

Gungahlin to Woden (via Barton) Light Rail Update



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Artist impression



STATEMENT FROM THE MINISTER FOR TRANSPORT AND CITY SERVICES

Canberra is one of the world's most liveable cities – a destination of choice to live, work, visit and invest.

As Australia grows, so too will Canberra. The ACT Government is planning for our city's growth by ensuring we have sufficient transport infrastructure in place *before* increasing congestion critically impacts our highly regarded urban amenity and quality of life.

Canberra's light rail network is a transformational city-shaping project for the Territory, providing an attractive, reliable and convenient public transport choice that connects families, students, communities and cultures.

The initial corridor between Gungahlin and Woden via the City and the Parliamentary Zone will form the backbone of the network, linking activity centres north and south of Lake Burley Griffin. In time it will be intersected by a future east-west corridor operating between Belconnen and the Canberra International Airport and other network extensions.

This light rail update focusses on the development of the City to Woden (via Barton) portion of Canberra's overall light rail network. Since the last light rail update, the ACT Government has reaffirmed its commitment to developing the project with \$12.5 million to be invested in progressing the project throughout the 2018-19 financial year. The ACT Government also welcomes the upcoming inquiry into the project to be conducted by the Commonwealth's Joint Standing Committee on the National Capital and External Territories.

The ACT Government will continue to engage with the Canberra community as the City to Woden light rail project develops, and as the City to Gungahlin light rail alignment draws closer to completion.

Meegan Fitzharris MLA
Minister for Transport and City Services

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1. EXECUTIVE SUMMARY

1.1 Introduction

This light rail update focusses on the development of the City to Woden (via Barton) portion of Canberra's overall light rail network. Since the last light rail update, the ACT Government has reaffirmed its commitment to developing the project with \$12.5 million to be invested in progressing the project throughout the 2018-19 financial year. The ACT Government also welcomes the inquiry into the project to be conducted by the Commonwealth's Joint Standing Committee on the National Capital and External Territories.

1.2 National context

Australia has one of the fastest population growth rates in the developed world at 1.49% per annum between 1999 and 2014.¹ Looking ahead, Australia's population is expected to reach 41.5 million by 2061.² Canberra will play an important role in facilitating Australia's growth.

In addition to being the nation's capital, Canberra is Australia's eighth largest city, strategically located between its two largest cities, Sydney and Melbourne. Canberra's economy is continuing to strengthen and diversify, with the highest real Gross State Product growth rate of any jurisdiction (4.6% in FY2017³) due to strong growth in the private sector (26.1% of nominal GSP growth). The ACT Government's investment in light rail will support the achievement of national objectives for continued economic growth and improved productivity, while helping the city to remain a liveable destination of choice. While other major Australian cities are now making expensive transportation investments with traffic congestion already at critical levels, Canberra has a unique opportunity to appropriately invest in such infrastructure at this more optimal time.

1.3 Benefits to Canberra

Light rail will help address the challenges of a growing city, improving public transport accessibility and connectivity and supporting the ACT Government's vision for a compact and competitive city. The ACT Government is committed to constructing a city-wide light rail system as part of an integrated public transport network, connecting key population, employment, social and cultural hubs across the Territory. The network will improve access and opportunity for all Canberrans, helping to transform our suburbs by creating stable corridors for investment and stimulating urban renewal across Canberra as the network is progressively built over the coming years. Light rail will have a transformational effect in Canberra by:

- Revitalising our urban centres and supporting active lifecycles
- Stimulating urban renewal
- Increasing economic activity, including employment opportunities during light rail construction
- Reducing Canberra's high level of car dependency
- Providing efficient, environmentally responsible public transport.

¹ Infrastructure Australia, Population Estimates and Projections, April 2015.

² ABS 322.0 – Population Projections, Australia Series B, November 2013.

³ ABS Cat. No. 522.0 2016-2017.

1.4 Parliamentary Zone and planning context

The Parliamentary Zone is a location of immense national significance and a growing employment and visitor hub in Canberra. It hosts a number of national institutions, such as Parliament House, and is home to businesses, organisations and government departments. Employment in the Parliamentary Zone is projected to increase by 50% by 2041.⁴ This growth will intensify the transport demand to, from and through the Parliamentary Zone, impacting on amenity in this nationally significant area. The Indicative Development Plan for the Parliamentary Zone, as contained in the *National Capital Plan Parliamentary Zone Precinct Code* identifies significant future development in the Parliamentary Zone with adjacent areas also experiencing substantial growth.

The *National Capital Plan Parliamentary Zone Precinct Code* recognises issues which already exist in the Parliamentary Zone, including that 'a disproportionate amount of through-traffic uses King Edward Terrace and as a consequence there is a number of traffic and pedestrian safety matters'. To address existing issues and support the Commonwealth's development and employment objectives for the area, the Parliamentary Zone will need to become a better-connected centre with improved accessibility and more appropriate traffic flows. Light rail will provide an attractive, reliable mass transit option to the area, improving connectivity and urban amenity in the Parliamentary Zone and alleviating rising parking and congestion problems.

Light rail is the backbone of a long-term vision for Canberra's public transport network.

The extension to Woden is subject to statutory approvals. Table 2 provides an overview of the anticipated approvals required for the project and the level of design required to support each process.

⁴ ACT Government statistic.

Table 2: Key approvals required for City to Woden light rail

Approval	Required by	Supporting material
EPBC Act approval	<ul style="list-style-type: none"> • <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> – Commonwealth Department of Environment and Energy • A prerequisite for Development Application under the <i>ACT Planning and Development Act 2007</i> 	<ul style="list-style-type: none"> • Draft EIS • Concept design • Detailed specialist studies • Extensive stakeholder consultation
Development Approval (DA)	<ul style="list-style-type: none"> • <i>ACT Planning and Development Act 2007</i> – ACT Environment Planning and Sustainable Development Directorate 	<ul style="list-style-type: none"> • Approved EIS • Concept design • Detailed specialist studies • Extended stakeholder consultation
Works Approval (WA)	<ul style="list-style-type: none"> • <i>Commonwealth Planning and Land Management Act 1988</i> – National Capital Authority 	<ul style="list-style-type: none"> • Approved EIS • Urban design requirements • Concept design • Detailed designs
Parliamentary Approval	<ul style="list-style-type: none"> • <i>Commonwealth Parliament Act 1974</i> – both Houses of Parliament 	<ul style="list-style-type: none"> • As per Works Approval

The next steps in the development of the project include: developing the design and submitting planning and environmental approvals, in consultation with the NCA; further community and stakeholder consultation as input to the design; and activities to progress land access and maintenance arrangements with the Commonwealth.

1.5 Light rail from Gungahlin to Woden

The ACT Government is committed to constructing light rail between Gungahlin and Woden via the City, Parkes and Barton as the backbone of its vision for a city-wide integrated public transport network. Further details of the city-wide light rail network are provided in Section 2.5. The initial stage between Gungahlin and the City was awarded the Asia-Pacific Transport Deal of the Year 2016 by Project Finance International and is already under construction. The second stage, which extends the alignment south to Woden, is currently in its planning and design stage, following clear feedback from the community.

Light rail from Gungahlin to Woden will create a north-south public transport spine for Canberra, significantly improving transport accessibility in the region. It will provide access to major educational institutions, employment hubs and retail and entertainment precincts, enhance connectivity between key inner city activity centres on both sides of Lake Burley Griffin, and provide a seamless public transport option between north and south Canberra, linking with other public and private transport options.

Light rail has been proven both nationally and internationally as an effective mass transit solution which enhances the urban realm. The Australian Government has previously contributed \$67 million to the development of Canberra's first stage of light rail, and has supported other light rail systems, including funding contributions to Gold Coast light rail and contemplating light rail in a recent Hobart city deal.⁵

⁵ Premier of Tasmania Media Release – Rene Hidding, Minister for Infrastructure: Light Rail under City Deal will benefit local businesses, 17 January 2018.

Canberra light rail will be:

- **Frequent** – passengers will be able to turn-up-and-go, with services operating at least every 6 minutes in peak periods and every 10 minutes between 7am and 6pm on weekdays. Outside of these periods, services will run at least every 15 minutes.
- **Rapid** – connecting Woden to the City in under 30 minutes, and Gungahlin to the City in 24 minutes.
- **Attractive** – with comfortable, state-of-the-art light rail vehicles and free Wi-Fi for passengers on-board and at stops.
- **Accessible** – with level boarding at all doors, priority seats for mobility-impaired passengers, designated areas for wheelchairs and pushchairs, and room for bikes on-board.
- **Sustainable** – run entirely on renewable energy.

Table 3 provides an overview of the alignment's key features.

Table 3: Key features

Key features of Gungahlin to Woden light rail	
Anticipated travel time	Barton to the City: 10 min Gungahlin to the City: 24 min Woden to the City: 25-30 min
Operating hours	<ul style="list-style-type: none">• Services will commence from Gungahlin, Woden and the City at 6am on weekdays and Saturday, and 8am on Sunday• Last service from the City at 11:30pm on Sunday through to Thursday and 01:00am on Friday and Saturday (following morning)
Frequency	<ul style="list-style-type: none">• Every 6 min in peak periods• At least every 10 min between 7am and 6pm on weekdays• At least every 15 min outside of these hours on weekdays, Saturdays, Sundays and public holidays
Length	24km
Stops	25 (including termini at Woden and Gungahlin)
Estimated patronage ⁶	39,000 daily boardings in 2036
Expected number of light rail vehicles	30

All over the world customers choose light rail due to its reliability, fixed routes, longer hours of operation and accessibility. The ACT Government is committed to constructing light rail between Gungahlin and Woden as part of its vision for an integrated public transport system to better connect communities within a city-wide light rail network at its heart.

⁶ ACT Government statistic (rounded to the nearest one hundred boardings).

Figure 1: Proposed Gungahlin to Woden light rail alignment



 Proposed Light Rail Route

 Light rail stop

In determining the alignment for the light rail extension to Woden, the Territory has undertaken technical analysis, community consultation and discussions with the National Capital Authority (NCA). As outlined in Figure 1, the ACT Government's preferred alignment for the City to Woden extension, via Barton will:

- Leave the City via London Circuit West
- Cross Lake Burley Griffin via Commonwealth Avenue on a new bridge, continuing south in Commonwealth Avenue's median
- Traverse the Parliamentary Zone via King George Terrace, Kings Avenue, John McEwen Crescent and Windsor Walk
- Join Capital Circle at Canberra Avenue
- Continue to Woden Town Centre via Adelaide Avenue, terminating at Callam Street.

The ACT Government is acutely aware of the national significance of many locations along the City to Woden corridor, particularly within the Parliamentary Zone. The design of the light rail alignment, stops and other features has been carefully managed to respect and enhance the heritage value of these locations. Ongoing dialogue with the Australian Government will be a critical part of this process to ensure that the vision for Canberra as our nation's capital is at the forefront of the Territory's design and planning process. Enhancements have been made to the route alignment and stop locations as a result of consultation to date with the NCA. This reflects the close working relationships developed between the NCA and the Territory during planning, design and delivery of the City to Gungahlin light rail.

1.6 Current project status

The initial stage of Canberra light rail between Gungahlin and the City is currently under construction, and is expected to be completed by the end of 2018. The alignment is being constructed by the Canberra Metro consortium under a Public Private Partnership agreement which includes the design, construction, financing, and operations and maintenance activities for 20 years.

The light rail extension from the City to Woden is currently in the early stages of project development, design and planning. The Territory activities undertaken to date include:

- Development of route alignment options and technical designs
- Consultation with the community
- Consultation with the NCA on route alignment options and stop locations
- Selection of the ACT Government's preferred route alignment
- Technical analysis and surveys to enhance and assure the design of the route alignment
- Initial light rail demand forecasting and traffic modelling
- Initial business case activities
- Consideration of planning approval pathways
- Initial consideration of potential procurement models.

2. STRATEGY AND VISION

2.1 Vision for Canberra

Canberra is a vibrant, dynamic and modern city, the heart of our national government, home to places of national and cultural significance, and a city with world-class educational institutions and research facilities.

The ACT Government is focused on Canberra's strengths to ensure that it remains one of the world's most liveable cities – a destination of choice to live, work, visit and invest in. It is a city which can attract high-value talent internationally and support our nation's growth.

The ACT Government's *Canberra: A Statement of Ambition* charts the Territory's course for Canberra as a progressive city that can continue to attract and retain talented people, with a more diversified economy and high-quality infrastructure, and one which embraces the digital mindset.⁷

By 2031 traffic congestion is set to cost the Territory \$703 million per year.

Light rail will help address the challenges of a growing city – improving public transport accessibility and connectivity, and supporting the ACT Government's vision for a compact and competitive city.

It will connect people with Canberra's lakeside, cultural institutions, festivals and events.

2.2 Challenges for a growing city

Canberra is a growing city, with the Territory having the second highest population growth rate (after Victoria) of 1.7% in the 12 months to 30 June 2017.⁸ This growth trend is expected to continue, with population expected to reach 500,000 by 2033.⁹

Canberra has a high car dependency and low public transport usage.¹⁰ With the city's growing population, this will mean more cars on our roads and more congestion. Without additional investment, Infrastructure Australia has estimated that the cost of road congestion in the Territory will increase from \$208 million per annum in 2011 to \$703 million per annum in 2031.¹¹

Without action, as Canberra's population continues to grow, increasing pressure will be placed on existing infrastructure, leading to increased congestion and travel times, and negatively impacting on liveability.

The ACT Government is committed to making strategic policy choices today to avoid the economic and social cost caused by severe congestion, as experienced in major cities like Sydney and Melbourne. This will ensure that our city remains competitive and continues the high-quality lifestyle Canberrans enjoy. These plans are consistent with the Australian Government's national cities objectives, including the concept of a '30-minute city', where, no matter where you live, you can access the places you need to visit on a daily basis¹².

⁷ ACT Government, *Canberra: A Statement of Ambition*, p5.

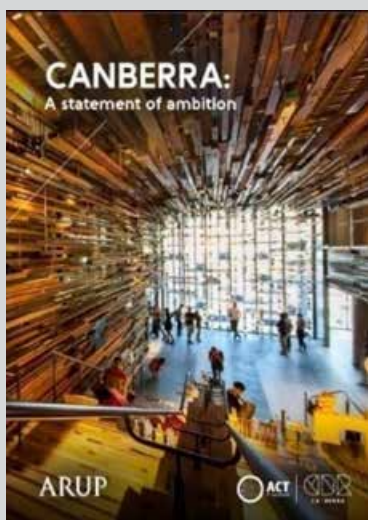
⁸ Australian Bureau of Statistics, *Regional Population Growth, Australia 2016-17*, released 24 April 2018.

⁹ ACT Treasury, *ACT Population Projections, 2013 Edition*, available at: <https://apps.treasury.act.gov.au/demography/projections/act/total>

¹⁰ ACT Government statistic (Transport Canberra Light Rail Network).

¹¹ Infrastructure Australia, *Australian Infrastructure Audit Report*, May 2015.

¹² Commonwealth of Australia, 2016. *Smart Cities Plan*. Commonwealth of Australia, The Department of the Prime Minister and Cabinet,



Canberra: A Statement of Ambition

The vision for Canberra is for a compact and competitive city of choice, talent and ambition: open to all. This ambition will be achieved by attracting and retaining talented people, continuing to open and diversify the local economy, delivering better metropolitan infrastructure and embracing the digital mindset. As with other ACT Government policies, *Canberra: A Statement of Ambition* acknowledges the potential transformative effects of light rail, noting that building a light rail network is fundamentally about changing settlement patterns and employment opportunities, and renewing the city's urban centres. The light rail network will be critical to developing a '30-minute city' of short commutes and journeys with 'a first class public transport system at its heart'. The light rail network will play a key role in revitalising inner city precincts and developing the compact, connected centres Canberra needs to attract the best people, while at the same time enhancing residents' lifestyles.

2.3 Planning Canberra as the nation's capital

As Australia's capital, Canberra holds a unique position as a symbol of the Federation of Australia, the home of Australia's democracy and the site of a number of nationally significant institutions. *The National Capital Plan*, prepared and administered by the National Capital Authority (NCA), is the key document governing planning arrangements in Canberra. It has one single statutory objective: 'to ensure that Canberra and the Territory are planned and developed in accordance with their national significance'.¹³

In developing Canberra's light rail network, consideration has been given to the land use plan and controls identified in the *National Capital Plan*, specifically the provision of an inter-town public transport system 'to link major employment nodes' that 'as far as practicable [is] segregated from other transport systems and will operate with priority right-of-way'.¹⁴ The indicative route for inter-town public transport shown in the *National Capital Plan* shows an alignment over Commonwealth Avenue, through Barton and south along Adelaide Avenue to Woden. This alignment travels through the Parliamentary Zone and so consideration has been given to the role of the Commonwealth and the NCA in the light rail project.

A number of key policy documents and Committee inquiry reports and recommendations have informed the development of the light rail network, and specifically the extension to Woden, including:

- *Kings and Commonwealth Avenues Draft Design Strategy*, developed by the National Capital Authority (2013 and 2017)¹⁵
- *Report of the Inquiry Into the Provision of Amenity Within the Parliamentary Triangle* (2013)¹⁶.

In its 2013 inquiry into amenity within the broader Central National Area, the Joint Standing Committee noted that:

'Car travel to and from the Central National Area is regarded as essential because of its isolation, lack of services and the slowness and lack of flexibility of public transport. Reducing reliance on cars necessitates improving amenity.'

Canberra, ACT

13 Australian Capital Territory (Planning and Land Management) Act 1988, Section 9.

14 National Capital Authority, Part Three – National Capital Plan, 2016.

15 National Capital Authority, 2017. *Kings and Commonwealth Avenues Draft Design Strategy*, National Capital Authority, Canberra.

16 Official Committee Hansard Joint Standing Committee on the National Capital and External Territories Provision of Amenity within the Parliamentary Triangle, Tuesday, 11 June 2013, Canberra, by Authority of The House of Representatives.

The Territory has designed the light rail landscape along the corridor to respond to the unique characteristics of the surrounding environment, while recognising and supporting the broader vision for the city espoused in legislated planning documents and the NCA's recent design strategy for Kings and Commonwealth Avenues. Canberra is made up of many world-class avenues and boulevards, and light rail's urban design seeks to support and enhance the quality of these spaces.

Kings and Commonwealth Avenues Draft Design Strategy

The National Capital Authority has developed a long-term vision for Kings and Commonwealth Avenues to guide their development and evolution well into the 21st century. The design seeks to restore their status as boulevards that are both memorable and functional, as originally conceived by Walter Burley Griffin.

The draft design strategy introduces a strategic framework intended to ensure the long-term integrity of both avenues. Its key principles include:

- Respect for the Griffin Principles and the work of Charles Weston
- The identification of uniform elements which thread through and reinforce the broader avenue character
- The prioritisation of pedestrian amenity through restructuring of the road verge and intersection treatments
- Ensuring that avenues are flexible enough to accommodate future sustainable forms of transport.



2.4 Public transport network objectives

The world's best and most liveable cities all have excellent transport networks, designed in conjunction with land use planning to create active, people-friendly communities that provide reliable and convenient transport choice.

The ACT Government's *Public Transport Improvement Plan*¹⁷ outlines Transport Canberra's mandate to deliver a quality public transport system that is:

- **Convenient** – to ensure an easy travel experience for all Canberrans
- **Efficient** – to get you where you want to go quickly, and maximise the services we get from our investment
- **Affordable** – providing a service to those who need it most
- **Reliable** – to provide confidence you will get where you want, when you want
- **Integrated** – to provide a seamless travel experience across Canberra.

With the introduction of light rail, Canberra is transitioning to a more connected and efficient public transport network, with regular local bus services that deliver passengers to high-frequency light rail or rapid bus interchanges and on to their final destination.

As with stage one, the bus network will be integrated with light rail prior to the commencement of operations to Woden.

¹⁷ ACT Government Public Transport Improvement Plan, 2015, p3.

2.5 Canberra light rail network

To support a growing Canberra and the achievement of its public transport objectives, the ACT Government is committed to constructing a city-wide light rail system as part of an integrated public transport network connecting key population, employment, social and cultural hubs across the Territory. The network will improve access and opportunity for all Canberrans, helping to transform our suburbs by creating stable corridors for investment and stimulating urban renewal across Canberra as the network is progressively built over the coming years. Light rail will have a transformational effect in Canberra by:

- Revitalising our urban centres and supporting active lifecycles
- Stimulating urban renewal
- Increasing economic activity
- Connecting to new and innovative public and private transport options
- Reducing Canberra's high level of car dependency
- Providing efficient environmentally responsible public transport.

Figure 2 overleaf provides an overview of the indicative future light rail network alignments.

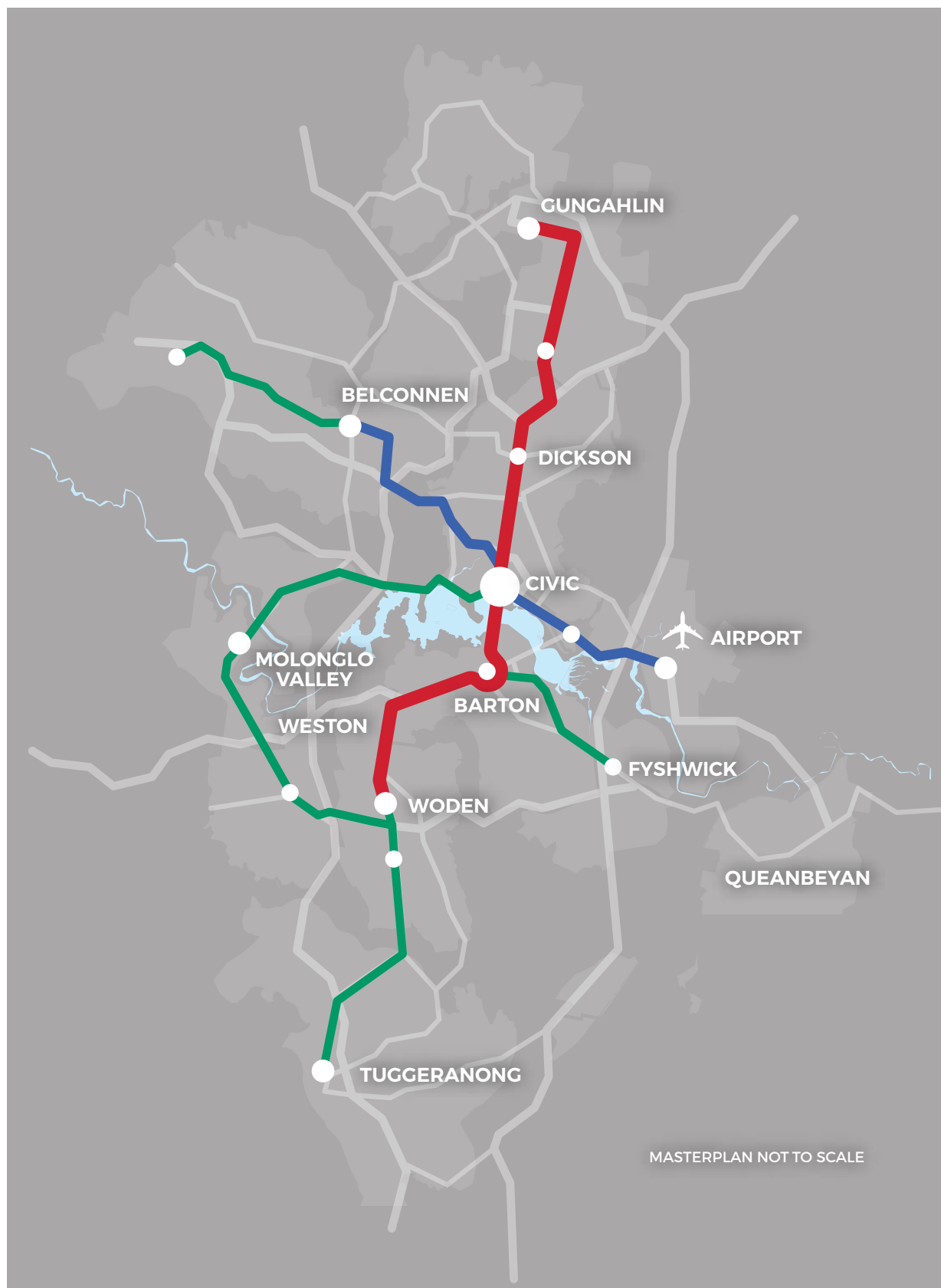
The initial north-south connection between Gungahlin and Woden via the City and Barton will form the backbone of the network, planned to be intersected by a future east-west corridor operating between Belconnen and the Airport.

Canberra's integrated public transport system will connect key population, employment, education, retail and cultural centres across the Territory.

The core of the future light rail network is the north-south spine from Gungahlin to Woden, crossed in Civic by an east-west route from Belconnen to Russell and the Airport.

The Territory is committed to construction of a city-wide network. The north-south corridor is a fundamental part of achieving this vision, crossing Lake Burley Griffin and connecting key activity centres north and south of the City.

Figure 2: Indicative Canberra light rail network



Proposed Light Rail Route

— Gungahlin to Woden

— Belconnen to Airport

— Future stages

2.6 Vision for light rail to Woden

Reflecting the ACT Government's ambition for Canberra, the vision for light rail and the objectives for the light rail extension to Woden are:

Table 4: Project objectives

	CONNECTIVITY Provide a north-south public transport spine that represents the next stage of a future city-wide light rail network that connects communities across Canberra.
	SHAPE AND PLACE Frame the future shape of development along the corridor while reinforcing the identity of existing communities and provide early delivery of city-wide initiatives for urban renewal and diversity of place.
	TRANSPORT CHOICE Provide Canberrans with an attractive, convenient, efficient and reliable integrated public transport system that facilitates choice, increases public transport patronage and reduces car dependency.
	VALUE AND INNOVATION Deliver the Territory an affordable project solution that drives innovation and provides a value-for-money outcome.
	ENVIRONMENT Reduce emissions and promote sustainable urban form for the benefit of current and future generations.
	COMMUNITY Provide a connected, accessible public transport network that strengthens opportunities for social and economic participation.
	LIVEABLE AND PRODUCTIVE Build a productive, diversified and smart economy by making Canberra a more attractive place in which to live, work and invest.

These project objectives have guided the development of the extension of light rail from Gungahlin to Woden via the City.

Ensuring Canberra is one of the world's most liveable and competitive cities connected through smart public transport.

3. LIGHT RAIL TO WODEN

3.1 The recommended alignment

Light rail from Gungahlin to the City is proposed to be extended south from the City to Woden via Barton. As outlined in Figure 3, the route:

- Leaves the City via London Circuit West
- Crosses Lake Burley Griffin via Commonwealth Avenue on a new bridge, continuing south in Commonwealth Avenue's median
- Traverses the Parliamentary Zone via King George Terrace, Kings Avenue, John McEwen Crescent and Windsor Walk
- Joins Capital Circle at Canberra Avenue
- Continues to the Woden Town Centre via Adelaide Avenue, terminating at Callam Street.

The light rail extension to Woden creates a corridor for the movement of people, as well as urban realm improvements and investment opportunities, stimulating urban renewal and economic diversification along the route alignment.

It provides better public transport connectivity to many of Australia's significant cultural institutions, such as Parliament House, the Museum of Australian Democracy, the National Gallery of Australia and the National Portrait Gallery.

In developing the route alignment and proposed stop locations, the Territory considered multiple options against the themes outlined in Table 5.

The community's views (see Section 3.2) were also a key consideration.

The light rail extension to Woden provides rapid, frequent public transport services to a number of key national institutions and places of national cultural significance, including:

- | | |
|----------------------------------|---------------------------------|
| • Parliament House | • Manuka Oval |
| • Museum of Australian Democracy | • National Gallery of Australia |
| • Questacon | • High Court of Australia |
| • Reconciliation Place | • King George Memorial |
| • National Portrait Gallery | • National Rose Garden |
| • Albert Hall | • Senate Gardens |
| • The Royal Australian Mint | • Aboriginal Tent Embassy |

Figure 3: Proposed City to Woden light rail alignment



3.2 Selecting the general route alignment

The City to Woden corridor was selected by the ACT Government to create a north-south light rail network 'spine'. We made this decision after consideration of community feedback, existing technical constraints and the overarching vision for our city. Light rail has been a prominent feature of community discussions in Canberra over recent years, and the ACT Government's commitment to light rail is well known.

As a logical expansion of the network, a future east-west route is anticipated to be delivered following the establishment of the north-south corridor.

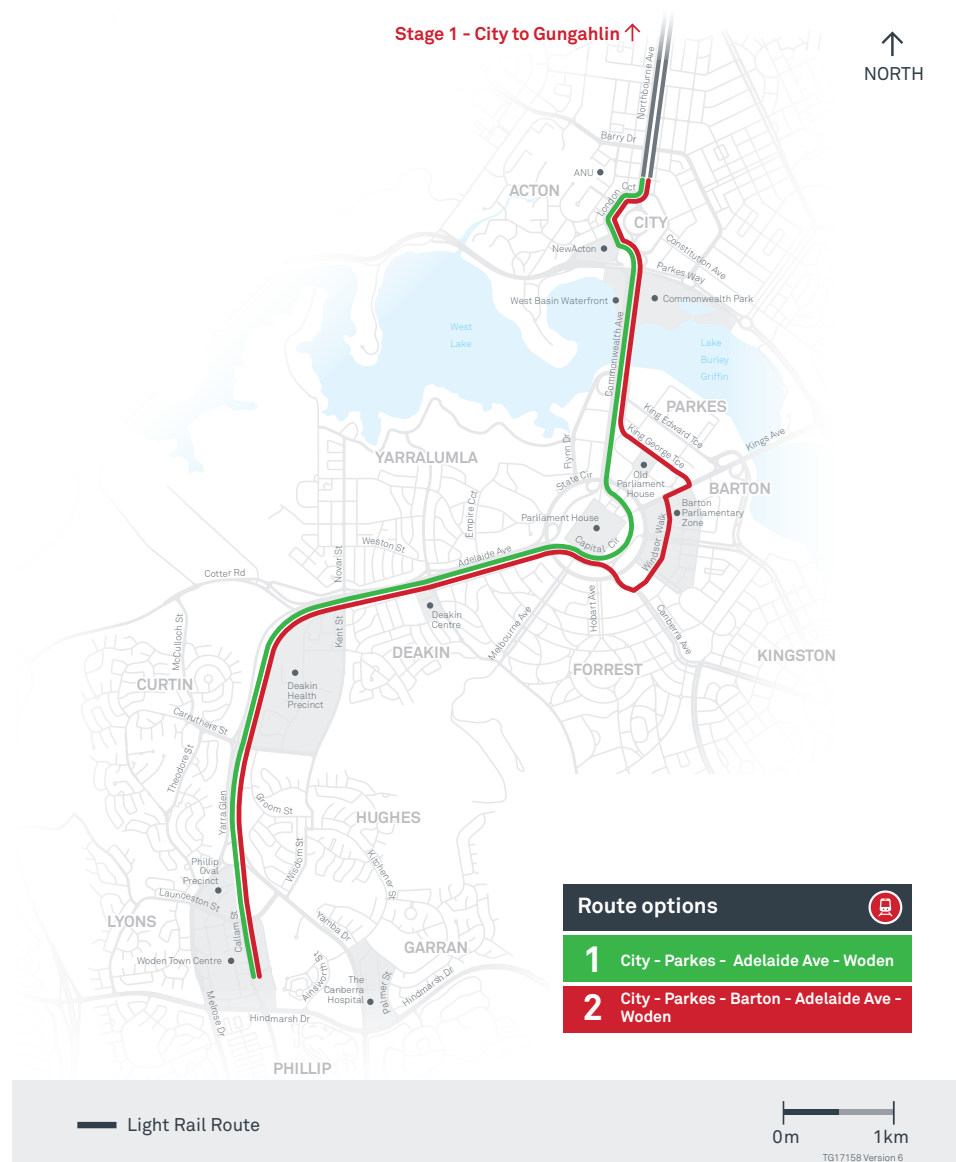
Gungahlin to Woden, via the City, connects over 5 educational institutions, 10 retail and entertainment precincts and 20 employment centres.

Planning and development of the City to Woden route has progressed throughout 2017 and 2018. An initial step in this process was to define the ACT Government's preferred route and stop locations, so that more detailed designs and analysis could then be undertaken to fulfil the requirements of a business case.

Figure 4: City to Woden route alignment options

In undertaking this alignment selection the Territory has considered whether the light rail service should be a direct service with limited stops or whether it should connect more centres of employment and recreation with Canberra's north and south (which logically suggests a route through Barton).

In May and June 2017, the Territory sought feedback from the community on two different route alignment options, stop locations and other elements



of community, cultural or environmental significance to assist with the project's development. Figure 4 outlines the route alignments considered as part of the community consultation.

The two route alignment options that were the subject of community consultation were:

- City to Woden Town Centre via Capital Circle
- City to Woden Town Centre via Parkes and Barton.

Of the 4,473 responses received, 75% of respondents supported a route alignment that travels through Parkes and Barton to better connect education, cultural and employment hubs in south Canberra. Figure 5 illustrates employment density along the route and shows how the alignment connects the areas of highest employment. The consultation also revealed a preference for more stops in Barton to enable easy access to employment and also recreational facilities such as Manuka Oval.

Discussions with the National Capital Authority (NCA) also revealed a preference from the Commonwealth for the Barton route to improve amenity in the area.

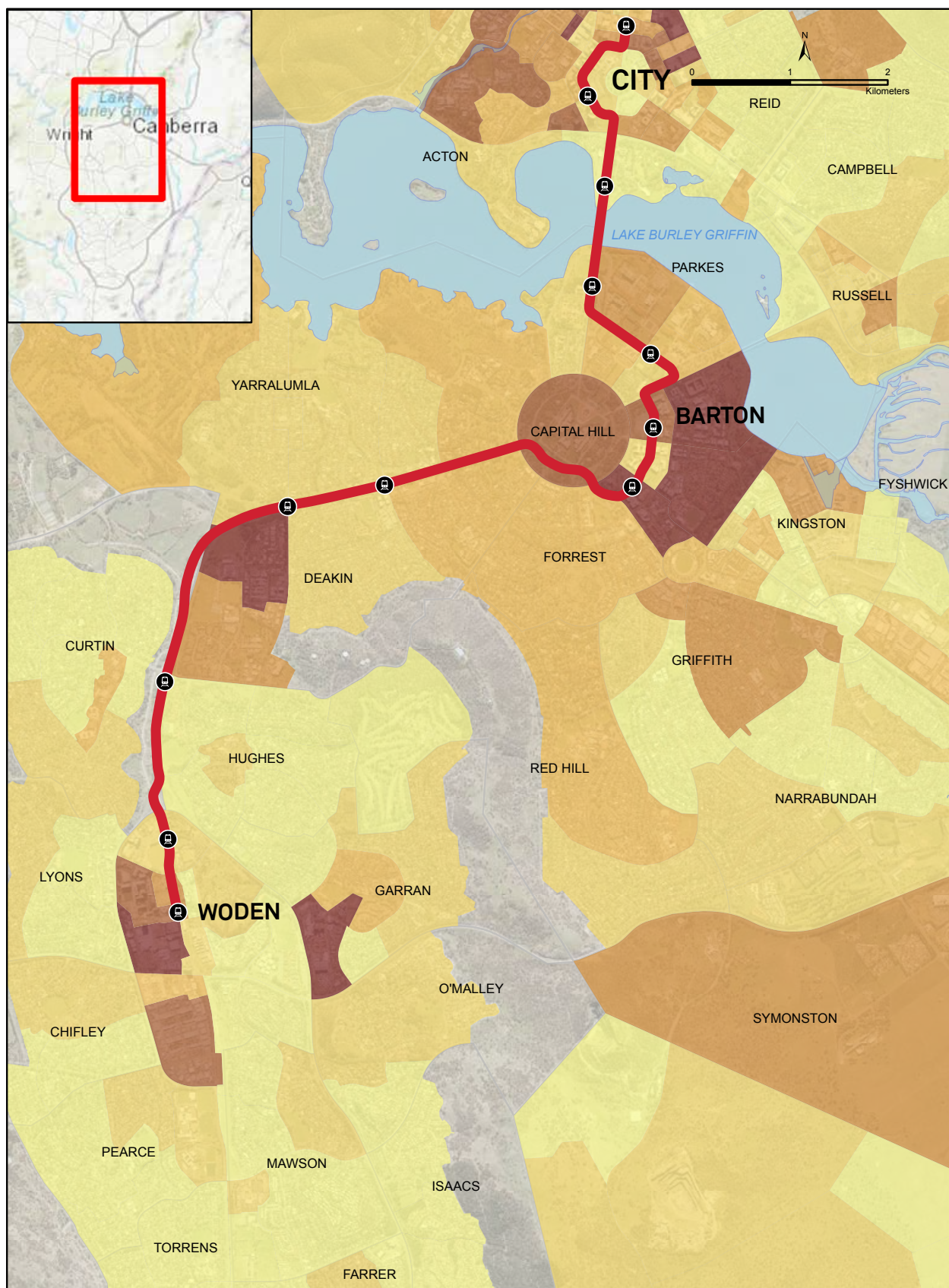
This overwhelming feedback reinforced the decision for light rail to connect Canberra's north and Woden via the employment hubs, institutional and recreational facilities of Parkes and Barton.

Although not included in the 2016 Draft Light Rail Masterplan, early project planning in 2017 contemplated the route potentially ending at Canberra Hospital in Woden. This is not being pursued as a feature of the current project, as further technical analysis revealed challenges in providing appropriate access to the stop and operational difficulties in extending the system further southwards from a Canberra Hospital terminus.

Barton is an increasingly important employment hub in Canberra. It is home to a number of significant public service and private sector employers, including:

- | | |
|--|--|
| • Department of the Prime Minister and Cabinet | • Office of National Assessments |
| • Attorney General's Department | • Australian Government Solicitor |
| • Australian Federal Police | • PwC |
| • Department of Foreign Affairs and Trade | • IBM |
| • Department of Finance | • A number of accommodation providers, such as Hotel Realm, the Little National Hotel, the Brassey Hotel and Hotel Kurrajong |
| • Australian National Audit Office | |

Figure 5: Employment along the City to Woden corridor

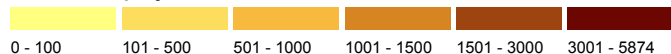


ACT
Government



**Proposed
Light Rail
Route**

Current employment (2016)



3.3 Detailing the alignment

Once the ACT Government's preferred corridor had been determined, details of the preferred route were more fully developed. The development of the project considered the following key areas to establish the most appropriate route:

- Lake Burley Griffin
- Parliamentary Zone
- Barton
- The City
- Barton to Woden

In developing the route alignment and proposed stop locations, the Territory considered various options against the themes outlined in Table 5. The views of the NCA and the community have been considered throughout the development of the route alignment, and refinements have been made to ensure that these have been reflected.

Table 5: Themes used to guide route alignment selection

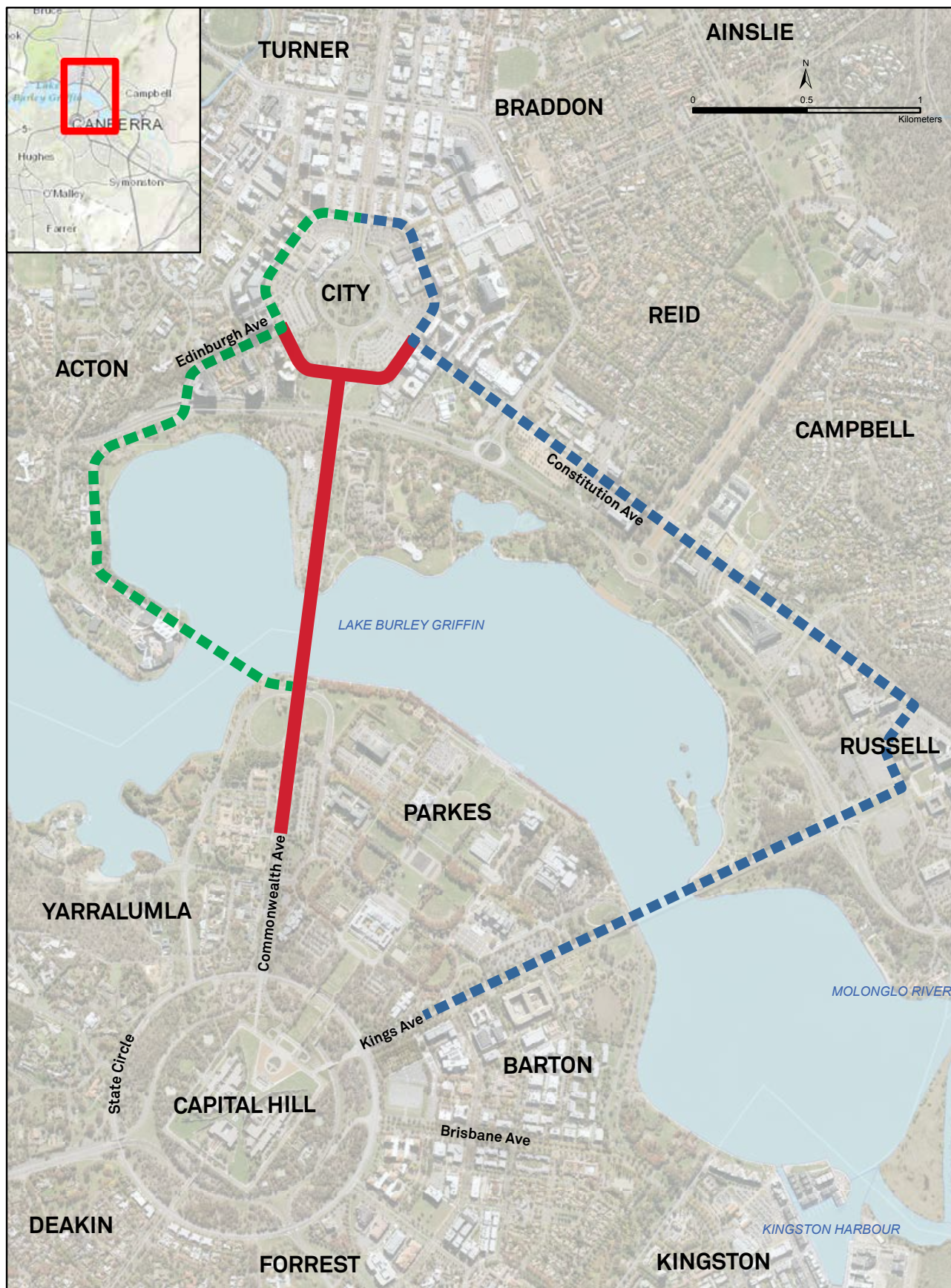
Theme	
City-shaping	<ul style="list-style-type: none">• Provides a competitive service between Woden and the City to support urban renewal in Woden Town Centre• Ensures a reliable, efficient service to support future employment and population centres in the south through a north-south light rail spine
Precinct development	<ul style="list-style-type: none">• Considers employment nodes and points of interest• Supports precinct development along the corridor• Considers the specific character of each precinct
Transport	<ul style="list-style-type: none">• Optimises Canberra's integrated transport system• Aligns with the future light rail network• Provides a reliable, frequent, high-capacity transport service• Maintains road capacity (i.e. light rail is off-road where possible)• Journey time aligns with the '30-minute city' concept in the Commonwealth Smart Cities Plan
Value for money	<ul style="list-style-type: none">• Optimises value for money in delivery, construction, operation and maintenance• Considers the ability to capture value and benefits through funding, productivity, economic activity and city-shaping mechanisms
Deliverability	<ul style="list-style-type: none">• Minimises planning, environmental and land use constraints

3.3.1 Crossing Lake Burley Griffin

The Territory has considered several options to cross Lake Burley Griffin, as shown in Figure 6:

- Central Alignment – new or existing Commonwealth Avenue Bridge
- Eastern Alignment – Kings Avenue Bridge
- Western Alignment – (New Acton Bridge)

Figure 6: Options to cross Lake Burley Griffin



Proposed Light Rail Route

— Central alignment

--- Eastern alignment

--- Western alignment

A Commonwealth Avenue crossing is the preferred alignment and was assessed to be superior to a Kings Avenue alignment for a variety of reasons:

- A Kings Avenue alignment would be expected to increase Woden to City journey times by a further five to seven minutes, exceeding the 30 minute journey time goal. This has an estimated 20% negative impact on patronage¹⁸ that is not compensated by demand between Russell and the Parliamentary Zone¹⁹
- A Commonwealth Avenue/Parkes/Barton alignment would better address existing and anticipated traffic issues in the Parliamentary Zone, as identified in the *National Capital Plan's Parliamentary Zone Precinct Plan*
- A Kings Avenue alignment would not serve (or adequately serve) a number of key areas of national and ACT interest, including:
 - A number of cultural institutions in the Parliamentary Zone
 - The Australian National University
 - West Basin
- A Commonwealth Avenue alignment is consistent with the NCA's *Kings and Commonwealth Avenues Draft Design Strategy*
- Cost considerations, noting such alignment would be approximately two kilometres longer
- The engineering and traffic capacity of the Kings Avenue bridge is insufficient for light rail
- An alignment along Constitution Avenue to Russell is better addressed (including for operational reasons) via a future east-west light rail alignment.

The Western Alignment (New Acton Bridge) was discounted on the following basis:

- Technical and engineering challenges
- Increased journey time (5-7 minutes)
- Bypasses employment centres in City West, Parliamentary Zone and Barton.

3.3.2 Off-road (median) on Commonwealth Avenue

The ACT Government initially contemplated that light rail on Commonwealth Avenue would need to be on-road, adjacent to the median. This was as a consequence of early guidance from the NCA in the context of the NCA's *Kings and Commonwealth Avenues Draft Design Strategy* (page 23 of that document explicitly contemplates 'Indicative Light Rail Alignment (road lane adjacent median)' with diagrams showing an on-road alignment. Page 46 then discusses '... a dedicated public transport lane able to accommodate future modes such as light rail'). However, subsequent discussions with the NCA has instead revealed a preference for an off-road (median) alignment.

Existing road capacity on Commonwealth Avenue will be retained.

In its project planning activities, the ACT Government has amended its design to move the light rail off the road and into the median of Commonwealth Avenue. This approach includes light rail on a new dedicated bridge over Lake Burley Griffin, built between the two existing Commonwealth Avenue bridges. This is the ACT Government's preferred approach for crossing the Lake.

¹⁸ ACT Government statistic.

¹⁹ ACT Government statistic.

Figure 7: Median alignment on Commonwealth Avenue



The median light rail alignment means that the existing road traffic capacity will be retained, and traffic flows will not be significantly affected by the introduction of light rail. The construction of a new light rail bridge between the existing Commonwealth Avenue bridges will also:

- Minimise the visibility of that new bridge from lakeside vantage points; and
- Avoid complications that may arise from the ACT Government constructing a light rail asset on Commonwealth-owned bridges.

Substantial traffic modelling has been undertaken to ascertain the impact of light rail on traffic flows across the city. The current design for light rail to Woden has a significant proportion of the alignment off-road and hence the introduction of light rail will not worsen traffic delays across the road network as a whole, as shown in Table 6.

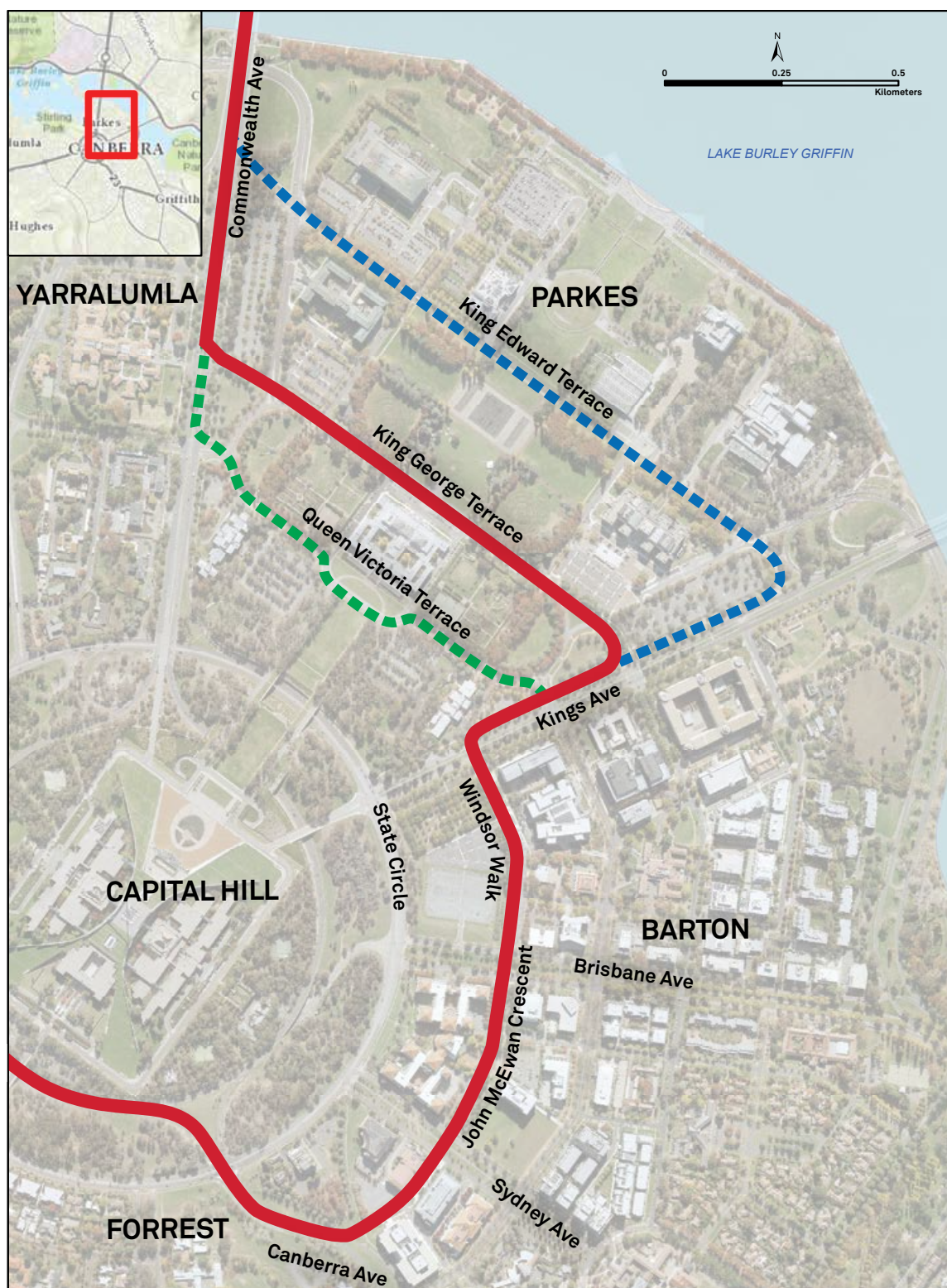
Table 6: Light rail traffic modelling summary (2026, with and without light rail)

Network statistics for all vehicles	2026: No light rail		2026: With light rail (median alignment Commonwealth Avenue)	
	AM peak	PM peak	AM peak	PM peak
Total vehicle travel time through network (h)	15,741	13,814	15,724	14,013
Total delay across network (h)	1,334	1,147	1,317	1,148
Average trip speed (km/h)	37	38	37	38

3.3.3 Crossing the Parliamentary Zone

The Territory has considered several options to cross the Parliamentary Zone: King George Terrace, King Edward Terrace and Queen Victoria Terrace, as shown in Figure 8.

Figure 8: Options to cross Parliamentary Zone



Proposed Light Rail Route

King George Terrace

King Edward Terrace

Queen Victoria Terrace

The Territory selected King George Terrace as the most appropriate route to cross from Commonwealth Avenue across the Parliamentary Zone towards Barton because:

- The route traverses the Parliamentary Zone as quickly as practicable, and hence minimises the impact on light rail journey time
- The route is consistent with the *National Capital Plan*
- This central route across the Parliamentary Zone is a middle route servicing all employment nodes, hotels and cultural institutions (see Figure 11 regarding walkability in the Parliamentary Zone)
- Consultation with the Museum of Australian Democracy (MoAD) also noted that the plans would be consistent with its current and future plans for vehicle access in and around MoAD
- The route provides an improved outcome for the land axis view from Parliament House.

The Territory notes that the light rail design will involve some road changes in the Parliamentary Zone to enable the route via King George Terrace, as outlined in Section 4.2.

The other options all had significant drawbacks in comparison to King George Terrace, as outlined in Table 7 below.

Table 7: Parliamentary Zone options deemed not suitable

Option	Key problems
King Edward Terrace	<ul style="list-style-type: none"> • King Edward Terrace is relatively narrow, so it is not possible to fit the light rail on this street without significantly impacting on road traffic and vehicle access into the various carparks, institutions and offices (noting that King Edward Terrace is currently the main vehicle route across the Parliamentary Zone) • King Edward Terrace has tree-lined streets and narrow pavements, so it is not possible to fit the light rail on this street without significantly impacting on trees • It is the furthest route from MoAD and Parliament House
Queen Victoria Terrace	<ul style="list-style-type: none"> • It does not align with MoAD current and future traffic access and movements along Victoria Terrace • It has a greater impact on the land axis view from Parliament House • It is a greater walking distance to national institutions on King Edward Terrace • Queen Victoria Terrace is relatively narrow, so it is not possible to fit the light rail on this street without significantly impacting on road traffic and vehicle access into the various carparks, institutions and offices • Queen Victoria Terrace has tree-lined streets, so it is not possible to fit the light rail on this street without significantly impacting on trees

Alignments through the northern sides of State Circle or Capital Circle have not been pursued due to those alignments:

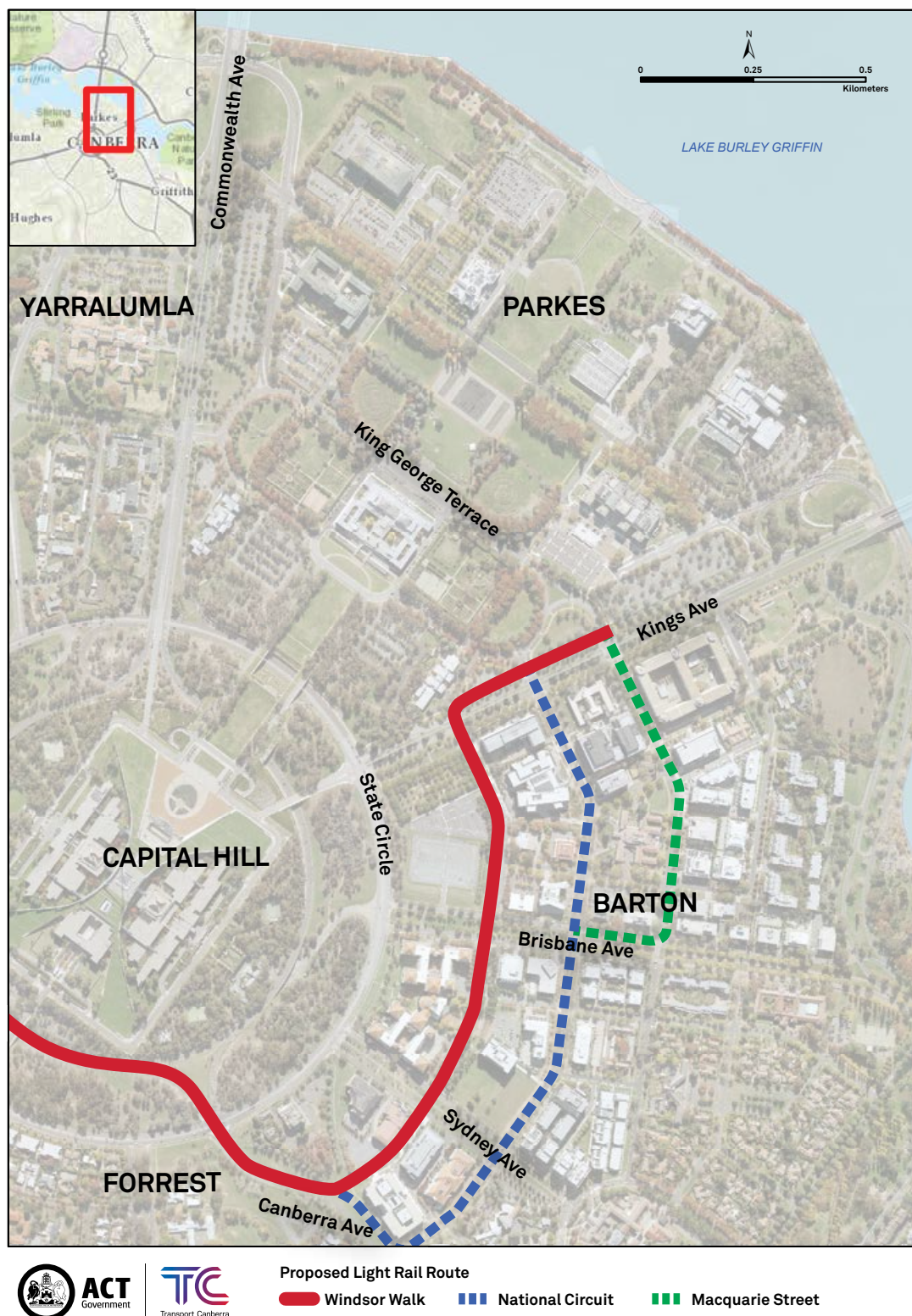
- Not effectively serving cultural and employment nodes in the Parliamentary Zone and Barton, and hence not meeting the objectives for connectivity and patronage
- Presenting multiple engineering challenges including the demolition and rebuilding of numerous bridges on those routes
- Potentially impacting on the operations of Parliament House significantly, including the rebuilding of the loading dock entrance, and additional approval requirements stemming from the *Parliamentary Precincts Act 1988*.

3.3.4 Connecting through Barton

The Territory has considered several options to connect through Barton, as shown in Figure 9:

- Windsor Walk
- National Circuit
- Macquarie Street

Figure 9: Options to connect through Barton



The main issue in Barton was to connect light rail to the employment hubs while also retaining traffic access and the existing tree-lined street character. The Territory has selected Windsor Walk and John McEwen Crescent as the proposed best method to achieve this goal. The route:

- Connects major employment hubs
- Minimises traffic impacts (Windsor Walk is not used currently for road traffic)
- Reduces impact on a significant number of mature trees
- Provides an opportunity to improve the existing urban space (see Section 4.1)
- Creates new places for Canberra
- Traverses Barton as quickly as practicable, and hence minimises impact on light rail journey time
- Is generally supported by the NCA (initially raised by them as a possible alignment through Barton).

The other options all had significant drawbacks in comparison to Windsor Walk, as outlined in Table 8.

Table 8: Barton options deemed not suitable

Design option	Key issues
National Circuit	<ul style="list-style-type: none"> • Shorter travel time compared to King Edward Terrace and Macquarie Street combination • Significant impact upon mature trees • Significant constraints to existing driveway access • The road is not wide enough to accommodate existing trees, traffic and light rail
Macquarie Street	<ul style="list-style-type: none"> • Macquarie Street only connects well to a King Edward Terrace Parliamentary Zone alignment – already not deemed suitable • Gradient constraints • The road is not wide enough to accommodate existing trees, traffic and light rail • The south-east end of Macquarie Street, before the turn towards Parliament House, may be technically challenging around Wesley Music Centre when compared to the National Circuit alignment • Running on Brisbane Avenue and National Circuit may be necessary (as displayed in Figure 9) • Slightly slower journey times compared to the National Circuit alignment

3.3.5 Connecting Alinga Street to the Commonwealth Avenue alignment

The Territory considered two routes to connect light rail from Alinga Street (the initial stage's terminus) to the Commonwealth Avenue alignment. Both of these options align with the *National Capital Plan* in terms of a public transport corridor on London Circuit. Routes considered were either to take a western or eastern alignment.

The Territory has selected the western alignment around London Circuit for the north-south spine to serve City West and the Australian National University, and to support the proposed developments on Capital Hill and at West Basin. The eastern side of London Circuit was considered to be better served by the east-west link of the light rail network, as part of the route from Belconnen to Russell and the Airport. Failure to traverse the western side of London Circuit as part of the extension to Woden means that it would be unlikely for the western side of London Circuit to ever be served by light rail.

3.3.6 Linking Barton to Woden

The Territory assessed three options for travelling to Woden: the more direct route via Adelaide Avenue/Yarra Glen, and two other routes through local centres via Denison Street and Kent Street.

The Territory has selected the more direct route via Adelaide Avenue/Yarra Glen. This route has the following advantages:

- It helps to improve travel times and ensure that Woden is within a 30 minute journey time to the City
- Light rail can be accommodated within the central median to retain traffic capacity on Adelaide Avenue
- It is consistent with the inter-town public transport provisions of the *National Capital Plan*
- The catchment area for the route is similar to that for the Denison and Kent Street options
- It has the potential to support urban renewal, including potential residential development and development of diplomatic estates west of the alignment at the North Curtin Horse Paddocks
- There is an opportunity to soften and enhance Adelaide Avenue's current landscape treatment, and bring it into line with published NCA guidance for Canberra's Main Avenues
- It provides an opportunity to improve the road layout at the Yamba Drive/Melrose Drive intersection at Phillip.

The other options all had drawbacks in comparison to Adelaide Avenue, as outlined in Table 9 below.

Table 9: Barton to Woden options deemed not suitable

Design option	Key issues
Denison Street	<ul style="list-style-type: none">• Would increase travel times significantly• Does not meet the '30-minute city' goal for Woden commuters• Requires road widening
Kent Street	<ul style="list-style-type: none">• Would increase travel times significantly• Does not meet the '30-minute city' goal for Woden commuters• Requires road widening• Only services low density housing

In developing the alignment, the Territory has taken into account the ceremonial aspects of Adelaide Avenue, particularly in terms of the ceremonial route to and from The Lodge (discussed in Section 4.4.2). The Territory has also noted the visual sensitivities of the area outside The Lodge (discussed in Section 4.4.3).

Table 10: Adelaide Avenue before and after the introduction of light rail

BEFORE LIGHT RAIL

Adelaide Avenue is one of Canberra's Main Avenues and Approach Routes and currently has an industrial look comprising of:

- No trees in the median
- Pedestrian sidewalk
- Generous on-road bicycle path
- Transit lane
- Additional road lane (between Hopetoun Circuit and State Circle only).



AFTER LIGHT RAIL

Adelaide Avenue will:

- Retain traffic capacity
- Utilise additional road lane (between Hopetoun Circuit and State Circle only) to establish landscaped boulevard, consistent with NCP.



Artist impression

4. PROJECT FEATURES

4.1 Urban renewal and development opportunities

Canberra: A Statement of Ambition sets out the Territory's vision for Canberra as a compact and competitive city. This is supported by ACT planning policy which establishes that Canberra's increasing population should drive improved land use along key transport corridors. Light rail supports these objectives, delivering infrastructure that demonstrates best practice urban design and reflects the planning intent of the Central National Area. It sets the foundation of how future development will proceed along the corridor.

Light rail supports the revitalisation of suburbs along the corridor, creating more vibrant, community-focused, active and modern precincts. City to Woden light rail via Barton will result in an uplift in population and employment adjacent to the light rail corridor. City to Gungahlin light rail has already had a very positive, visible urban renewal impact, with the construction of new residential and commercial precincts underway on Northbourne Avenue and Flemington Road. Light Rail between Gungahlin and the City has been the catalyst for significant urban realm improvements to Northbourne Avenue, the 'gateway to the nation's capital'.

Light rail will also support tourism growth. Figure 10 shows the clustering of hotel accommodation adjacent to the Gungahlin to Woden light rail. Visitors to Canberra will have a direct light rail connection from their hotel to the national institutions, galleries and museums in the Parliamentary Zone, and the entertainment zones along the route.

Light rail has the potential to:

Support planned developments in the Parliamentary Zone and Barton, and improve public transport access to the area for employees, as well as to cultural and tourist destinations

Encourage development and density along the rapid transport corridor between the City and Woden Town Centre

Contribute to Woden's revitalisation by enhancing amenity and safety, improving public access to the shopping district and employment hubs, and increasing property values

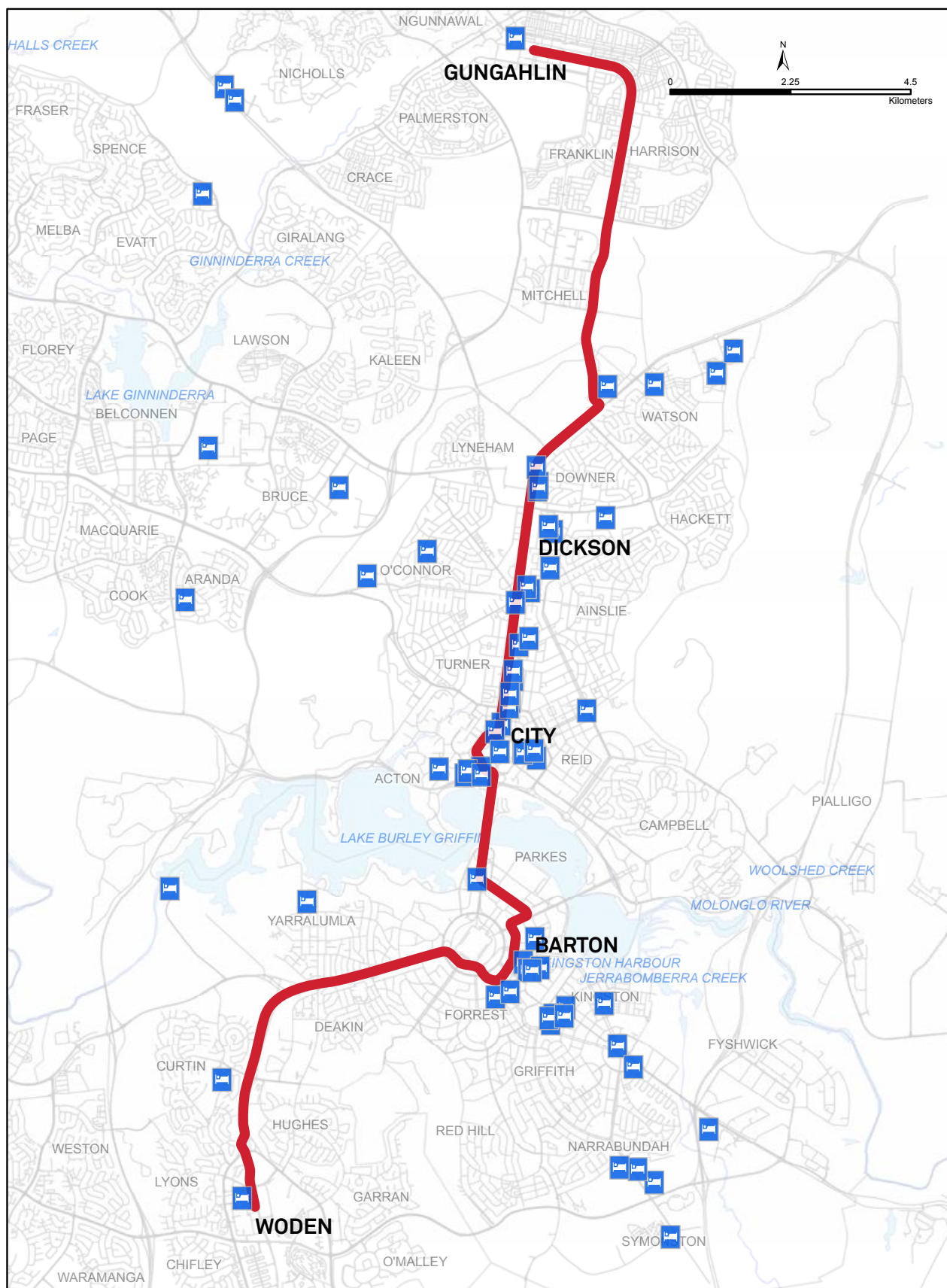
Facilitate the medium to longer term development in North Curtin, Deakin and North Curtin Horse Paddocks



Enhance the anticipated benefits from proposed city renewal opportunities by improving access between the north and the south of Canberra

Support ongoing urban renewal in Braddon and New Acton, City Hill and West Basin

Generate employment opportunities during light rail construction.

Figure 10: Distribution of hotels in Canberra



 **Proposed Light Rail Route**
 **ACT accommodation data**

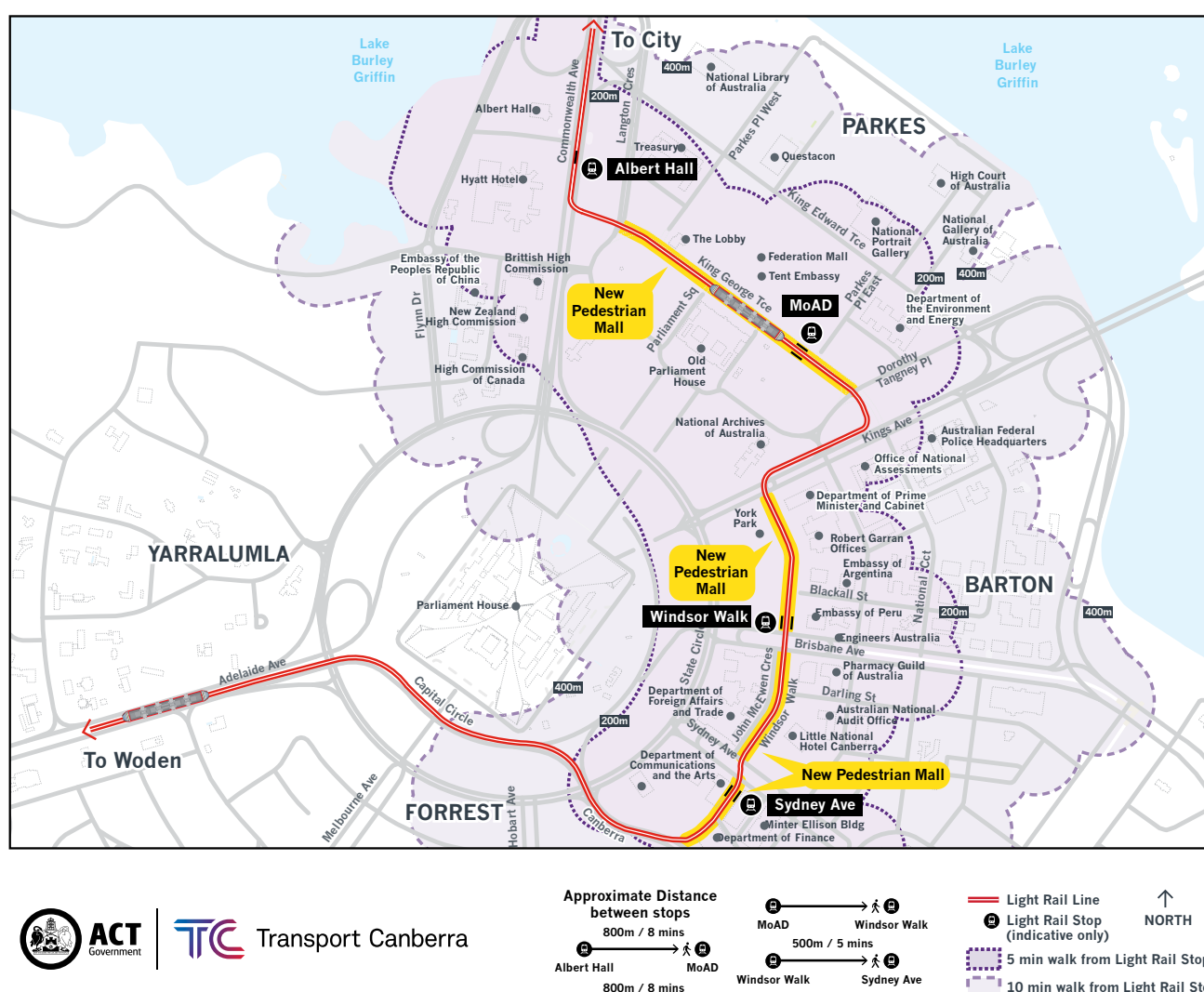
The Territory has prioritised the seamless integration of light rail and its stops into surrounding precincts, particularly where the alignment traverses nationally significant areas, such as the Parliamentary Zone. Light rail stops will act as catalysts for wider economic growth by supporting new businesses, employment and tourism opportunities, as well as providing improved connectivity across Canberra. Light rail in the Parliamentary Zone will substantially support the Commonwealth Government's existing activities and its aspirations for future development and urban realm improvements across the Parliamentary Triangle.

The following sections provide further detail on the anticipated urban renewal impact of the light rail extension.

4.1.1 Stops

The location of light rail stops has taken into account the unique characteristics of each individual precinct along the corridor, the potential for place-making opportunities, the location of key attractions and opportunities to maximise connectivity.

Figure 11: Walking catchment around Parkes/Barton light rail stops



The landscape surrounding each stop has been carefully considered to allow for tailored design solutions that respect and enhance the local environment and heritage value. These areas will be designed to be urban spaces that are liveable, safe, active and attractive.

Access to light rail stops has been planned to be safe, legible and direct. Facilities will be provided to support access to light rail via a range of modes, including footpaths and pedestrian crossings, bicycle parking and storage facilities, and integration with bus stops (where feasible) to allow for easy transfers. Taxi, Kiss and Ride, and Park and Ride interfaces will also be provided, where appropriate. Figure 11 depicts the location of stops and walkability to key places of interest.

The Territory is investigating alternatives for the MoAD stop, including a simplified stop directly in front of Old Parliament House. An example of this approach is shown in Figure 12. Further consultation will be undertaken with the NCA on this element of the design.

Experience in over 400 cities worldwide has proven that light rail transforms them for the better.

It acts as a catalyst for urban renewal, supporting the creation of a more compact, competitive and connected city.

Integrating light rail into the surrounding environment – a ‘minimalist’ stop

Light rail stops can be sensitively integrated into their environment. Figure 12 below shows a stop in Place de la Bourse, Bordeaux, in France – a UNESCO World Heritage Site. The stop surface is integrated into the fabric of the square and it has no canopy to obscure view lines. This type of approach is planned for the MoAD light rail stop to reflect its iconic location.

Figure 12: Light rail at the UNESCO World Heritage Site, Place de la Bourse in Bordeaux, France



4.1.2 Renewal of Commonwealth Avenue

Commonwealth Avenue is designated in the *National Capital Plan* as one of Canberra’s Main Avenues and Approach Routes, and is intended to establish and enhance the identity of the approach to the Central National Area as a road of national significance. Light rail will assist in revitalising Commonwealth Avenue and help deliver the nationally significant boulevard that is intended in the *National Capital Plan*.

The existing character of Commonwealth Avenue, as noted in the *Kings and Commonwealth Avenues Draft Design Strategy* (2017) is lacklustre and rundown in appearance, and acts ‘as a barrier rather than as a connector between the National Triangle and its surrounding uses’.²⁰

In 2013, the NCA stated²¹ that ‘many of the street trees are declining, and it’s timely to plan for tree renewal’ (see Section 4.5 for further information on nationally significant trees). The NCA also noted that Commonwealth Avenue is visually dominated by traffic and carparks and difficult to cross, with only minimal amenity. These attributes of the Avenue do not support its objectives as a Main Avenue and Approach Route.

The NCA’s plans for Kings and Commonwealth Avenues includes place-making initiatives, such as reducing road speed limits, increasing access for pedestrians and cyclists, and opening land for development along transport corridors. These objectives were implemented as part of the national award-winning upgrade of Constitution Avenue, the third arm of the Parliamentary Triangle. The Territory’s recommended route alignment will run along a new infill bridge between the existing Commonwealth Avenue bridges. This allows sufficient space for to provide the NCA’s vision, including landscaped median and verges, generous pedestrian and cycle paths and maintained road vehicle capacity on Commonwealth Avenue. Light rail will have minimal impact on the heritage and visual values of Commonwealth Avenue. Table 11 and Table 12 depict the clear contrast between Commonwealth Avenue as it appears today and the ACT Government’s vision with light rail. The ACT Government intends to continue its approach to enhancing the design and urban amenity of the route with extensive road and landscaping improvements, as it has done with the City to Gungahlin light rail.

Light rail will run along a new bridge between the existing Commonwealth Avenue bridges, minimising any impact on existing traffic flow while improving urban quality outcomes in line with the NCA’s vision for this national avenue.

Light rail will refresh the City and support the development of City Hill and West Basin.

²⁰ National Capital Authority, 2017. *Kings and Commonwealth Avenues Draft Design Strategy*, National Capital Authority, Canberra.

²¹ National Capital Authority, *Background Issues – Renewal of Kings and Commonwealth Avenues*, 2013.

Table 11: Commonwealth Avenue before the introduction of light rail

BEFORE LIGHT RAIL

The current condition of Commonwealth Avenue:

- Limited accessibility for pedestrians and cyclists, with narrow paths
- Inconsistent palette of materials and finishes
- No trees planted within median north of the lake
- No dedicated public transport passage.



Table 12: Commonwealth Avenue after the introduction of light rail

AFTER LIGHT RAIL

The Territory's vision to deliver improved urban amenity on Commonwealth Avenue introduces:

- Generous landscaped verges for active building frontages
- Enhanced north-south pedestrian and bicycle connections through improved surface treatments
- Additional safe opportunities for pedestrians and cyclists to cross Commonwealth Avenue (east-west)
- A new generation of tree plantings, replacing existing trees with a suitable species.



4.1.3 Development of Windsor Walk

Commonwealth planning policies, such as the *National Capital Plan* and the *York Park Master Plan* envisage revitalising precincts within the Designated Areas. York Park and Windsor Walk should accommodate active travel and active frontages, while demonstrating design excellence due to the visual sensitivity of the location.

Windsor Walk does not currently achieve its planning aspirations. Cars are the dominant mode of transport in the surrounding area and active travel is not well accommodated. An abundance of open surface carparks and concrete reflect an industrial character, unsuitable for its close proximity to Parliament House.

The Territory, in discussion with the NCA, selected a preferred light rail alignment that traverses Barton along Windsor Walk. Windsor Walk will be retained and redeveloped as a central linear park and continuous pedestrian spine connecting transport facilities, offices, a proposed retail plaza and landscaped recreational areas.

The Brisbane Avenue light rail stop (Figure 11) will be designed within the context of the surrounding urban environment to ensure seamless integration into the public domain of Barton. The shared pedestrian nature of the precinct will facilitate a lively retail plaza that provides active frontages for future developments.

The Sydney Avenue stop at Game Court (Figure 11) will service the southern end of Barton and Manuka Oval. Light rail will not disrupt building access, and new pedestrian and bicycle paths will improve movements within Barton. A consistent high-quality palette of materials will connect Windsor Walk from Kings Avenue to Canberra Avenue with light rail.

Table 13 below depicts the stark contrast between Windsor Walk today and the Territory's plan for the area with light rail.

Table 13: Windsor Walk before and after the introduction of light rail

BEFORE LIGHT RAIL

York Park is located adjacent to Windsor Walk and has significant oak parkland tree planting which has heritage significance. However, the area is:

- Dominated by carparks
- Lacking pedestrian amenity
- Underutilised
- Lacklustre with low urban amenity and limited access for pedestrians and cyclists.



AFTER LIGHT RAIL

The Territory's vision to deliver improved urban amenity at Windsor Walk introduces:

- Generous active travel paths alongside the light rail alignment
- A barrier-free shared zone that ensures easy access for pedestrians and cyclists across the tracks
- New street tree planting to reflect the nature and pedestrian scale of surrounding streets, while respecting the existing character and heritage
- The restriction of road vehicles to only allow access from Blackall Street to the turnaround facility servicing the childcare centre and the existing surface carpark/future development site.

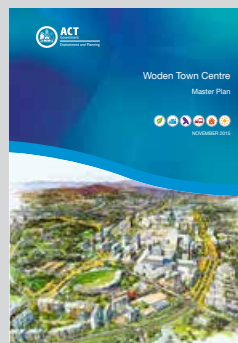


4.1.4 Rejuvenation of Woden Town Centre

Woden is a major activity centre for southern Canberra, acting as a community and commercial hub for the Woden Valley and the broader region. Light rail will improve access to the Woden retail district and employment hubs, supporting investment and economic diversification. It will make Woden a more attractive place to live, work and visit, and support the realisation of the Woden Town Centre Master Plan, outlined below.

Woden Town Centre Master Plan

The Woden Town Centre Master Plan provides a vision, planning principles, spatial framework, planning strategies and policies for Woden Town Centre. The directions in the Master Plan respond to current development pressures and consider the strategic planning directions and policies, background analysis, and community and stakeholder engagement activities undertaken as part of the Master Plan development process. The Master Plan incorporates the Light Rail Master Plan, viewing it as an opportunity to improve accessibility in Woden Town Centre and build it into a metropolitan hub for Canberra.



Woden is a key urban renewal site in Canberra where existing amenity is good, but could be improved to enhance the district's liveability and productivity potential. At presentations to the Inner South, Woden Valley and Weston Creek Community Councils, and at business and community roundtables there was extensive discussion about the overall opportunity for renewal, development and activation that the new southern corridor presents²².

Light rail results in the realisation of potential opportunities for development in Woden, subject to future decisions of government. Approximately 601,300m² of residential land (4,070 dwellings), 679,000m² of commercial land, 49,200m² of retail land and 7,500m² of community land could be developed as a result of light rail²³.

As part of the light rail project, the ACT Government intends to redevelop the existing bus interchange to provide a seamless interchange between bus and light rail services and better access to Woden Town Centre.

Light rail is already stimulating investment in Woden

Light rail is already having a positive effect on Canberra's economy.

'Developers are working on grand plans that promise hope to breathe new life into the area. New apartments are springing up, vacant shops in the Westfield mall are filling...'

'There's been a huge change to Woden, and in spite of the fact that there's been a loss of employment, the expectation that the tram will go there has lifted a lot of people's interest in the place...'

Light rail will encourage urban renewal and development along the corridor, making Canberra a more attractive, dynamic and connected city.²⁴

²² Transport Canberra, 2017. Light Rail Update, August 2017. Transport Canberra, available at: https://www.transport.act.gov.au/__data/assets/pdf_file/0007/1096090/Light-Rail-UpdateAugust-2017-Report.pdf accessed 12/6/18.

²³ ACT Government statistics.

²⁴ Canberra Times 2nd March 2018

Table 14: Woden Town Centre before and after the introduction of light rail

BEFORE LIGHT RAIL

Woden Town Centre is the major retail precinct in the Woden Valley. It currently has:

- A prominence of carparks
- Opportunity to better improve pedestrian amenity
- Scope for better utilisation of land and community assets
- An aging bus interchange.



AFTER LIGHT RAIL

The Territory's vision to deliver a high capacity transport interchange introduces:

- Generous active travel paths alongside the light rail alignment
- A barrier-free shared zone that ensures easy access for pedestrians and cyclists across the track
- A new integrated public transport interchange (bus, light rail, active travel)
- New street tree planting to reflect the nature and pedestrian scale of the surrounding streets
- The restriction of private road vehicles on Callam Street from Matilda Street to a new Bradley Street (excluding emergency vehicles and buses).



4.2 Adjustments to traffic arrangements

4.2.1 Integration of light rail into the road network

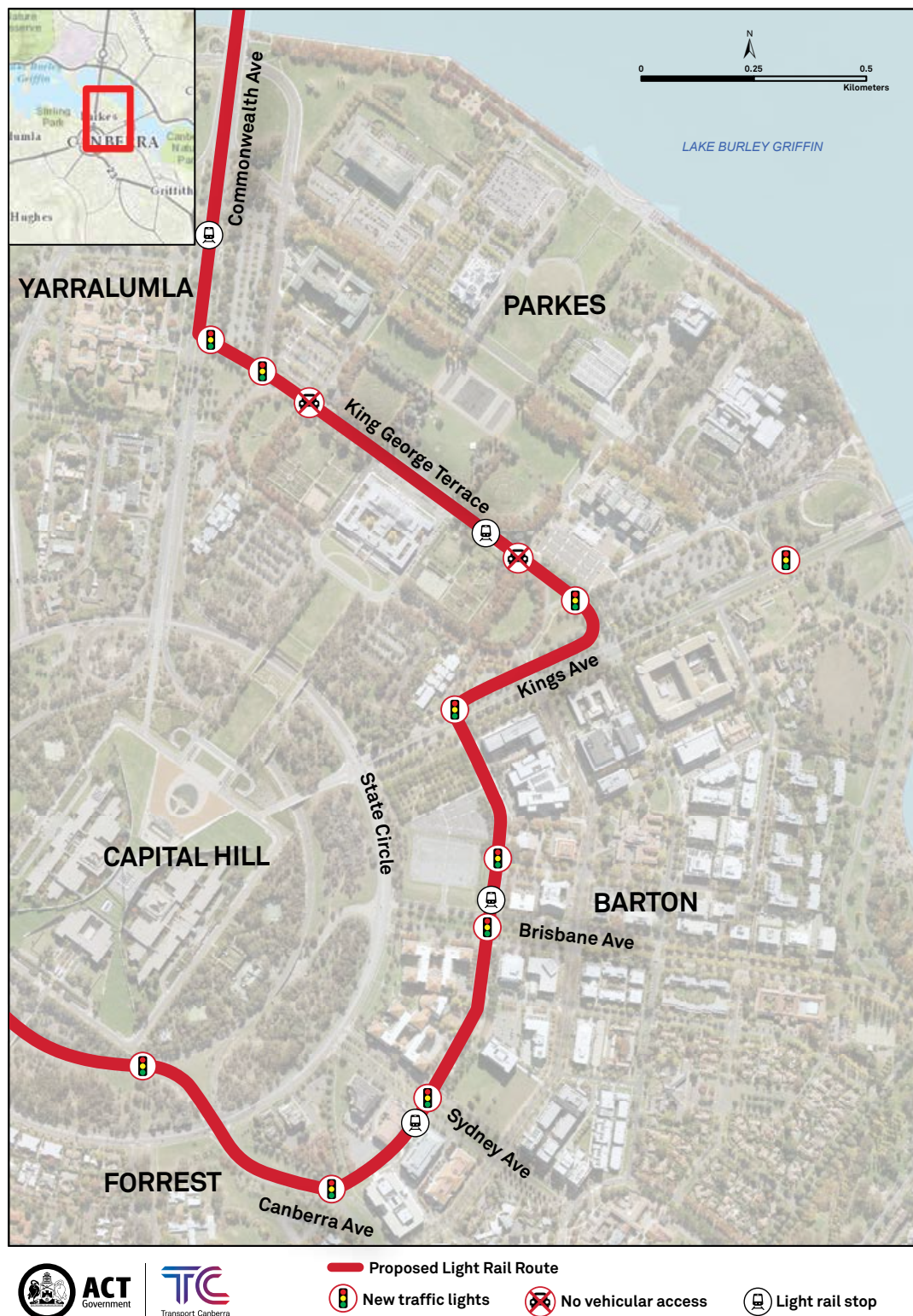
Canberra's light rail network has been planned to integrate seamlessly with other transport modes, including active travel and cars, to provide a more accessible and easy-to-use network that meets the needs of customers.

Traffic modelling suggests that light rail will not worsen performance of the road network (Table 6). Adjustments to the road network are proposed to accommodate light rail and to facilitate safe crossings of pedestrians and cyclists with light rail and cars, retain access throughout the Parliamentary Zone, and improve the utility of land, such as Windsor Walk.

Light rail will provide a credible alternative to the private vehicle for access to the Parliamentary Zone and Barton, supporting the reduction in road traffic and improving amenity in this nationally significant area.

In order to integrate light rail with the road network, some upgrades to the existing road network will be required, such as lane and kerb adjustments, modifications to existing intersections or new intersections. There will also be a need for additional traffic signals along some areas of the route, such as in Parkes and Barton, where a total of 10 new traffic lights will be introduced (Figure 13) to ensure safe operation of the light rail with pedestrian, cyclist and car movements (though noting those traffic lights will be phased so as to minimise any road traffic stoppages).

Figure 13: Road upgrade – Parliamentary Zone and Barton road changes



4.2.2 Integration of light rail into the Parliamentary Zone

The main improvement on the road network in the Parliamentary Zone to accommodate light rail is the removal of private vehicle access from King George Terrace (access remains for ceremonial events and emergency vehicles). Accompanying road changes are necessary to ensure traffic accessibility and retain north-south movements within the Parliamentary Zone.

The introduction of light rail into the Parliamentary Zone has been designed to retain access to all institutions and facilities.

Light rail will follow the current King George Terrace road reserve, located within the current kerb alignment (Figure 14). King George Terrace would form an attractive public transport, cycle and pedestrian connection. This plan aligns with the Museum of Australian Democracy's (MoAD) current and future requirements for bus and carpark access via Queen Victoria Terrace.

Some of the key modifications to the road network are outlined below and shown in Figure 14:

- A new signalised intersection to allow light rail from Commonwealth Avenue to King George Terrace (impacts southbound traffic on Commonwealth Avenue only)
- A new signalised intersection at Langton Crescent and King George Terrace (enables north-south movement through the Parliamentary Zone and access to carparks)
- Closure of intersections of King George Terrace with Parkes Place East and Parkes Place West
- A new signalised intersection at Dorothy Tangney Place and King George Terrace (enables north-south movement through the Parliamentary Zone and access to carparks)
- A new signalised intersection to allow light rail from Kings Avenue to Windsor Walk
- A new signalised intersection at Kings Avenue and King Edward Terrace to allow all movements.

Figure 14: Road changes within the Parliamentary Zone



The ACT Government considers that retaining King George Terrace as a shared zone for light rail, cars, cycles and pedestrians is unsuitable for a high-capacity public transport route. As a shared zone, cars and light rail vehicles would have to share road space, and cars would need to drive on the light rail tracks. A single road vehicle delay or breakdown would disrupt light rail journeys for many visitors, employees and residents in the area, with extended light rail journey time and reduced service reliability. A shared zone does not align with the concept of a priority right of way for the inter-town public transport system, as noted in the *National Capital Plan*.

Table 15 depicts light rail on King George Terrace, providing a more attractive, people-friendly space with improved connectivity to national institutions.

Table 15: MoAD before and after the introduction of light rail

BEFORE LIGHT RAIL

King George Terrace, in front of MoAD:

- Lacks pedestrian amenity and urban quality
- Is underutilised
- Is a car-dominated space.



AFTER LIGHT RAIL

The Territory's vision to create a new public space shared with light rail introduces:

- Generous space active travel
- A barrier-free shared zone that ensures easy access for pedestrians and cyclists across the tracks
- Restrictions for road vehicles from King George Terrace.



Artist impression

4.3 Changes to parking demand and availability in Parkes/Barton

Light rail provides high-capacity, frequent and reliable public transport, greatly contributing to improved amenity in the Parkes and Barton area. It changes the demand for parking and facilitates urban renewal in line with the NCA's future development plans.

Currently in the area, there is a range of public and private car parking facilities catering to visitors, residents and employees. The introduction of paid parking in 2014 aimed to prioritise spaces for visitors to national institutions and assist with ongoing parking management on National Land.

Previous Inquiry: Amenity within the Parliamentary Triangle

An Inquiry into amenity within the Parliamentary Triangle noted that 'in the past, this lack of amenity has certainly been a justification for free parking in the Central National Area'. The inquiry also provided a series of recommendations relating to the improvement of access by public transport to the Parliamentary Zone, as a key requirement to assist in improving the amenity of the area.

As outlined in Section 3.2, technical assessments and an extensive NCA and community consultation process by the ACT Government, determined that light rail should ideally traverse Barton using Windsor Walk to maximise amenity and connectivity in the area.

The light rail is proposed to stop at Brisbane Avenue in order to service key employment hubs, including the Department of Foreign Affairs and Trade, Attorney General's Department and the Department of the Prime Minister and Cabinet. On the basis of there being some 3,600 public car parks available within the Parkes Barton area, the project will result in the displacement of approximately 4% of carparks (130 carparks). In contrast, light rail has the ability to move up to around 4,000 people into this area in the morning peak hour.

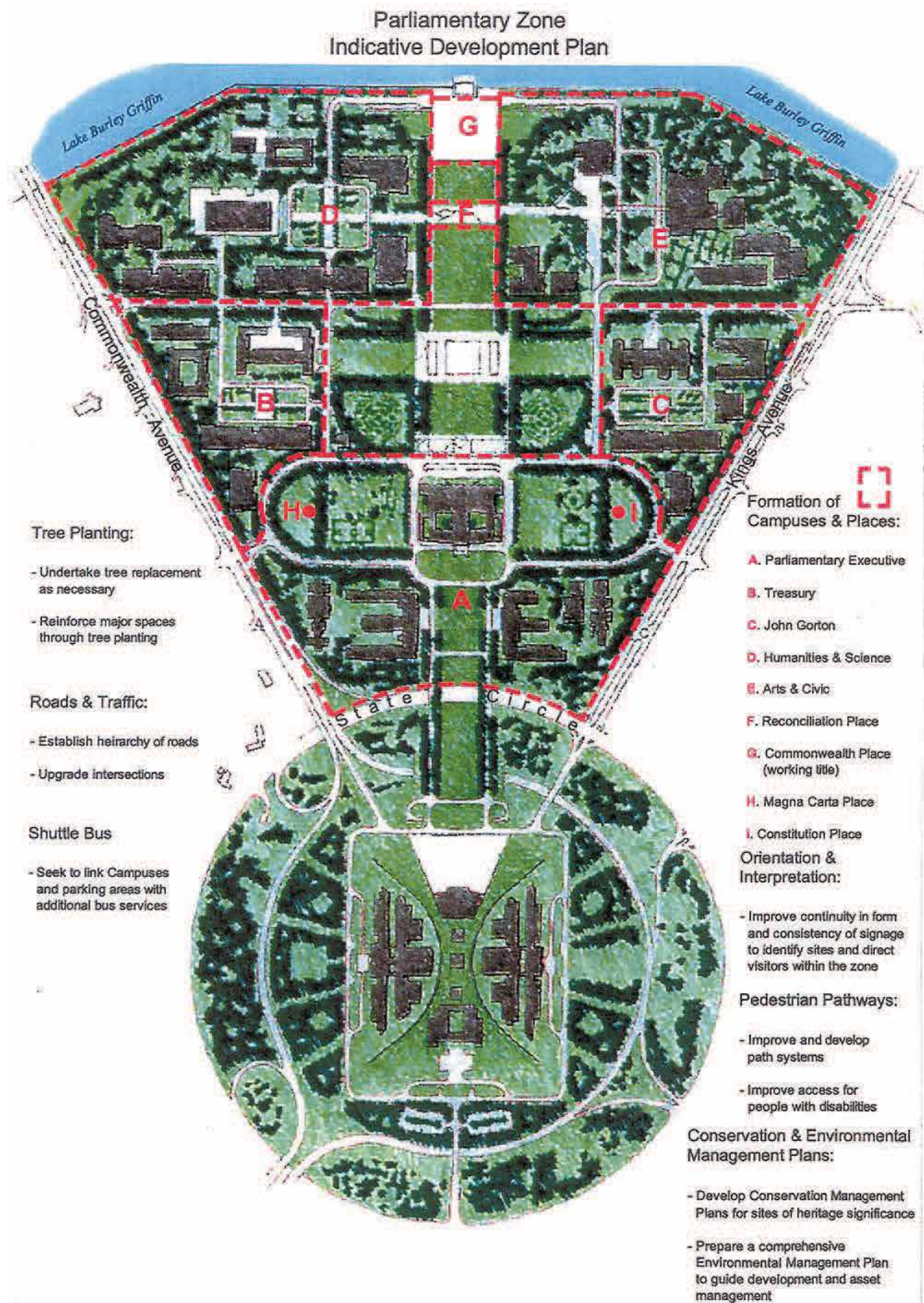
The Territory is aware of future development intentions for surface carparks on National Land within this area. These intentions are identified in the *National Capital Plan* (see Figure 15) and were mentioned in 2013 during the Joint Standing Committee (JSC) Inquiry into amenity within the Parliamentary Triangle²⁵. Development of these large surface carparks, in the absence of frequent reliable public transport, could result in poor amenity and traffic congestion in the Parliamentary Zone. Implementation of light rail now will help facilitate the development, minimising impacts to the workforce when development occurs and the large surface carparks become major construction sites.

Traffic modelling for the area indicates that future development intentions would, in the absence of improved public transport, require augmentation of the network to address projected delays and congestion, further eroding the significance of the Central National Area. Providing frequent high-capacity public transport to move people within the precinct will better suit the objectives for the area, as noted in the *National Capital Plan* and canvassed through the findings of the 2013 JSC Inquiry into amenity within the Parliamentary Triangle.

The introduction of the light rail will change the demand for parking and helps with the orderly development of the area, in line with future developments identified by the National Capital Authority.

²⁵ Official Committee Hansard Joint Standing Committee on the National Capital and External Territories Provision of Amenity within the Parliamentary Triangle, Tuesday, 11 June 2013, Canberra, by Authority of The House of Representatives.

Figure 15: Parliamentary Zone, Indicative Development Plan²⁶



²⁶ National Capital Authority, National Capital Plan, 2016.

4.4 Heritage, cultural, visual and environmental implications of light rail

City to Woden light rail, via Barton has relevance to matters of National Environmental Significance and ACT environment listings. These will be assessed by a Commonwealth Environmental Impact Statement (EIS) under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* and a Territory EIS under the *Planning and Development Act (2007)*. The Territory has coordinated with both Commonwealth and Territory regulators to agree an appropriate pathway for environmental approvals (see Section 5.2).

A Preliminary Environmental Assessment (PEA) has been prepared by the ACT Government as part of the Definition Design and some specialist environmental studies have followed. These will inform a Referral of the Proposed Action to the Department of the Environment and Energy and an application for an EIS scoping document from the ACT Planning and Land Authority (ACTPLA). These identified the following areas of environmental focus:

- Heritage
- Biodiversity
- Visual implications
- Noise and vibrations.

Appropriate recommendations will arise through the EIS process to further minimise and mitigate any potential implications from the project and to inform the design process to achieve the best possible project outcome. The ACT Government notes it would welcome a statement of principles from the Commonwealth to guide design and construction in regard to environmental issues (Section 4.4).

4.4.1 Heritage considerations

The light rail will travel through areas of national and cultural significance. Preliminary assessment of relevant heritage registers has identified a total of 20 heritage listed and nominated items within the study area which should be considered during the development of the light rail project. Most of these items are located within the Parliamentary Zone and these include five items of national significance:

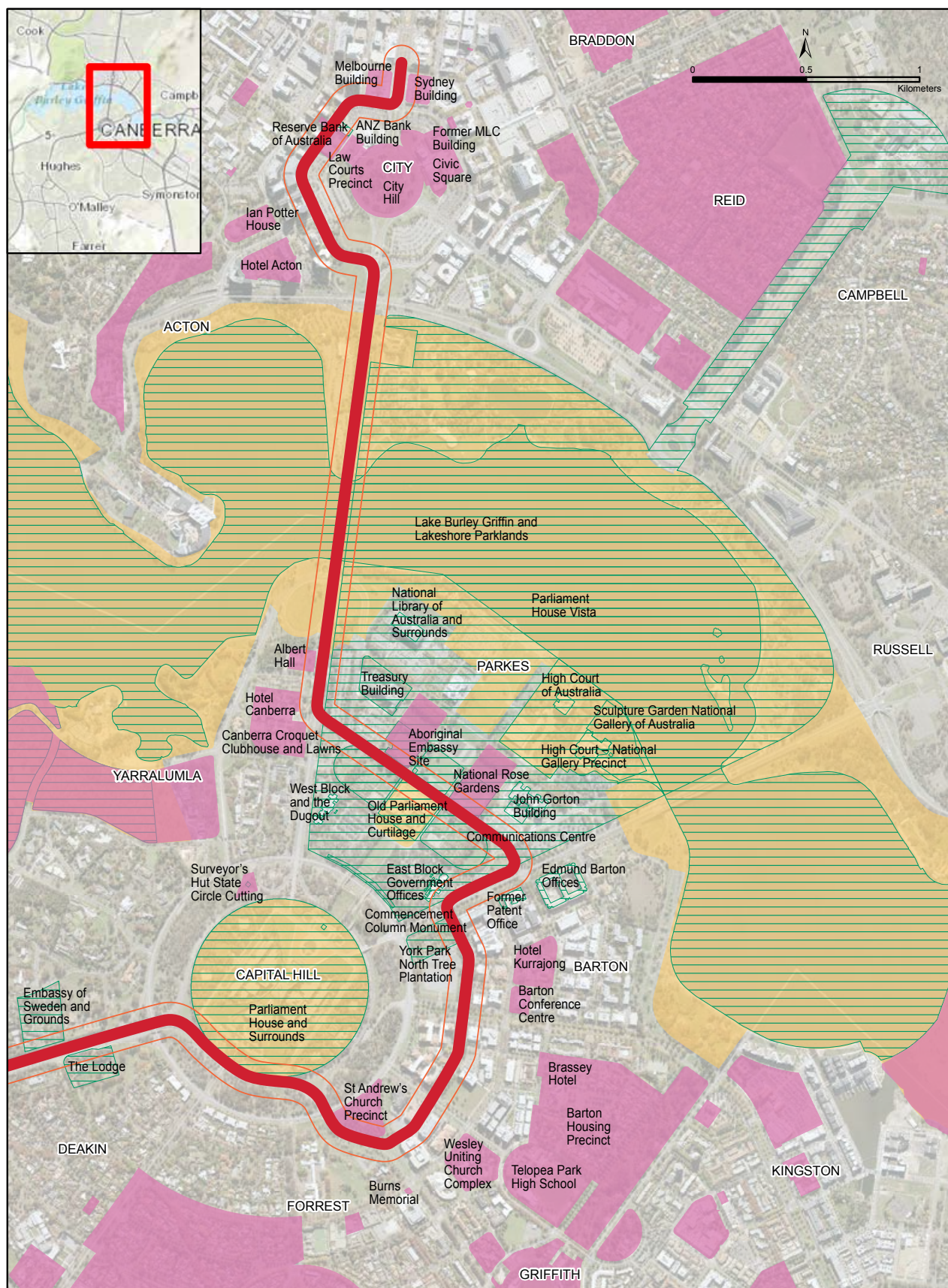
- Canberra – Central National Area and Inner Hills
- Parliament House and Surrounds
- Canberra and Surrounding Areas;
- Old Parliament House and Curtilage
- Aboriginal Embassy Site

Kings and Commonwealth Avenues are not currently on the Commonwealth Heritage List, however the NCA has previously indicated that they have been found to have Commonwealth heritage value.

Urban design and landscaping principles

Urban design and landscaping principles are proposed to be developed in collaboration with the NCA and the Commonwealth to support light rail design, and assessed in the EIS. These principles will guide the development of major design elements of the proposal, with the aim of reducing impacts on heritage items, areas of cultural importance and visual amenity.

Figure 16: Map of the identified heritage items located near the light rail corridor



Proposed Light Rail Route
Light Rail Route 50m Footprint

ACT Heritage List items
National Heritage List items
Commonwealth Heritage List items

The Territory will engage with the custodians of each of the above heritage listings as part of the EIS process. This may identify additional investigations and mitigations to minimise any potential impacts upon heritage values (though noting that the project intends to enhance the heritage values of the Parliamentary precinct). A Heritage Management Plan will be in place for construction activities and then updated for the start of operations. Principles for managing potential implications to Commonwealth listed heritage items would help guide the Territory through the design and approvals process and ensure a controlled and consistent approach is taken to address heritage concerns in the Central National Area.

Potential impacts on items of heritage significance will be rigorously assessed under existing legislative provisions.

4.4.2 Ceremonial activities

Safe and dignified access will continue to be provided to all ceremonial occasions during the construction and operation of light rail. The major ceremonial routes that are relevant to the alignment are City Hill to Capital Hill, Government House to The Lodge and The Lodge to Parliament House, as outlined in Table 16. Ceremonial events may include:

- Diplomatic and state visits
- Repatriation ceremonies
- Police and state funerals
- Remembrance Day
- National Police Remembrance Day
- Investitures
- Anzac Day services
- Memorial services
- Community parades and events.

In order to protect these significant ceremonial events, the Territory will seek advice from the Commonwealth, including Ceremonial and Protocol Officers of the Australian Federal Police and the Department of Foreign Affairs and Trade to understand transport operational requirements, and ultimately provide contract conditions to accommodate these requirements. The ACT Government will welcome any Commonwealth guidance which informs these engagements and requirements.

Table 16: Ceremonial routes relevant to the light rail

City Hill to Capital Hill	London Circuit is identified as the main public transport circuit for the City, allowing Vernon Circle to remain the ceremonial road leading to Parliament House for public events for the city. A median alignment on Commonwealth Avenue allows the verges and three road lanes to be utilised to facilitate these movements during light rail operations. Two new signalised crossings will be introduced to Commonwealth Avenue.
Government House to The Lodge	The enhanced urban character of the ceremonial route will protect the ceremonial and symbolic aspects of the approach. The Territory will ensure efficient access to The Lodge from Adelaide Avenue which will be maintained for security and authorised vehicles. Access to Government House is not expected to be impacted by the project and the Territory will ensure arrangements are maintained for events such as school visits, ministers being sworn into office and ambassadors presenting their credentials, as well as when special arrangements are required, such as security envelopes enforced for visiting heads of state.
The Lodge to Parliament House	As above, appropriate access from The Lodge to Adelaide Avenue will be maintained with the introduction of light rail. The Ministerial Entrance for Parliament House is located to the south, at Melbourne Avenue. Light rail will not impact this passage from The Lodge.

4.4.3 Preserving the aesthetic integrity

The Territory has given careful consideration to the visual implications of light rail and accompanying infrastructure when designing the alignment through the Parliamentary Zone and through to Adelaide Avenue. Light rail has been planned with the desire to maintain the aesthetic integrity of the Central National Area, with light rail infrastructure located and designed to minimise intrusive visual impacts.

The Territory is exploring track surface finish options for the precincts along the alignment. A grass surface finish, similar to that in operation in Adelaide (see Figure 17), could be implemented along Commonwealth Avenue and Kings Avenue to conceal the rail within the landscape of the national boulevard. King George Terrace will be paved to integrate the light rail tracks with the new pedestrian environment (Table 15). A similar treatment is envisaged for Windsor Walk.

Figure 17: Example of grass tracks in Adelaide (no overhead wires planned for areas with grass track in Canberra)

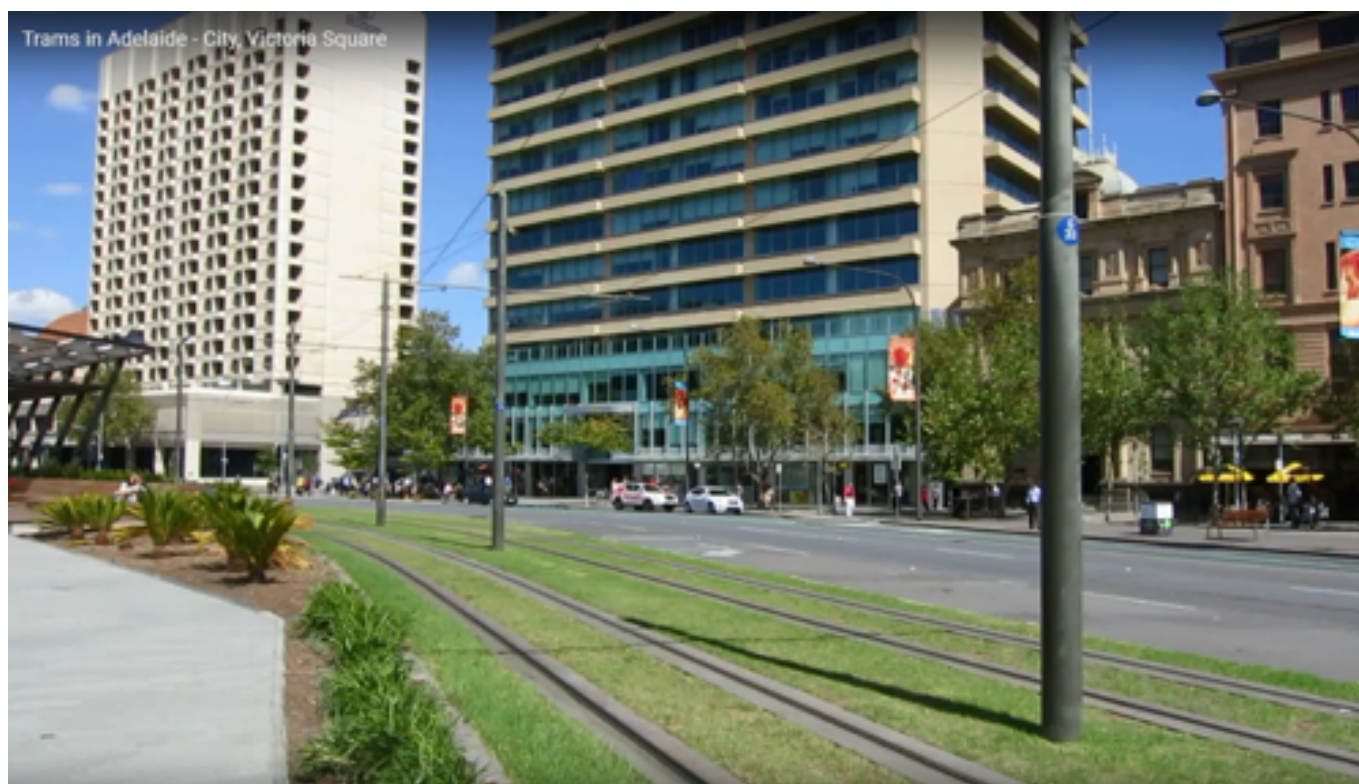


Figure 18 identifies the broad sections of the alignment proposed to have overhead line power and sections proposed as wire-free. Negotiations between the ACT Government and the NCA are continuing, seeking to determine an acceptable outcome for the precise extent of wire-free operations. These include:

- The length between stops where a vehicle can travel wire-free with existing battery technologies, taking gradients into account
- Speed limitations when operating under wire-free conditions.

The current ACT Government plan has wire-free running from Alinga Street to Sydney Avenue, and again in Woden from the Phillip Oval stop. Wire-free running in these areas would remove the visual impact of overhead wires in the light rail corridor, reflecting advice from the NCA. There are technological challenges to the length of run that a vehicle can operate as wire-free. Preliminary design work has identified that long sections of the alignment in Adelaide Avenue may be constrained or impractical to function without overhead contact wires. This will be carefully considered as part of further design work to minimise visual implications, particularly around The Lodge. As consultation and further design continues, the extent of wire-free operations is subject to change.

An expert Design Advisory Panel comprising landscape architects and urban design professionals advised the ACT Government on design outcomes for the City to Gungahlin light rail. A similar concept will be used for the extension to Woden.

Figure 18: Overhead line power and wire-free running locations



Proposed Light Rail Route
Wire free running

Light rail stop

Temporary implications

Light rail construction may cause temporary amenity implications for those who work, study, reside, visit or access businesses/community services within the vicinity of the light rail corridor due to:

- The establishment of construction compounds, worksites and stockpiles
- The erection of fencing, barricades, gates and security lighting for the provision of safe and secure worksites
- Traffic disruptions associated with traffic management measures (road diversions/closures) and/or construction traffic
- The removal of existing trees
- Earthworks
- The parking and use of construction plant and equipment.

The ACT Government will seek to minimise these short-term impacts where possible. The amenity implications associated with light rail construction will be temporary in nature, and as the construction progresses, the revitalisation of existing public spaces and public domain along the corridor will begin to transform local communities, creating people-friendly spaces.

4.4.4 Detailed environmental impact assessment studies

The Territory has completed a range of preliminary environmental assessments for light rail to better understand the potential environmental areas for focus during the construction and operational phases of the project. Further detailed investigations will be undertaken as part of a future environmental approvals process (see Section 5) which will definitively characterise any potential adverse or beneficial implications and, importantly, canvass the available options to avoid, minimise or offset those impacts.

Noise and vibration considerations

The provisions of the ACT *Environment Protection Act 1997* (and associated Regulations) and relevant Australian Standards would apply to the light rail. Given the sensitivity and national significance of some of the land uses within close proximity to the light rail, in addition to these Standards, the Territory recommends the development of a set of clear construction and operational principles with key Commonwealth stakeholders to effectively manage construction impacts.

The Territory has successfully managed these issues throughout the construction of the initial stage of light rail between Gungahlin and the City, and would seek to build on these lessons through the delivery of light rail to Woden.

Biodiversity values

Targeted surveys for a range of biodiversity values, including the critically endangered Golden Sun Moth (GSM) have taken place across the light rail corridor. The Territory has confirmed the presence of the GSM and habitat within a nominal project footprint, and the likelihood of impacts to the local population.

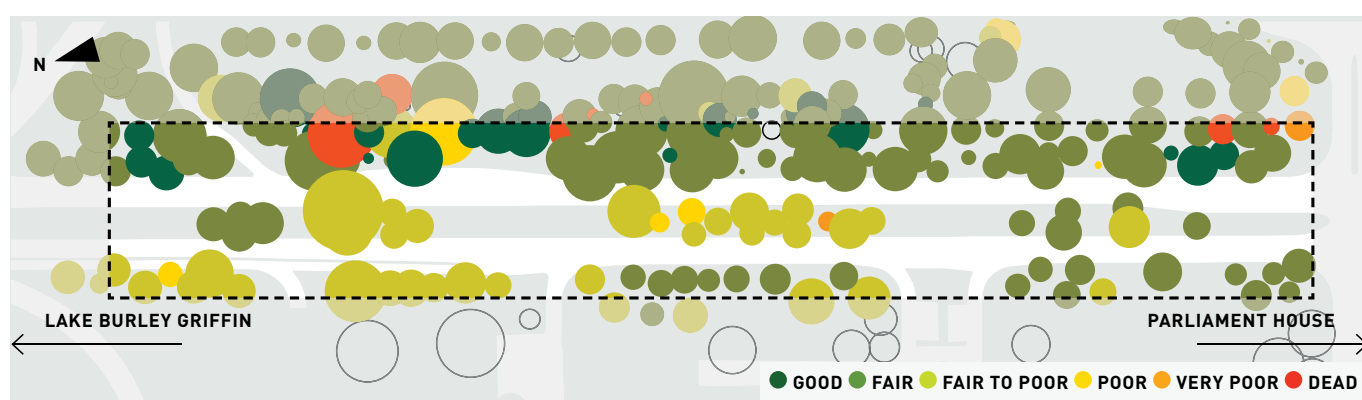
As part of future environmental assessment processes, the potential impact on the GSM will be a key consideration. Given their conservation status and known habitat areas, consideration will be given to the impact on the GSM in the ACT Government's Referral under the requirements of the *EPBC Act* and detailed in the EIS phase of the assessment. If the impacts could not be avoided, then offsets are likely to be needed. These detailed matters will be carefully investigated and managed through the ongoing environmental assessment process yet to be commenced under both the ACT and Commonwealth legislation.

4.5 Impacts to existing trees and provision of a renewed landscape

The *National Capital Plan* outlines an ambition to revitalise the landscape of the precincts adjacent to the light rail alignment. Areas along the alignment are degrading and do not meet the desire for high-quality landscapes with pedestrian pavement materials, street furniture and lighting.

The planting of trees is key for the unique landscapes of the precincts in Canberra. Kings and Commonwealth Avenues present an assortment of native, coniferous and deciduous species that require rationalisation. The original design intent of the avenue planting was to provide a backdrop of coniferous evergreen trees contrasting with the deciduous trees at the street edge. This made the avenues legible in the broader landscape and distinctive throughout the seasons. The health of these trees vary among and between species (see Figure 19).

Figure 19: Tree health on Commonwealth Avenue, taken from Background Issues – Renewal of Kings and Commonwealth Avenues



There are currently 28 trees in the Commonwealth Avenue median from Lake Burley Griffin to Coronation Drive; all of which will be impacted by the introduction of light rail. They are original Charles Weston 1920s cedar plantings with a life expectancy (assessed in 2013) ranging from only 5 to 40 years. In 2013, the NCA stated²⁷ that ‘many of the street trees are declining, and it’s timely to plan for tree renewal’. *The National Capital Plan* acknowledges that a consistent approach to replacement tree planting should be undertaken to reinstate this intent.

Light rail presents an opportunity for a place-based approach to the revitalisation of these trees, reinstating the character and history of the Avenues, with a vision to deliver the following landscape objectives:

- Adopt and refine the relevant elements of the Griffins’ philosophy such as ‘the city in the landscape’
- Strengthen the qualities of the Avenues and view corridors through the enhancement of tree plantings
- Craft a sense of journey through the landscape character zones and precincts along the route
- Maximise the opportunities for light rail to act as a catalyst in revitalising existing and new urban centres along the corridor
- Protect and enhance the natural systems and connections with the city’s open spaces.

Light rail will facilitate the renewal of the landscape around the corridor, preserving the intended character of each precinct with the planting of trees, the renewal of public spaces and the improved accessibility for pedestrians.

²⁷ National Capital Authority, Background Issues – Renewal of Kings and Commonwealth Avenues, 2013.

Light rail would see the replacement of existing trees to provide the desired amenity for the Avenue for the next one hundred years, consistent with the NCA's Draft Design Strategy.

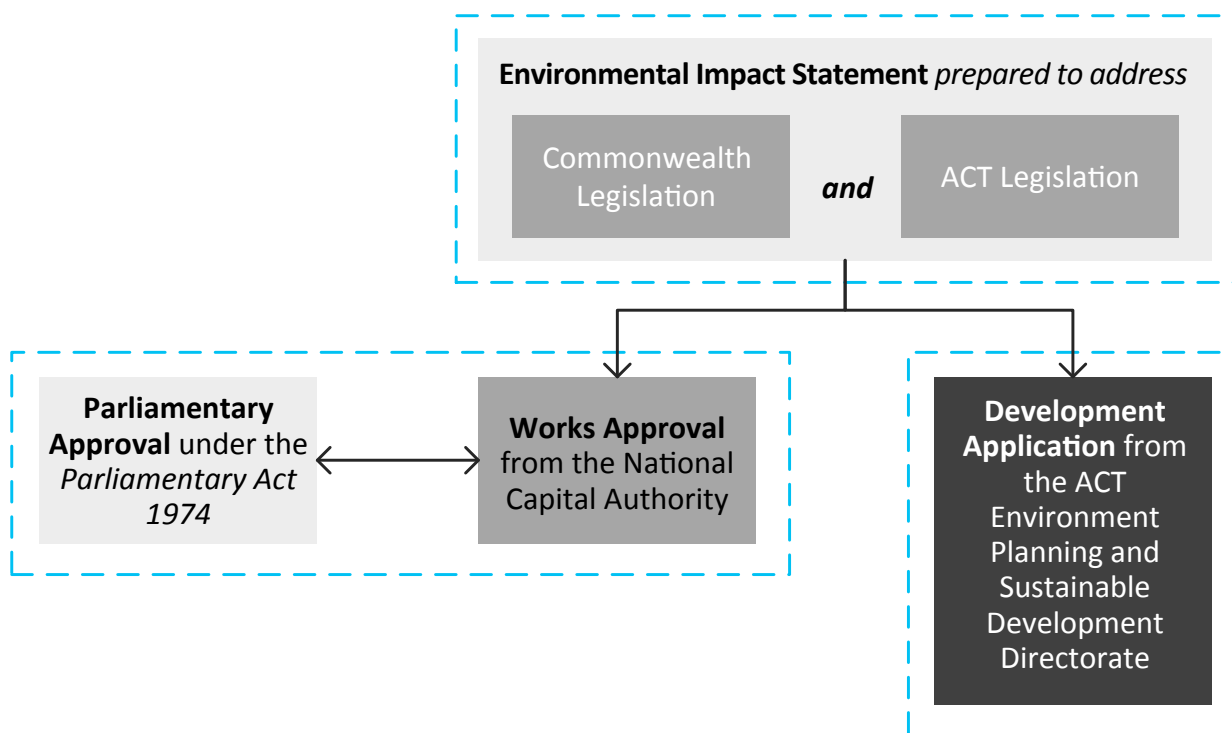
Approximately 40 new trees would be planted between the carriageways, including 20 between Lake Burley Griffin and Coronation Drive south of the Lake. Original plantings between Coronation Drive and King George Terrace are not impacted by light rail and can be retained. The section of Commonwealth Avenue to the north of Lake Burley Griffin currently has no trees within the median, but there are plans to introduce trees in the area to enhance the natural character.

5. FUTURE PROJECT DEVELOPMENT

5.1 Introduction

The approvals process for the project is similar to the first stage of light rail, being subject to both ACT and National Capital Authority planning requirements. There are, however, additional requirements as a result of the Commonwealth *Parliament Act 1974* and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). These additional requirements, while adding to the complexity of the project approvals, are well established and rigorous processes, addressing the planning, design and environmental implications discussed in Section 4. Figure 20 provides a simplified overview of the different processes that apply to the project and the relationship between them.

Figure 20: Overview of the approval processes that apply to the project



The different approval processes apply variously to different portions of the project alignment. Figure 21 illustrates the different approval processes across the project alignment.

The Territory is unlikely to enter into a delivery contract for the project until Works and Parliamentary Approval has been granted, given the potential for changes out of this process to affect the economic, financial or operational viability of the project. Building on the experience gained in achieving necessary approvals for the first stage of light rail, the process described below represents a carefully considered and realistic approach to:

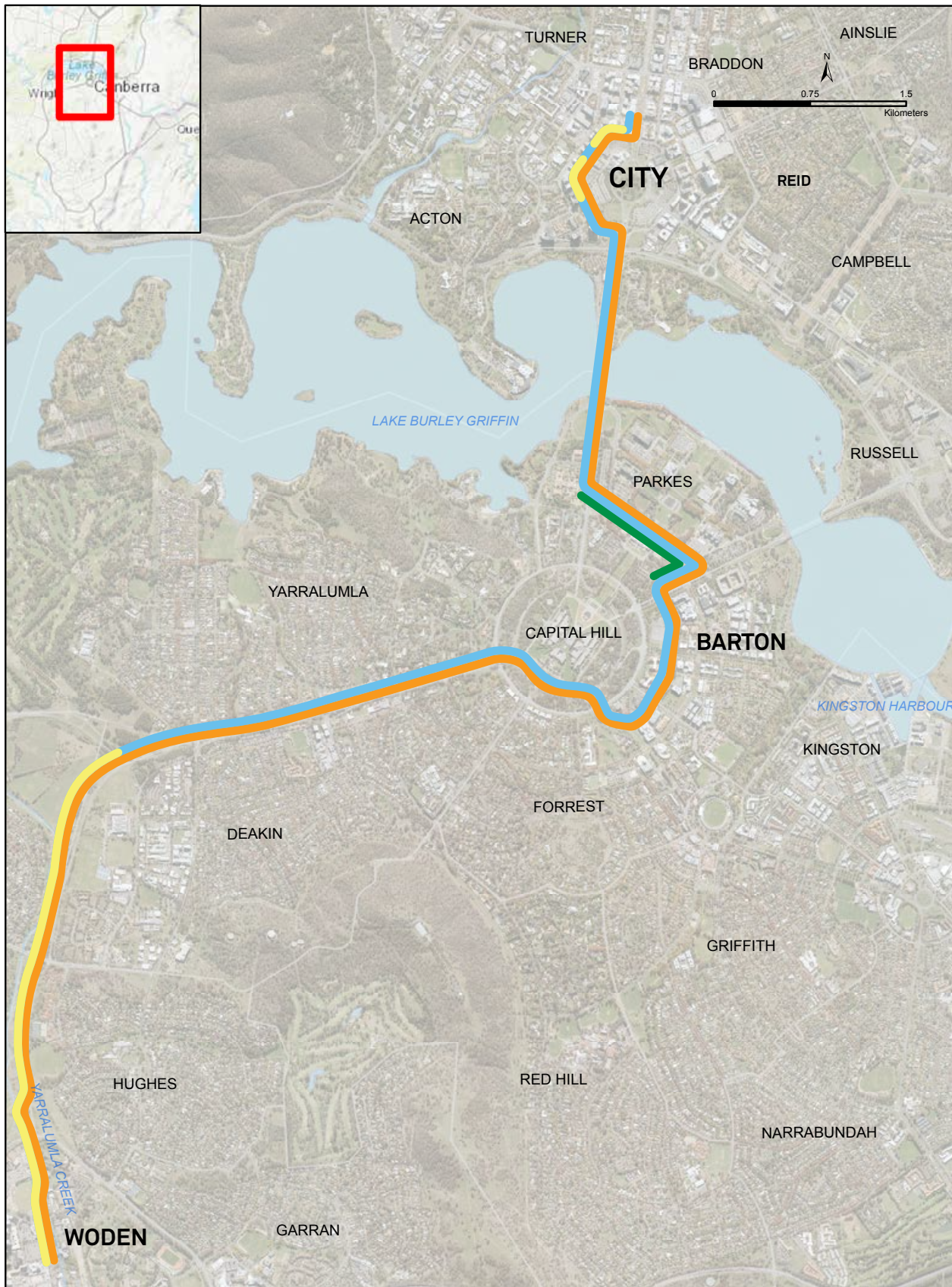
- **Securing design outcomes** required to enhance the amenity and character of the Central National Area
- **Providing progressive confidence** that the project is on the right track to allow procurement to progress
- **Carefully managing the impacts** during construction and operation.

A summary of the key approvals required and the supporting material for each is included in the Table 17 below.

Table 17: Key approvals required for City to Woden light rail

Approval	Required by	Supporting material
EPBC Act approval	<ul style="list-style-type: none"> • Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> – Commonwealth Department of the Environment and Energy • A prerequisite for Development Application under the <i>ACT Planning and Development Act 2007</i> 	<ul style="list-style-type: none"> • Draft EIS • Concept design • Detailed specialist studies • Extensive stakeholder consultation
Development Approval (DA)	<ul style="list-style-type: none"> • <i>ACT Planning and Development Act 2007</i> – ACT Environment, Planning and Sustainable Development Directorate 	<ul style="list-style-type: none"> • Approved EIS • Concept design • Detailed specialist studies • Extended stakeholder consultation
Works Approval (WA)	<ul style="list-style-type: none"> • Commonwealth <i>Planning and Land Management Act 1988</i> – National Capital Authority 	<ul style="list-style-type: none"> • Approved EIS • Urban design requirements • Concept design • Detailed designs
Parliamentary Approval	<ul style="list-style-type: none"> • Commonwealth <i>Parliament Act 1974</i> – both Houses of Parliament 	<ul style="list-style-type: none"> • As per Works Approval

Figure 21: Approvals that apply across the project



ACT
Government



- Subject to ACT Planning and Development Act 2007
- Subject to Commonwealth Planning and Land Management Act 1988
- Subject to Commonwealth Environment Protection and Biodiversity Conservation Act 1999
- Subject to Commonwealth Parliament Act 1974

5.2 Ongoing engagement and consultation

Extending light rail to Woden will see the alignment pass through some of the most revered and visually spectacular parts of Canberra. It also travels through some of Canberra's most established suburban areas and a town centre in the process of revitalisation. The Territory also notes the presence of a significant part of the diplomatic community within close proximity to the project, and the importance of this community within a national context.

The Territory is committed to an ongoing consultation process with the community, local businesses, educational institutions and other key stakeholders.

Key precincts and stakeholders to be engaged include:

- Barton precinct, including national cultural institutions and Commonwealth departments
- Woden Town Centre users, such as businesses, customers and public transport patrons
- Residents and representative groups in Barton, Forrest, Deakin, Yarralumla, Curtin, Hughes, Lyons and Woden, such as the Inner South Canberra and Woden Valley Community Councils. This will include aged care facilities, such as St Andrews Village
- Aboriginal groups and individuals, including representatives from the Aboriginal Embassy, Registered Aboriginal Organisations, and the broader Aboriginal community.
- Suburban shopping areas, such as Deakin and Curtin Shops
- Educational institutions, such as the Australian National University (ANU), Canberra Institute of Technology (CIT) and Canberra Girls Grammar School (CGGS)
- Health facilities, including Calvary John James Private Hospital
- Local peak groups, such as the ACT Property Council, the Canberra Business Chamber and the Public Transport Association of Canberra.

The next phase of consultation is expected to commence once guidance has been provided on the preferred alignment by the Australian Government through the Committee Inquiry process.

5.3 Design development

The Territory is continuing the design development for light rail to Woden to concept design phase. The key activities to be undertaken during the development of the concept design include:

- Preparing specialist studies that will input into the concept design, such as flood and further traffic modelling
- Undertaking spatial analysis of the route alignment to confirm features and amenities such as urban and landscape design, footpaths, bike paths, roads and utilities
- Incorporating feedback from approvals processes, such as the Environmental Impact Statement (EIS) and further stakeholder input into the design, including from the NCA
- Developing the Urban Design Requirements in collaboration with the NCA and other Territory specialists.

5.4 Business case and investment decision

The ACT Government expects to make its final investment decision in respect of the City to Woden light rail project once greater clarity is achieved as to the Australian Government's support for the project and any associated planning requirements. Commonwealth planning

constraints, particularly if they are of a fundamental nature to the project, may affect the economic, financial and operational viability of the project and, as such, it is prudent for the ACT Government to first seek the Australian Government's support for the project, as proposed.

The ACT Government's investment decision will be guided by a final business case for the project. Business case activities for the project have progressed throughout 2017 and 2018. In addition to the design and planning works described throughout this paper, initial costings for the project have been developed. The project's capital value is currently anticipated to be in the region of \$1.3 to \$1.6 billion, which is commensurate with the original cost estimate for the first stage of light rail, escalated to future dollars and reflecting additional costs associated with bridges, wire-free running, additional light rail vehicles, additional risk contingency amounts and other corridor-specific costs. The final value of the project though will be heavily dependent upon (i) the final design of the project and any planning constraints, (ii) the timing of the project, (iii) the project's procurement process, and (iv) general national infrastructure market conditions. As such, this figure should be treated with exceptional caution at this stage.

Economic analysis for the project cannot be finalised until certainty is achieved regarding basic project features as described in this document and final costings are undertaken. The ACT Government notes, however, it is not considering this project in isolation. Rather, City to Woden light rail is one element of the ACT Government's broader vision for a light rail network in Canberra. The City to Woden element is a challenging and expensive element of that network, but an element that is vital to the network's overall functionality. The ACT Government will look beyond simple benefit cost ratio modelling in making its investment decision, and will take into account matters such as its overall vision for Canberra, community sentiment, urban realm benefits and other factors.

5.5 Procurement and project timeframes

As noted above, it is not possible for the ACT Government to finalise its investment decision until greater clarity is achieved regarding the Australian Government's support for the project and any associated planning requirements. Consequently, it is also not possible for the ACT Government to provide definitive guidance at this stage as to the project's procurement approach or timelines. However, subject to Commonwealth approval processes, an indicative project timeline might be as follows:

Figure 22: Indicative project timeline



It will be necessary for the ACT Government to understand any potential Commonwealth Government security sensitivities in relation to the participation of any parties or products in the project's development. For the benefit of the Australian Government, ACT Government and market participants, any such sensitivities should ideally be made known to the ACT Government as soon as possible, and in any event, prior to the project's procurement process commencing.

Light rail is the backbone
of a long-term vision
for Canberra's public
transport network.



Artist impression

Find out more about Light Rail and other
transport projects in Canberra:
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