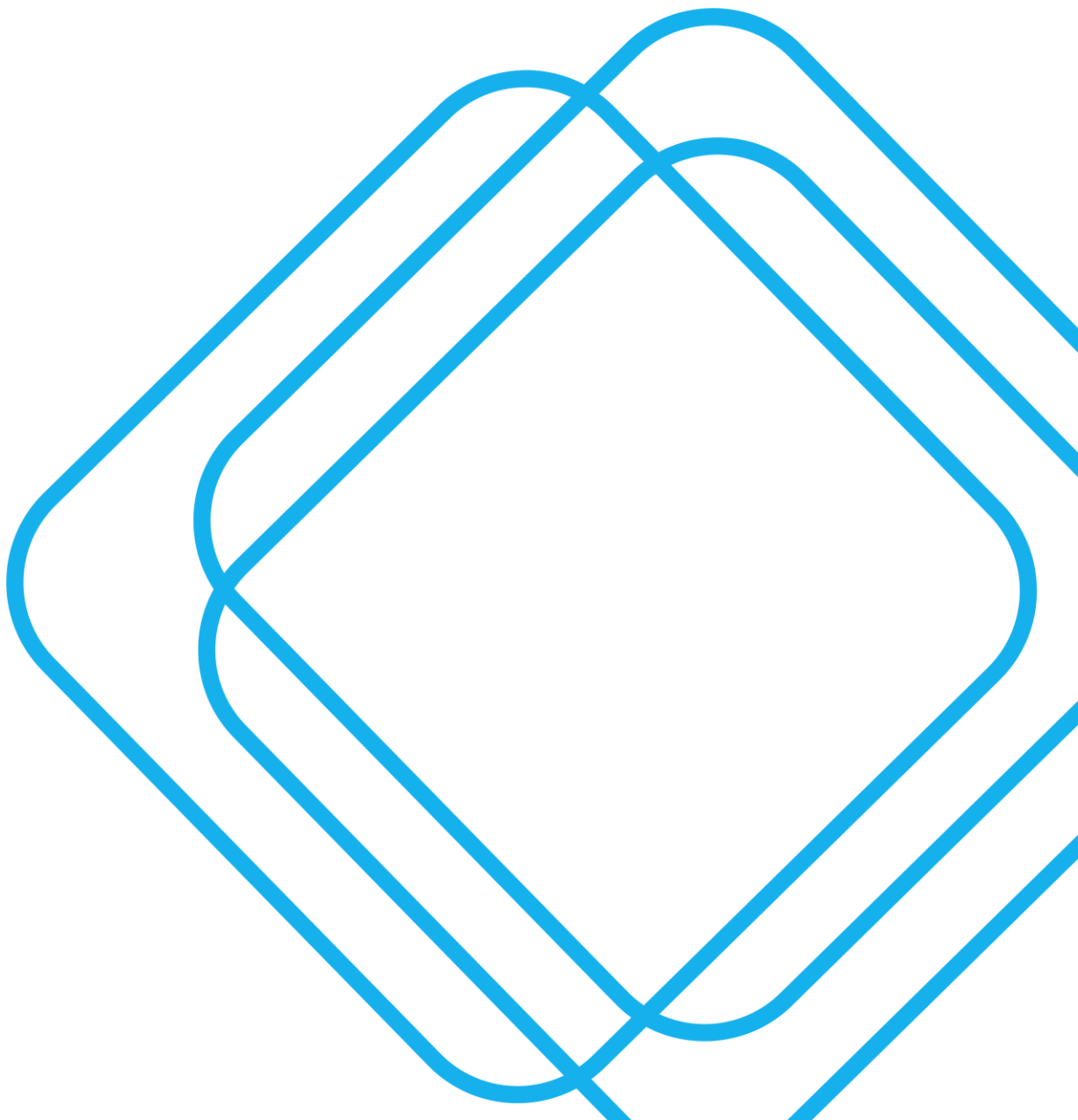




ACTON WATERFRONT PARK

Traffic and Transport Assessment –
NCA Works Approval

1 JUNE 2023



Quality Assurance

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Project Number:	SCT_00315		
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Executive Summary

Purpose of this report

The Acton Waterfront Park (AWP) project progresses an important piece of the Griffin legacy, continuing the Lake Burley-Griffin waterfront and supporting connections into New Acton.

The function of the AWP extends beyond providing highly attractive open space, it also provides for walking and cycling connections in an east-west capacity and through to New Acton via Parkes Way. This transport report supports the lodgement of the project for approval with the National Capital Authority (NCA).

Strategic context

Acton Waterfront Park is part of the West Basin Precinct in the National Capital Plan. As a designated area, it is regulated by the Australian Government. The National Capital Plan stipulates:

- The park is part of the open space zone, which permits aquatic recreation facilities, cafés, bars, restaurants, car parks, cultural facilities, indoor recreation facilities, pathway corridors, recreation facilities, roads, and parkland
- The park provides connectivity not only along the waterfront but also through West Basin's future master planned area ('Acton Waterfront precinct') to Lake Burley-Griffin.

The 2014 West Basin Precinct Guidelines provide a structure for the development of the zone and include:

- A 55m waterfront zone
- Limited car parking and priority on pedestrian access
- A waterfront pathway and a designated cycle commuter route
- Public transport stops along the roadway
- Generous width footpaths and cycleways – a minimum of 2.5m.

As part of the area regulated by the Australian Government, Territory provisions do not apply. However, much of the assessment has been based on planning principles from the Territory to ensure appropriate integration with nearby Territory areas.

The park is located strategically, providing both local and strategic links along and through the site. The eastern side connects with a future Canberra Light Rail stop. The waterfront promenade and regional cycling routes continue the connectivity around Lake Burley Griffin which is an important feature of the Lake.

Existing conditions

The site sits along a network of regional active transport connections. Immediately to the west and east are wide footpaths which cater for pedestrians and cyclists. The foreshore of Lake Burley-Griffin is an important exercise destination, with joggers and cyclists observed to use the long continuous facilities for exercise. The foreshore also provides connectivity between homes, workplaces, education and shopping – for commute, education and shopping purposes. The network through the site is attractive for journeys between Capital Hill, Australian National University and City Hill.

The southern side of the study area connects to the recently delivered Henry Rolland Park, which provides outdoor recreation opportunities – exercise equipment and barbeques.

Strava data shows there is a major demand for routes around the park, which would likely reroute via the new park.

The site is serviced by ten bus routes, of which six are rapid buses within a 500m walk of the park. The main stop is on Commonwealth Avenue.

Parking options are abundant around the vicinity of the site.

The proposal

The Acton Waterfront Park proposal seeks to rejuvenate the lakefront by providing a renewed and attractive public open space with multiple uses for the community to enjoy. It has the following six key areas:

- **Arrival section:** located at the southern end of the AWP, will connect to the existing Henry Roland Park and provide an entrance to the waterfront promenade. The Arrival section is within walking distance of the future Light Rail Stage 2 stop on Commonwealth Avenue. Key features include a new pavilion, with a café and public toilets and sheltered seating areas, along with a connection to the boardwalk. This space is envisioned to be used for events such as markets, community ceremonies and education programs. Vehicular access is to be provided through Albert Street and the existing Barrine Drive (south of Albert Street).
- **Community Park:** provides sheltered seating, picnic areas and amenities such as barbecue, drinking fountains, and table tennis area.
- **Play space:** includes a turf play area along with water play and adventure play areas, with accessible public toilets, and seating arrangements at the Pavilion which will contain a kiosk.
- **Plaza:** offers a connection between future development and Acton waterfront park. It also provides a large, shaded plaza to host events and larger groups. Seating steps are provided to create an amphitheatre. The Plaza also has an events pavilion.
- **Terraces:** form the end part of the Acton Waterfront Park development. Connections north-west of the terraces are to be integrated with future planning and development of the Acton Precinct

A 3.5m wide accessible path is provided through the six sections of the park that provides a connection between the upper sections and the waterfront boardwalk. The scope of works integrates with Barrine Drive / Albert Street, providing a shared zone-style intersection to mark the start of the park. It also facilitates connectivity for all modes through Henry Roland Park.

Parking requirements

Parking would typically be required for a development of this nature based on the Territory Plan Parking and Vehicular Access General Code 2018. Based on this code, 26 parking spaces should be provided. As the site is a designated zone, the rates stipulated within the National Capital Plan apply. The West Basin Guidelines 2014 specifies that car parking should be limited.

There is no off-street parking proposed for the park in line with the aspiration to make the park a sustainable destination. There are ample alternative parking locations around the site – a total of 943 spaces either adjacent to the park or in Commonwealth Park. There is sufficient spare capacity in the nearby parking facilities.

There are no impacts to the car parking facilities with the proposed design.

Transport design principles

The concept design has been developed using the following transport principles:

- Fire and emergency access would during Stages 1A and 1B of the park's operation.
- Pedestrian connectivity has been developed based on the current master plan of the broader Acton Waterfront precinct.
- Regional cycling demands are separated from the promenade by the provision of a high-quality alternative corridor. The intent is for the waterfront promenade to have activities that would conflict with fast-moving cyclists. The alternative corridor has been designed to be an attractive alternative so that cyclists using the park for exercise prefer alternative routes.

Transport impact assessment

With the park being regionally or even nationally significant (based on the views to Capital Hill and destinations along the foreshore of Lake Burley-Griffin), the demand for the park could be greater than 1,000 people per day. The vast majority of trips would be by walking or cycling.

There are no local traffic generation rates identified for public parks. Using the Institute of Transportation Engineers Common Trip Generation Rates, the park would generate 0.6 vehicle trips in the PM peak hour. The café proposed could generate 8.6 vehicles per hour in the evening peak period. Overall, the park is expected to generate less than 10 vehicles per hour.

The total amount of gross floor area is less than 1,000 m² and the seating would accommodate less than 50 people. This puts Acton Waterfront Park in the category of not requiring detailed assessment. Existing and future transport and access networks and infrastructure can accommodate the number of vehicular and non-vehicular trips that are likely to be generated by the development.

The development does not alter any public transport routes but rather complements the numerous existing bus routes (services 2, 4, 6, 7, 57 or 58) available on Commonwealth Avenue opposite Regatta Place. Access to the site will be further enhanced with the completion of Light Rail Stage 2A, having a stop within 400m of the park.

The development of the AWP will provide new and improved pedestrian and cycling connections around Lake Burley Griffin. Under the current situation, the two pedestrian overpass bridges are the primary connection from the city to Acton Park. Hence it is expected that these will become key links to the park experiencing a greater demand for pedestrians and cyclists.

A preliminary construction traffic management plan has been prepared with likely truck volumes and haulage routes. Detailed Transport Management Plans would be prepared before each construction stage for authority approval.

An event transport concept has also been developed that responds to a 1,000-person event within the park. Recommendations are made about traffic management approaches to support patron safety.

Conclusion

The Acton Waterfront Park, therefore, meets the design requirements laid out in the West Basin Precinct Guidelines 2014 and delivers a park that will serve the important transport connectivity around Lake Burley-Griffin while providing an attractive destination.

1.0 Introduction

1.1 Background

The Acton Waterfront Park (AWP) project progresses an important piece of the Griffin legacy, continuing the Lake Burley-Griffin waterfront and supporting connections into New Acton.

The aspirations of City Renewal Authority for this space are to:

produce an exemplary, sustainable and globally recognisable urban park that connects people and celebrates our nationally significant heritage.

The boundary of the site is shown in **Figure 1-1**.

Figure 1-1 Acton Waterfront Park site boundary



Proposed Park Site Boundary —————

Project Extents - - - - -

Source: ACT Government, 2022

The purpose of this stage of work is to produce a sketch plan and achieve National Capital Authority (NCA) works approval by August 2023.

1.2 Purpose of the report

The function of the AWP extends beyond providing highly attractive open space, it also provides for walking and cycling connections in an east-west capacity and through to Acton via Parkes Way. This transport report supports the lodgement of the project for approval with the National Capital Authority (NCA).

2.0 Strategic Context

2.1 Site Context

Acton Waterfront Park proposal seeks to transform the Acton Waterfront precinct into a vibrant cultural and recreation zone, providing easy and convenient links to the Canberra City Centre. Characteristics of the site include:

- Acton Park is located within 10 minutes (900m) of the Canberra City centre
- Surrounded by parks and recreational zones to its east and west, with strong pedestrian and cycling connections along the waterfront
- To be integrated with the waterfront boardwalk (from Henry Rolland Park to Acton Park) currently under construction.

2.2 Commonwealth Government Planning Guidance

The development and transport planning responsibility in the Australian Capital Territory (ACT) is predominantly shared between two levels of government, the National Capital Authority, and the ACT government.

Specific regions, routes and landmarks are designated by the Australian Government and have to comply specifically with the National Capital Plan (NCP). Whereas the development in zones outside the NCP is guided by the ACT government under the Territory Plan (discussed further in Section 2.3).

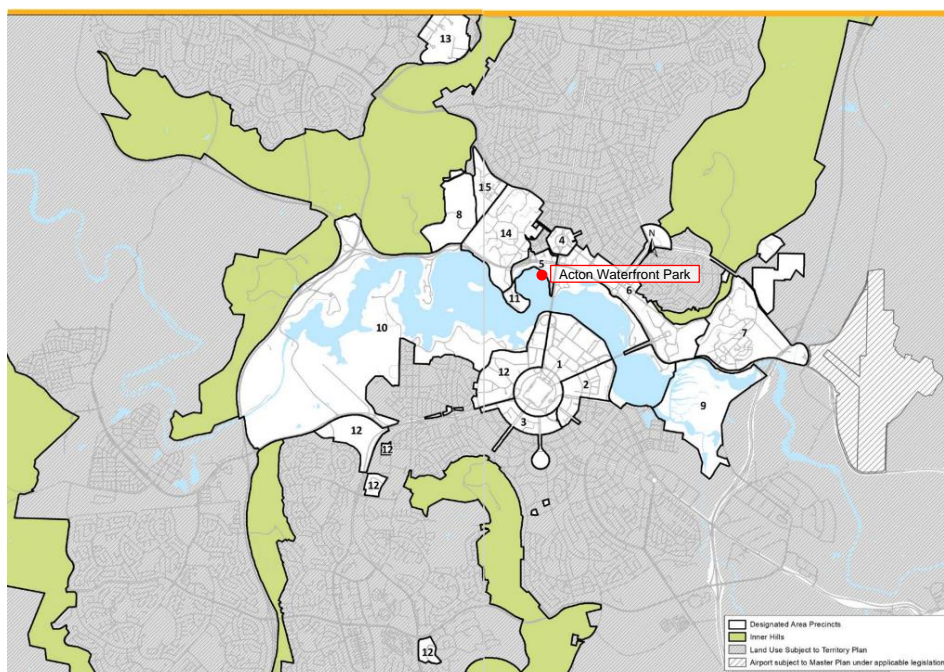
The NCP aims for 'Canberra and the Territory to be planned and developed following their national significance and hence an important planning document to be integrated with the design and development of the Acton Waterfront Park.

2.2.1 National Capital Plan

The National Capital Plan is the key planning document governing the development and planning within the nationally significant regions of the Australian Capital Territory.

The Acton Waterfront Park is located within one of the Designated Area Precincts and hence is regulated by the Australian Government. **Figure 2-1** illustrates the designated area precincts, with AWP falling under the West Basin precinct (precinct #5).

Figure 2-1 Designated precincts map

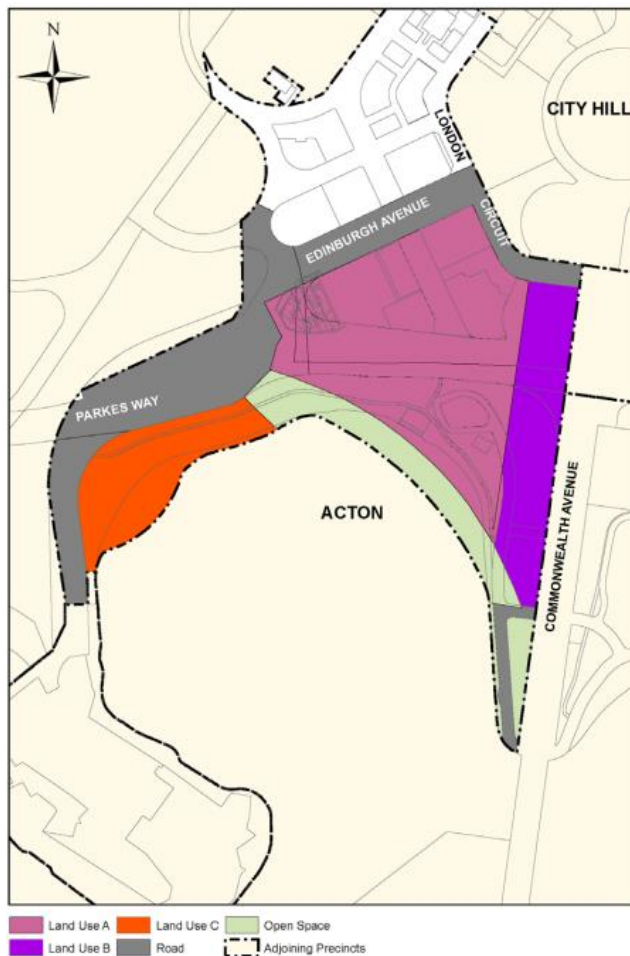


Source: National Capital Authority

The West Basin precinct is classed into four land uses (shown in **Figure 2-2**):

- **Open Space:** permitted land uses include aquatic recreation facility, café, bar, restaurant, car park, cultural facility, indoor recreation facility, pathway corridor, recreation, road, and park
- **Land use A:** mixed-use zone (provision for a variety of uses, including retail, accommodation, residential, social/community facility, office space, café, bar, restaurant, roadway, tourist facility, banks)
- **Land use B:** mixed-use zone (similar to land use A)
- **Land use C:** aquatic recreation facility, cultural facility, diplomatic Mission, place of assembly, national capital use, waterfront promenade with other ancillary uses as presented in the NCA.

Figure 2-2 Land use zoning map of West Basin



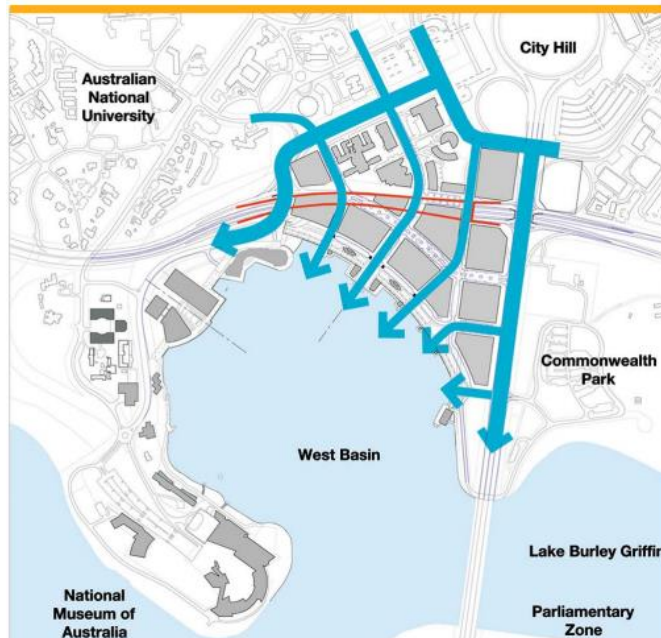
Source: National Capital Authority,

The Acton Waterfront Park site is classified as an Open Space land use zone (green).

The plan provides several development controls for the area, including the urban structure, development patterns, and connectivity from the city to the lake. The plan envisions multiple connections across Parkes Way to the foreshore (**Figure 2-3**).

Figure 2-3 Links to West Basin

Figure 58: West Basin – Indicative extension of the city to the lake



Source: National Capital Authority

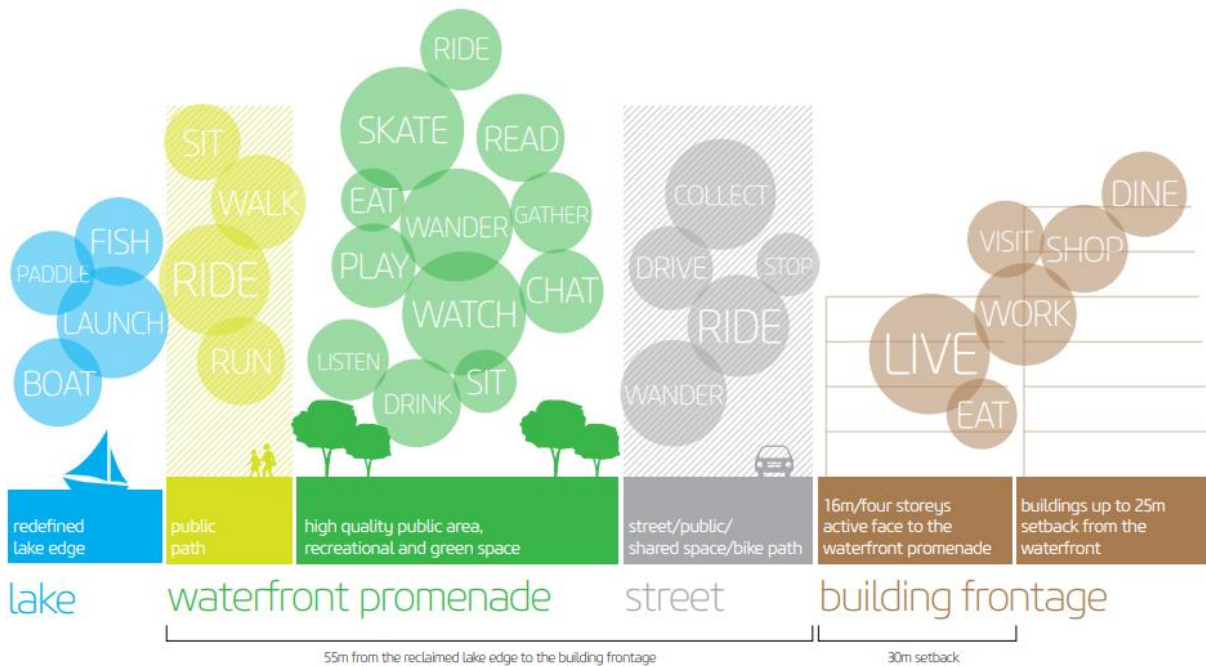
Implications for the site: AWP sits at the southwestern extent of connectivity that starts in Acton and City Hill. Major connections will join the park at several locations along its length.

2.2.2 West Basin Precinct Guidelines (2014)

The West Basin Precinct Guidelines set out direction and design requirements for the precinct. The Acton Waterfront Park site boundary is identified as Open Space Waterfront Promenade within the West Basin Guidelines. Specific guidance on transport around the Acton Waterfront Park site includes:

- The 55m waterfront may include a shared space roadway, with **limited car-parking** and access provision, but **allowing public transport, and disabled access**, and be located more than 40m from the lake edge. The shared space roadway shall be able to be temporarily closed for events.
- Design for very **low-speed vehicle access** to the waterfront
- **Prioritise pedestrian movement** over that of cars in laneways, minor and collector streets and public spaces.
- The design and surface materials shall provide subtle direction for the preferred use of the space, through the level, colour, and textural changes rather than using bollards and fences
- **Waterfront pathway** to seamlessly integrate into R.G Menzies Walk, at a **minimum dimension of 4.5m**, and preferably an unimpeded space of 10m wide.
- A pavilion/structure, that adds to the lake amenity may extend into the lake.
- Generous, **designated cycle commuter route** within the waterfront, but away from the lake edge.
- Connects to surrounding pathways and minimises conflict with pedestrians.
- **Public transport** stops at a **minimum of 400m** apart on the waterfront, and group bike facilities at stops.
- Footpaths and cycleways (other than on the waterfront) should be designed to have generous proportions, with a **minimum width of 2.5m**, and to exceed national standards.
- On-street car parking is allowed in streets other than the waterfront but must be carefully designed to minimise accessibility and visual impact.

Figure 2-4 Typical cross-section for Acton Waterfront Park



Source: West Basin Precinct Guidelines, 2014

Implications for the site: the guidelines focus on providing priority to active transport networks along the waterfront. A separate cyclist way to avoid pedestrian conflicts is to be provided as part of the Acton waterfront park design.

2.3 ACT Government Planning and Design Guidelines

2.3.1 Territory Plan

The Territory Plan is a statutory document prepared by the ACT government to guide planning and development in the ACT. It is used for the assessment of development applications and management of public land in the ACT. Strategic directions, land zoning, objectives for land zones and a set of general and specific codes are presented for each zone.

It is to be noted that the Territory Plan is prepared in support of the National Capital Plan, with areas part of the NCP classified as **designated zones** in the Territory Plan. The directions in the NCP take precedence over the Territory plan for the designated zones. The Acton Waterfront Park is classified as a designated area in the plan.

For the context of this report, the following sections of the Territory plan are referenced and used as a comparison for the potential parking requirement for an Open Space (containing mixed-use development) land use:

- Parking and Vehicular Access General Code
- Bicycle Parking General Code
- Parks and Recreation Zone Development Code

Implications for the site: Provides a guide for Open space parking rates and flavour of ACT government priorities for shifting towards a less car-dependent city.

2.3.2 ACT Transport Strategy

Published in 2020, the strategy sets the vision for Canberra to have a world-class transport system that supports a compact, sustainable and vibrant city. The ACT Transport Strategy has been developed alongside the *ACT Planning Strategy 2018* and *Climate Change Strategy 2019-2025*. This ensures that the transport and land use planning are integrated to provide better, direct, and variety of efficient connections for the community.

Key directions to support the delivery of the world-class system over the next 20 years include:

- Meeting the diverse needs of all Canberrans with a high-quality customer experience and accessible design.

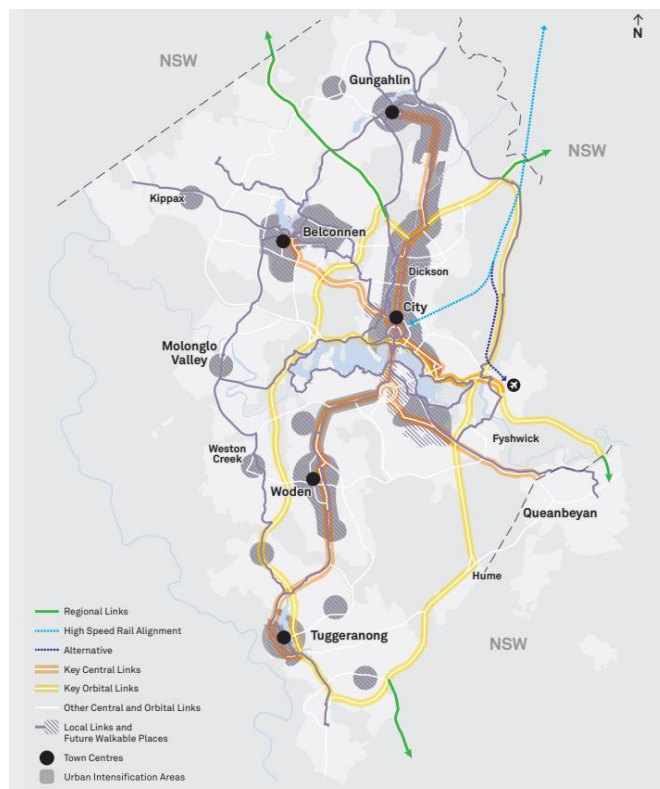
- Integrating with land use planning to shape a more compact, vibrant, and accessible city.
- Providing a wide range of journey opportunities, and the ability to travel at different times of the day and to change destination mid-trip.
- Getting people and goods to where they need to be, when they need to be there, in a predictable manner, remaining resilient to unforeseen events.
- Leading the way in the switch to zero-emission transport technologies and providing choices that will reduce the ACT carbon emissions. Aim for public transport to transition to zero emissions by 2040
- Improving the health and well-being of all Canberrans by expanding opportunities to travel by public transport, walking and cycling

Key transport initiatives include:

- Investigating more Rapid Routes and Feeder/local routes
- Future CBR cycle routes network will build new and upgraded offroad paths and protected bike lanes for trips across the city and support urban intensification areas, the Parliamentary Zone and planned growth areas such as the Molonglo Valley.
- The ACT Government will expand dockless bike share to include electric scooters and electric bikes for use in public spaces across Canberra and continue to welcome shared car and micro-mobility schemes to provide options for Canberran

The strategy builds on the Movement and Place framework to categorise the future road network into four overarching classes. This is illustrated in **Figure 2-5**.

Figure 2-5 Conceptual transport network 2045



Source: ACT Transport Strategy, 2020

The Movement and Place framework encourages practitioners to balance the needs of all road users and not simply apply car-oriented thinking. It prioritises users based on the place function of the road and its significance for movement. The strategy categorises the ACT's road network into four overarching classes as illustrated in **Table 2-1**.

Table 2-1 ACT road network categories

Link type	Function	Examples of streets around the Acton Waterfront Park (AWP)
Local links	<ul style="list-style-type: none"> – Short trips, focused on walking and cycling – Integrated with places for social interactions, enhancing the quality of life and vibrancy in local centres and areas – Provide access to public transport 	<ul style="list-style-type: none"> – Barrine Drive (east of site) – Albert Street (east-west access to the site) – Lawson Crescent (west of site)
Central links	<ul style="list-style-type: none"> – Efficient transport movement between centres and growth regions by public transport, walking and cycling – Central links to support the development of centres and urban intensification areas 	<ul style="list-style-type: none"> – Northbourne Avenue – north of City Hill and the site, is a central connection for the current Canberra Metro Stage 1 – Commonwealth Avenue – directly east of the AWP and is the planned route for Canberra Metro – Constitution Avenue – north-east of AWP and classified as the main cycling route from City to Campbell, a suburb slightly to the south-east of the city)
Orbital links	<ul style="list-style-type: none"> – Focused on reliable connections with private vehicles and freight connections for journeys around the city – Enhance road quality and integration of intelligent technologies to maintain safety, and reliable journey times and manage congestion on the network providing users with real-time information about their journey in advance. 	<ul style="list-style-type: none"> – Parkes Way- parallel and north of AWP, providing fast vehicle and freight movement
Regional links	<ul style="list-style-type: none"> – To provide efficient long-distance and regional connectivity – Includes enhancement and management of road freight routes, a rail connection between Sydney and Canberra, and air routes for local and international flight travel 	<ul style="list-style-type: none"> – Federal Highway – 25 minutes drive northeast of the site, provides a connection to Sydney and other towns in between.

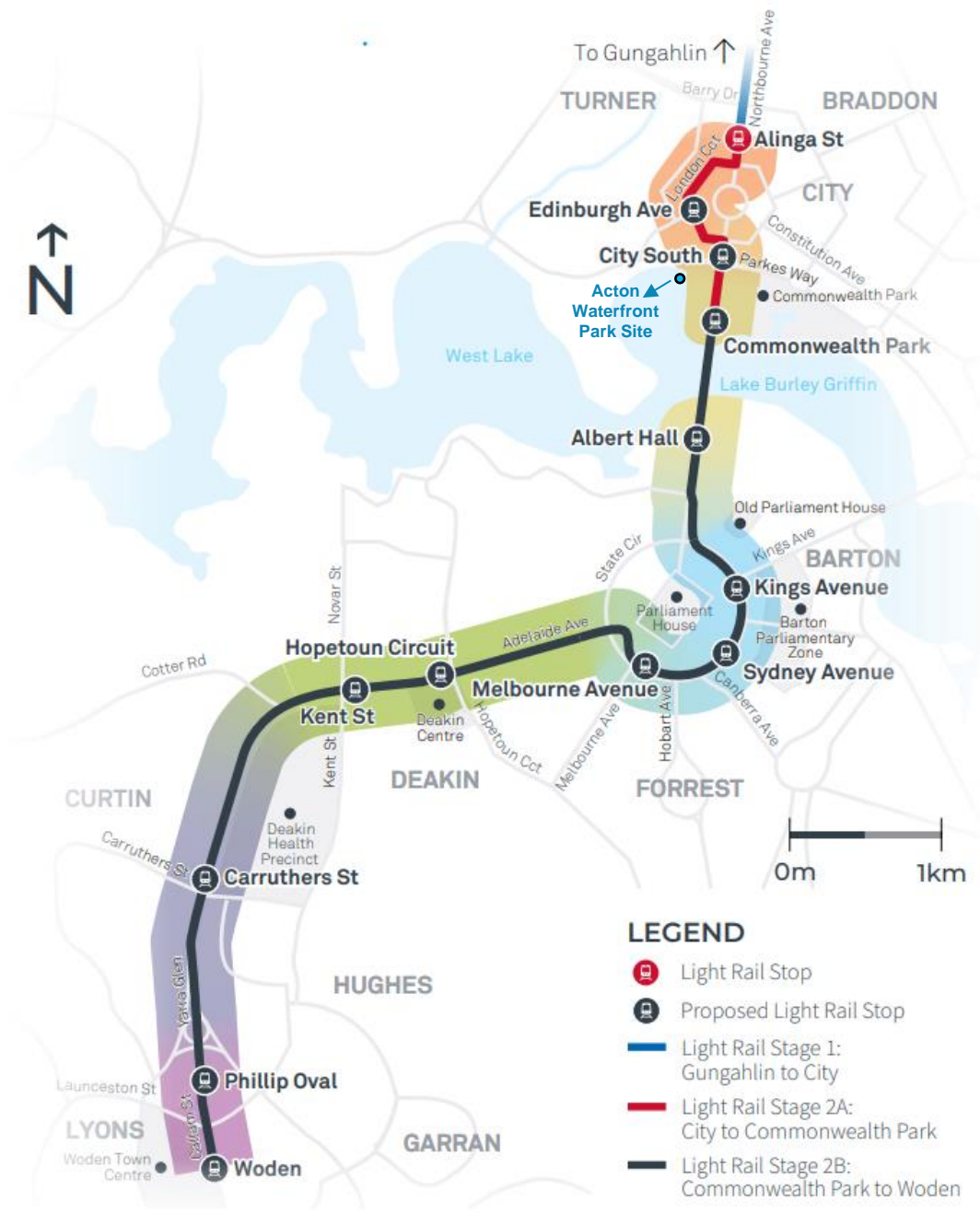
Source: ACT Transport Strategy, 2020

Implications for the site: The Acton Waterfront Park development supports the ACT Transport Strategy's vision for an exemplary transport system that is accessible to the diverse needs of the community. The enhancement of the waterfront through open space and a network of footpaths and cycle paths creates attractive active links for families and the community to enjoy, improving the health and well-being of Canberrans and aligning with the 20-year liveable neighbourhood vision.

2.3.3 Canberra Light Rail

Canberra has seen significant public transport development in recent years with the introduction of a new bus network and Light Rail Stage 1 completed in 2019. The stage 1 light rail route connects the Canberra Central District to Gungahlin, the northernmost district of the ACT. The ACT transport strategy adopted in 2020 suggests a positive response to Light Rail Stage 1 and embraces the opportunity for Canberrans to adopt more public transport options upon completion of Light Rail (City to Woden).

Figure 2-6 ACT Light Rail route map



Source: ACT Government Light Rail to Woden, 2022

The Light Rail Stage 2 is an 11km long route that will connect the Canberra CBD to Woden via the Parliamentary Triangle. It is to be delivered in the following two stages:

- **Stage 2A:** 1.7km route, from Alinga Street in the CBD to Commonwealth Park, strengthening the connection between the city and lake and providing a direct improved public transport connection to the proposed Acton Waterfront Park. The **raising of London Circuit** is a key major road project as part of Stage 2A that involves the construction of an at-grade intersection with Commonwealth Avenue, providing crucial infrastructure for the light rail connection to Commonwealth Park.
- **Stage 2B:** this is the latter part of the City to Woden light rail connection and comprises the construction of 12 additional stops between Commonwealth Park and Woden town centre, which is approximately a 15min drive from City Hill.

The expected completion of ACT Light Rail Stage 2 is in 2024.

Implications for the site: The Light Rail will complement the Acton Waterfront Park development by providing a key connection from greater Canberra to the city and AWP. This promotes a shift towards sustainable mode share over car usage for work or recreational journeys. The light rail stop at Commonwealth Avenue responds to the West Basin guideline of having public transport connection within 400m of the AWP.

2.3.4 Relevant Guidelines and Standards for parking and transport

The following guidelines have been used to inform and access the required transport infrastructure for the development:

Table 2-2 Reference to guidelines used in the preparation of the report

Document	Section	Purpose
Municipal Infrastructure Standards	MS 01 Street Planning and Design	Guides road hierarchy, cross-section etc
	MS 05 Active Travel Facilities Design	Guides footpath classifications and widths
Guide to Traffic Generating Development (NSW) and supplementary technical directions	Traffic generation and parking generation rates	Understand traffic and parking demands
Trunk Road Infrastructure Standards (TRIS) Guidance on road design and cross-section, primarily based on Austroads and supplements provided specifically to ACT	Trunk Road Infrastructure Standard No. 01 Road Planning Supplement to Austroads Guide: Road Transport Planning	Guidance on ACT Road Hierarchy
	Trunk Road Infrastructure Standard No. 02 Road Design Supplement to Austroads Guide: Road Transport Planning	Specifies local road widths are to be per the Estate Development Code DV 306.
AS 2890.5 Parking – on street	All	Understand requirements for on-street parking

2.4 Floriade Festival

Floriade is an iconic festival for Canberra, celebrated every Spring from mid-September to mid-October at Commonwealth Park, located along Lake Burley Griffin, just east of the subject site. It is a display of a range of colourful annuals and bulbs spread across Commonwealth Park. The festival is celebrated since 1988 and completes its 34th year in 2022. It attracts thousands of visitors, with a record crowd of **94,586** visiting the festival across the **three-day long weekend** in October 2018. Additionally, NightFest, held over four evenings, brings Floriade to life during the night by illuminating the flowers with a display of lights along with live entertainment.

Entry to Floriade between 9.30am-5.30pm is free with the last entry restricted at 5pm. The NightFest, which runs for four nights between 6.30pm -10.30pm from Thursday to Sunday, is a ticketed event. Food, beverages and market stalls are available throughout the day and evening.

Due to its popularity, the festival attracts crowds across Sydney and Canberra, accounting for a high parking demand. Public car parks around Commonwealth Park that can be used during the event include:

- Commonwealth Park carpark at Regatta Place
- Car parks at Acton Park off Commonwealth Avenue
- Car park at Constitution Avenue south of Coranderrk Street
- Public car parks off Allara, Coranderrk, and Cooyong Streets
- Public car parks off London Circuit (0.6 to 1.2km).

The car parks are within 200m to 1.5km of Commonwealth Park. It is expected that visitors are likely to walk a few minutes or catch a bus service from the city to the event.

Other ways of getting to Floriade include bus services from the City Centre to the Commonwealth Avenue bus stop, opposite Regatta Place, and a short walk to the festival entrance. Bus routes servicing around Commonwealth Park

include 2, 4, 6, 7, 57 or 58. Catching the light rail to Alinga Street at the City Centre and approximately walking 20mins to the festival is also an alternative to driving to the event.

Implications for the site: Floriade is a major trip attractor, and it is expected that demands will spill out from Floriade to the AWP during its operation. The car parks to the north of AWP are key overspill parking for Floriade, however, these may be impacted by the development to the north.

3.0 Existing Conditions

The reclamation of the lake for the Open Space zone is currently underway in conjunction with the boardwalk construction.

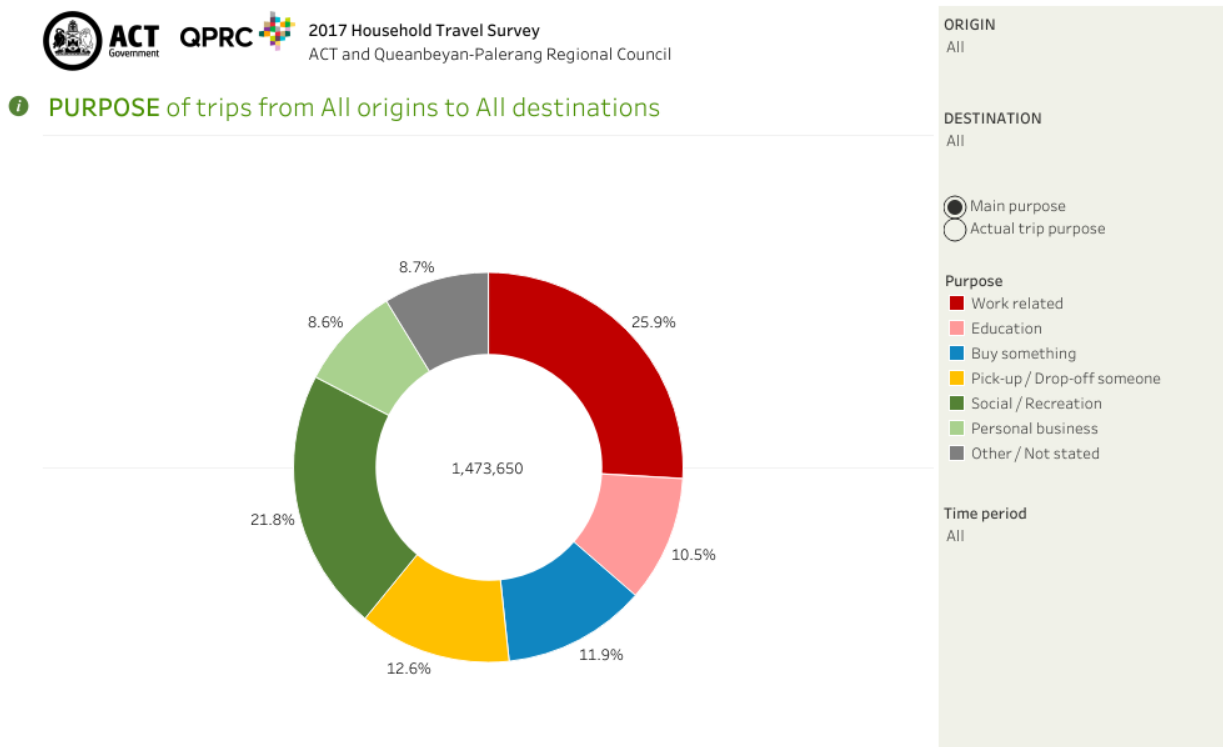
3.1 Recreational travel characteristics

Acton Waterfront Park is a recreational destination, meaning that trip generation characteristics differ from a typical generator. Key characteristics of recreational travel are:

- Increased preference for walking and cycling
- Travel as a destination – some recreational trip destinations are the transport facility itself
- Less of a focus on speed or efficiency
- Greater preference for ‘place’ aspects, such as tree canopy, quieter roads, and lower slopes.

The 2017 Household Travel Survey showed that social/recreational accounts for 21.8% of travel purposes (Figure 3-1).

Figure 3-1 Mix of trip purposes



A results summary brochure is available for download from: <https://www.transport.act.gov.au/about-us/planning-for-the-future/household-travel-survey>

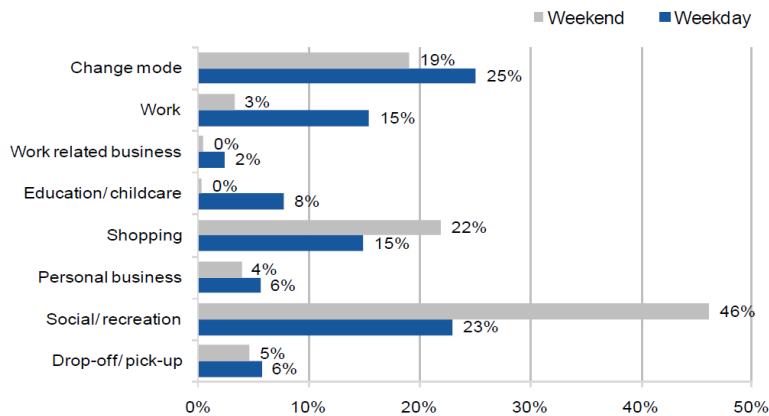
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Source: ACT Government, QRPC, 2017

Unfortunately, mode share for recreational trip purposes is sparse. Data was not able to be located for Canberra.

Using NSW-based data, social/recreation is one of the main purposes of walking trips. On the weekend, this becomes even higher with social / recreation accounting for 46% of walk trips.

Figure 3-2 Purpose of walk trips in 2010



Source: TfNSW, 2013

With social/recreational purposes accounting for high levels of active transport, walking and cycling are expected to account for the vast majority of trips.

3.2 Walking transport network

- Shared paths (provision for cyclists and pedestrians) exist along the Lake Burley Griffin waterfront
- Pedestrian access between the city centre and waterfront is primarily provided by the shared path bridges from Marcus Clarke Street and Allara Street.
- Waterfront shared path width range from 2.5m-4.5m

Figure 3-3 Strategic walking and cycling network (overview)

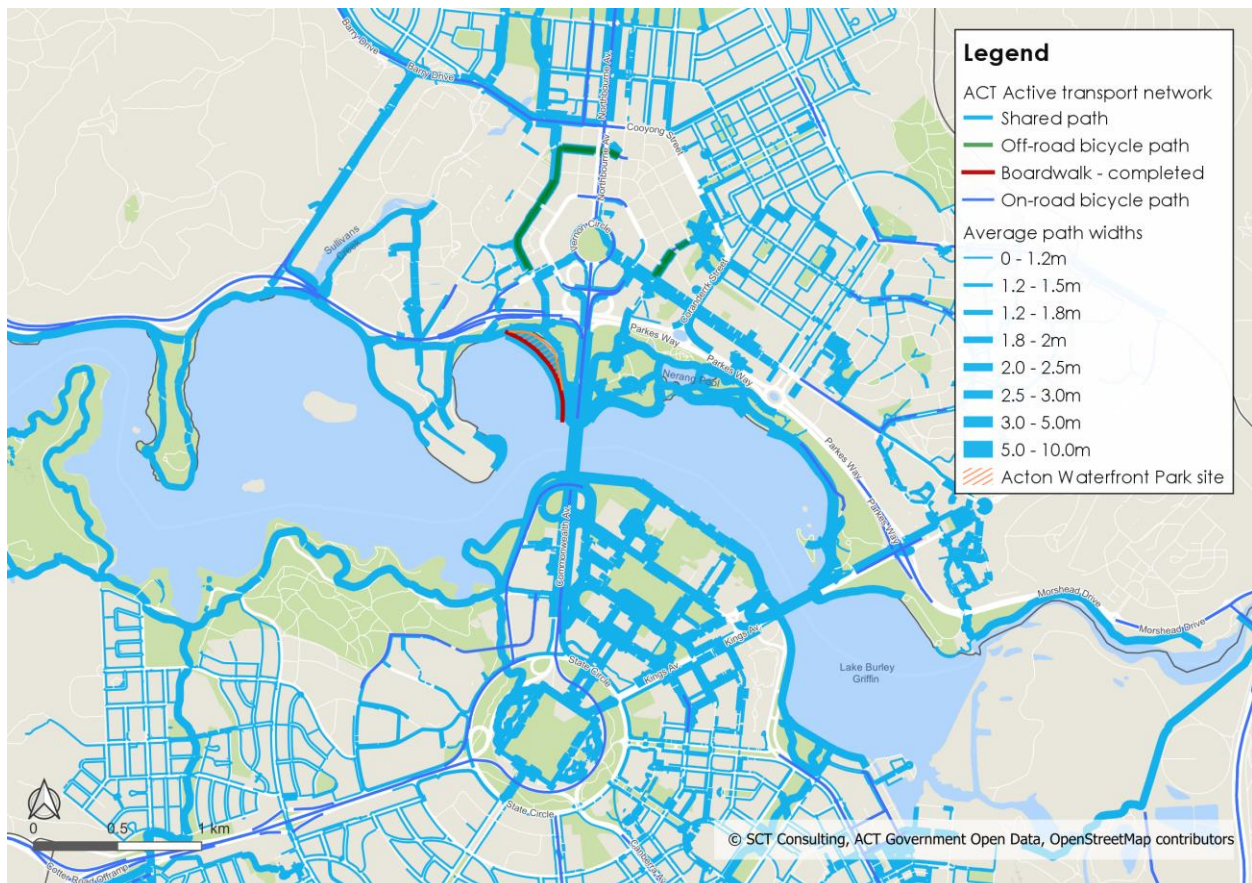
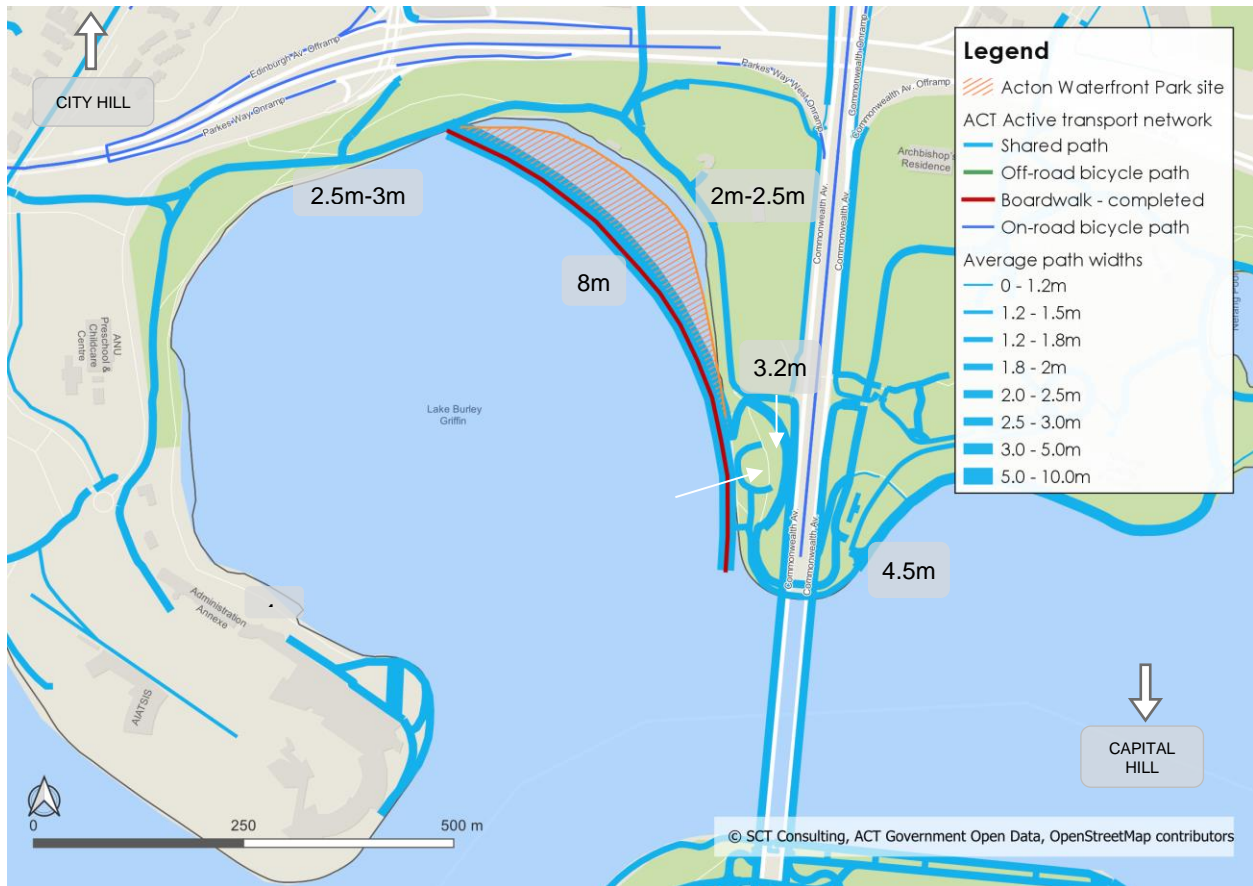


Figure 3-4 Strategic walking and cycling network (close up)

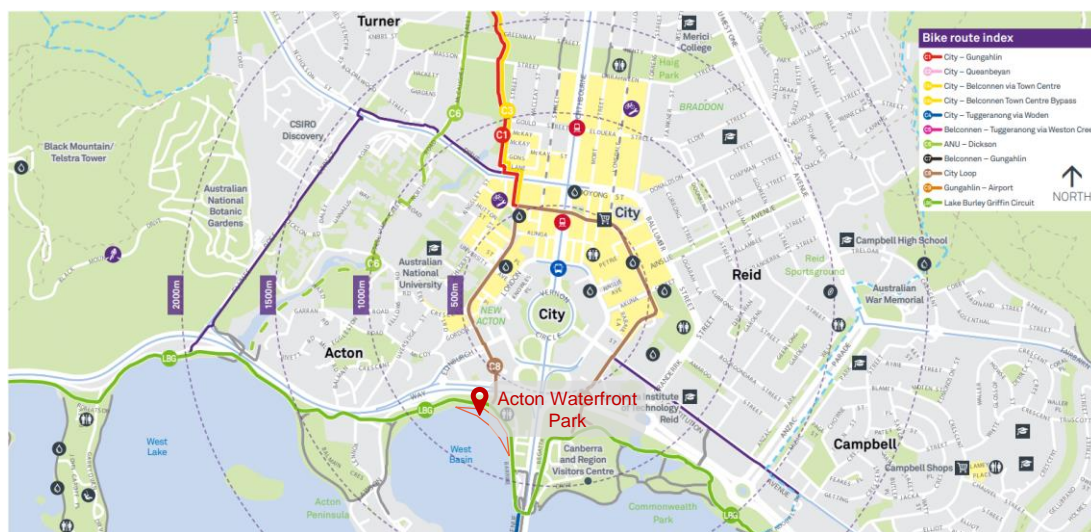


Source: SCT Consulting, © OpenStreetMap Contributors, ACT Government Open Data, 2022

3.3 Cycling transport network

According to the ACT road rules, cyclists are permitted to use footpaths provided they give way to pedestrians. As a result, almost all footpaths/shared paths are attractive for cyclists. Some routes are elevated to be more strategic in significance (Figure 3-5).

Figure 3-5 Strategic cycling routes in Central Canberra



Source: Access Canberra, 2022

- At the eastern end, the key tie-ins for cycling are the shared path east of Barrine Drive and the waterfront promenade. At the western end, where fewer public domain works have occurred, the cycling links are primarily via Lake Burley Griffin Walk, which takes cyclists around the lake.
- The Waterfront provides important connectivity for cycling. Strava data (**Figure 3-6**) shows heavy use of the waterfront promenade by cyclists recording with Strava (usually undertaking exercise rather than commuting).
- Cyclists will expect that the waterfront promenade will cater for regional cycling connectivity. If the design wishes to encourage cyclists away from this space, it will require clear and attractive alternative cycling facilities.

Figure 3-6 Strava Metro data (purple = heavy use, orange = light use)



Source: Strava, 2022

- Tie-ins to other cycling facilities will be less critical on the western side, where there is an expectation of future public domain enhancements. On the eastern side:
 - Connectivity to the Henry Rolland Park shared path makes sense to cater for exercise cyclists. The shared path is not along the key desire line for pedestrians and will therefore be more attractive for this user group. This path is about 3.4m wide. This is an opportunity to reduce the attractiveness of the waterfront promenade for this user group as well.
 - The waterfront promenade connectivity will remain attractive for cyclists. As **Figure 3-6** shows, it is normal for cyclists to use the waterfront promenade, even for exercise.

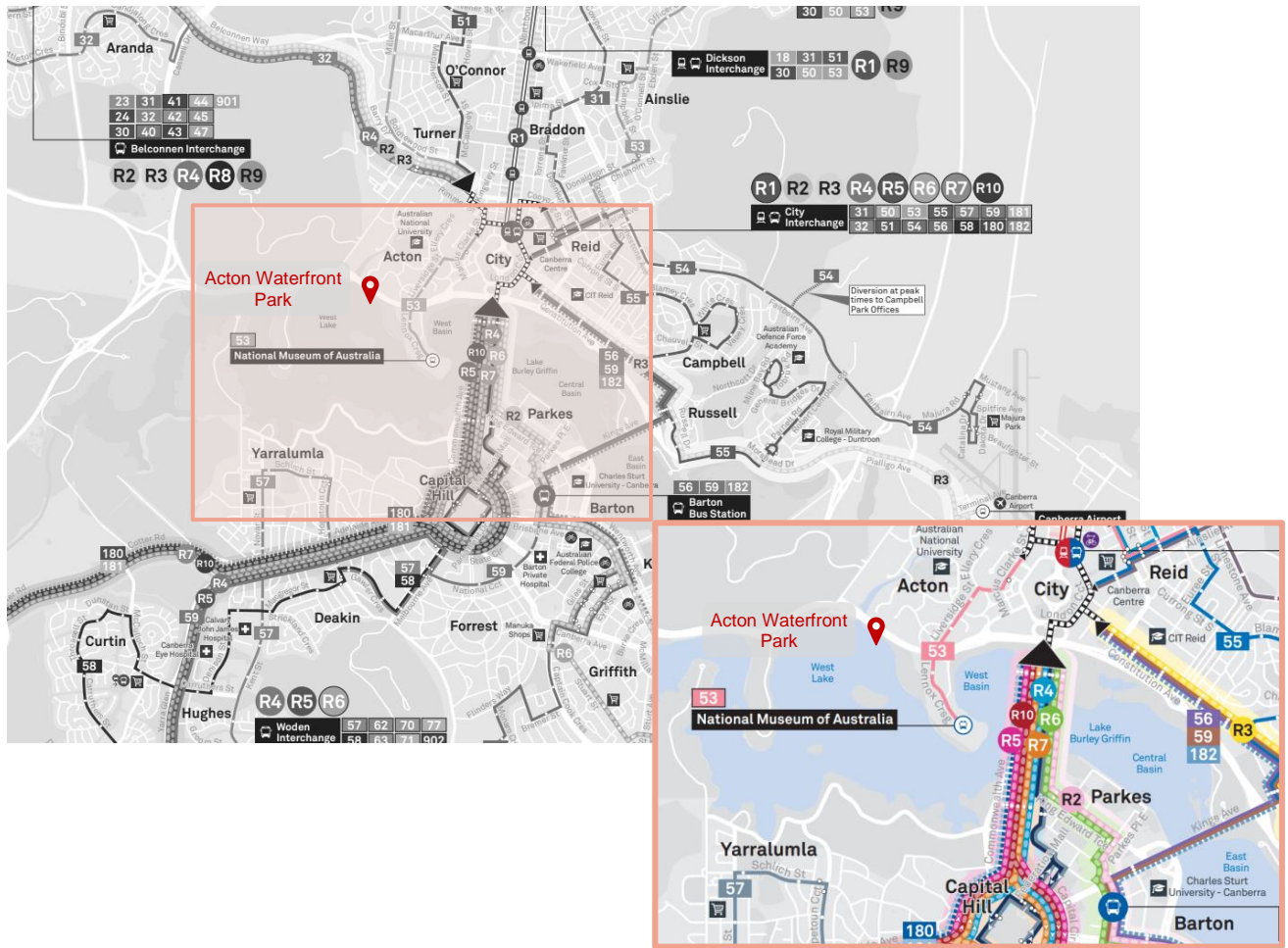
3.4 Public transport

Canberra's public transport system is predominately serviced by its bus network, with a fleet of 450 buses and 2500 bus stops around the Australian Capital Territory. The light rail stage 1 Gungahlin to Canberra City Centre, completed in 2019, provides additional connections for passengers travelling to northern Canberra.

More specific to the subject site, Commonwealth Avenue, within 500m of Acton Park is the central spine for rapid bus routes, connecting southern suburbs to the city and beyond to the northern areas. Currently, ten bus routes, of which six are rapid bus services traverse through the bus stop at Commonwealth Avenue opposite Regatta Place. 14 services to the city are available between 10am-11am and 12 services between 5pm-6pm on Saturday.

The public transport routes servicing Acton Park and its surrounds are shown in **Figure 3-7**

Figure 3-7 Public transport network



Source: Transport Canberra Maps, 2022

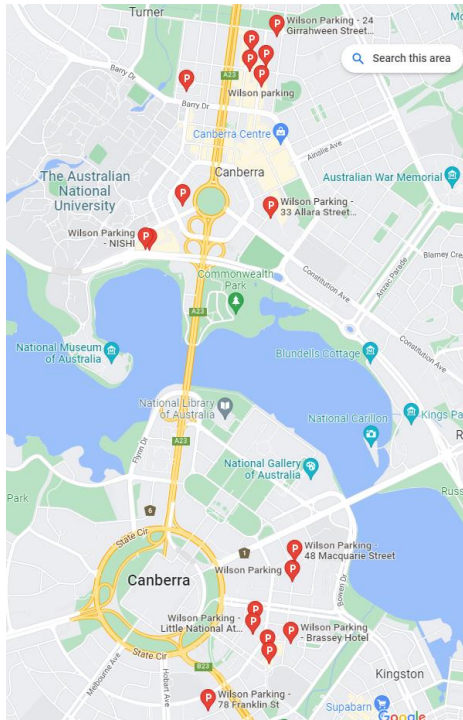
Additionally, route 53, Dickson to National Museum of Australia is within a 20mins walk from the Acton Ferry Terminal. It is to be noted that the ferry terminal is not currently in operation. Constitution Avenue, less than 2km (approx. 16 mins walk) from Acton Park, also serves as a central link for travellers from south-eastern Canberra. Light rail, Gungahlin – City, from Alinga Street (approx. 20mins north) services between 6am-11pm on weekdays, and till 1am on weekends. Frequency ranges between 5mins in AM peak (7am-9:30am) and 6mins in PM Peak (3:30pm-6:30pm) and every 15mins on weekends and public holidays.

3.5 Parking

Parking options are abundant around the vicinity of the site. Parking facilities range from private/public off-street parking facilities to on-street parking.

The key owners of off-street parking are the ACT government, National Capital Authority, privately held public car parks (e.g., Wilsons car park, **Figure 3-8**) and private car parks.

Figure 3-8 Wilsons parking facilities along Constitution Avenue

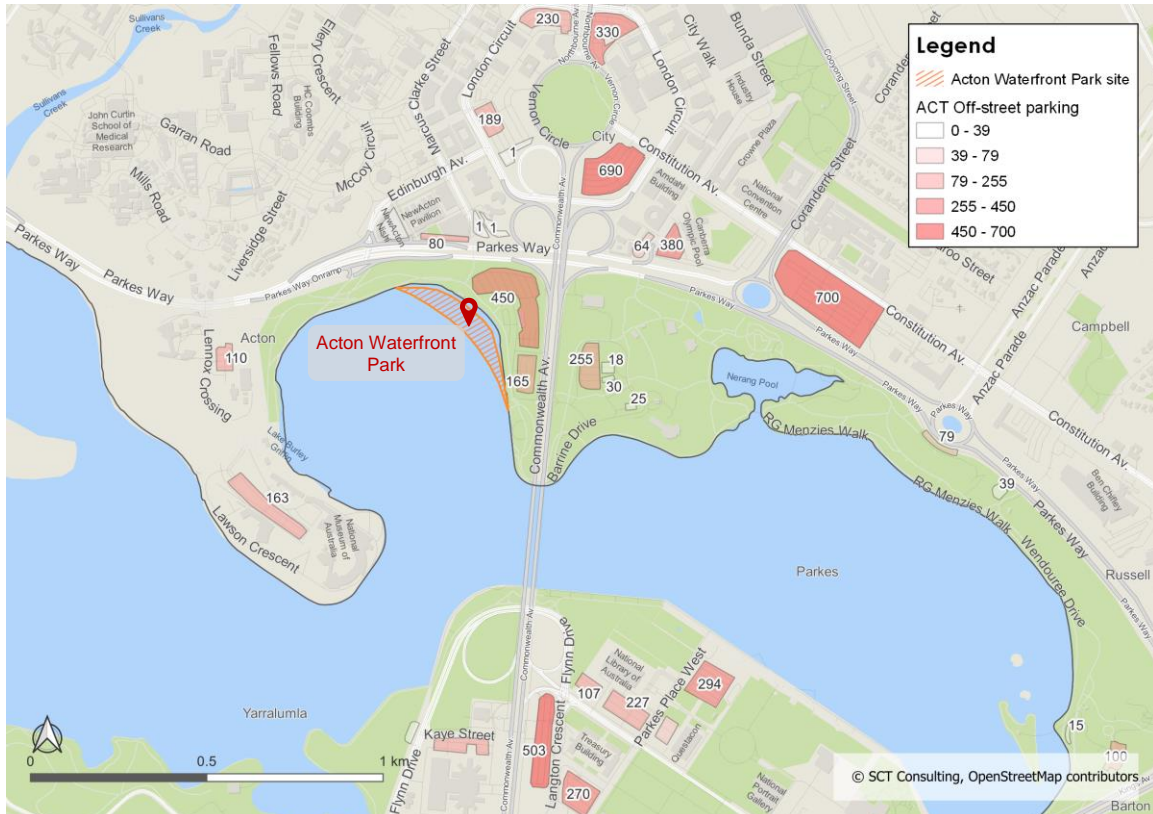


Source: Wilsons, 2022

Privately held, publicly accessible car parks are provided particularly along Constitution Avenue, which runs north-south through Canberra and features some of the key activities in the centre.

Figure 3-9 provides an overlay of key publicly accessible car parks in the vicinity of AWP.

Figure 3-9 Key off-street parking facilities in the vicinity of AWP



Source: ©SCT Consulting, OpenStreetMap Contributors, ACT Government, 2022

It is to be noted that Barrine Drive off-street parking, approximately providing 615 spaces, would be redeveloped as part of the Acton Waterfront precinct.

Overall, parking is abundant around the site, with a substantial supply northeast of the site and within a short distance. There is also a range of options south of the lake, north of State Circle.

3.6 Road network and classification

The site, primarily the 55m waterfront zone, is bounded by Barrine Drive, a local access road and Lake Burley Griffin Circuit (LBG), an active transport link to its east and Lake Burley Griffin to its west. From a wider perspective, two key movement corridors run adjacent to Acton Park. This includes Constitution Road classed as a central link in the transport strategy to the east and Parkes Way an orbital link to the north.

The key roads surrounding the subject site are:

- **Parkes Way** to the north of the site is a two-way arterial road, providing an east-west connection along the edge of Lake Burley Griffin. It has two lanes in each direction and additional exit lanes for city-centre connections through Edinburg Avenue and Commonwealth Avenue. It is a key movement corridor for local and regional vehicle traffic with a speed limit of 80km/h, transitioning to 90km/h further west. Based on its high speed and movement significance no footpaths exist directly along Parkes Way. Two pedestrian overbridges, east and west of the Commonwealth Avenue overpass run across Parkes Way, providing direct active transport links to the city. The overpass imposes a 4.5m height restriction, and a detour to Commonwealth Avenue is available for large heavy vehicles.
- **Commonwealth Avenue** bisecting Parkes Way through a grade-separated overpass is the central north-south spine for the city of Canberra. It follows Griffin's alignment and is a gateway to the parliamentary zone precinct, also considered the main avenue in the NCP. It is classified as an arterial road and has three lanes in each direction, connecting to Vernon Circuit in the north and Capital Circuit and Parliament House in the south. The northbound and southbound lanes are separated by an 11.8m wide grassed median. Additionally, Commonwealth Avenue facilitates access to Acton Park and Commonwealth Park via left-in and left-out turns at Albert Street. It has a speed limit of 70km/h and the bridge over Lake Burley Griffin is subjected to a 32-ton gross load limit.

Pedestrian facilities are provided along Commonwealth Avenue, including 2m footpaths on both sides along with a signalised crossing just north of Albert Street. The wide median provides a safe refuge point for pedestrians crossing the nearly 40m wide carriageway and a direct link from the Regatta Place public car park to Acton Park. On-road cycle lanes, approximately 1.5m wide, run parallel to the vehicle lanes in both directions and transition into a footpath along the bridge.

- **Albert Street** is a local road, positioned east and west of Commonwealth Avenue and provides sole vehicle access to Acton Park and Commonwealth Park. It has a single lane in each direction accommodated within a 6.8m carriageway. The Commonwealth Avenue median restricts through movement on Albert Street, hence only left-in and left-out turns are permitted. Traffic wishing to turn right from either the east-west legs of Albert Street are required to use the Barrine Drive loop to access the opposite direction or travel along Commonwealth Avenue and return via Vernon Circuit. No on-street parking is allowed on Albert Street. Footpaths are available on both sides and connect to local park pathways and car parks.
- **Barrine Drive** is also a local road with a greater place significance than having priority for car movements. It runs along the fringe of Lake Burley Griffin and offers fresh wide views of the lake. In general, it can be considered in three sections:

Barrine Drive East, east of Commonwealth Avenue is the primary access for Commonwealth Park and its parking, along with providing a pedestrian connection to the lakefront walk.

Barrine Drive West, just south of Albert Street, passing through Henry Rolland Park, functions as a shared zone within a 6.4m two-way carriageway. The shared zone has a 10km/h speed limit with a flushed street surface and decorative paving to signify its shared space characteristic.

Barrine Drive North, west of Commonwealth Avenue, currently services the two car parks around Acton Park and connects to Corkhill Street, which provides a secondary exit from Acton Park to Commonwealth Avenue.

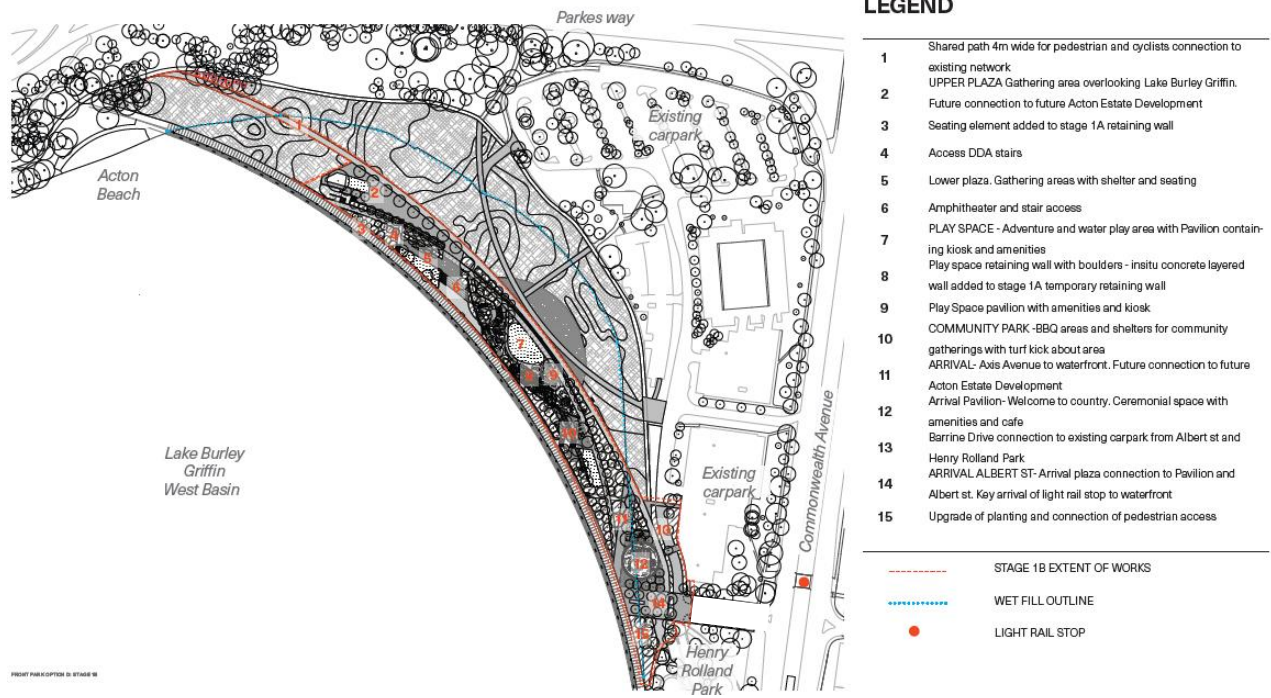
Barrine Drive terminates at the Acton carpark in the north.

4.0 The Proposal

4.1 Proposal overview

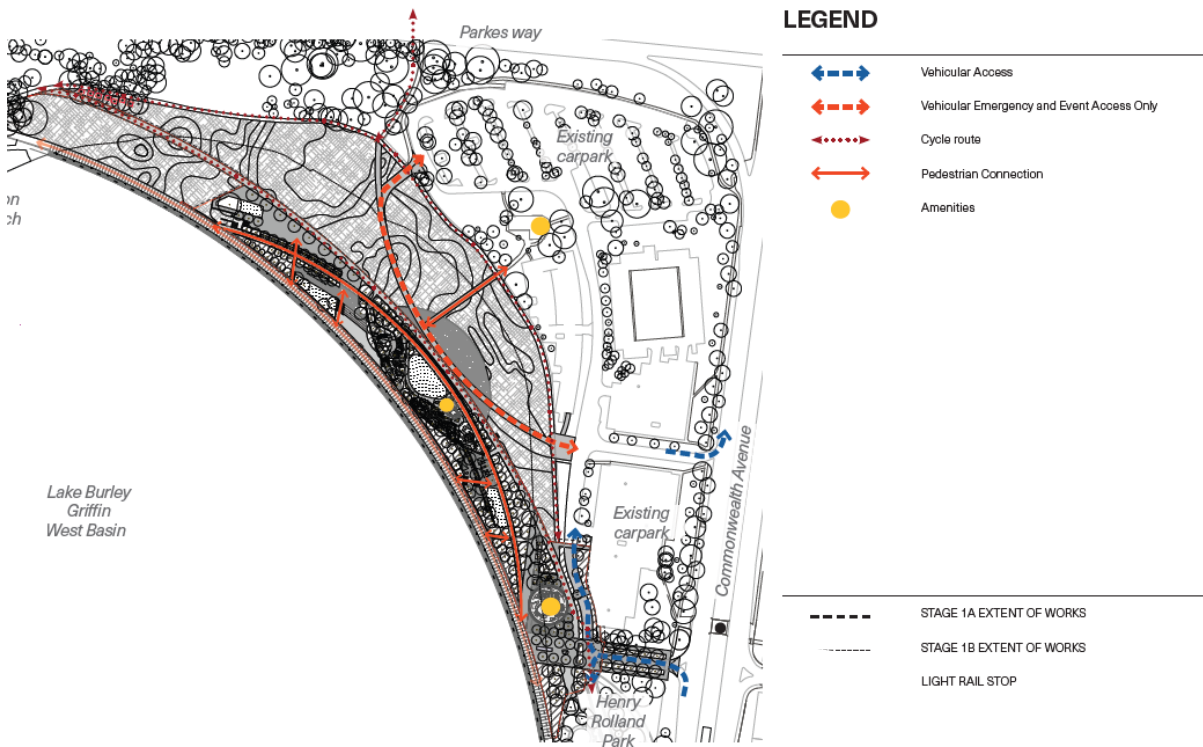
The Acton Waterfront Park (AWP) proposal located at the heart of the Acton Waterfront precinct aims to provide a renewed and attractive public open space with multiple uses for the community to enjoy. The proposal is shown in **Figure 4-1** and **Figure 4-2**.

Figure 4-1 Stage 1B Inclusion of works



Source: ASPECT Studios, May 2023

Figure 4-2 Stage 1B, AWP circulation and movements



Source: ASPECT Studios, May 2023

Key access and connection routes include:

- **Trunk cycle route**, 4.0m wide, running parallel to the boardwalk and catering for exercise cyclists through an uninterrupted cycling track.
- **An accessible footpath** provides a 3.5m connection as an arc from the boardwalk, providing connectivity throughout the park.
- **A vehicle access** supporting waste collection, emergency access and access during events.
- **A Boardwalk**, an 8.4m-wide waterfront walkway, connecting to Henry Rolland Park in the south and the existing Lake Burley Griffin Walk in the north. The boardwalk is anticipated to be used by both pedestrians and recreational cyclists. The boardwalk is also a DDA-compliant route.

The boardwalk has been designed to be more attractive for dwelling than for movement. With the provision of a trunk cycle route, experienced cyclists are likely to prefer the trunk route as it will likely be faster and less interrupted.

The transport by mode is summarised in **Table 4-1**.

Table 4-1 Summary of transport mode access

Mode	Configuration
Walking	A DDA-compliant shared zone connects the existing car parking and toilet facilities to the park
Cycling	Cyclists use the existing alignment of Barrine Drive or the waterfront promenade
Car	Drivers park in existing parking facilities within the vicinity of the park
Waste / emergency	Under current plans, waste vehicles can travel along Barrine Drive. An emergency vehicle path will be provided as part of Stage 1A and 1B

4.1.1 Staging

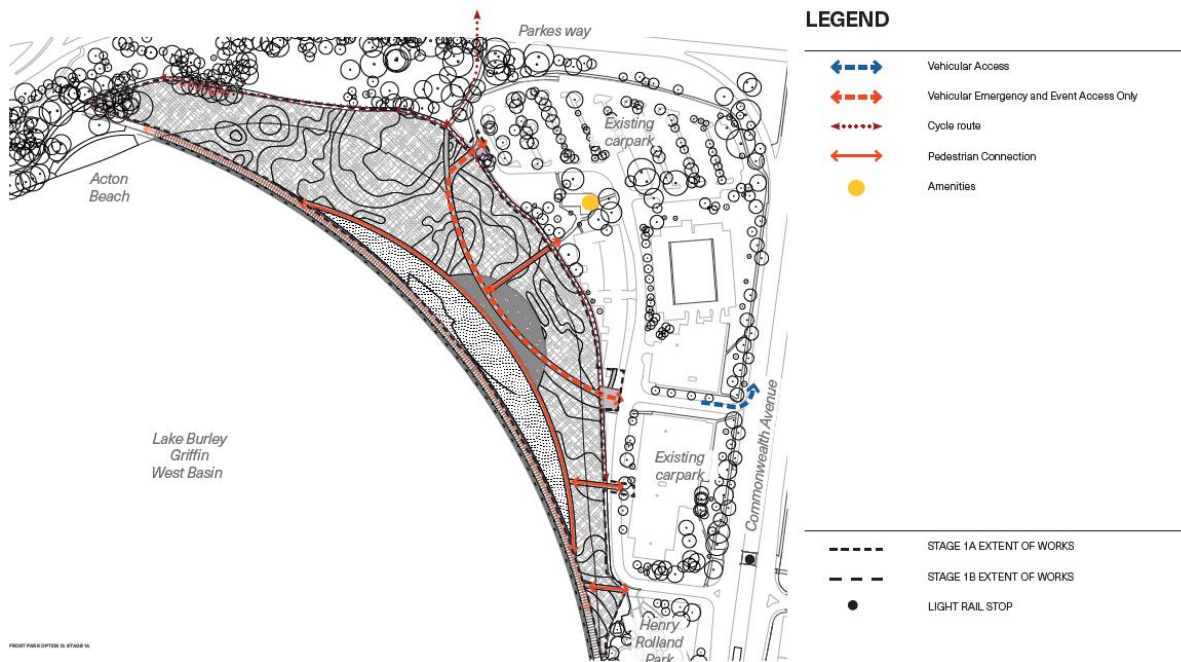
Stage 1A includes the completion of bulk earthwork with native dry land meadows treatment. A 3.5m wide pedestrian path is proposed to be constructed as part of Stage 1A. This is shown in **Figure 4-3** where it will be turned into in situ concrete as part of stage 1B. This is one of the primary pedestrian paths that connect the northern and southern extents of AWP. A one-direction emergency vehicle-only path will be constructed during Stage 1A for ambulances shown in **Figure 4-4**.

Figure 4-3 Stage 1A inclusion of works



Source: ASPECT Studios, May 2023

Figure 4-4 Stage 1A AWP circulation and movements



Source: ASPECT Studios, May 2023

4.1.2 Mix of uses

The Acton Waterfront Park is proposed to include the following uses:

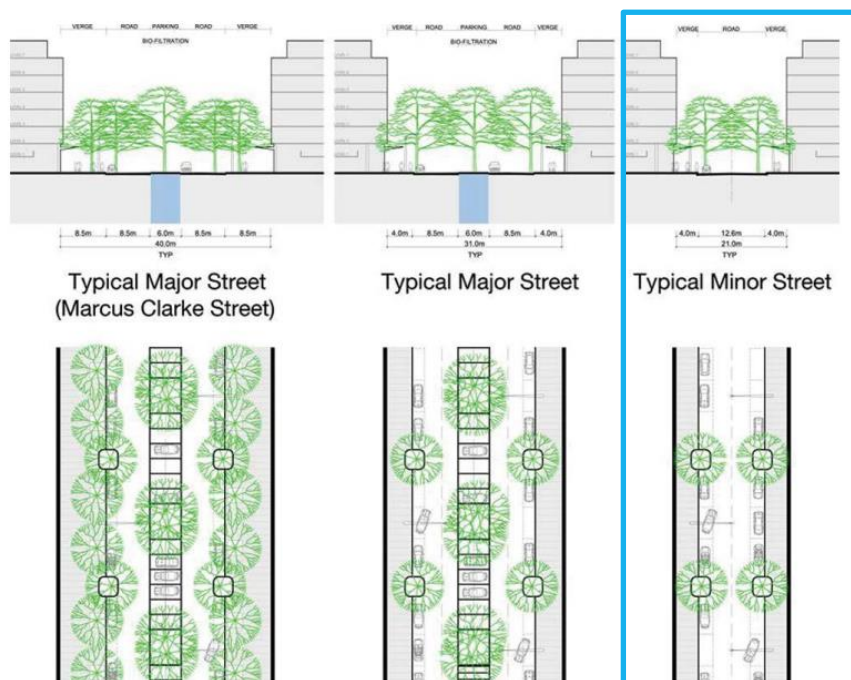
- Gathering spaces – such as an amphitheatre
- Open green spaces/lawns – for relaxing, picnics or events
- Accessible play space – playground attracting children and families
- Two pavilions – to cater for community events and gatherings, weddings and provide public amenities
- Waterfront promenade in the form of a boardwalk – to cater for pedestrians and recreational cyclists (young children pedal cycling, slow adult cyclists, etc.)
- Dedicated pedestrian and cycle paths – integrate with existing paths and provide links to surrounding national institutions, tourist, and heritage attractions.

4.2 Cross-section requirements

The National Capital Plan (NCP) and West Basin Precinct Guidelines developed in support of the NCP by the National Capital Authority (NCA) are the primary guidance documents that forecast the vision for the Acton Waterfront Park and its surrounds.

The NCP recommends the hierarchy of streets include minor, major, and main avenues. **Figure 4-5** illustrates the indicative cross-sections of these street types.

Figure 4-5 Typical cross-sections



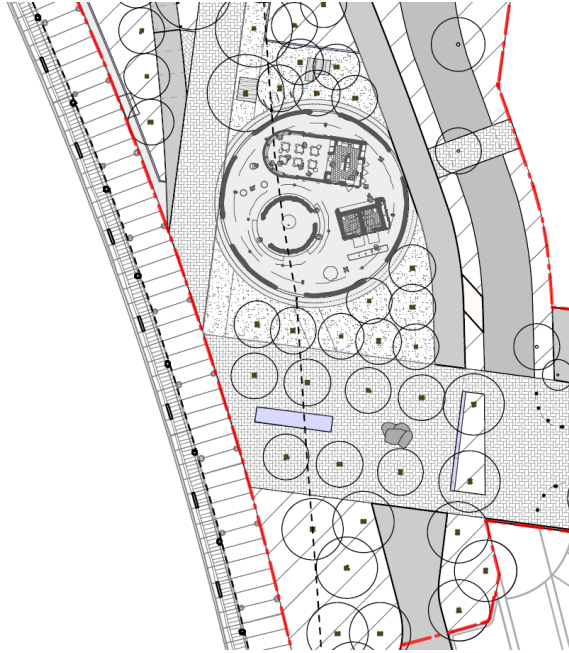
Source: National Capital Plan (NCP)

Barrine Drive is considered a minor or lower-order street type in support of the NCP road hierarchy. No further cross-section details related to width or traffic volume capacities are provided in the NCP or WBPG. Hence, the ACT government design principles are referenced for cross-section development.

Under the current plans in **Figure 4-6**, vehicle access will be restricted to Barrine Drive which will generally retain its current configuration. Barrine Drive would be a Minor Street.

Treatment of the intersection of Albert Street and Barrine Drive is proposed, raising it to form an arrival plaza. The West Basin Precinct Guidelines support a shared space roadway, with limited car parking along the waterfront promenade. This is congruous to the proposed Barrine Drive roadway intersection upgrade, with the southern leg of Barrine Drive currently a shared zone.

Figure 4-6 Intersection treatment of Barrine Drive and Albert Street



Source: ASPECT Studios, May 2023

According to ACT Government, the design of the Trunk Road network must be in general accordance with the Austroads Guide, and per the specific provisions within the Trunk Road Infrastructure Standard (TRIS). The TRIS refers to the Estate Development Code for lane widths and cross-section requirements, hence specifics from the EDC are referenced below.

4.2.1 Roadway design requirements

While the remainder of the development is being progressed and traffic modelling developed, Canberra Renewal Authority has advised that traffic on Barrine Drive is expected to be minimal. Based on typical estate planning, this would mean that the road would likely sit as an Access Street A or B.

Figure 4-7 Street hierarchy for estates in residential zones and CZ5 (Mixed-use zone)

Table 1A: Street hierarchy for estates in residential zones and CZ5		
Street type and function	Design speed (km/h)	Traffic volume (vehicles per day) ⁽¹⁾
REAR LANE	30	0-160 ⁽²⁾
Rear lanes are narrow and short streets which have the primary function of providing rear vehicular access to blocks.		
ACCESS STREETS		
Access Street A	60	0-300
Access Street B	60	301-1000
Access streets are used where the residential environment is dominant, traffic is subservient, speed and traffic volumes are low and pedestrian and cycle movements are facilitated. Access streets are categorised as Access Street A or Access Street B according to traffic volumes. Access Street A generally collects traffic from rear lanes and connects to collector roads; they do not normally accommodate traffic from other streets.		
COLLECTOR ROADS		
Minor collector	60	1001-3000
A minor collector road collects and distributes traffic from access streets to major collector roads or direct to the external arterial road network. A reasonable level of residential amenity and safety is maintained by restricting vehicle speeds by means of street alignment, intersection design or by speed-control measures. Direct property access is allowed.		
Major collector	70	3001-6000
Major Collector Roads collect and distribute traffic within residential, industrial and commercial areas. They form the link between the primary network and the roads within local areas and should carry only traffic originating or terminating in the area.		
The volume of traffic carried is constrained by environmental objectives – safety and traffic noise – and reflects the limited area that they serve. Direct property access is still permissible but the access and egress arrangements should be such that vehicles can exit properties in a forward direction.		

Source: Estate Development Code, 2013


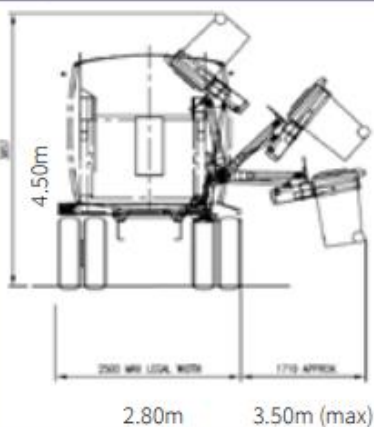
Figure 4-8 ACT Street network requirements

Table 2A: Street network requirements – all estates except in industrial zones						
Facility Type	Rear lane ⁽²⁾	Shared use access street 'Woonerf' style	Access street A	Access street B	Minor collector	Major collector
Traffic volume range (vpd) ⁽¹⁾	0-160 ⁽³⁾	0-40	0-300	301 –1000	1001-3000	3001-6000
Design speed (km/h)	20	20	50	60	60	70
Minimum carriageway width (m) ⁽²⁾	5.5 (5.0 where the lane is less than 60m in length)	3.5-3.7 (single lane)	5.5	7	10	10
Verge width (m)	minimum 1.5m	5.0	5.5	6.25	6.25	6.25
Minimum horizontal radius (to accommodate)	12.5m single unit truck					
On-street car parking	Prohibited	Permitted only as indented spaces	Assumed on one side of the carriageway only	Assumed staggered on both side of the carriageway only	Assumed on both side of the carriageway only	Assumed on one side of the carriageway only
Kerb type	Flush or layback upright kerb adjacent to street lighting	Flush or layback	Layback or upright	Layback or upright	upright	upright
Maximum street longitudinal gradient	12.5%	12.5%	12.5%	12%	12%	12%
Minimum shared path requirement	No shared path required	No shared path required	1.5 wide shared path on one side only	2.0m wide on one side only	2.5m wide shared path on both sides and aligned at least 1.5m away from the kerb	2.5m wide shared path on both sides and aligned at least 1.5m away from the kerb
Bus route requirement	Not to be used as bus route	Not to be used as bus route	Not to be used as bus route	Not to be used as bus route	can be used as a bus route where in accordance with table 3	can be used as a bus route where in accordance with table 3
Street tree requirement	No trees required and not to be planted unless sufficient space is provided	Street trees to be provided	Street trees to be provided	Street trees to be provided	street trees to be provided	street trees to be provided

Source: Estate Development Code, 2013

As per the TRIS, all streets should be designed to accommodate garbage truck turning movements, including the overhang requirements of the truck. **Table 4-2** specifies the dimensions for a general side-lift garbage truck that may be used for garbage collection.

Table 4-2 Indicative dimensions and weights of garbage collection vehicles in the ACT

Side-lift truck for MGBs																					
																					
Comments and dimensions	<p>This type of vehicle is used to collect waste and recycling and is used to service 140L, 240L and 360L MGBs.</p> <p>The vehicle has an automated MGB lifting device fitted to the left-hand side of the vehicle allowing for automatic loading of MGBs into the vehicle body for compaction.</p> <p>One person can operate these vehicles as the vehicle operator is not required to exit the vehicle cabin unless MGBs are incorrectly positioned and cannot be reached by the sidearm.</p>																				
Approximate dimensions and weight of the most commonly used vehicle	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Volume</td> <td style="text-align: right; padding: 2px 5px;">29m³</td> </tr> <tr> <td style="padding: 2px 5px;">Length overall</td> <td style="text-align: right; padding: 2px 5px;">12.20m</td> </tr> <tr> <td style="padding: 2px 5px;">Width overall</td> <td style="text-align: right; padding: 2px 5px;">2.50m</td> </tr> <tr> <td style="padding: 2px 5px;">Width overall (with mirrors)</td> <td style="text-align: right; padding: 2px 5px;">2.80m</td> </tr> <tr> <td style="padding: 2px 5px;">Loading height</td> <td style="text-align: right; padding: 2px 5px;">4.50m</td> </tr> <tr> <td style="padding: 2px 5px;">Clearance width for side loading</td> <td style="text-align: right; padding: 2px 5px;">6.20m</td> </tr> <tr> <td style="padding: 2px 5px;">Travel height</td> <td style="text-align: right; padding: 2px 5px;">3.80m</td> </tr> <tr> <td style="padding: 2px 5px;">Wheelbase</td> <td style="text-align: right; padding: 2px 5px;">5.50m</td> </tr> <tr> <td style="padding: 2px 5px;">Rear overhang</td> <td style="text-align: right; padding: 2px 5px;">3.20m</td> </tr> <tr> <td style="padding: 2px 5px;">Weight (vehicle & load)</td> <td style="text-align: right; padding: 2px 5px;">23. tonnes</td> </tr> </table>	Volume	29m ³	Length overall	12.20m	Width overall	2.50m	Width overall (with mirrors)	2.80m	Loading height	4.50m	Clearance width for side loading	6.20m	Travel height	3.80m	Wheelbase	5.50m	Rear overhang	3.20m	Weight (vehicle & load)	23. tonnes
Volume	29m ³																				
Length overall	12.20m																				
Width overall	2.50m																				
Width overall (with mirrors)	2.80m																				
Loading height	4.50m																				
Clearance width for side loading	6.20m																				
Travel height	3.80m																				
Wheelbase	5.50m																				
Rear overhang	3.20m																				
Weight (vehicle & load)	23. tonnes																				
Operational dimensions and configuration																					

Source: Development Control Code for Best Practice Waste Management in The Act 2019

Buses are not expected to use Barrine Drive. Barrine Drive and Albert Street have been designed to accommodate an AS2890.1 Heavy Rigid Vehicle. Which has comparable dimensions to the garbage collection vehicles used in the ACT.

4.2.2 Pedestrian and cyclist facilities requirements

The requirements for off-road pedestrian facilities are determined based on expected pedestrian and cyclist demand are outlined in **Table 4-3**.

Table 4-3 Off-road footpath requirements

Type	Common Term	Function	Width
Minor Path	Footpath	Pedestrian and cyclist use; low volumes, local access.	1.2 m
Intermediate Path	Shared Use Path, Minor Cyclepath, Wide Path	Pedestrian and cyclist use: low volumes; commuting and local access; cyclists passing in opposite directions is rare.	2.0 m
Trunk Path	Shared Use Path, Cyclepath, Cycleway, Bike Path, Trunk Path	Pedestrian and cyclist use: two way cyclists are common; commuting and local access: speeds 20 km/h.	2.5 m
Trunk Path (High use)	Shared Use Path, Cyclepath, Cycleway, Bike Path, Trunk Path	High levels of pedestrian and cyclist use in both directions: commuting; speeds greater than 30 km/h.	3.0 m

Source: TRIS 02 Road Design, Attachment B

Based on the role and function of the cycleway, it is expected to be a trunk path, so needs to be a minimum width of 3.0m. A width of 4.0m has been provided.

4.2.3 Emergency vehicle access

Key emergency vehicle requirements as per ACT Fire and Rescue include:

- Stage 1A emergency access path to be designed to service an ambulance (needs to be suitable to carry a 4-tonne load)
- Stage 1B emergency access path to be designed to carry a 14-tonne fire truck.

These requirements have been incorporated into the design.

4.3 Parking

4.3.1 Car parking requirements

The West Basin Precinct Guidelines do not provide specific requirements for the AWP, or the types of uses contained within. The guidelines do specify that parking should be “limited” and located more than 40m from the lake edge.

For a comparison, Territory requirements are featured in **Table 4-4**

Table 4-4 Parking requirements based on Territory Plan Parking and Vehicular Access General Code 2018

Activity	Land use	Off-street parking requirement	Source	Required parking
Main Pavilion (at the Arrival section of AWP) – approx. 350 m ² including the Cafe)	Parkland	Subject to individual assessment	Section 3.9 Other zones (including Urban Open Spaces) and Territory Plan Definitions	17 spaces ¹
Play space pavilion (approx. 80 m ²)				
Café at the Main Pavilion (approx. 90m ²)	Tourist Facility	Subject to individual assessment	Section 3.9 Other zones (including Urban Open Spaces) and Territory Plan Definitions	9 spaces ²
Playground	Outdoor recreation facility	Subject to individual assessment	Section 3.9 Other zones (including Urban Open Spaces)	Nil
Picnic area, general recreation (e.g., waterfront play walking, cycling, relaxing purposes)	Parkland	Subject to individual assessment	Section 3.9 Other zones (including Urban Open Spaces)	Nil
Total				26

Source: ACT Planning and Land Authority, 2018

Note #1 – pavilions are defined as parkland under the territory plan and hence require individual assessment for parking rates. For this assessment, the 4 spaces/100m², parking rate for the community activity centre was considered appropriate for understanding the parking needs for the pavilions as they would serve a similar purpose as a small public community centre.

Note #2 – the parking rate for the café was based on the typical parking rate for restaurants (10 spaces/100m²) in a mixed zone.

The current scheme would require a total of 26 parking spaces based on these typical rates.

This parking is usually required to be provided on-site (**Figure 4-9**).

Figure 4-9 Locational requirements for parking (Territory Plan Parking and Vehicular Access General Code, 2018)

3.9.4 Locational requirements

The following are specific requirements for the location of long stay, short stay and operation parking.

Development	Long stay parking	Short stay parking	Operational parking	Visitor parking
Under all other zones	On-site or within 200m	On-site	On-site	On-site

Source: ACT Planning and Land Authority, 2018

4.3.2 Car parking proposal

Despite these requirements, it is **proposed that zero off-street parking spaces be provided**. The justification is as follows:

- The West Basin Precinct Guidelines recommend limited parking and that none should occur within 40m of the foreshore (the pavilions are located within 40m of the foreshore)
- Current on-grade parking that sits to the northeast of the AWP will provide sufficient parking in the short term. There are no parking spaces impacted by this design.
- The provision of off-street parking would impede the seamless connectivity of cycling links, which are a key priority in this space
- There are sufficient parking locations broader than the site (refer to **Figure 3-9**) that could absorb any parking deficit

4.3.3 Bicycle parking requirements

It is to be noted that bicycle parking requirements for the following land uses are based on individual assessments under the Bicycle Parking General Code as part of the Territory Plan:

- Outdoor recreation areas
- Tourist facility
- Community activity centre.

Since the proposed AWP is like the uses above, it is recommended that bike parking be provided along the proposed AWP. This could be in the form of bike racks and facilities near pavilions and the plaza section, like Henry Rolland Park. Dimensions, spacing and specifics for bike parking to be per AS2890.3.

Figure 4-10 Potential bicycle parking facilities



Source: Google Street view, 2020

4.3.4 Bicycle parking proposal

It is recommended that parking opportunities be provided for other bike users such as bike-share customers, food deliveries and electric bike users in detailed design.

4.3.5 Commercial vehicle requirements

Access to the park is provided by a roadway which will be completed in Stage 1B.

5.0 Traffic and Transport Impact Appraisal

5.1 Trip generation

The total attractiveness of the Acton Waterfront Park is difficult to forecast as it is partly a function of the adjacent land uses. Distinguished Professor Billie Giles-Corti found in her research of public open space in Perth that the demand for public open space was a function of the quality of the open space (e.g., quality of paths, water features, presence of water, irrigation of lawns, lighting, shade, and bird life). Demand was also a function of a gravity model based on the competing public open space. Public open space attractiveness moderated the demand arising from surrounding land uses.

Based on this concept, the total demand for the park will grow as Acton is developed – residential uses, which will increase the weekday and weekend while businesses will increase the weekday demand.

The site, particularly with its frontage to Lake Burley Griffin will form part of the Territory's most prominent public open space. Demand for the site could be over 1,000 people per day, particularly after the delivery of the remainder of West Bank.

The vast majority of trips will be walking and cycling trips. With limited on-street parking and no off-street parking, the park will become attractive mostly for this type of travel.

A substantial proportion of trips will likely be linked trips. Linked trips are trips that are intermediate destinations. For instance, people may stop over at the park to take photos of the lake on the way to work.

5.2 Traffic generation

As per the ACT Transport Impact Assessment Guidelines, estimates of traffic generation can be based on published trip generation databases or surveys of comparable developments. Additionally, the TRIS supplement to *Austrroads Guide: Traffic Management* supports Part 12 of the guide which provides guidance on traffic impact assessments and trip generation rates based on the NSW *Guide to Traffic Generating Developments*.

The NSW guidelines do not specify any traffic generation rates for developments such as recreational parks, comprising pavilions and play spaces. Hence as a secondary reference document, the Institute of Transportation Engineers Common Trip Generation Rates is applied.

Table 5-1 Traffic generation rate

Land use	Trip generation rate	Source	Site trip generation
Public Park (approx. 23207.8m ² , equal to 5.7 Acres)	0.11/Acres (PM Peak)	Institute Of Transportation Engineers Common Trip Generation Rates (PM Peak Hour)	0.6 trips in the PM peak hour
Café at the Main Pavilion (approx. 70m ² GFA)	12.3 veh/h per 100m ² GFA	TfNSW Technical Direction TDT 2013/04a	8.6 trips in the PM peak hour
Total			9.2 veh/h

Source: Trip Generation Manual, 10th Edition

The park may generate more vehicle traffic than identified in this table. Traffic generation could be higher but in the order of fewer than 10 vehicles per hour.

The total amount of gross floor area is less than 1,000 m² and the seating would accommodate less than 50 people. This puts Acton Waterfront Park in the category of not requiring detailed assessment. Existing and future transport and access networks and infrastructure can accommodate the number of vehicular and nonvehicular trips that are likely to be generated by the development. Despite this, because of the importance of this park to the people of Canberra, this report has been prepared to the normal level of a transport assessment report.

5.3 Road network impacts

Barrine Drive is expected to carry low traffic volumes, hence providing freedom of movement for pedestrians, cyclists and recreational users.

The low traffic generation due to the development is anticipated to have minimal impact on the adjacent road network.

5.4 Public transport impacts

The development does not alter any public transport routes but rather complements the numerous existing bus routes (services 2, 4, 6, 7, 57 or 58) available on Commonwealth Avenue opposite Regatta Place. Access to the site will be further enhanced with the completion of the Light Rail, having a stop within 400m of the park.

The public transport network is expected to have sufficient capacity to accommodate visitors to the AWP.

The park design has been integrated with the future light rail stop on Commonwealth Avenue east of the park. The arrival section on the eastern edge recognises pedestrians arriving from this important stop and draws them into the park. High-quality walking and cycling facilities are provided within the study area that allows light rail users to head westbound.

The scheme has also been developed to align with the current master plan of the remainder of the Acton Waterfront precinct, with sections of Barrine Drive aligning with anticipated intersection locations. This ensures that pedestrians choosing another route from the light rail can connect comfortably with the park. Barrine Drive has also been designed as a slow street with a tight cross section to make it easier to cross at regular intervals.

5.5 Active transport impacts

The development of the AWP will provide new and improved pedestrian and cycling connections around Lake Burley Griffin. Under the current situation, the two pedestrian overpass bridges are the primary connection from the city to Acton Park. Hence it is expected that these will become key links to the park experiencing a greater demand for pedestrians and cyclists. Future Acton Waterfront precinct would offer improved connections via new streets and overpasses connecting to London Circuit.

Overall, the development complements and enhance existing and future active transport network.

5.6 Parking impacts

It is expected that off-street parking surrounding the development is sufficient to absorb the small parking demand created by the AWP development.

6.0 Preliminary construction management

6.1 Proposed works

The construction of the Acton Waterfront Park is to be undertaken in stages. This preliminary construction management plan is a high-level review of the potential routes and impact of the construction activities related to Stages 1A and 1B of AWP. Stage 1A will be focused on earthworks required to provide future levels for the park development. The staging will allow for the settlement of the fill before permanent infrastructure is delivered. Stage 1B incorporates the partial delivery of park elements in advance of the broader Acton Waterfront precinct.

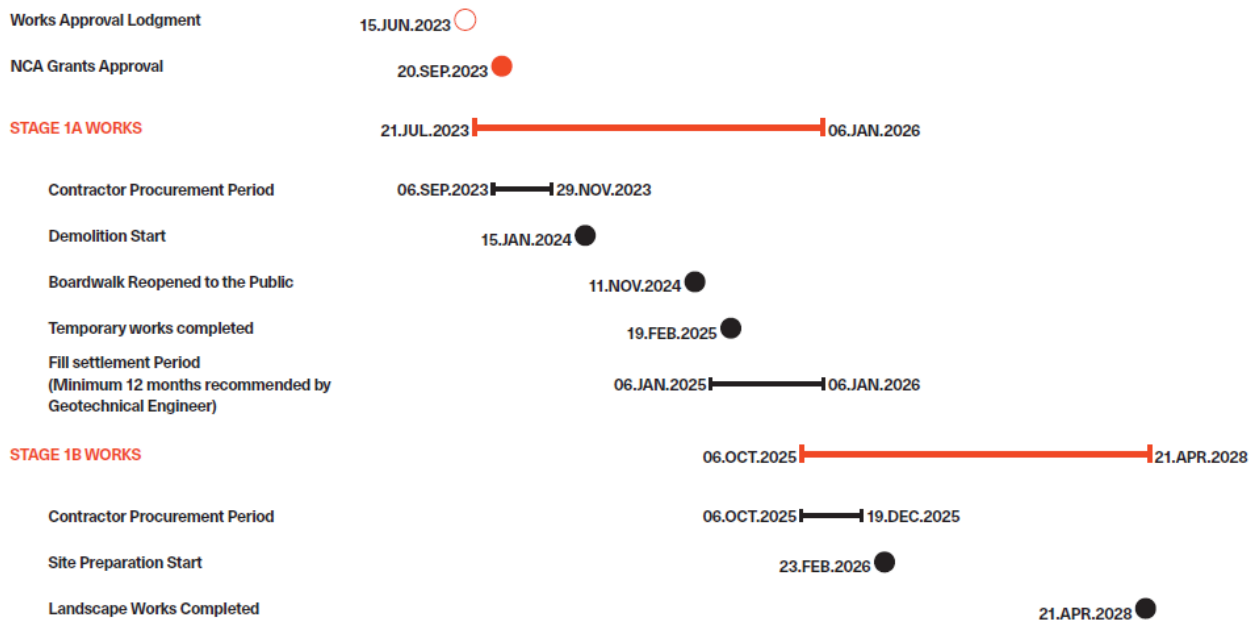
A detailed Construction Traffic Management Plan including Traffic Guidance Schemes would be developed for each stage before construction commences for authority approval.

6.2 Program and working hours

Construction working hours would be subject to future conditions of consent for the proposal. It is expected that major construction activities would be limited to between 7am and 8pm on Monday to Saturday and 8am and 8pm on Sunday and public holidays¹.

The program for construction will be refined after approval of the works. The indicative program is that the construction of Stage 1B would be complete by 2028.

Figure 6-1 Summary program



Source: ASPECT Studios, May 2023

6.2.1 Construction traffic

An overview of the expected vehicle types is provided in **Table 6-1**.

Table 6-1 Construction work types and truck types

Construction work	Potential vehicles
Bulk earthwork	– General access truck and dog trailers (<19m)
Native dry land meadows treatment	

¹ Noise Environment Protection Policy, Environment Protection Authority | January 2010 Section 9.11, page 16

Construction work	Potential vehicles
Emergency/pedestrian pathway construction	<ul style="list-style-type: none"> – Materials delivery trucks (e.g., paving materials, toilet installation, benches etc) – Concrete or Asphalt laying machines – Crane for installation of the pavilion
Waterplay area	
Community Park area	

Based on the types of activities expected, the majority of trucks would be either a 12.5m heavy rigid truck (e.g., for delivery of materials to the site) or an articulated truck up to 19m in length. At this stage of planning, no oversize or over-mass vehicles are expected to be required. Stage 1A would require an import of 55,000m³ of fill. Based on 24-ton trucks, it is estimated that this would require a total of 4,800 truck movements.

Construction workers would typically arrive in light vehicles. The estimated volume of traffic is outlined in **Table 6-2**.

Table 6-2 Traffic volumes by vehicle type

Vehicle type	Maximum daily volume
Light vehicles	50 workers – 100 trips
Heavy vehicles	20 trips

6.2.2 Construction vehicle haulage routes







Classes 1 to 9 correspond to General Mass Limits (GML) vehicles (i.e. up to 42.5-tonne gross vehicle mass and 19 metres length and including buses), and have unrestricted access to the ACT road network, while classes 10 and above are restricted access vehicles (**Figure 6-4**). Common general access vehicles are illustrated in **Figure 6-3**

Figure 6-2 Heavy vehicle classification

Level 1 Length (indicative)	Level 2 Axles and axle groups		Level 3 Vehicle type	Austroads classification	
	Axle	Groups	Description	Class	Parameters
LIGHT VEHICLES					
Short Up to 5.5 m	2	1 or 2	Short Sedan, wagon, 4WD, utility, light van, bicycle, motorcycle, etc.	1	$d_1 \leq 3.2$ m and axles = 2
	3, 4 or 5	3	Short – towing trailer, caravan, boat, etc.	2	Groups = 3, $2.1 \text{ m} \leq d_1 \leq 3.2 \text{ m}$ $d_2 \geq 2.1 \text{ m}$, and axles = 3, 4 or 5
HEAVY VEHICLES					
Medium 5.5 m to 14.5 m	2	2	Two axle truck or bus	3	$d_1 > 3.2$ m and axles = 2
	3	2	Three axle truck or bus	4	Axles = 3 and groups = 2
	> 3	2	Four axle truck	5	Axles > 3 and groups = 2
Long 11.5 m to 19.0 m	3	3	Three axle articulated or rigid vehicle & trailer	6	$d_1 > 3.2$ m, axles = 3 and groups = 3
	4	> 2	Four axle articulated or rigid vehicle & trailer	7	$d_2 \leq 2.1$ m, $2.1 \text{ m} \leq d_1 \leq 3.2 \text{ m}$ Axles = 4 and groups > 2
	5	> 2	Five axle articulated or rigid vehicle & trailer	8	$d_2 \leq 2.1$ m, $2.1 \text{ m} \leq d_1 \leq 3.2 \text{ m}$ Axles = 5 and groups > 2
	6 > 6	> 2 3	Six axle (or more) articulated or rigid vehicle & trailer	9	Axle = 6 and groups > 2 or axles > 6 and groups = 3
Medium combination 17.5 m to 36.5 m	> 6	4	'B' Double or heavy truck trailer	10	Groups = 4 and axles > 6
	> 6	5 or 6	Double road train or heavy truck and trailers	11	Groups = 5 or 6 and axles > 6
Long combination over 33 m	> 6	> 6	Triple road train or heavy truck and three trailers	12	Groups > 6 and axles > 6

Source: Austroads Vehicle Classification by Vehicle Length, 2006

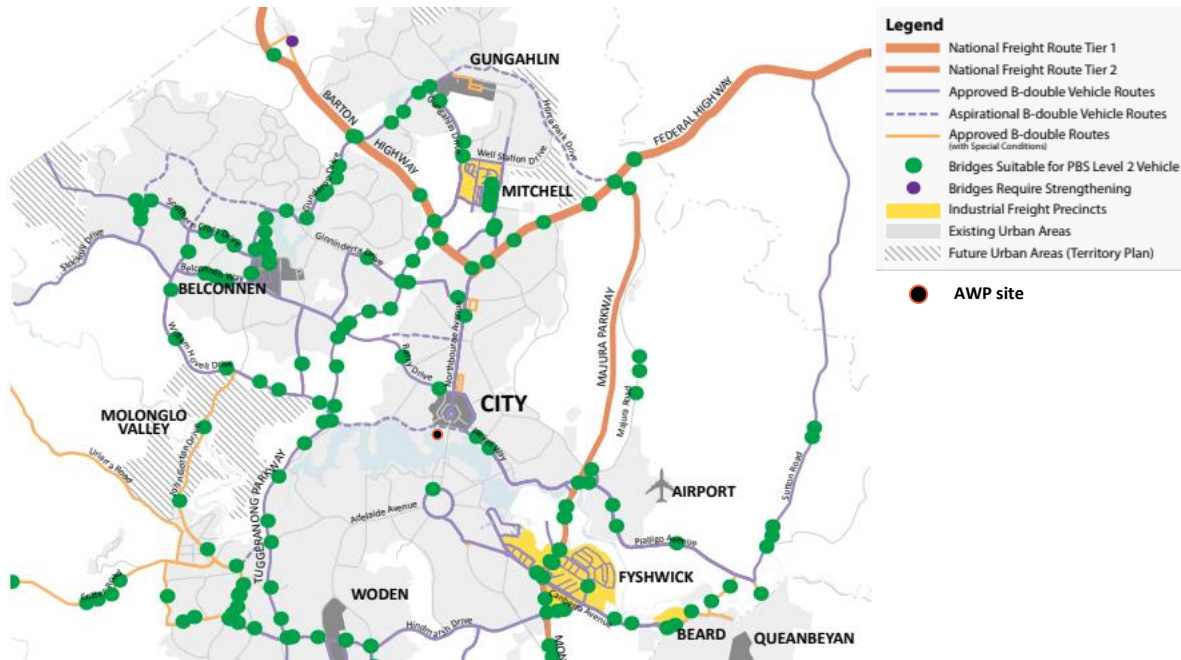
Figure 6-3 Common general access vehicles (mostly permitted on all roads)

Prime mover	Rigid truck	Rigid truck and trailer combinations	Prime mover semitrailer combinations	Bus	Level 1 Performance Based Vehicles (PBS)
					
A heavy motor vehicle designed to tow a semitrailer.	A rigid motor vehicle built mainly as a load carrying vehicle.	A rigid truck towing one trailer up to 19m in length.	A prime mover towing one semitrailer up to 19m in length.	A heavy motor vehicle built or fitted to carry more than nine adults, including the driver.	A vehicle that meets PBS standards, not longer than 20 metres in length.

National Heavy Vehicle Regulator, 2022

As illustrated below, Northbourne Avenue, Cooyong Street, Coranderrk Street, and Parkes Way west of Coranderrk Street are B-double-approved routes.

Figure 6-4 B-double restricted access vehicle network with PBS suitable bridges



Source: ACT Government, ACT Freight Strategy, 2016

Higher-tier vehicles are not expected to be required. At this stage, construction vehicles would all be general access vehicles.

Located on Commonwealth Avenue, the site has access to the strategic road network without needing to use local roads. Figure 6-5 and Figure 6-6 show the routes from the site and illustrate that they have no impact on local roads.

Figure 6-5 Routes to site



Source: Nearmap, SCT Consulting annotations, 2022

Figure 6-6 Routes from the site



Source: Nearmap, SCT Consulting annotations, 2022

The primary entry and exit for the site are via Barrine Drive, Albert Street and Commonwealth Avenue. The intersections of Albert Street with Commonwealth Avenue are both left in left out, but the Barrine Drive underpass of Commonwealth Avenue and the cloverleaf interchange of Commonwealth Avenue and Parkes Way provide connectivity to other parts of the road network.

6.3 Impact identification

6.3.1 Construction parking impacts

During Stages 1A and 1B, light vehicle worker parking would either be within the project boundaries or the off-street parking facilities off Barrine Drive. An estimated up to 50 workers could be on-site during construction. Based on the

current 943 spaces within a short walk of the work site, the additional 50 vehicles can be accommodated. During all of the site visits for the project, there were at least 200 spaces of spare capacity.

6.3.2 Pedestrian and cyclist access impact

The construction site has been fenced off during the delivery of the waterfront promenade. The walking and cycling links were diverted around the construction zone to provide continued connectivity. There would be no changes from the previous construction phase during Stages 1A and 1B. With the newly delivered waterfront promenade,

The impact on pedestrians is expected to be minimal.

6.3.3 Public transport impact

Like the construction of the waterfront promenade, there are no expected impacts on public transport routes. Barrine Drive does not cater for any bus routes.

6.4 Mitigation of impacts

Road network impacts by worker traffic to the site will be mitigated by the construction workers generally starting earlier and finishing earlier than the commuter peak periods and would likely not coincide with the school or road network peak periods. Construction workers will be encouraged to carpool and use public transport, reducing the impact on the road network and local parking demands.

So as not to adversely impact the traffic system during the construction period, the construction traffic is expected to be managed as follows:

- Truckloads would be covered during transportation off-site
- All activities, including the delivery of materials, would not impede traffic flow along local roads
- Materials would be delivered, and spoil removed during standard construction hours
- Avoidance of idling trucks alongside sensitive receivers
- Vehicles are to enter and exit the site in a forward direction along the travel path shown on delivery maps
- Drivers are to always give way to pedestrians and cyclists

7.0 Event Management Strategy

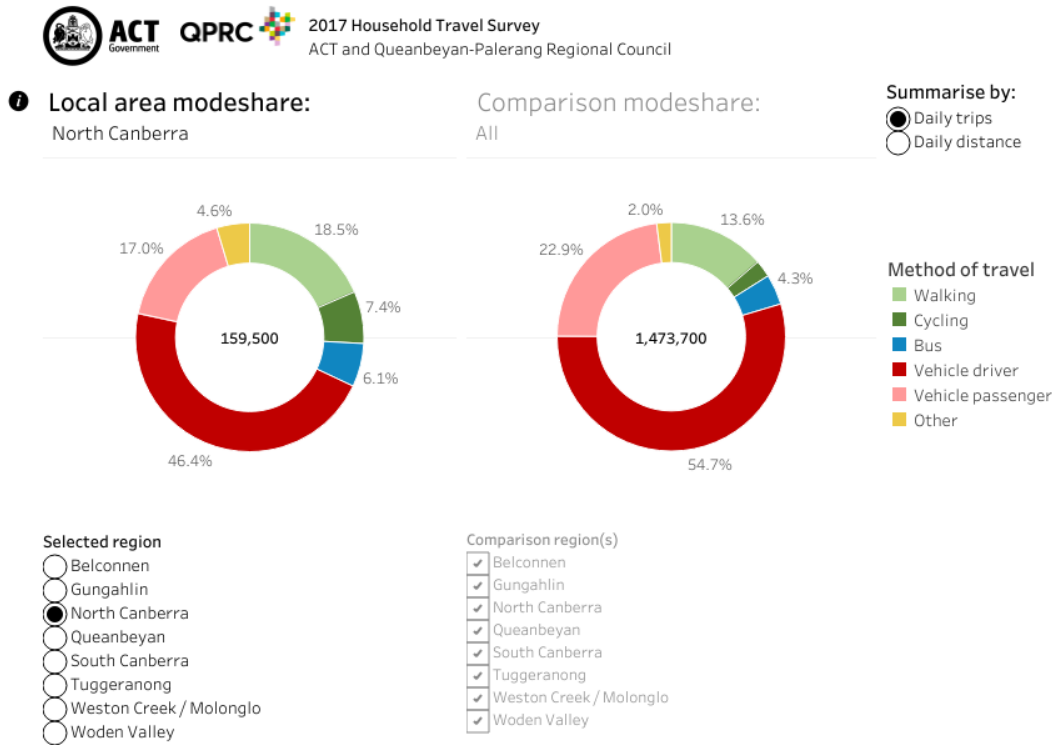
An event management strategy has been prepared for an event of up to 1,000 patrons during the end state

7.1 Mode share targets

Limited data is available for events in Canberra. Benchmarking was undertaken of other sites, which shows that:

- Mode share of major events in other cities (e.g., in Sydney Olympic Park or Metricon Stadium) can be from 55% to 80% public transport mode share². These events often have major rail infrastructure and integrated ticketing (patrons receive free or price-included public transport with a ticket)
- Walking and cycling tend to be a low proportion given the majority of event destinations are usually separate from residential dwellings.
- The 2017 Household Travel Survey shows that for Northern Canberra, walking and cycling comprise 25.9% of trips and public transport is 6.1% (Figure 7-1). It is expected that since the introduction of Canberra Light Rail, this value would increase.

Figure 7-1 2017 Household Travel Survey mode share data for North Canberra



A results summary brochure is available for download from:
<https://www.transport.act.gov.au/about-us/planning-for-the-future/household-travel-survey>

[← Index](#)

² Tourism & Transport Forum (TTF) Position Paper Accessing Major Events, <https://www.ttf.org.au/wp-content/uploads/2016/09/Accessing-Major-Events.pdf>

Based on this data, an aspirational mode share for events is set out in **Table 7-1**. This forecast will require refinement based on real event operations.

Table 7-1 Mode share targets and requirements

Mode	Share	People	Requirements
Walking	10%	100	Nil
Cycling	5%	50	A total of 50 secured bicycle parking spaces would be required
Bus	10%	100	Indicatively 5 services assuming they are 50% occupied
Light rail	10%	100	Nil
Car	63%	630	Based on a car occupancy of 2.5 passengers per car, 630 patrons would require 252 parking spaces
Point to point	2%	20	Based on a car occupancy of 2.5 passengers per car, space for eight vehicles total would be required

Source: SCT consulting, 2022

7.2 Event transport requirements

7.2.1 Cycling

Event organisers should aim to provide bicycle parking for 5% of patrons. Depending on the event scale, temporary bicycle parking facilities may need to be considered.

7.2.2 Public transport

Based on the number of services required and the typical frequency on Commonwealth Avenue, additional services are not considered necessary at this event scale. For events that finish late (i.e., after 10pm), service frequency declines. This could lead to reduced public transport take-up if there are no available services for the return journey.

To make public transport attractive to patrons, event organisers should consider:

- Provide links to the public transport services as part of advertising material
- Provide integrated tickets or free public transport for patrons
- For late events, work with TCCS to consider event services.

7.2.3 Car and point to point

An estimated 252 parking spaces are required based on the mode share benchmarking. At this scale, Commonwealth Park has sufficient spare capacity. Patrons should be provided with parking information on maps and be directed to the appropriate facilities.

Some events have a gradual arrival profile – e.g., markets. These events may have 1,000 patrons but are spread over a day. The site may take several hours to reach capacity.

Other events may have a formal start time such as a concert. Events with a key arrival time often have a bump in of approximately 30 – 60 minutes. Events with 1,000 patrons and a shorter bump in period. These events have a more significant impact on the transport network – particularly the road network.

Events should consider:

- During event ingress, traffic control could be provided within the Commonwealth Park car parks to direct patrons to parking facilities. This is key to reducing the risk of queuing on Commonwealth Avenue. This would be particularly important in large events with short ingress periods.
- During egress, traffic controllers could be provided at key conflict points between crowds and cars – particularly Albert Street, which is a desirable exit point for both cars and pedestrians.
- Identification of an overflow parking area that would serve as a backup in case parking demands exceeds the capacity of the Commonwealth Park facilities.

- Closing Regatta Place north of Albert Street to minimise conflicts between vehicles and pedestrians. An initial ingress and egress concept is articulated in **Figure 7-2** and **Figure 7-3**.

Figure 7-2 Transport management during major event ingress



Source: Nearmap, annotations by SCT Consulting, 2022

Figure 7-3 Transport management during major event egress



Source: Nearmap, annotations by SCT Consulting, 2022

7.2.4 Continuous improvement

Event transport planning is often uncertain and can vary between different types of events. As the future operators of the park, TCCS could consider a continuous improvement model:

- Prepare event transport management plans that focus on increasing non-car use and carpooling: consider mechanisms to make non-car or carpooling more attractive to patrons
- Collect data: for major events, undertake a site inspection and estimate the number of cars associated with the event to measure success
- Use historical data to inform future transport management plans: adjust mode share and car occupancy information as data becomes available to strengthen the quality of predictions.

8.0 Conclusion

This traffic and transport impact assessment concludes that:

- The waterfront park design and functionality are consistent with the West Basin Guidelines 2014 and the National Capital Plan
- The park provides for diverse transport users, recognising its role as both a destination and a regional walking and cycling route
- It can be accessed by emergency services, freight (e.g., for deliveries), maintenance, and waste collection
- The Park provides for less mobile users by providing accessible connections
- Construction of the park can occur without major impacts on the transport network
- The park can be used for events of up to 1,000 patrons based on the available transport capacity.

