

6 Pedestrians and Cyclists

The C4 commercial building will be mainly accessed by pedestrians walking from railway stations, bus interchanges, ferry wharfs and homes. It is estimated that around 91% of people will be accessing the site on foot. Based on the assumption³ that 80% of commuters arrive in the three hour peak and out of which 61% arrive in the peak hour it is estimated that 1,997 people would be accessing the C4 commercial building on foot in the peak hour.

There will also be a high proportion of cyclists commuting to the C4 commercial building. It is estimated that around 4% of workers will commute on a bicycle, by applying the same assumptions as above, 88 cyclists would be arriving to the C4 commercial building in the peak hour.

The detailed breakdown of AM peak commuters is shown in Table 7 and amalgamated into people walking, cycling or arriving by vehicle in Table 8.

Table 7 Mode share of people arriving at C4 commercial building

Mode Split	Number of people travelling to work			
	%	Daily	AM peak period (3 hour peak)	AM peak hour
Car driver parking onsite	2.8%	128	102	62
Car driver parking offsite	0.3%	14	11	7
car passenger of car parked on site	0.6%	27	22	13
car passenger of car parked off site	0.3%	14	11	7
bus	20.0%	911	729	445
light rail	0.0%	-	-	-
train	63.0%	2,869	2,295	1,400
ferry	1.0%	46	37	23
truck	0.0%	-	-	-
taxi	1.0%	46	37	23
walk	6.0%	273	218	133
bicycle	4.0%	182	146	89
motorcycle on site	1.0%	46	37	23
motorcycle off site	0.0%	-	-	-
Total	100%	4,554	3,643	2,222

* AM peak hour number of car drivers parking on site includes retail and commercial car drivers, and does not include service vehicles.

³ The assumption comes from the Modified Concept Plan Traffic Report July 2008 from Section 4.4 which applies to rail; this assumption has also been applied to all modes of transport apart from car driver parking on site in the AM peak hour.

Table 8 Number of people arriving at C4 commercial building

Mode Split	Number of people travelling to work			
	%	Daily	AM peak period (3 hour peak)	AM peak hour
walk to C4 commercial building (from home, station, bus stop etc)	90.6%	4,126	3,300	2,013
drive to C4 commercial building (car/motorcycle/taxi/car drop off)	5.4%	246	197	120
cycle to work	4.0%	182	146	89
Total	100.0%	4,554	3,643	2,222

6.1 Pedestrian Linkages

The C4 building will have pedestrian friendly access with low vehicular traffic and wide footpaths along both Shelley Street and Globe Street adjacent to the precinct. It is estimated that out of the 91% of people accessing the C4 commercial building on foot will be around 70% rail commuters and around 21% bus commuters.

The Wynyard Station - Kent Street pedestrian tunnel is heavily utilised for train commuter access to the King Street Wharf precinct. The C4 commercial building will introduce a further 1074 arrivals to Wynyard Station in the AM peak hour (based on current split of city station use). The majority of these pedestrians will utilise the new Wynyard Walk link to travel between the station and the C4 building.

The remainder 8% of walkers will be the commuters walking from home, ferry wharfs and other locations in the city. It is expected that of the people walking from home around 50% will walk from Darling Harbour along the waterfront and 50% from the Kent Street direction. There would be a small proportion of people accessing the C4 commercial building from the north along Hickson Road.

The C4 building will be one of a series of buildings forming the Barangaroo South development. Ultimately it will have pedestrian friendly access with low vehicular traffic and wide footpaths along Shelley Street, Napoleon Street extension and Globe Street.

The following pedestrian linkages are proposed for Barangaroo South:

- Wynyard Walk: A new high-volume pedestrian tunnel from Barangaroo to the frequent rail and bus services at Wynyard Station and George Street (currently under construction)
- City Walk Wynyard Connection: A new pedestrian link bridge over Sussex Street/Hickson Road located close to the intersection of Hickson Road and Napoleon Street which links into the Wynyard Walk.
- 189 Kent Connection: A new pedestrian link bridge over Hickson Road to be constructed and coordinated with the future development of 189 Kent Street.
- Maritime Staircase: A new staircase at the junction of Napoleon Street and Hickson Road which connects to the Maritime Centre

Key walking routes to and from the C4 building are presented in Figure 6

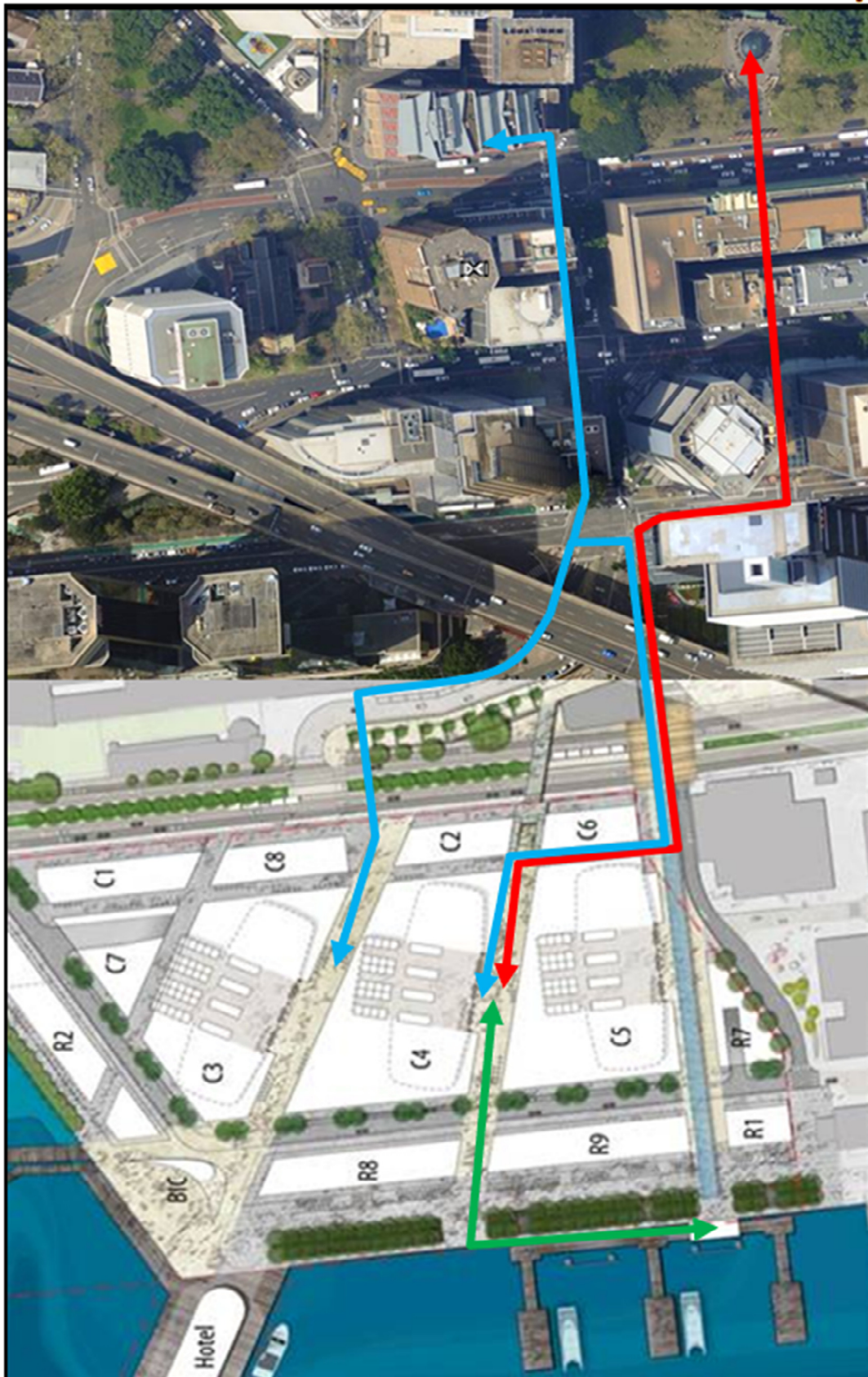


Figure 6 Key Walking Routes from the C4 Building

6.2 Cycling Access

An area of the basement car park has been allocated to provide for bicycle facilities associated with future C4 development. Access to the bicycle facilities is currently located off Hickson Road via a dedicated bicycle ramp down to Level B1 which provides a safe access environment for cyclists. End of trip facilities such as showers, changing rooms and lockers will be available in close proximity to the bicycle parking area.

A minimum of 5% of the commercial population will be provided with bicycle facilities with the total number of bicycle spaces and associated facilities in accordance with the relevant Green Star requirements. Current planning for the commercial development is targeting the provision of bicycle facilities for 10% of the commercial population which is in excess of the mode share target for cycling and will allow for growth in this mode of travel as the city's bike facilities improve. The additional facilities are likely to be provided in a staged manner making adequate provision for this growth. Short term visitor parking will also be provided near the entrance to the building, visible to the public eye.

The City of Sydney has recently commenced a roll out of a cycleway network where dedicated cycle lanes are being constructed throughout the CBD as part of its Cycle Strategy and Action Plan 2007-2017⁴. The Barangaroo cycling strategy will include integration with this cycleway network.

New separated cycleways along both King Street and Kent Street in close proximity to the C4 building have recently been completed. These routes provide a connection between the Anzac Bridge and Sydney Harbour Bridge cycleways. It is anticipated the majority of cyclists will arrive to the Barangaroo South precinct using these dedicated cycling facilities.

The main cycling routes to and from the site are indicated in Figure 7.

⁴ Refer City of Sydney's publication entitled Cycle Strategy and Action Plan 2007-2017, City of Villages dated February 2007.



Figure 7 Key Cycling Routes to and from the C4 Building

7 Public Transport

The site is well located to a number of public transport hubs, including rail, bus and ferry. Public transport accessibility to Barangaroo is a key area where there has been further development since the TMAP 2008. At the time of the TMAP 2008 assessment, the mode share to public transport was focused on train and bus with a very low ferry mode share. There is now the potential for a number of changes to transport modes to influence the mode of choice to Barangaroo; these being Sydney Light Rail and Ferry services.

7.1.1 Ferry

Existing commuter ferry services providing access to Barangaroo and the CBD in general arrive and depart from King Street Wharf (number 3) and Circular Quay. The potential for a new Barangaroo Wharf Ferry terminal adjacent to the C4 building has the potential bring additional ferry services and routes, contributing to an to increase ferry mode share. The current TMAP assigns only a 1% mode to ferry for journey to work. Larger tenants in the Circular Quay area have recorded ferry mode share as high as 7% indicating that there is good potential for an increased ferry mode share with increased services and improved frequencies.

7.1.2 Wynyard Walk

The NSW Government's 2012-13 Budget includes \$61 million to building the Wynyard Walk (previously Barangaroo Pedestrian Link), a direct pedestrian link between the new Barangaroo development and Wynyard Station and transport interchange. The Wynyard Walk, expected to be complete by 2015, will provide a high level of access to public transport for the growing western corridor of the CBD, including Barangaroo and the King Street Wharf.

7.1.3 Sydney Light Rail

The first stage of the inner-west light rail extension is a 5.6km extension running between Lilyfield and Dulwich Hill. It will run from the current light rail terminus at Lilyfield, along the disused freight rail corridor, to Dulwich Hill. The NSW Government's 2012-13 Budget has allocated \$116 million for the construction of the railway, which is expected to be operational by 2014. It could be expected that public transport patronage to Barangaroo from the inner west would shift mode from bus and rail as a result of these extensions.

The NSW Government has allocated \$25m in the 2012-13 Budget to plan for future light rail development across Sydney. The Government recently appointed consultants to prepare a Light Rail Strategic Plan for an area approximately 10km in radius from the Sydney CBD to consider light rail extensions as part of a wider integrated light rail network. This plan will specifically investigate the feasibility of extending light rail through the CBD, to the University of NSW and to Sydney University. The integration of existing and planned light rail networks would further enhance patronage by this mode to Barangaroo. The preferred light rail corridor, as recently published in the Draft NSW Long Term Transport Masterplan, is presented in

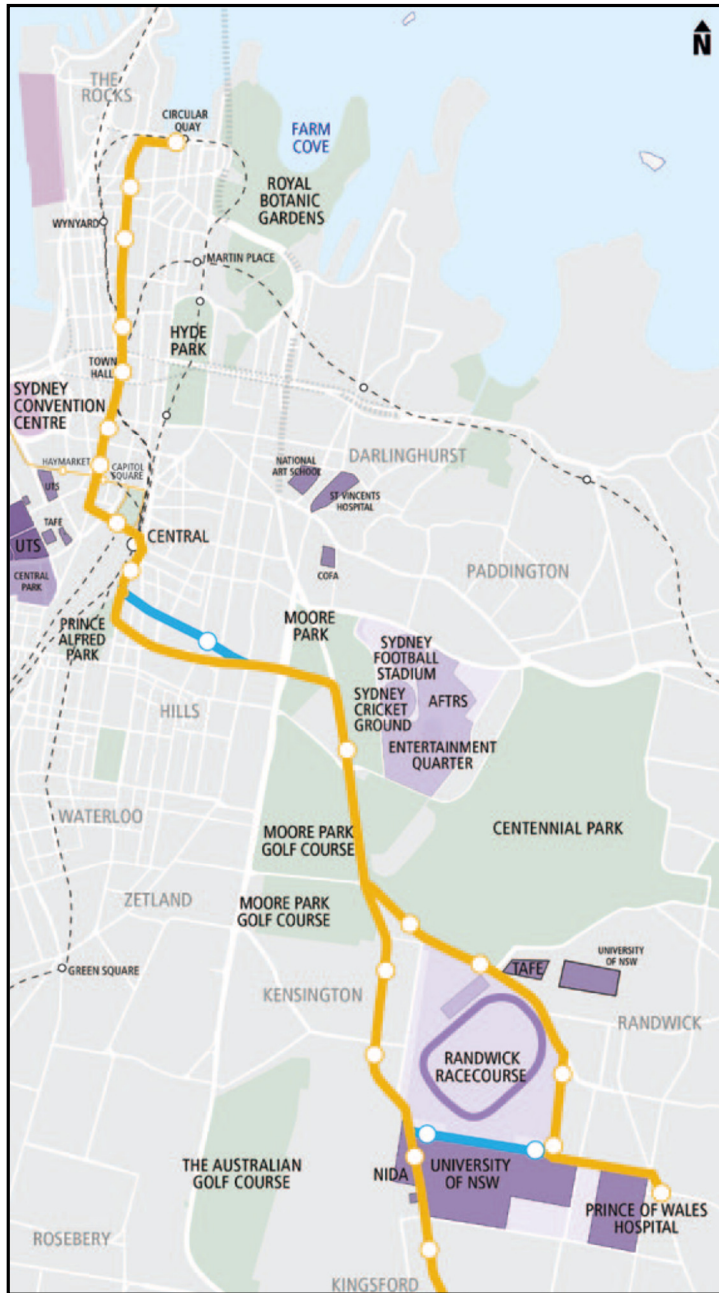


Figure 8 Sydney Light Rail Preferred Route

The Draft NSW Long Term Transport Masterplan presents the key findings from the Sydney Light Rail Study, highlighting that a light rail option serving Barangaroo via The Rocks would *'provide fewer customer benefits, and therefore (is) considered a lower priority.'*

7.1.4 North West/South West Rail Links

The NSW Government is committed to building the North West Rail Link and South West Rail Link, allocating more than \$750 million to continue work on the projects in the 2012-13 Budget which includes:

- \$360 million to develop the 23km North West Rail Link between Epping and Rouse Hill. This includes funding the preparation of major construction sites,

property acquisition and the development of a second Environmental Impact Assessment (EIS). An EIS for the major civil construction works was placed on public exhibition in April 2012, with the EIS for the Stations, Rail Infrastructure and Systems placed on public exhibition in October 2012.

- \$397 million to continue construction of the South West Rail Link, which includes 10.5km of twin track between Glenfield and Leppington, two new stations at Edmondson Park and Leppington, car parking and a train stabling facility at Rossmore. The project will be finalised in 2016

The North West Rail Link is planned by the NSW Government to run as a shuttle service between Chatswood and Cudgegong Road in the North West growth sector. The proposed alignment is presented in Figure 9.



Figure 9 North West Rail Link Proposed Alignment

7.1.5 Improving Public Transport Services and Facilities

The NSW Government's 2012-13 Budget includes a range of improvements to public transport including:

- \$124 million towards delivering electronic ticketing for ferries, trains, buses and light rail.
- \$127 million to acquire 269 buses for Sydney and the outer Metropolitan area
- \$148 million for the new transport access program to improve access to the public transport network, including station upgrades, better access to CityRail Stations, improved transport interchanges and commuter wharf improvements.
- \$95 million for infrastructure upgrades for the rollout of the new Waratah trains.
- \$22m for capital improvements on the Sydney Ferry fleet and infrastructure

7.1.6 Long Term Transport Masterplan

The draft NSW Long Term Transport Masterplan was released in September 2012 and outlines a 20 year plan for the direction of transport services across NSW. The plan presents an integrated approach to transport planning and identifies the roles

different modes of transport play in meeting the future needs of the State population.

The *Draft NSW Long Term Transport Masterplan* confirms that the proposed Barangaroo Ferry Hub is an integral component of Sydney's transport network, supporting commercial development of Barangaroo and take pressure off Circular Quay.

The masterplan aims to integrate public transport services to maximise future use as well as improve the overall customer experience. The masterplan discusses the implementation of the 'Opal' card – the future integrated public transport ticketing system for NSW.

7.1.7 Barangaroo Integrated Transport Plan

In August 2012 the BDA released the Barangaroo Integrated Transport Plan, which was prepared by a taskforce chaired by Transport for NSW and included City of Sydney, BDA, Lend Lease and other Government agencies. The plan outlines a series of transport strategies and actions to accommodate the significant employment growth in the northern CBD over both the short and long term. A selection of the recommended actions include:

- Plan for investigation of a future bus corridor along Hickson Road in lieu of light rail;
- To accommodate the significant increase passenger throughput over the short and long term (up to 26%), prepare a costed implementation plan to upgrade the station and improve capacity;
- Investigate options to relieve congestion at the Wynyard bus interchange and increase the number of bus stops and layovers;
- Commence planning for a new ferry interchange at Barangaroo;
- Complete the Sydney Light Rail strategic plan to determine the feasibility of light rail on George Street and Hickson Road;
- Construct Wynyard Walk, City Walk Bridge and other bridges over Hickson Road as per existing planning approvals;
- Improving cycling access to Barangaroo by extending the City of Sydney's bicycle network, including upgrading existing bicycle shoulder lanes on Hickson Road; and
- Locate sufficient taxi ranks in consultation with City of Sydney, BDA and the Taxi Council.

8 Conclusions

The section 75W application for the C4 Commercial Building is lodged under the existing Approved Concept Plan December 2010 (Modification 4).

Vehicular access to the C4 building will be provided via Hickson Road and Globe Street. A temporary road will be constructed to connect the access ramp in the north east corner of the basement to Hickson Road.

Traffic modelling of key intersections surrounding the site using LinSig indicates that the final ground floor layout including the basement exit at Hickson Road / Napoleon Street is forecast to operate satisfactorily in the peak hours with the addition of Barangaroo development traffic. In terms of peak hour traffic generation, the proposed modification to the C4 building results in a minor reduction (one vehicle in each peak hour) when compared with the current approvals.

The key area where there has been further development since the TMAP 2008 is in the area of public transport access to the site. At the time of the TMAP assessment, the mode share to public transport was focused on train and bus with a very low ferry mode share. There is now the potential for a number of changes to transport modes to influence the mode of choice to Barangaroo; these being Sydney Light Rail and Ferry services. These alternatives improve the potential to support the mode split towards public transport and the concepts of the TMAP.

The NSW Government's 2012-13 Budget includes investment in new transport services for Sydney including funding for planning for future light rail development across Sydney, funding to building the North West and South West Rail Links, funding for construction of the Wynyard Walk and improvements to bus and ferry services. The NSW Long Term Transport Masterplan, released in September 2012, outlines a future direction for transport services across NSW including measures to increase the attractiveness of non-car modes of transport. The released published Barangaroo Integrated Transport Plan provides a series of short and long term actions to ensure transport management policies are in place to meet the needs of Barangaroo commuters. These will all assist Barangaroo to achieve a high public transport mode share.