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**Randwick City Council**  
a sense of community

Adopted on 29 April 2014

# Introduction

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## 1.1 Introduction

The CBD and South East Light Rail (CSELR) project announced by Transport for NSW will introduce significant changes to Randwick City. The proposed light rail service from central Sydney via Surry Hills to Randwick and Kingsford will provide an enhanced public transport experience for Randwick City residents, visitors and businesses, offering a reliable, high capacity and high frequency connection between Randwick City and Sydney CBD.

### Background

Randwick City Council has a long history of consistent planning and advocacy for rail-based public transport to serve its community, and key destinations and employment centres. The Urban Design guidelines continue this planning process, aiming to ensure that the light rail design and implementation achieves outcomes consistent with Council's and the community's standards and expectations.

### Objectives

The light rail alignment and infrastructure will have a major physical impact on the urban fabric of Randwick City, and especially on its streetscapes, public spaces, the landscape and commercial centres along the route.

An integrated design approach is critical to the success of the light rail project, so that the new urban elements, infrastructure and changed visual character introduced by the light rail are positive interventions that are sensitive to their context, and achieve the following key objectives:

- Achieve a high design quality
- Enhance Randwick City's public spaces and streetscapes
- Contribute to the vibrancy and amenity of commercial centres
- Integrate with the surrounds, and be safe and accessible



*Artist's impression of the CSELR proposal at Kensington (Transport for NSW)*



*Artist's impression of the CSELR proposal at Kingsford (Transport for NSW)*

## The Randwick City Plan

**These Guidelines are consistent with key themes and outcomes of the Randwick City Plan, Council's 20 year community strategic plan.**

The Randwick City Plan themes and outcomes below are most relevant to the light rail project, and form a cornerstone of the Urban Design Strategy:

### Themes:

- Places for People
- Moving around
- A Prospering city

### Outcomes:

- Excellence in urban design and development
- A liveable City
- A strong local economy
- Integrated and accessible transport



## 1.2 Purpose and Structure

The Randwick City Light Rail Urban Design Guidelines have been prepared to link the proposed light rail design with Randwick City Council's key strategies, design and technical standards.

### Purpose

The Guidelines provide a coordinated approach which has drawn upon relevant existing Council Plans, Strategies, standards and codes applied to the light rail design, in order to present a tailored and specific suite of guidelines.

### Structure

The Guidelines are presented in two volumes. The first volume outlines the urban design context and overall strategy for the light rail project in Randwick City. It includes design concepts for key light rail elements and configurations, addressing the impact of the project on Randwick City's spaces, streets and public domain.

These design concepts illustrate how the urban design principles and standards can be applied to the light rail project in order to achieve a coordinated, integrated and seamless outcome, in line with the CSELR proposal objective to "improve the overall amenity of public spaces in the CBD and suburbs to the south-east".

The second volume contains key relevant technical design standards and specifications.

### Volume 1

- Introduction
- Urban design strategy
- Design concepts
- Palettes of materials, urban and landscape elements

### Volume 2

- Technical standards
- Specifications



### 1.3 Proposal overview

The CSELR project comprises the construction and operation of approximately 12km of new light rail from Circular Quay to Central, Kingsford and Randwick via Surry Hills and Moore Park.

It will provide an accessible, reliable, high frequency “turn-up-and-go” service catering for up to 9000 passengers per hour in peak periods.

Key elements include:

- 20 light rail stops
- A pedestrian zone on George Street
- A light rail stabling facility in Randwick
- A maintenance depot in Rozelle
- Public domain improvements

In the City of Sydney the proposed route extends from Circular Quay in Sydney CBD along George Street to Central Station, then to Anzac Parade at Moore Park via Surry Hills.

In Randwick City the light rail route travels along Anzac Parade to a terminus and interchange at Kingsford; branching at Alison Road to form a second light rail line which travels along the boundary of Royal Randwick Racecourse to High Street, with a terminus and interchange at Randwick.

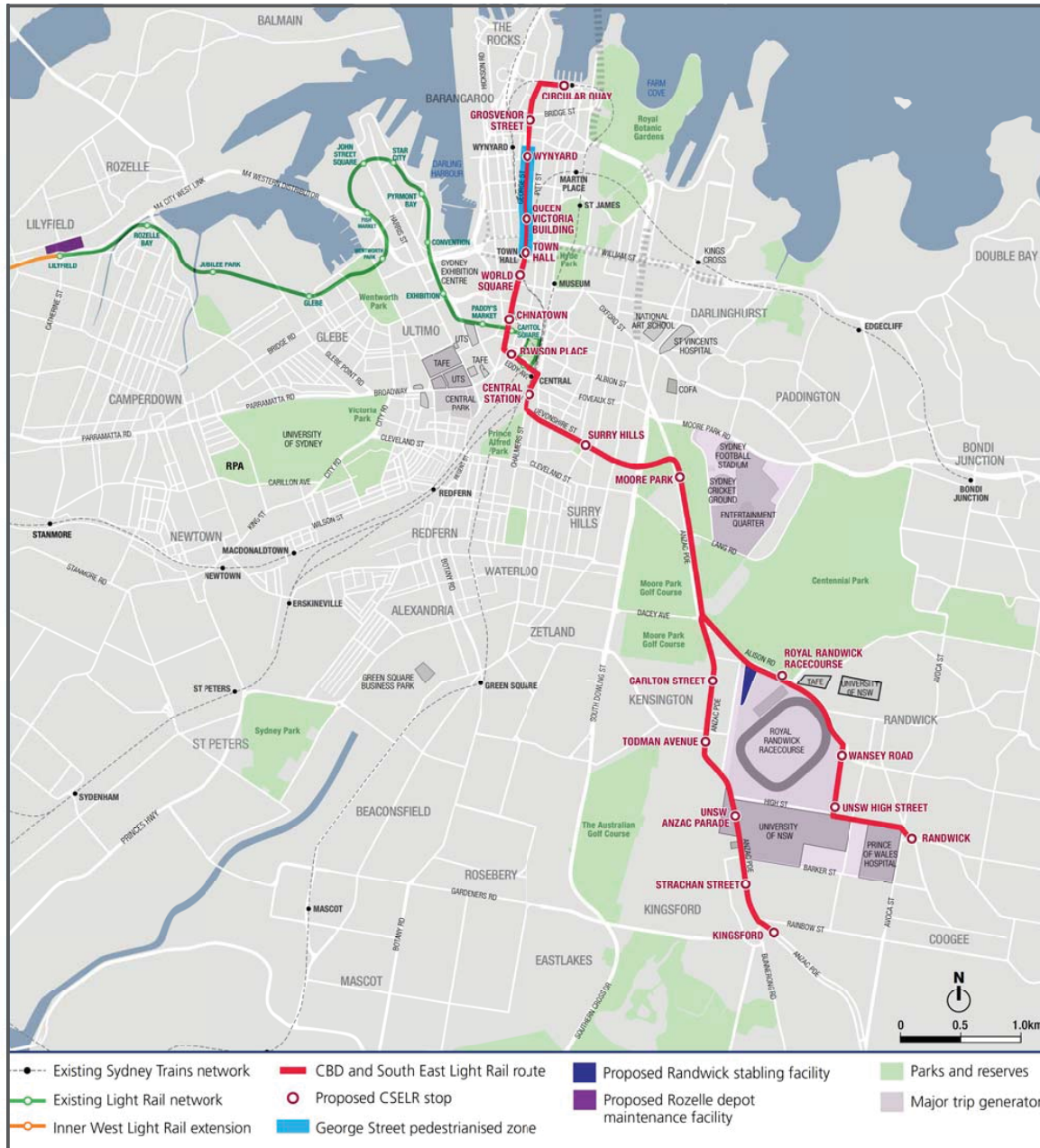


Figure 1.1: the proposed CSELR route (Transport for NSW)



# Urban Design Strategy

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- 2.1 Context and background**
- 2.2 Design principles and actions**
- 2.3 Light rail precincts and stops**
- 2.4 The public domain**

## 2.1 Context and background

### Background

The CSELR proposal includes Urban Design Principles and Objectives guiding all aspects of the design, and linking to the wider State Plan for New South Wales.

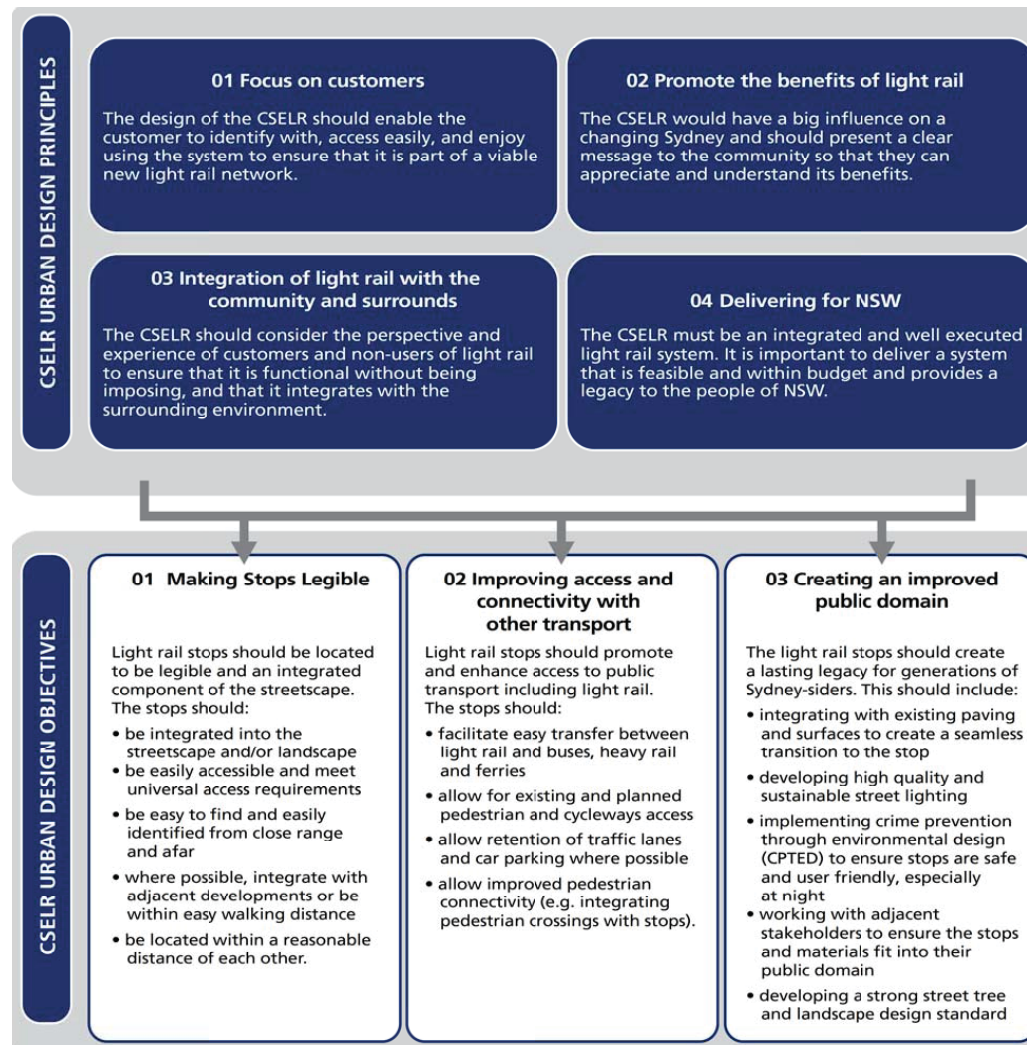


Figure 2.1: CSELR Urban Design Strategy (Transport for NSW)

**Randwick City's Light Rail Urban Design Guidelines have been prepared with reference to the CSELR Urban Design Principles and objectives.**

The CSELR Urban Design Objectives are all highly relevant to the urban fabric of Randwick City.

Key words and outcomes consistent with the Randwick City Light Rail Urban Design Guidelines are:

- *Legible*
- *Integrated*
- *Accessible*
- *Promote/enhance public transport*
- *Improved public domain*
- *Pedestrian and cycle connections*
- *Improved connectivity*
- *Seamless transitions*
- *High quality sustainable lighting*
- *Safe and user friendly*
- *Consistent with City public domain standards*
- *Strong streetscape and landscape design standard*

National context

The Urban Design Protocol for Australian Cities is an action of the Australian Government’s National Urban Policy.

The Council of Australian Governments (COAG) agreed to undertake reforms in capital city strategic planning systems. A key criterion in the COAG agreement is: *‘To encourage world-class urban design and architecture’.*

The Urban Design Protocol for Australian Cities aims to encourage the highest standard of urban design, and to create productive, sustainable and liveable places for people through leadership and interation of design excellence.



Figure 2.2: Components of quality urban design (Urban Design Protocol for Australian Cities)

Strategic Context

Randwick City’s Urban Design Strategy has been prepared in consideration of the Urban Design Protocol for Australian Cities, prepared under the guidance of the Federal Department of Infrastructure, and with support from all levels of government.

The 12 principles of the Urban Design Protocol (UDP) align well with the key urban design directions and outcomes of the Randwick City Plan:

UDP Principle	Randwick City Plan directions and outcomes
Excellence	Achieve high quality urban design
Enhancing	Improve the environmental performance of spaces and buildings
	Value, protect and celebrate our heritage
Vibrant	Vibrant businesses, institutions and services that provide ongoing and diverse employment and serve the community
Comfortable	Foster distinct neighbourhoods with commercial centres that meet the needs of our community as places to live, work, shop, meet and socialise
Safe	Maximise the identity, amenity and useability of neighbourhoods
Context	Centres, streets and public spaces are safe, inviting, clean and support a recognisable image of our City
Connected	Integrated and accessible transport
Walkable	A network of safe and convenient walking paths and cycleways that link major and uses and recreation opportunities



## Design Excellence

Design excellence is a cornerstone of the Randwick City Plan and the outcomes sought from the Light Rail urban design. The objectives and principles below are derived from the Randwick City Local Environmental Plan 2012 and Development Control Plan 2013.

### Objective

- to deliver the highest standard of architectural and urban design

### Principles

- achieve a high standard of architectural design, materials and detailing appropriate to the building type and location
- improve the quality and amenity of the public domain
- respond to the environmental and built characteristics of the site and achieve an acceptable relationship with other buildings on the same site and on neighbouring sites
- meet sustainable design principles in terms of sunlight, natural ventilation, wind, reflectivity, visual and acoustic privacy, safety and security and resource, energy and water efficiency
- avoid detrimental impacts on view corridors and landmarks

The design of all buildings, structures, public spaces and the public domain within the CSELR project should address and achieve Randwick City's design excellence principles.

### What is good design?

**Good design is a creative process which, when applied to development, results in great urban places, buildings and spaces.**

*Successful places provide the following:*

- 1. Character**  
*- a place with its own identity*
- 2. Continuity and enclosure**  
*- private and public spaces*
- 3. Quality public realm**  
*- attractive and well-used outdoor areas*
- 4. Ease of movement**  
*- easy to get to and move through*
- 5. Legibility**  
*- easy to navigate*
- 6. Adaptability**  
*- flexibility to change*
- 7. Diversity**  
*- variety and choice*

*(Commission for Architecture and the Built Environment, CABE, UK)*

## 2.2 Principles and actions

Four key principles and associated actions below are derived from Randwick City strategies and relevant to the light rail urban design. These are explored further in these Guidelines within each precinct on the route.

1

### An integrated, accessible and safe circulation network

- Action: Balance and address the needs of pedestrians, cyclists, vehicular and public transport
- Action: Coordinate the light rail physical infrastructure with the surrounding public domain and circulation network



2

### Streets and public spaces communicate identity and character

- Action: Reinforce and enhance key gateways to Randwick City on Anzac Parade
- Action: Reflect and reinforce the roles and characters of the streets and public domain within the light rail network:

**Anzac Parade:** Enhance the Anzac Parade boulevard character and respect its regional significance

**Alison Road:** Respect and retain the landscape character and setting

**High Street:** Establish High Street as the spine of the Randwick Education and Health Specialised Centre

**Wansey Road:** Recognise and retain the landscape and local streetscape character

**Avoca Street/High Cross:** Reinforce and respond to the heritage character, views and landmarks



3

### Commercial centres are our social and business hubs

- Action: Retain and foster the distinct neighbourhood identities of commercial centres
- Action: Support the centres as vibrant, prospering and connected



4

### A well designed public domain supports community life

- Action: minimise visual clutter, and create legible, coherent streetscapes
- Action: Enhance the public domain at commercial centres on Anzac Parade
- Action: achieve design excellence and innovation
- Action: create streets that are accessible, safe, clean and inviting



1. Enhance gateway to Randwick City



2. Enhance Kensington town centre



3. Enhance Kingsford town centre



3. Enhance Kingsford town centre

## Urban Design Principles

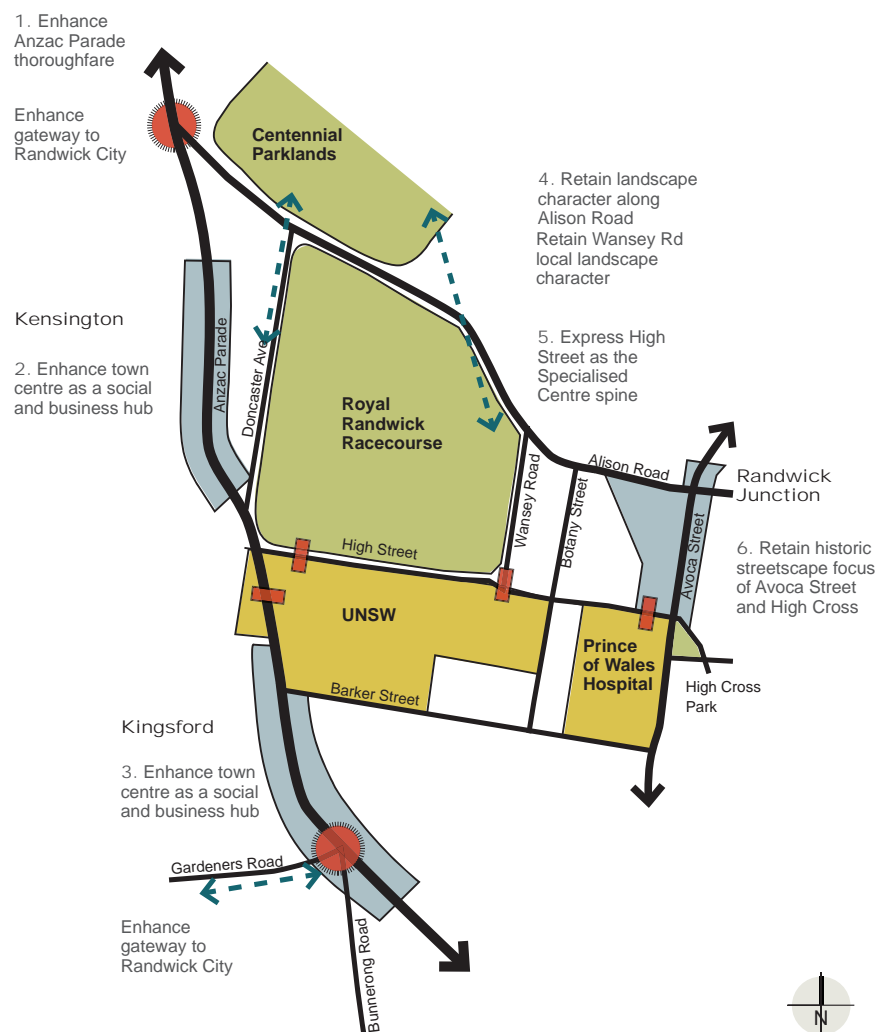


Figure 2.3: Light rail urban design principles



4. Retain landscape character



4. Retain landscape character



5. High St: Specialised Centre spine



6. Avoca St: Retain historic focus



## 2.3 Light rail precincts and stops

The CSELR proposal defines five precincts within the route alignment, each with specific, separate urban design approaches based on a broad contextual analysis.

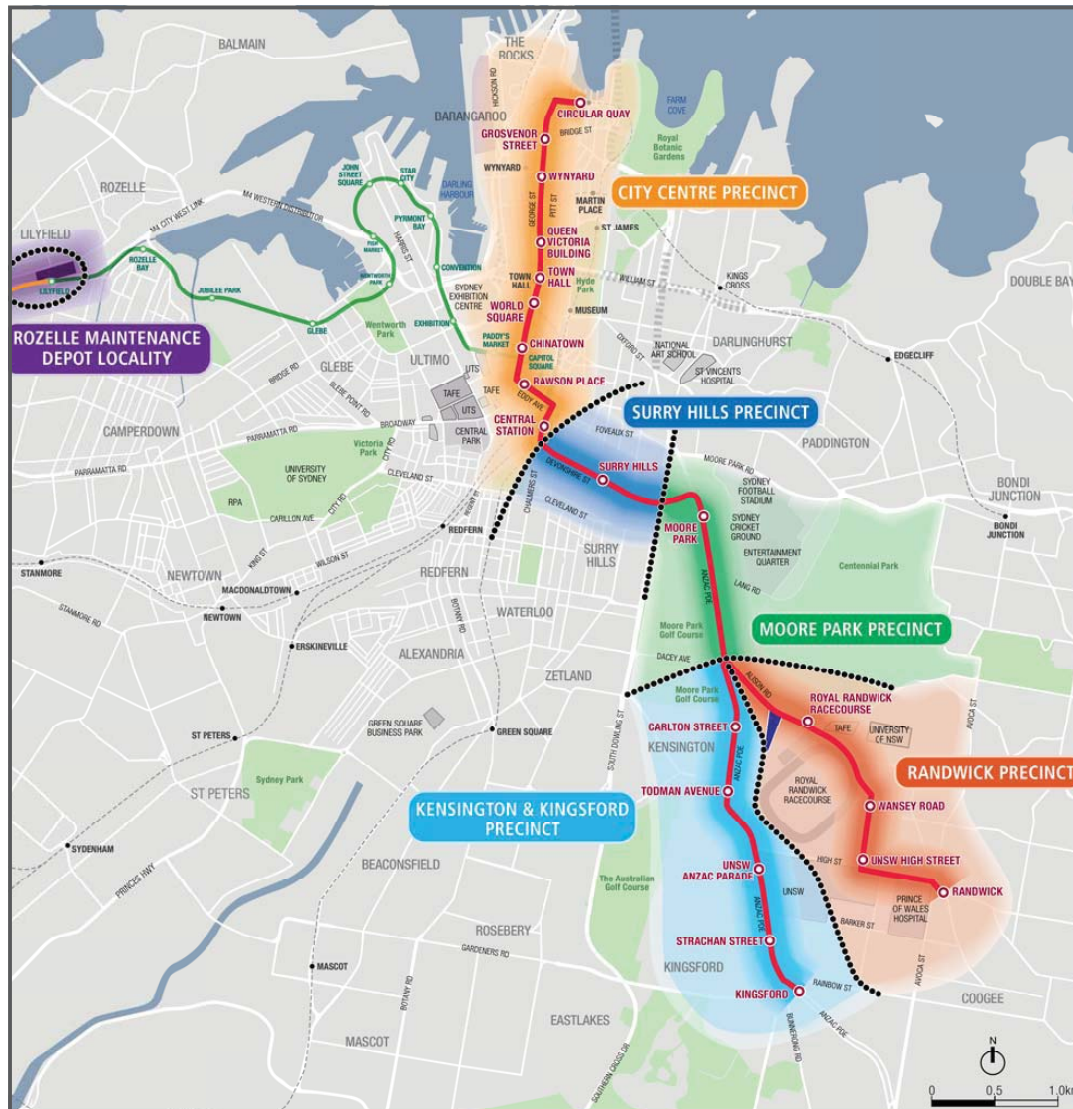


Figure 2.4: Light rail precincts (Transport for NSW)

### Precincts

In Randwick City the proposed light rail route is categorised into two precincts:

- **Kensington/Kingsford:**  
covering the route along Anzac Parade to the interchange at Kingsford
- **Randwick:**  
covering the route along Alison road, Wansey Road, and High Street to the interchange at Randwick

### CSELR Design typologies

The CSELR proposes three design typologies based on a contextual analysis of the intended route. These are:

- Civic
- Park
- Boulevard

These typologies are applied to the design of the light rail, focusing on stations and landscape treatment.

### Park typology - Randwick

Characterised by a strong linkage to the open space of the surrounding land uses.

### Boulevard typology - Kensington/Kingsford

Characterised by the built form and urban character of Anzac Parade

## Stations and Interchanges

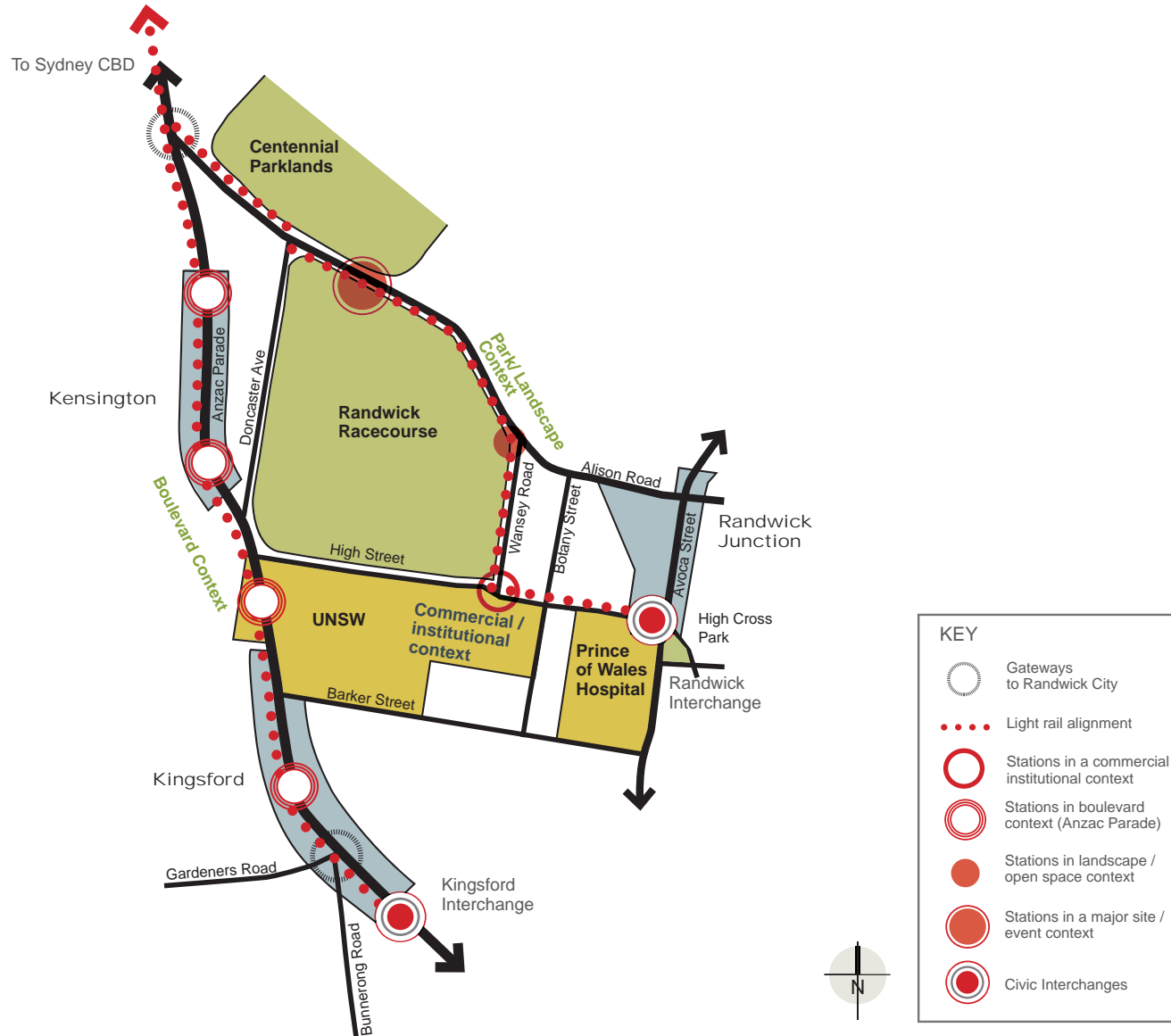


Figure 2.5: Light rail urban design principles - stations and interchanges

## Public domain principles - light rail stops and interchanges

The diagram overlays the proposed light rail route and stop locations, and suggests how the design and public domain treatment around the light rail should respond to the broader context.

### Stops and Interchanges

Stops and interchanges should not be the dominant element in the streetscape, but consider and respond to their context.

### Kensington/Kingsford Precinct

The CSELR proposal applies a boulevard typology to the light rail design, characterised by the formal landscaped character of Anzac Parade, activated by the commercial centres of Kensington and Kingsford.

### Randwick Precinct

The CSELR proposal applies the Park typology to the Randwick Precinct. The Park typology suits the segments of the precinct facing Randwick Racecourse and Centennial Park, however the segment of the route on High Street and High Cross Park are characterised by a more urbanised, pedestrianised and commercial/institutional context.



*Differentiated paving at pedestrian crossing, Manchester*



*Turfed tracks in a park context, France*



*Light rail stop in a town centre context, Nice*

## Light rail stops

Light rail systems work within the existing urban environment, and form an integral part of the public domain and circulation network. The following design principles apply to the design of the light rail alignment, stops and interchanges to ensure they positively integrate with the urban fabric of Randwick City.

### General principles

- Light rail stops, tracks and infrastructure should respond to and complement the existing context, while providing for a clear and legible and coherent station design.
- Platforms and circulation areas are sized to suit passenger and pedestrian volumes and desire lines
- Use a high quality yet simple, limited and controlled palette of materials and finishes
- Use coherent elements with a consistent scale and form, and clear alignment
- Maintain clear sight lines and provide transparency
- Use visually sensitive approaches to guide pedestrian movement, and minimise fences and barriers
- Avoid redundant elements
- Maximise intuitive wayfinding, and where signage is needed, integrate with the stop design and context
- Consider appropriate lighting design for the context of each station location
- Apply CPTED principles to the access and layout of stations and interchanges
- Balance provision of shelter and shade with the need to minimise visual bulk
- Maintain a seamless ground plane, with differentiation for pedestrian areas to signify crossing points and pedestrianised zones



# Light rail stops

## Additional principles for interchanges

- Integrate light rail design as part of a comprehensive concept for an urban space/plaza
- Consider additional passenger and pedestrian needs; eg: public toilets, water bubblers, cafes
- Provide secure bicycle lockers
- Minimise the visual bulk of light rail plant and infrastructure such as substations (by placing underground)

## Additional principles for stops in a park context

- leverage the opportunity to visually extend the park landscape into the light rail alignment (eg: grassed tracks)
- Preserve sight lines, views and vistas to and through surrounding open space and landscaped areas

## Additional principles for stops in a town centre context

- Maintain sight lines to shops, services and facilities across sides of the street
- Locate platforms to maintain and support pedestrian flows
- Explore opportunities to increase pedestrianised space surrounding stops in high pedestrian activity areas



*Light rail stops - Bordeaux, France*

Examples showing a simple, subdued palette of materials, with a station design not dominating the surrounding context.

Elements on the platform are unobtrusive yet legible and coherent.



*Light rail in a public square - Bordeaux, France*

Examples show how a light rail system can be integrated into an existing urbanised environment with minimal fences or barriers, with a consistent treatment in the ground plane ensuring the light rail does not dominate surrounding heritage and civic buildings.

## Kensington/Kingsford Precinct - context

This Precinct covers the light rail route alignment along Anzac Parade. Anzac Parade is an important regional transport corridor, and is notable for its generous width and formal landscape character; framed by significant fig trees at its northern end, and characterised further to the south by a broad planted median.

### Historic context

Anzac Parade was first established as route linking the settlement at Sydney to Randwick Racecourse and beyond in the mid 19th century. The formal boulevard concept emerged in the late 19th century as the surrounding suburbs began to develop. It obtained its present name in 1917 to commemorate the Australian and New Zealand Army Corps, with a memorial obelisk placed at its northern end near Moore Park.

Council's 2006 Randwick City Plan recognised this road's significance with an action to transform Anzac Parade into one of Sydney's grand boulevards.

### Land use

Within the Kensington/Kingsford precinct Anzac Parade is framed by the local commercial/mixed use centres of Kensington and Kingsford, the University of NSW and NIDA. The precinct supports strong and growing demand for educational, cultural, recreational, shopping and leisure/entertainment uses.

With a wide central median, and activated footpaths and ground level buildings this Precinct includes an important gateway to Randwick City, and supports busy and growing volumes of people living, working, studying and visiting the area. Rather than a suburban context as noted in the CSELR proposal, this precinct is characterised by medium to high density developments in town centres, and the key institutional frontages of UNSW and NIDA.

### Landscape and character

The wide treelined landscaped character of Anzac Parade is a dominant element of the eastern suburbs of Sydney, as it traverses from Moore Park in the north to La Perouse and Botany Bay.

### Implications for the light rail design

This context highlights the imperative for the light rail urban design in this Precinct to effectively manage the multiple roles of Anzac Parade in:

- Supporting busy business, learning and social hubs
- Reflecting the regionally notable landscaped boulevard
- Maintaining an effective transport corridor.

### Anzac Parade - a snapshot

Designs for the model suburb of Kensington in 1891 first introduced the concept of a formal boulevard along what is now known as Anzac Parade:

*"The main boulevard...is the principal feature...and the main artery for traffic. It is designed in two chains in width and comprises two outer roadways for light and local traffic and a central one for tram and heavy traffic. Two outer and two inner footpaths provide for foot traffic and general promenading, the inner ones being planted down their centres with suitable trees."*



*Image of Anzac Parade in the 1920's showing a multi-lane boulevard layout.*



*Corner of Anzac Parade and Gardners Road, Kingsford*

## Kensington/Kingsford precinct - Strategy

Strategies below for the Kensington/kingsford precinct are developed from the overall light rail urban design principles and actions:

- **Reinforce and enhance key gateways to Randwick City on Anzac Parade**  
Retain Randwick City gateway signage
- **Enhance the Anzac Parade boulevard character and respect its regional significance**  
Establish a strong landscape character with generous scale formal street tree planting  
Maintain view corridors and boulevard proportions  
Provide for undergrounding of power
- **Enhance the public domain at commercial centres on Anzac Parade**  
Employ a consistent and coordinated palette of paving, street trees and public domain elements  
Provide for undergrounding of power to allow street tree planting and public domain treatment on footpaths
- **Retain and foster the distinct neighbourhood identities of commercial centres**  
Reflect the human, intimate scale of the public domain in town centres
- **Support the centres as vibrant, prospering and connected**  
Maintain access and sight lines to shops and businesses  
Provide opportunities for outdoor dining
- **Minimise visual clutter, and create legible, coherent streetscapes**  
Maximise co-location of signage, lighting, banners, power poles  
Employ a consistent and coordinated palette of materials, urban elements and landscape treatment
- **Achieve design excellence and innovation**  
Use a high quality consistent palette of materials, finishes and urban elements  
Explore innovative applications of sustainable materials and technologies
- **Create streets that are accessible, safe, clean and inviting**  
Ensure the design and capacity of footpaths, light rail platforms and crossings reflects pedestrian volumes and desire lines
- **Coordinate the light rail infrastructure with the surrounding public domain**  
Light rail should be an unobtrusive yet legible, accessible and coherent element in the urban environment



## Randwick Precinct - context

There are two distinct components within the Randwick precinct, defined by landscape, topography, history and its role in supporting Randwick City's largest employment centre:

1. Alison Road and Wansey Road characterised by a landscape/park context, and;
2. High Street/Avoca Street and High Cross Park characterised by the spine of the Education and Health Specialised Centre, and the historic core of Randwick city

### **Alison Road and Wansey Road context**

Randwick Racecourse, together with Centennial Park and Moore Park form one of the largest areas of open space in the eastern suburbs of Sydney. Alison Road and Wansey Road have mature and significant avenue plantings which enhance the streets' visual amenity.

Key features are significant tree plantings, a broad landscaped outlook, and view corridors to Sydney CBD and local landmarks.

### **High Street/Avoca Street/High Cross Park context**

High Street links the major institutions and uses within the Randwick Education and Health Specialised Centre, and also connects these activities to Randwick Junction, a focal point of the City and highly visible from many vantage points. This town centre retains many of the enduring symbols of Randwick's development, while providing key services, businesses and shops supporting the local community, visitors, students and workforce.

Avoca Street is located on a ridge in the centre of Randwick. Most of Randwick's early roads cross or originate from High Cross, at the intersection of High Street, Avoca Street and Belmore Road. It was the first part of Randwick City to be developed and historically is the most important.

High Cross Park is one of Randwick's major urban civic spaces, and a central identifying element of Randwick's historic landscape. It is a feature in vistas along Belmore Road and Avoca Street, framed by heritage items and visually connecting the the Captain Cook Statue at the corner of Belmore Road and High street.



*Early images of High Cross Park and Avoca Street (Randwick image library)*



## Randwick Precinct - strategy

Strategies below for the Randwick Precinct are developed from the overall light rail urban design principles and actions

### Key Streets

Alison Road:	Respect and retain the landscape character and setting
Wansey Road:	Recognise and retain the landscape and local streetscape character
High Street:	Establish High Street as the spine of the Education and Health Specialised Centre
Avoca Street:	Recognise and respect its historic importance and view corridors

- **Retain and foster the distinct neighbourhood identities of commercial centres**
  - accommodate pedestrian flows while reflecting the human, intimate scale of the public domain in town centres
- **Support the centres as vibrant, prospering and connected**
  - maintain sight lines to shops and businesses
  - provide opportunities for outdoor dining
  - provide opportunities for a pedestrian plaza/public space at the Randwick interchange
- **Minimise visual clutter, and create legible, coherent streetscapes**
  - maximise co-location of signage, lighting, banners, power poles
  - employ a consistent and coordinated palette of materials, urban elements and landscape treatment
- **Achieve design excellence and innovation**
  - explore innovative applications of sustainable materials and technologies
  - provide a comprehensive customised design for the Randwick interchange that responds to the context and includes high quality public space
  - retain significant trees, views and vistas
- **Create streets that are accessible, safe, clean and inviting**
  - ensure the design and capacity of footpaths, light rail platforms and crossings reflects pedestrian volumes and desire lines
  - create seamless pedestrian connections to the surrounding public domain at stations and interchanges
- **Coordinate the light rail infrastructure with the surrounding public domain**

Light rail should be an unobtrusive yet legible, accessible and coherent element in the urban environment



**High Cross Park is the focus of the historical development of Randwick City, and remains at the centre of the City's highest concentration of heritage items and heritage conservation areas.**

The park and surrounding buildings demonstrate the area's role as a major civic space since the foundation of the village of Randwick in the early 19th century. High Cross is widely recognised by the community as a central and identifying element of Randwick's historic landscape.

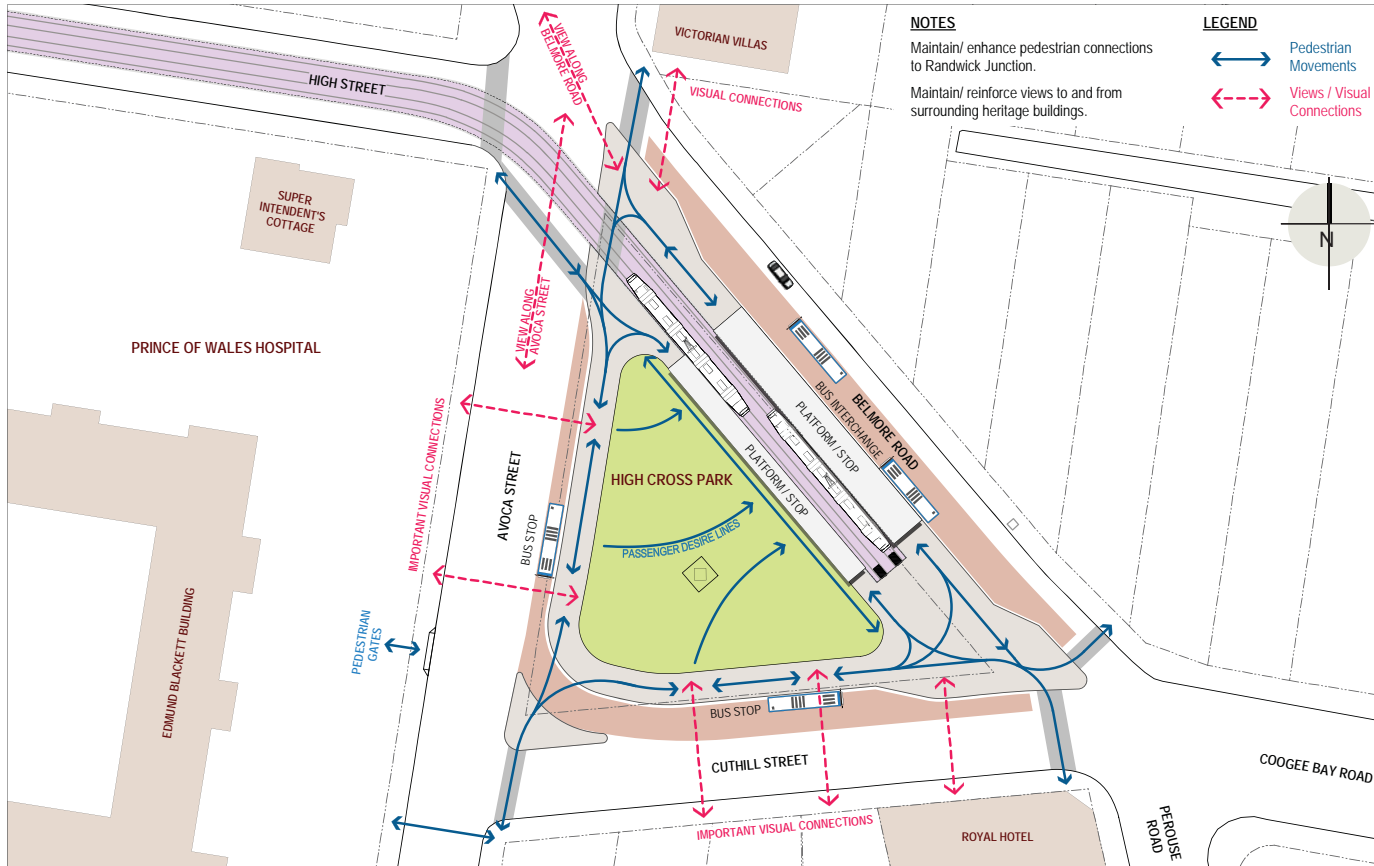
The park was an early focal point for social gatherings in the 19th century, continuing with the placement of the Anzac memorial in the early 20th century.

The Transport for NSW proposed interchange location at High Cross Park will introduce a new role for this key site. The future design of High Cross Park will need to respect and respond to its heritage values.

## Randwick Precinct - High Cross Park Study







Provide and maintain views and key connections to and from High Cross Park and surrounding streets, commercial centres and destinations including the Prince of Wales Hospital.

Views and visual connections:

- Avoca Street ridge
- Views from surrounding heritage buildings to High Cross Park
- Views to Prince of Wales Hospital
- Visual connections to Randwick Junction and the Spot
- Views to significant trees
- Views to local landmarks
- Coastal views and vistas

Pedestrian connections:

- Respond to desire lines for travel between light rail and bus operations
- Provide high quality, accessible connections to Prince of Wales Hospital, Randwick Junction and the Spot

## Visual clutter

Visual clutter is a confused or disordered state or collection of information and objects in the visual field. It is influenced by the amount of objects, their relevance to their location, and the way they are organised in a given setting.

In the context of streetscapes and the public domain visual clutter is measured by:

- the number and density of objects/information in the streetscape
- the range of different types of objects (also affected by the range of colours, shapes etc)
- their location relative to each other and the broader visual environment
- the degree of coordination and organisation of different objects; their legibility and coherence
- the size and prominence of objects in the visual field
- the relevance/appropriateness of objects to their location
- the relevance of the object to a particular activity

A cluttered visual environment can:

- create distraction
- inhibit the ability to search, focus on and absorb relevant information
- create unnecessary spatial constraints and impede circulation
- affect the safety, useability and enjoyment of streets for pedestrians, cyclists, vehicles drivers and passengers

These Urban Design Guidelines contain key principles, concepts and layouts for the types and organisation of objects in the public domain to contribute to uncluttered, safe, legible and well-designed streets and public spaces.

A visually uncluttered environment:

- is coherent and legible
- facilitates wayfinding for pedestrians and vehicles
- contributes to safety
- supports a well-designed public domain

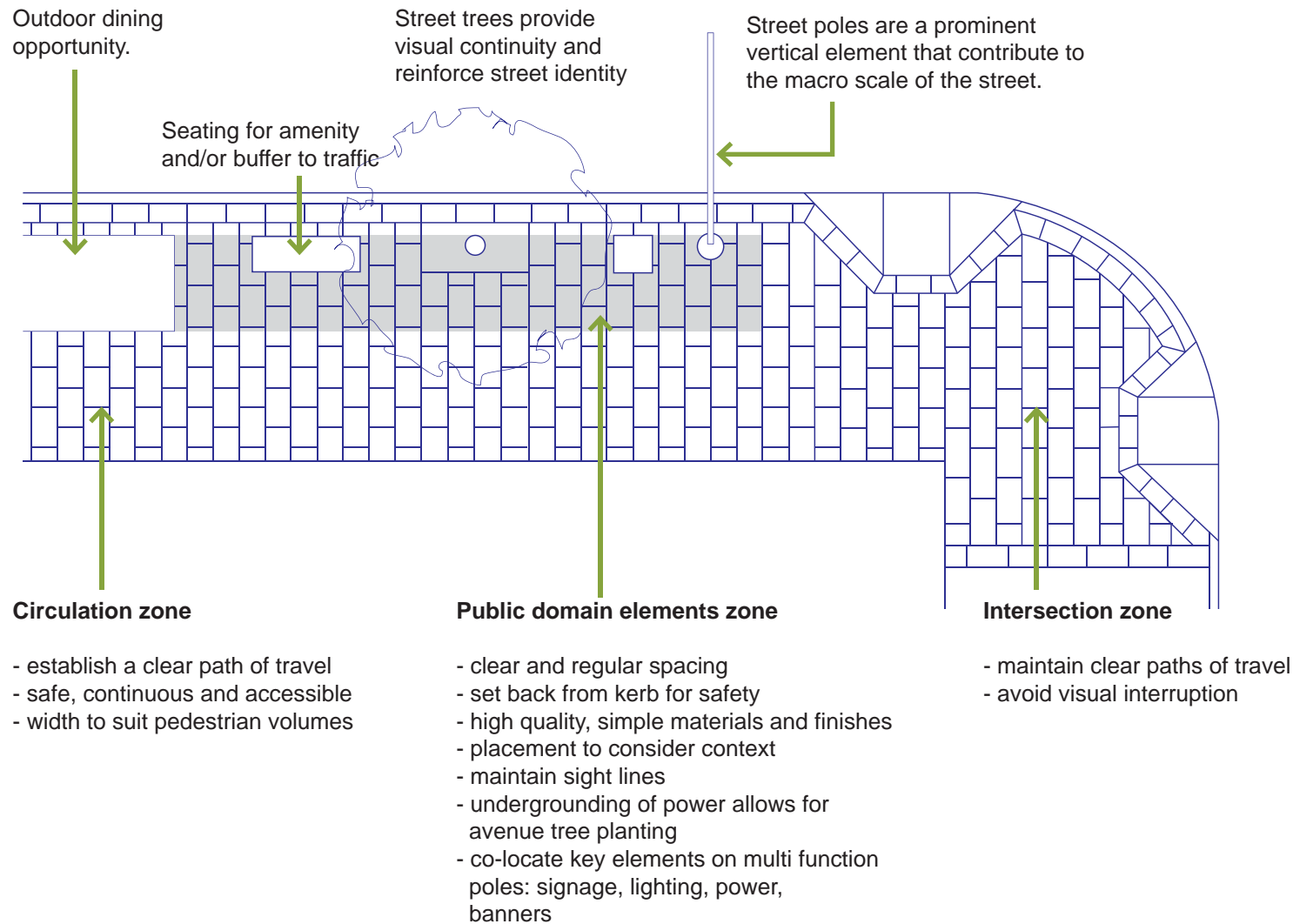


*Examples of a cluttered public domain*



*Example of an un-cluttered public domain*

## 2.4 The public domain



### Design and layout principles

A well-thought out and regular spacing of elements reinforces the street rhythm and creates a legible pedestrian environment.

For a legible streetscape:

- Establish clear zones for public domain elements and safe pedestrian movement.
- avoid visual clutter
- adopt consistent layout principles
- only use what is needed
- avoid redundant infrastructure
- use complementary elements with a simple, consistent palette
- maximise co-location of street pole-mounted elements

Include opportunities for localised responses with customised design elements and/or public art to reinforce a sense of place

## Public domain elements

Our public spaces in combination with the public domain elements support the public life of the City. Each element has a clear role to play in contributing to an overall cohesive, safe and attractive environment.

### Street furniture

- Provides utility, human scale, punctuates the street with a purposeful rhythm
- Design of street furniture should be high quality, durable and simple
- Should be placed to maintain sight lines and circulation along and across streets and public spaces
- Street furniture can be customised in key locations to reflect special characteristics of a place, or combine with public art/interpretation

### Landscape

- Use carefully selected street trees to respond to and reinforce the character of streets and provide visual continuity at a broad scale
- Consider smaller scale planting to define localised, more intimate spaces and provide a buffer to high movement/traffic zones
- Feature planting for public plazas and spaces reflects locality, use and character, creates focal points and reinforces view corridors
- Landscape improves amenity, shade, supports biodiversity and enhances the microclimate
- Maximise opportunities for use of landscape as part of water-sensitive urban design

### Signage & wayfinding

- Maximise potential for the urban design of the public domain to provide for intuitive wayfinding
- Provide directional wayfinding at/near light rail stops in response to pedestrian and passenger needs
- Ensure a consistent, simple and legible family of signage and wayfinding elements
- Coordinate wayfinding signage with other signage elements in the public domain to avoid visual clutter
- Signage to be adaptable to a range of installations – eg: multi-function poles, free-standing, wall-mounted



*Customised seat design (Hub Street Furniture)*



*Levinson Park, Boston*



*Decorative street lighting, Vienna*



## Public domain elements

### Lighting and poles

- Poles are prominent vertical elements in the streetscape. Pole design and spacing should reinforce the street rhythm.
- Maximise co-location of elements onto multi-function poles, including:
  - lighting
  - street and parking/traffic signage
  - banners
  - light rail catenary
- Consider opportunities for decorative/feature lighting in town centres and to support the night time economy

### Paving

- Employ a simple, high quality and durable palette of paving materials for the public domain
- Provide a seamless treatment for footpaths and pedestrianised areas
- Identify opportunities for specialised on-road paving treatments in high pedestrian areas and pedestrian plazas
- Integrate light rail public domain paving design with Randwick City standards

### Public art/interpretation

- Incorporate public art into key streets and spaces to contribute to cultural identity, help build stronger, more connected communities and to foster artistic excellence
- Identify opportunities to coordinate public art with other public domain elements such as lighting, paving insets and specialised street furniture
- Identify opportunities for temporary public art, interpretive elements and cultural events during construction of the light rail



*Decorative lighting, Zuccotti Park, New York*



*Public art installation at High Cross Park*



*Smartpoles at Customs House, Sydney*

## References

### **Existing Council plans, strategies, policies and standards**

Randwick City Plan 2006 – updated 2013  
Randwick City Council

Randwick Local Environmental Plan 2012  
Randwick City Council

Randwick Comprehensive Development Control Plan 2013  
Randwick City Council

Randwick Economic Development Strategy 2009  
Prepared by SGS on behalf of Randwick City Council

Randwick City Council Public Art Strategy (2011)  
Randwick City Council

Kensington Town Centre Public Domain Improvement Strategy (2003)  
Prepared by Civitas for Randwick City Council

Kingsford Town Centre Strategy (2013)  
Randwick City Council

Randwick Education and Health Specialised Centre Precinct Plan (2010)  
Randwick City Council

Randwick City Council Bicycle Plan (2007)  
Prepared by Sustainable Transport Consultants on behalf of Randwick City Council

Randwick City Signage Manual (2008)  
Prepared by Minale Bryce Design Strategy for Randwick City Council

Randwick City Urban Elements Manual (2008)  
Prepared by Dickson Rothschild for Randwick City Council

Randwick City Street Tree masterplan and specification (2009)  
Randwick City Council (updated from an original by Spackman and Mossop)

Randwick City civil specifications and technical standards - various

Randwick City Council Significant Tree Register (2008)  
Prepared by Landarc Pty Ltd for Randwick City Council

### **Other references**

Urban Design Protocol for Australian Cities  
([www.urbandesign.gov.au](http://www.urbandesign.gov.au))

Commission for Architecture and the Built Environment (CABE) UK  
([www.cabe.org.uk](http://www.cabe.org.uk))

CBD and South East Light Rail Environmental Impact Statement 2013 and Submissions Report 2014  
Transport for New South Wales – 2013

CDB and South East Light Rail Definition Design documentation  
Transport for New South Wales - 2013

### **Image credits**

Historical Images from Randwick City Council Library Services  
Page 16 City of Sydney: Proposed cycleway Missenden Road Camperdown ([www.cityofsydney.nsw.gov.au](http://www.cityofsydney.nsw.gov.au))  
Page 20 Light rail images - various ([www.lightrailnow.org](http://www.lightrailnow.org))  
Page 28 Examples of visual clutter ([www.english-heritage.org.uk](http://www.english-heritage.org.uk))  
Page 30 Hub Street furniture: examples of customised furniture design ([www.hubstreetequipment.com.au](http://www.hubstreetequipment.com.au))  
Page 31 Streetscape international: Smartpole installation, Customs House, Sydney ([www.streetscape.ae](http://www.streetscape.ae))

### **Acknowledgements**

Concept designs prepared for Randwick City Council by Spackman Mossop and Michaels, 2014





## Design Concepts

3

## Purpose

The design concepts prepared by Spackman Mossop and Michaels acknowledge that the CSELR project is still subject to detailed design and that several design and technical aspects will evolve. The intention is that the key recommendations and design intent of the illustrated concepts is maintained as the project becomes further resolved.

Each study area includes:

- summary of recommendation
- plan of Randwick City Council's preferred layout
- section of Randwick City Council preferred layout
- existing situation - cross section
- TfNSW's proposal

The study drawing list:

- 1a RANDWICK - High Street, Transport Plaza
- 1b RANDWICK - High Cross Park, Transport Plaza
- 2 RANDWICK - High Street, Midblock
- 3 RANDWICK - High Street, UNSW Stop Upper Campus - Transport Plaza, Stop
- 4 RANDWICK - High Street, UNSW Upper Campus - Transport Plaza, Midblock
- 5 RANDWICK - Wansey Road, Midblock
- 6 RANDWICK - Alison Road at Wansey Road Intersection
- 7a RANDWICK - Alison Road, Royal Randwick Racecourse Stop
- 7b RANDWICK - Alison Road, Royal Randwick Racecourse Entry/Exit
- 8 RANDWICK - Alison Road corner Doncaster Avenue
- 9 RANDWICK - Alison Road shared footpath alignment
- 10 KENSINGTON - Anzac Parade, Midblock
- 11 KENSINGTON - Anzac Parade, south of Todman Avenue
- 12 KINGSFORD - Anzac Parade, UNSW Lower Campus Stop - Option A Central Platform
- 13 KINGSFORD - Anzac Parade, Midblock
- 14 KINGSFORD - Anzac Parade, Stop corner Strachan Street/Middle Street
- 15 KINGSFORD - 'Nine Way' Intersection
- 16 KINGSFORD - Anzac Parade, Parking Area South of Interchange



— Randwick Alignment

— Kingsford Alignment



## 1a. RANDWICK - HIGH STREET, TRANSPORT PLAZA

### RECOMMENDATIONS

#### KEY IDEAS

- Relocate the Randwick terminus from High Cross Park to the eastern end of High Street.
- Create a transport plaza at the eastern end of the shared street, at the junction of High Street and Avoca Street.

#### MOVEMENT AND CIRCULATION

- Close High Street to buses between Clara Street and Avoca Street. Divert buses to/from Avoca Street along an alternate route (Wansey Road/Arthur Street/Belmore Road).
- Provide new bus stops on Avoca Street to create a bus/light rail interchange at the eastern end of High Street.
- Provide one vehicle lane eastbound between Clara Street and Avoca Street to allow for access to existing driveways, with a view towards full pedestrianisation in the future.
- Create a 'shared street' environment between Clara Street and Avoca Street, with kerb-free transitions between footpaths/shared paths and vehicle/light rail lanes. Separation to be delineated by a change in materials and/or texture in the paving surface.
- Improve visual and pedestrian connections between public domain and Prince of Wales at Avoca and High Street.

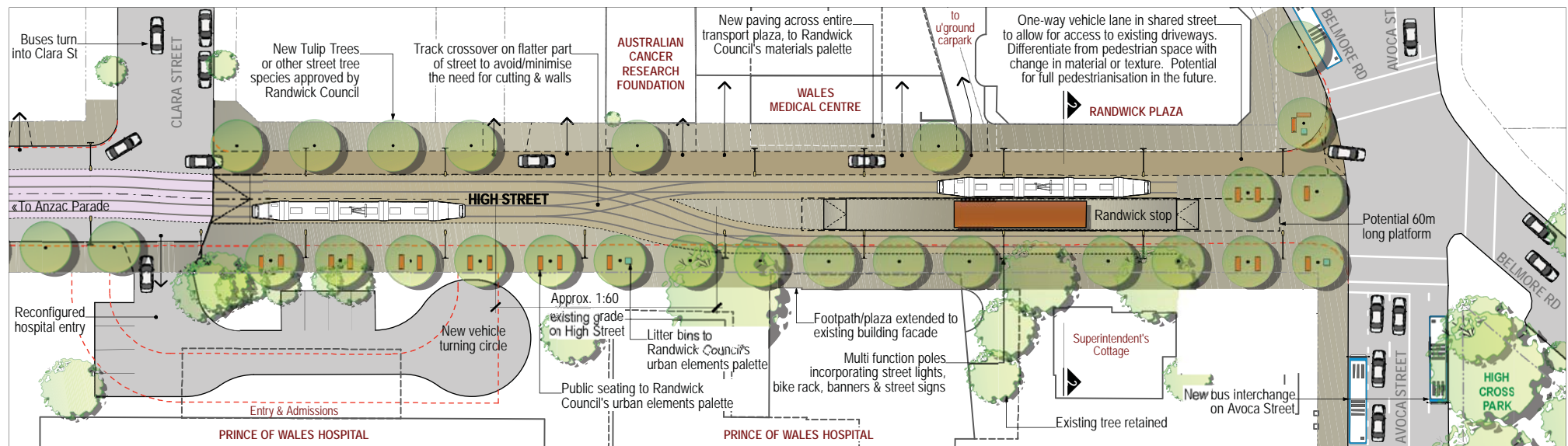
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Light rail lanes to be wire-free to allow for tree planting in plaza.
- Minimise 'pole clutter' by providing multi-function poles that integrate street lighting, pedestrian lighting, traffic signals, street signs and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

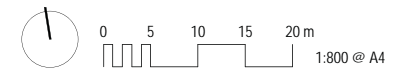
- Provide new street trees along High Street and in the plaza. Species to be Tulip Trees (*Liriodendron tulipifera*) or other species to be approved by Randwick City Council.

# 1a. RANDWICK - HIGH STREET, TRANSPORT PLAZA



NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

----- Existing kerbs/medians removed



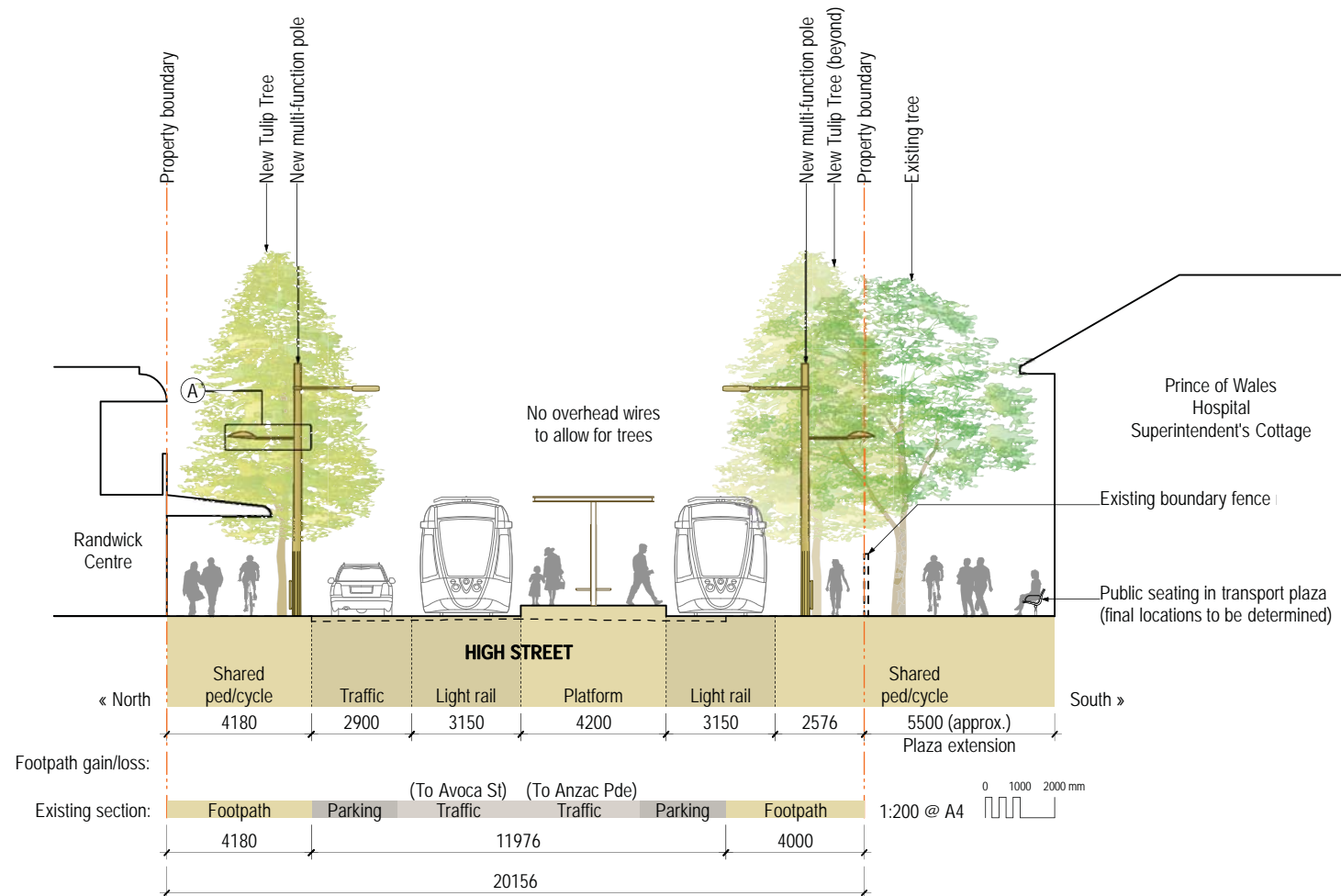
Plan at High Street

Section at eastern end - near Avoca Street

**RCC Preferred Arrangement**



# 1a. RANDWICK - HIGH STREET, TRANSPORT PLAZA



NOTE: Existing dimensions are from GIS data supplied by Randwick Council and are approximate only.

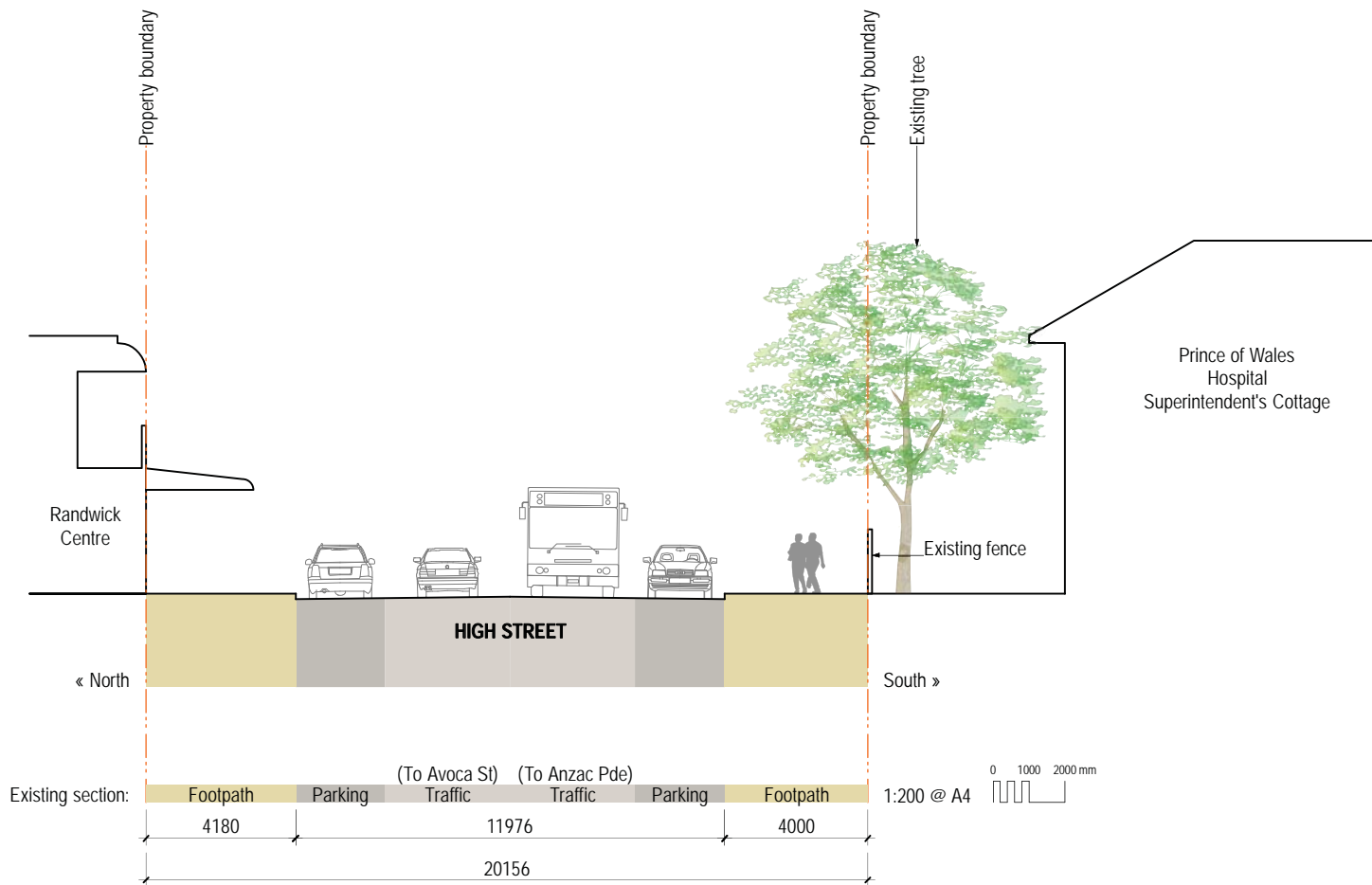
A: Alternative pedestrian lighting may be required at building awnings

High Street - Section 2

Section at eastern end - near Avoca Street

**RCC Preferred Arrangement**

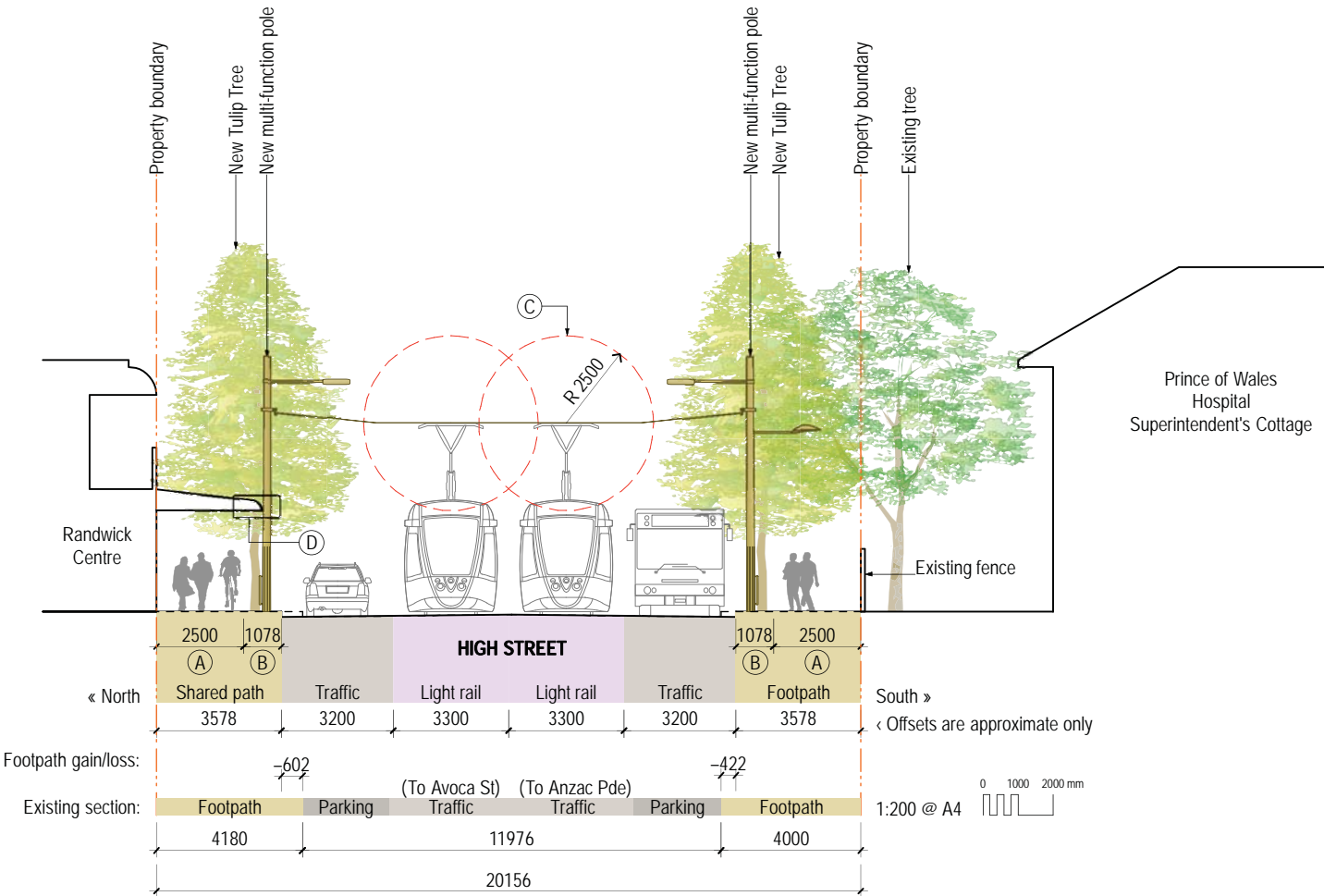
1a. RANDWICK - HIGH STREET, TRANSPORT PLAZA



NOTE: Existing dimensions are from GIS data supplied by Randwick Council and are approximate only.

High Street - Section 2  
Section at eastern end - near Avoca Street  
**Existing Situation**

1a. RANDWICK - HIGH STREET, TRANSPORT PLAZA



NOTE: Existing dimensions are from GIS data supplied by Randwick Council and are approximate only.  
A: Clear space for pedestrians & cyclists (min. 2500) B: Space for furniture & planting (max. 1200)  
C: Vegetation clearance zone for overhead wires D: Cutouts at awnings may be required to accommodate trees

High Street - Section 2  
Section at eastern end - near Avoca Street  
**Transport for NSW Proposal**



## 1b. RANDWICK - HIGH CROSS PARK, TRANSPORT PLAZA

### RECOMMENDATIONS

- Creation of an attractive urban plaza that provides opportunities for activities, e.g. café, markets, music, street performers.

### MOVEMENT AND CIRCULATION

- Increase accessibility for pedestrians and cyclists by extending footpath and platform widths.
- Provide visual and physical connections between park and station areas through structured planting and paved surfaces.
- Provide visual connections from park to historical landmark buildings.
- Retain space / clearance for gatherings and celebrations around the memorial.

### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Protect and retain heritage elements (such as the cenotaph).
- Incorporate in the TfNSW's proposal for the drivers amenities building: café, public toilets and bicycle lockers.
- Incorporate wayfinding / information hub.
- Provide civic furnishings such as seating, bike racks & lockers and appropriate sized shelters.
- Provide litter bins, bubblers (including fill up water bottle station) and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document.
- Provide lighting – decorative, interpretive, in paving inserts, feature lighting for trees and as needed for general safety.
- Provide opportunities to incorporate public art.
- Surface treatments: predominantly hardscape with elevated / raised planted areas incorporating sitting.
- Underground substation and power lines.

### LANDSCAPING

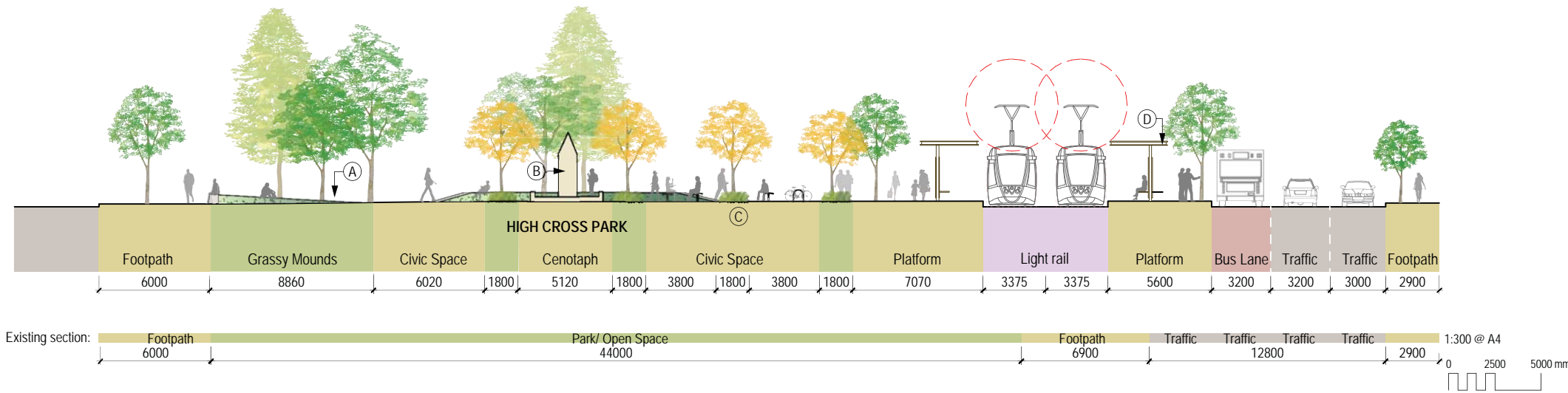
- Retain existing park trees where possible.
- Introduction of new civic feature trees in formal arrangement, e.g. grid.
- Trees and planting species to be in accordance with the 'Planting Palette' in section 4 of this document or as approved by Council.



1b. RANDWICK - HIGH CROSS PARK, TRANSPORT PLAZA



# 1b. RANDWICK - HIGH CROSS PARK, TRANSPORT PLAZA

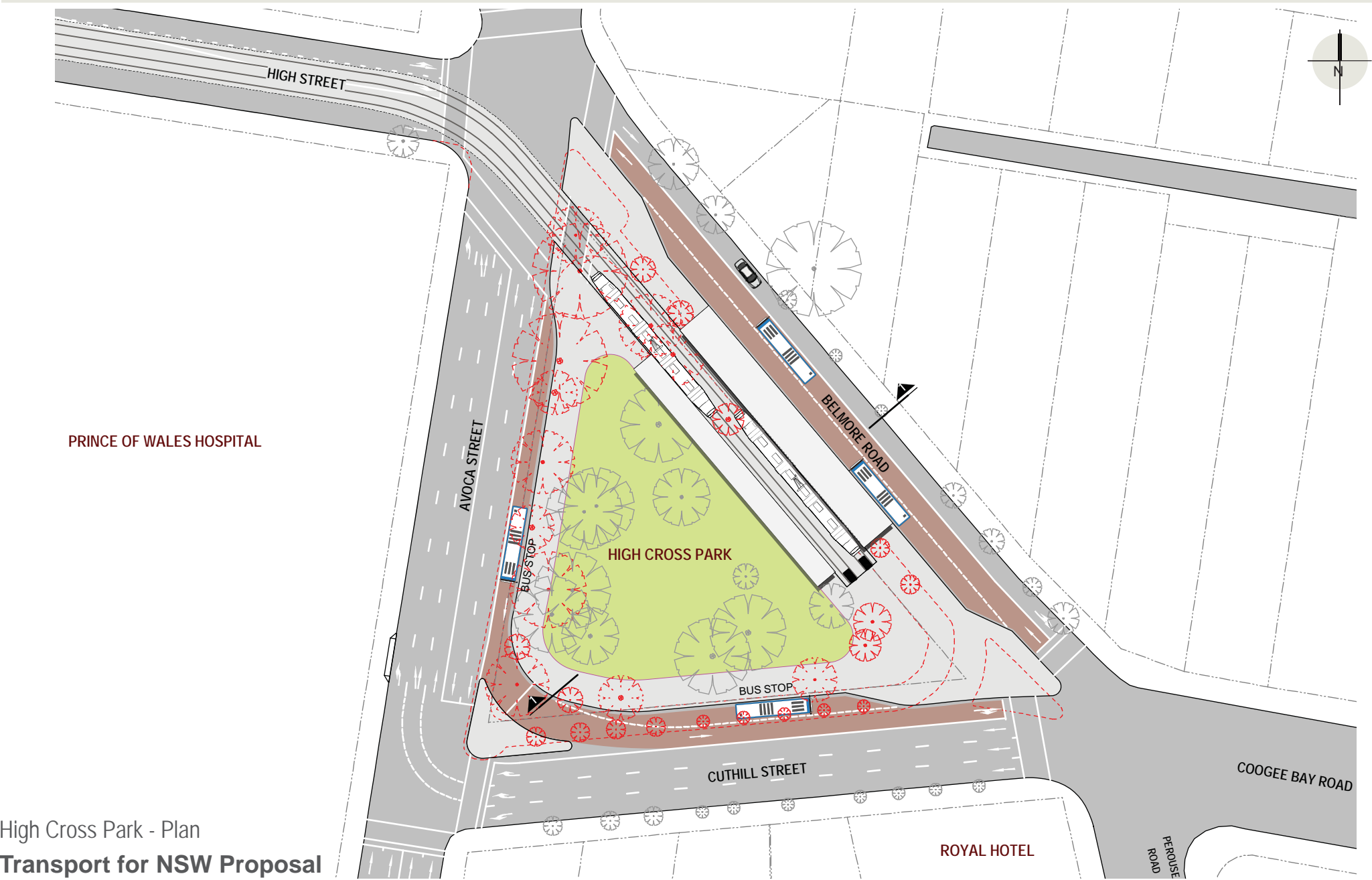


NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Grassy seating mounds B: Retained Cenotaph C: Civic areas of high quality planting and furnishings D: Appropriate sized shelters to reduce clutter and allow for street trees

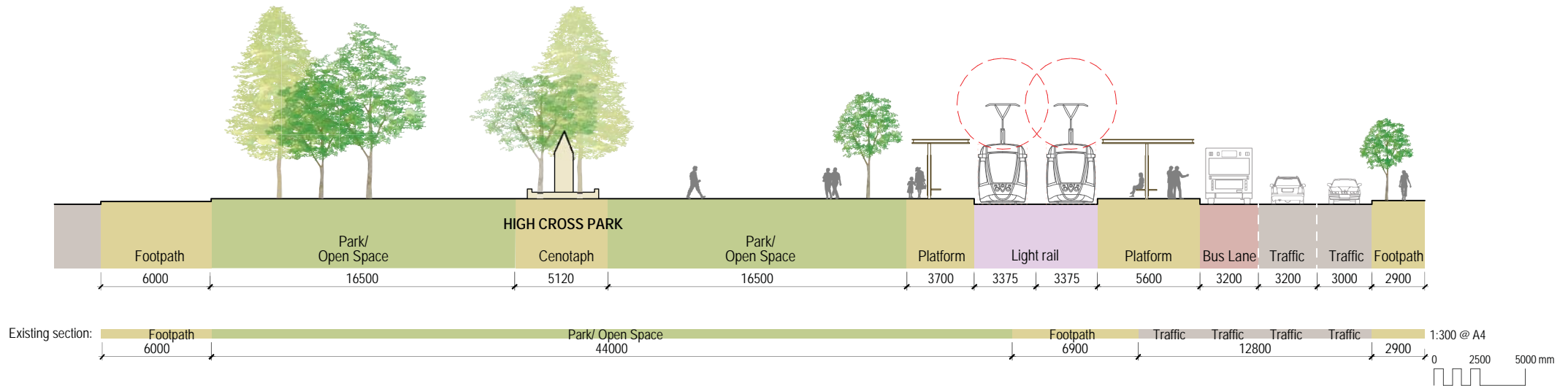
High Cross Park - Section  
RCC Preferred Arrangement

1b. RANDWICK - HIGH CROSS PARK, TRANSPORT PLAZA



High Cross Park - Plan  
Transport for NSW Proposal

## 1b. RANDWICK - HIGH CROSS PARK, TRANSPORT PLAZA



### ISSUES

- Footpaths adjacent the Light Rail Terminal will have high pedestrian volumes, proposed widths are insufficient.
- Turf surfaces are likely to degrade due to high volumes of foot traffic associated with a transport interchange.
- A number of significant trees are proposed for removal, including the prominent *Araucaria heterophyllas*.
- Pedestrian desire lines have not been addressed.
- Proposed bicycle parking restricts pedestrian access as it is concentrated in one location.

### High Cross Park - Section Transport for NSW Proposal





## 2. RANDWICK - HIGH STREET, MIDBLOCK

### RECOMMENDATIONS

#### KEY IDEAS

- Provide light rail lanes to minimum width requirements (ie 3300 per lane) in order to maximise footpath space retained.

#### MOVEMENT AND CIRCULATION

- Widen southern footpath (UNSW & hospital side of street) as per Transport for NSW proposal.
- Provide 2500 wide shared pedestrian and cycle path on northern side of High Street.

#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

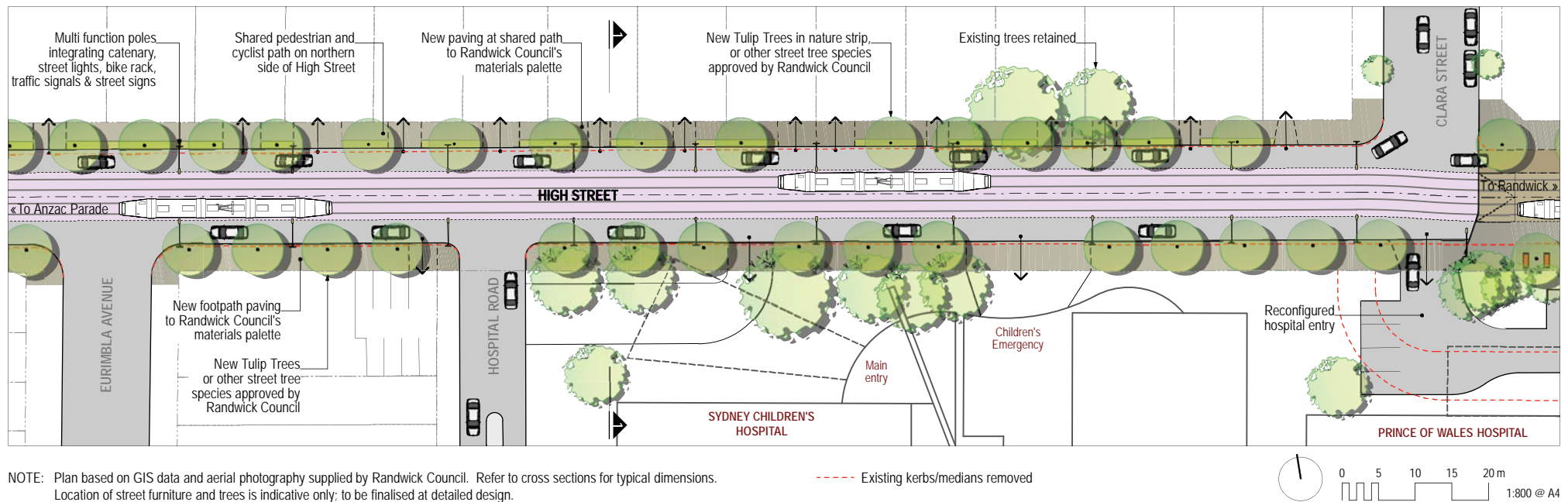
Minimise 'pole clutter' by providing multi-function poles that integrate light rail catenary, street lighting, pedestrian lighting, traffic signals, street signs and bike racks.

- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

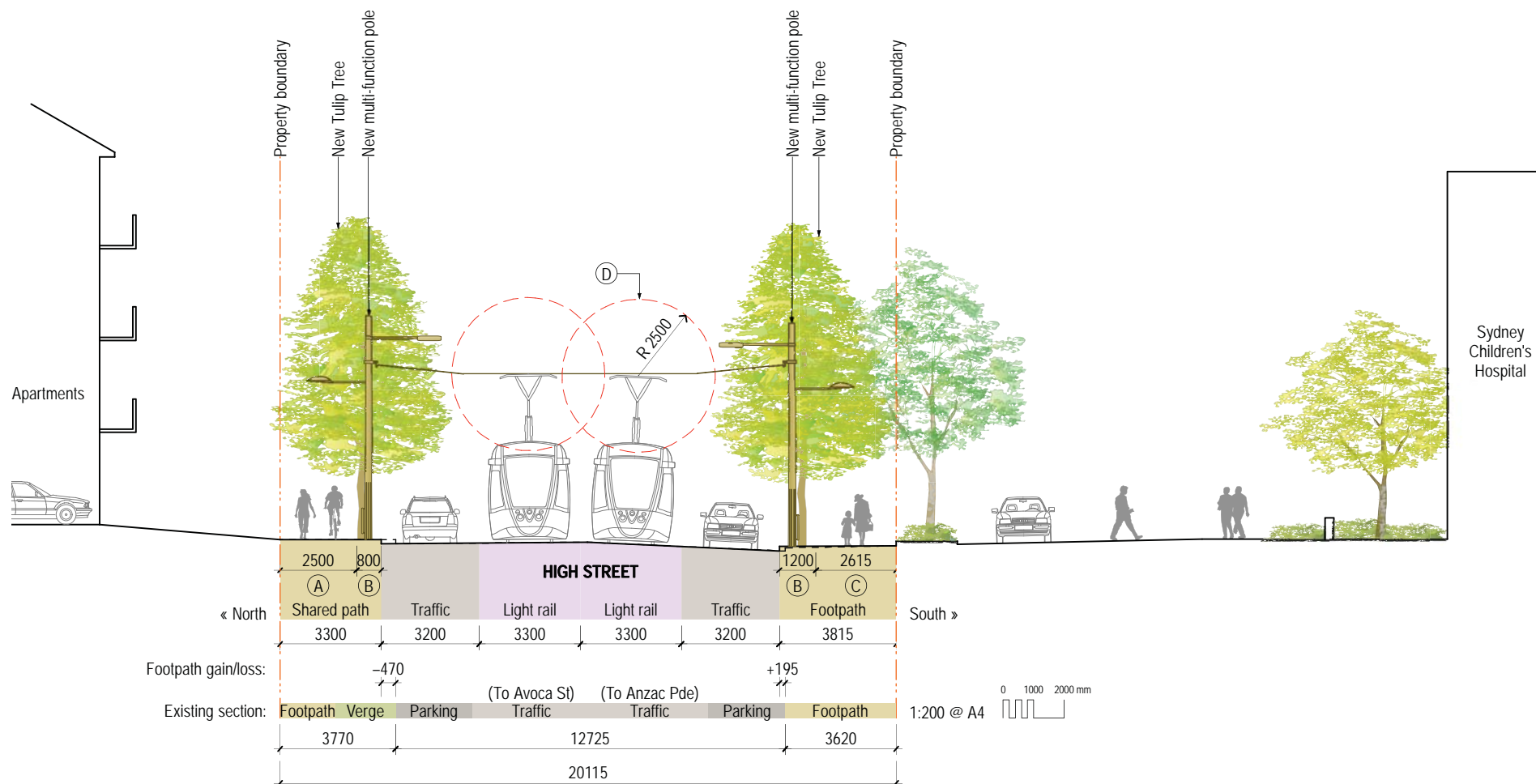
- Provide new street trees along High Street. Species to be Tulip Trees (*Liriodendron tulipifera*) or other species to be approved by Randwick City Council.

## 2. RANDWICK - HIGH STREET, MIDBLOCK



Plan at High Street  
Eurimbla Avenue - Clara Street  
**RCC Preferred Arrangement**

## 2. RANDWICK - HIGH STREET, MIDBLOCK



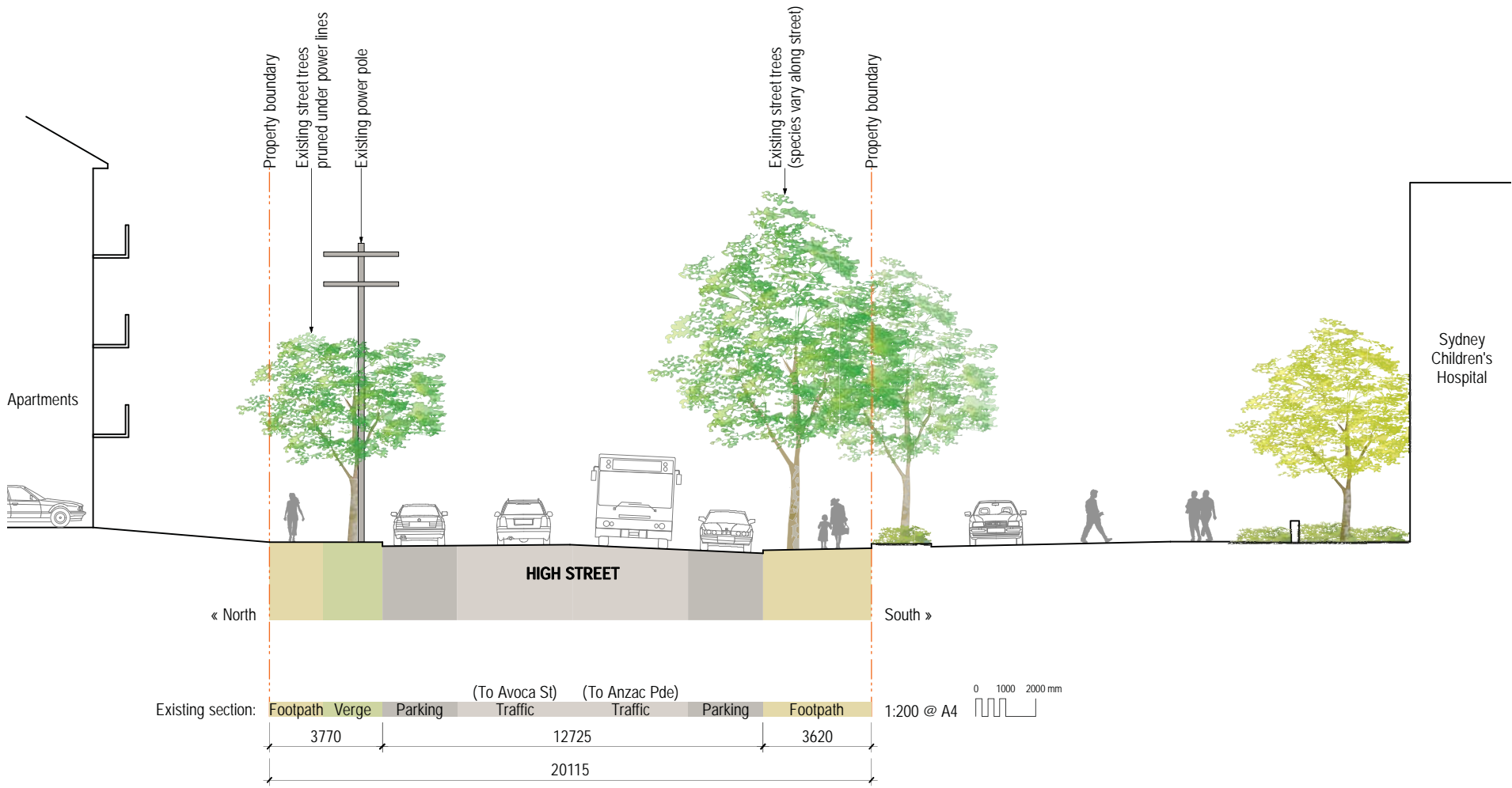
NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 16.

A: Minimum 2500 wide clear space for shared path    B: Space for furniture & planting (max. 1200)

C: Clear space for pedestrians (min. 2500)    D: Vegetation clearance zone for overhead wires

High Street - Section 1  
Typical Midblock Section  
**RCC Preferred Arrangement**

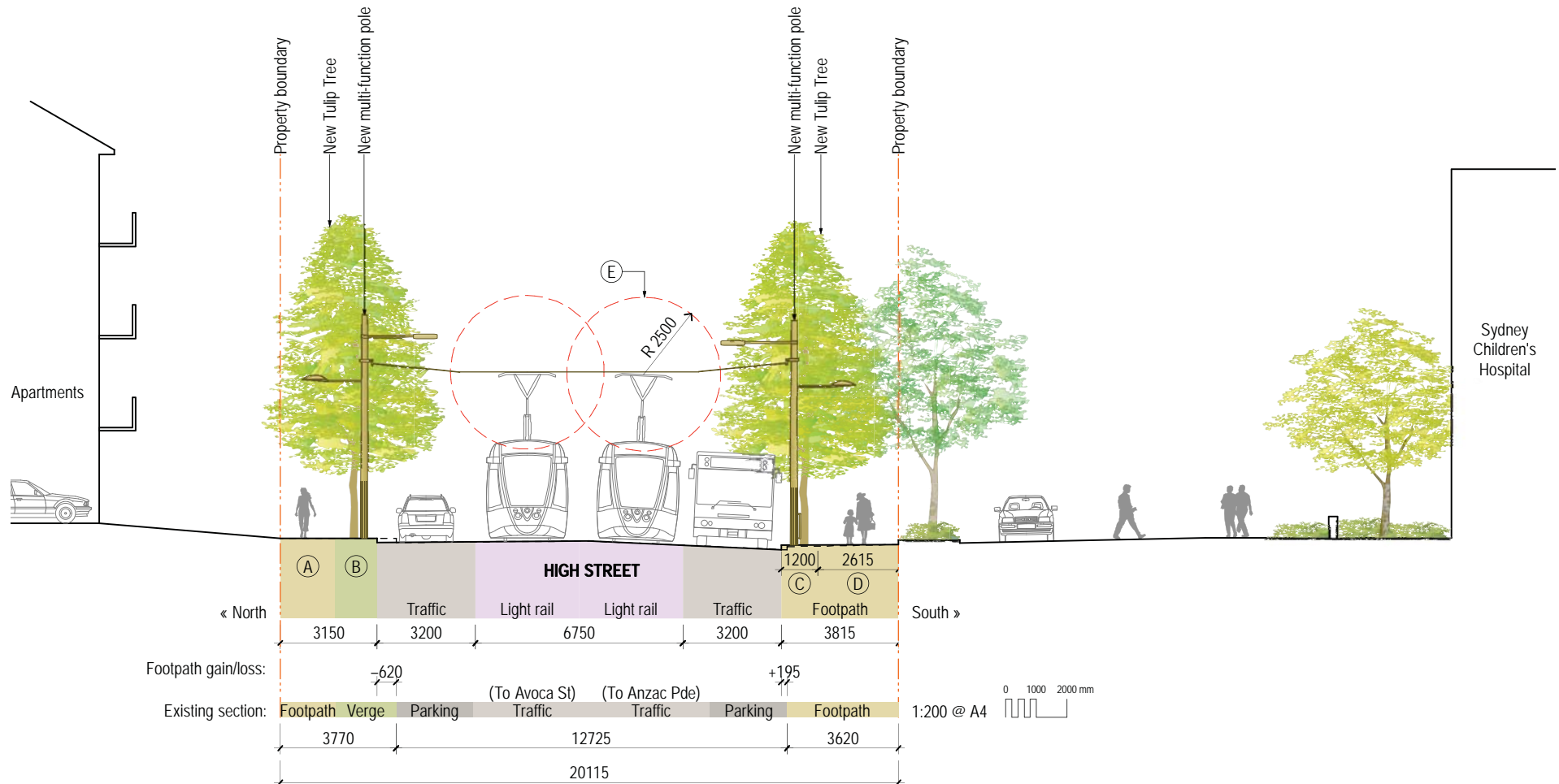
## 2. RANDWICK - HIGH STREET, MIDBLOCK



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 16.

High Street - Section 1  
Typical Midblock Section  
**Existing Situation**

## 2. RANDWICK - HIGH STREET, MIDBLOCK



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 16.

A: Existing footpath width maintained B: Existing planted verge narrowed C: Space for furniture & planting (max. 1200)

D: Clear space for pedestrians (min. 2500) E: Vegetation clearance zone for overhead wires

### ISSUES

- Light rail lanes are wider than minimum requirements, unnecessarily reducing footpath widths.

High Street - Section 1  
Typical Midblock Section  
**Transport for NSW Proposal**





### 3. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - STOP

#### RECOMMENDATIONS

##### KEY IDEAS

- Close High Street to traffic between Wansey Road and Botany Street.
- Create a transport plaza between Wansey Road and Botany Street that provides for pedestrians, cyclists and light rail.

##### MOVEMENT AND CIRCULATION

- Provide side-running platforms at the light rail stop, with kerb-free transitions to the surrounding plaza.
- Divert buses to/from Avoca Street along an alternate route (suggest Wansey Road/Arthur Street/Belmore Road).

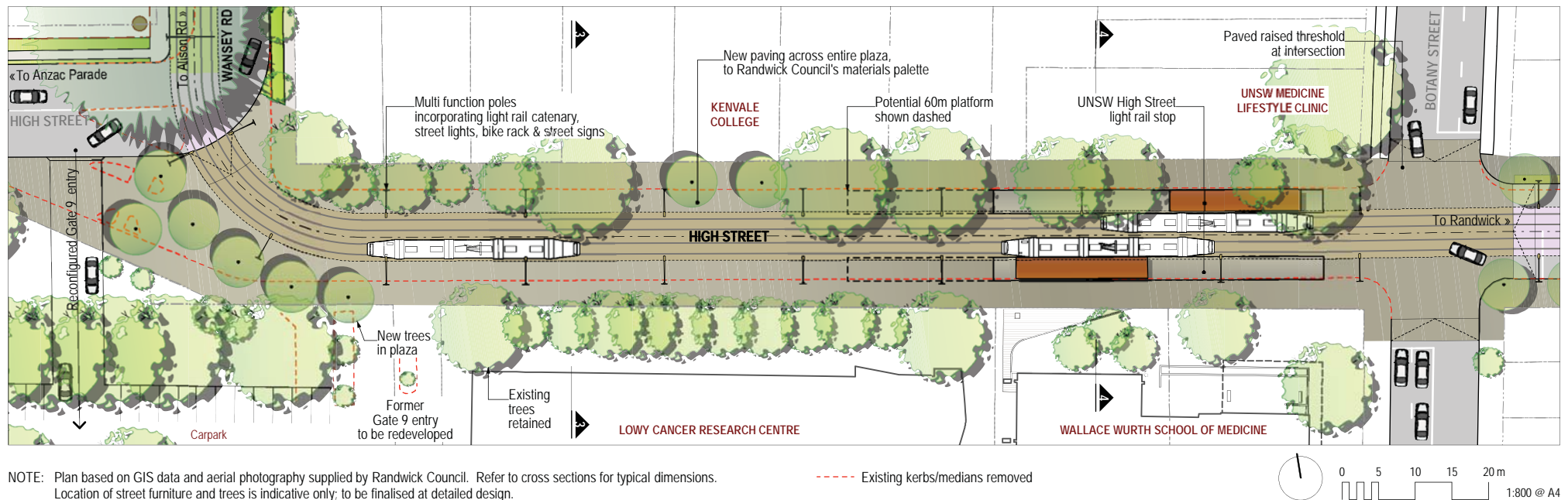
##### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Away from the light rail stop, the light rail lanes are to be flush with the surrounding plaza levels (no kerbs) and differentiated by a change in paving material or texture.
- Consider removing the existing palisade fence and hedge at the UNSW boundary to better integrate the new plaza with the university.
- Minimise 'pole clutter' by providing multi-function pole that integrate light rail catenary, street lighting, traffic signals, street signs and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Provide litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

##### LANDSCAPING

- Retain all existing trees and supplement with new Plane trees (or other large street tree species approved by Randwick Council).

### 3. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - STOP



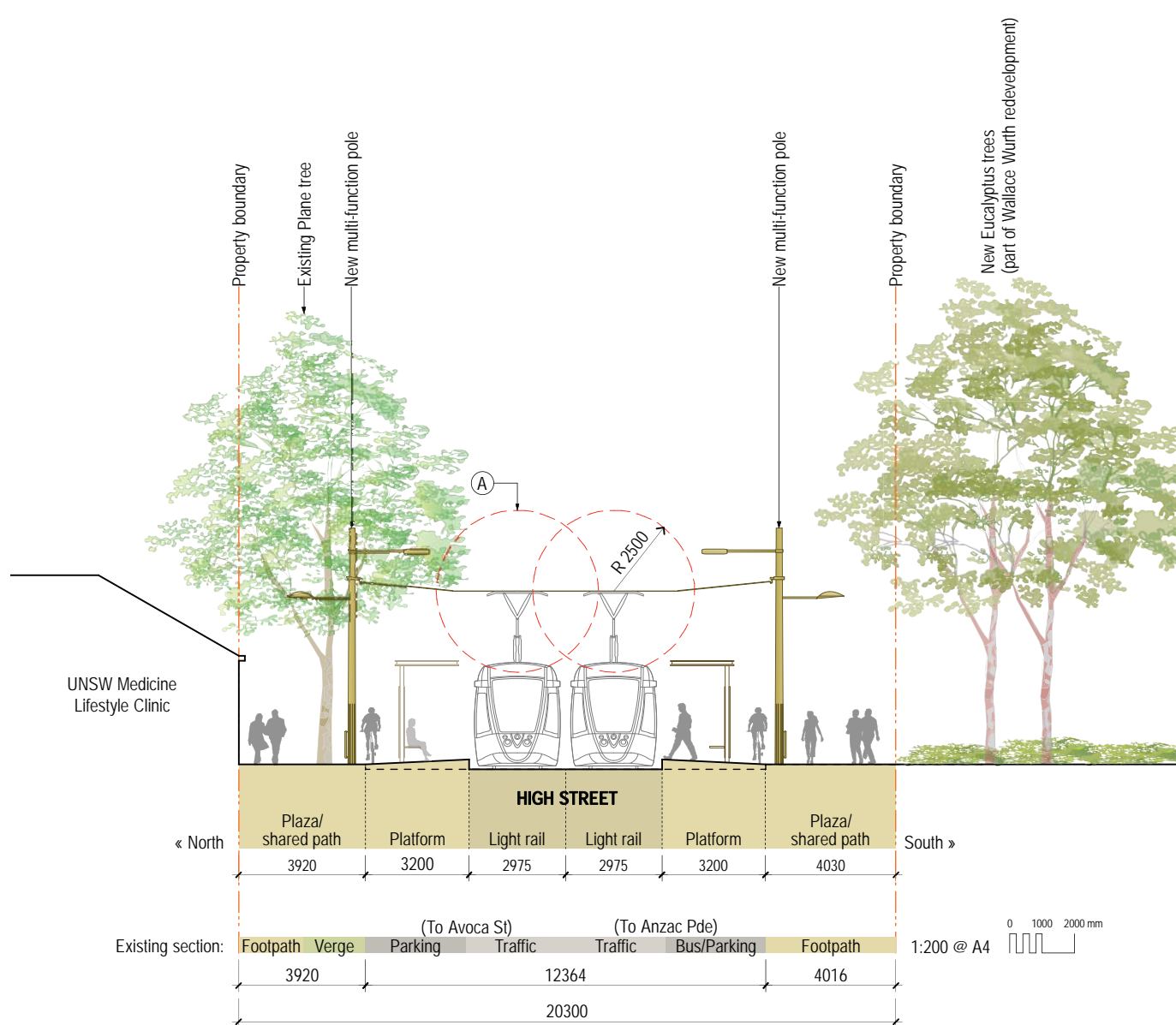
Plan at High Street Stop

Wansey Road - Botany Street

**UNSW High Street Plaza**

**RCC Preferred Arrangement**

### 3. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - STOP



NOTE: Existing dimensions are measured Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires – some pruning of existing trees may be required

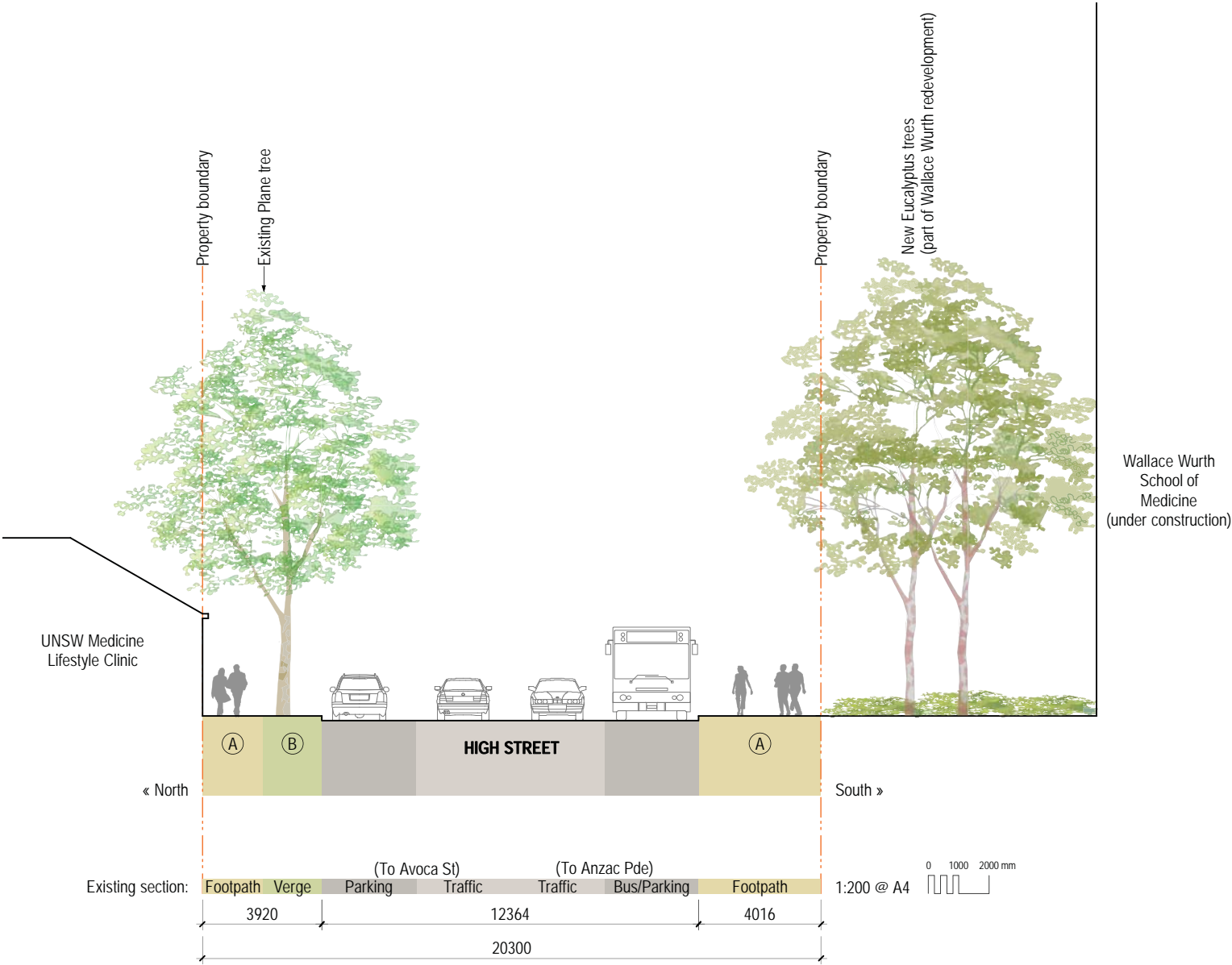
High Street Stop - Section 4

Section at UNSW -

Wallace Wurth School of Medicine

**UNSW High Street Plaza Stop  
RCC Preferred Arrangement**

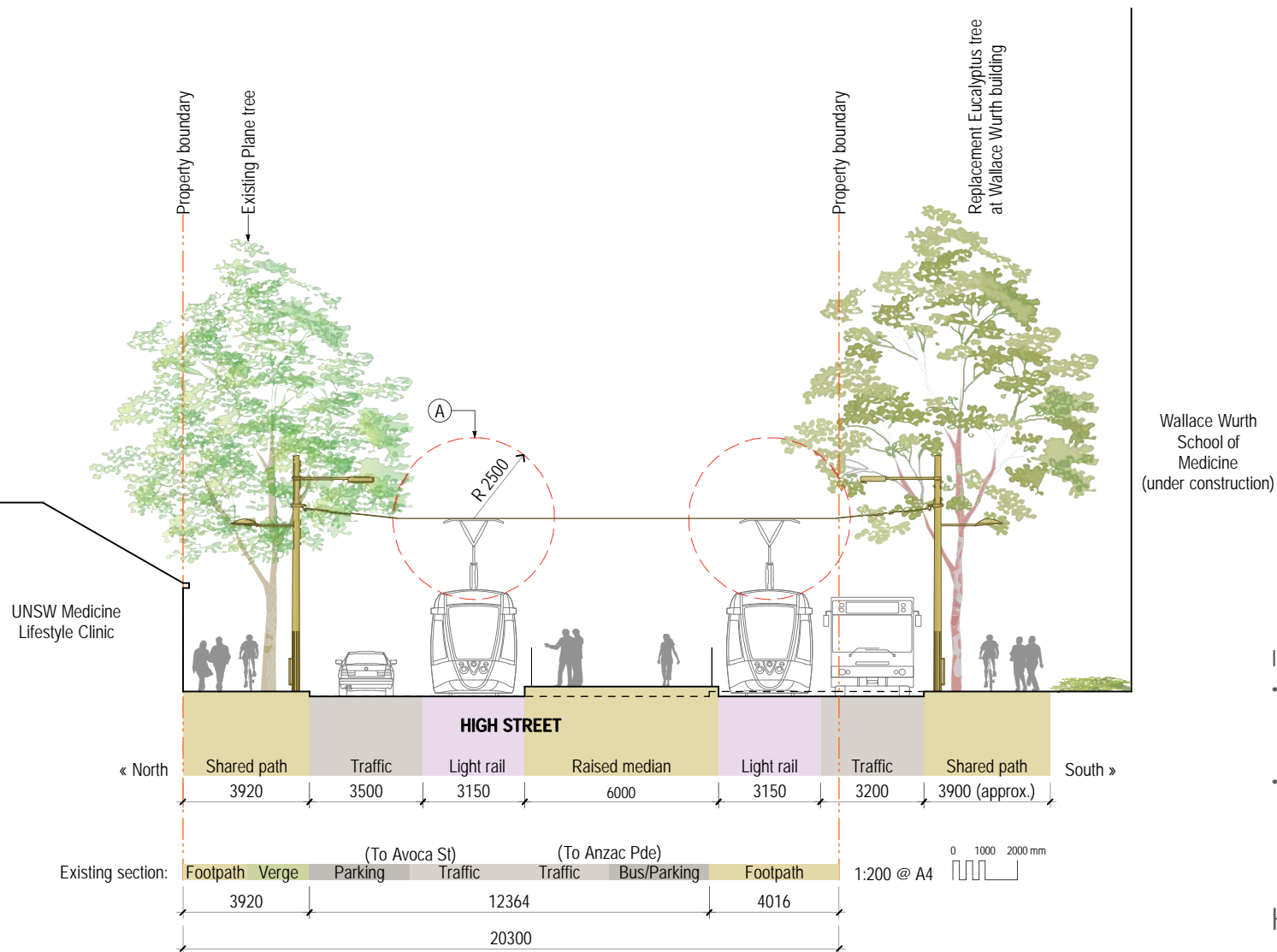
3. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - STOP



High Street Stop - Section 4  
Section at UNSW -  
Wallace Wurth School of Medicine  
**Existing Situation**

NOTE: Existing dimensions are measured Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.  
A: Footpath B: Grass verge

### 3. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - STOP



NOTE: Existing dimensions are measured Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires – some pruning of street trees may be required

#### ISSUES

- The Transport for NSW proposal requires the removal of all of the existing mature and proposed new trees along the UNSW boundary at the Wallace Wurth School of Medicine.
- The raised median access to the light rail stop is very exposed and lacks pedestrian amenity.

High Street Stop - Section 4

Section at UNSW -

Wallace Wurth School of Medicine

**Transport for NSW Proposal**





## 4. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - MIDBLOCK

### RECOMMENDATIONS

#### KEY IDEAS

- Create a transport plaza between Wansey Road and Botany Street that provides for pedestrians, cyclists and light rail.
- Close High Street to traffic between Wansey Road and Botany Street.
- Light rail lanes are to be flush with the surrounding plaza levels (no kerbs) and differentiated by a change in paving material or texture.

#### MOVEMENT AND CIRCULATION

- Divert buses to/from Avoca Street along an alternate route (suggest Wansey Road/Arthur Street/ Belmore Road).

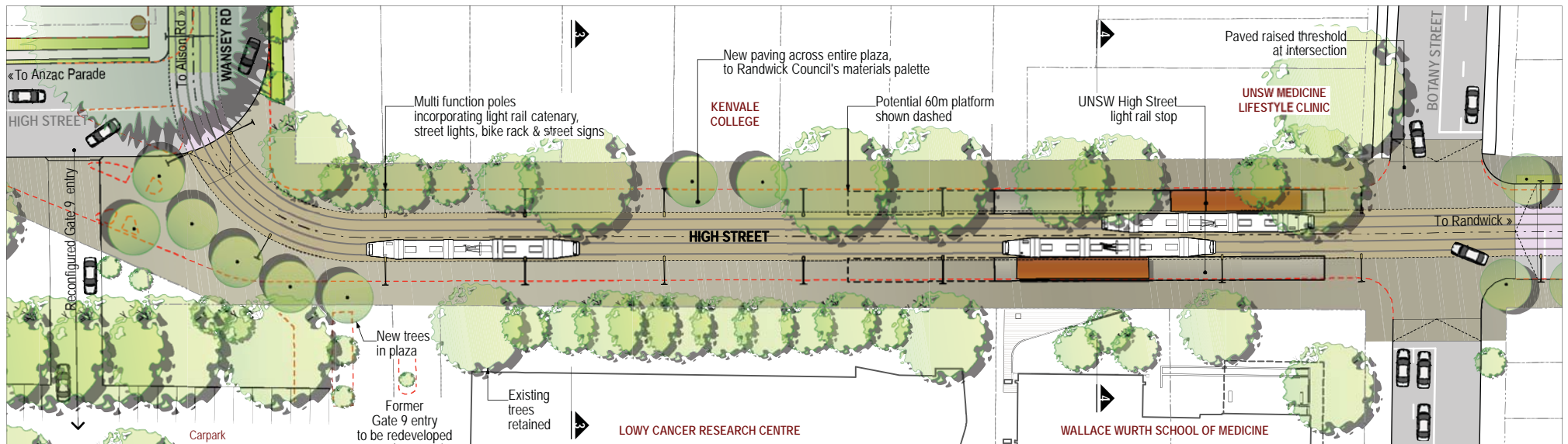
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Consider removing the existing palisade fence and hedge at the UNSW boundary to better integrate the new plaza with the university.
- Minimise 'pole clutter' by providing multi-function pole that integrate light rail catenary, street lighting, traffic signals, street signs and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Provide litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

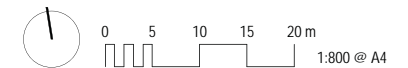
- Retain all existing mature trees and supplement with new Plane trees (or other large street tree species approved by Randwick Council).

## 4. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - MIDBLOCK



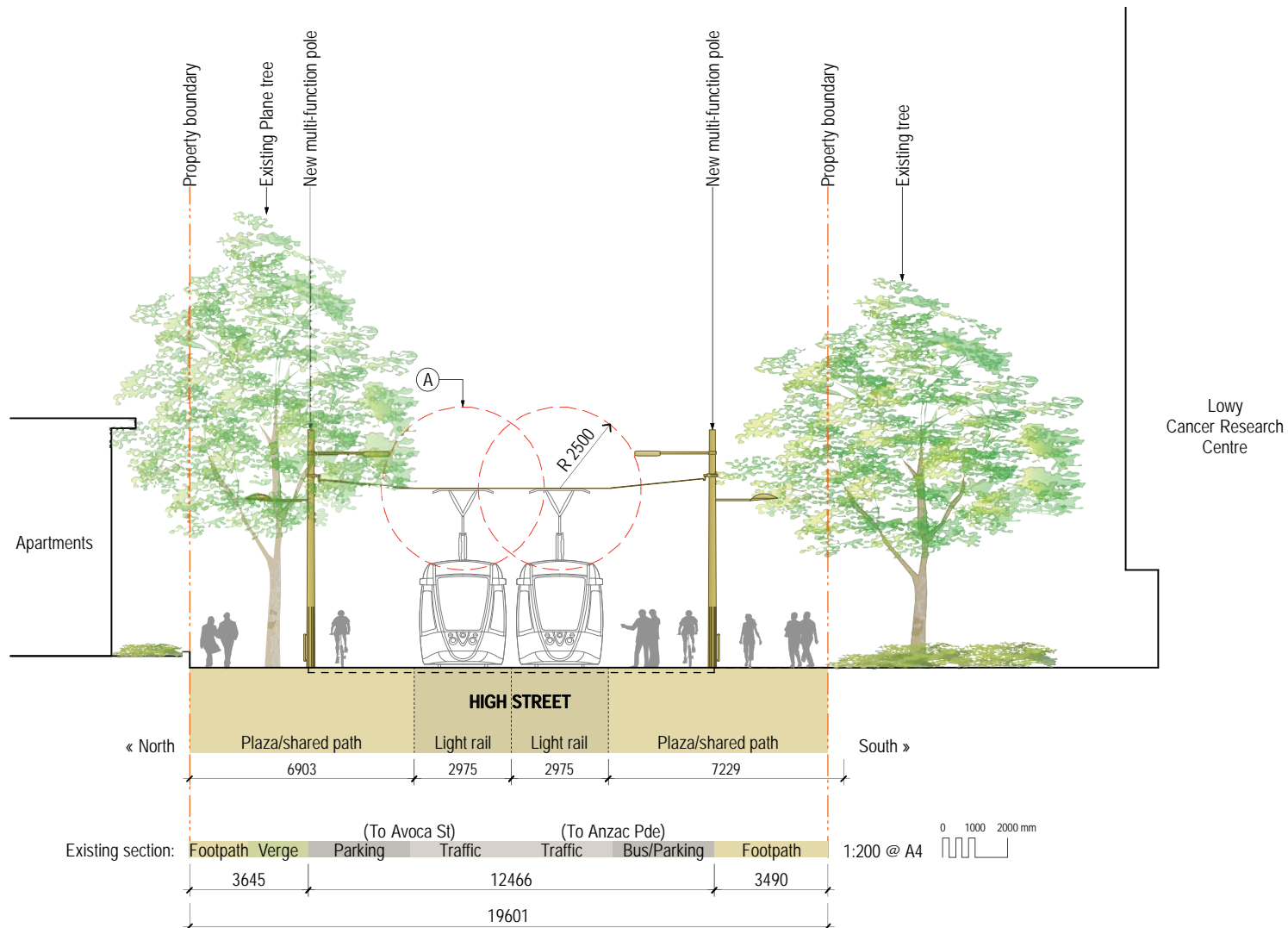
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan at High Street Stop  
Wansey Road - Botany Street  
**RCC Preferred Arrangement**

## 4. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - MIDBLOCK



NOTE: Existing dimensions are measured Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires – some pruning of existing trees may be required

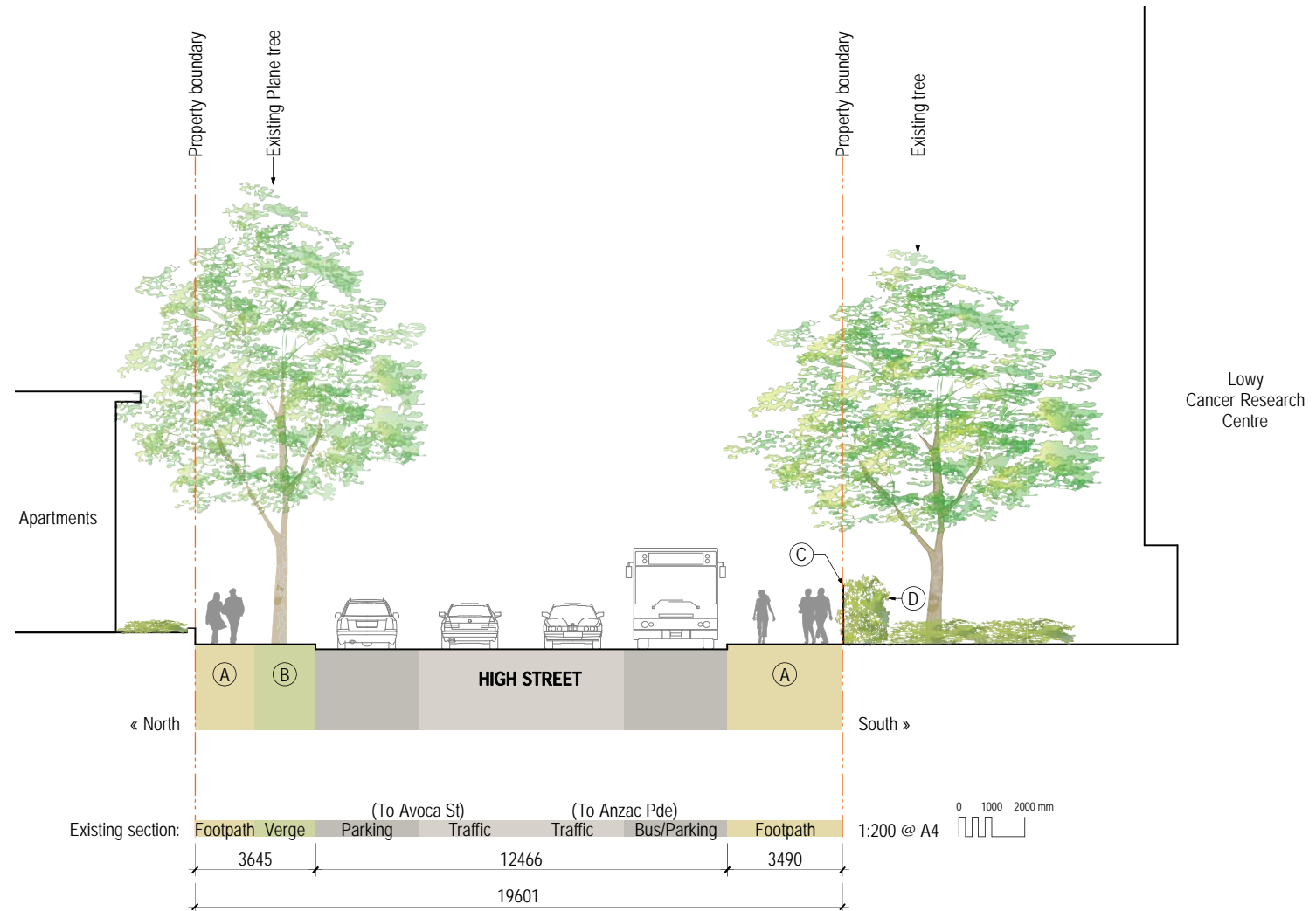
High Street Midblock - Section 3

Section at UNSW -

Lowy Cancer Research Centre

**RCC Preferred Arrangement**

## 4. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - MIDBLOCK



NOTE: Existing dimensions are measured Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

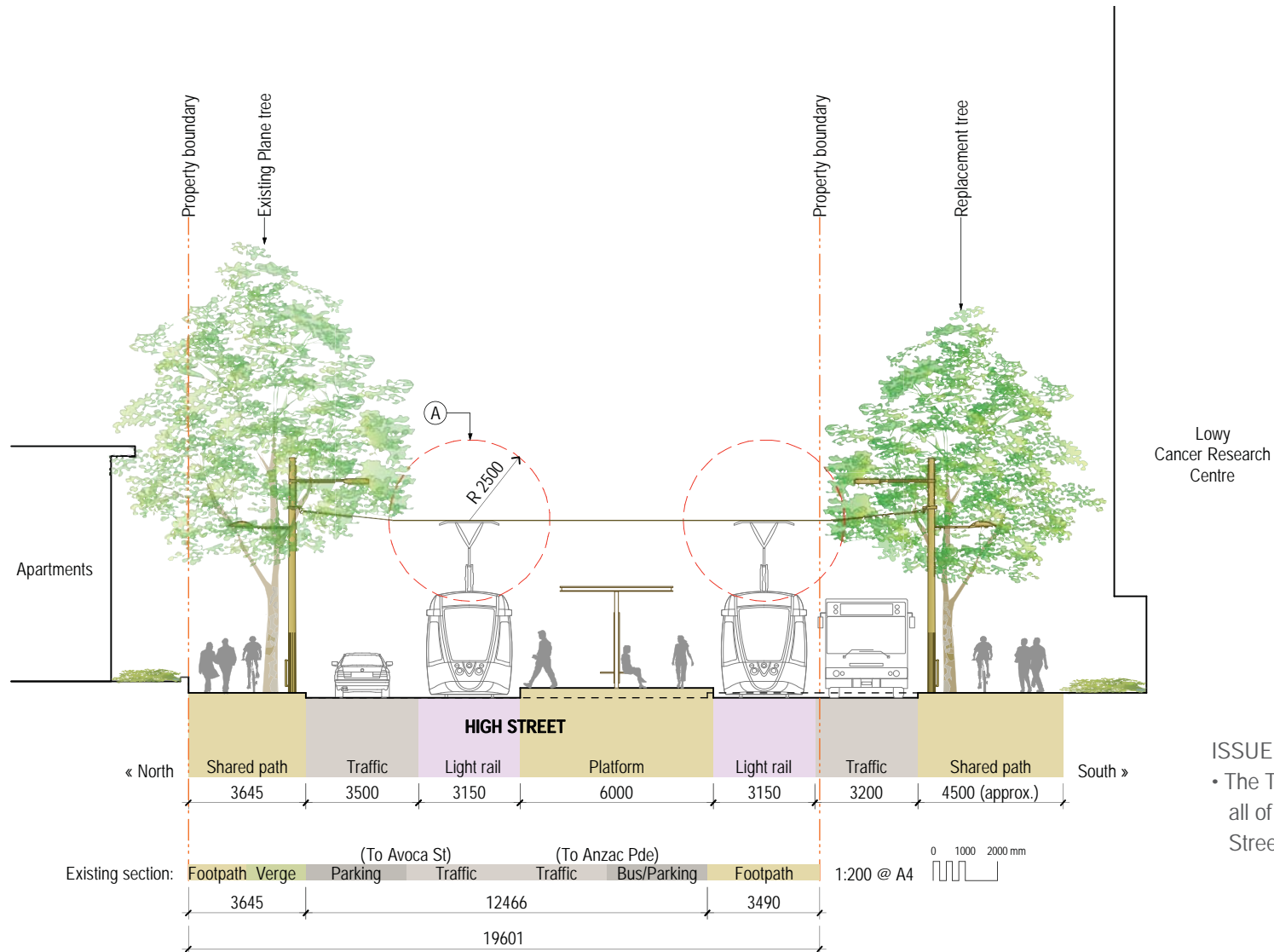
A: Footpath B: Grass verge C: Palisade fence at UNSW boundary D: Hedge

High Street Midblock - Section 3

Section at UNSW - Lowy Cancer Research Centre

**Existing Situation**

## 4. RANDWICK - HIGH STREET, UNSW UPPER CAMPUS TRANSPORT PLAZA - MIDBLOCK



NOTE: Existing dimensions are measured Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires – some pruning of existing trees may be required

### ISSUES

- The Transport for NSW proposal requires the removal of all of the mature trees along the UNSW boundary at High Street - Lowy Cancer Research Centre.

### High Street Midblock - Section 3

### Section at UNSW - Lowy Cancer Research Centre

### Transport for NSW Proposal





## 5. RANDWICK - WANSEY ROAD, MIDBLOCK

### RECOMMENDATIONS

#### KEY IDEAS

- Locate the light rail lanes along boundary of Royal Randwick Racecourse boundary while retaining significant trees.

#### MOVEMENT AND CIRCULATION

- Location of the shared path on western side of Wansey Road (east of the light rail alignment) to maximise visual surveillance.

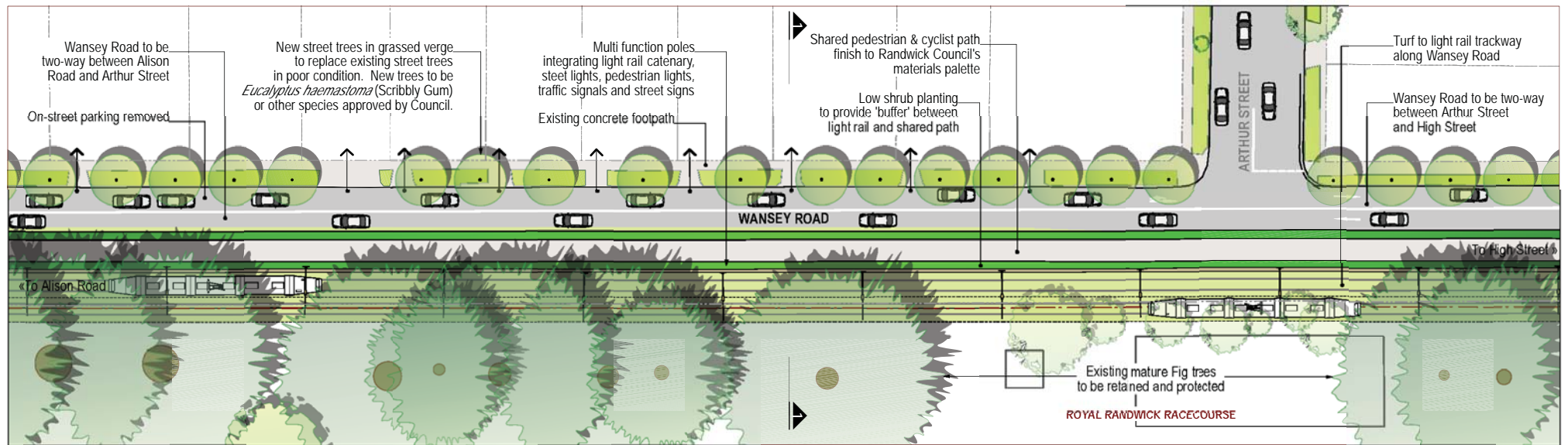
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Minimise 'pole clutter' by providing multi-function poles that integrate light rail catenary, street lighting, pedestrian lighting, traffic signals and street signs.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.

#### LANDSCAPING

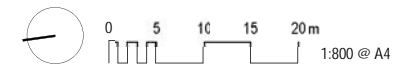
- Provide replacement street trees along both sides of Wansey Road. Species to be Eucalyptus haemastoma (Scribbly Gum) or other species approved by Randwick Council.

## 5. RANDWICK - WANSEY ROAD, MIDBLOCK



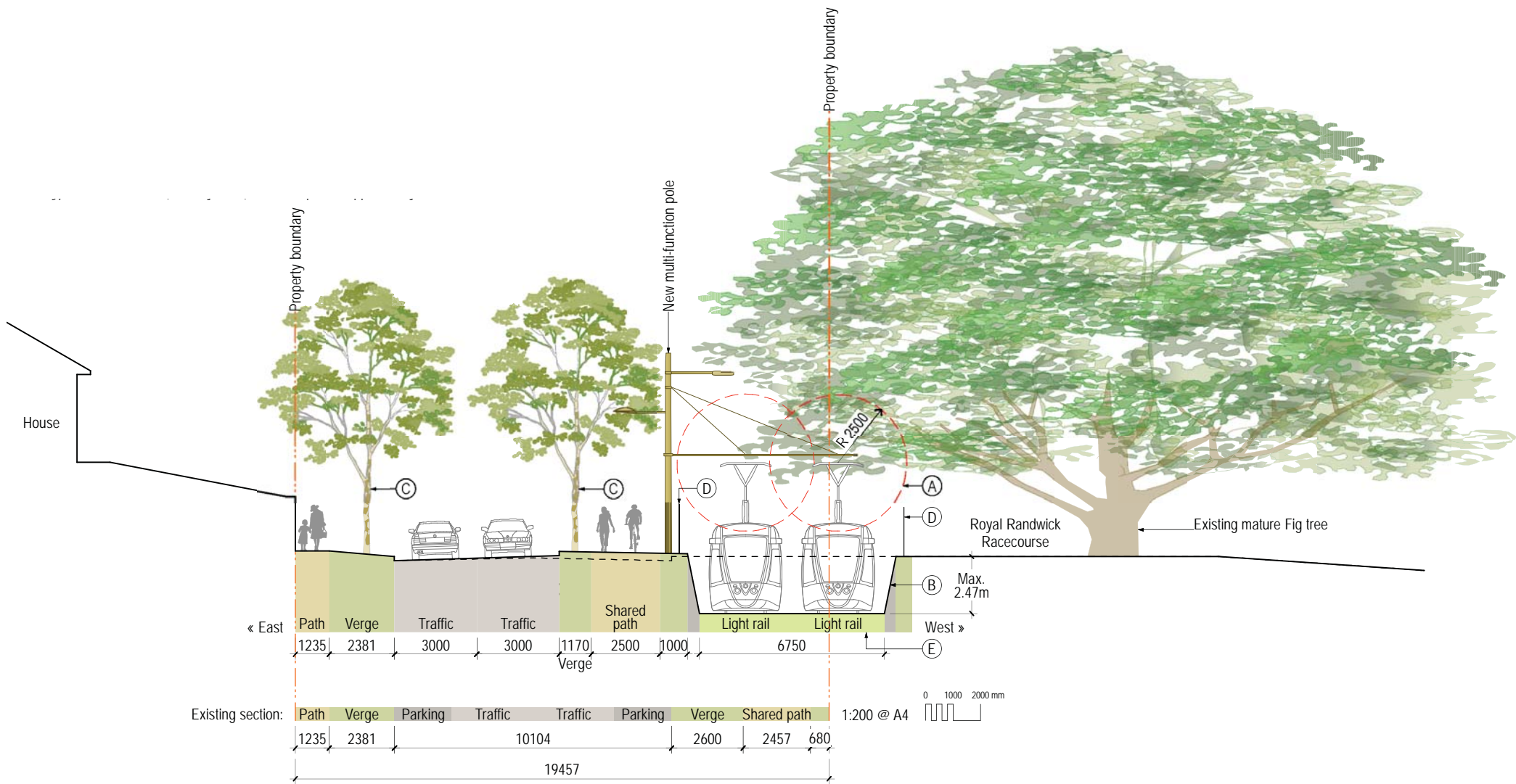
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan at Wansey Road  
Arthur Street Intersection  
**RCC Preferred Arrangement**

5. RANDWICK - WANSEY ROAD, MIDBLOCK



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

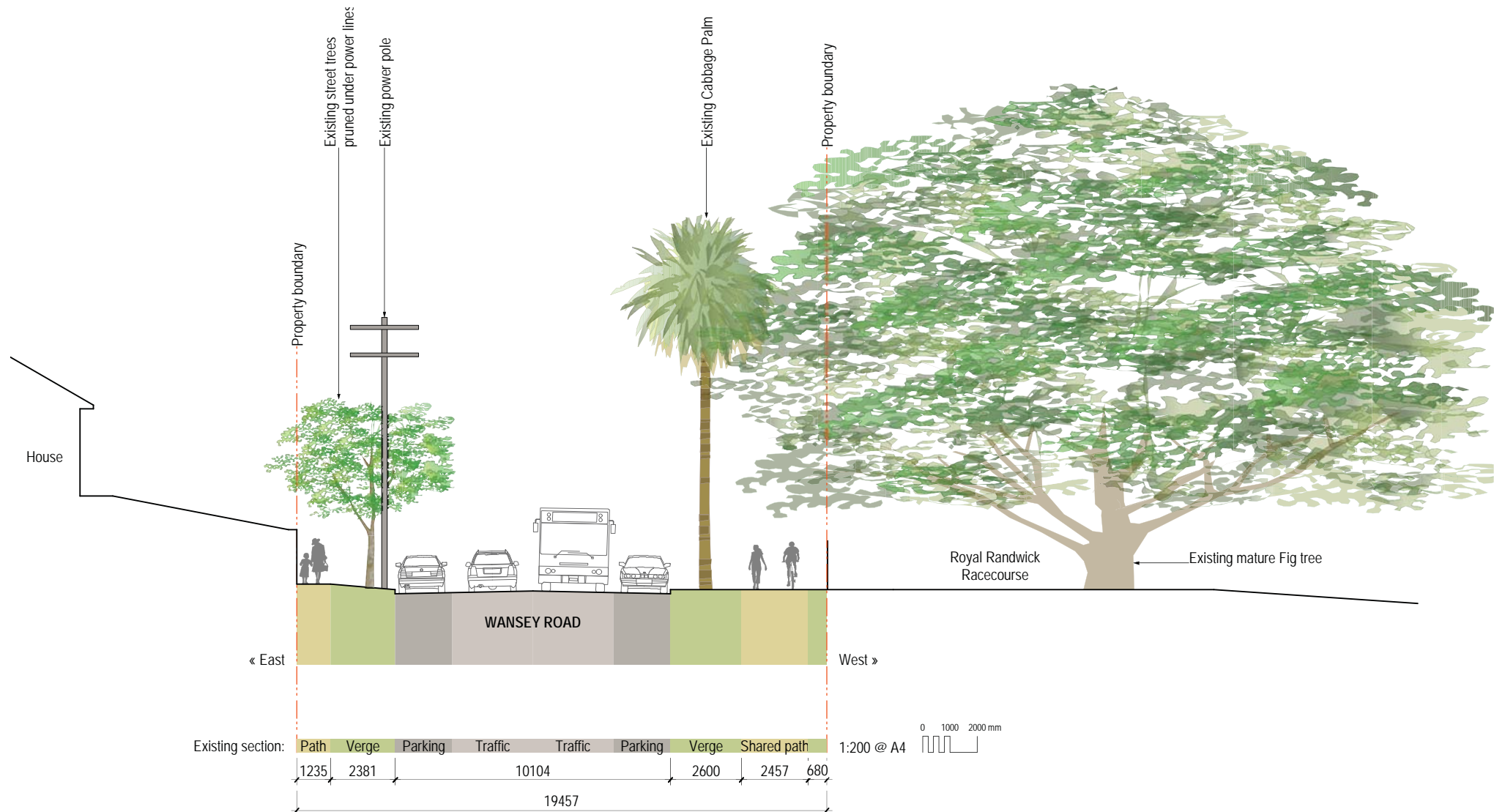
A: Vegetation clear zone for overhead wires – pruning of existing trees required    B: Light rail cutting with retaining walls

C: Replacement street tree – Scribbly Gum (*E. haemastoma*) or other species to be approved by Randwick Council    D: New fence

E: Turf to light rail trackway

Wansey Road - Section 1  
Typical Midblock Section  
RCC Preferred Arrangement

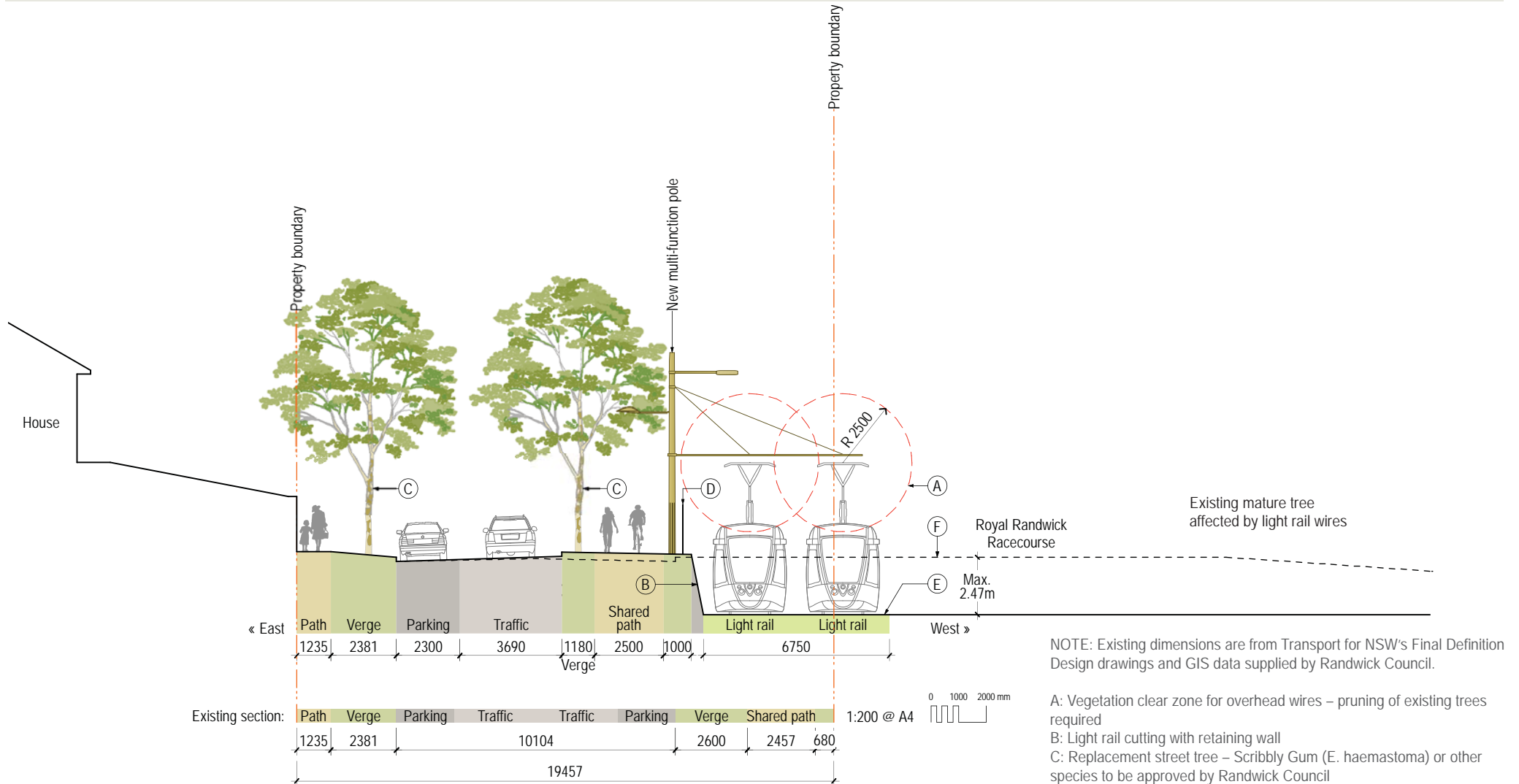
## 5. RANDWICK - WANSEY ROAD, MIDBLOCK



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Wansey Road - Section 1  
Typical Midblock Section  
**Existing Situation**

## 5. RANDWICK - WANSEY ROAD, MIDBLOCK



### ISSUES

- The Transport for NSW proposal places the light rail lanes into a cutting that crosses into Royal Randwick Racecourse land. The cutting is well below the existing ground level and extends into Racecourse land to meet existing levels. The cutting will necessitate the removal of the avenue of existing mature fig trees on racecourse land.
- The loss of the Fig trees is a critical issue as they are fundamental to the existing character of Wansey road and provide a visually significant backdrop along the ridgeline when viewed from within Royal Randwick Racecourse.

NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

- A: Vegetation clear zone for overhead wires – pruning of existing trees required
- B: Light rail cutting with retaining wall
- C: Replacement street tree – Scribbly Gum (*E. haemastoma*) or other species to be approved by Randwick Council
- D: New fence
- E: Turf to light rail trackway
- F: Existing ground line

Wansey Road - Section 1

Typical Midblock Section

**Transport for NSW Proposal**







## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION

### RECOMMENDATIONS

#### KEY IDEAS

- Configure the horizontal alignment of the light rail lanes to stay within the existing road reserve, in order to avoid impacts on the existing mature trees at the Royal Randwick racecourse boundary.
- Light rail lanes to be flush with adjacent traffic lanes, separated by a flush edge strip if required.

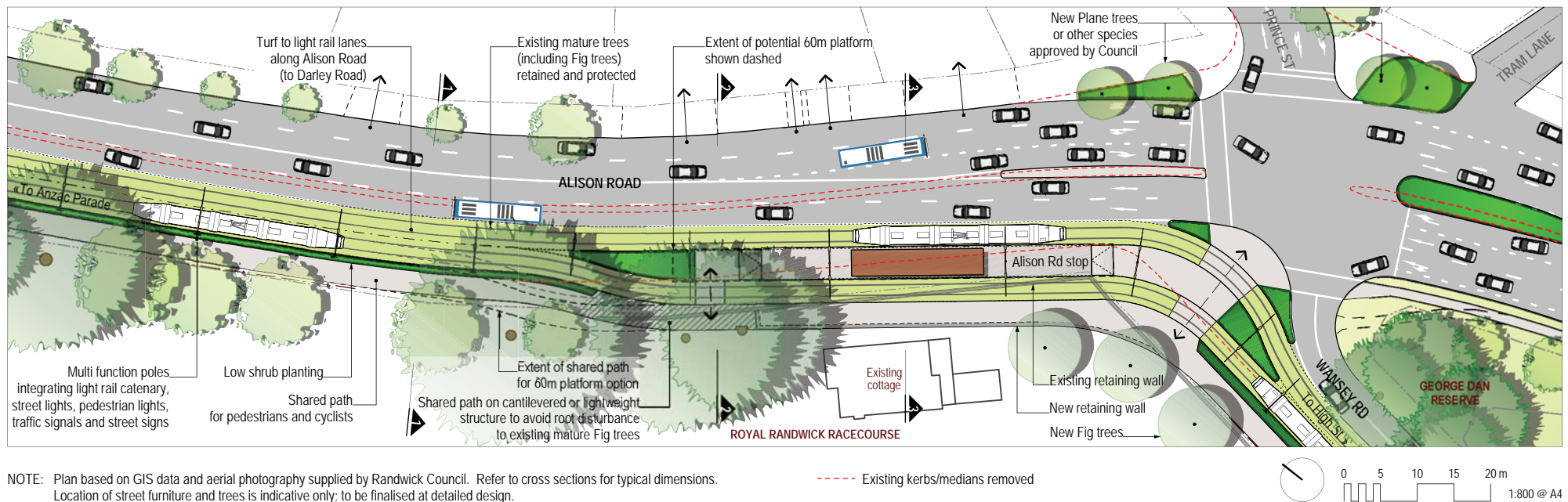
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Minimise 'pole clutter' by providing multi-function poles that integrate light rail catenary, street lighting, traffic signals and street signs.
- Central poles may be required where the light rail lanes are median separated.
- Provide litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

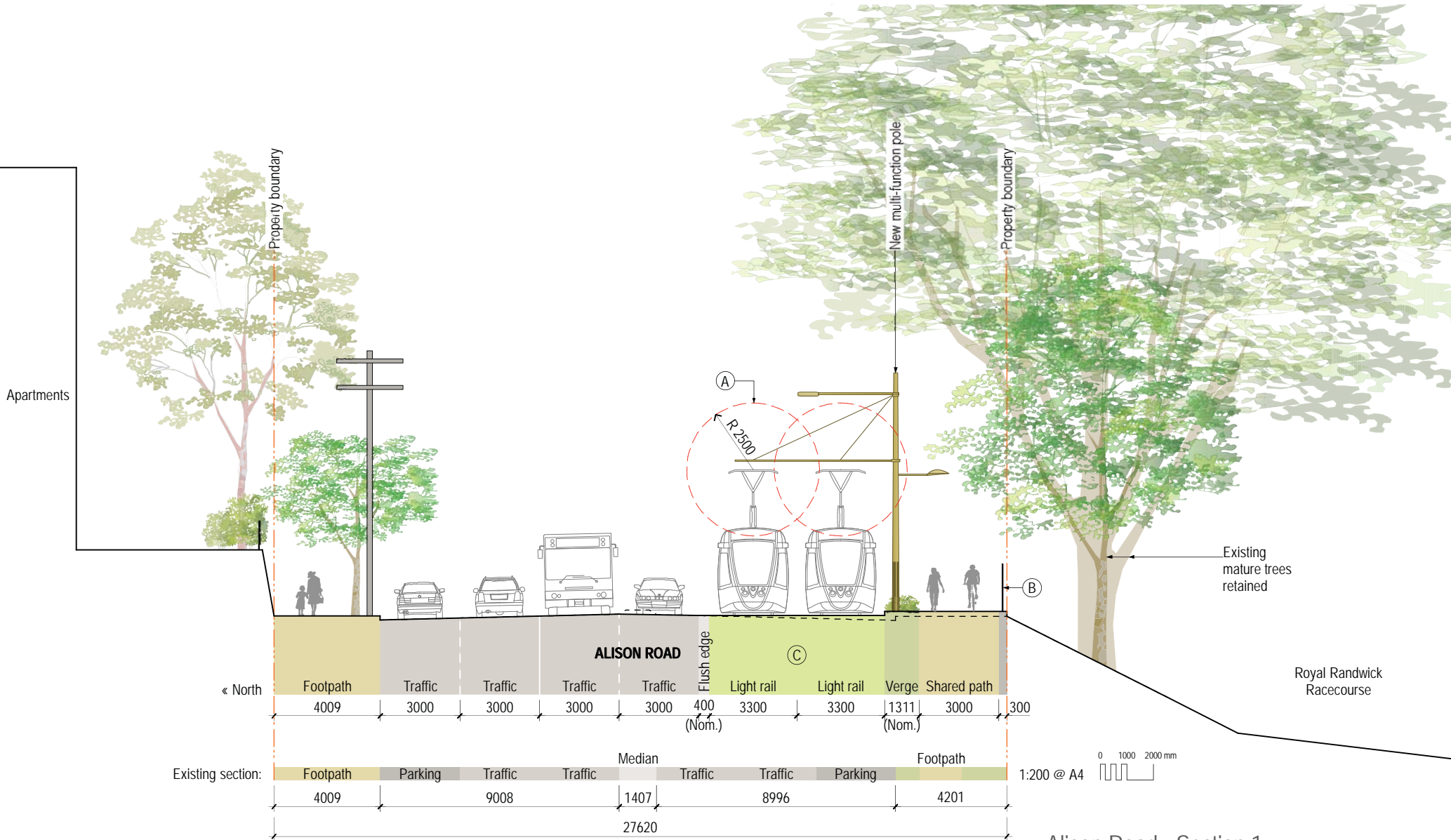
- Retain existing street trees along Alison Road and supplement with new Plane trees wherever possible.
- Provide replacement mature transplanted Fig trees at the new Royal Randwick Racecourse boundary, in consultation with the Racecourse and Council.
- Provide replacement street trees along both sides of Wansey Road. Species to be *Eucalyptus haemastoma* (Scribbly Gum) or other species approved by Randwick Council.
- Provide planting in the medians to enhance the landscape character of the street.

## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION



Plan at Alison Road  
Stop at Wansey Road Intersection  
**RCC Preferred Arrangement**

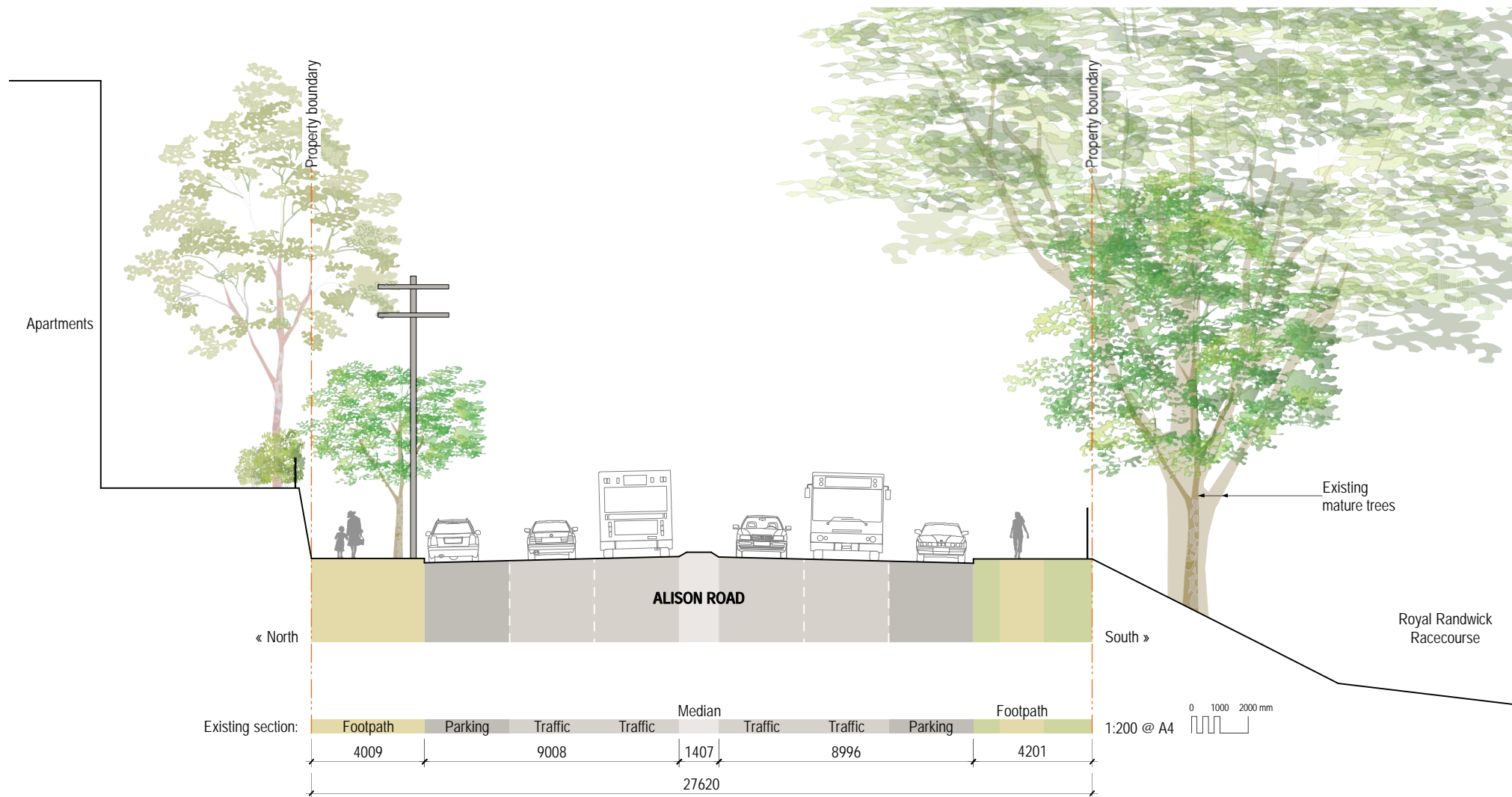
6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - MIDBLOCK, SECTION 1



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.  
A: Vegetation clear zone for overhead wires B: Boundary fence (existing position maintained) C: Turf to light rail trackway

Alison Road - Section 1  
Typical Midblock Section  
RCC Preferred Arrangement

6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - MIDBLOCK, SECTION 1

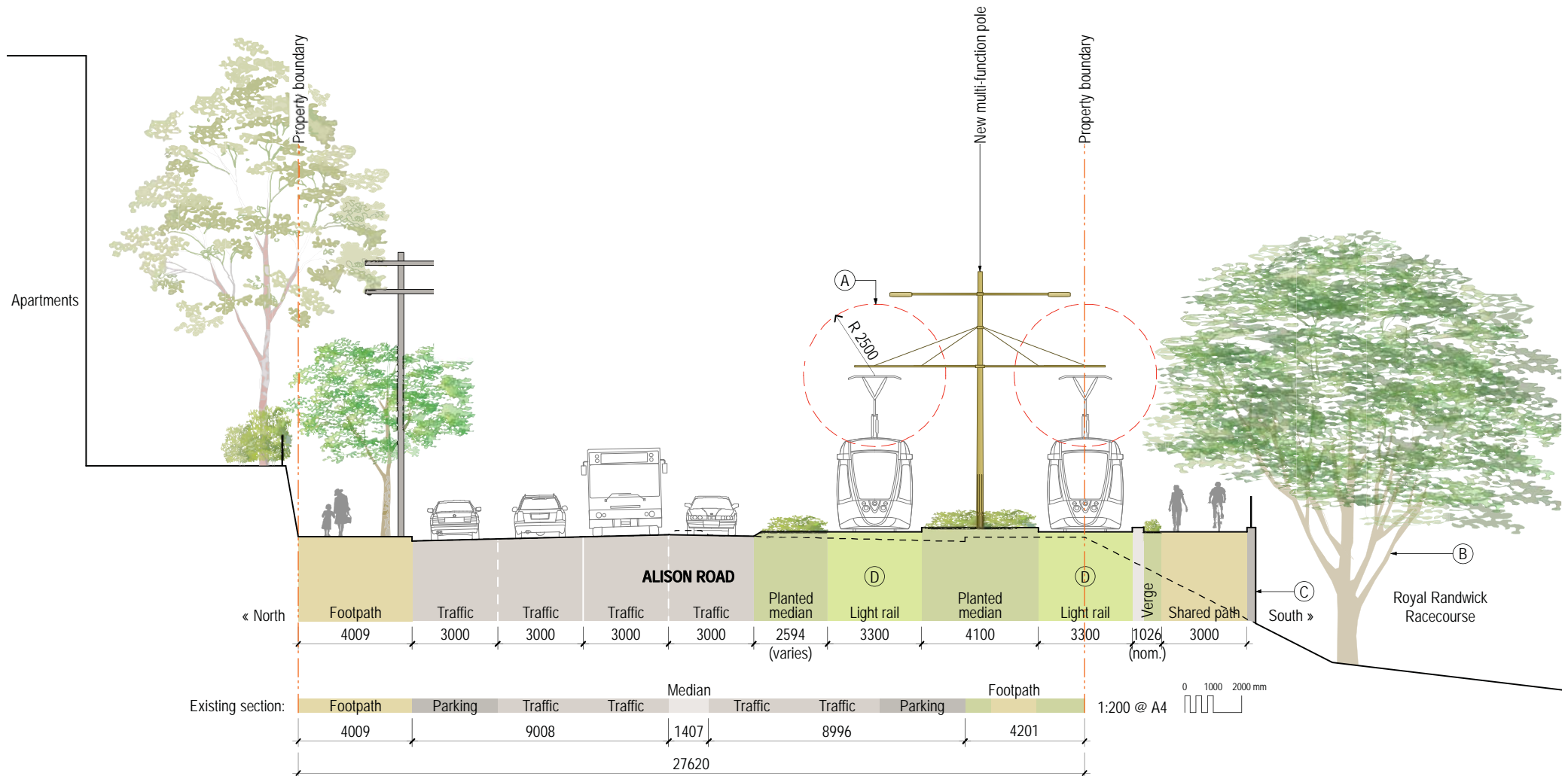


NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Alison Road - Section 1  
Typical Midblock Section  
**Existing Situation**



## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - MIDBLOCK, SECTION 1



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires B: New mature transplanted Fig tree at new Racecourse boundary to replace existing mature trees removed.

C: New retaining wall D: Turf to light rail trackway

### ISSUES

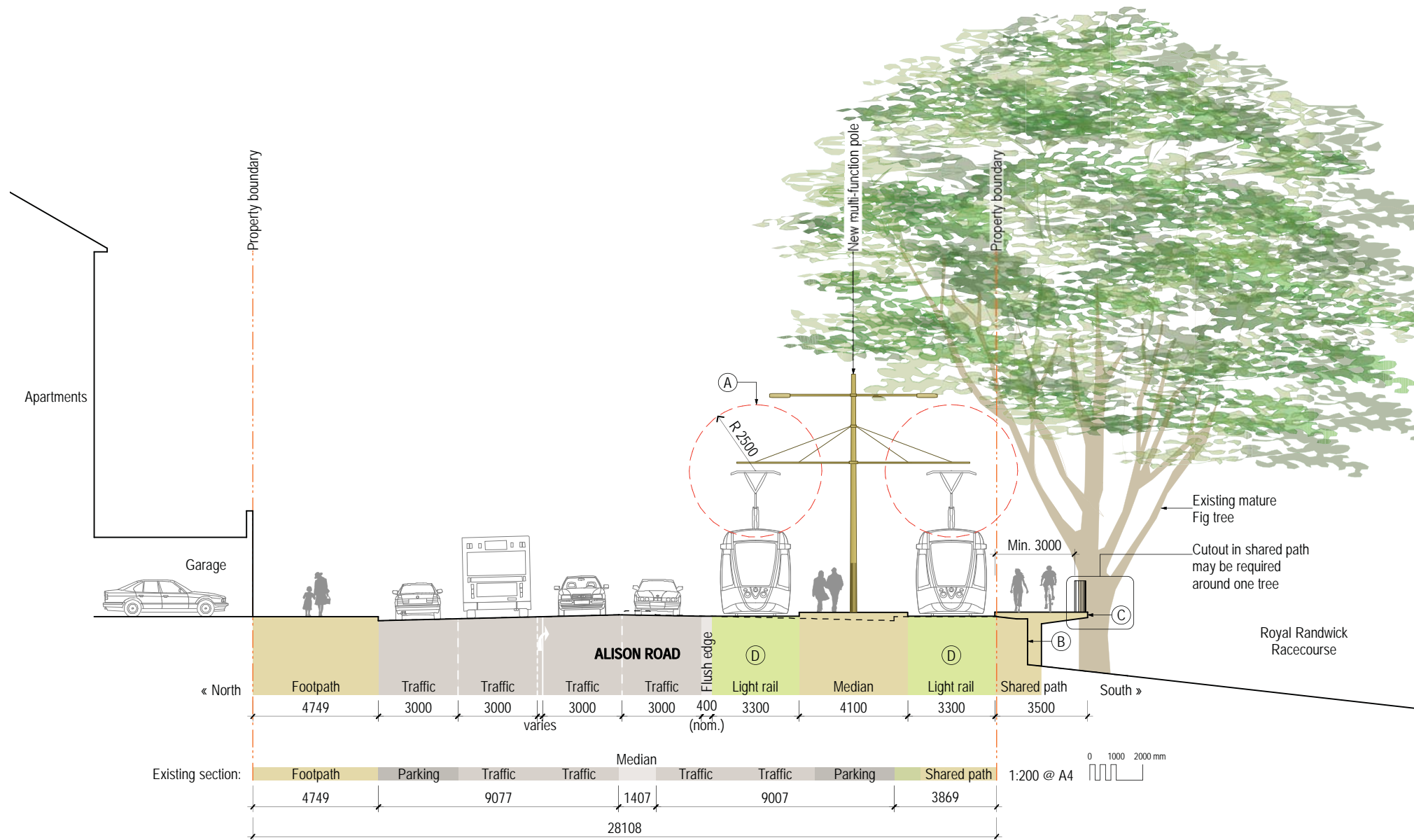
- The horizontal alignment of the light rail lanes and medians results in the removal of approximately twelve mature trees (including large Fig trees) at the boundary of Royal Randwick Racecourse along Alison Road.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.

Alison Road - Section 1

Typical Midblock Section

**Transport for NSW Proposal**

## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - STOP, SECTION 2



Alison Road - Section 2

Alison Road Stop

**RCC Preferred Arrangement**

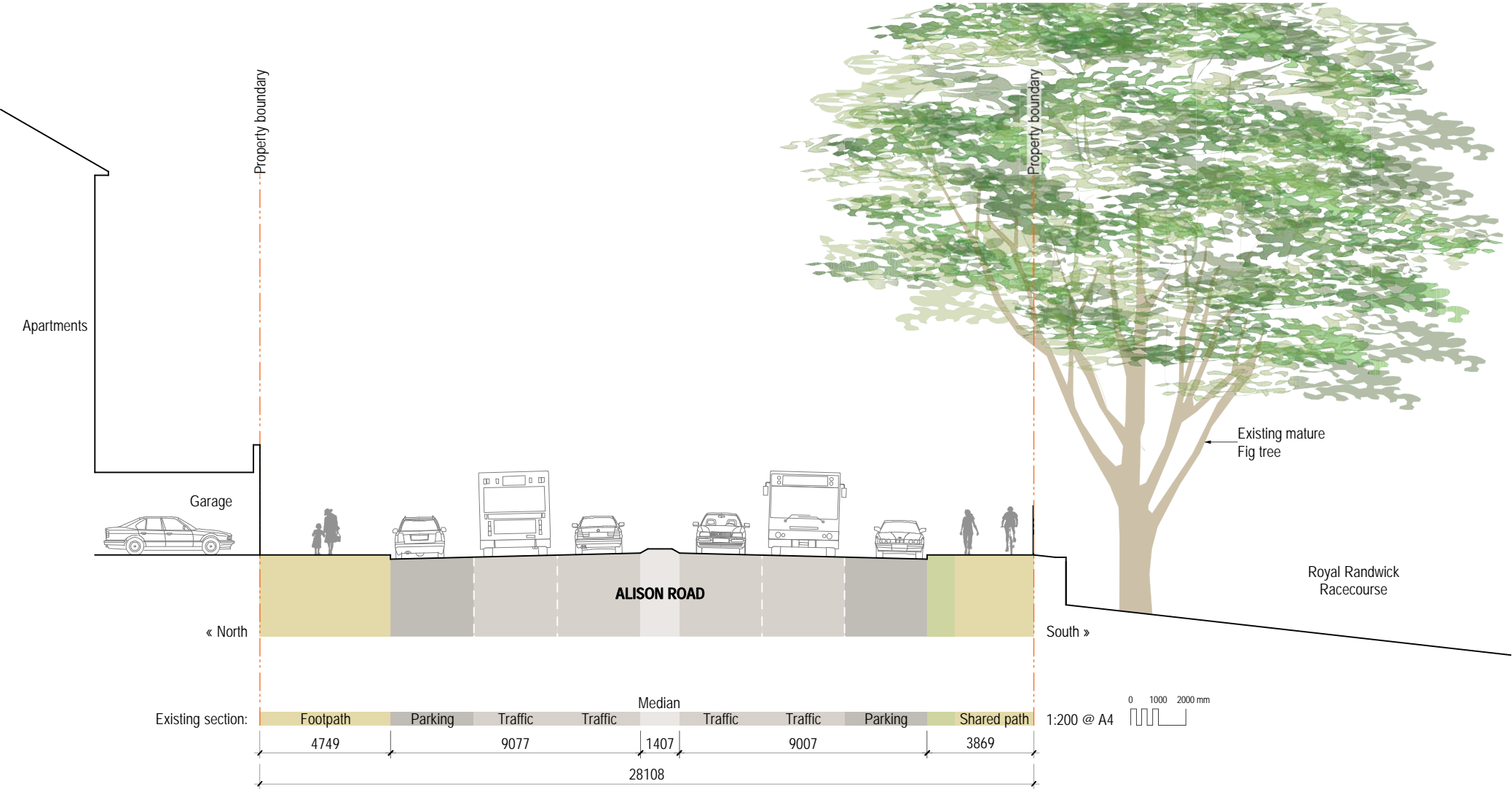
NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires – some pruning may be required B: Existing retaining wall

C: New shared path on cantilevered or lightweight structure to avoid impacts on existing trees D: Turf to light rail trackway



6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - STOP, SECTION 2



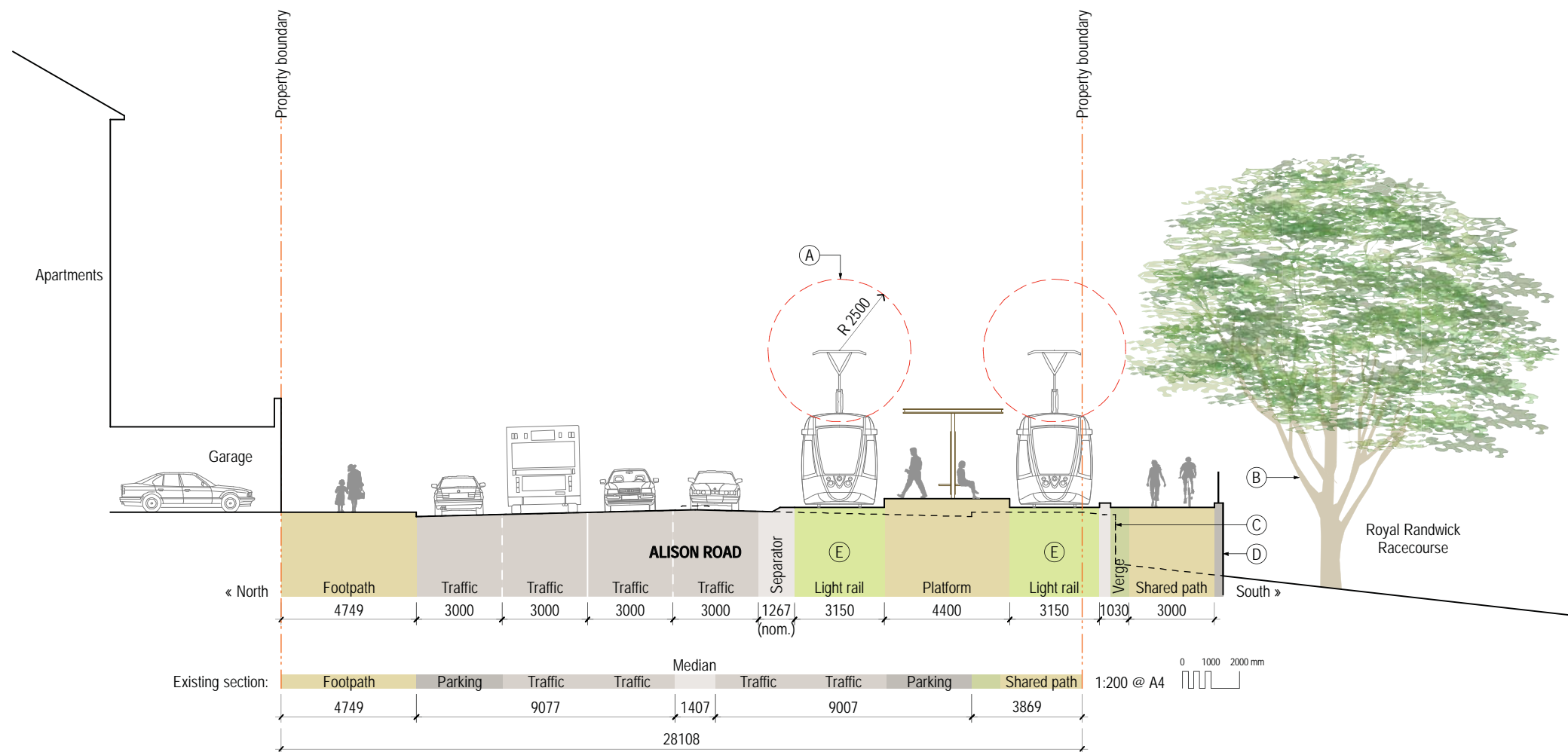
NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

ISSUES

- The horizontal alignment of the light rail lanes and medians results in the removal of approximately twelve mature trees (including large Fig trees) at the boundary of Royal Randwick Racecourse along Alison Road.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.

Alison Road - Section 2  
Alison Road Stop  
**Existing Situation**

## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - STOP, SECTION 2



Alison Road - Section 2

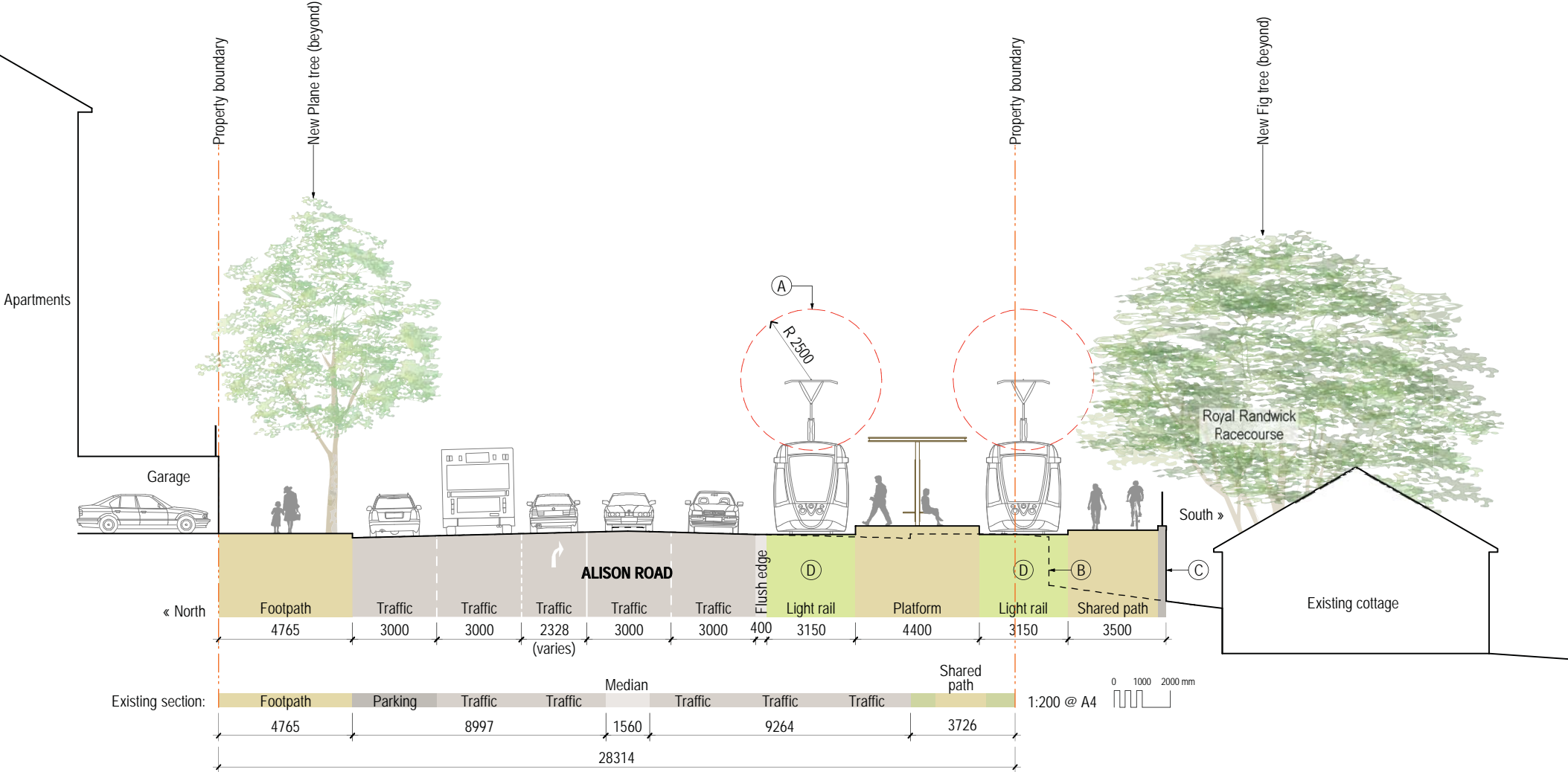
Alison Road Stop

**Transport for NSW Proposal**

### ISSUES

- The horizontal alignment of the light rail lanes and medians results in the removal of approximately twelve mature trees (including large Fig trees) at the boundary of Royal Randwick Racecourse along Alison Road.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.

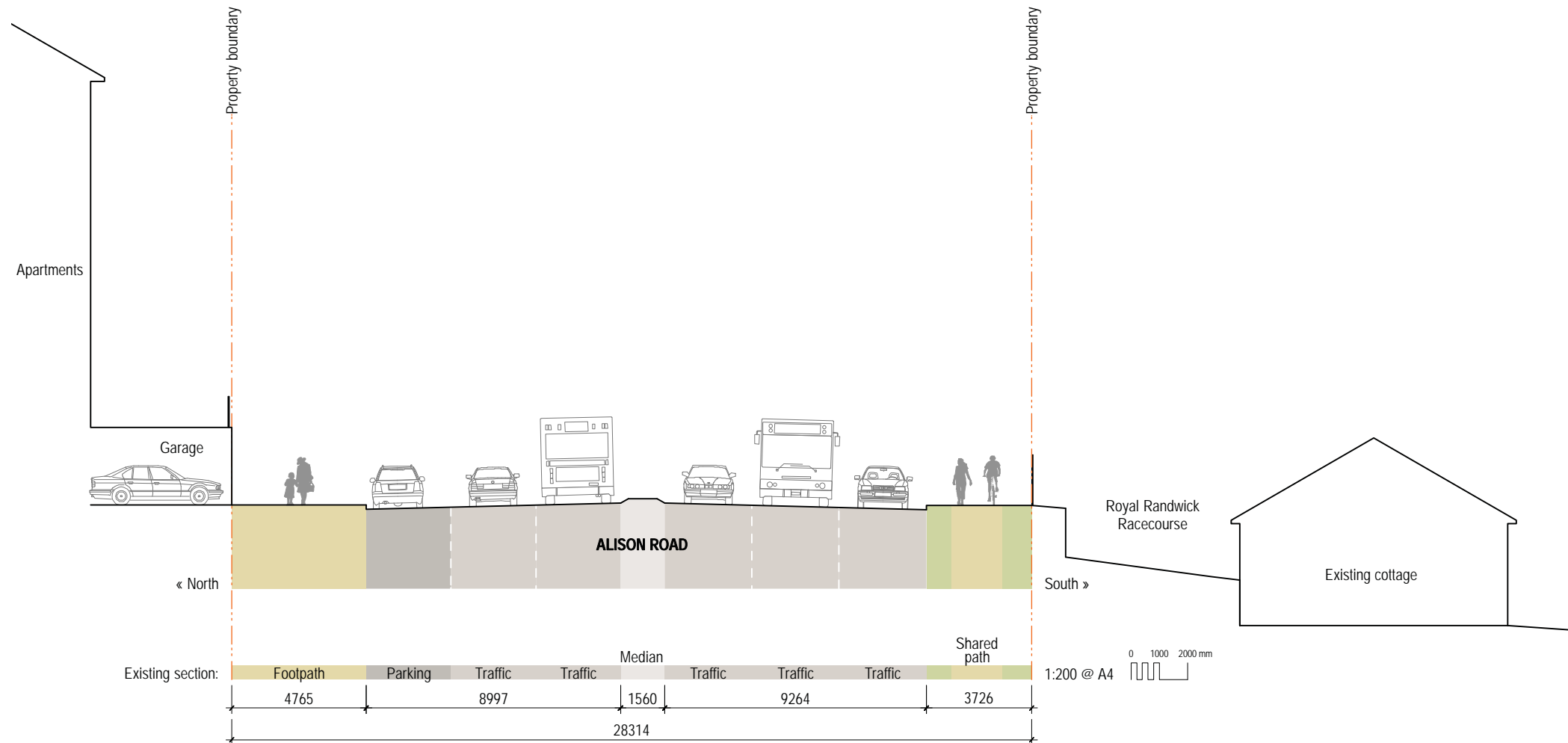
6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - STOP AT EXISTING COTTAGE, SECTION 3



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.  
A: Vegetation clear zone for overhead wires B: Existing retaining wall C: New retaining wall D: Turf to light rail trackway

Alison Road - Section 3  
Alison Road Stop (at existing cottage)  
**RCC Preferred Arrangement**

## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - STOP AT EXISTING COTTAGE, SECTION 3



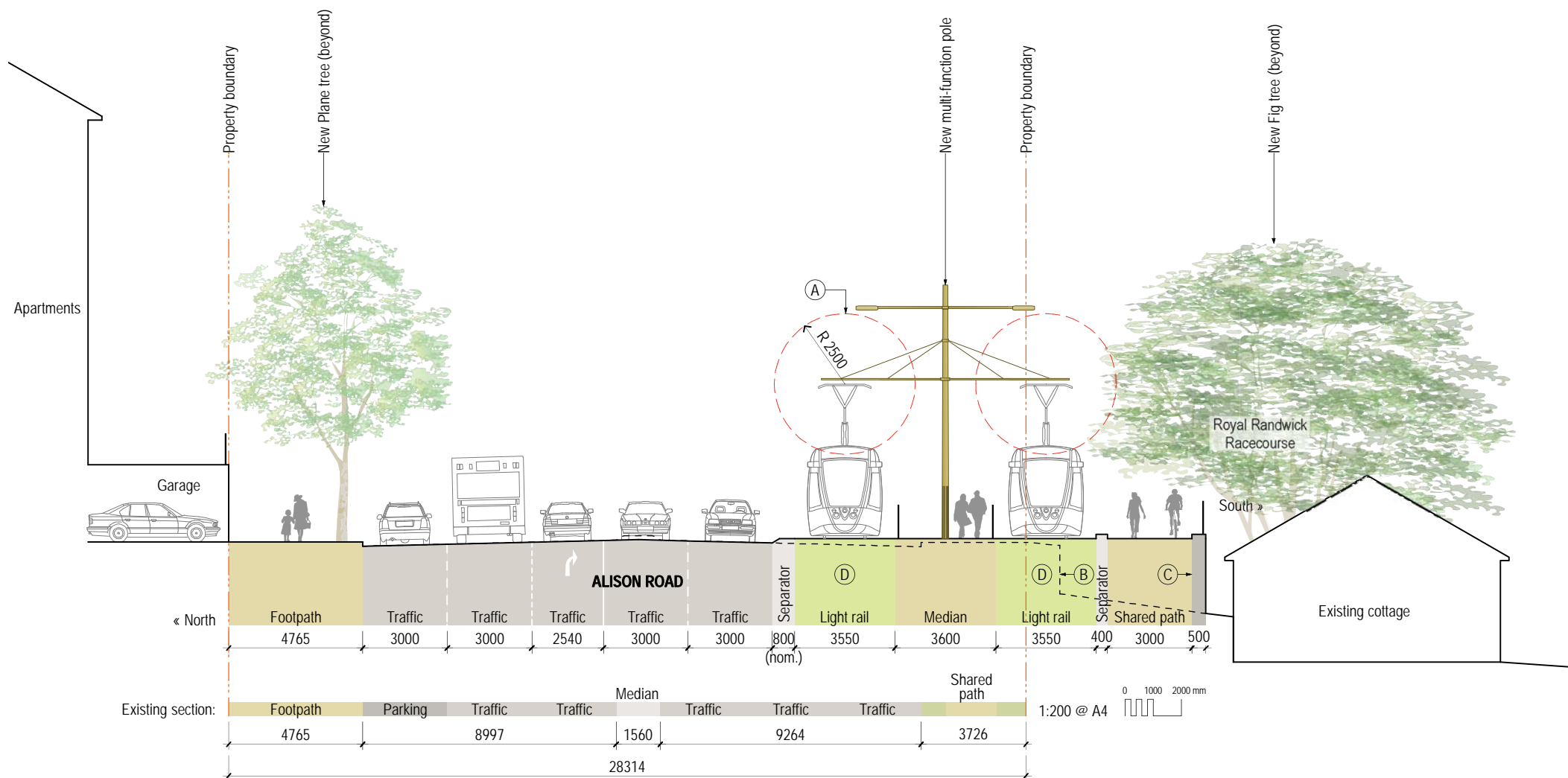
NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Alison Road - Section 3

Alison Road Stop (at existing cottage)

**Existing Situation**

## 6. RANDWICK - ALISON ROAD AT WANSEY ROAD INTERSECTION - STOP AT EXISTING COTTAGE, SECTION 3



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires B: Existing retaining wall C: New retaining wall D: Turf to light rail trackway

### ISSUES

- The horizontal alignment of the light rail lanes and medians results in the removal of approximately twelve mature trees (including large Fig trees) at the boundary of Royal Randwick Racecourse along Alison Road.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.

### Alison Road - Section 3

### Alison Road Stop (at existing cottage)

### Transport for NSW Proposal





## 7a. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE STOP

### RECOMMENDATIONS

#### KEY IDEAS

- Minimise or break up the expanse of hard surface with garden beds and/or level changes.
- Define the new Royal Randwick Racecourse property boundary.
- Provide grass tracks adjacent to the Racecourse.

#### MOVEMENT AND CIRCULATION

- Reduce the number of crossing points for pedestrian and cyclists on the shared path along Alison Road.
- Design of the light rail alignment to not preclude from the option of having buses co-sharing with light rail from Darley Road during Racecourse events.

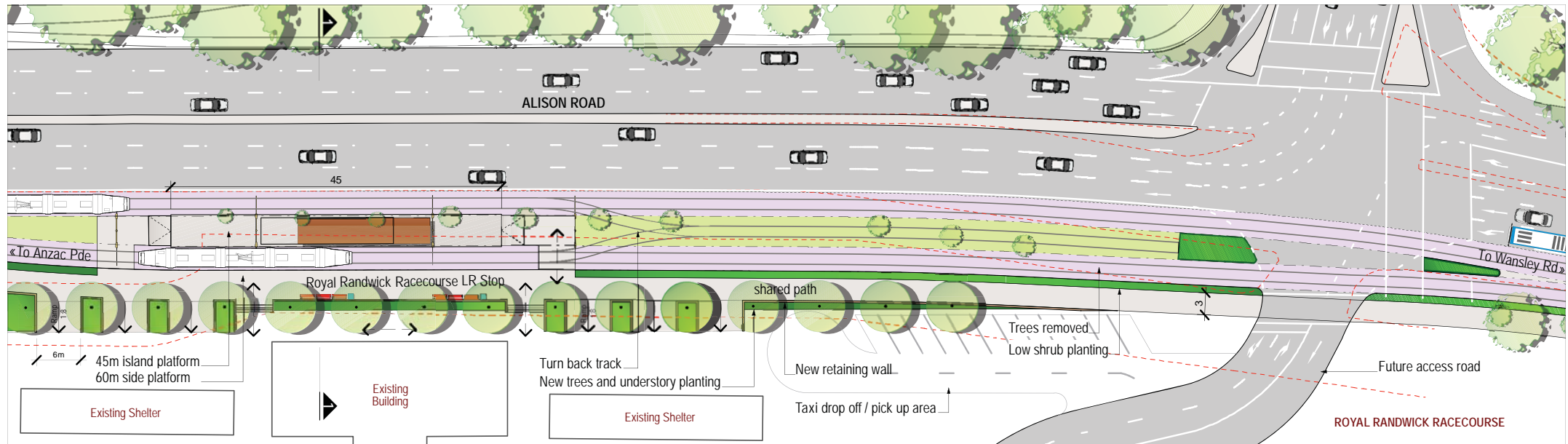
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Retain existing building and limit impact on racecourse land.

#### LANDSCAPING

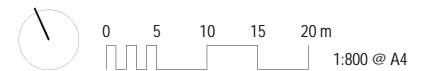
- Provide new trees and garden beds.

## 7a. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE STOP



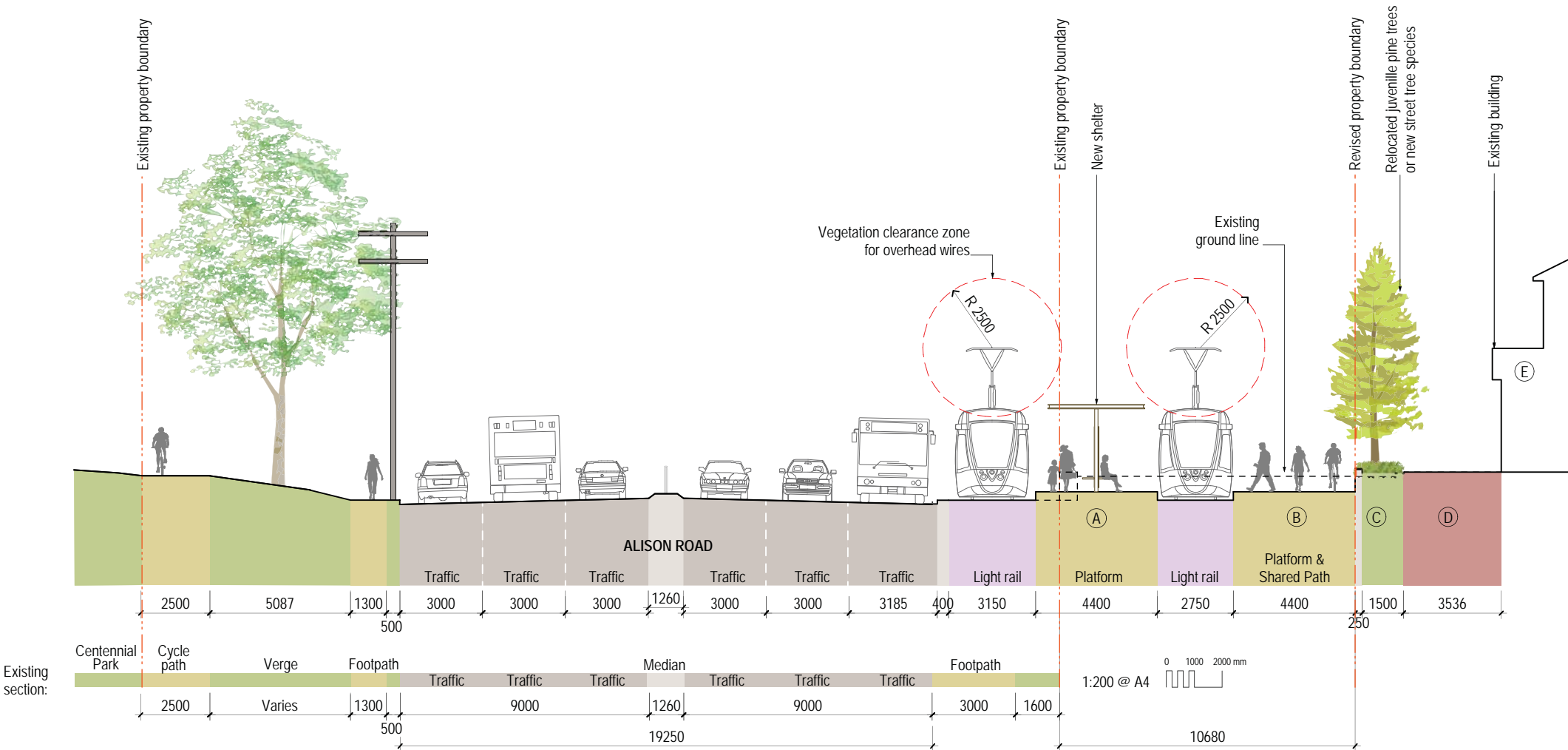
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan  
Royal Randwick Racecourse Stop  
**RCC Preferred Arrangement**

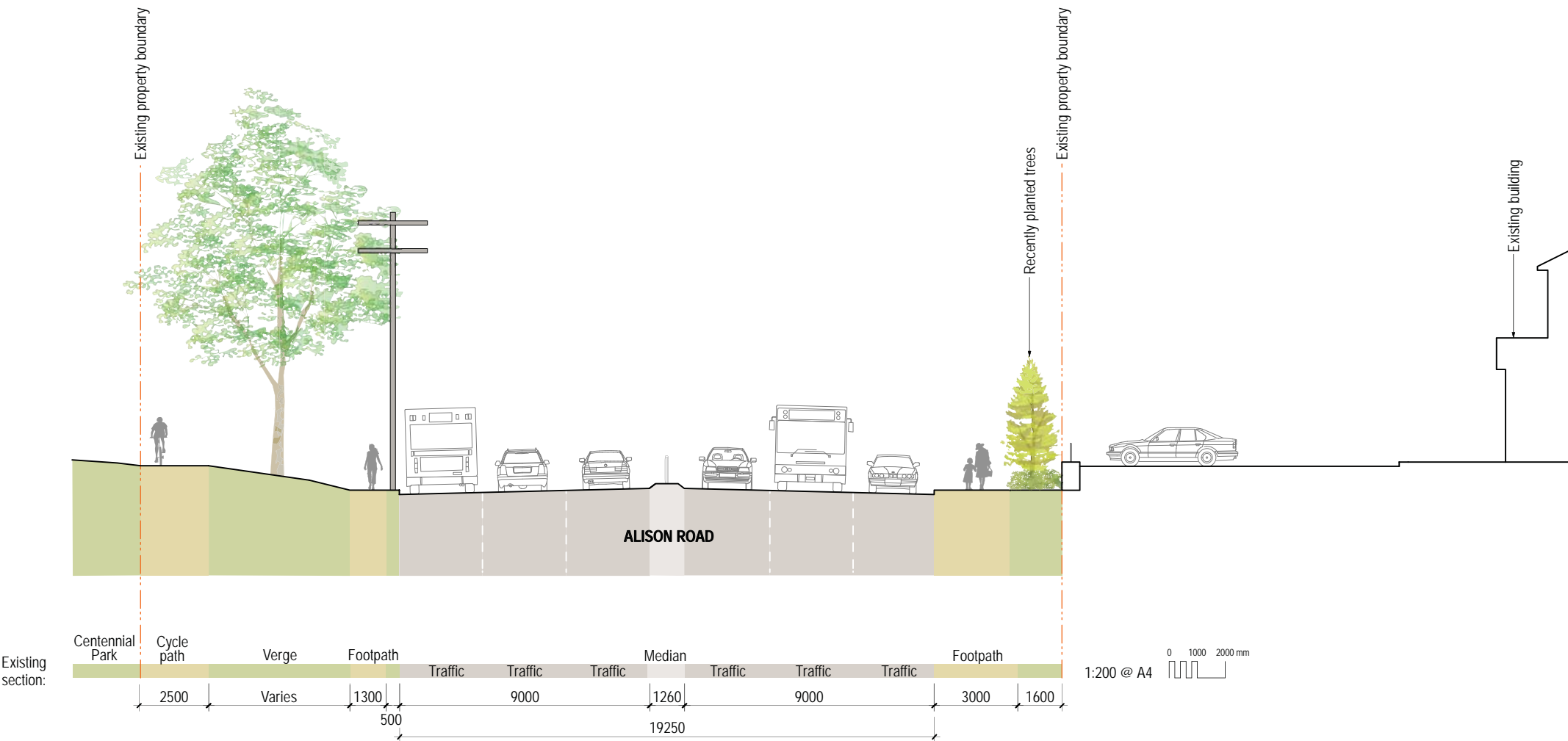
# 7a. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE STOP



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.  
A: Island Platform B: Side Platform / Shared Path C: New street trees and low shrubs D: Vehicle access retained E: Building retained

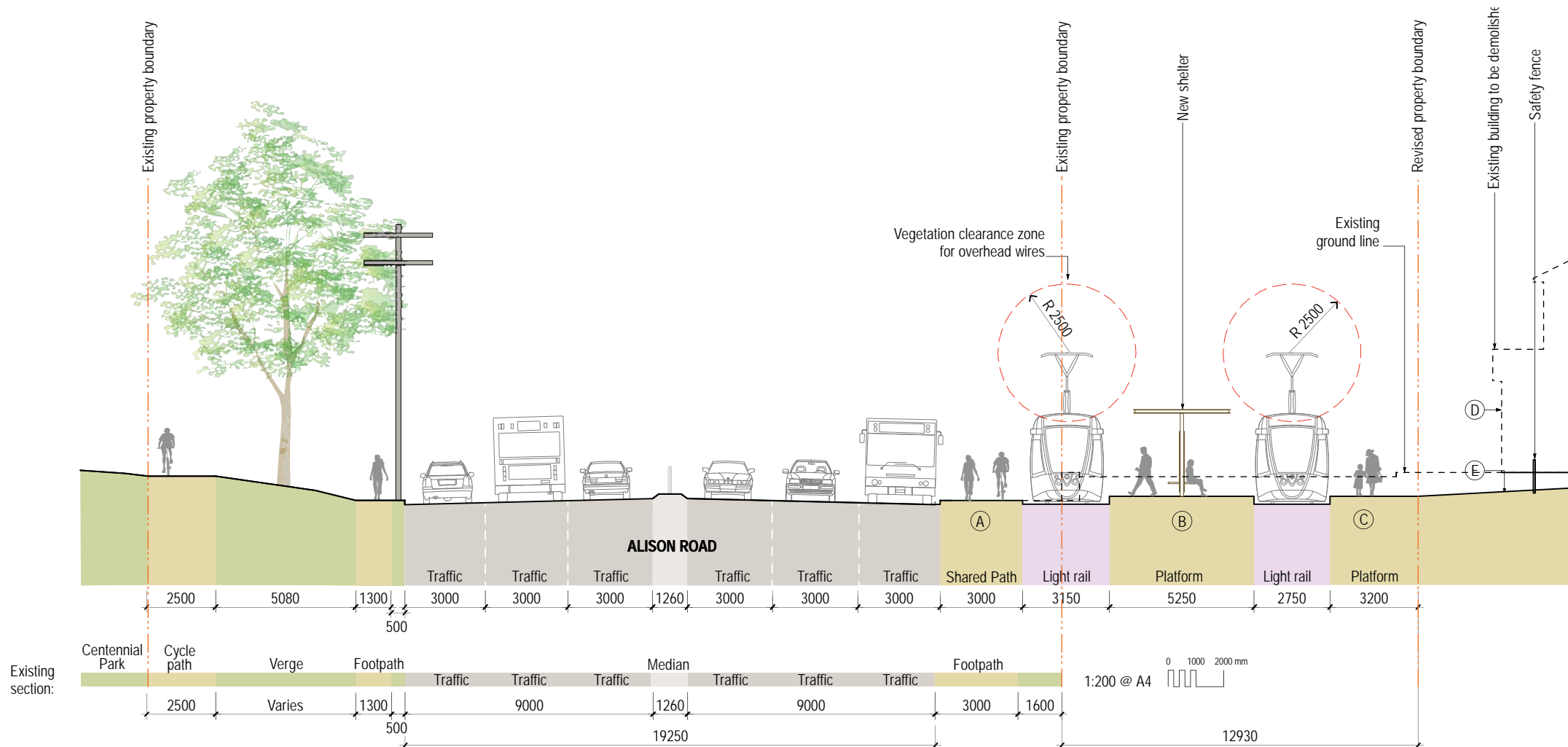
## Section Royal Randwick Racecourse Stop RCC Preferred Arrangement

7a. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE STOP



Section  
Royal Randwick Racecourse Stop  
**Existing Situation**

## 7a. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE STOP



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Shared path B: Island platform C: Side platform D: Building to be demolished E: Racecourse entry regraded to 4.5% slope

### ISSUES

- Reduced street amenity due to removal of ten trees and 190 l/m of garden bed at the boundary of Royal Randwick Racecourse.
- Diminished street character due to wide expanse of hard surface with no defined property boundary.
- Significant works, including removal of a building with heritage value, on Racecourse land.
- Poor pedestrian and bicycle experience along Alison Road due to multiple crossing points and positioning of path between traffic lanes and light rail.

### Section

### Royal Randwick Racecourse Stop

### Transport for NSW Proposal





## 7b. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE ENTRY/EXIT

### RECOMMENDATIONS

#### KEY IDEAS

- Minimise land purchase by combining bus and light rail facilities.

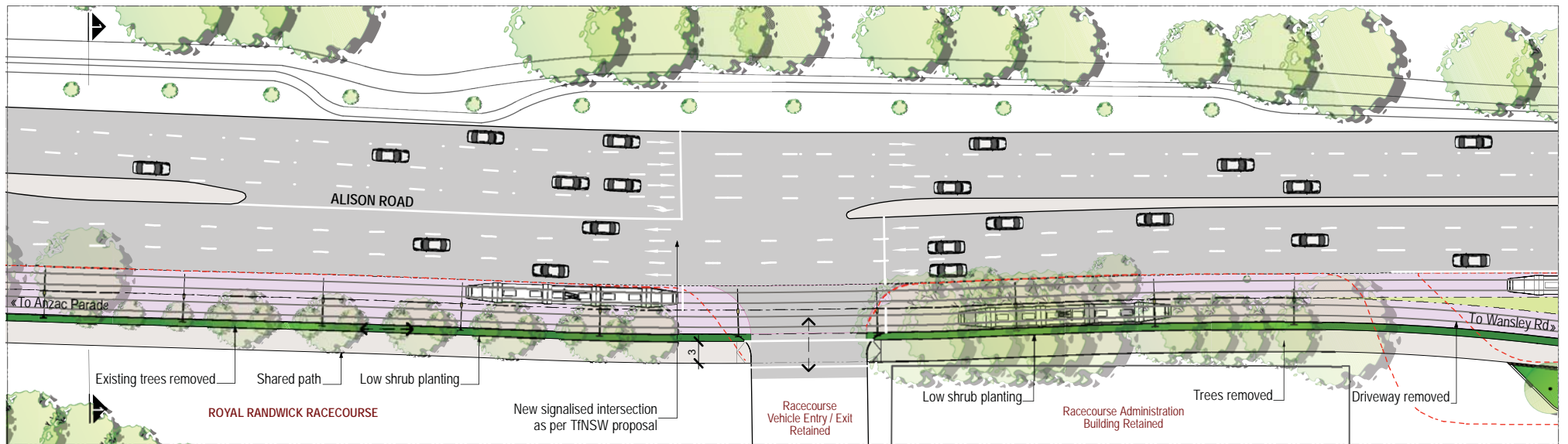
#### MOVEMENT AND CIRCULATION

- Increase safety for pedestrians and cyclist by eliminating light rail crossover points.

#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

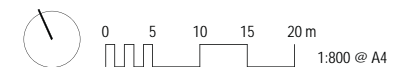
- Enhance street amenity with new garden beds and low planting.

## 7b. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE ENTRY/EXIT



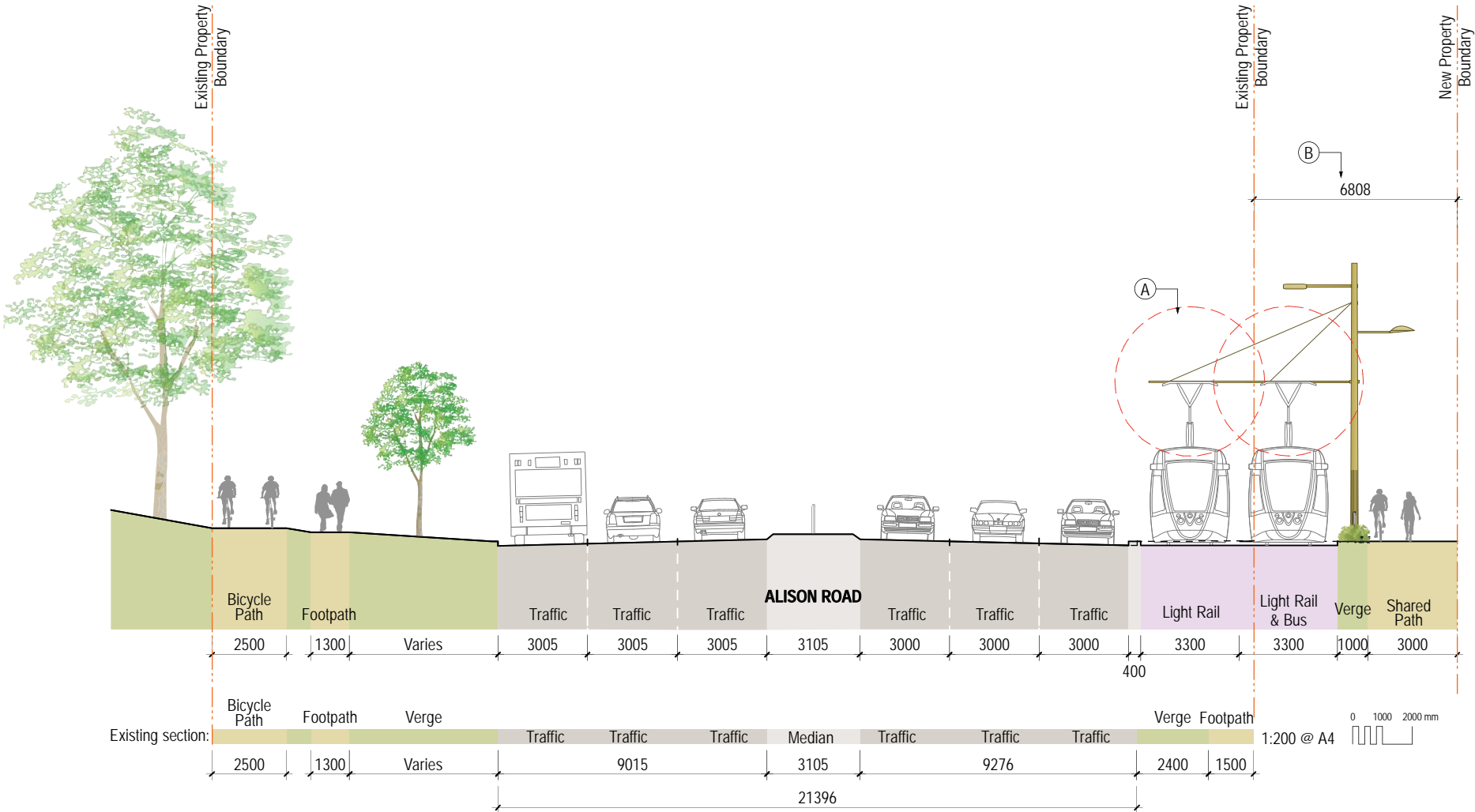
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan  
Royal Randwick Racecourse Entry/Exit  
**RCC Preferred Arrangement**

7b. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE ENTRY/EXIT

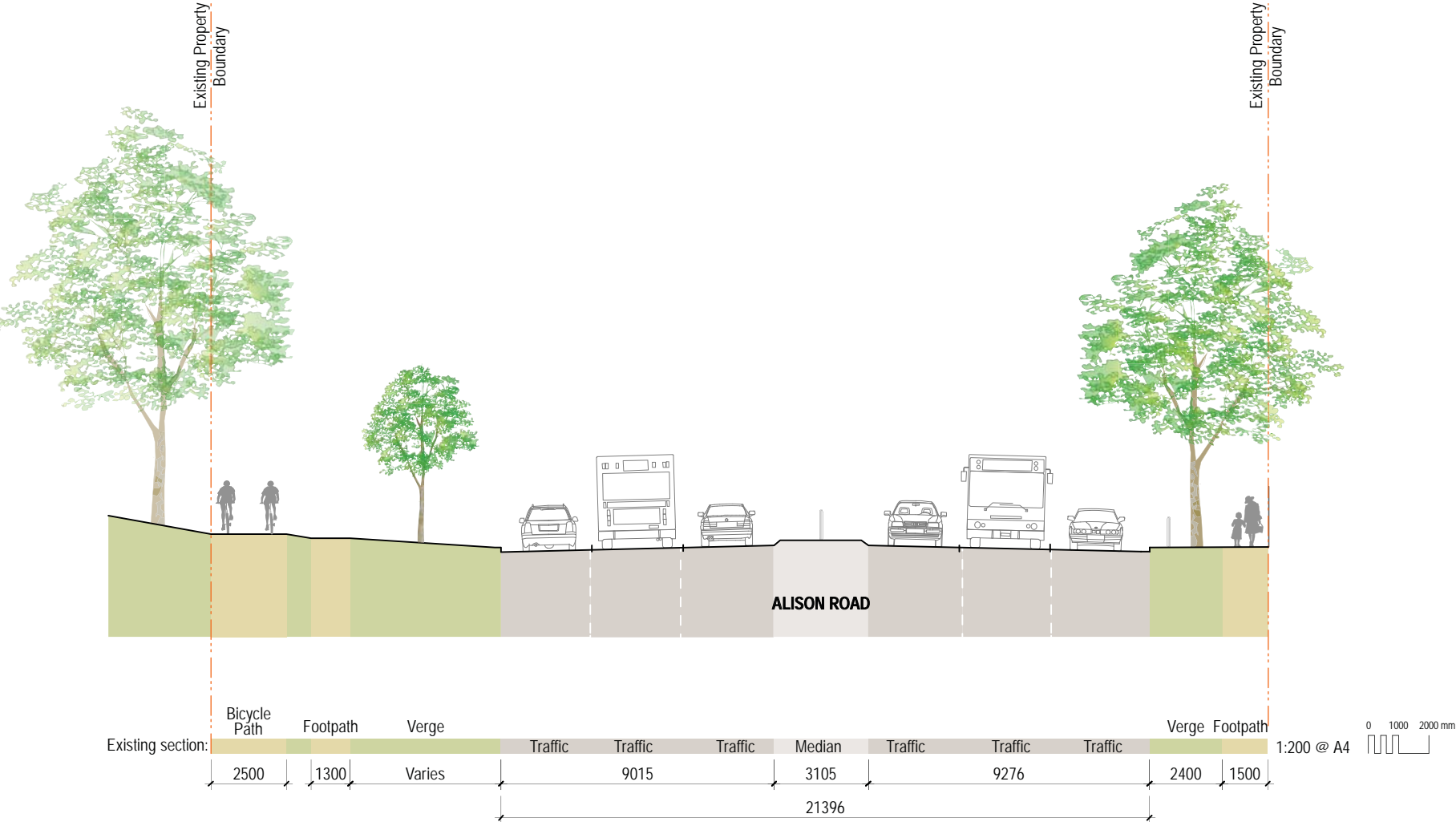


NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires B: Adjustment to property boundary

Section  
Royal Randwick Racecourse Entry/Exit  
RCC Preferred Arrangement

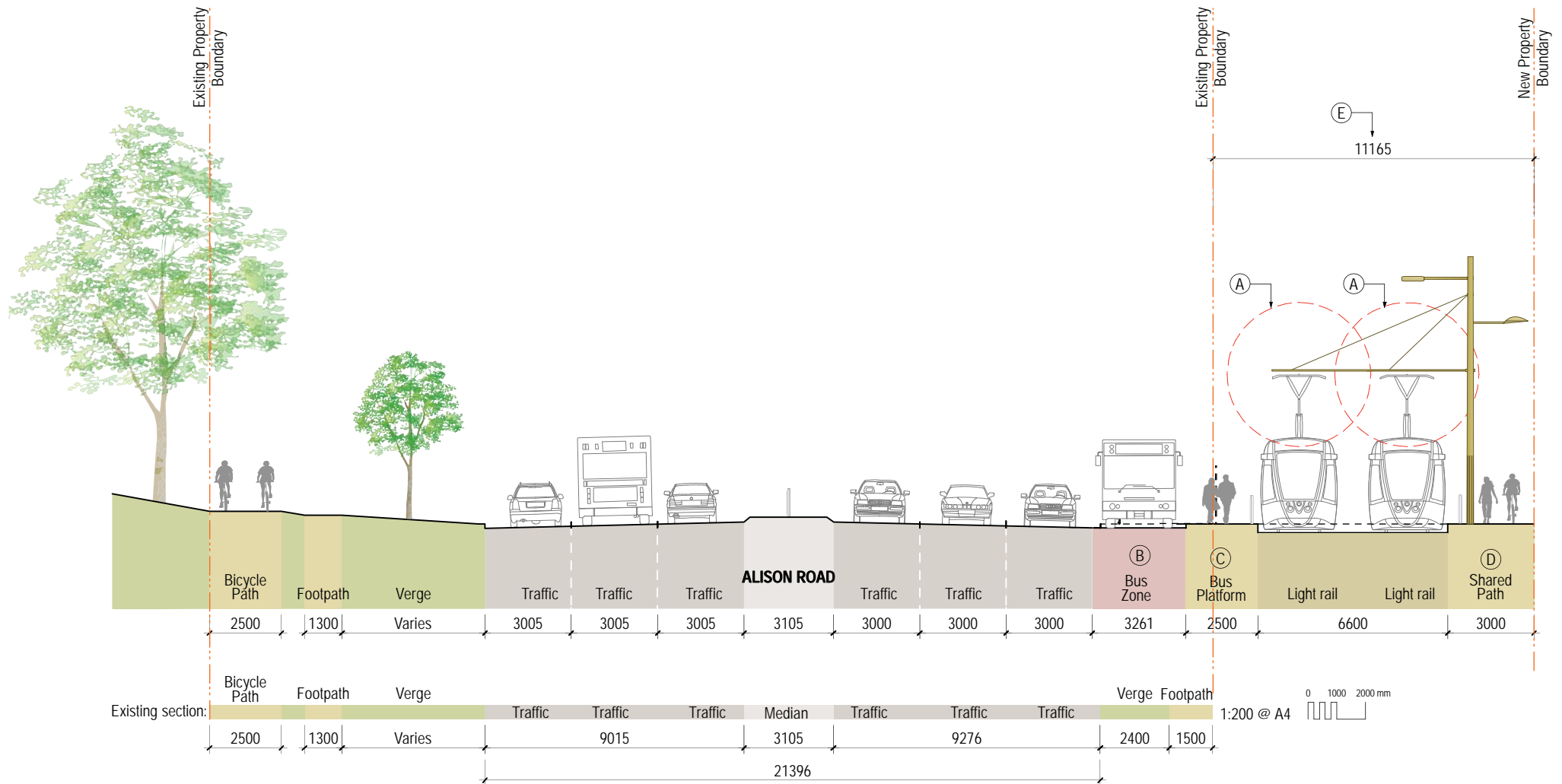
7b. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE ENTRY/EXIT



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Section  
Royal Randwick Racecourse Entry/Exit  
**Existing Situation**

## 7b. RANDWICK - ALISON ROAD, ROYAL RANDWICK RACECOURSE ENTRY/EXIT



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

A: Vegetation clear zone for overhead wires B: Bus pull in bay C: Bus Platform D: Shared Path E: Adjustment to property boundary

### ISSUES

- Proposed configuration requires the purchase / appropriation of a large amount of adjacent property.
- Multiple light rail crossing points decreases accessibility and increases risk for pedestrians and cyclists.
- Pedestrian experience on Bus platform is poor due to positioning between light rail and traffic.
- Bus stop proximity to Doncaster Avenue prohibits bus movements across Alison Road and into separated bus/light rail lane adjacent Centennial Park.

### Section

### Royal Randwick Racecourse Entry/Exit Transport for NSW Proposal





## 8. RANDWICK - ALISON ROAD CORNER DONCASTER AVENUE

### RECOMMENDATIONS

#### KEY IDEAS

- Council's preferred option for the shared path between Doncaster Avenue and Robertson Road is between the light rail alignment and Alison Road / Anzac Parade road alignment.
- Final shared path alignment through the Doncaster Avenue / Alison Road / Bus Roadway intersection subject to detailed engineering and traffic signal design.

#### MOVEMENT AND CIRCULATION

- Eliminate pedestrian/cyclist crossing points by realigning the shared path so that it is on the road side of the light rail and bus lane.

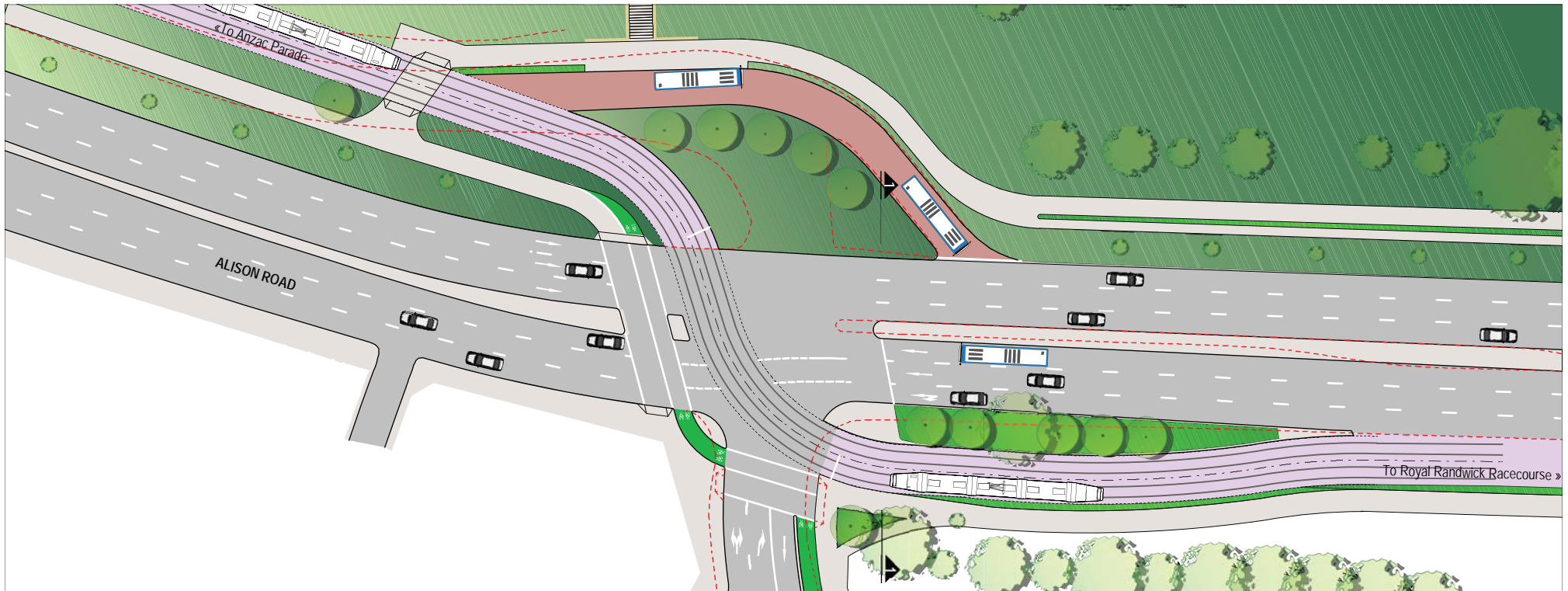
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Minimise visual and noise impacts through the use of buffers that incorporate appropriate regrading and planting.

#### LANDSCAPING

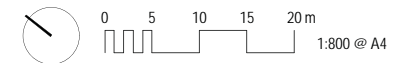
- Maximise parkland character through avenue planting.

## 8. RANDWICK - ALISON ROAD CORNER DONCASTER AVENUE



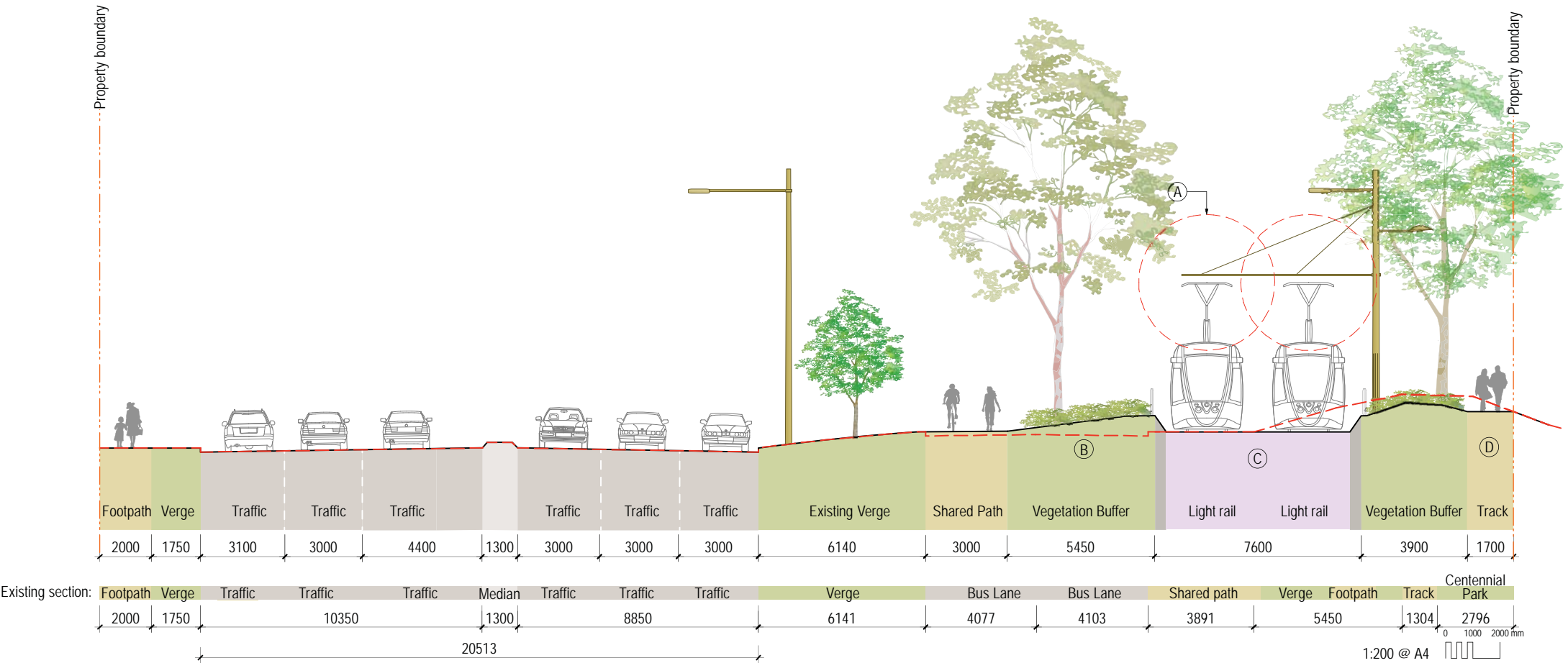
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions.  
Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan  
Alison Road corner Doncaster Ave  
**RCC Preferred Arrangement**

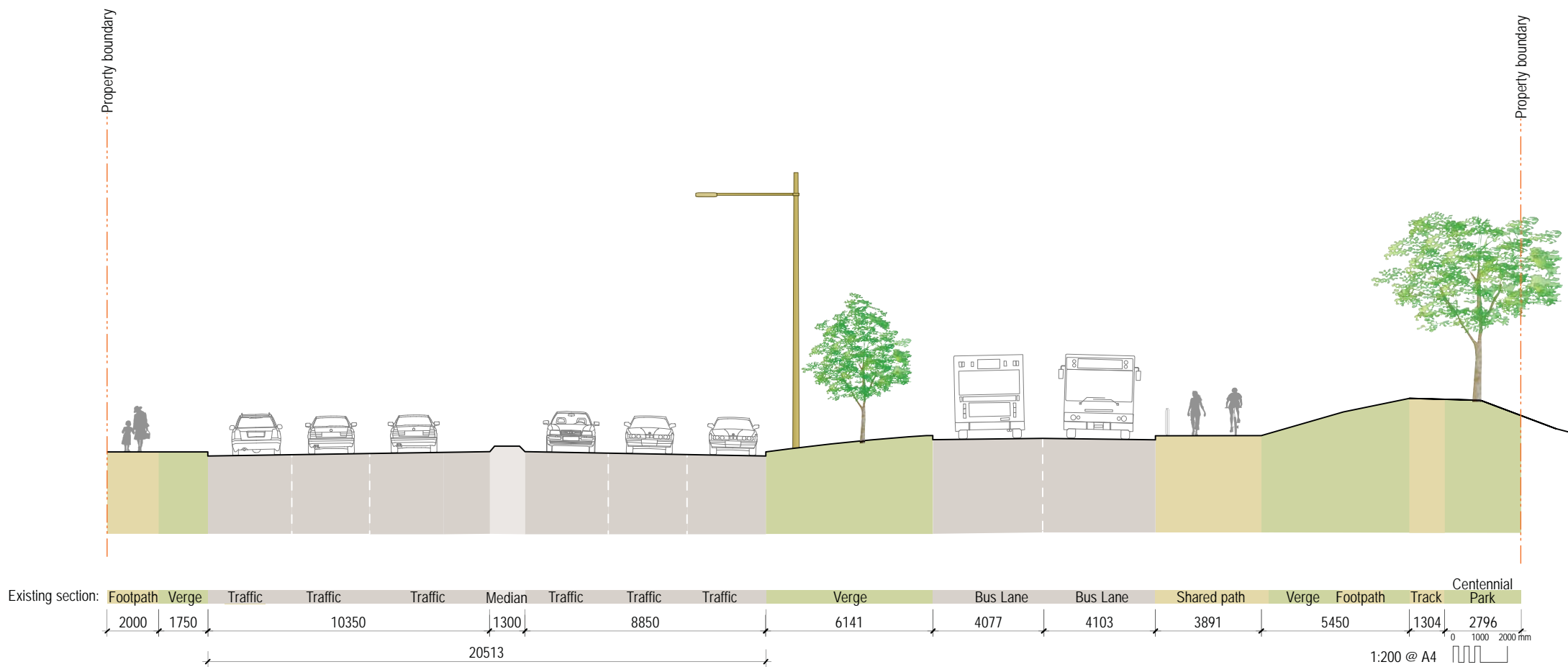
8. RANDWICK - ALISON ROAD CORNER DONCASTER AVENUE



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.  
A: Vegetation clear zone for overhead wires B: Vegetation/Noise Buffer C: Bus/Light rail shared lane D: Reinstated track

Section  
Alison Road corner Doncaster Ave  
**RCC Preferred Arrangement**

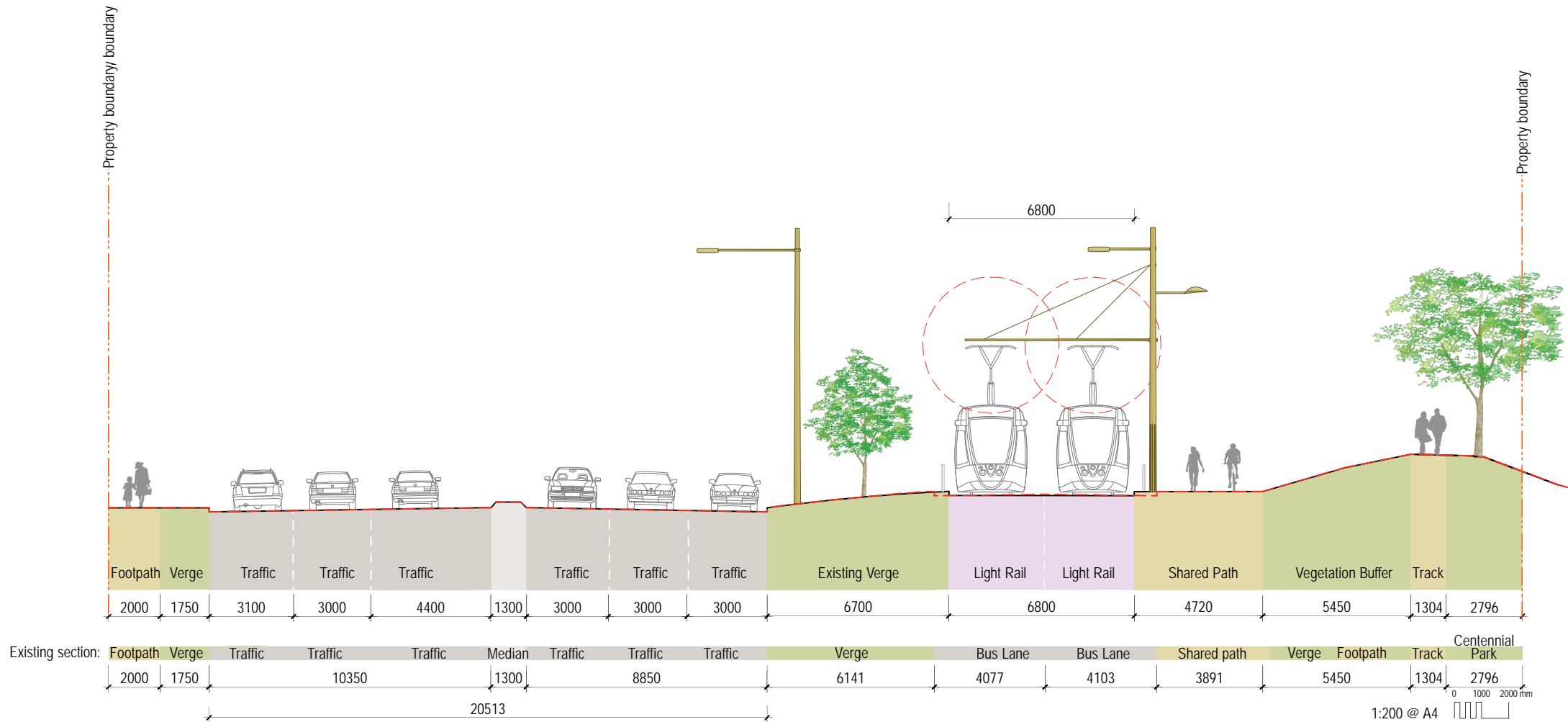
# 8. RANDWICK - ALISON ROAD CORNER DONCASTER AVENUE



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Section  
Alison Road corner Doncaster Ave  
**Existing Situation**

## 8. RANDWICK - ALISON ROAD CORNER DONCASTER AVENUE



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

### ISSUES

- Proposed alignment requires pedestrians and cyclists to cross the light rail and bus lane at Robertson Road and Doncaster Avenue.
- Pedestrian/Cyclist experience poor due to proximity to Light Rail Travel Lanes.
- Poor passive surveillance for cyclists and pedestrians.
- Potential visual and noise impacts on areas of Centennial Parklands.

### Section

Alison Road corner Doncaster Ave

**Transport for NSW Proposal**





## 9. RANDWICK - ALISON ROAD SHARED FOOTPATH ALIGNMENT

### RECOMMENDATIONS

#### KEY IDEAS

- Council's preferred option for the shared path between Doncaster Avenue and Robertson Road is between the light rail alignment and Alison Road / Anzac Parade road alignment.

#### MOVEMENT AND CIRCULATION

- Eliminate pedestrian/cyclist crossing points by realigning the shared path so that it is on the road side of the light rail and bus lane.

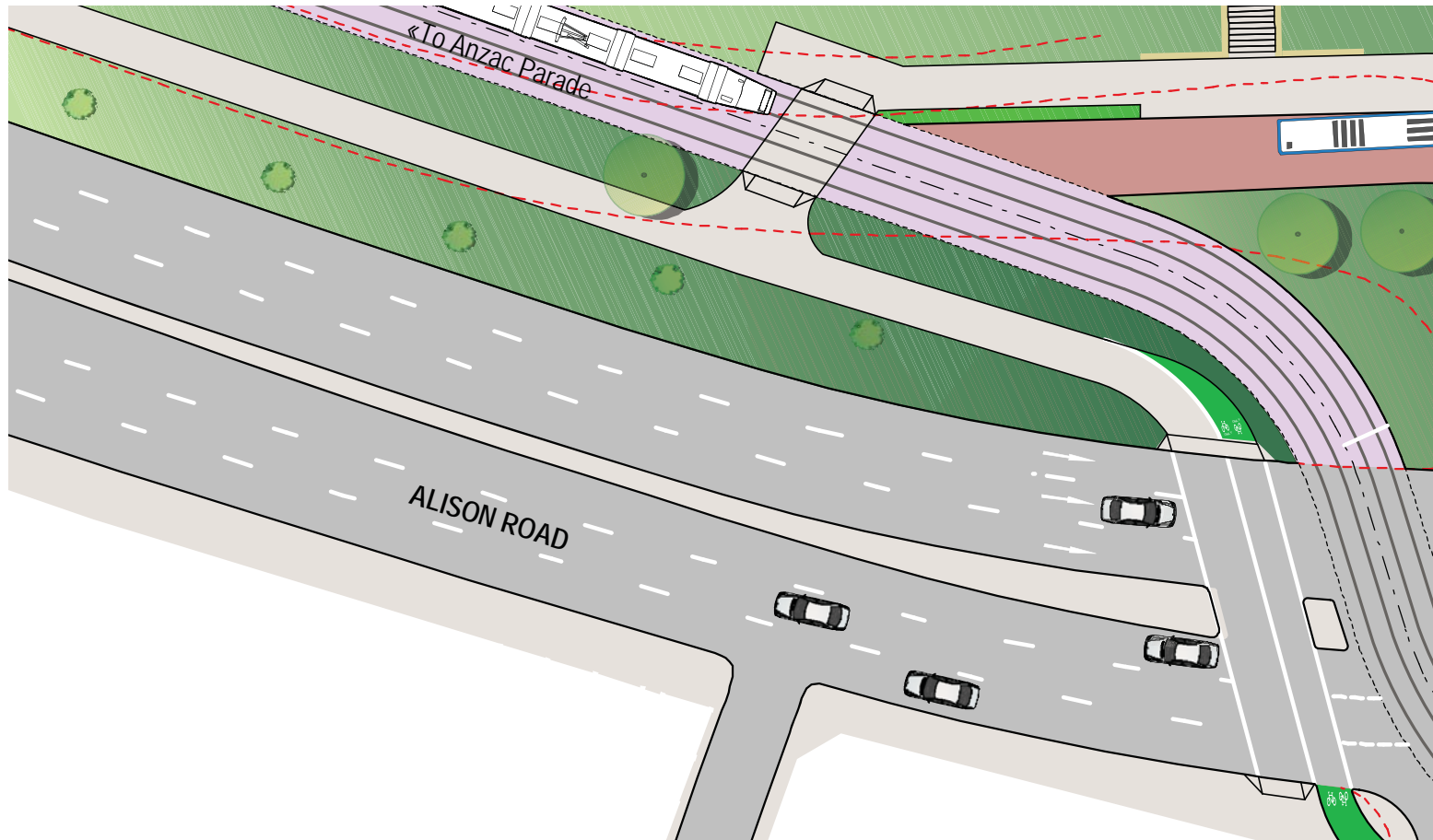
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Minimise visual and noise impacts through the use of buffers that incorporate appropriate regrading and planting.

#### LANDSCAPING

- Maximise parkland character through avenue planting.

## 9. RANDWICK - ALISON ROAD SHARED FOOTPATH ALIGNMENT



Drawing not to scale

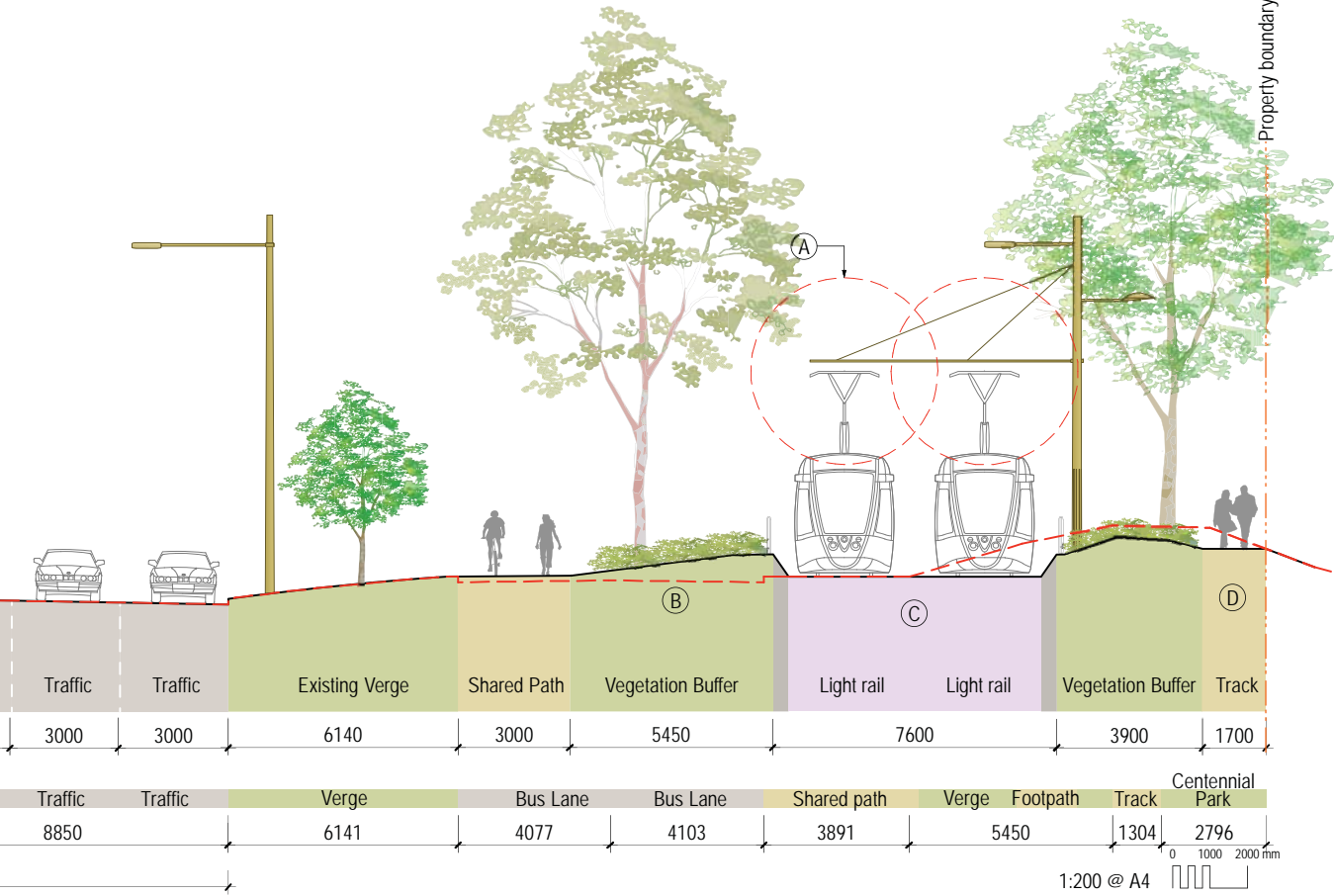


Plan

Alison Road shared footpath alignment

**RCC Preferred Arrangement**

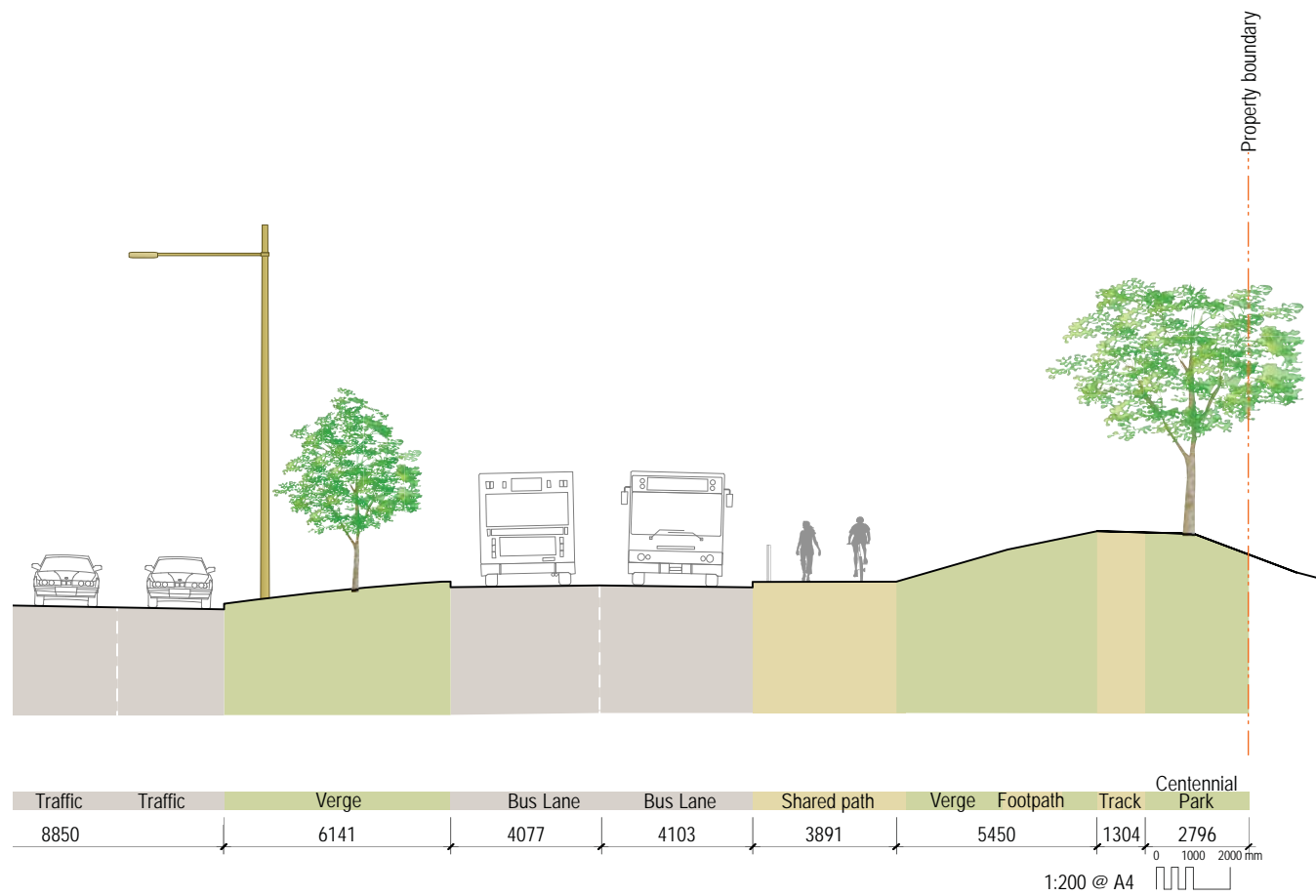
9. RANDWICK - ALISON ROAD SHARED FOOTPATH ALIGNMENT



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.  
B: Vegetation/Noise Buffer C: Bus/Light rail shared lane D: Reinstated track

Section  
Alison Road shared footpath alignment  
**RCC Preferred Arrangement**

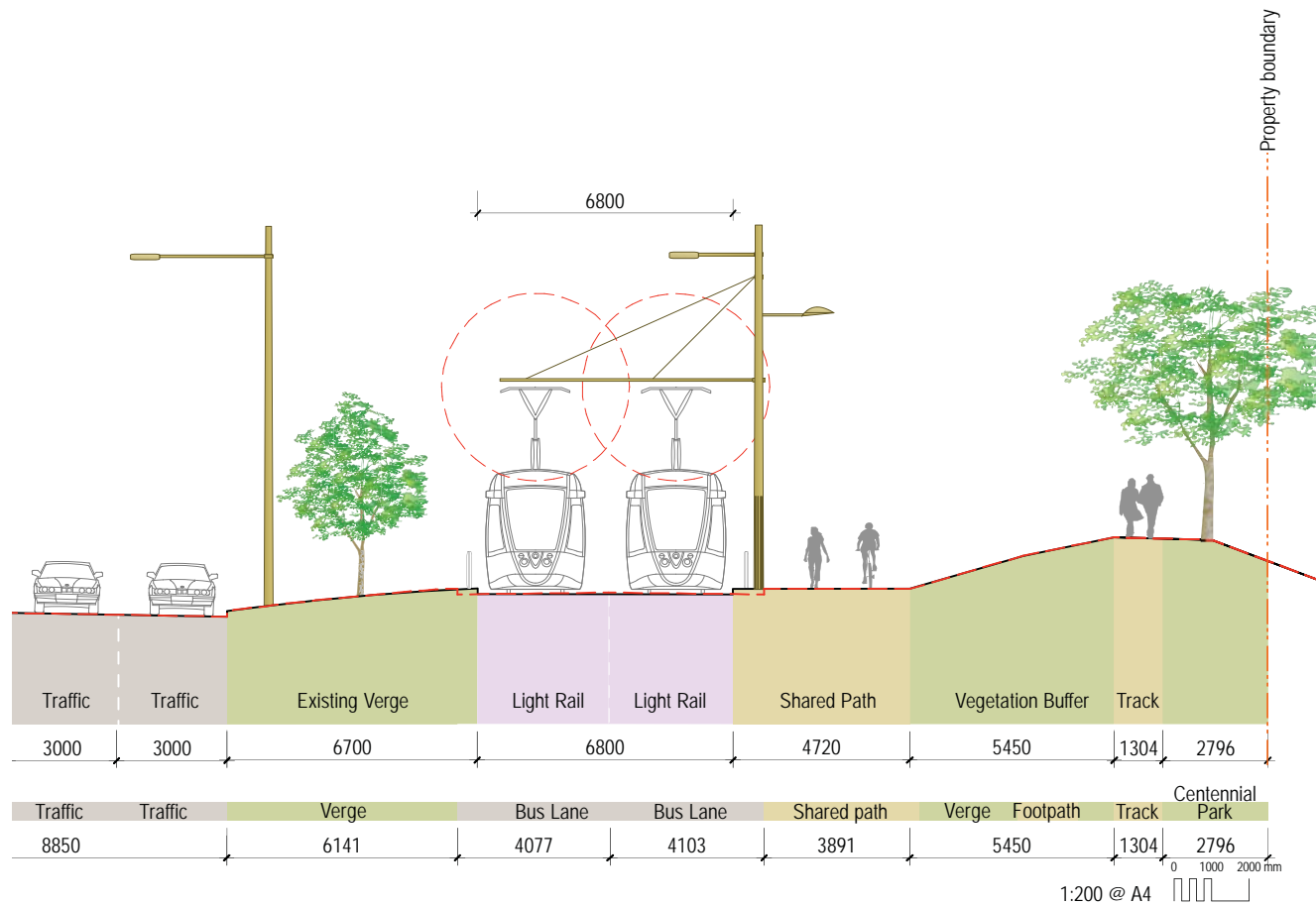
# 9. RANDWICK - ALISON ROAD SHARED FOOTPATH ALIGNMENT



Note: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Section  
Alison Road shared footpath alignment  
**Existing Situation**

## 9. RANDWICK - ALISON ROAD SHARED FOOTPATH ALIGNMENT



Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

### ISSUES

- Proposed alignment requires pedestrians and cyclists to cross the light rail and bus lane at Robertson Road and Doncaster Avenue.
- Pedestrian/Cyclist experience poor due to proximity to Light Rail Travel Lanes.
- Poor passive surveillance for cyclists and pedestrians.
- Potential visual and noise impacts on areas of Centennial Parklands.

### Section

Alison Road shared footpath alignment

**Transport for NSW Proposal**





## 10. KENSINGTON - ANZAC PARADE, MIDBLOCK

### RECOMMENDATIONS

#### KEY IDEAS

- Provide light rail lanes, mixed traffic lanes and parking lane to minimum width requirements. Use the extra space gained to create a wide median suitable for tree planting and to widen footpaths.

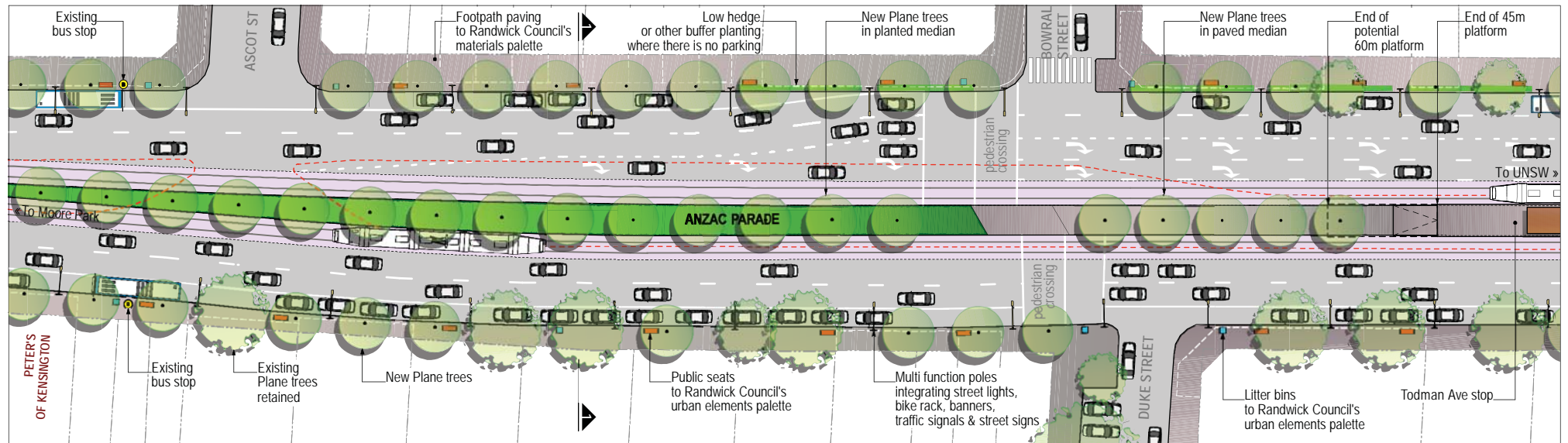
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Light rail lanes to be flush with adjacent traffic lanes to maximise flexibility in the street.
- Light rail lanes to be wire-free to allow for street trees to be centred in median.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Minimise 'pole clutter' by providing multi-function poles that integrate street lighting, traffic signals, street signs, banners and bike racks.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

- Retain existing street trees wherever possible and supplement with new Plane trees to create a substantial 'boulevard' experience.
- Provide replacement Plane trees in median to maintain existing street character (ongoing pruning required to maintain overhead wire clearance zone).

## 10. KENSINGTON - ANZAC PARADE, MIDBLOCK



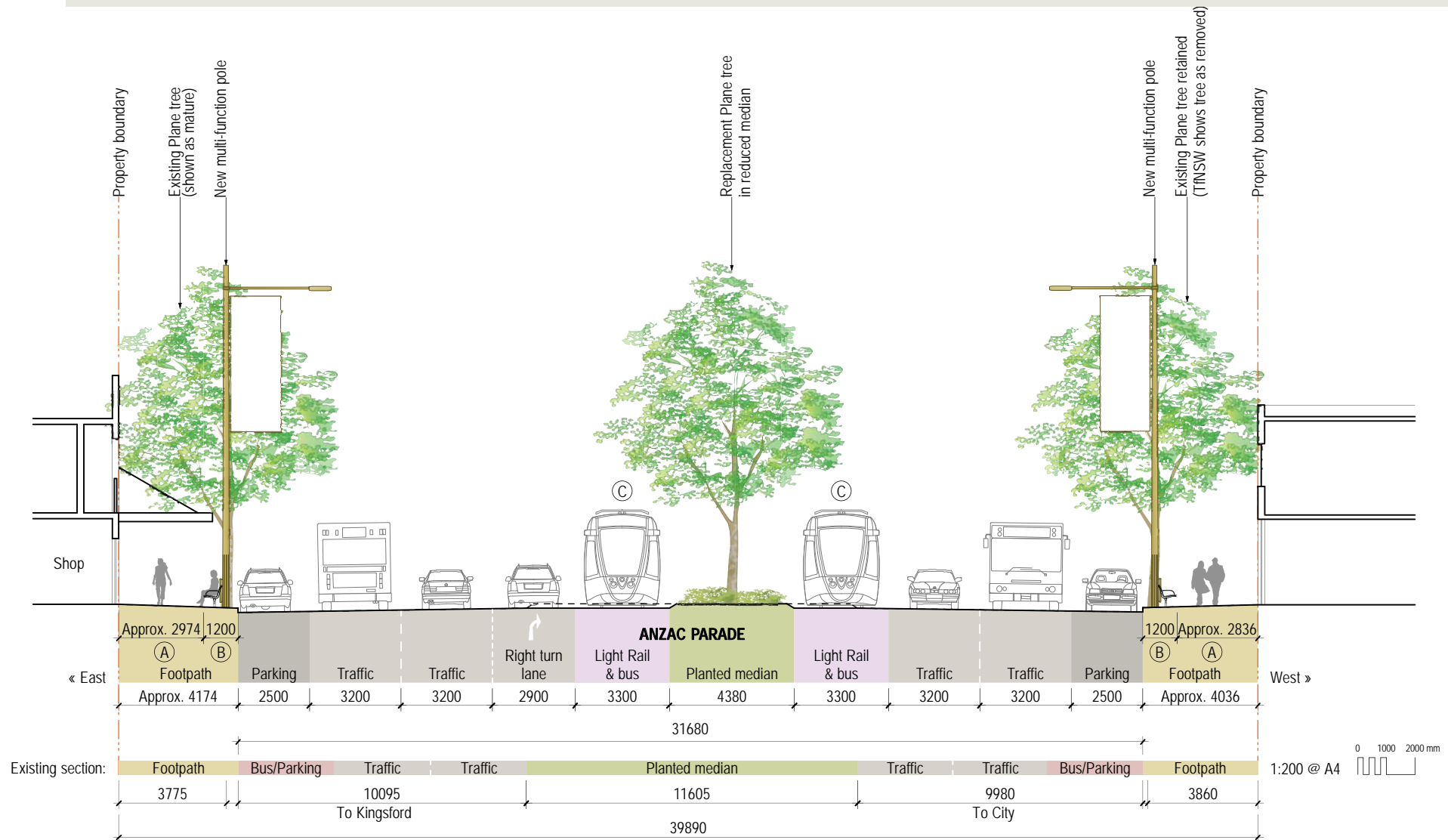
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan at Kensington  
Ascot Street - Duke Street  
**RCC Preferred Arrangement**

# 10. KENSINGTON - ANZAC PARADE, MIDBLOCK

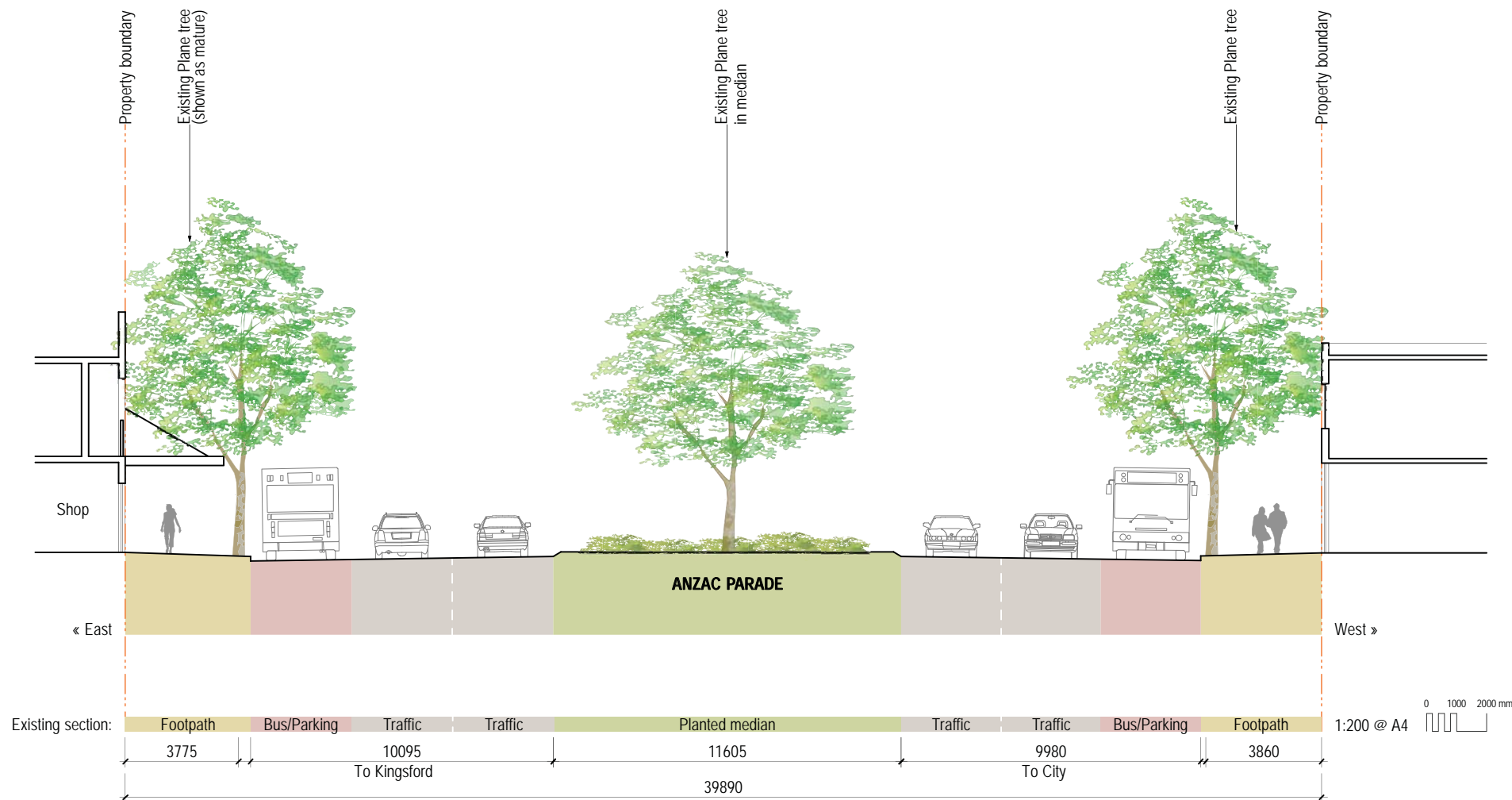


NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 09.

A: Minimum 2500 wide clear space for pedestrians B: Space for furniture & planting (max. 1200) C: Light rail lanes to be wire-free at Kensington town centre to allow for trees in median

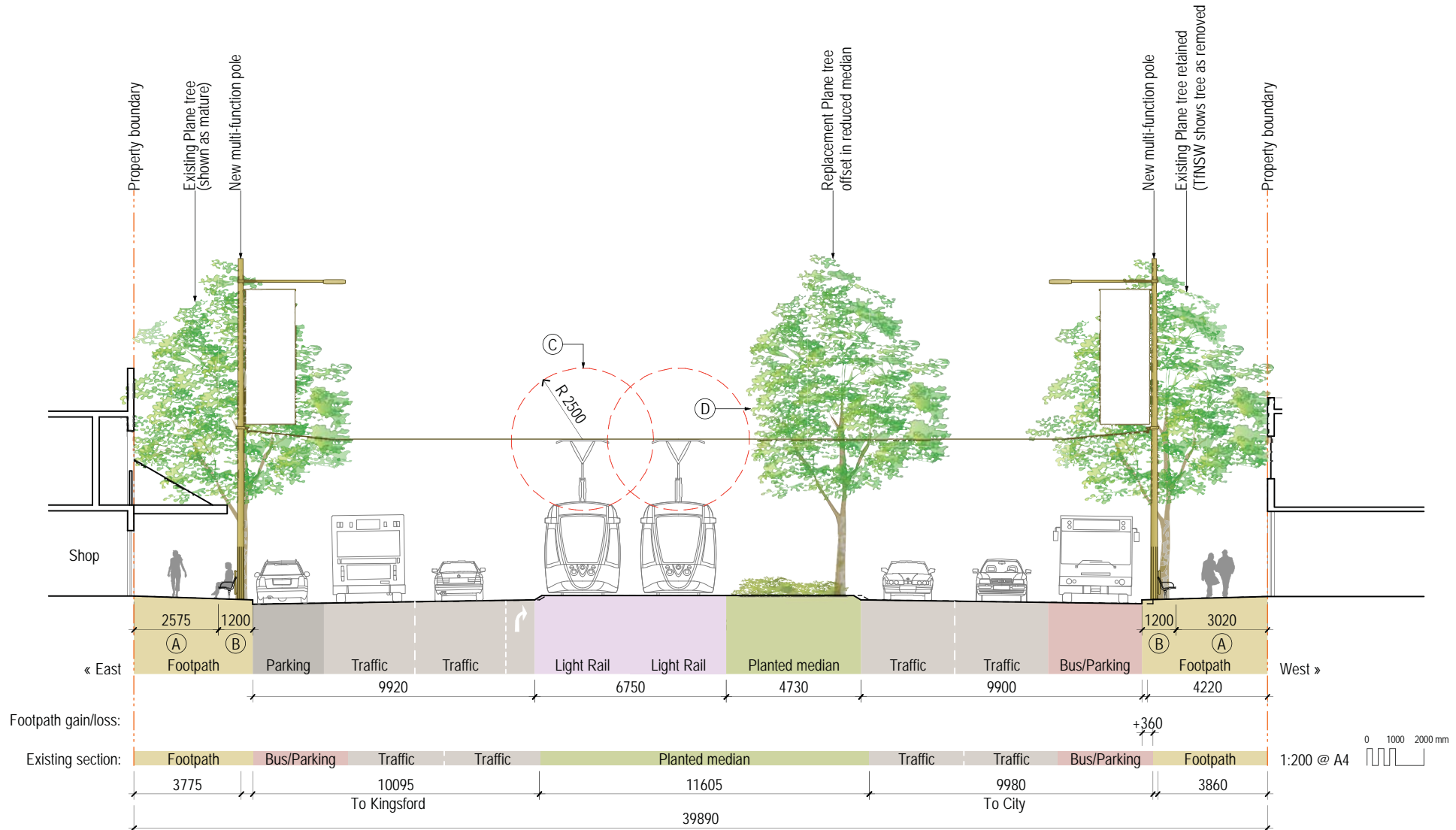
## Kensington - Section 1 Typical Midblock Section RCC Preferred Arrangement

# 10. KENSINGTON - ANZAC PARADE, MIDBLOCK



Kensington - Section 1  
Typical Midblock Section  
**Existing Situation**

# 10. KENSINGTON - ANZAC PARADE, MIDBLOCK



## ISSUES

- Light rail lanes and traffic lanes are wider than minimum requirements.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.
- Existing mature Plane trees on western side of street are shown to be removed, even though no footpath reduction is proposed.

## Kensington - Section 1 Typical Midblock Section Transport for NSW Proposal



## 11. KENSINGTON - ANZAC PARADE, SOUTH OF TODMAN AVENUE

### RECOMMENDATIONS

#### KEY IDEAS

- Provide light rail lanes, mixed traffic lanes and parking lane to minimum width requirements. Use the extra space gained to create a wide median suitable for tree planting and to widen footpaths where possible.

#### MOVEMENT AND CIRCULATION

- Provide right turn lane at the minimum required width for cars only in order to maximise space available for the median.

#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

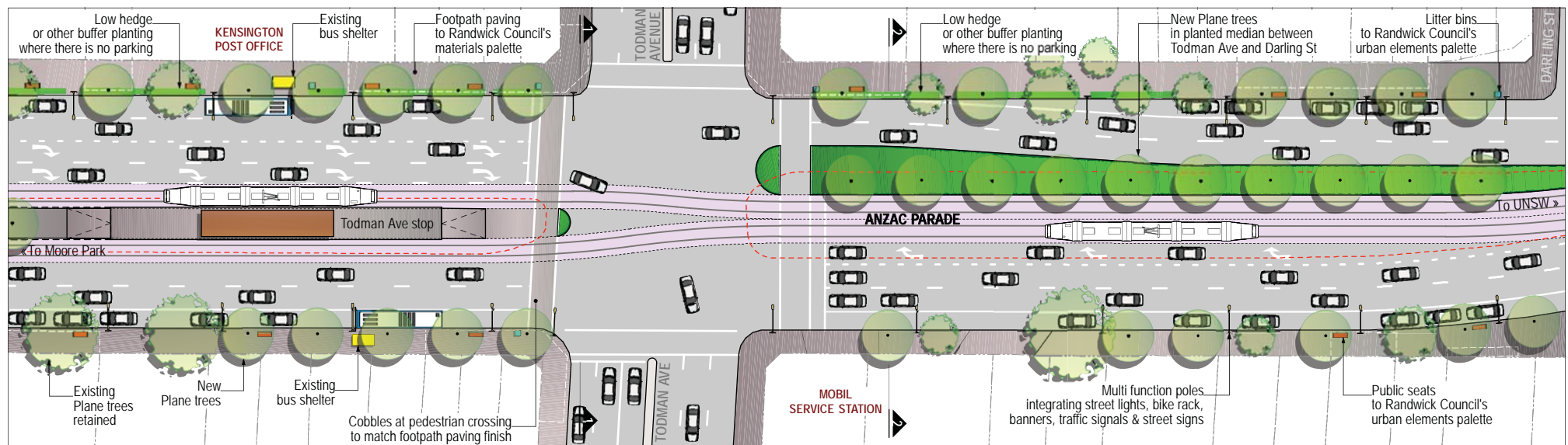
- Light rail lanes to be flush with adjacent traffic lanes to maximise flexibility in the street.
- Light rail lanes to be wire-free to allow for street trees to be centred in the median.
- Minimise 'pole clutter' by providing multi-function poles that integrate street lighting, traffic signals, street signs, banners and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

- Provide replacement Plane trees in the median to maintain the existing street character.
- Retain existing street trees wherever possible and supplement with new Plane trees to create a substantial 'boulevard' experience.
- Where kerbside parking is not provided, provide a planted edge (eg hedge) behind the kerb to create a 'buffer' between pedestrians/shops and traffic.

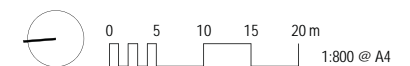


## 11. KENSINGTON - ANZAC PARADE, SOUTH OF TODMAN AVENUE



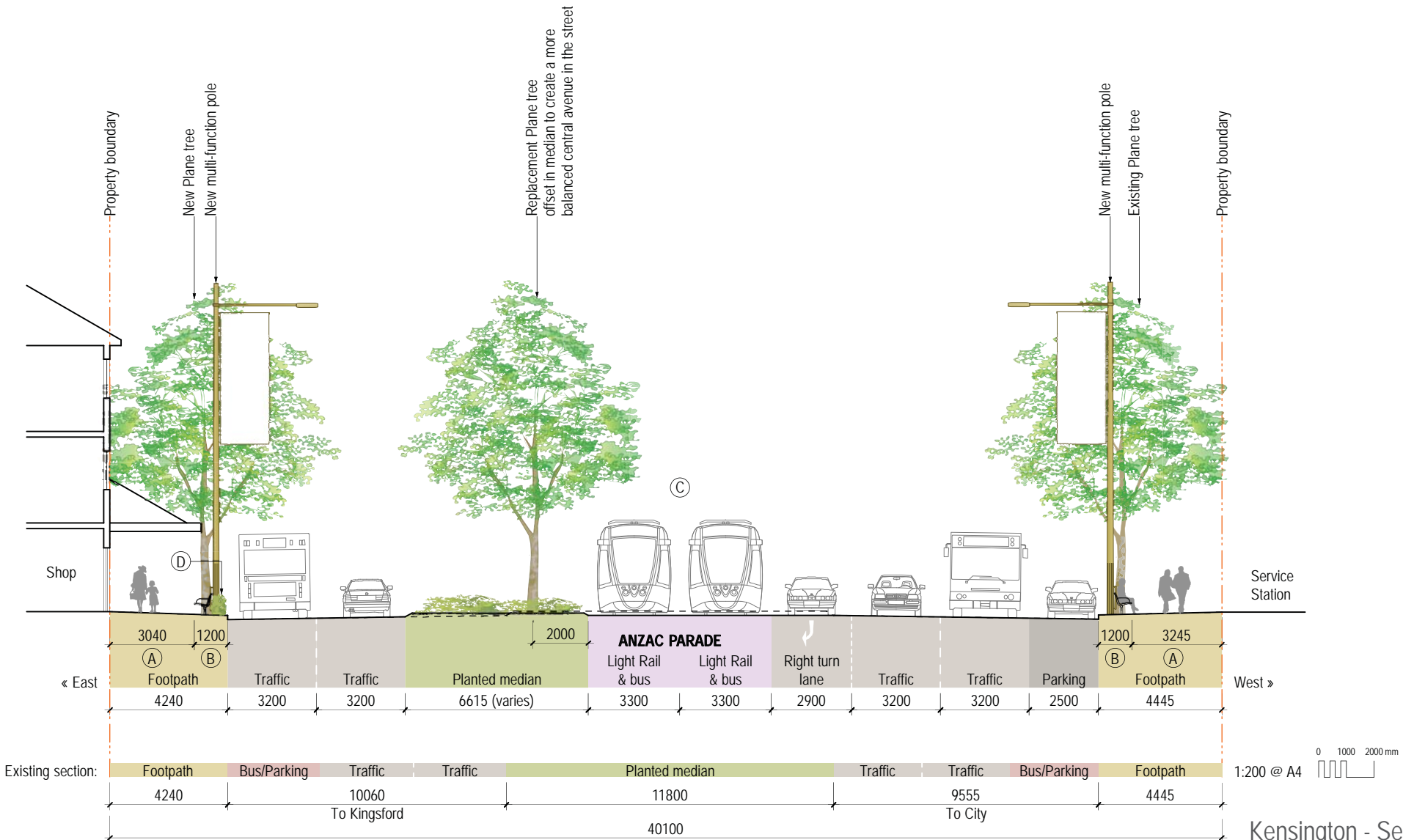
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan at Kensington  
Todman Avenue Stop & Intersection  
**RCC Preferred Arrangement**

# 11. KENSINGTON - ANZAC PARADE, SOUTH OF TODMAN AVENUE



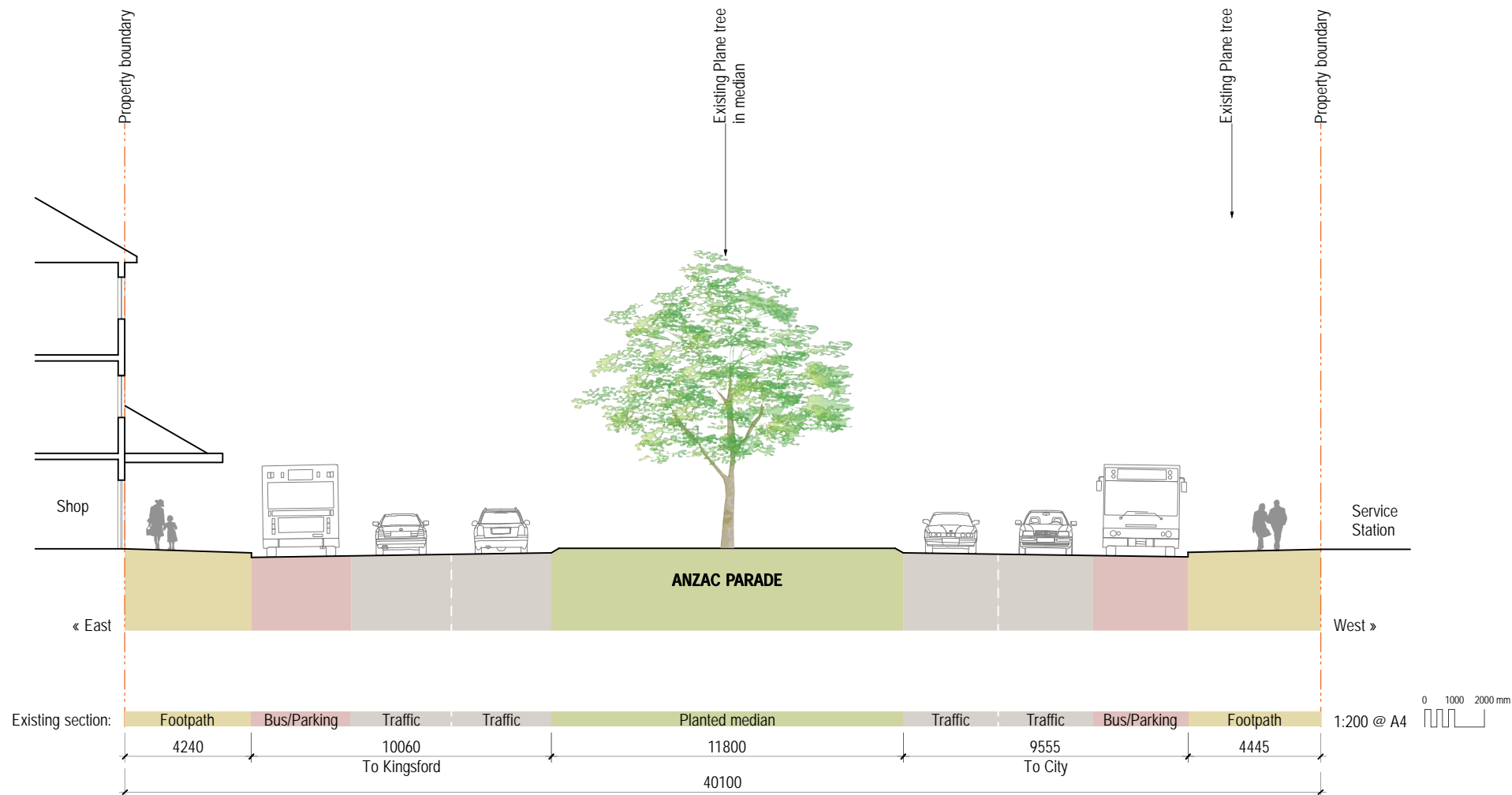
NOTE: Existing dimensions are measured from Transport for NSW's Final Definition Design plan and are approximate only.

A: Minimum 2500 wide clear space for pedestrians    B: Space for furniture & planting (max. 1200)    C: Light rail lanes to be wire-free at Kensington town centre to allow for trees in median

D: Low hedge or other buffer planting where kerbside parking is not provided

Kensington - Section 2  
Typical Midblock Section -  
South of Todman Avenue  
**RCC Preferred Arrangement**

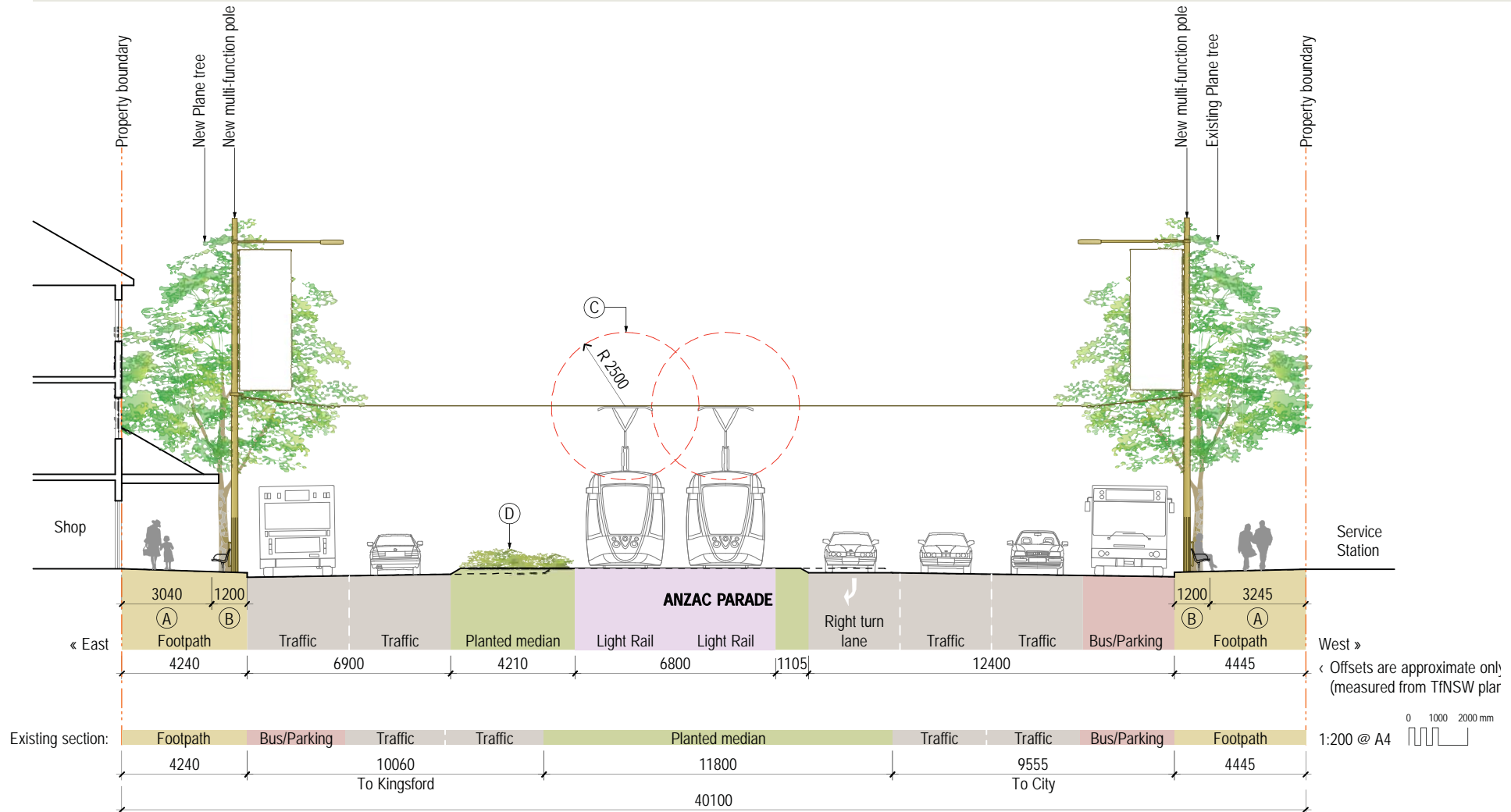
# 11. KENSINGTON - ANZAC PARADE, SOUTH OF TODMAN AVENUE



NOTE: Existing dimensions are measured from Transport for NSW's Final Definition Design plan and are approximate only.

Kensington - Section 2  
Typical Midblock Section -  
South of Todman Avenue  
**Existing Situation**

# 11. KENSINGTON - ANZAC PARADE, SOUTH OF TODMAN AVENUE



NOTE: Existing dimensions are measured from Transport for NSW's Final Definition Design plan and are approximate only.

A: Minimum 2500 wide clear space for pedestrians B: Space for furniture & planting (max. 1200) C: Vegetation clearance zone for overhead wires

D: Shrub planting only at median; insufficient space for tree planting outside vegetation clearance zone

## ISSUES

- Light rail lanes and traffic lanes are wider than minimum requirements.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.
- A right-turn lane has been introduced on the western side of the street, creating a total of 4 lanes northbound, where currently there are 3.
- Loss of parking outside the shops on the eastern side of the street.

## Kensington - Section 2

### Typical Midblock Section - South of Todman Avenue

### Transport for NSW Proposal



## 12 KINGSFORD - ANZAC PARADE, UNSW LOWER CAMPUS STOP

### RECOMMENDATIONS

#### KEY IDEAS

- Provide light rail lanes and mixed traffic lanes to minimum width requirements. Use any extra space gained to widen platform / footpaths.

#### MOVEMENT AND CIRCULATION

- Protect pedestrians and cyclists by extending footpath widths.

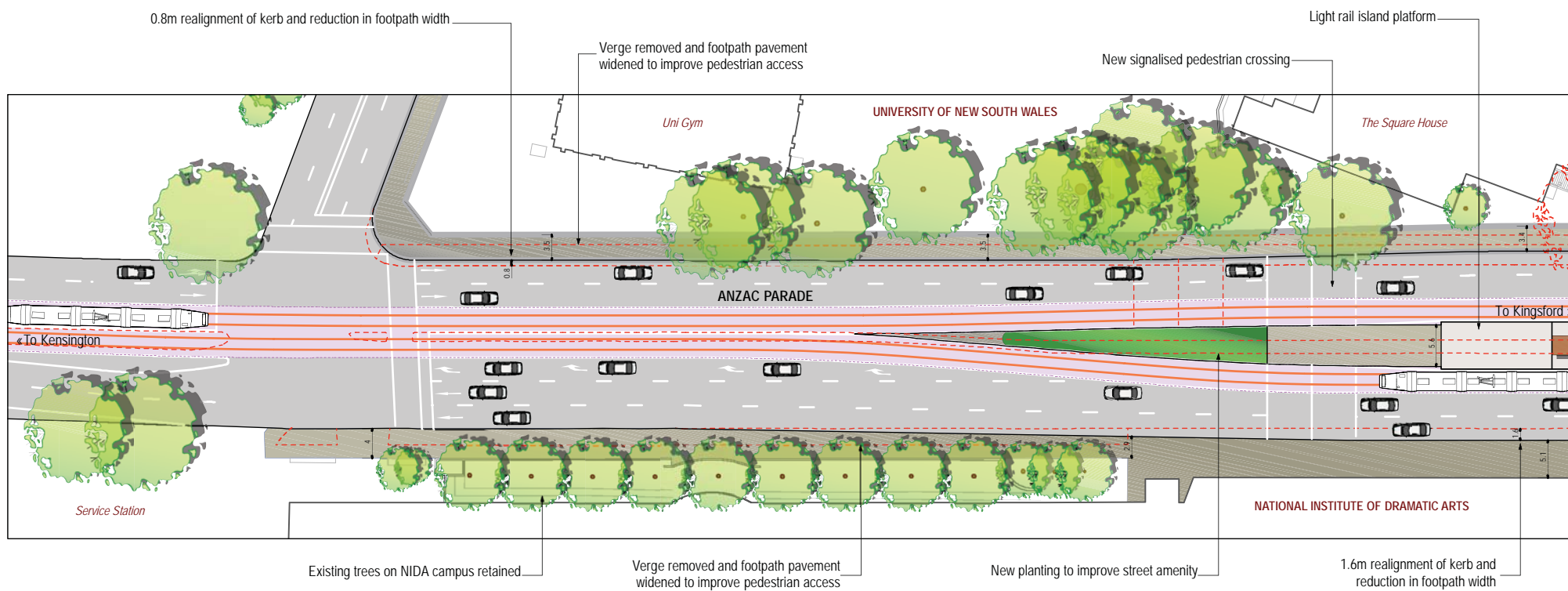
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Light rail lanes to be flush with adjacent traffic lanes to maximise flexibility in the street.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Minimise 'pole clutter' by providing multi-function poles that integrate light rail catenary, street lighting, traffic signals and street signs.
- Footpath pavement in accordance with the 'Materials & Furniture Palette' in section 5 of this document.

#### LANDSCAPING

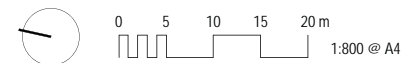
- Retain existing street trees wherever possible and supplement with new trees to create a substantial 'boulevard' experience.
- Provide planting in the medians to enhance the landscape character of the street.

## 12 KINGSFORD - ANZAC PARADE, UNSW LOWER CAMPUS STOP



NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

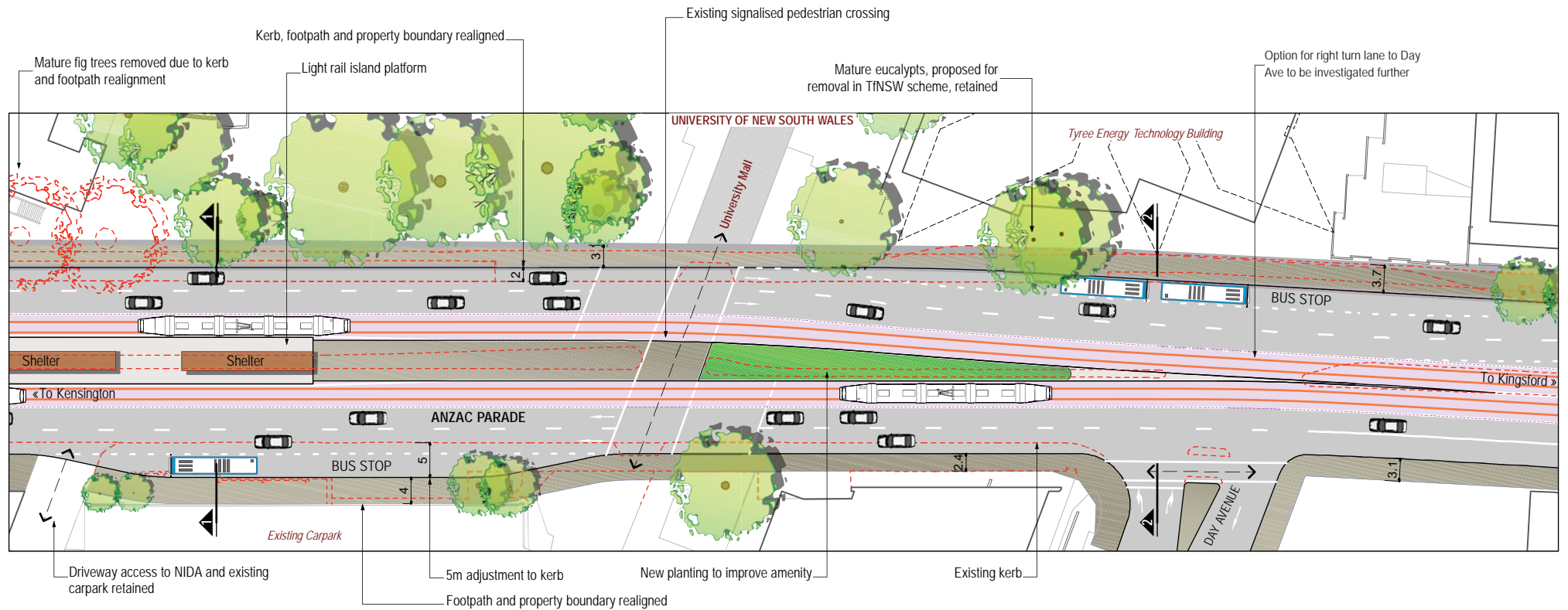
----- Existing kerbs/medians removed



## Plan at UNSW Lower Campus

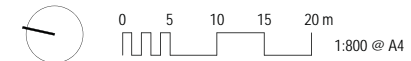


## 12 KINGSFORD - ANZAC PARADE, UNSW LOWER CAMPUS STOP



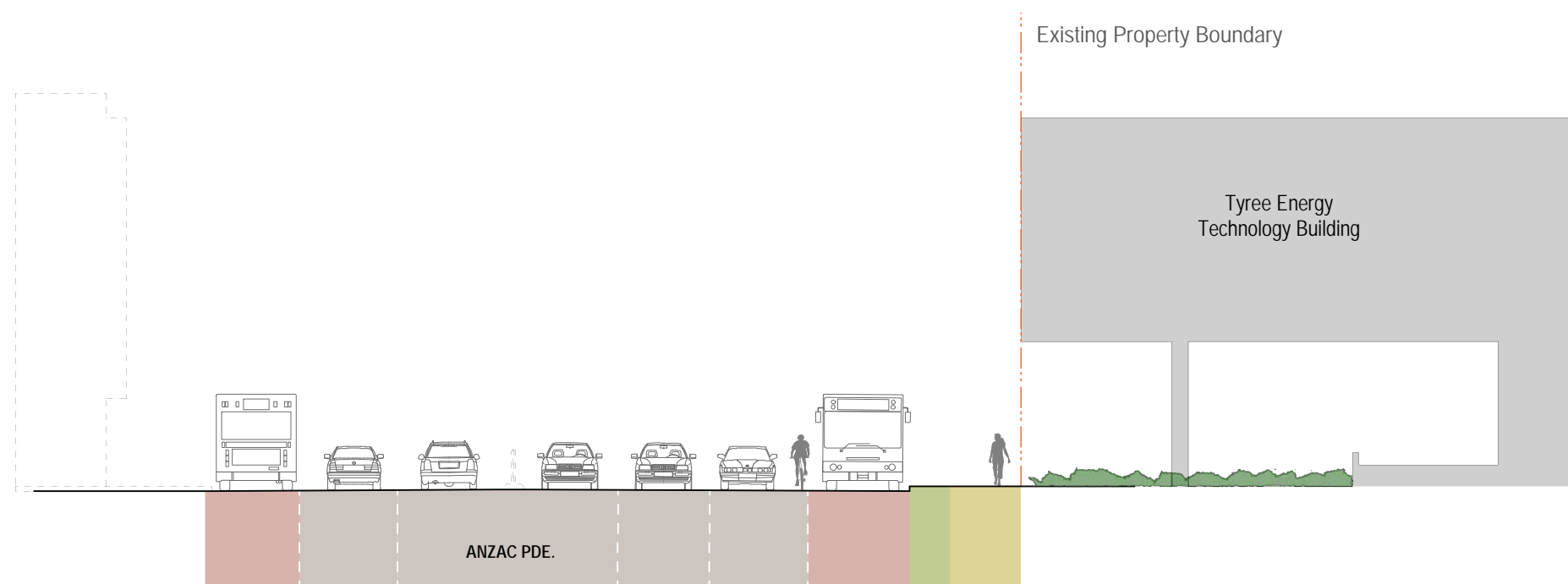
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed

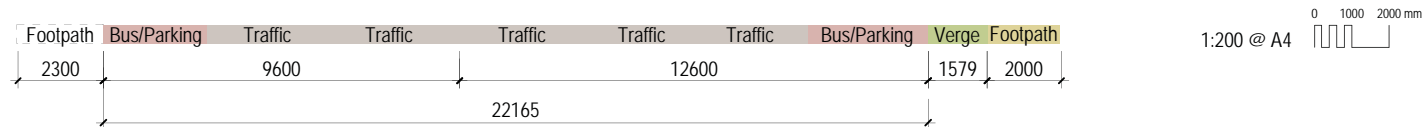


Plan at UNSW Lower Campus  
**RCC Preferred Arrangement**

# 12 KINGSFORD - ANZAC PARADE, UNSW LOWER CAMPUS STOP



Existing section:



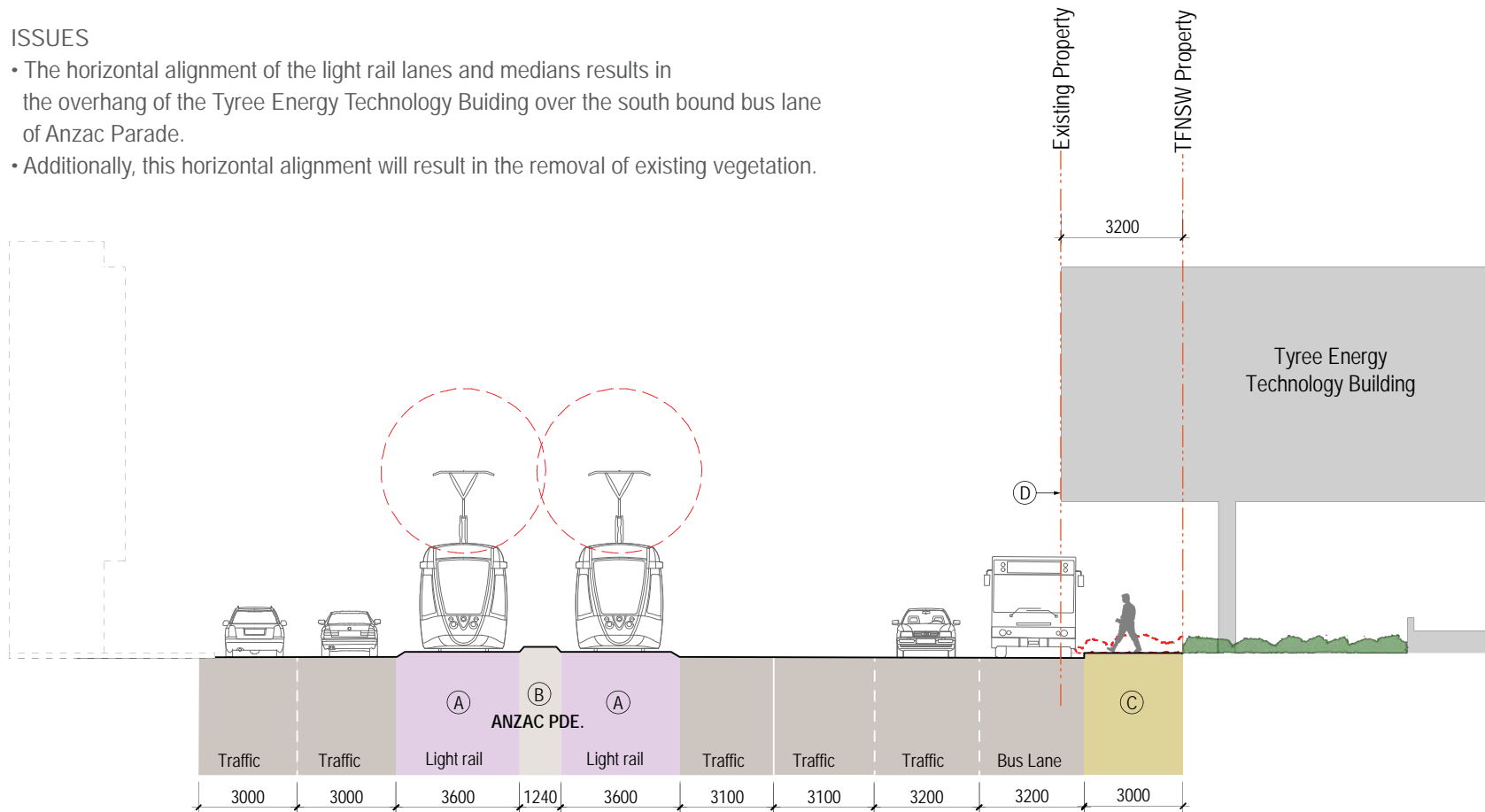
NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Section at UNSW Lower Campus  
Existing Situation

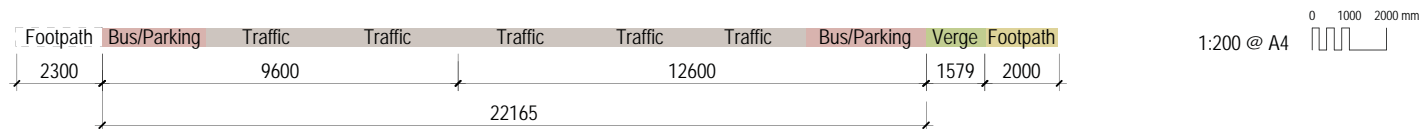
## 12 KINGSFORD - ANZAC PARADE, UNSW LOWER CAMPUS STOP

### ISSUES

- The horizontal alignment of the light rail lanes and medians results in the overhang of the Tyree Energy Technology Building over the south bound bus lane of Anzac Parade.
- Additionally, this horizontal alignment will result in the removal of existing vegetation.



Existing section:



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design drawings and GIS data supplied by Randwick Council.

Section at UNSW Lower Campus  
Transport for NSW Proposal



## 13. KINGSFORD - ANZAC PARADE MIDBLOCK

### RECOMMENDATIONS

#### KEY IDEAS

- Provide light rail lanes and mixed traffic lanes to minimum width requirements and use extra space gained to widen footpaths.

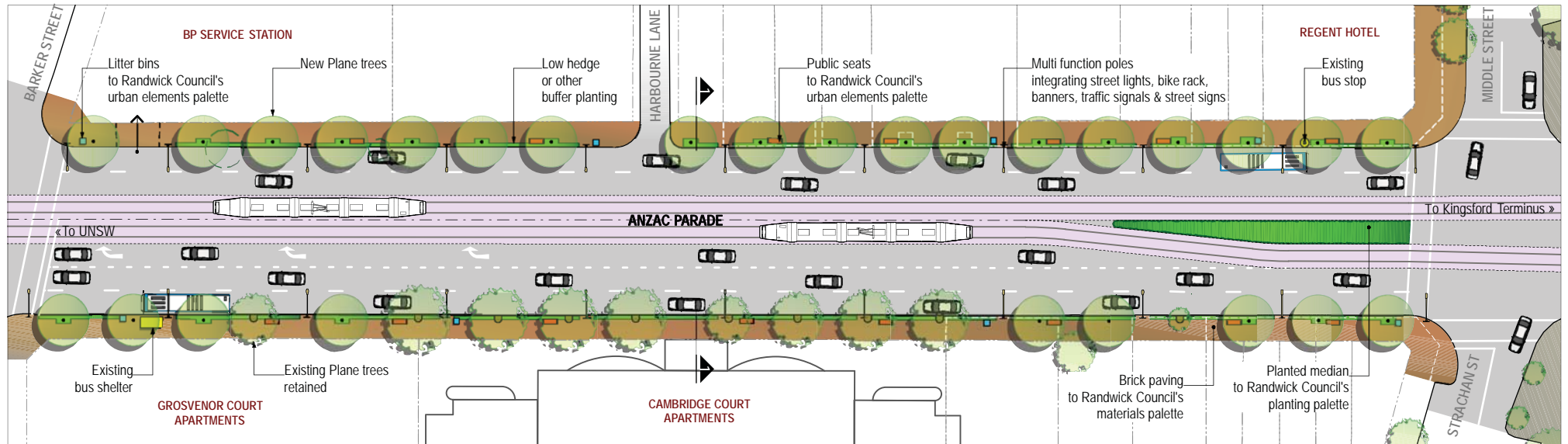
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Light rail lanes to be flush with adjacent traffic lanes to maximise flexibility in the street.
- Light rail lanes to be wire-free through Kingsford to minimise clutter and maximise boulevard character.
- Consolidate street furniture and planting to 1200 behind kerb to maximise clear space at footpaths.
- Minimise 'pole clutter' by providing multi-function poles that integrate street lighting, traffic signals, street signs, banners and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

- Retain existing large Plane trees and supplement with new Plane trees to create a substantial 'boulevard' experience.
- Provide a planted edge (eg. hedge) behind kerb to create a 'buffer' between pedestrians/shops and traffic.

# 13. KINGSFORD - ANZAC PARADE MIDBLOCK



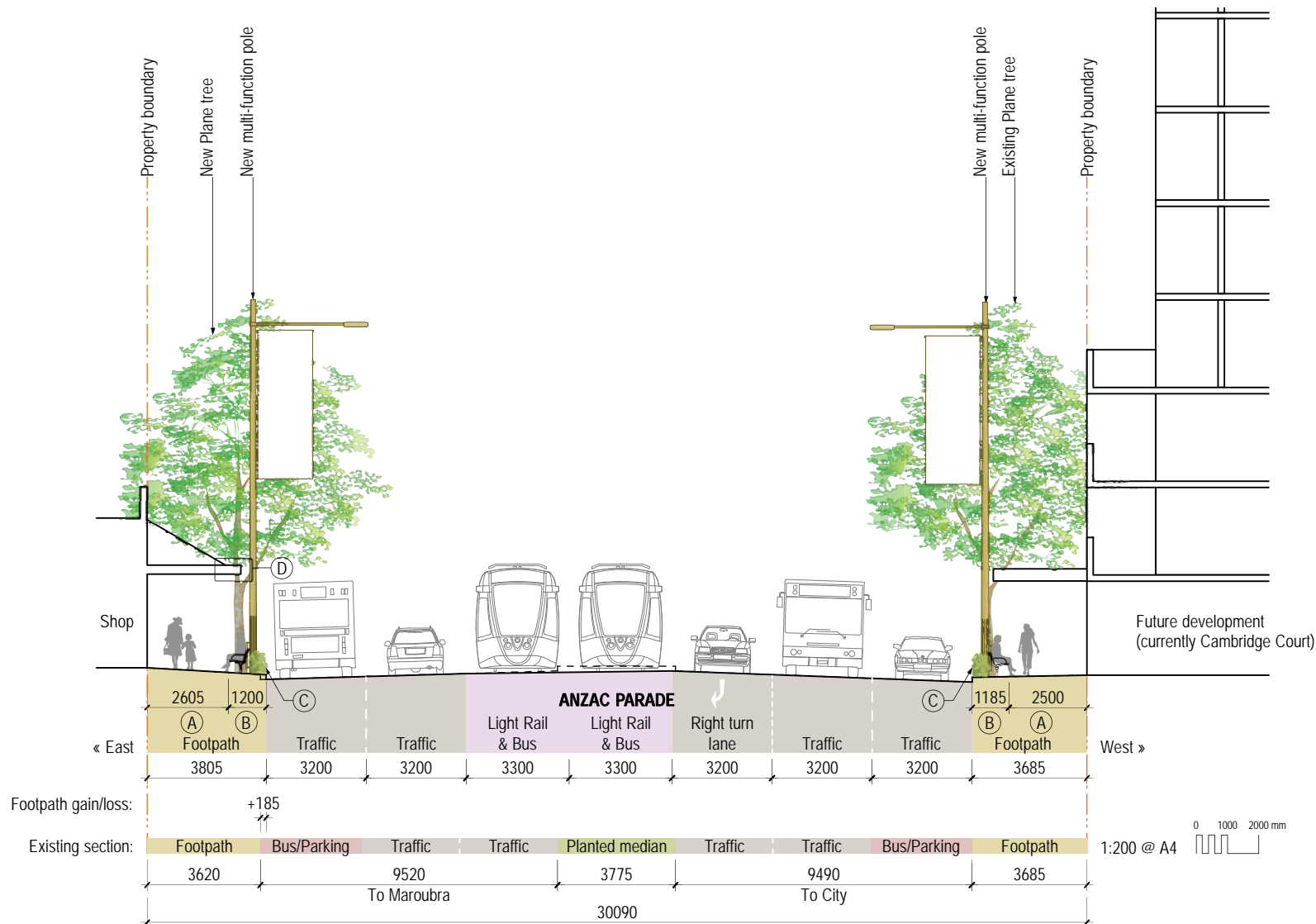
NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions. Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed



Plan at Kingsford  
Barker Street - Strachan Street  
**RCC Preferred Arrangement**

# 13. KINGSFORD - ANZAC PARADE MIDBLOCK



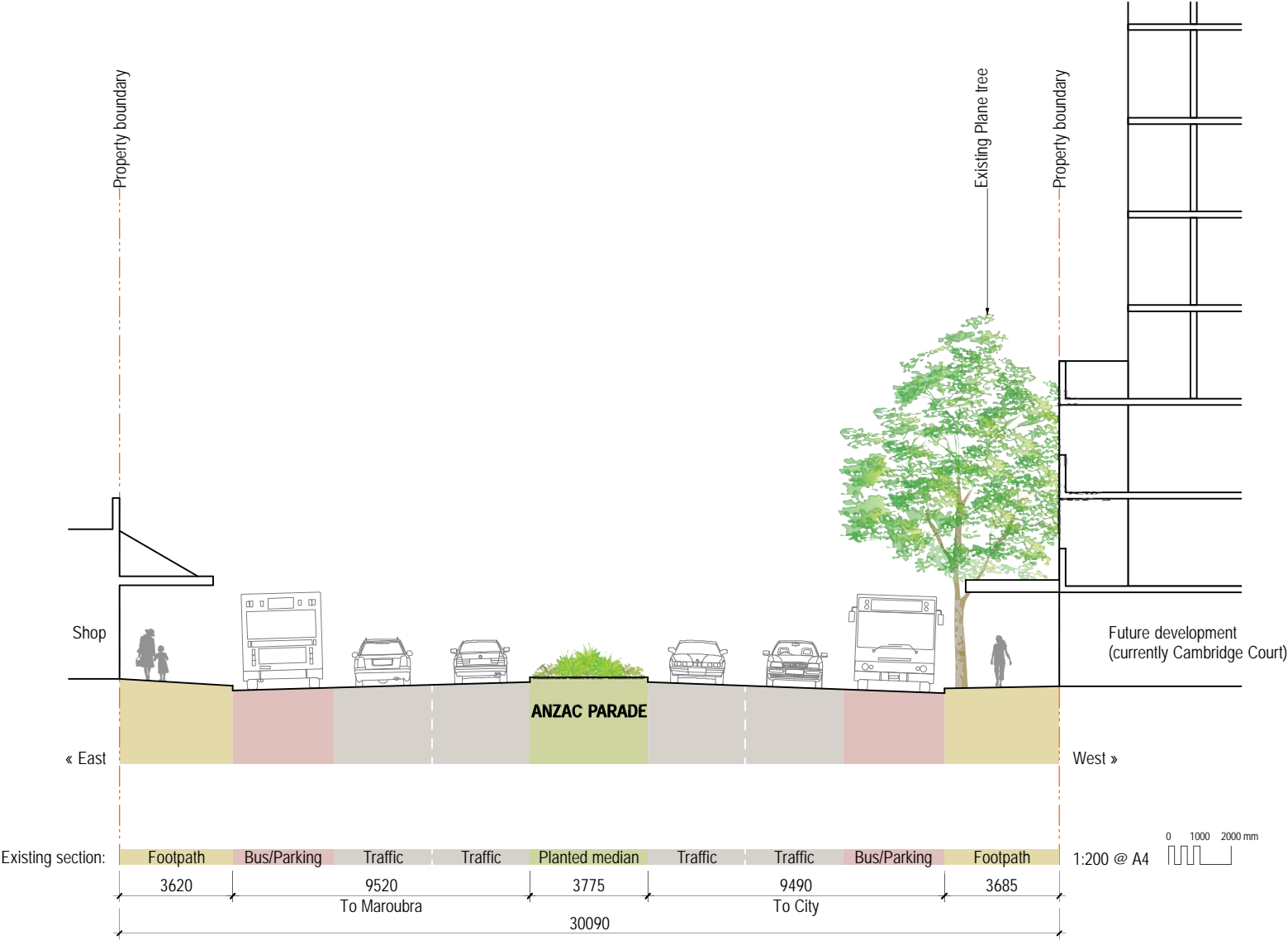
NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 11.

A: Clear space for pedestrians (min 2500) B: Space for furniture & planting (max. 1200) C: Low hedge D: Cutouts at awning may be required to accommodate trees

Kingsford - Section 1  
Typical Midblock Section  
RCC Preferred Arrangement



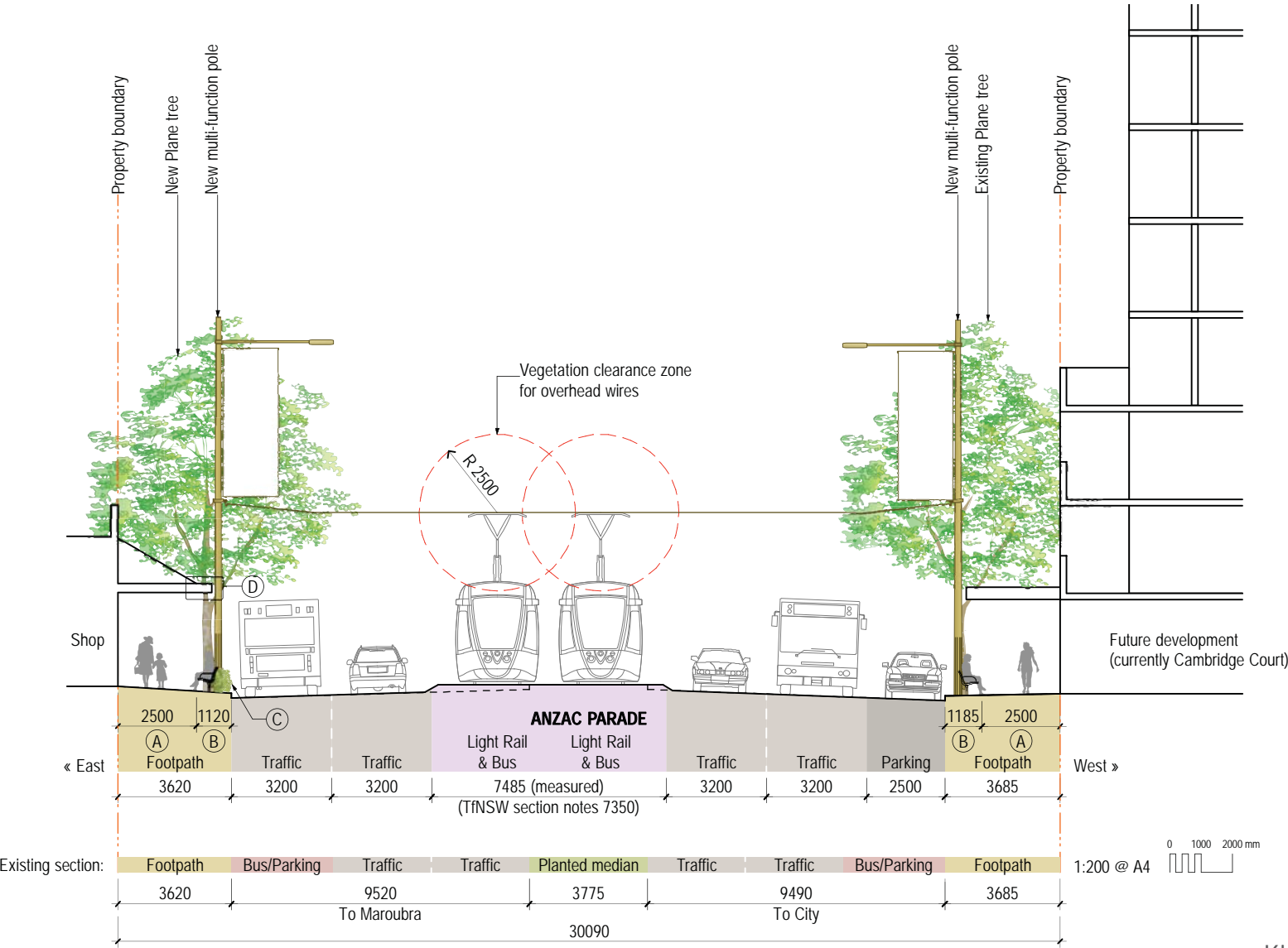
# 13. KINGSFORD - ANZAC PARADE MIDBLOCK



Kingsford - Section 1  
Typical Midblock Section  
Existing Situation

NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 11.

# 13. KINGSFORD - ANZAC PARADE MIDBLOCK



- ISSUES**
- Light rail lanes are wider than minimum requirements.
  - Light rail lanes are separated on a raised median, reducing flexibility in the street.
  - Existing footpath widths leave minimal space for new furniture and planted buffer to traffic.

NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section 11.  
A: Clear space for pedestrians (min. 2500) B: Space for furniture & planting (max 1200) C: Low hedge D: Cutouts at awning may be required to accommodate trees

Kingsford - Section 1  
Typical Midblock Section  
Transport for NSW Proposal



## 14. KINGSFORD - ANZAC PARADE, STOP CORNER STRACHAN ST / MIDDLE ST

### RECOMMENDATIONS

#### KEY IDEAS

- Reduce one traffic lane each way to minimum width requirements for cars only (nom. 2900) in order to maintain existing footpath widths (minor widening may be possible).

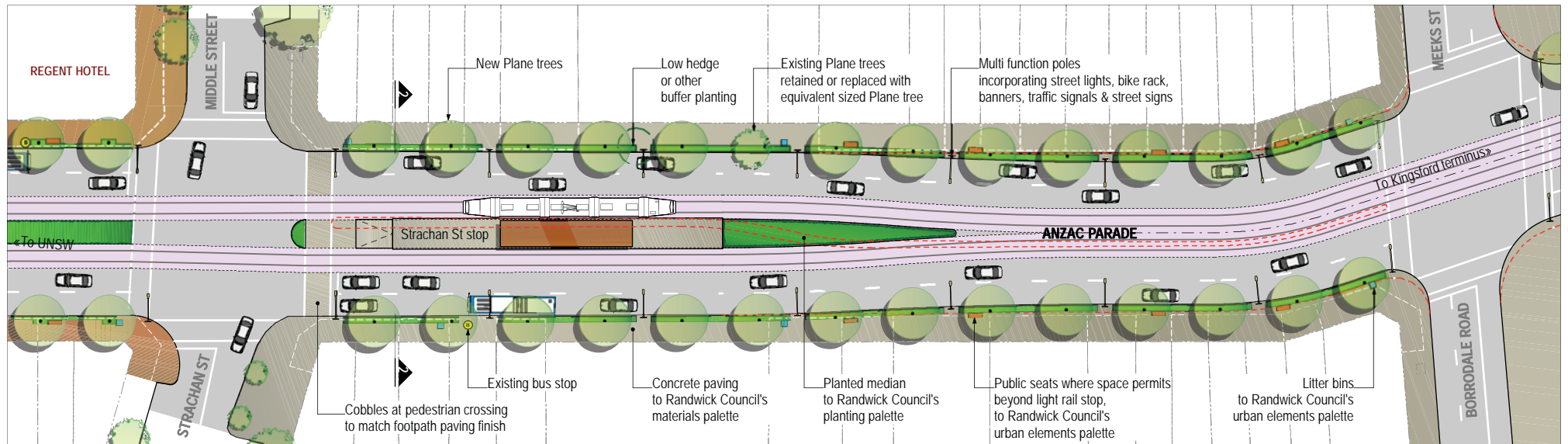
#### PUBLIC DOMAIN ELEMENTS AND INFRASTRUCTURE

- Light rail lanes to be flush with adjacent traffic lanes to maximise flexibility in the street.
- Light rail lanes to be wire-free through Kingsford to minimise clutter and maximise boulevard character.
- Minimise 'pole clutter' by providing multi-function poles that integrate street lighting, traffic signals, street signs, banners and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.
- Adjust crossfall on eastern footpath to be less steep.
- Provide public seating along street where space permits.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.

#### LANDSCAPING

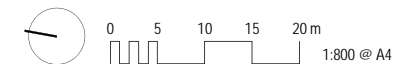
- Replace existing large shrubs (Magnolia 'Little Gem') with Plane trees to create a substantial 'boulevard' experience.
- Provide a planted edge (eg. hedge) behind kerb to create a 'buffer' between pedestrians/shops and traffic. Planting species in accordance with the 'Planting Palette' in section 4 of this document.

## 14. KINGSFORD - ANZAC PARADE, STOP CORNER STRACHAN ST / MIDDLE ST



NOTE: Plan based on GIS data and aerial photography supplied by Randwick Council. Refer to cross sections for typical dimensions.  
Location of street furniture and trees is indicative only; to be finalised at detailed design.

--- Existing kerbs/medians removed

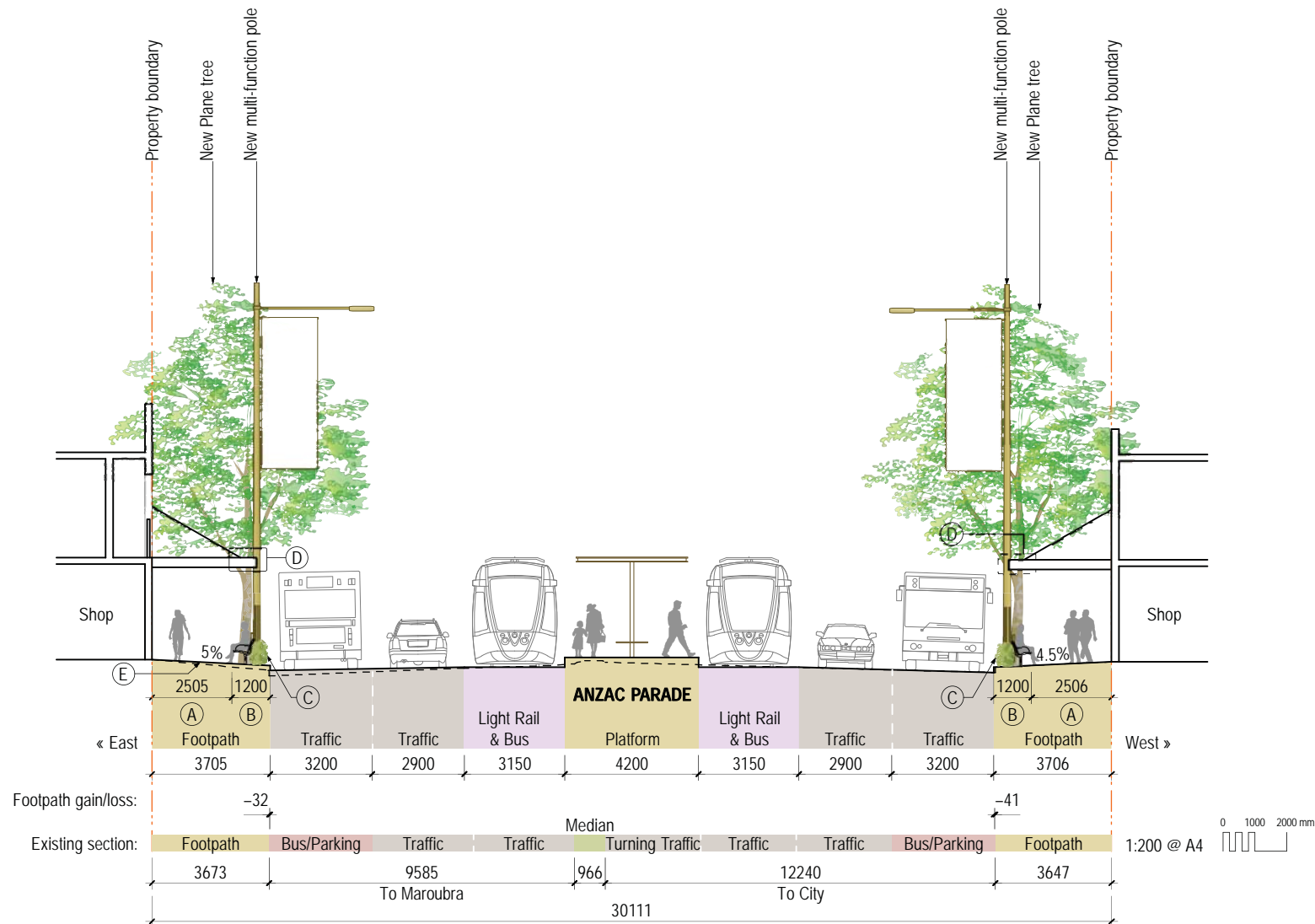


Plan at Kingsford Stop

Strachan St / Middle St - Borrodale Rd / Meeks St

**RCC Preferred Arrangement**

# 14. KINGSFORD - ANZAC PARADE, STOP CORNER STRACHAN ST / MIDDLE ST



NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section (Kingsford Stop platform section 01).

A: Clear space for pedestrians (min. 2500) B: Space for furniture & planting (max. 1200) C: Low hedge D: Cutouts at awning may be required to accommodate trees

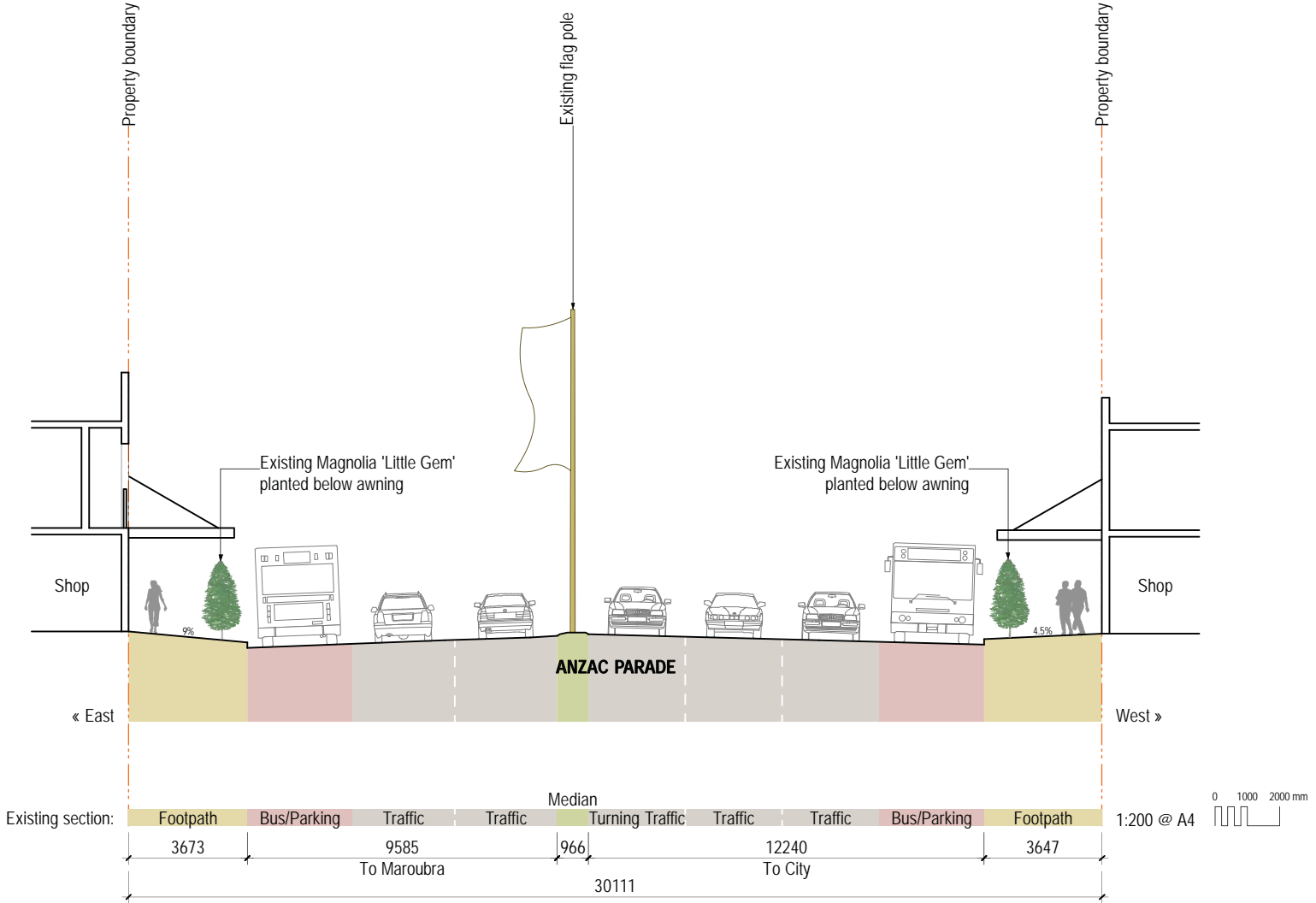
E: Footpath crossfall adjusted to be less steep

Kingsford - Section 2

Section at Kingsford Stop

**RCC Preferred Arrangement**

14. KINGSFORD - ANZAC PARADE, STOP CORNER STRACHAN ST / MIDDLE ST

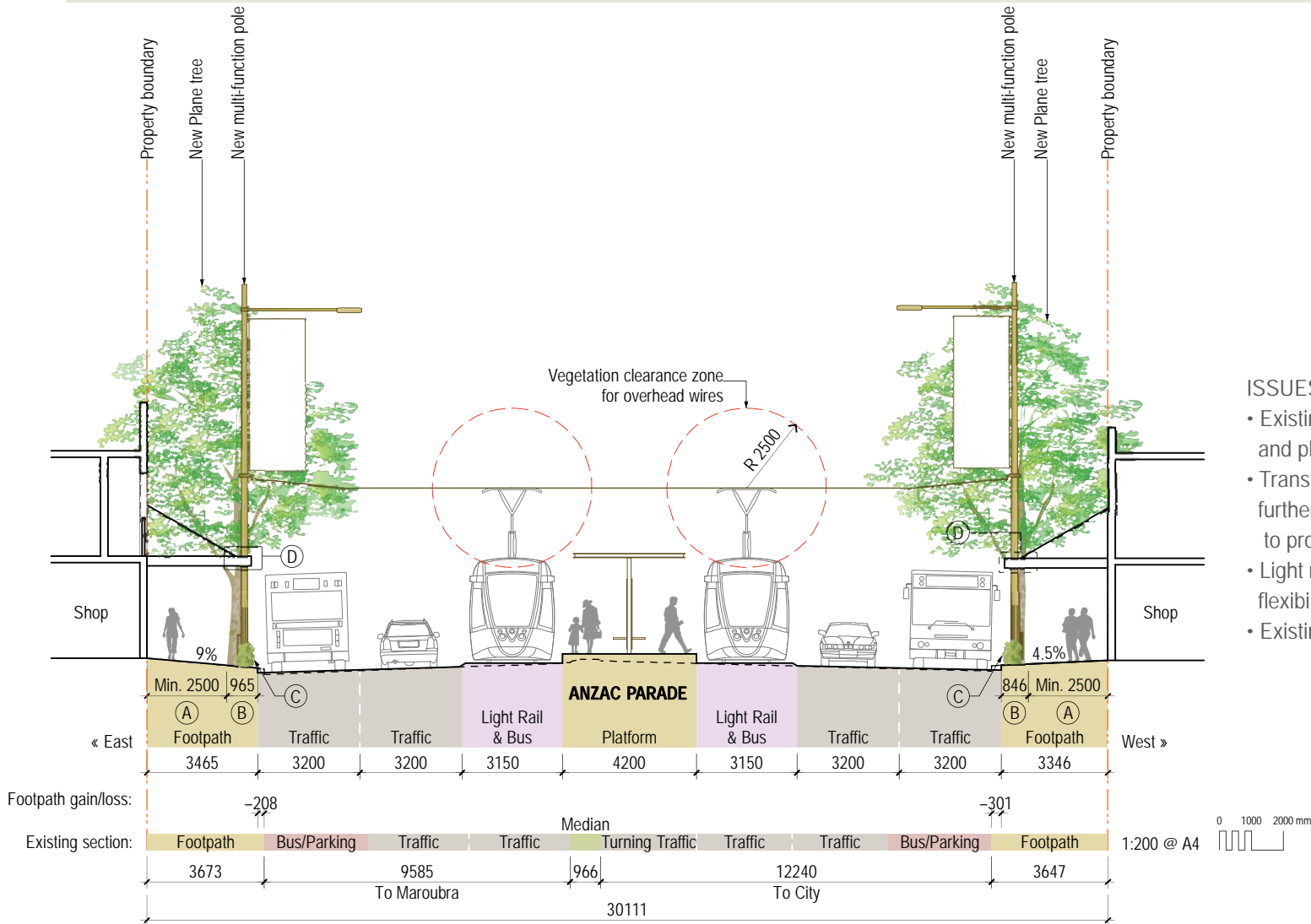


NOTE: Existing dimensions are from Transport for NSW's Final Definition Design cross section (Kingsford Stop platform section 01).

Kingsford - Section 2  
Section at Kingsford Stop  
**Existing Situation**



# 14. KINGSFORD - ANZAC PARADE, STOP CORNER STRACHAN ST / MIDDLE ST



## ISSUES

- Existing footpath widths leave minimal space for new furniture and planted buffer to traffic.
- Transport for NSW's proposal reduces footpath widths even further, leaving very little space to improve footpath amenity or to provide a 'buffer' to traffic.
- Light rail lanes are separated on a raised median, reducing flexibility in the street.
- Existing footpath on eastern side of street is very steep.

Kingsford - Section 2  
Section at Kingsford Stop  
**Transport for NSW Proposal**

## 15. KINGSFORD - '9 - WAY' INTERSECTION

### Recommendations

#### 'NINE WAYS' INTERSECTION LIGHT RAIL PROVISIONS & INFRASTRUCTURE

- Light rail lanes to be flush with adjacent traffic lanes (ie not on raised median) to maximise flexibility in the street.
- Light rail lanes to be wire-free through Kingsford to minimise clutter and maximise boulevard character.
- Minimise 'pole clutter' by providing multi-function poles that integrate street lighting, traffic signals, street signs, banners and bike racks.
- Relocate existing overhead electricity lines underground to reduce overhead wire clutter.

#### PUBLIC DOMAIN URBAN CHARACTER & AMENITY

- Minimise the physical scale of the intersection by minimising lane numbers and widths wherever possible. Pedestrian space is to be prioritised.
- Create local plazas at the residual spaces on the northern side of the intersection. Provide for outdoor dining space and substantial planting.
- Prioritise pedestrian safety by maximising the size of the refuge islands at the Rainbow Street and Gardeners Road crossings.
- Minimise the visual scale of the roadway by providing planted verges and medians. The width and extent of planted verges and medians is to be maximised.
- Retain existing trees wherever possible, and supplement with new Plane trees, or other tree species approved by Randwick Council, to create a substantial 'boulevard' experience along Anzac Parade.

Cutouts in existing awnings may be required to accommodate trees.

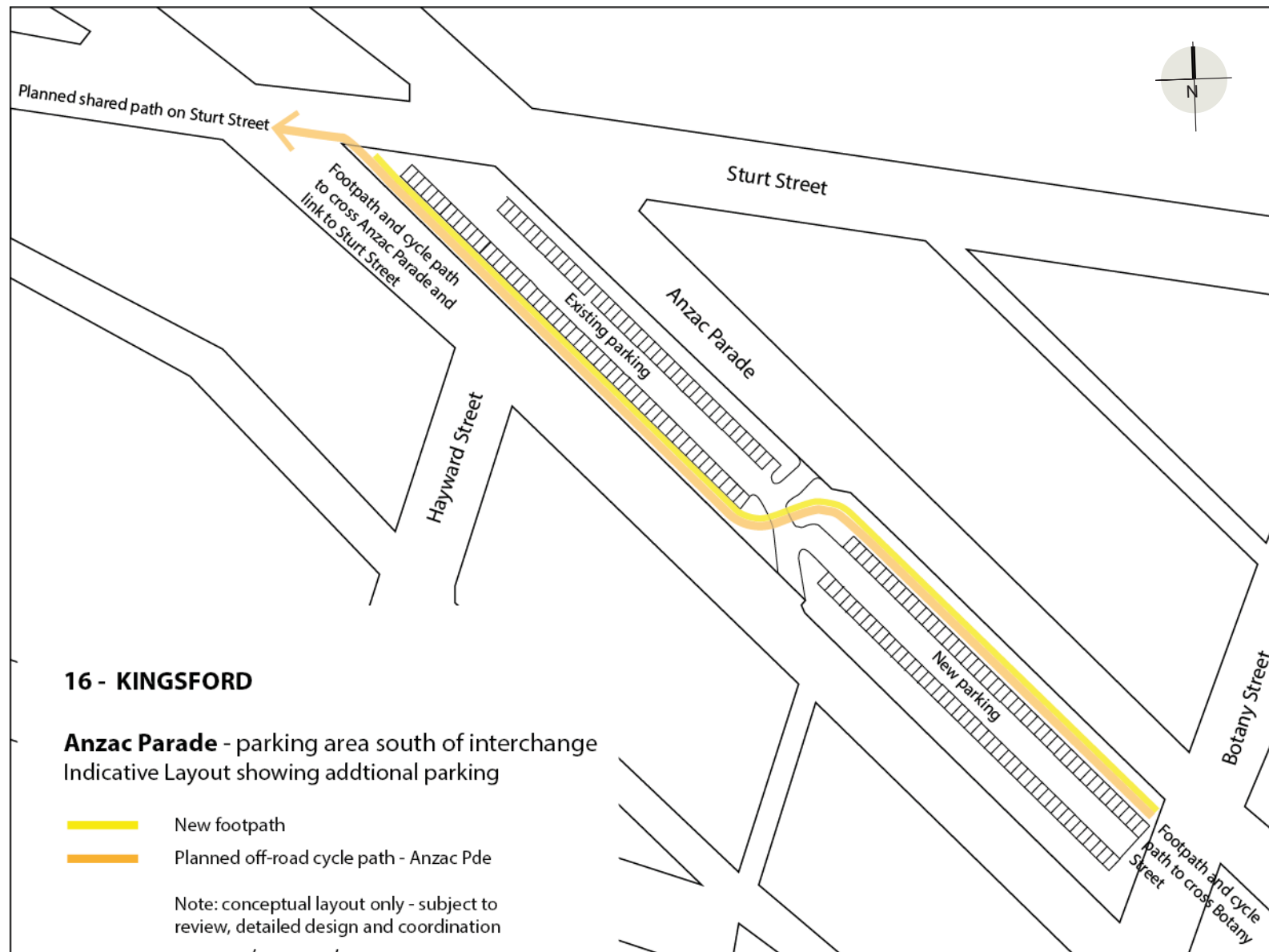
- The existing landmark mature fig tree currently in the median south of the 'Nine Ways' intersection is to be retained. Configure the new median to minimise root disturbance to the tree and, if necessary, underprune to achieve the necessary light rail clearances. Consider implementing a 'wire free' light rail lane to minimise impacts to the tree.
- Consider using 'feature' tree species around the intersection to signalise the entry to Randwick City. Planting species in accordance with the 'Planting Palette' in section 5 of this document, alternate species to be approved by Randwick Council.
- Extend paving material from Kingsford town centre south of the intersection to Sturt Street to visually integrate the new light rail terminus/bus interchange with the town centre.
- Provide a planted edge (eg. hedge) behind kerb to create a 'buffer' between pedestrians/shops and traffic along Anzac Parade. Planting species in accordance with the 'Planting Palette' in section 4 of this document.
- Provide public seating, litter bins and other street furniture in accordance with the 'Materials & Furniture Palette' in section 5 of this document. Furniture locations to be approved by Council.



## Plan at Kingsford 'Nine Ways' Intersection RCC Preferred Arrangement



## 16. KINGSFORD - ANZAC PARADE, PARKING AREA SOUTH OF INTERCHANGE



















## Planting Palette

4

















## Planting Palette

### TREES

	BOTANICAL NAME	COMMON NAME	LOCATION
 	<i>Agathis robusta</i>	Queensland Kauri	Alison Road between Anzac Pde & Doncaster Ave (northern side)
 	<i>Araucaria heterophylla</i>	Norfolk Island Pine	High Cross Park
 	<i>Corymbia citriodora</i>	Lemon-scented Gum	Wansey Road
 	<i>Delonix regia</i>	Poiniana	High Cross Park
 	<i>Eucalyptus haemastoma</i>	Scribbly Gum	Wansey Road
 	<i>Ficus microphylla</i>	Moreton Bay Fig	High Cross Park
 	<i>Ficus rubiginosa</i>	Port Jackson Fig	High Cross Park





### TREES

	BOTANICAL NAME	COMMON NAME	LOCATION
 	<i>Gleditsia triacanthos</i> 'Sunburst'	Honey Locus	High Cross Park
 	<i>Jacaranda mimosifolia</i>	Jacaranda	High Cross Park
 	<i>Liriodendron tulipifera</i>	Tulip Tree	Anzac Parade & High Street
 	<i>Magnolia grandiflora</i>	Magnolia 'Little Gem'	High Cross Park
 	<i>Pistacia chinensis</i>	Chinese Pistache	High Cross Park
 	<i>Platanus orientalis</i> 'Digitata'	Cut Leaf Plane	Anzac Parade & Alison Road between Darley Rd & Wansey Rd (Northern side)
 	<i>Platanus acerifolia</i>	London Plane	Anzac Parade & Alison Road between Darley Rd & Wansey Rd (Northern side)






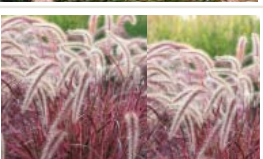

## TREES

	<i>Podocarpus elatus</i>	Illawarra Plum or Brown Pine	High Cross Park
	<i>Pyrus calleryana</i>	Callery Pear	High Cross Park & High Street
	<i>Sapium sebiferum</i>	Chinese Tallow	High Cross Park Street Tree

## SHRUBS / ACCENT PLANTS








	<i>Alternanthera dentata</i>	Ruby Leaf Alternanthera	High Cross Park & Verges Anzac Pde
	<i>Callistemon vermillion</i>	Callistemon Little John	High Cross Park & Verges Anzac Pde
	<i>Carrisa macrocarpa</i>	Natal Plum	High Cross Park & Verges Anzac Pde
	<i>Murraya paniculata</i>	Orange Jessamine	High Cross Park & Verges Anzac Pde







## GRASSES

	<i>Dianella caerulea</i>	Blue Flax Lily	Street Verges
	<i>Dianella revoluta</i>	Mauve Flax Lily	Street Verges
	<i>Imperata cylindrical</i>	Blady Grass	Street Verges
	<i>Microlaena stipoides</i>	Weeping Meadow Grass	Street Verges
	<i>Pennisetum alopecuroides</i>	Swamp Foxtail	Anzac Pde median & verges behind kerb (where appropriate)
	<i>Pennisetum setaceum 'rubrum'</i>	Fountain Grass	Anzac Pde median & verges behind kerb (where appropriate)
	<i>Patersonia sericea</i>	Silky Purple Flag	Street Verges

## Planting Palette

### GROUND COVERS / ACCENT PLANTS

	<i>Agapanthus praecox 'tinkerbell'</i>	Lily of the Nile	High Cross Park, Anzac Pde Town Centres, Urban Plazas
	<i>Agave attenuata</i>	Agave	High Cross Park, Anzac Pde median & Urban Plazas
	<i>Ajuga reptans</i>	Catkins Giant	High Cross Park, & Urban Plazas
	<i>Anigozanthos</i>	Evergreen Kangaroo	High Cross Park, Anzac Pde median, Urban Plazas, Wansey Road
	<i>Clivia miniata</i>	Kaffir Lily	High Cross Park, Anzac Pde Town Centres, Urban Plazas
	<i>Liriope variagated/Liriope</i>	Lilyturf	High Cross Park, Anzac Pde Town Centres, Urban Plazas
	<i>Lomandra filiformis</i>	Lomandra Savannah Blue	Anzac Pde median, Wansey Road & verges behind kerb

	<i>Doryanthes excelsa</i>	Gynea Lily	High Cross Park, Anzac Pde Town Centres & medians, Wansey Road
	<i>Crinum pedunculatum</i>	Crinum Lily	High Cross Park, Anzac Pde Town Centres & medians, Wansey Road
	<i>Philodendron xanadu</i>	Xanadu	High Cross Park, Anzac Pde Town Centres & medians, Urban Plazas
	<i>Phormium tenax</i>	Flax	High Cross Park, Anzac Pde Town Centres & medians, Urban Plazas
	<i>Trachelospermum jasminionides</i>	Star Jasmin	High Cross Park, Anzac Pde Town Centres & Urban Plazas
	<i>Tradescantia Spathacea</i>	Spider-lily	High Cross Park, Anzac Pde Town Centres & Urban Plazas

Alternative species to this planting palette prepared for the light rail project is to be discussed and approved by Randwick City Council.

## Materials & Furniture Palette

5



## Materials and Furniture Palette


	IMAGE	DESCRIPTION	LOCATION
PAVING		PA01 - RCC City Paver Pebblecrete or approved equal by Council. Large format paver generally 400x600mm or 300x600mm. Thickness 40 to 60cm. Sample code PPX1615:SB with bevelled/chamfered edge	Randwick Town Centre Kingsford Town Centre High Street UNSW Royal Randwick Racecourse Stop and between Doncaster Ave & Darley Rd
		PA02 Concrete body with saw cuts and Cobble Stone Paver or similar banding	Kensington Town Centre and footpath along Anzac Pde
		Cobble Stone Paver or similar.	Verges along all footpaths Anzac Pde & light rail alignment in transport plazas
		PA03 Body pavement - concrete or A/C basalt aggregate in concrete tones	Secondary Streets in town centres
TACTILE GROUND SURFACE INDICATORS		Stainless Steel Markers	All Areas
TREE SURROUNDS		Porous pavement infill (terrabond or similar)	Randwick Town Centre Kingsford Town Centre High Street UNSW
		Cobble stone paving surround around tree base, porous pavement infill (terrabond or similar)	Kensington Town Centre






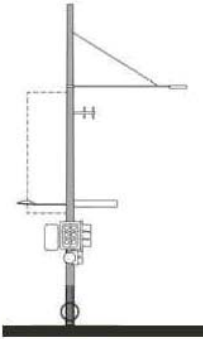

	IMAGE	DESCRIPTION	LOCATION
SERVICE PIT LIDS		Pit lids to consist of paving inserts consistent with the paved footpath finish	All Areas
TREE PITS IRRIGATION GRATES			All Areas
SEATS		SE05 Park Seat with arm rests and back. Timber or aluminium battens.	Kensington Town Centre Kingsford Town Centre along Anzac Pde Randwick Town Centre High Street
BINS		BI02 Stainless steel bin enclosure	All Areas
BUBBLERS		FA01 Stainless steel drinking fountain	All Areas

	IMAGE	DESCRIPTION	LOCATION
BICYCLE RACKS		ST01 Bicycle Parking - tubular in stainless steel	All Areas
		Bicycle Ring Parking in stainless steel	All Areas
BOLLARDS		BA01 Stainless steel bollard	All Areas
NOTICE BOARDS		ST02 Heavy duty stainless steel and toughened glass	Kensington Town Centre Kingsford Town Centre Randwick Town Centre
SIGNAGE		Aluminium cladding, fixed to frame.	All Areas  Streetscape signs such as Markers, Street Sign, Information Signs, Wayfinding Signs, etc.

	IMAGE	DESCRIPTION	LOCATION
MULTI FUNCTIONAL STREET POLE		Equivalent to City of Sydney	Anzac Parade and High Steet Royal Randwick Racecourse Stop and between Doncaster Ave & Darley Rd
PEDESTRIAN GUARDRAILS		Metal pedestrian barriers equivalent to existing along Alison Road Racecourse area.	Footpath areas along verge / meddians

Alternative species to this planting palette prepared for the light rail project is to be discussed and approved by Randwick City Council.

