WALSH BAY ARTS AND CULTURAL PRECINCT

STATE SIGNIFICANT DEVELOPMENT APPLICATION SSDA 8671

APPENDIX 16: GREEN TRAVEL PLAN







Walsh Bay Arts and Cultural Precinct
State Significant Development Application
Green Travel Plan

Client // Infrastructure NSW

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Green Travel Plan

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Cover image source: SixMaps



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1. Introduction

1.1 The Project

The NSW Government is committed to development of a public arts and cultural precinct at Walsh Bay. Infrastructure NSW is acting on behalf of the client, Create NSW in preparing this State Significant Development Application for the Walsh Bay project.

This SSDA will seek approval for the construction and operation of Pier 2/3 and Wharf 4/5 for arts and cultural uses with complementary commercial and retail offerings to activate the precinct.

The site generally comprises Pier 2/3, Wharf 4/5, and Wharf 4/5 Shore Sheds. The site has a street frontage to Hickson Road as shown in Figure 1.1. The site is part of the Walsh Bay area, which is located adjacent to Sydney Harbour within the suburb of Dawes Point.

Figure 1.1: The Site



The scope of the project is described in the following subsections.

Pier 2/3

- The adaptive re-use providing for new arts facilities including performance venues for the Australian Chamber Orchestra, Bell Shakespeare and Australian Theatre for Young People.
- Retaining a large heritage commercial events/ art space for events such as Sydney
 Writers Festival, Biennale of Sydney and a wide range of commercial and artistic events.
- A series of stairs, external lift and balconies designed as a contemporary interpretation of the original gantries reflecting the precinct's former industrial heritage.
- Modifications to the roof.



Wharf 4/5 (including Shore Sheds)

- Refurbishment of the ground floor arts facilities and its associated Shore Sheds for Bangarra Dance Theatre, Sydney Dance Company, Sydney Philharmonia, Gondwana and Song Company.
- New commercial retail opportunities.
- A series of stairs, external lifts and balconies designed as a contemporary interpretation of the original gantries reflecting the precinct's former industrial heritage.
- Modifications to the roof.

1.2 Purpose of this Report

The Purpose of this report is to outline specific green travel opportunities and requirements for the Walsh Bays Arts and Cultural Precinct. This report also responds to the Secretary's Environmental Assessment Regulations (SEARs) as they relate to sustainable travel options. Some of the SEARs requirements as they relate to the GTP are shown in Table 1.1.

Table 1.1: SEARS

Condition	Addressed in Report
Details of existing and proposed vehicular access, taxi and car parking arrangements for workers and visitors (cars, point to point transport, coaches / buses and taxi ranks), including compliance with parking codes and the Australian Standards	Section 2
Demonstrate appropriate provision, design and location of on-site bicycle parking and detail how it would be integrated with the existing bicycle network	Section 4
Details of sustainable travel initiatives for workers and visitors, particularly end-of-trip facilities and pedestrian and cyclist facilities located in secure, convenient and accessible areas, incorporating lighting and passive surveillance	Section 4 and Section 5
Proposals to encourage employees and visitors to make sustainable travel choices such as walking, cycling and using public transport, including wayfinding strategies and preparation of a Green Travel Plan	Section 4 and Section 5

The final GTP will be developed in consultation with Transport for NSW, the City of Sydney, Roads and Maritime Services (Roads and Maritime) and the CBD Coordination Office.

1.3 Report Structure

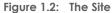
- Section 2: Green Travel Plan This section describes what a green travel plan is and its objectives. It also incorporates discussion of existing and future transport conditions.
- Section 3: Proposed Development An overview of the scope of the development and an assessment of the traffic impacts of the proposed development.
- **Section 4: Opportunities and Outcomes** A description of possible outcomes resulting from actions taken regarding the implementation of the green travel program.
- Section 5: Actions A summary of potential actions to encourage sustainable transport opportunities for the Walsh Bay Arts and Cultural Precinct.
- **Section 6: Sample Survey** An indicative survey format which may be able to be distributed to staff and visitors to ascertain transport patterns.



1.4 Existing Conditions

The Walsh Bay Arts and Cultural Precinct (WBACP) generally comprises Pier 2/3, Pier 4/5 and its shore sheds which make up Wharf 4/5, as well as the adjoining waterway. The site has a street frontage to Hickson Road. The site is shown in Figure 1.2. The site is part of the Walsh Bay area which is located adjacent to Sydney Harbour within the suburb of Dawes Point. The site is located within the City of Sydney Local Government Area.

Walsh Bay is strategically located to the north of Sydney's CBD near major tourist destinations including the Sydney Harbour Bridge, the historic areas of Millers Point and The Rocks, Circular Quay and the Sydney Opera House. The Barangaroo redevelopment precinct is located immediately to the south-west.





Source: Provided

Pier 2/3 is legally described as Lot 11 in DP 1138931 and Wharf 4/5 is legally described as Lot 65 in DP 1048377. The total area for these lots is 18,090sqm.

The land owner of the site is the Roads and Maritime. Both Pier 2/3 and Wharf 4/5 are occupied under various lease arrangements with Arts NSW, Department of Justice, primarily for arts and cultural uses.

The area of water that the project proposes to build over is also owned by Roads and Maritime. Its land title description is Lot 12 in DP 1138931.

Walsh Bay comprises ten berths constructed between 1908 and 1922 for international and interstate shipping. These are collectively known as the Walsh Bay Wharves. The Walsh Bay Wharves Precinct is listed as an item on the State Heritage Register.

The Walsh Bay Wharves comprise the following:

• Pier One which contains the Sebel Pier One Sydney Hotel.

- Pier 2/3 the last remaining undeveloped pier (has previously received approval for cultural uses, temporary arts events and some commercial events).
- Wharf 4/5 which is occupied by the Sydney Theatre Company (STC), the Australian Theatre for Youth Program (ATYP), Sydney Dance Company (SDC), Bangarra Dance Theatre and the choirs comprising Gondwana, the Song Company and Sydney Philharmonia.
- Pier 6/7 which has been redeveloped for residential apartments and associated boat marina.
- Pier 8/9 which has been redeveloped for office uses.
- Shore sheds aligning Hickson Road which contain a range of commercial activities, including restaurants, bars, shops and offices.

2. Green Travel Plan (GTP)

2.1 Introduction

Transport is a necessary part of our daily activities, which has effects that can be managed. The transport sector is one of the fastest growing emissions sectors in Australia and therefore a travel plan provides an opportunity for reducing emissions and reducing traffic congestion. As well as delivering better environmental outcomes, providing a range of travel choices with a focus on walking, cycling and public transport will have major public health benefits and will ensure healthy and prosperous communities.

The limited parking ratios permissible in the planning controls for the site and the physical infrastructure being provided as part of the development forms a major part of the initiatives to encourage reduction of vehicle transport use, although strictly speaking, it is noted that the site falls outside of the planning control of the City of Sydney and will be assessed by the Department of Planning and Environment. The GTP will ensure that the services and policies to the site are tailored to the users and co-ordinated to achieve a sustainable outcome.

2.2 What is a Green Travel Plan?

A GTP is a package of measures aimed at promoting and encouraging sustainable travel and reducing reliance on the private car. The GTP for this particular development will assist to reduce private car usage by imposing related conditions of tenancy. However, the purpose of a GTP is not to be 'anti-car', but to make apparent, encourage and support broader community expectations for carrying out their daily business in a more sustainable way. GTPs can provide both:

- Measures which encourage reduced car use (disincentives or 'sticks')
- Measures which encourage or support sustainable travel (also known as Active Transport), reduce the need to travel or make travelling more efficient (incentives or 'carrots').

Active transport relates to physical activity undertaken as a means of transport. It includes travel by foot, bicycle and other non-motorised vehicles. Use of public transport is also included in the definition as it often involves walking or cycling as an access or egress mode, and promotes relatively sustainable options.

The GTP would promote the use of transport, other than the private car, for choice of travel to and from the site, which is more sustainable and environmentally friendly. Ultimately however, end users will choose their most suitable means of transport.

This GTP in this instance is also aided by the high level of public transport services and accessibility available from the site.

2.3 Walk Score, Transit Score and Bike Score

A walk score and transit score provide an assessment of how accessible a development is to public transport, parks, restaurants, entertainment centres and schools, that is, in terms of walking distance. A higher walk score and transit score correlates to a reduced need for a car.



The walk score and transit score are provided by walkscore.com (https://www.walkscore.com/). Whilst there is no official recognition of the walk score, transit score or bike score by any transportation authority, the score provides a broad indicative insight into how accessible an area is for people travelling without a car. The score lies on a scale between 0 and 100. The site gives the following description on what each score means:

Table 2.1: Walk score and transit score

Score	Walk score meaning	Transit score meaning	Bike score meaning	
90 – 100	Walker's Paradise Daily errands do not require a car	Rider's Paradise World-class public transportation	Biker's Paradise Daily errands can be accomplished on a bike	
70 – 89	Very Walkable Most errands can be accomplished on foot	Excellent Transit Transit is convenient for most trips	Very Bikeable Biking is convenient for most trips	
50 – 69	Somewhat Walkable Some errands can be accomplished on foot	Good Transit Many nearby public transportation options	Bikeable Some Bike infrastructure	
25 – 49	Car-Dependent Most errands require a car	Some Transit A few nearby public transportation options	Somewhat Bikeable	
0 – 24	Car-Dependent Almost all errands require a car	Minimal Transit It is possible to get on a bus	Minimal bike infrastructure	

Table 2.2 shows the outputs of various points of interest surrounding the WBACP.

Table 2.2: Walk score outputs

Туре	Location	Walk Score	Transit Score	Bike Score
	Dawes Point	92	N/A	N/A
Suburb	Barangaroo	94	100	N/A
	The Rocks	98	N/A	N/A
Road	Hickson Road	80	100	N/A

It is clear from the walk score outputs that the area is highly walkable and considered to be well-accessed by public transport. For reference, Dawes Point has a comparable walk score to suburbs such as Glebe, North Sydney and Lavender Bay. A summary map is shown in Figure 2.1.

Figure 2.1: Walk Score



Source: https://www.walkscore.com/AU-NSW/Sydney/Dawes_Point, accessed 29 August 2017



2.4 Existing Transport Provision

There are a wide range of active transport options that are available for staff and visitors of the WBACP including:

- Rail services
- Bus services
- Ferry services
- Bicycle and pedestrian linkages.

2.4.1 Rail

The WBACP is somewhat accessible by train, Wynyard and Circular Quay are approximately equidistant from the WBACP, with walking access approximately 1,300 metres. Whether a person alights the train at Wynyard or Circular Quay is a matter of personal preference, and their specific origin/destination. Train services from these stations provides almost direct access to all other stations across the Sydney Trains network, excluding the Eastern Suburbs and Illawarra Line, and the Carlingford Line.

2.4.2 Bus

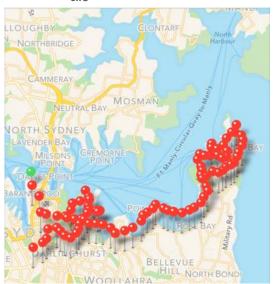
The site and its surroundings is serviced by a number of bus routes operating within the vicinity of the site. These routes include the 311, 324 and 325 as are outlined and described in Figure 2.2 and Figure 2.3. The site is within walking distance to Circular Quay which acts an interchange area provides bus services to many of Sydney's inner and middle ring suburbs including Rose Bay, Maroubra and Bondi.

In the Sydney City Centre Access Strategy, Hickson Road is identified as a strategic bus corridor. GTA made enquiries with Transport for NSW (TfNSW) in 2016, but TfMSW were unable to confirm what functionality this might encompass in the future.

Figure 2.2: Sydney Buses region guide



Figure 2.3: Bus access from stop #2000439 near site



source: http://www.sydneybuses.info/routes/15326_STA_region_web_map_east_20160801.pdf, accessed 22 August 2016 source: iOS Tripview app, accessed 22 August 2016



Table 2.3: Availability of bus services near the subject site

Service	Route #	Route description	Location of stop	Distance to nearest stop	Frequency on/off peak
Bus	324, 325	Watsons Bay to Walsh Bay (two separate routes)	Hickson Rd opposite Wharf Theatres (2000130)	20m	10-15 mins/ 15-30 mins
Bus	311	Railway Square to Millers Point via Woolloomooloo	Barangaroo Reserve, Hickson Road (2000439)	250m	15 mins/ 30-45 mins

2.4.3 Ferry

Circular Quay acts as the primary node for the entire Sydney Ferries network. All stops within the network are accessible from the wharves at Circular Quay. Facilities are available adjacent to Pier 2/3 for private/ charter ferry access to the precinct.

As part of the Barangaroo redevelopment, a new ferry wharf has been constructed and has recently been commissioned. This has resulted in the closure of the Darling Harbour wharf further to the south. The wharf serves two routes, the F3 Circular Quay-Parramatta route and the F4 Barangaroo route (also encompassing Pyrmont, Balmain East, McMahons Point and Milsons Point). It is expected that the wharf will service 11 vessels during the commuter peak hour and up to 14 vessels in the weekend peak¹. The location of the ferry wharves in relation to the WBACP is shown in Figure 2.4. The distances to the ferry wharves is approximately one to 1.5 kilometres.

¹ https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/bfh-barangaroo-wharf-fact-sheet-june-2017-final.pdf, accessed 28 August 2017



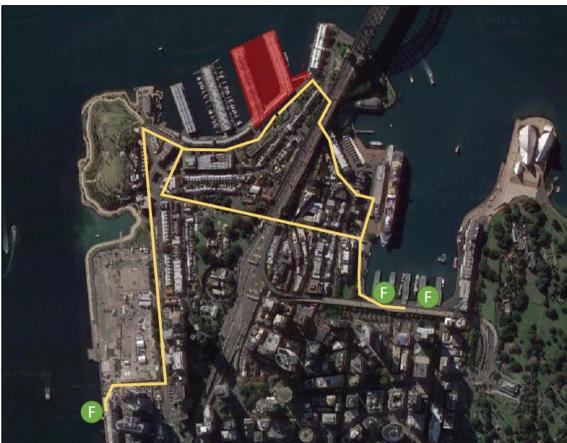


Figure 2.4: Ferry Wharf location

Basemap Source: Google Maps

2.4.4 Pedestrian Infrastructure

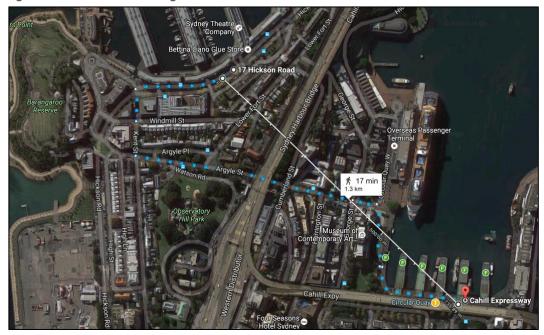
As a result of the detached nature of the site from the CBD and significant grade changes, topographically, the WBACP is currently difficult to navigate on foot. Improved wayfinding and repeater signage from key nodes surrounding the site is essential for improving pedestrian access to the WBACP. It is envisaged that the majority of walking trips to the site will be from the CBD and the Wynyard and Circular Quay transport hubs. In this regard, the primary pedestrian links to and from the site will be via George Street (towards the core of the CBD) and Circular Quay and Hickson Road (towards Barangaroo and Wynyard Walk, providing access to the railway station). An alternative route is also available via Observatory Hill.

George Street between Lower Fort Street and Circular Quay forms a pedestrian friendly environment, with low vehicle speeds and relatively generous footpath widths. The pedestrian route from the end of George Street to the site itself is somewhat circuitous and includes several sets of stairs (which are not Disability Discrimination Act [DDA] compliant) as the path negotiates the significant grade difference between Hickson Road and the areas further inland. There may be an opportunity to maintain one of the grade separated crossings of Hickson Road as a pedestrian access to the site.

The current pedestrian route south along Hickson Road towards Wynyard Railway Station is not an ideal pedestrian environment; however, the north-south section of Hickson Road will be upgraded to form a more pedestrian friendly environment as part of the works associated with the Barangaroo development.

As a general overarching comment, pedestrian paths are provided on all streets surrounding the site. There remain some challenges in providing direct links to various points of interest. For example, as the crow flies, Pier 4 is 700 metres from Circular Quay, but when a walking network distance is considered, it increases to approximately 1.3 kilometres, which is indicative of a substantial distance penalty. This is shown in Figure 2.5 and Figure 2.6.

Figure 2.5: Pedestrian walking detour



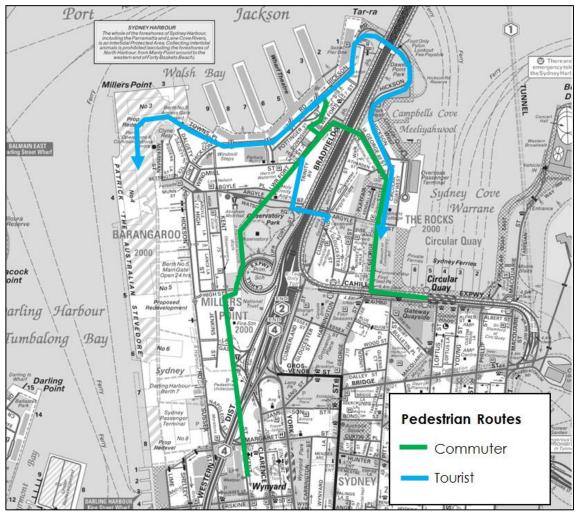


Figure 2.6: Key pedestrian routes to and from Walsh Bay

Pedcatch is a walking assessment tool which allows the modelling of a walking catchment for a given speed and time. Assuming a 15-minute walk at a speed of 4.8 kilometres per hour, Figure 2.7 shows the modelled walking catchment from a on Hickson Road near Wharf 4/5. Circular Quay is within a 15-minute walk and provides access to ferries, trains and buses. In the future, Circular Quay will also have a light rail service. Barangaroo ferry wharf is also on the outer extent of a 15-minute walking catchment.



Figure 2.7: 15-minute walking catchment

Source: http://www.pedcatch.com/, accessed 29 August 2017

2.4.5 Cycle Infrastructure

Limited cycling infrastructure is available immediately adjacent to the site, noting that the Sydney Cycleways map does not indicate the presence of shoulder lanes on Hickson Road. However, the site is in close proximity to facilities such as the Kent Street cycleway and the Harbour Bridge cycleway. The current cycling network is shown in Figure 2.8.

The Sydney City Centre Access Strategy shows that there is an intent to develop a strategic cycleway link between the southern end of the Sydney Harbour Bridge and Barangaroo, possibly along Lower Fort Street. This is shown in Figure 2.9.

In recent months, bicycle share schemes have commenced in Sydney. These schemes are generally beneficial to users in that individuals do not need to return a bicycle to a 'home pod' when not using them. This means that there would be opportunities for both staff and visitors to cycle to the WBACP precinct from places such as Wynyard and Circular Quay and cycle back to these interchanges after their event/day is completed. An indicative cost would be \$1.99 for a ride from Circular Quay to the WBACP, and would arguably be a very effective and efficient form of transport. A ride from Circular Quay to the WBACP would take approximately five to seven minutes.

Bangarra Dance Theatre Sydney Theatre Company Millers Point Syd Windmill St BridgeClimb Sydney Overseas Passenger Terminal Argyle Pl 🖯 :: Argyle St Gover Museum of High St Contemporary Art. 0 0 0 Cahill Exp Circular Quay (1) Separate dedicated cycleways — Dedicated cycling lanes …… Bicycle-friendly roads Source: http://www.sydneycycleways.net/map/, accessed 16 August 2016

Figure 2.8: Availability of cycleway routes near the subject site

Strategic cycleway network Strategic cycleway network routes to be determined === Existing separated cycleway -Cahill Expressway identified for removal

Figure 2.9: Future strategic cycling network

Source: Sydney City Centre Access Strategy, pg. 45, accessed 28 August 2017

2.4.6 Car Share

Car share is a concept by which members join a car ownership club, choose a rate plan and pay an annual fee. The hourly/ daily usage fees cover fuel, insurance, maintenance, and cleaning. The vehicles are mostly sedans and hatchbacks, but also include sports utility vehicles, station wagons, trays and utility vans. Each vehicle has a home location, referred to as a "pod", either in

a parking lot or on a street, typically in a highly-populated urban neighbourhood. Members reserve a car via internet or telephone and use a key card to access the vehicle.

Councils have largely endorsed car share schemes as a way of reducing car use and vehicle ownership, for example, the City of Canada Bay Council has reported that each share car replaces between eight and 23 private car parking spaces, depending on the location of the development. Consequently, such provision should be able to reduce both the parking demand for the site and the traffic generated by it.

GoGet, a car share company, has a number of vehicles positioned on the northern fringe of the Sydney CBD. Figure 2.10 shows the location of GoGet vehicles near the site. It illustrates shows the presence of 16 pods within approximately one kilometre of the site, with 11 of these located north of Argyle Place.

Overall however, as the WBACP will tend to be more of a destination location as opposed to an origin destination, and therefore, the benefit of car share is often not fully realised. For the development, point-to-point transport operations will provide more substantial benefits.

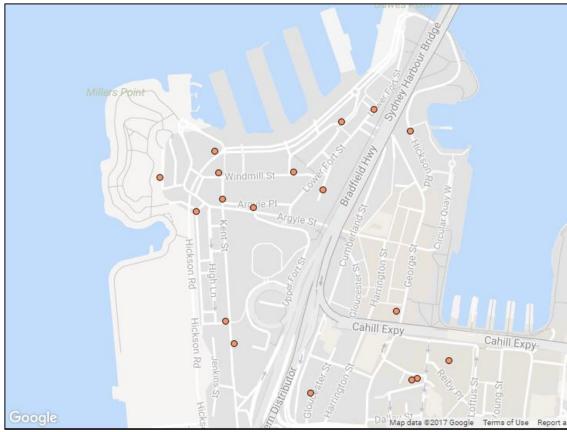


Figure 2.10: Location of GoGet pods near the subject site

Source: http://www.cityofsydney.nsw.gov.au/live/residents/car-sharing, accessed 28 August 2017

2.4.7 Point-to-Point Transport (Taxis and Ride Sharing)

Traditionally, taxis have serviced the market with regards to point-to-point transport. In recent years, the use of alternative platforms such as Uber allow individuals to request a ride ondemand. Point-to-point transport offers levels of service comparable to private vehicles, at costs generally cheaper and more convenient than private vehicle (especially when parking costs are taken into account at a destination). A number of drop offs and pick-ups were observed near

the site for current land uses during site surveys. A taxi zone is located immediately outside of the Wharf 4/5 site, with capacity for approximately three vehicles.

2.4.8 Parking Restrictions

Near the site, Hickson Road is somewhat atypical with its street configuration, with three lanes in each direction, with a parking lane either side of a traffic lane. This substantially increases the parking availability compared to more typical road layouts.

On Hickson Road adjacent to the piers and wharves, there is primarily the presence of service vehicle parking, with extensive loading zones and taxi zones. Opposite the piers and wharves (noting the presence of the 'inside' parking lanes, parking generally varies between two and four-hour paid parking).

Parking permits are not given to residents of developments that were approved on or after the adoption of the City of Sydney's Neighbourhood Parking Policy. This presumably includes the proposed development.

2.4.9 Existing Transport Use

The 2011 Census Journey to Work (JTW) data generally provides the most robust picture of existing travel patterns to and from the development and Greater Sydney. The smallest geographical area for which JTW data is available is known as a travel zone (TZ).

The WBACP (and some immediately surrounding areas) occupy the travel zones 6, 7, 8, 9 and 10 as shown in Figure 2.11. JTW data for this travel zone from the 2011 census was to be reviewed to understand the current mode of travel to work for people living within the zone and determine changes in travel patterns over the two periods. The result of the data is shown in Table 2.4.

St. paul ST Pa

Figure 2.11: TZ boundary

Source: http://visual.bts.nsw.gov.au/jtwbasic/#9,6,7,8,10, accessed 23 August 2016

Table 2.4: Census JTW data

Travel mode	2011 Census – TZ6, TZ7, TZ8 TZ9 and TZ10 (n=443 residents)	2011 Census – TZ6, TZ7, TZ8 TZ9 and TZ10 (n=2,089 workers)
Vehicle Driver	38%	30%
Walked Only	32%	5%
Bus	10%	19%
Train	8%	30%
Other Mode (Incl. Cycling)	7%	6%
Vehicle Passenger	3%	3%
Ferry/Tram	1%	5%
Not Stated	1%	1%

Source: http://visual.bts.nsw.gov.au/jtwbasic/#9,6,7,8,10, accessed 23 August 2016

Table 2.4 shows that for residents of the area, there is generally a higher reliance on private vehicles than for employees of the area. For residents, there is a significantly higher proportion of people who walk to work, and for workers, there is a significantly higher proportion of people who catch the train to the area. A more detailed assessment of the data is shown below.

Employment Patterns

In TZs 6, 7, 8, 9 and 10 as reported above, of the 443 people who lived within the area and commuted to work, 293 (66 per cent) work in the Sydney Inner City SA3. Other areas of employment are relatively small in proportional and absolute terms.

For workers within the area of the WBACP, in the 2011 census, there were 2,089 workers and these workers can be assessed by access mode and from the SA3 they commuted from. The assessment is shown below in Table 2.5 and includes SA3s with at least 80 origin trips.

Table 2.5: Commute patterns for employees of TZ6, 7, 8, 9 and 10

Origin SA3 (number of trips)	Vehicle driver	Bus	Train	Vehicle passenger	Walk only	Other	Ferry	Not stated
Sydney Inner City (421)	19%	18%	23%	5%	23%	11%	N/A	1%
Eastern Suburbs – North (230)	35%	21%	22%	1%	N/A	8%	11%	1%
North Sydney – Mosman (143)	24%	37%	5%	2%	9%	4%	14%	4%
Eastern Suburbs – South (107)	32%	54%	4%	N/A	N/A	10%	N/A	N/A
Strathfield – Burwood – Ashfield (97)	26%	N/A	67%	3%	N/A	4%	N/A	N/A
Leichhardt (85)	32%	43%	N/A	4%	N/A	14%	8%	N/A
Overall (2,089)	30%	19%	30%	3%	5%	6%	5%	1%

Source: http://visual.bts.nsw.gov.au/jtwbasic/#9,6,7,8,10, accessed 23 August 2016

The following comments can be made about Table 2.5:

o There are 80 people who work at the area of the WBACP, live within the Sydney Inner City \$A3 and elect to drive to work at the precinct. In contrast, 97 people walk. This is a high proportion given the proximity and convenience of public transport services.



- Given the proximity to Circular Quay, a five per cent overall mode share for the ferry is reasonable, representing approximately 100 people. This may grow in the future as Barangaroo wharf becomes known in the community.
- 67 per cent of people who live in the Strathfield Burwood Ashfield SA3 elect to commute to work at the precinct by train.
- An 'other' mode of six per cent is consistent with the cycling links provided on Kent Street and the Sydney Harbour Bridge which provides largely separated cycling access to areas such as Leichhardt and North Sydney.
- Overall, vehicle driver proportion may be higher than expected, but is significantly lower than the overall rate for Sydney. Train, bus and ferry services support a high public transport access rate to the precinct and a significant proportion of people elect to transport to work by 'other' mode (generally cycling).
- Where there are visitors to the site, an assumption is made that the visitors will adopt comparable mode splits as the employees of the site.

2.4.10 Council Policy

The City of Sydney Council is a leader in promoting and encouraging active and public transport. These policies include, but are not limited to the following:

- To continue to implement the Liveable Green Network to enhance pedestrian access throughout the City and to encourage walking, especially for shorter trips and trips to local amenities.
- o To work with the State Government to introduce measures to improve pedestrian safety and priority, including 40 kilometres per hour speed limits throughout the City Centre, changes to traffic light timings and wider footpaths.
- To complete its Cycle Strategy and Action Plan, which involves 200 kilometres of cycleways, together with programs to encourage cycling as the most sustainable and healthy form of travel for medium length (one to five-kilometre) trips, noting infrastructure such as the Kent Street cycleway is in close proximity to the site.
- To continue to support car share as it provides an additional option for people to reduce their ownership and use of private cars, in conjunction with greater use of walking, cycling and public transport.

2.5 Future Transport Provision

In the short-to-medium term, there are a couple of transport infrastructure projects which will likely provide access benefits to the WBACP. These projects will provide new travel choices to the WBACP, and likely reduce dependence on private vehicles to access the site.

2.5.1 Sydney Metro

The CBD aspect of the Sydney Metro will commence operations in approximately 2024, providing high frequency services to a new station located at Barangaroo. It is anticipated that through Sydney Metro, together with signalling and infrastructure upgrades across the existing network, the capacity of train services can increase from about 120 per hour today, to up to 200 services beyond 2024. This project will provide substantial access benefits along the Bankstown-Rouse Hill corridor by improving travel times and decreasing the distance between a station (being Circular Quay or Wynyard) and the WBACP.





Figure 2.12: Barangaroo Metro Station Precinct

Source: https://www.sydneymetro.info/citysouthwest/project-overview, accessed 28 August 2017

2.5.2 CBD Light Rail

The CBD light rail project is forecast to be completed in 2019. This project will provide a light rail service linking Circular Quay with Randwick and Kingsford in Sydney's south-eastern suburbs. The project is expected to enhance the accessibility by improving travel time reliability and improving travel times along the corridor.

Figure 2.13: Light rail interchange at Circular Quay



Source: http://www.sydneylightrail.transport.nsw.gov.au/gallery?page=3, accessed 28 August 2018

3. Proposed Development

3.1 Overview

The proposal will consist of a mixed-use development incorporating approximately 16,500 square metres of entertainment floor space and associated facilities. The precinct is expected to support a workforce of approximately 650 staff and up to approximately 2,200 visitors on a typical day.

The following text provides a summary of expected visitor numbers dependent on the event profile as provided to GTA².

- Scenario 1 Peak population Most probable upper limit population that would be within the tenancies at any one time. This type of event is defined as a rare event.
- Scenario 2 Typical day population Anticipated population that would normally be expected within the precinct.
- Scenario 3 Cumulative Relies on every venue within and surrounding the precinct to
 occur at capacity concurrently. This type of event is a one-off event that is highly
 unlikely to occur.
- Scenario 4 Event Based on typical events within the precinct such as the Sydney Writers Festival and Biennale.

Table 3.1: Scenario summary

Scenario	Weekday population	Weekend population	Period of day
Peak	4,441	4,151	Evening (6pm-10pm)
Every day (50% of peak)	2,221	2,076	Evening (6pm-10pm)
Cumulative	4,441 +2,506 (surrounding WBACP)	4,151 +2,506 (surrounding WBACP)	Evening (6pm-10pm)
Event	N/A	4,250	Afternoon (12pm-6pm)

3.2 Trip Characteristics

Whilst the WBACP will generate new trips, from the outset, it is important to outline that the operational nature, consumer behaviour and the linking of journeys will guide likely overall traffic demands. It is also important to give context to the Sydney CBD as a whole.

- Overall populations generated by the site are modest when compared to the size and scope of the Sydney CBD.
- Traffic generation can be managed operationally by assessing the timing and overlap of specific events.
- Some journeys will be expected to be linked in nature, and would not be the primary cause of trip generation. For example, a couple, rather than just going out for dinner at Circular Quay, might go out for dinner and subsequently go to the WBACP for an event. Linked journeys do not add to travel demand. Further, should people drink alcohol (which would not be unexpected), they are essentially precluded from being able to drive.



 $^{^{\}rm 2}$ Correspondence from GTK Consulting, dated 18 August 2017

3.3 Traffic Generation

Traffic generation for the proposal has been estimated with regards to the Barangaroo Integrated Transport Plan. This is appropriate given the proximity of the WBACP to Barangaroo. The Plan outlines an intention of 85 per cent access to Barangaroo by public transport, 10 per cent by walking and cycling, and five per cent by private vehicle.

Extrapolating estimated staff and visitor numbers for the site as detailed above, with the mode share estimates outlined above, and with consideration of existing ABS journey to work data, Table 3.2 has been developed to identify the likely number of trips by each mode for an 'everyday' event (as outlined in Table 3.1).

Table 3.2: Future transport demands

Mode	Share	Trips (n=2,200)
Train (Includes Metro)	33%	726
Bus (Includes Light Rail)	33%	726
Walk	17%	374
Car	8%	176
Bicycle	2%	44
Ferry	3%	66
Taxi/ Ride Share	4%	88
Total	100%	2,200

With consideration of the above estimates of future transport demands, Table 3.3 shows an anticipated worst-case scenario with regards to traffic impact for traffic attributable to the WBACP development.

Table 3.3: Traffic generation estimation

Mode	Persons arriving	Average vehicle occupancy	Trip generation
Taxi/ Ride Share	88	1.5	57
Private Vehicle (including park/ pick up/ drop off)	176	2	88
Loading Vehicle	-	-	<5
Total			150

Having regard to the estimated traffic generation, and the known significant changes to the local and regional road network as part of the Barangaroo development and CBD and South East Light Rail project, traffic associated with the WBACP development would have a negligible impact on the surrounding road network. It is also noted that the peak traffic generation times of the WBACP tend to fall outside of road network peak periods.

3.4 Proposed Transport Actions

Motor Vehicle Parking

No additional car parking or motorcycle parking is proposed as part of the WBACP development.

Bicycle Parking

Various NSW bicycle planning guidelines typically outline that bicycle parking provision should be approximately three to five per cent of capacity and/or staff numbers. Accordingly, with a typical capacity of 2,200 persons, it might be expected that up to 110 spaces might be typically



provided. Whilst this remains indicative, the anticipated clientele of the precinct (with consideration of the time of events and function type) would not typically be expected to access the precinct by bicycle.

Accordingly, GTA has adopted a bicycle parking provision of approximately three per cent and considers that 66 bicycle parking spaces be provided on-site for staff and visitors (this allows for a 2% mode share as per Table 3.1, with a 50% contingency), ideally with shower and locker facilities. Future opportunities to be investigated within the precinct should demand arise (noting the high variability in visitor activity within the precinct).

The concept plan of the WBACP has provided 35 bicycle parking facilities on site for staff and 40 visitor bicycle parking racks within the public domain. Bicycle parking provision will meet five per cent of the staff population and one per cent of the visitor population. End of trip facilities are provided in each tenancy. The bicycle share schemes that have commenced in Sydney do not require secure parking. These bicycles are self-locking and do not require specific parking facilities.

Car Share

Given the WBACP will primarily function as a destination, the additional provision of car share is not likely to be beneficial to visitors. Given staff estimates of up to 650 persons in addition to the 2011 residential population of 443, with 11 car share spaces currently provided within close proximity of the precinct (Figure 2.6), a shared vehicle is available for every 99 residents or employees. This is likely to be an adequate supply of shared vehicles for the proposed development. However, this should be monitored at a precinct level moving forward.

Point-to-Point

Despite the location of WBACP in the city, it is detached from most public transport operations. Point-to-point services are likely to be most suitable in providing transport services to the site. To encourage people to use such services to gain access to the site, consideration may be given to entering an agreement with a point-to-point service provider. This may be further explored with potential WBACP-specific discount codes on event nights.

Additional drop off/ pick up areas might be considered should there be localised traffic flow issues associated with excess activities as the precinct develops. Such discussions will need to be had with the relevant Council and agencies.



4. Opportunities and Targets

Based on the transport network reviewed in Section 2, this section identifies the potential travel patterns which might be anticipated as part of the WBACP development. This section builds on the walking and public transport networks already available within and surrounding the precinct, as well as the limited on-site car parking provision, identifying transport modes which may be best suited to meet the travel demand for the site. This section guides possible initiatives which may be implemented to promote sustainable travel patterns to the site.

The final GTP will be developed in consultation with Transport for NSW, the City of Sydney, Roads and Maritime Services and the CBD coordination office.

4.1 Analysis

Scenario 1: Business as usual

If no green travel actions are taken, it is likely that the new staff/visitors would adopt travel patterns similar to those currently living and working in the area. In this way, the current travel patterns are a suitable proxy to identify likely future travel patterns if no green travel actions are applied (broadly consistent with Table 2.5). If the management of the WBACP make an active effort to encourage 'greener' travel modes, preferred future travel patterns can be established.

Scenario 2: Wayfinding and visitor/staff travel information

By informing staff and visitors with quality information about transport options, the site can achieve more walking, cycling and public transport use. Providing wayfinding and public transport information to staff and visitors is an opportunity to demonstrate good transport practice and encourage individuals to adopt these travel modes and promote long term travel behaviour changes.

In the short term, this should be emphasised towards the railway station/ferry wharves/bus stops at Circular Quay and Wynyard railway station. This will also include signage to the future Barangaroo Sydney Metro station and integrating with the CBD light rail at Circular Quay.

Scenario 3: Proactive initiatives ('reach' target)

The WBACP development could proactively pursue initiatives to accommodate pedestrians, cyclists and public transport users. To achieve 'reach' travel targets, prototype projects and initiatives which promote 'active transport' may be required to minimise car use by staff and visitors.

Ideally, the primary travel mode of employees and visitors would be to walk to/from Circular Quay (or Barangaroo in the long term) and to access a train, bus, light rail or ferry. The WBACP development objectives would lie in ensuring a greater percentage of staff and visitors choosing to catch public transport.

Based on the JTW data shown in Table 2.5 and the frequency of alternative transport modes available near the site, and the Barangaroo Integrated Transport Plan goals, the following mode splits have been determined:

- 85 per cent of staff and visitors travelling to by public transport (train, bus, ferry, light rail)
- o 10 per cent of staff and visitors travelling to work walking or cycling
- Five per cent or less of staff and visitors travelling by private car.



A sporadic travel survey of visitors might be desirable to provide a base case for such transport uses, refine assumptions and inform future programs as part of the GTP.

4.2 Target Modes and Actions

The location of the site, in terms of its proximity to Wynyard and Circular Quay stations (and in the future Barangaroo metro station) is a key attribute in the justification of the mode shares. The GTP puts in place measures to further influence the travel patterns of staff and visitors with a view to encouraging modal shift away from cars. The measures provided in this GTP and their success can inform the travel plans for subsequent developments in the area, including Barangaroo. To reduce car parking demand from the WBACP, the most straightforward and achievable target modes and actions should be addressed first.

i Implementation of the GTP

- Appoint a Travel Plan Coordinator (TPC) to ensure the successful implementation and monitoring of the GTP. This should be coordinated in an integrated format for the entire precinct not for individual developments.
- Conduct sporadic travel surveys to establish travel patterns in the area and assess success of the GTP. This is to be managed by the appointed TPC. Allow surveys to incorporate suggestions from visitors and staff to improve green travel arrangements. Door surveys may be undertaken by simply asking where visitors have commuted from and how they got to the site.

ii Increase walking, running and cycling to work and to other destinations (errands, recreation, social) by staff and visitors

- Ensure that there is accessible and secure bike parking for staff and visitors.
- Use the precinct bicycle store as a prominent reminder of cycling to the site. The 'Pit Stop' at City of Sydney represents a precedent in terms of the design of such a facility.
- Promote local bicycle facilities, shops and learn-to-ride or bike maintenance courses available through Sydney Cycleways to staff to encourage and facilitate an increase in cycling.
- Work with City of Sydney Council and other relevant partners to establish a clear tourist walk with associated wayfinding, maps and points of interest between Circular Quay and Barangaroo/ Wynyard.
- Advocate for the creation of street networks and associated cycleways, footpaths and links to encourage cycling and walking.

iii Increase public transport use

• Tenants to consider providing information about public transport access options to the site at the time of ticket purchase.

iv Increase consideration of point-to-point transport options

• Tenants to consider providing information about available point to point transport options to the site at the time of ticket purchase.

V Increase car share use

• Undertake awareness campaigns with tenants of the WBACP to promote, where possible, the use of car share services such as GoGet.



vi Increase awareness and knowledge of available transport options by tenants

- Development and provision of a Transport Access Guide (TAG) which would be given to tenants of the precinct. This document would be based upon facilities currently available at the site and would be updated regularly to reflect changes in public transport service, active travel facilities and other relevant pieces of information.
- Consider providing real time information on public transport arrival/ departure times. There is a growing trend of buildings having information screens in, for example, the lobby identifying information such the local weather and a rolling newsfeed. A similar display could be arranged to show train departure times from Circular Quay or Wynyard station and as well as bus stops within the vicinity of the site. This would also extend to informing tenants of the availability of smartphone apps such as TripView for real time data. The digitals signs proposed for the precinct could include this information (refer to separate wayfinding and signage report by others).
- A half-yearly newsletter could be provided to tenants for up to two years after occupation bringing the latest news on sustainable travel initiatives in the area and informing of upcoming changes (light rail and Sydney Metro). This newsletter could incorporate events occurring from the pedestrian generators identified in Section 2.4.4.
- Provision of high quality, accurate and useful directional signage to promote walking and cycling is essential and it is proposed that this is provided stating times to destination in minutes taken as well as distances in half kilometres.
- Promote bicycle share scheme use to visitors of the precinct.

Based on the targets identified and some of the initiatives outlined above, Section 5 identifies a program checklist to achieve travel behaviour through this plan. These targets are measurable through spot surveys. Using these metrics, the property manager can quickly track performance against the travel plan objectives to recognise what programs are working and link program funding and initiative promotion to results.

The chosen measures would ideally be in place from 'day one' as people will establish long term habits from day one, so if there is no bus service, timetable, bike, bike route or walking information, they will tend to drive and mode choice is somewhat inelastic.

Every tenant's welcome pack should not only include the TAG, which would give detailed information about how to travel to and from the site by means other than the car, but also an information on how to use services such as GoGet and the availability of ride share services.

4.3 Information and Communication

Several opportunities exist to provide staff and visitors with information about nearby transport options as well as cultures and events that encourage green travel habits, many of these are included within Section 2 of this report. Connecting staff and visitors with information would help to facilitate journey planning and increase their awareness of convenient and inexpensive transport options which support long term changes in travel behaviour.

Transport NSW info

 Bus, train and ferry routes, timetables and journey planning are provided by Transport for NSW through their Transport Info website: http://www.transportnsw.info/



Sydney Cycleways

• City of Sydney provides a number of services and a range of information to encourage people of all levels of experience to travel by bicycle. http://sydneycycleways.net/

Connecting tenants via social media may provide a platform to informally pilot new programs or incentivise long term travel behaviour patterns.

5. Actions

5.1 General

Action	Timeframe
Identify a tenant/champion to complete travel coordinator duties involved in this plan for up to a year	Prior to occupation
Provide a welcome pack upon initial occupation of each tenant, which includes a TAG and information regarding how to use GoGet and become involved in car-sharing and point-to-point travel	Prior to occupation
Further utilise existing social media opportunities to inform tenants and visitors with up to date transport information and initiatives	During operation

5.2 Walking

Action	Timeframe
Identify tenants living near work that may be interested in walking to work	During Operation
Identify through the travel survey what incentives might need to be put in place for non-walkers to consider a mode shift	During Operation
Provide wayfinding signage between the precinct and significant public transport hubs such as Circular Quay and Wynyard	Prior to occupation
Produce a map showing safe walking routes to and from the site with times, not distances, to local facilities, such as shops and public transport stops	Prior to occupation
Promote participation in events such as 'National Walk to Work Day'	During Operation
Have some TravelSmart Get to Work days encouraging tenants to travel by alternative modes of transport	During Operation
Consider distributing emails to visitors prior to events informing of the possible access options	During Operation

5.3 Cycling

Action	Timeframe
Inform staff through the TAG of the presence of cycling clubs and Bicycle Users Group (BUG). BUGs are formed by people who want to work together to improve facilities for cyclists and encourage cycling	Prior to occupation
Organise a cyclists' breakfast. A potential location would be at The Rocks. Doing so would establish a strong relationship with the local businesses	During Operation
Provide sufficient bicycle parking to meet peak needs	Prior to occupation
Have good, secure bicycle parking in an easily accessible location	Prior to occupation
Provide bicycle parking for visitors	Prior to occupation
Ensure bicycle parking is clearly visible or provide signage to direct people to cycle bays	Prior to occupation
Provide or rent secure bicycle lockers	Prior to occupation
Supply a communal toolkit for staff consisting of puncture repair equipment, a bike pump, a spare lock and lights. Illustrations of how to undertake basic repairs might also be provided. Contact details of local shops such as Bike Bug might also be provided on the poster	During Operation
Provide an on-site bicycle maintenance service course within the precinct (either as a special one-day event or on a regular basis)	During Operation



Action	Timeframe
Produce a map showing more leisurely bicycle routes to work	Prior to occupation
Use bicycle couriers for local deliveries	During Operation
Promote the participation in annual events such as 'Ride to Work Day'	During Operation
Liaise with a café to provide staff with subsidised coffee to promote cycling past their premises	During Operation
Promote bicycle share schemes	During Operation

5.4 Public Transport

Action	Timeframe
Within the TAG, provide information about the best way to commute to high areas with high residential as outlined in this report (City of Sydney, Eastern Suburbs, North Sydney, Leichhardt etc.)	Prior to occupation
Consider installing a digital notice board with maps showing the main public transport routes to and from work as well as departure times and estimated walking times to the closest train stations and bus stops	Prior to occupation
Engage with the City of Sydney to liaise with Transport for NSW to develop new and enhance existing bus routes into the Dawes Point region	During Operation
Liaise with a café to provide residents with subsidised coffee to promote walking to either a bus stop or railway station	During Operation

5.5 Carpooling and Car Share

Action	Timeframe
Through surveys, identify staff who may be able to car pool to the precinct by identifying cost savings	During Operation
Allocate additional spaces as required for car-sharing pods within the precinct	During Operation
Within the travel survey, try and pair staff who work in the same area in an attempt to car pool. Promote the realisation of cost savings to these staff	During Operation
Tenants to provide information about point-to-point transport opportunities	During Operation

5.6 Car Parking

Action	Timeframe
The application of the City of Sydney parking provision conditions in line with LEP/ DCP maximum limits means that onsite parking is restricted to encourage non-car ownership	N/A
Staff of the development will not be eligible to participate in Council's resident parking schemes for on-street parking	N/A
Consider the provision of on-street disabled parking to enhance disabled access	Prior to Occupation



6. Monitoring and Review

For the GTP to be effective it must be reviewed on a regular basis. It is important to ensure that the GTP is meeting its objectives and having the intended impact on car use and transport choices for the visitors and staff of the WBACP. The GTP should ideally be reviewed on a yearly basis with staff travel surveys and in consultation with Council's Planners or Sustainable Transport Officer. The GTP should be updated and changed to reflect changing circumstances.

6.1 Travel Survey

It will clearly be important to understand people's reasons for travelling the way they do, any barriers to changing their behaviour and their propensity to change. This will enable the most effective initiatives to be identified, and conversely less effective initiatives can be modified or replaced to ensure the best outcomes are achieved.

To monitor the GTP, a travel questionnaire should be conducted of all residents. Surveys results should be reported annually by the TPC or building manager to senior management and used to inform funding allocation for successful programs/ removal for unsuccessful programs. This would be in consultation with Council Planners or Sustainable Transport Officer, as required. Based on the review the travel plan should be updated to reflect changing circumstances.

An example format for the survey is provided below.

An e	example format for the survey is provided below.
Do	you identify as a worker or a visitor?
Q1:	What postcode is your residence?
	As a guest/ staff member of the Walsh Bay Arts Precinct, how did you travel here today? ect one)
0 0	Walk / run Bicycle Bus
0 0	Train Combination bus and train Drive a car
0	Passenger in a car Other (explain)
Q4:	What is your preferred mode of travel on a day-to-day basis? (Select one)
0	Walk / run Bicycle
0	Bus Train
0	Combination bus and train Drive a car
0	Passenger in a car
0	Other (explain)

Q5: Would you realistically consider another mode of transport to travel here? What would the mode be and what needs to be done to facilitate that change? For example, might you might consider cycling if there were more paths. (Select one)

- Walk / run
- Bicycle
- o Bus
- Train
- Combination bus and train
- Drive a car
- Passenger in a car
- Other (explain)

6.2 Review In-house Programs

The annual resident travel survey would assist the TPC in the review of the GTP. If required, the plan would be updated, in consultation with Council Planners or Sustainable Transport Officer.

Other feedback provided to the travel coordinator should be used to update programs as well. Sample feedback could include: email responses to programs, monitoring the bike/ car parking spaces used, hits on a website, activity within social networking groups related to transport programs, transport complaints and participants at events.

People in any organisation like to be part of a successful plan. Residents should be kept informed of green travel achievements, e.g. send out email bulletins, make announcements during meetings, or have a dedicated column within internal/ external publications. Advertise success to residents as part of a sustainability and green campaign for the estate.

6.3 Gaps

During occupancy, it may be that transport deficiencies are identified. Some examples may include:

- o provision of car-pool priority spaces may be required as demand grows
- o bicycle spaces and lockers for residents and visitors as demand grows.

Transport deficiencies would be tracked by the travel coordinator; these issues may need to be revisited if identified as an issue during monitoring.



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