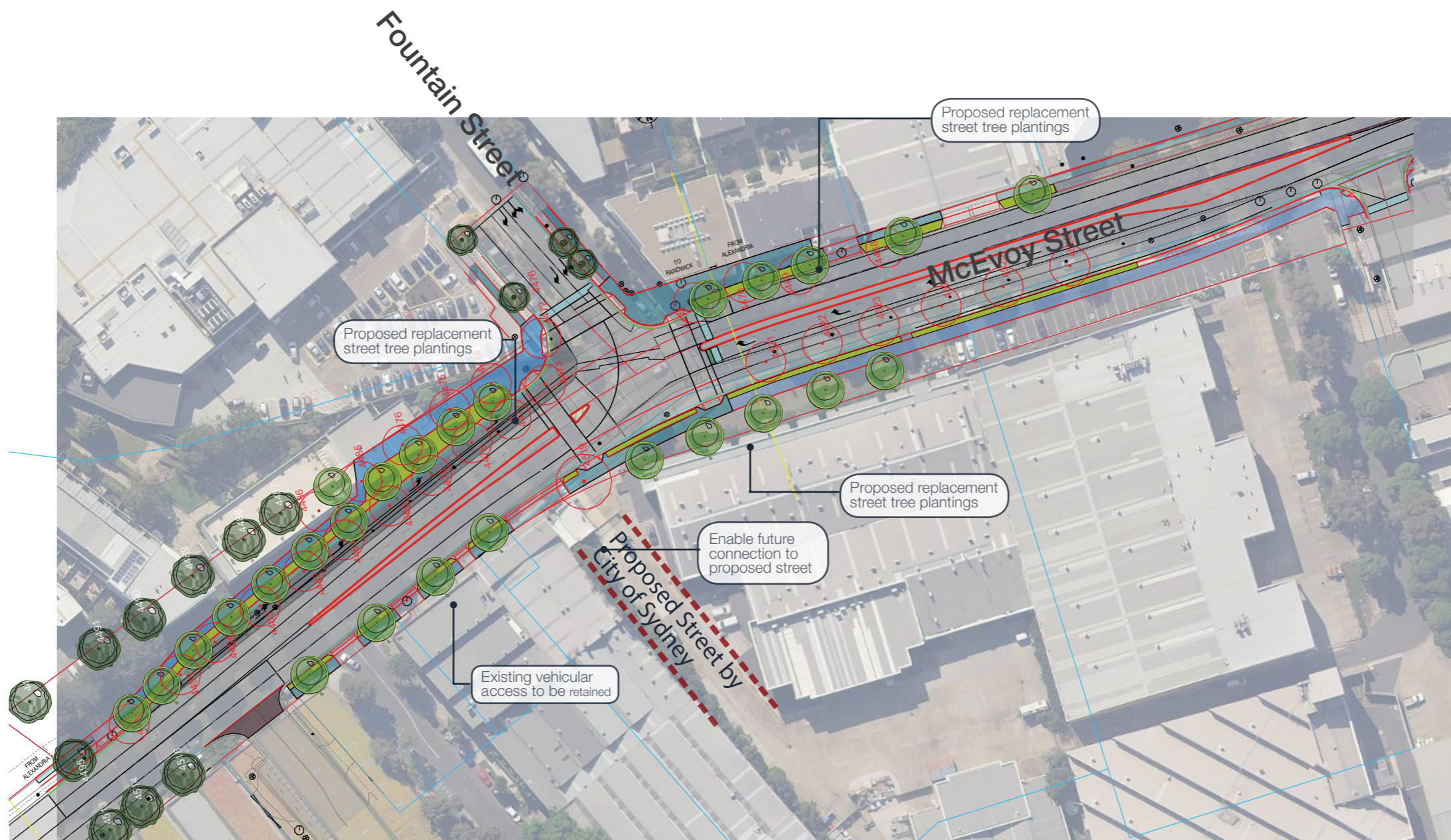












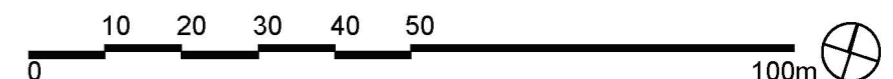


Figure 3-2. Zone 1 - McEvoy Street and Fountain Street

**LEGEND**

- |   |  |   |
|---|--|---|
|  Existing tree to be retained            |  Existing property boundary |  Existing road surface       |
|  Existing tree potentially to be removed |  Current survey information |  Proposed road surface works |
|  Existing tree to be removed             |  New Works                  |  2.5m wide footpath          |
|  Proposed tree planting                  |  Vegetated verge            |  Minimum 1.5m wide footpath  |

Note:  
Extent of proposed trees shown is subject to existing in-ground services. A detailed survey of the existing in-ground services (including potholing) is required to determine the exact location and number of proposed trees in the detailed design stage.



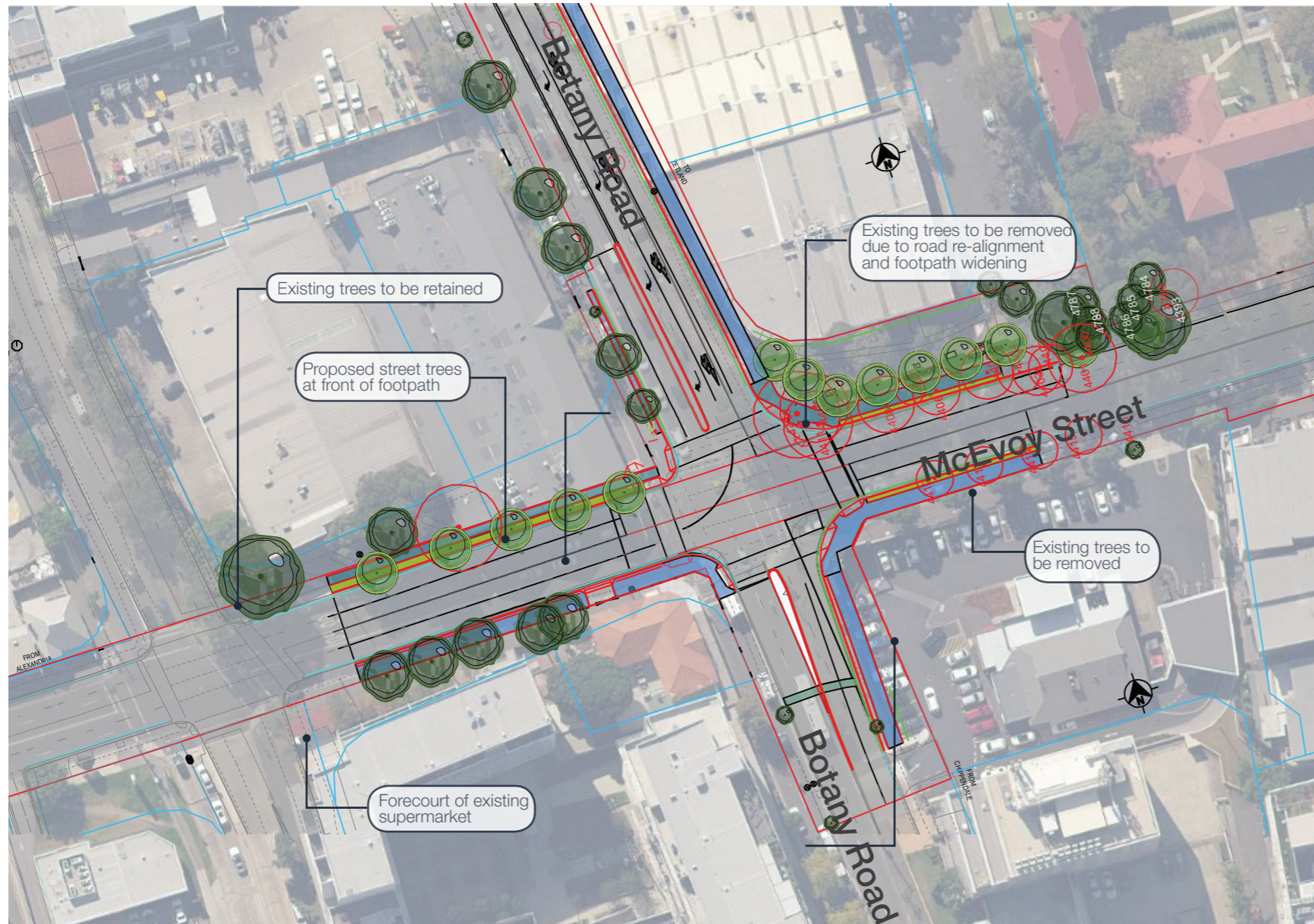
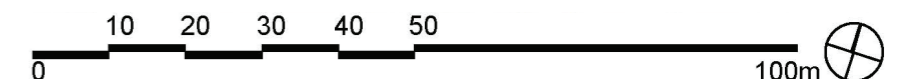


Figure 3-3. Zone 2 McEvoy Street and Botany Road

**LEGEND**

	Existing tree to be retained		Existing property boundary		Existing road surface
	Existing tree potentially to be removed		Current survey information		Proposed road surface works
	Existing tree to be removed		New Works		2.5m wide footpath
	Proposed tree planting		Vegetated verge		Minimum 1.5m wide footpath

Note:  
Extent of proposed trees shown is subject to existing in-ground services. A detailed survey of the existing in-ground services (including potholing) is required to determine the exact location and number of proposed trees in the detailed design stage.



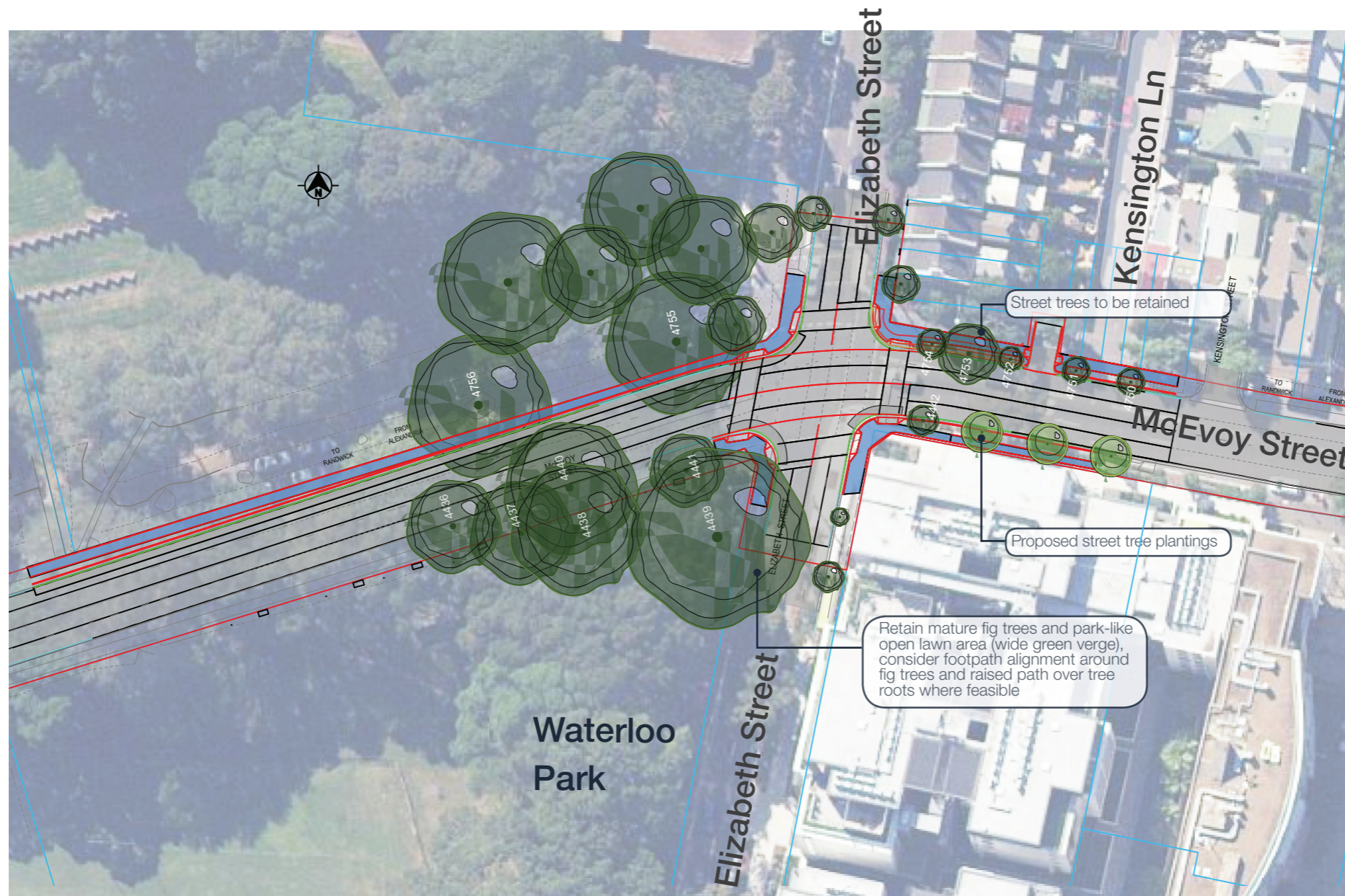














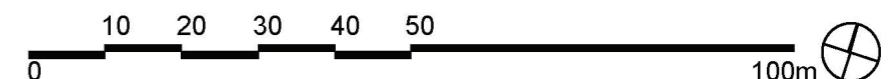
Figure 3-4. Zone 3 - McEvoy Street and Elizabeth Street

**LEGEND**

- |   |  |   |
|---|--|---|
|  Existing tree to be retained            |  Existing property boundary |  Existing road surface       |
|  Existing tree potentially to be removed |  Current survey information |  Proposed road surface works |
|  Existing tree to be removed             |  New Works                  |  2.5m wide footpath          |
|  Proposed tree planting                  |  Vegetated verge            |  Minimum 1.5m wide footpath  |

**Note:**

Extent of proposed trees shown is subject to existing in-ground services. A detailed survey of the existing in-ground services (including potholing) is required to determine the exact location and number of proposed trees in the detailed design stage.



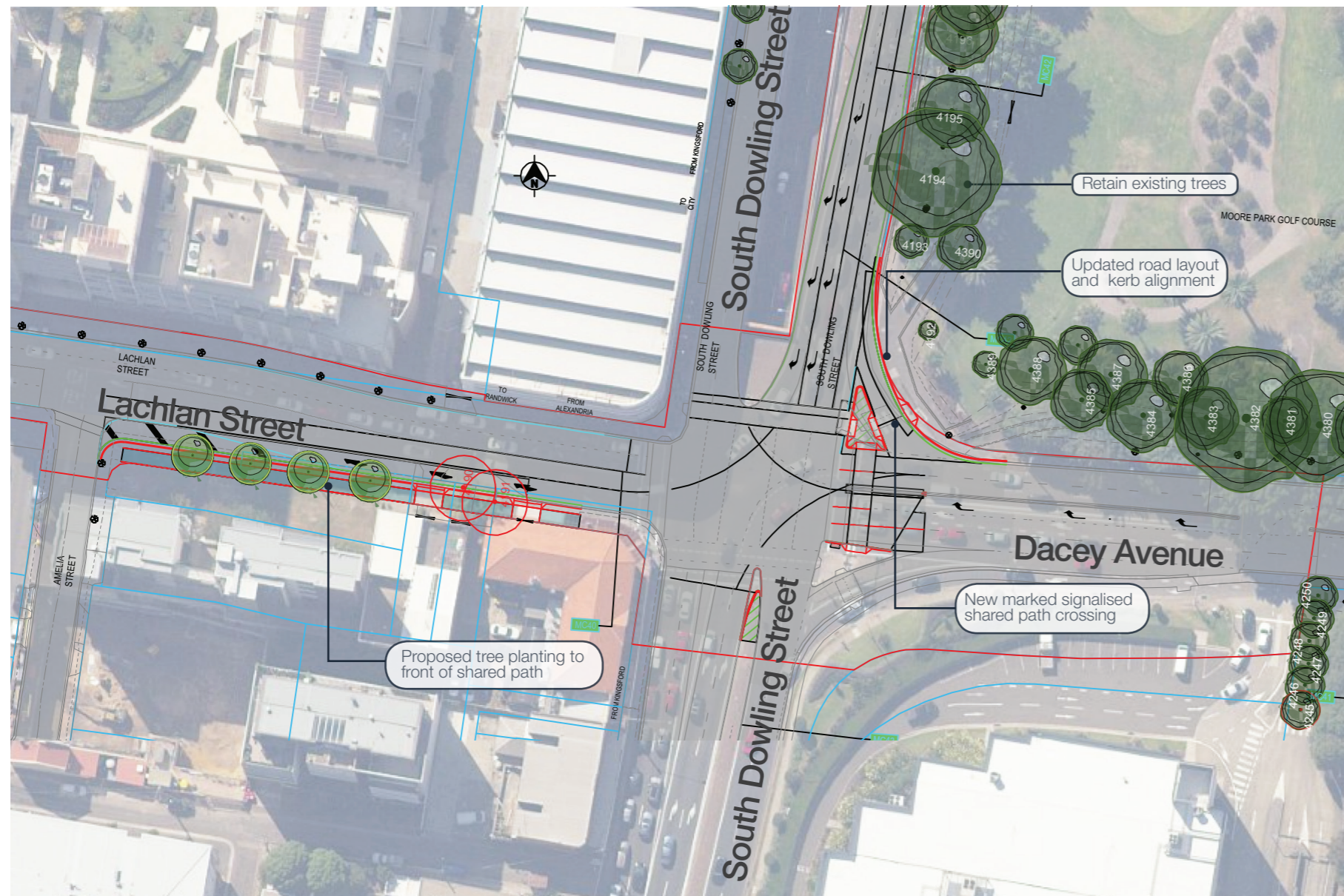


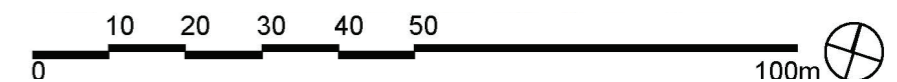
Figure 3-5. Zone 4 - South Dowling Street, Lachlan Street and Dacey Avenue

**LEGEND**

	Existing tree to be retained		Existing property boundary		Existing road surface
	Existing tree potentially to be removed		Current survey information		Proposed road surface works
	Existing tree to be removed		New Works		2.5m wide footpath
	Proposed tree planting		Vegetated verge		Minimum 1.5m wide footpath

**Note:**

Extent of proposed trees shown is subject to existing in-ground services. A detailed survey of the existing in-ground services (including potholing) is required to determine the exact location and number of proposed trees in the detailed design stage.





# 04 Visual Impact Assessment

## 4.1 Introduction

Based on the assessment of the existing visibility of the A2MP corridor undertaken in two site visits, the potential visual impact of the project has been assessed by combining the likely sensitivity of the viewers to the proposed works with the magnitude of the proposed works within existing views.

## 4.2 Sensitivity, magnitude & impact

### 4.2.1 Visual Sensitivity

Visual sensitivity refers to the visual importance of the view and how sensitive it is to any change resulting from the proposed work. Sensitivity is dependent on:

- The category of viewer (resident, worker, shopper, open space user)
- Composition of the view (i.e. how much the elements of the proposal visible in a particular view affect or change it)
- Importance of the view (for example, identified in tourist guides, static or moving viewpoint, do people deliberately seek the view).

Generally, viewers with the highest levels of sensitivity typically include:

- Residents who would have existing attractive views affected by the proposed upgrade works
- Users of public open space where their attention is focused on visual landscape values, such as scenic lookout points or natural landscape areas with attractive views
- Communities in which the proposed works would result in changes to the landscape views that they value

Viewers with the lowest visual sensitivity are most likely to be:

- Those engaged in work where their attention is focused on their work
- People engaged in active recreation activities such as team sports

### 4.2.2 Magnitude

The magnitude of a proposal refers to the scale, form and

character of the proposed works. In the case of visual impact assessment, it also incorporates how far the proposed works are from the viewer.

The project-specific categories of magnitude for this project have been defined by the Urban Design team as:

- High – total loss of key elements/features/characteristics of the existing landscape and/or introduction of elements considered to be totally uncharacteristic of the existing landscape character
- Moderate – partial loss of/or alteration to one or more key elements/ features/characteristics of the existing landscape and/or introduction of elements that may be prominent but not considered to be substantially uncharacteristic of the existing landscape
- Low – minor loss of/or alterations to one or more key elements/features/characteristics of the existing landscape and/or introduction of elements that are consistent with the existing landscape
- Negligible – very minor alteration to one or more key element/features/characteristics and/or introduction of elements that are consistent with the existing landscape (i.e. approximating the 'no change' situation).

		MAGNITUDE			
		High	Moderate	Low	Negligible
SENSITIVITY	High	High	Moderate - High	Moderate	Negligible
	Moderate	Moderate - High	Moderate	Moderate - Low	Negligible
	Low	Moderate	Moderate - Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Table 4-1. Visual impact assessment matrix (Roads and Maritime, 2013)

## 4.3 Key Viewpoints

Key viewpoints representing the different typical situations and conditions expected throughout the corridor have been selected in order to assess the proposal's impact.

Given that the corridor lies in an inner-city area with no long-distance views to the corridor rather than along the corridor, all selected viewpoints are located within the project area looking across and along the corridor.

## 4.4 Visual Impact Assessment Summary

A total of 15 viewpoints form the basis of the visual impact assessment. A summary of the assessment results are presented Table 4-2.

The range of visual impact ratings were determined as follows:

- 4 viewpoints would have a Moderate to High visual impact
- 3 viewpoints would have a Low - Moderate visual impact.
- 8 viewpoints would have a Negligible visual impact.

A rating of High occurs in an area where proximity and sensibility to the works is greatest, in particular in areas with large mature trees, highly valued by the greater community

Beyond these situations, the impact ratings involve Moderate, Low and Negligible ratings. This generally reflects the low visibility of the existing road corridor and the proposed works. It also indicates that the scale of the proposal would be consistent with the existing street environment.

VIEWPOINT	SENSITIVITY	MAGNITUDE	VISUAL IMPACT
VP 01	Low	Moderate	Low - Moderate
VP 02	Low	Moderate	Low - Moderate
VP 03	Low	Moderate	Low - Moderate
VP 04	Moderate	High	Moderate - high
VP 05	Moderate	High	Moderate - high
VP 06	Moderate	High	Moderate - high
VP 07	Moderate	High	Moderate - high
VP 08	High	Negligible	Negligible
VP 09	High	Negligible	Negligible
VP 10	High	Negligible	Negligible
VP 11	Moderate	Negligible	Negligible
VP 12	Moderate	Negligible	Negligible
VP 13	Moderate	Negligible	Negligible
VP 14	Moderate	Negligible	Negligible
VP 15	Moderate	Negligible	Negligible

Table 4-2. Visual Impact Assessment Viewpoints



Figure 4-1. Site Locations Plan

VIEWPOINT	SENSITIVITY	MAGNITUDE	VISUAL IMPACT
VP 01-03	<p><b>Low</b></p> <p>Predominantly businesses and industrial warehouses are located along this section of McEvoy Street. The users / residents of these premises would have only a low sensitivity to this proposal.</p>	<p><b>Moderate</b></p> <p>Only very minor alterations to the existing road layout along the northern side, several meters of road widening along the southern side, with the removal of all street trees along this side, with some trees further away from the road to remain. New street trees are proposed.*</p>	<p>Low - moderate</p>
VP 04-07	<p><b>Moderate</b></p> <p>Businesses on both sides of the road and residents along the southern side would have a moderate to high sensitivity to the works due to the loss of trees and public open space.</p>	<p><b>High</b></p> <p>Only minor alterations to the existing road layout along the southern side without tree removal. Extensive road widening along the northern side with the removal of several large trees and park-like street verge.*</p>	<p>Moderate - High</p>
VP 08-10	<p><b>High</b></p> <p>The sensitivity of the residents and the overall community along the Waterloo Park section would be rated high as Waterloo Park is an important and well loved asset for the community in general.</p>	<p><b>Negligible</b></p> <p>Very minor alterations to the existing road along the southern side. The proposed road layout would be retained within existing kerb line without affecting the existing trees. To minimise affects on the existing fig trees, raised walkways should be considered. Effects on the tree canopy should be minimal.</p>	<p>Negligible</p>
VP 11-13	<p><b>Moderate</b></p> <p>The community in general will have a moderate sensitivity to the proposal due to the prominence and high visibility of the site.</p>	<p><b>Negligible</b></p> <p>Road widening works to this intersection are minor and do not impact adjacent trees or landscape</p>	<p>Negligible</p>
VP 14	<p><b>Moderate</b></p> <p>The community would have a very low sensitivity to the proposal from this viewpoint as the proposed changes are negligible. Both, the heritage-listed Moore Park View Hotel, located opposite the also heritage-listed AGM building would be retained. Both buildings contribute to the visual quality of this intersection.</p>	<p><b>Negligible</b></p> <p>Very minor alterations to the existing road layout.</p>	<p>Negligible</p>
VP 15	<p><b>Moderate</b></p> <p>The community would have a moderate sensitivity to the proposal as this section of Dacey Avenue does not include the iconic avenue of mature fig trees.</p>	<p><b>Negligible</b></p> <p>Very minor alterations to the existing road layout. The proposed road layout would be retained within existing kerb line without affecting the existing trees. Raised foot and shared paths should be considered to minimise the effects on the tree roots.</p>	<p>Negligible</p>

Table 4-3. Visual Impact Assessment

# Visual Impact Assessment

## 4.5 Visual Impact Assessment

Zone 1: Fountain Street and McEvoy Street Intersection

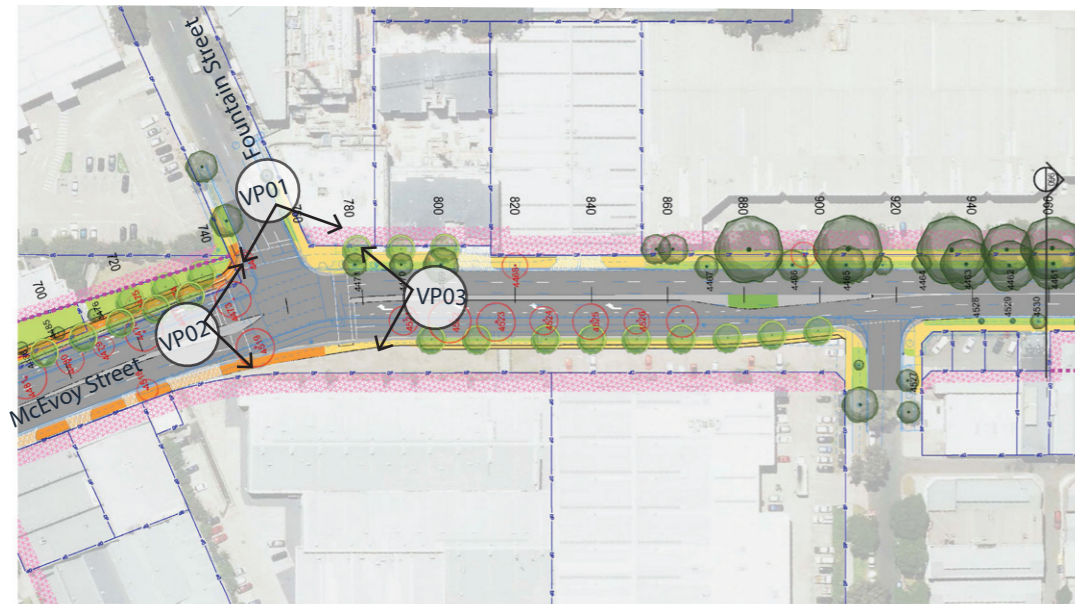


Figure 4-2. Viewpoints Plan

\*While new street trees have been proposed to compensate for the loss of mature trees and their visual (and ecological) functions, these young trees can only fully fulfil these functions as mature trees in the long term. The immediate magnitude of the impact will remain high.

VIEWPOINT	SENSITIVITY	MAGNITUDE	VISUAL IMPACT
VP 01-03	<p>Low</p> <p>Predominantly businesses and industrial warehouses are located along this section of McEvoy Street. The users / residents of these premises would have only a low sensitivity to this proposal.</p>	<p>Moderate</p> <p>Only very minor alterations to the existing road layout along the northern side, several meters of road widening along the southern side, with the removal of all street trees along this side, with some trees further away from the road to remain. New street trees are proposed.*</p>	<p>Moderate</p>

Table 4-4. Visual Impact Assessment



Figure 4-3 - Viewpoint 01: Fountain Street McEvoy Street intersection, looking south into McEvoy Street

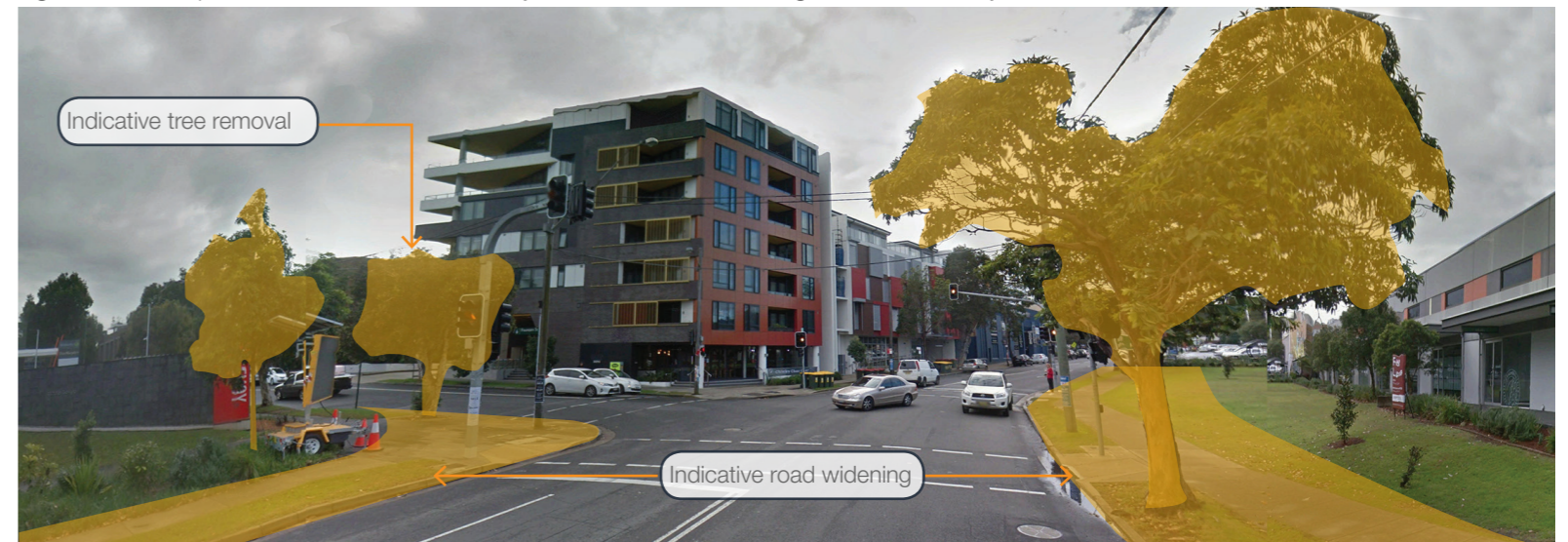


Figure 4-4 - Viewpoint 02: McEvoy Street intersection, looking North into Fountain Street

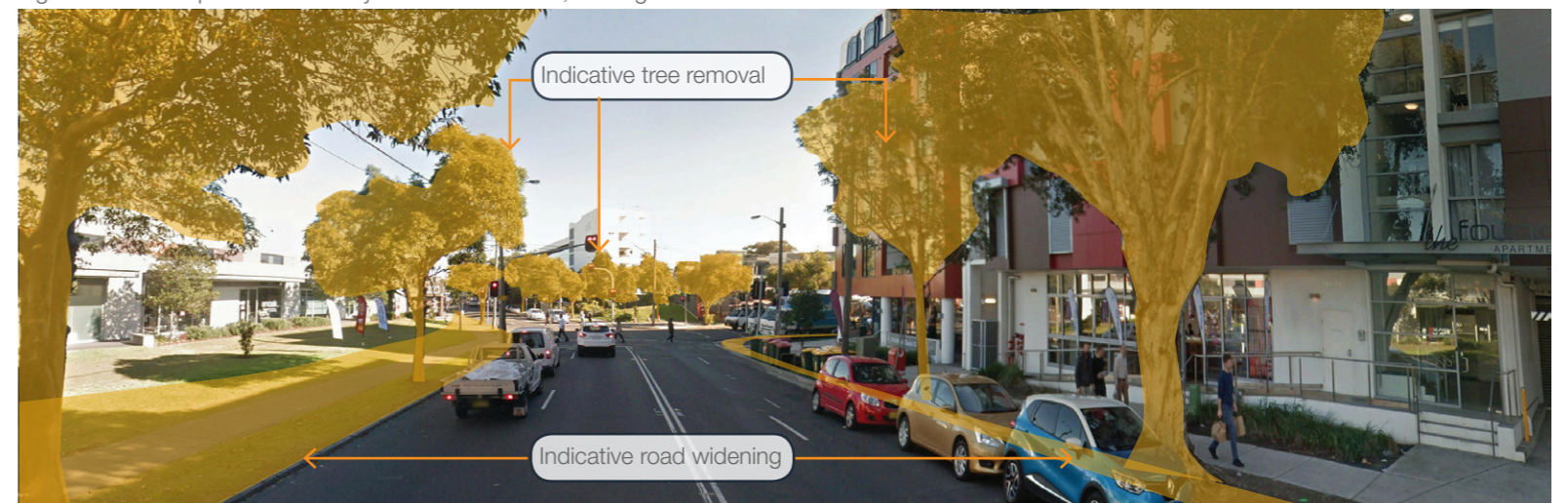


Figure 4-5 - Viewpoint 03: McEvoy Street intersection with Fountain, looking along McEvoy Street

# Visual Impact Assessment

## 4.5 Visual Impact Assessment

Zone 2: McEvoy Street and Botany Road Intersection



Figure 4-5. Viewpoints Plan

VIEWPOINT	SENSITIVITY	MAGNITUDE	VISUAL IMPACT
VP 04-07 McEvoy Street - Botany Road intersection	Moderate Businesses on both sides of the road and residents along the southern side would have a moderate to high sensitivity to the works due to the loss of trees and public open space.	High Only minor alterations to the existing road layout along the southern side without tree removal. Extensive road widening along the northern side with the removal of several large trees and park-like street verge.	Moderate - High

Table 4-5. Visual Impact Assessment



Figure 4-6. Viewpoints Plan

Viewpoint 04: Botany Road and McEvoy Street intersection, looking north into McEvoy



Figure 4-7 - Viewpoint05: Botany Road and McEvoy Street intersection, continuing south on Botany Road

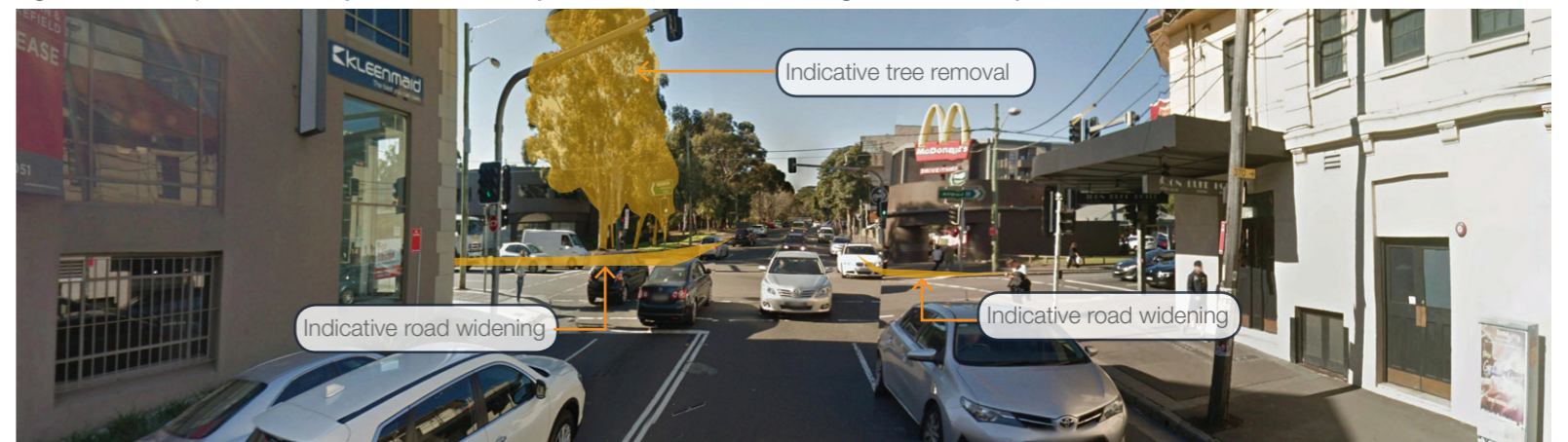


Figure 4-8 - Viewpoint06: Botany Road and McEvoy Street intersection, looking east into McEvoy Street

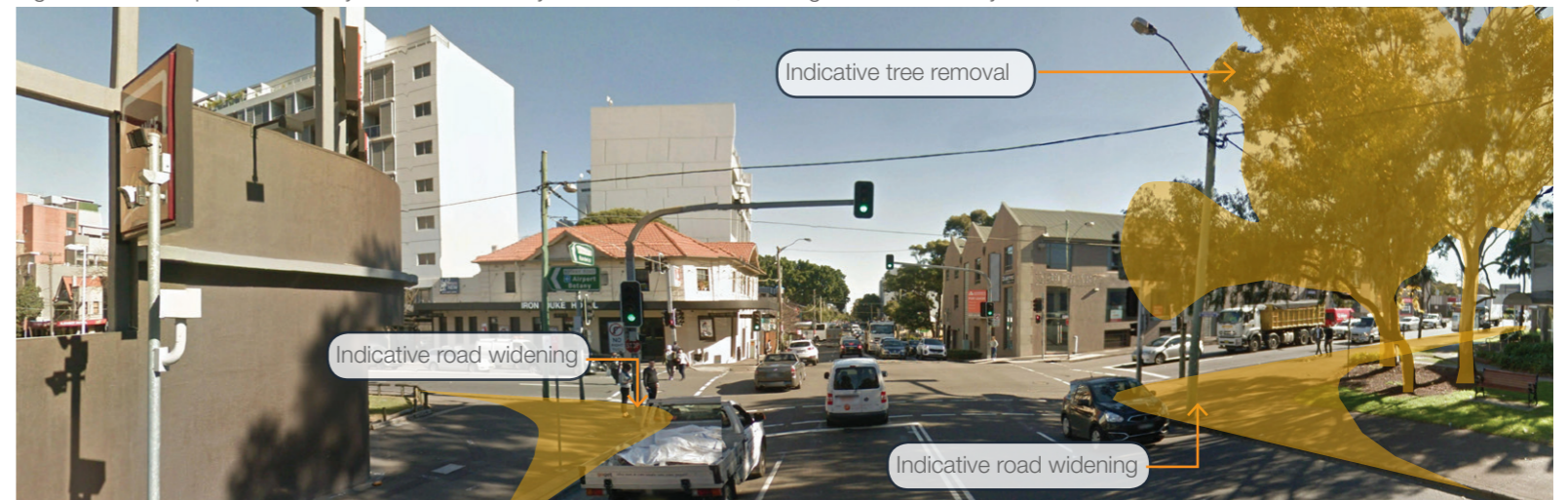


Figure 4-9 - Viewpoint07: Botany Road and McEvoy Street intersection, looking west into McEvoy Street

# Visual Impact Assessment

## 4.5 Visual Impact Assessment

Zone 3: Elizabeth Street and McEvoy Street Intersection



Figure 4-10. Viewpoints Plan

VIEWPOINT	SENSITIVITY	MAGNITUDE	VISUAL IMPACT
VP 08-10	<p>High</p> <p>The sensitivity of the residents and the overall community along the Waterloo Park section would be rated high as Waterloo Park is an important and well loved asset for the community in general.</p>	<p>Negligible</p> <p>Very minor alterations to the existing road along the southern side. The proposed road layout would be retained within existing kerb line without affecting the existing trees. To minimise affects on the existing fig trees, raised walkways should be considered. Effects on the tree canopy should be minimal.</p>	<p>Negligible</p>

Table 4-6. Visual Impact Assessment



Figure 4-11 - Viewpoint 08: Elizabeth Street and McEvoy Street intersection, looking south at Elizabeth Street



Figure 4-12 - Viewpoint 09: Elizabeth Street and McEvoy Street intersection, looking east at McEvoy Street



Figure 4-13 - Viewpoint 10: Elizabeth Street and McEvoy Street intersection, looking north at Elizabeth Street i

# Visual Impact Assessment

## 4.5 Visual Impact Assessment

Zone 4: South Dowling Road Intersection

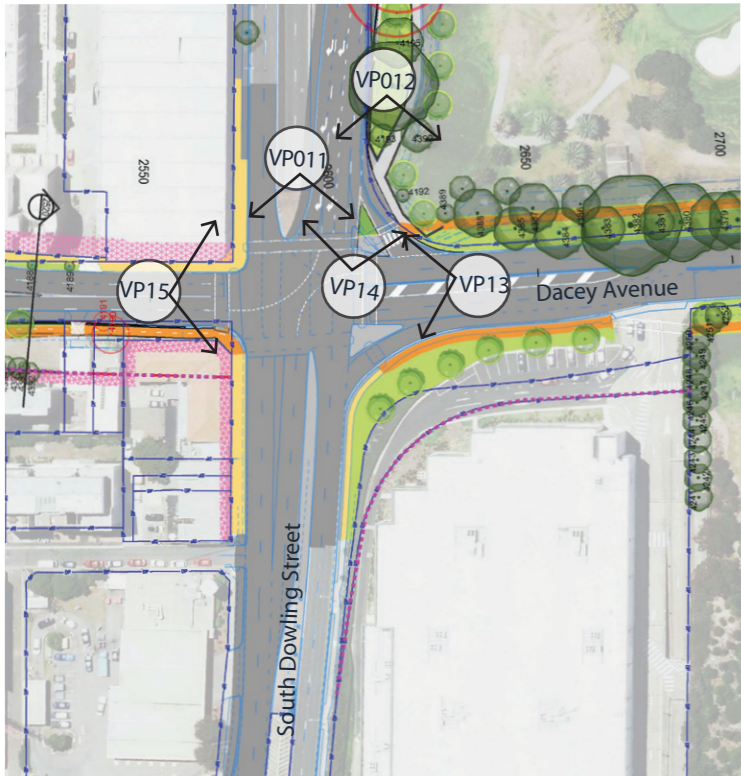


Figure 4-14. Viewpoints Plan



Figure 4-15 - Viewpoint 11: South Dowling Street / Lachlan Street / Dacey Avenue intersection, looking south into Dacey Street



Figure 4-16 - Viewpoint 12: South Dowling Street / Lachlan Street / Dacey Avenue intersection, looking south into Dacey Street



Figure 4-17 - Viewpoint 13: South Dowling Street / Lachlan Street / Dacey Avenue intersection, looking east into Dacey Street



Figure 4-18 - Viewpoint 14: South Dowling Street at Dacey Street intersection -

Indicative road widening

VIEWPOINT	SENSITIVITY	MAGNITUDE	VISUAL IMPACT
VP 11-13	South Dowling Street at Dacey Street intersection Moderate The community in general will have a moderate sensitivity to the proposal due to the prominence and high visibility of the site.	Negligible Road widening works to this intersection are minor and do not impact adjacent trees or landscape	Negligible
VP 14	South Dowling Street / Lachlan Street / Dacey Avenue intersection Moderate The community in general will have a moderate sensitivity to the proposal due to the prominence and high visibility of the site.	Negligible Very minor alterations to the existing road layout.	Negligible
VP 15	Dacey Avenue - east of South Dowling Street intersection Moderate The community would have a moderate sensitivity to the proposal as this section of Dacey Avenue does not include the iconic avenue of mature fig trees.	Negligible Very minor alterations to the existing road layout. The proposed road layout would be retained within existing kerb line without affecting the existing trees.	Negligible

Table 4-6. Visual Impact Assessment



Figure 4-19 - Viewpoint 15: South Dowling Street / Lachlan Street / Dacey Avenue intersection, looking east into Dacey

## Conclusion

Only Zone 1 and 2 (Fountain St/McEvoy St intersection and Botany Road/McEvoy St intersection) are identified to have works proposed that are deemed to have any significant visual impact, both of which are a result of the loss of existing mature and non-mature trees, with impacts ranging from negligible to moderate-high.

Mitigation of these impacts includes proposed new tree plantings where possible to each of these sites. Details of these mitigation strategies is outlined in section 5.

# 05 Mitigation Measures

## 5.1 Existing Trees - Methodology

The assessment of the existing trees in the urban design strategy has been based on an earlier Arboricultural Tree Assessment. However, the assessment of this urban design strategy diverges in several locations, based on following assumptions:

- All trees located in the street verge in sections, where the existing kerb alignment would not be affected by the proposed road design, would be retained as it has been assumed that no construction works in the vicinity
- Only trees directly impacted by the proposed road design have been shown as 'to be removed'. All other trees have been shown as 'to be retained', regardless of the tree's condition, age, vigour or longevity.
- Should sections of the proposed footpaths and shared paths impact on trees or tree roots, these sections of the paths would be constructed as an elevated walkway where feasible to minimise the impact on the trees and minimise the need to remove existing trees.

The assessment is based on the Final Concept Design design. A detailed tree assessment and detailed tree survey must be undertaken prior to construction based on the final road design. The current Urban Design drawings show all existing trees based on current survey data, current Arboricultural Tree Assessment data and the available aerial photo. Existing trees not shown in the current survey are shown indicatively only in the Urban Design drawings.

## 5.2 Tree Planting Strategy

All new tree plantings would be planted in the vegetated area at the front of the path. Existing trees adjacent to the kerb would be retained and the path moved away from the kerb where possible. Where space constraints are present adjacent to existing buildings, the shared path would be adjusted to allow for a vegetated verge adjacent to the kerb.

New street trees will be planted in accordance with the City of Sydney's Street Tree Masterplan. Tree species to be used include:

- *Ficus microcarpa* var. *hillii* (Hill's Fig)
- *Waterhousea floribunda* 'Green Avenue' (Weeping Lilly Pilly)
- *Lophostemon confertus* (Brush Box)
- *Platanus acerifolia* (London Plane).

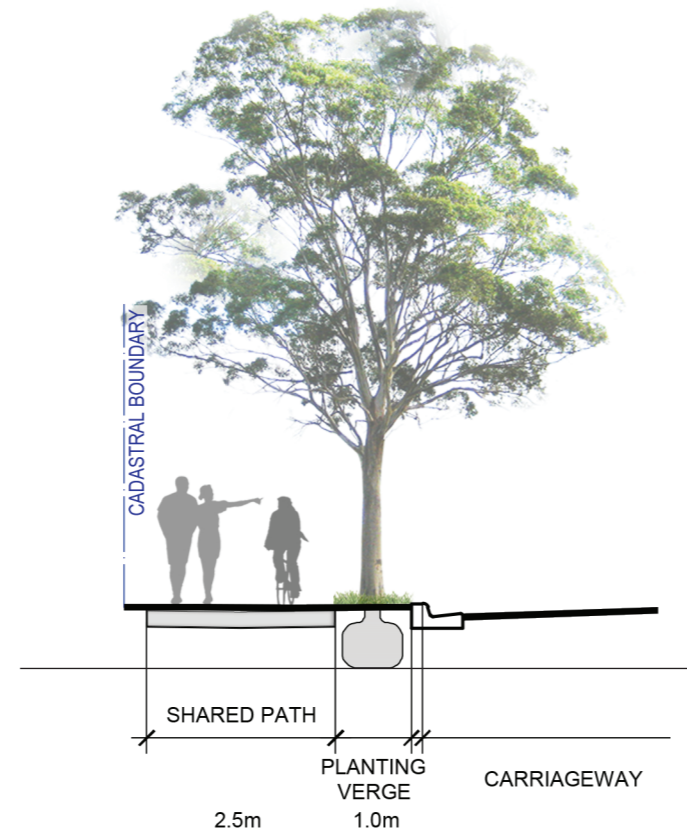


Figure 5-5 TYPICAL STREET TREE PLANTING - GENERAL APPROACH  
NTS

## 5.3 Green Infrastructure

Water Sensitive Urban Design (WSUD) initiatives would be an important component of the green infrastructure of the A2MP project, given its low-lying condition of the area and propensity for flooding. Any system would provide RMS and Council with a repeatable WSUD planning and implementation strategy across the entire study area.

Eco-Pits are a proprietary drainage structure intended to be located in the gutter, just upstream of regular stormwater gully pits and direct stormwater to adjacent tree planting areas. Eco pits should be considered for road sections where road realignments are proposed and new kerbs are required.

When the capacity of the Eco-Pits to discharge water to the tree is exceeded, the excess simply overflows into the adjacent gully pit. The innovative design also addresses:

- 1. Water Quality Improvement: The design aims at capturing the first flush and recycle it through the subsoil tree feeding system. The innovative system exceeds the minimum water quality targets of a typical soak-away, rain garden/bio-retention basin, infiltration pit and groundwater recharge system by using specially graded soil horizons and a deeper media
- 2. Water Quantity Detention: The runoff captured in the eco-pits is continuously feeding through a exfiltration spiral system and soak-away through the gravel. The continuous system reduces the runoff leaving the site and the flooding risk to the receiving catchment.
- 3. Placemaking: Drainage at the base of the tree pits flow back to gully pits and also introduces aeration at a depth which makes it possible for tree roots to fill the entire soil volume, allowing larger tree species to achieve their full growth potential providing landscape/township features.
- 4. Environmental issues: The system would improve the health and vigour of street trees. The captured runoff would provide alternate irrigation waters to the streetscape and reduce potable water consumption. This system would improve the hydrology, water quality and public health of the local environments.



# 06 References

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