



Interchange Access Plan

Barangaroo Station

September 2022
Version 6



Contents

1.0	Introduction	5
2.0	Interchange and transfer planning	9
3.0	Consultation	19
4.0	Interchange Access Plans planning conditions	23
5.0	Regional context	27
6.0	Barangaroo – local context	31
7.0	Barangaroo – interchange and transfer requirements overview	35
8.0	Barangaroo – operations, maintenance and management provisions	49
9.0	Modal hierarchy review	53
10.0	Barangaroo – actions	57

Sydney Metro respectfully acknowledges the traditional owners and custodians of this great land and we pay our respects to Elders past, present and future, extending this respect to all Aboriginal and Torres Strait Islander peoples.

Cover: Barangaroo Station precinct looking northeast from Street D
Right: Barangaroo Headland Park





1.0 Introduction

Barangaroo Station northern entry .

1.0 Introduction

1.1 Sydney Metro

Sydney Metro has four core components:

Sydney Metro Northwest

Services started in May 2019 in the city's north west between Rouse Hill and Chatswood, with a metro train every four minutes in the peak. The project was delivered on time and \$1 billion under budget.

Sydney Metro City & Southwest

The Sydney Metro City & Southwest project includes a new 30 kilometre metro line extending metro rail from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through new central business district (CBD) stations and southwest to Bankstown. It is due to open in 2024, and will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new underground metro platforms at Central Station. In addition, it will upgrade and convert all 11 stations between Sydenham and Bankstown to metro standards.

Sydney Metro West

Sydney Metro West will be a new underground metro railway that will double rail capacity between Greater Parramatta and the Sydney CBD transforming Greater Sydney for generations to come.

This once-in-a-century infrastructure investment will have a target travel time of about 20 minutes between Parramatta and the Sydney CBD, link new communities to rail services and support employment growth and housing supply.

The construction of Sydney Metro West will create more than 10,000 new direct jobs and 70,000 indirect jobs.

Stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

Sydney Metro - Western Sydney Airport

Metro rail will also service Greater Western Sydney and the new Western Sydney International (Nancy Bird Walton) Airport. The new railway line will become the transport spine for the Western Parkland City's growth for generations to come, connecting communities and travellers with the rest of Sydney's public transport system with a fast, safe and easy metro service. Six new stations will be delivered at St Marys, Orchard Hills, Luddenham, Airport Business Park, Airport Terminal, and Western Sydney Aerotropolis. The Australian and NSW governments are partners in the delivery of this new railway.

Additional information can be obtained from the Sydney Metro website at www.sydneymetro.info.

1.2 Sydney Metro & Southwest objectives

The objectives of Sydney Metro are to:

- Improve the quality of the transport experience for customers.
- Provide a transport system that is able to satisfy long-term demand.
- Grow public transport patronage and mode share.
- Support the productivity of the Eastern Economic Corridor.
- Improve the resilience of the transport network.
- Improve the efficiency and cost effectiveness of the public transport system.

1.3 Interchange Access Plan

The Interchange Access Plan (IAP) has been developed by applying broad transport and access standards, guidelines, principles and strategies to the specific physical and operating environment of the interchange. It consolidates the requirements and aspirations for good customer transfer and identifies potential barriers or risks to achieving them, considering anticipated patronage and movement patterns once metro services are in operation.

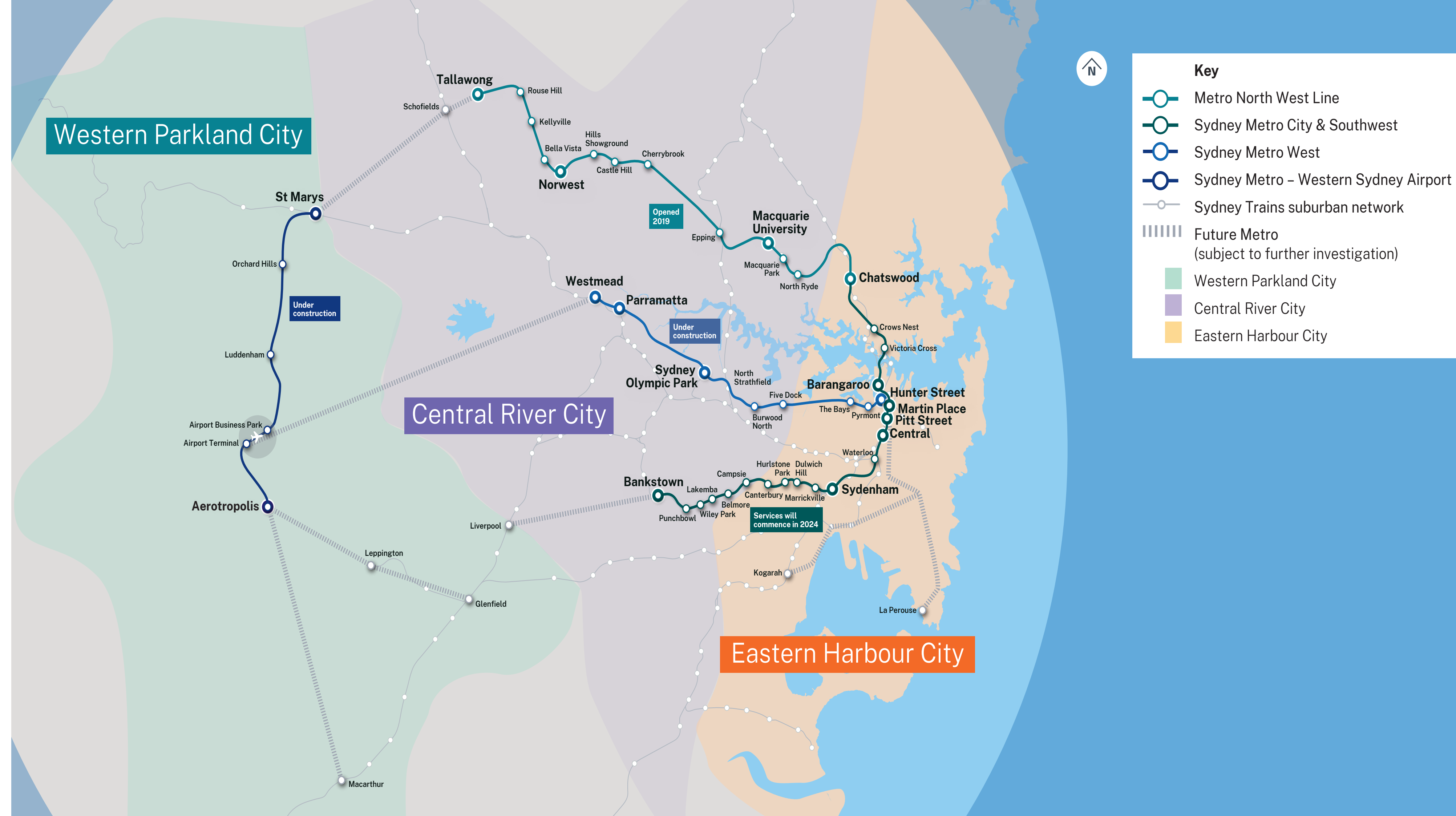
The Interchange Access Plan sets out areas that are likely to require attention, either as part of the metro development or subsequently, and identifies the agency or stakeholder responsible for delivering improvements. Some improvements to infrastructure and operations will be made as a direct result of constructing the metro stations and associated works.

1.4 Purpose of the Plan

The Interchange Access Plan has been prepared to:

- Respond to the requirements of the Sydney Metro City & Southwest – Chatswood to Sydenham conditions of approval.
- Provide detailed interchange deliverables.
- Inform the interchange design of transport and access facilities, including footpaths, cycle paths and bike parking, bus stops (temporary transport requirements considered), and car parking.
- Identify customer amenities, shelter, and road and traffic management required to ensure easy, accessible, safe and efficient customer transfer when services start in 2024.
- Provide a list of actions for delivery partners and other stakeholders to enable the implementation of an easy customer transfer which supports the project objectives.

The Interchange Access Plan is provided to inform planning and investment decisions. This document will be updated in response to station design as required.





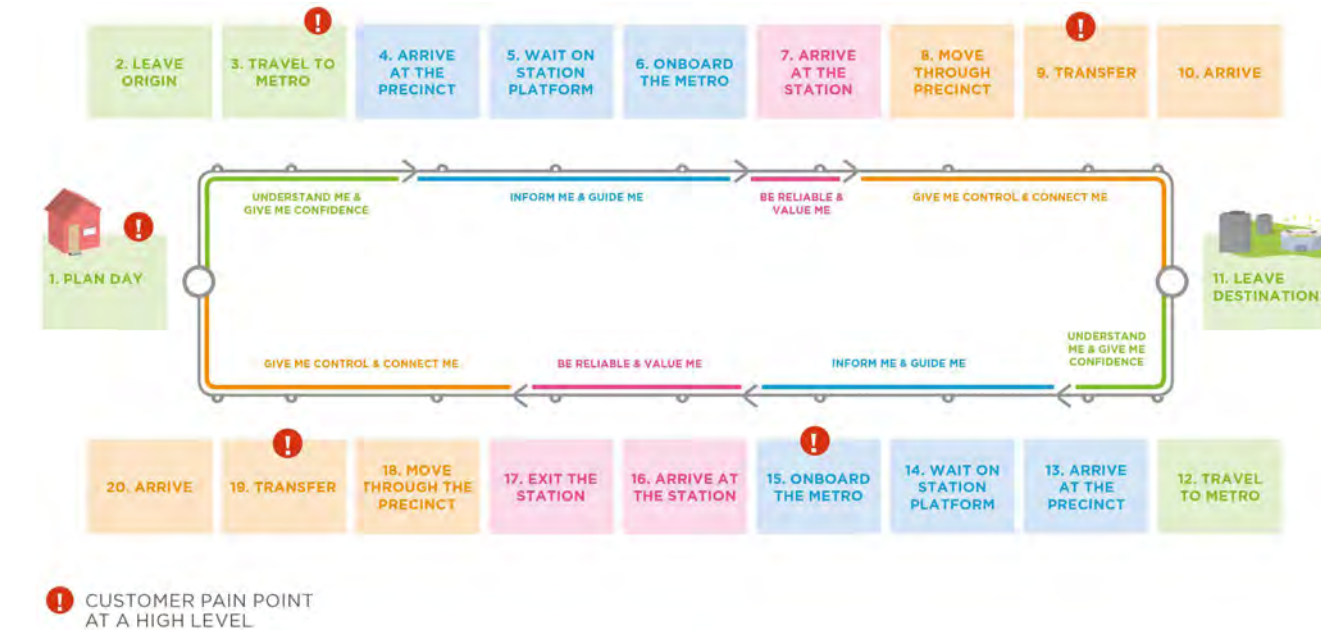
2.0 Interchange and transfer planning

Barangaroo Station bike parking

2.0 Interchange and transfer planning

Transport for NSW (TfNSW) is responsible for ensuring the needs of the customer are at the centre of planning and decision making for the transport system, and that all projects and services are designed and operated accordingly. This is reflected in the TfNSW mission statement:

‘The customer is at the centre of everything we do in transport.’



Door-to-door-to-door experience for Sydney Metro

2.1 Customer-centred design

Sydney Metro aims to serve a diverse set of customers who will undertake a number of journeys throughout the day and week using the metro. The design and delivery of service is centred around the customer – their needs, behaviours, and their jobs to be done.

Sydney Metro’s commitment is to deliver a reliable ‘door-to-door-to-door’ (from origin to destination and back again) transport solution, which is easy for all customers. This is through designing a seamlessly integrated experience with a focus on moving customers around safely, quickly and easily, and that is adaptive to change.

Providing services centred around the customer is key to Sydney Metro’s ongoing success and building a solid customer base.

Customers expect the provision of a service that is on time, clean, safe, comfortable, efficient, convenient, has the right information and has adequate customer service. These basics are key drivers of customer satisfaction. Sydney Metro’s goal is to deliver a level of service that goes beyond satisfaction, makes it easy for customers to use the metro and encourages repeat use across the multiple types of journeys they may make. This will support TfNSW’s goal of increasing the number of journeys taken on public transport by the public, both in the peak and off-peak periods.

Sydney Metro provides a customer focus by addressing customer needs at all stages of the journey. A critical principle of Sydney Metro is that every effort will be made to make good connections to other modes, ensuring an easy and quick transfer. It is critical to customers that their journey is

seamless and well integrated across all connecting modes and that there is easy and safe access to connect to/from the metro.

At each stage of the journey there are a number of touchpoints where the customer will interact with a TfNSW product, service, system or is interacting in one of TfNSW’s spaces such as a station or an interchange or using one of TfNSW’s modes. At these touchpoints the aim is to make it easy to interact as well as provide consistency in service delivery and information, such that it is easy for a customer to have a seamless journey.

The stations, interchanges, trains and complete travel experience all contribute to and will be integral

to the customer experience. A high-quality transport product is critical to attracting and retaining customers, and also to meeting broader transport goals.

Linking communities, schools, hospitals, key destinations and businesses with the new metro network is key in delivering the easy customer experience.

2.2 Sydney Metro customer principles

The Sydney Metro customer principles inform the design, development and operation of the services, products, systems and spaces to enable customers to have an easy and safe customer experience.



Sydney Metro customer principles

Interchange and transfer planning continued

2.3 An integrated customer journey

Customers see their journey from ‘door-to-door-to-door’ and may plan and use multiple travel modes throughout their journey in order to achieve their tasks. It is critical to customers that their journey is seamless and well integrated across all connecting modes, and that access to/from the metro from other modes is easy, efficient and safe.

The Sydney Metro customer journey map captures the touchpoints in a customer’s journey from door (origin – planning the day) to door (destination) to door (return to origin). Key customer satisfaction drivers and customer principles that are important to customers have been noted at each journey stage. The satisfaction drivers indicate the service attributes that customers consider most important, what customers believe represents value, and the elements of the transport experience that contribute to customer satisfaction. Customer experience of the transport system is made up of two core elements – the functional benefit and the experience of the journey itself. Customer Value Proposition research suggests there are a number of broad factors that encourage people to use public transport. These factors reflect the trade-offs customers consider when making their travel choices and indicate known customer ‘pain points’ that impact customer interaction with public transport. Sydney Metro must ensure that these elements are well understood in order to deliver products, services, systems and stations that match customer needs and increase its customer base.

2.4 Interchange functionality and role

Sydney Metro will facilitate a diverse range of trips, providing not only a fast journey to work but also encouraging trips for other purposes such as access within the Sydney’s north-west, Sydney’s Eastern Economic Corridor, the north-west business park, local or business trips, access to universities and educational institutions, and service and recreational uses.

In order to facilitate a range of trips across the

multitude of destinations Sydney Metro stations will act as both origins and destinations for these trips. Each station will vary to the extent that it is a trip origin or destination throughout the day. The diagram on this page shows the diverse range of trips to a variety of land use categories.

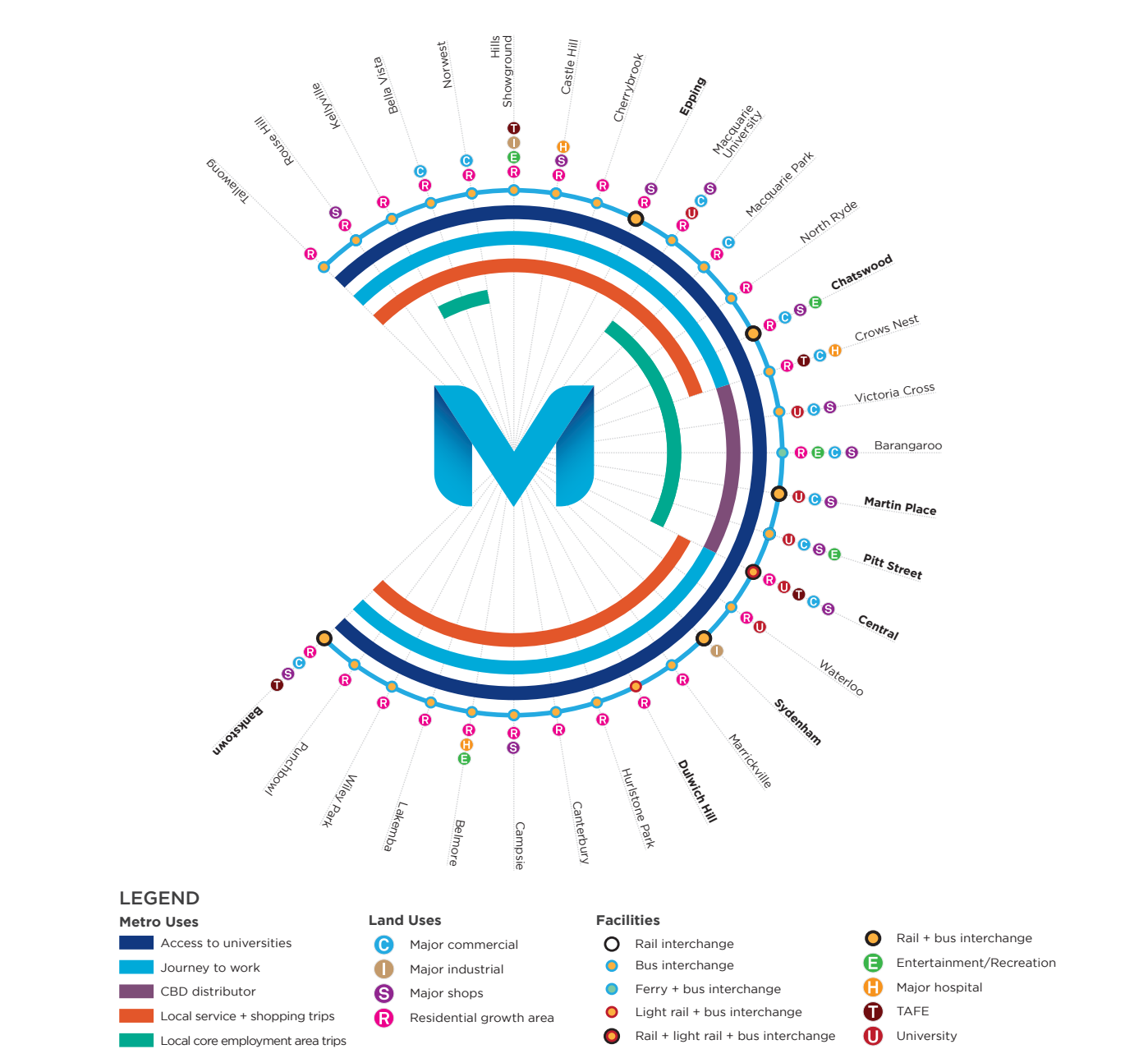
In general, stations with high levels of surrounding employment and/or educational institutions, such as Victoria Cross, Pitt Street or Macquarie University, tend to be destination stations in the morning peak period. Stations with high surrounding residential areas, such as Cherrybrook and Dulwich Hill, tend to be origin stations in the morning peak period. This trend reverses in afternoon as people return to their homes.

Other functional and node based characteristics of interchanges along the corridor including centres that both generate significant volumes of trips (origins from the catchment) as well as trips with destinations in or near the centre. This is typically associated with its positioning of the station within the overall network, as well as its proximity, density and importance of the surrounding land uses and in the centre it serves. Examples are Castle Hill, Crows Nest and Waterloo, where these stations have both significant residential catchments and employment zones that generate opposing two way flows through the stations during typical weekday peak periods.

The final interchange characteristic is that which has a significant internal transfer role between transport modes with a focus on connecting services for customer journeys across Sydney. These network nodes are functionally important and critical for supporting the delivery of efficient and seamless travel across the transport network. In some cases, the major design changes occur internally with only minor modifications to station access points, connections and facilities. Factors such as its historical establishment and its role in continuing to support growth in public transport use as well as in shaping an urban centre are also key considerations. Examples are Central, Chatswood and Sydenham, where these stations sit at critical decision making

points in established areas of Sydney for travel across the network. In these situations its focused on providing customers with the opportunity to connect between rail to rail, or metro or light rail lines. In less established locations, the focus maybe on bus to metro connectivity or commuter parking. Examples of this include Tallawong, Rouse Hill and

Kellyville where customers key travel choices are based around these modes and the design is driven by these modal considerations that may be external to the station.



Sydney Metro trip diversity and accessibility.

Interchange and transfer planning continued

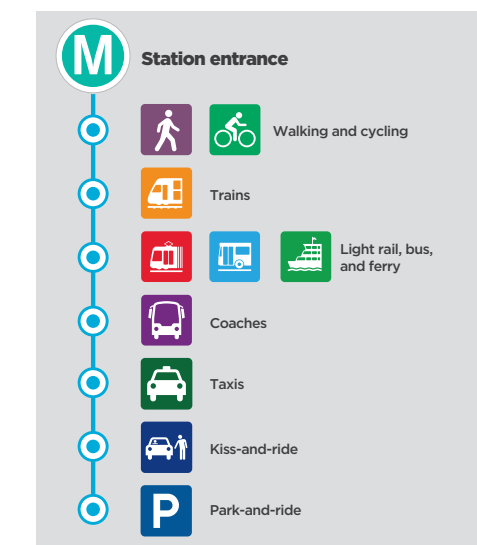
2.5 Modal hierarchy

Designing an efficient interchange requires the allocation of space to different users, according to Sydney Metro's modal hierarchy. The IAP responds to the modal hierarchy which prioritises transfers from more equitable and sustainable modes, such as walking and cycling, over vehicle-based modes, including the provision of supporting infrastructure. The modal hierarchy used in this plan is consistent with the transport planning principles defined in the Environmental Impact Statement (EIS).

Due to the location of each station, particularly within the Sydney CBD, metro customers are not expected to access the station by driving their car. No car parking is to be provided at any of the metro stations between Chatswood and Sydenham and no additional parking will be provided between Sydenham and Bankstown.

Every arrival or departure from each station will be as a pedestrian – either from the precinct or after transferring from or to connecting modes.

Consideration is given to accessible facilities for all modes of travel. The design of the interchange aims to prioritise customers with accessible requirements.



Modal hierarchy

Transport mode	Description
Walking and cycling	<p>Walking and cycling are the highest priority access modes as they are the most sustainable, cost-effective, equitable and accessible. Pedestrians and bicycle riders have the lowest environmental impact and typically require the least amount of space, while they also contribute to personal safety, urban and commercial viability.</p> <p>For stations located within established urban areas, walking and cycling access will be predominantly along existing paths and routes, which may require upgrade. Additional new paths and routes may also be required. For stations located within new or developing urban development areas, additional new paths and routes may be proposed.</p> <p>The interchange must provide safe, easy, quick, direct, continuous, high-quality, clearly signposted and accessible access between the station and other modes for connecting and transferring customers.</p> <p>A safe and well-defined pedestrian connection shall be provided from the station entry/exit to the nearest footpath on the adjacent street network. Pedestrian routes within the station and interchange shall be clear, direct, unimpeded, accessible, provide for clear sight lines and passive surveillance, and facilitate easy circulation. Pedestrian routes within the station and interchange shall be reduced by highlighting all hazards with high-contrast finishes, special lighting or tactile paving.</p> <p>Pedestrian networks in and around the station must encourage walking, cater for forecast demand, minimise delays crossing roads, and provide access to the station and other modes for all (including older people, and people with young families and disabilities, who have greater safety and mobility needs) in line with Disability Discrimination Act 1992 (DDA) requirements. Through-site links to stations should be open 24 hours a day (or as long as metro is operating).</p> <p>Pedestrian infrastructure shall be designed to accommodate modelled volumes/demands and to protect pedestrians from other road users in accordance with relevant Australian Standards, and Austroads and NSW Government guidelines.</p> <p>For bicycle riders, the interchange must provide safe and clear bicycle access in the vicinity of the station, signage and bike parking facilities at stations, in order to encourage cycling to Sydney Metro.</p> <p>Cycle routes must be of a high quality outside the stations, be designed to accommodate forecasted modelled user demands in accordance with Australian Standards and Austroad Guidelines, and be safely integrated with the local network.</p> <p>The station must enable through-access to allow for bicycles to be taken on metro trains. Cycleways need to be separated from vehicles, pedestrians and parked cars in accordance with Austroads Guidelines and NSW Government directions.</p> <p>Bicycle access and bike parking must be provided at all stations in accordance with Australian Standards, Austroads Guidelines and NSW Government directions.</p>
Rail	<p>Customer transfer from rail services will occur between platforms at Epping, Chatswood, Martin Place, Central, Sydenham, and Bankstown stations. At these stations clear and intuitive wayfinding should be provided to ensure an easy customer transfer. At other stations customers will need to exit the stations and use existing footpaths to connect to other rail stations.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities, and safe, accessible paths of travel between Sydney Metro platforms and other rail platforms, in accordance with the <i>Disability Standards for Accessible Public Transport 2002</i> (DSAPT).</p>
Light rail, bus and ferry	<p>Transfer to other public transport modes is a high priority in station planning. These services expand the effective catchment area of Sydney Metro. Seamless and safe transfer is required in order to encourage linked trips within the public transport network.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities and safe, accessible paths of travel between station and light rail, bus and ferry facilities, in accordance with the DSAPT.</p>
Coaches	<p>Transfer to coaches is the next highest priority after public transport in station planning. Coach services provide connection to major city and regional NSW destinations. Safe transfers between coaches and the connecting public transport services and/or surrounding land use is important to ensure high level customer experience.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities and safe, accessible paths of travel between the station and the coach facility, in accordance with the DSAPT.</p>

Interchange and transfer planning continued

Transport mode	Description
Taxi	<p>Taxis are the highest priority of the car-based modes, supplementing the public transport system for access to destinations separated from the public transport network.</p> <p>Taxi access and parking should be provided at all stations, with shelters, seating and taxi providers' contact details.</p> <p>Taxi zones are to be visible and well signposted, and located where taxis can depart easily in most directions to reduce any unnecessary travel to reach the passenger's destination.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities, and accessible paths of travel between station and taxi facilities, in accordance with the DSAPT.</p>
Kiss-and-ride	<p>Kiss-and-ride is the preferred mode of those accessing the station by private vehicle, but a relatively low priority. Kiss-and-ride supports the concept of car sharing, trip chaining and ride sharing, reducing the number of single-occupant trips, and, in some instances, parking demand.</p> <p>Kiss-and-ride spaces are to be provided where safe and efficient vehicle access and high vehicle turnover is available, as part of kerbside parking or within station car parks closest to the station. Kiss-and-ride in CBD areas is not generally provided for due to the public transport network coverage, except if deemed beneficial to support point to point, car sharing and ride sharing to improve station access given the local context and location of the station. Access must be safe and easy for vehicles to enter and exit, minimising conflicts with pedestrians, cycles, buses and other vehicles.</p> <p>Ridesharing services, such as GoCatch and Uber, will use kiss-and-ride zones to pick up and drop off passengers.</p> <p>Sydney Metro station interchanges shall incorporate accessible facilities and accessible paths of travel between station and kiss-and-ride facilities in accordance with the DSAPT.</p>
Park-and-ride	<p>Park-and-ride is the lowest priority of all modes. Given the high accessibility to sustainable transport modes in Sydney, formal parking facilities are only suggested outside of major centres. The stations between Chatswood and Sydenham will not include park-and-ride facilities and there is no additional car parking proposed for stations between Sydenham and Bankstown. For Sydney Metro Northwest, due to the extent of likely station catchments and the nature of the local transport networks, 4,000 parking spaces will be provided for metro customers at Tallawong, Kellyville, Bella Vista, Hills Showground and Cherrybrook stations.</p> <p>Access to parking areas should be located away from town centres where possible, with new parking areas accessible by a safe, well-lit footpath to enable customers to drive and catch the train. Parking areas should also be located and designed to minimise disruption to walking connections between town centres and the station.</p> <p>Car park layouts shall ensure safe and efficient entry, exit and circulation for pedestrians and vehicles. Car parks shall have clearly marked pedestrian circulation to achieve safe segregation of pedestrian pathways and vehicles in car parks. Car park access points shall be oriented away from station entries to avoid conflicts between pedestrians and vehicles.</p> <p>Park-and-ride shall be compliant with the Sydney Metro Northwest Parking Management Strategy and the Sydney Metro City & Southwest Parking Management Strategy.</p>

	Walking	Cycling	Trains	Light rail	Bus	Ferry	Coaches	Taxi	Kiss-and-ride	Park-and-ride
CHATSWOOD	Walking	Cycling	Trains		Bus		Coaches	Taxi	Kiss-and-ride	
CROWS NEST	Walking	Cycling			Bus			Taxi	Kiss-and-ride	
VICTORIA CROSS	Walking	Cycling			Bus			Taxi	Kiss-and-ride	
BARANGAROO	Walking	Cycling			Bus	Ferry	Coaches	Taxi	Kiss-and-ride	
MARTIN PLACE	Walking	Cycling	Trains		Bus			Taxi	Kiss-and-ride	
PITT STREET	Walking	Cycling			Bus			Taxi	Kiss-and-ride	
CENTRAL	Walking	Cycling	Trains	Light rail	Bus		Coaches	Taxi	Kiss-and-ride	
WATERLOO	Walking	Cycling			Bus			Taxi	Kiss-and-ride	
SYDENHAM	Walking	Cycling	Trains		Bus			Taxi	Kiss-and-ride	
MARRICKVILLE	Walking	Cycling			Bus			Taxi	Kiss-and-ride	
DULWICH HILL	Walking	Cycling		Light rail	Bus			Taxi	Kiss-and-ride	P
HURLSTONE PARK	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
CANTERBURY	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
CAMPSIE	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
BELMORE	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
LAKEMBA	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
WILEY PARK	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
PUNCBOWL	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
BANKSTOWN	Walking	Cycling	Trains		Bus			Taxi	Kiss-and-ride	P

Modes serving each station

Interchange and transfer planning continued

2.6 Legislative requirements and applicable guidelines

Sydney Metro stations and interchanges must comply with the following legislative requirements and guidelines.

Legislation or guideline	Description
Legislation	
Disability Discrimination Act 1992	Designated Sydney Metro stations and interchange facilities will be fully compliant with the <i>Disability Discrimination Act 1992</i> .
Disability Standards for Accessible Public Transport 2002	The purpose of <i>Disability Standards for Accessible Public Transport 2002</i> (Transport Standards) (DSAPT) is to enable public transport operators and providers to remove discrimination against people with disabilities from public transport services 'as far as possible'.
Strategy and policy	
Future Transport 2056	The strategy is an update of the 2012 <i>NSW Long Term Transport Master Plan</i> . It outlines a vision, strategic directions and customer outcomes. The strategy acknowledges the vital role transport plays in the land use, tourism, and the economic development of towns and cities. It includes issue-specific and place-based supporting plans that focus on integrated solutions rather than individual modes of transport. The strategy also focusses on the role of transport in delivering movement and place outcomes that support the character of the places and communities needed for the future.
Eastern City District Plan	Prepared by the Greater Sydney Commission (GSC), the Eastern City District Plan is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision for Greater Sydney. It contains the planning priorities and actions for implementing the Greater Sydney Region Plan: A Metropolis of Three Cities, at a district level and is a bridge between regional and local planning. The Eastern City District covers the Bayside, Burwood, City of Canada Bay, City of Sydney, Inner West, Randwick, Strathfield, Waverley and Woollahra local government areas. The content of the strategy has been considered in this plan by examining the context of the station in relation to the surrounding regional land uses and growth precincts, linkages to local, strategic and metropolitan centres, and connectivity to transport networks including rail, light rail and road corridors.
Sustainable Sydney 2030	<i>Sustainable Sydney 2030</i> is the City of Sydney's strategic vision and action plan for the sustainable development of the local government area to 2030 and beyond.
Sydney City Centre Access Strategy	The strategy outlines how people will enter, exit, and move in and around the Sydney CBD over the next 20 years, and demonstrates how light rail, buses, trains, ferries, cars, taxis, pedestrians and cyclists will interact in the heart of Sydney. The strategy will also be updated to reflect current changes in an evolving plan that allows for the growth of Sydney as a global centre through the establishment of a multi-modal transport access plan for the city centre.
Guidelines	
Australian Standards	Standards relevant to construction, operation and maintenance of interchanges and all relevant modes. The relevant standards have been considered throughout the development of this plan and were used to guide the design development of the interchange. The standards were used to ensure the provision of safe and efficient multi-modal interchange facilities.
Austrroads guidelines	Austrroads' levels of service (LoS) establish standards of performance for key infrastructure, based on its ability to accommodate forecast use and movements safely and efficiently. Levels range from A to F, in descending order of performance. Austrroads guidelines were considered throughout the development of this plan, and were used to guide the design development process to provide safe and efficient interchange facilities.
TfNSW Traffic and Transport Technical Directives	These documents are Transport for NSW (TfNSW) complementary documents to the <i>Austrroads Guide to Traffic Management</i> and the Australian Standards AS1742, 1743 and 2890. The content of the directives were applied in conjunction with the relevant Austrroads guidelines, and were incorporated in the design of the multi-modal interchange facilities, such as crossing facilities, and changes to the existing road layout.
Local council guidelines	Interchange facilities must comply with relevant local council guidelines.

Interchange and transfer planning continued

Legislation or guideline	Description
Guidelines	
TfNSW Interchange Wayfinding Requirements	Sets out requirements for wayfinding in transport interchanges. A comprehensive wayfinding strategy for the interchange has been developed in accordance with the core principles of the wayfinding requirements as outlined by TfNSW, and outlines objectives and controls to ensure that intuitive, clear and consistent signage is provided at the interchange.
TfNSW Interchange Planning Guidelines	Guidelines for the development of interchanges. These guidelines have been considered in the design of the interchange, to ensure high quality infrastructure and a safe and efficient service is provided throughout.
Crime Prevention Through Environmental Design	Provides guidance on crime prevention strategies through the design of physical spaces. The content of this crime prevention strategy has been considered through the development of this plan, as demonstrated through the station and interchange layout that includes the provision of pedestrian plazas and additional public domain to improve pedestrian safety.
NSW Bicycle Guidelines	Provides guidance to assist in the planning and design of high-quality cycleways within the on-road and off-road environments. The guide should be read in conjunction with Austrroads guidelines, however it prevails for any differences. This plan responds to the relevant guidelines by incorporating the design principles in the delivery of bicycle facilities throughout and within proximity to the interchange, including bicycle paths and bicycle parking..
State Transit Bus Infrastructure Guide	Provides guidance to ensure the consistent delivery of safe and effective bus-related infrastructure across New South Wales. The key components of the guide have been considered throughout the development of this plan, including the planning of bus facilities and consideration of the availability and quality of the interchange and transfer facilities.

Relevant TfNSW and DSAPT standards and guidelines were adhered to during the design of the interchange and will continue to be throughout the detailed design stages. In addition, the Design Review Panel (DRP) also considers accessibility requirements, TfNSW has been consulted on the IAP, and the design review process carried out by Sydney Metro comprises three stages.

2.7 Operations and maintenance

The station must provide access for operations and maintenance activities. Sufficient space shall be provided at stations for the accommodation of buses in the event of planned or unplanned disruption of normal operations.

Further detail regarding the operation and maintenance of the interchange can be seen in the operations, maintenance and management provisions, which fits within the TfNSW Interchange Operations and Maintenance Framework.

As identified in the Metro Concept of operations, Metro will coordinate with heavy rail and light rail to ensure services availability during planned and

unplanned Metro shutdown for city stations. Sydney Metro is currently investigating the need for rail replacement buses to service Barangaroo Station. If required, proposed kerbside parking allocation may change to accommodate rail replacement buses.

2.8 Defining the interchange area

The area to be included in the Interchange Access Plan has been determined by the particular local context of each metro station. The definition of the 'interchange' area reflects local pedestrian routes, circulation patterns and desire lines; land use and the level of activity around the station; relationships to other transport networks and modes; and the proximity of local access roads and routes.

The area to be considered as the interchange is effectively determined by

- The current and likely demands for pedestrian access to the station entry/entries as currently proposed.
- Formal or informal bike routes and desire lines, in relation to the station entry/entries.

- The path of travel from the surrounding rail stations.
- The path of travel from the surrounding light rail stops.
- The path of travel from the surrounding bus stops.
- Current or planned taxi zones, ranks or stands, as well as informal customer drop-off/pick-up points from/to taxis.
- The anticipated propensity for, and location of, drop-off and pick-up of customers as passengers in private cars.
- Major destinations within the immediate catchment of the station, including over site development to be undertaken as part of the metro project.
- Where appropriate, transfer from other modes, including coaches.

Interchange and transfer planning continued

2.9 Terms and definitions

Term	Definition	Ownership/responsibility
Station	The station building and all service facilities required for the operation of the metro, including the entries and exits, and under the direct responsibility of the contracted operator. The station is within the interchange area, and includes the area directly owned by TfNSW as part of Sydney Metro or Sydney Trains, including the ground plane, the licensed maintenance area, and any other areas required for station operation.	One or more of the following: <ul style="list-style-type: none"> • Sydney Metro operator. • TfNSW. • Other transport operators.
Interchange*	The area and assets that facilitate easy, safe and intuitive customer access to and egress from the public transport network, transfer between modes by accessible paths, entry to urban centres, and an efficient customer journey. The interchange includes the station (see above). The interchange can have multiple sites that may not be connected, and includes areas that are owned by other stakeholders.	One or more of the following: <ul style="list-style-type: none"> • Sydney Metro operator. • TfNSW. • Other transport operators. • Local Council. • Private property owners.
Precinct	The area that influences and interacts with the station and interchange, within the local context. The interchange provides a transport access focal point for the precinct, serving key attractions and generating opportunities for land use change and place-making opportunities within the precinct. The precinct includes areas that are owned by other stakeholders.	One or more of the following: <ul style="list-style-type: none"> • Local Council. • TfNSW. • INSW • Private property owners.
Catchment	The station walking catchment is generally within an 800-metre walk of the station. For suburban stations the catchment and the precinct may be the same. For urban stations the precinct will generally be smaller than the catchment. The Project may seek greater catchment areas to assess specific outcomes, such as parking impacts on local streets. The cycling catchment for Sydney Metro stations is taken as 2.5 kilometres, due to their proximity to each other and potential destinations along the network. This is a comfortable 10-minute bike ride for an average rider.	One or more of the following: <ul style="list-style-type: none"> • Local Council. • TfNSW • Private property owners.

* For Epping, Chatswood, Martin Place, Central, Sydenham and Bankstown stations, many customers will transfer within the boundaries of the station – both between Sydney Trains services and between Sydney Trains and Sydney Metro services. These Interchange Access Plans acknowledge the need to consider the broader principles of customer transfer as an integral part of station design.

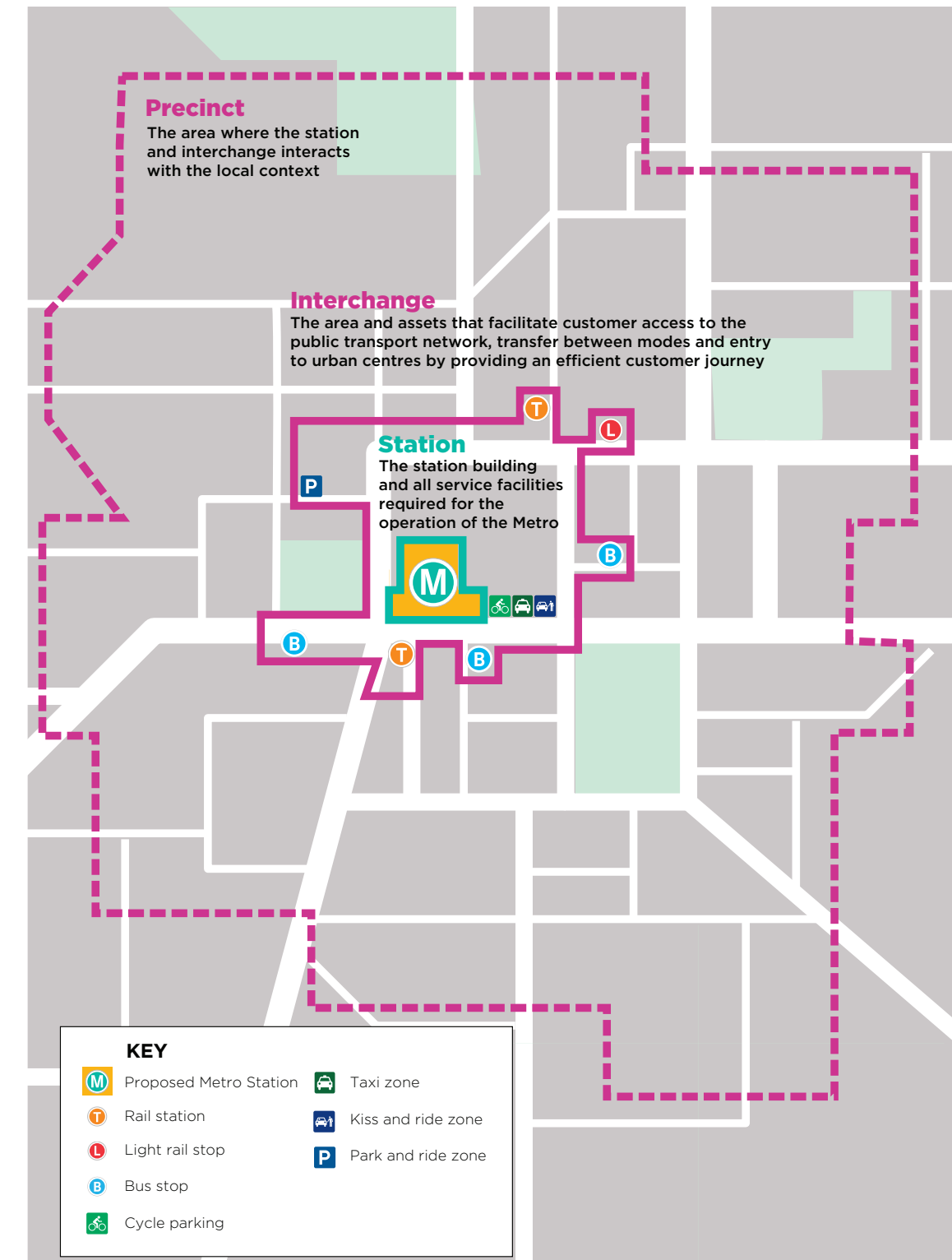


Illustration of terms and definitions

Interchange and transfer planning continued

2.10 Design development process

Sydney Metro undertakes interchange planning by considering the role of the interchange and requirements and aspirations for an easy customer journey throughout the design process. As identified in the figure below, the interchange planning process broadly comprises three stages: interchange concept, interchange design and operational analysis, and interchange design refinement and action plan. This process is undertaken to align with the design development process and to effectively integrate planned facilities, plazas and connections with other planned station projects and precinct enhancements.

As part of the CSSI Conditions (CoA) for the new metro platform, station entry and associated connections within Barangaroo Station, the quality of the interchange design and its overall performance is required to be validated to support the detailed design development phase. The robustness of the design and its compliance to requirements, specification, standards and guidelines is verified at each design stage (refer to Figure below), and this design process captures technical design audits, safety assurance, safety-in-design and risk reviews. This process also captures continuous stakeholder inputs along with any required updates to transport modelling appraisals required to support road agency applications and approvals.

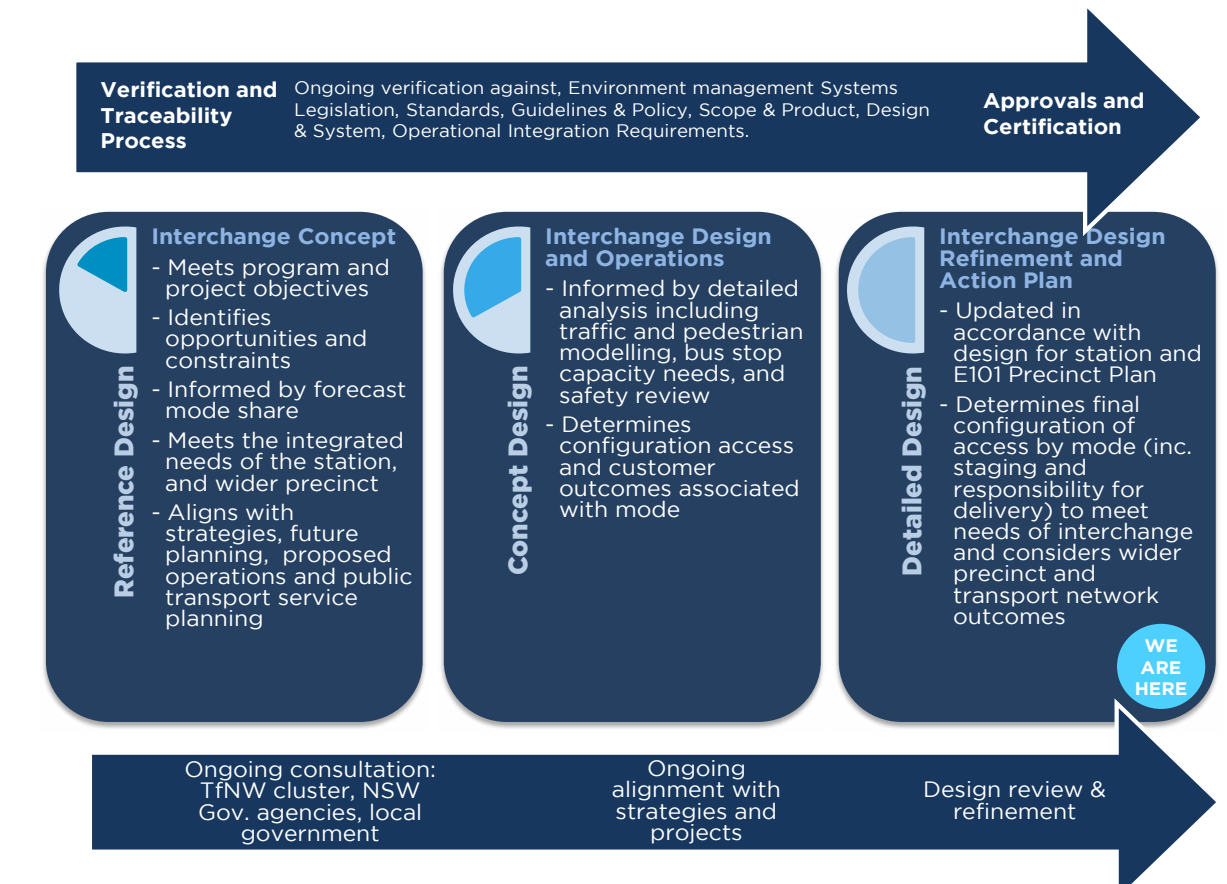


Illustration of terms and definitions

Interchange and transfer planning continued

2.11 Consideration of Station Design and Precinct Plan

The Interchange Access Plan is developed in conjunction with the Station Design and Precinct Plan (SDPP). The SDPP highlights urban outcomes within the precinct surrounding Barangaroo Station, and enables other programs to develop the potential for wider place improvements. The IAP demonstrates urban and place making outcomes by identifying a new plaza that facilitates a safe and comfortable movement through to interchange facilities. The SDPP equally considers items in the IAP, for example, by identifying pedestrian amenity and the kerbside facilities required to bring about an integrated customer journey. Refer to the following sections in the SDPP:

- Section 2.3 on design objectives and principles.
- Section 3.3 on transport and access.
- Section 4.4 on the public domain and precinct scope.
- Section 4.7 on vertical transport.
- Section 4.8 and Section 5 on connectivity, transport and access.

2.12 Wayfinding

All Sydney Metro interchanges aim to provide intuitive, clear and consistent information to make customer journeys more efficient. Effective wayfinding will help customers to navigate the space to reach their destination.

Legible wayfinding will ensure that all customers can travel independently and easily on Sydney Metro.

This can be achieved by:

- Understanding customers needs.
- Providing accurate information at the right time.
- Planning and creating predictable and intuitive environments.
- Applying a consistent system of signs and information.

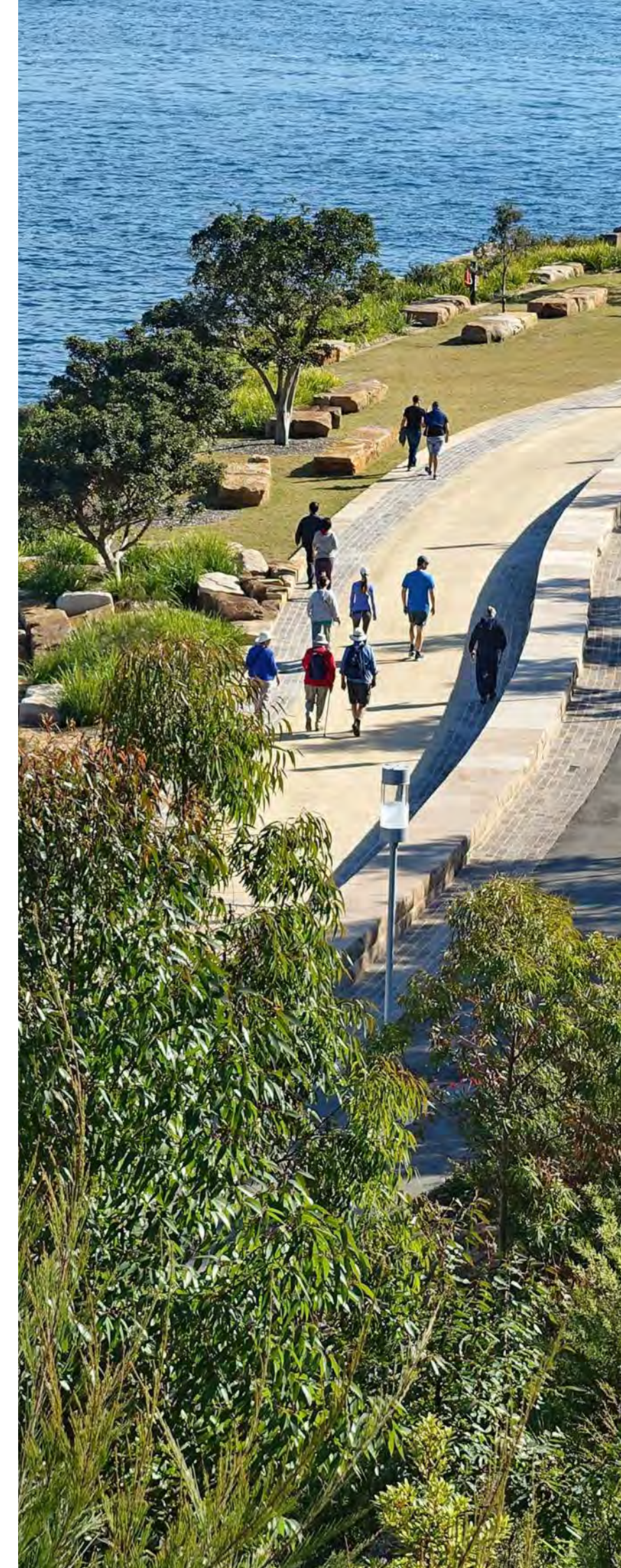
Wayfinding will be available to customers when they are:

- Interchanging between services or modes.
- Connecting to and from public transport by walking, cycling, catching a taxi, being dropped off or picked up in private vehicle or parking in their car.
- Connecting to existing access options including the Cutaway lift (see Section 4, Condition E94).

A clear wayfinding system will support pedestrian safety as it provides controlled and direct travel paths along the desire line within low speed environments. This will in turn protect them from other road users, allowing safe integration with existing transport networks.

The wayfinding will be visually simple, intuitive and consistent with TfNSW guidelines. It will contribute to an easy customer experience by:

- Providing visibility between station levels where possible.
- Using intuitive design to minimise wayfinding choices and the need for signage.
- Providing safe, legible, efficient, convenient, obstruction-free, level, direct and attractive routes for customer access.



3.0 Consultation

3.0 Consultation

Targeted consultation was undertaken for the Barangaroo Interchange Access Plan (IAP) and included all major stakeholders. The consultation process involved the following steps:

- Organising briefing sessions with stakeholders.
- Presenting the key elements of the IAP to stakeholders and allowing time for discussion.
- Distributing the IAP to any additional personnel identified during the briefing session for further review and comment.
- Reviewing comments received and incorporating feedback into the IAP where applicable.
- Responding to each stakeholder and ensuring contentment with responses to be able to close out comments where applicable.

In many cases pre-consultation sessions with key stakeholders were held to identify and resolve anticipated issues in advance of the formal consultation process. Furthermore, previous consultation was also undertaken with many stakeholders on the concept design of the station.

This section refers to the consultation undertaken during the detailed design process via various working groups and forums. The results are summarised to the right.

A summary of the consultation undertaken for the Barangaroo Station IAP is presented in the following table.

Group/organisation	Meeting dates	Key Aspects
Traffic Transport Liason Group (TTLG)	27 July 2022	Draft IAP presentation and review. TTLG did not require supplementary analysis and modelling on operational traffic (Condition E78)
	25 July 2018	Response to Planning Condition E94. No feedback received at meeting. Presentation circulated for feedback, no feedback received.
	21 December 2017	General overview of IAPs and proposed interchange configuration. TTLG did not require supplementary analysis and modelling on operational traffic (Condition E78)
Design Review Panel (DRP)	20 July 2022	Draft IAP presentation and review
	21 January 2020	Inclusion of a footpath to the Hickson Road Eastern verge
	7 August 2018	Response to Planning Condition E94. Feedback: The Panel acknowledged the analysis and long term aspiration for accessible connections between Hickson Road and Kent Street. While there is a need for additional connectivity between Barangaroo and Millers Point, the solution is beyond the scope of Sydney Metro to deliver.
City of Sydney (CoS)	30 June 2022	Draft IAP presentation and review For the final round of design development only changes which were a deviation from the City of Sydney's standards were further presented, including:
	9 March 2022	Hickson Road TSB pavement design
	17 June 2021	Hickson Road comment closeout
	29 April 2021	Landscape and lighting presentation
	23 March 2021	Barangaroo stormwater system
	16 March 2021	Consultation workshops with key changes incorporated into the design following this consultation include:
	27 February 2020	City of Sydney were consulted through the development of the Reference Design by INSW and during the design development of the Stage 2 and 3 designs by METRON. CoS provided input into the Design Refinement concerning lane widths, kerb alignments, tree planting and tree spacing Hickson Road was revised in line with CoS preferred dimensions (parking, traffic lanes, bi-directional cycleway, bus stops), and the eastern verge footpath was revised to be 2.0m wide minimum in line with City of Sydney preferred dimensions.
	19 February 2020	At the conclusion of the Design Refinement City of Sydney issued their endorsement of the design north of the High Street Stairs.
28 June 2018	In response to Planning Condition E94, it was recommended to CoS to not provide a lift but to improve wayfinding to existing lifts within area. CoS raised concern on whether the Cutaway lift has sufficient capacity during major events. Further analysis has been undertaken on access paths to major events.	

3.0 Consultation continued

Group/organisation	Meeting dates	Key Aspects
Millers Point Community Resident Action Group	21 June 2021	Barangaroo Station Design and Precinct Plan, including opportunity to provide feedback.
Walsh Bay Precinct Association	28 March 2022	Barangaroo Station Design and Precinct Plan and INSW scope.
	8 February 2022	Revised Barangaroo Station Design and Precinct Plan based on feedback.
	25 June 2021	Barangaroo Station Design and Precinct Plan, including opportunity to provide feedback.
Infrastructure NSW (INSW)	24 June 2022	Barangaroo civil changes
	23 June 2022	Barangaroo landscape and lighting changes
	December 2021 - present (weekly)	Project meeting - Central Barangaroo changes
	5 July 2021	Headland park
	2 June 2021	Hickson Road comment closeout
	18 May 2021	Design refinement stage 3 design
	16 April 2021	Transition zone drainage
February 2021-July 2021 (Weekly)	Project meeting - Design Refinement of each METRON deliverable	



4.0 Interchange Access Plans planning conditions

Barangaroo Station northern entry

4.0 Interchange Access Plans planning conditions

The Minister for Planning granted approval to carry out Critical State Significant Infrastructure (Sydney Metro City & Southwest– Chatswood to Sydenham) on 9 January 2017, subject to conditions of approval. A modification including Sydenham station and Metro Facility South was subsequently approved on 13 December 2017, subject to additional conditions of approval. The Interchange Access Plans requirements under these conditions of approval are outlined below.

Condition	Description	Relevance in the document
E92	The Proponent must develop an Interchange Access Plan for each station to inform the final design of transport and access facilities and services, including footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration of public domain and transport initiatives around and at each station. The Interchange Access Plan(s) must consider walking and cycling catchments and take into account:	
(a)	a station access hierarchy consistent with the transport planning principles defined within the EIS;	A modal hierarchy consistent with the principles defined in the EIS was adopted. Refer to: <ul style="list-style-type: none"> Section 2.5: Modal hierarchy. Section 9.0: Modal hierarchy review.
(b)	safe, convenient, efficient and sufficient access to stations and transfer between transport modes (including subterranean connections and the safeguarding of additional entrances in response to land use change and patronage demand);	Safe, convenient, efficient and sufficient access was considered for each travel mode in the development of the IAP. Safeguarding for future demand was considered and included in the action plan. Refer to: <ul style="list-style-type: none"> Section 6.0: Barangaroo - local context. Section 7.0: Barangaroo - interchange and transfer requirements overview. Section 10.0: Barangaroo - actions.
(c)	the maintenance or improvement of pedestrian and cyclists level of service within a justified proximity to stations;	The level of service for pedestrians and cyclists was considered and used to inform the design of pedestrian thoroughfares and crossings, planned cycleways and other infrastructure. Refer to: <ul style="list-style-type: none"> Section 7.1: Walking interchange and transfer requirements. Section 7.2: Cycling interchange and transfer requirements. Section 10.0: Barangaroo - actions.
(d)	current transport initiatives and plans;	All current transport initiatives and plans were considered, including state government strategies, Council plans and general transport design guidelines. Refer to: <ul style="list-style-type: none"> Section 2.6: Legislative requirements and applicable guidelines. Section 5.2: Related projects. Section 6.0: Barangaroo - local context. Section 7.0: Barangaroo - interchange and transfer requirements overview. Section 10.0: Barangaroo - actions.
(e)	opportunities and constraints presented by existing and proposed transport and access infrastructure and services;	Key opportunities and constraints affecting the design are presented in Section 6.7: Opportunities and constraints.
(f)	patronage changes resulting from land use, population, employment, transport infrastructure and service changes;	Forecast patronage is presented in Section 6.0: Barangaroo - local context and accounts for future land use, population and employment, and further outlined in Section 7.0: Barangaroo - interchange and transfer requirements overview. Potential future service changes have informed the design process and the provision of interchange facilities.
(g)	integration with existing and proposed transport infrastructure and services;	The station and precinct has been designed to integrate effectively with existing and proposed transport infrastructure and services for all travel modes. The interchange provides for safe and efficient transfer to all modes in close proximity to the station. Refer to Section 7.0: Barangaroo - interchange and transfer requirements overview for further information on each mode's provisions within the interchange area.

Interchange Access Plans planning conditions continued

Condition	Description	Relevance in the document
E92	The Proponent must develop an Interchange Access Plan for each station to inform the final design of transport and access facilities and services, including footpaths, cycleways, passenger facilities, parking, traffic and road changes, and integration of public domain and transport initiatives around and at each station. The Interchange Access Plan(s) must consider walking and cycling catchments and take into account:	
(h)	pedestrian, cycle, bus, taxi, vehicle and emergency vehicle access and parking infrastructure and service changes;	Access for all modes has been accounted for and has considered potential service changes. Refer to Section 7.0: Barangaroo - interchange and transfer requirements overview for further information on each mode's provisions within the interchange area. Emergency vehicle access is accommodated within the station's adjacent kerbside spaces.
(i)	legislative requirements and applicable guidelines;	All applicable legislation, standards and guidelines were used in the development of the design and IAP. Refer to Section 2.6: Legislative requirements and applicable guidelines.
(j)	safety audits, including but not limited to a review of traffic facility and cycle changes to ensure compliance with Austroads design criteria;	A safety audit was undertaken prior to Stage 3 design completion and used to inform further development of the Interchange Access Plan. The traffic facility and cycle changes in scope already comply with Austroads design criteria.
(k)	final design, infrastructure, management and service measures and the level of access and service to be achieved for all users; and	Design principles and access and service objectives are detailed in Section 2.0: Interchange and transfer principles and Section 7.1 Barangaroo - walking interchange and transfer requirements. Pedestrian modelling has been assessed to 2036 and is of an acceptable level of service.
(l)	the contents of the Interchange Operations and Maintenance Plan (IOMP) and operational management provisions for future operational requirements, including maintenance, security and management responsibilities.	The IOMP was used to inform operations and maintenance access requirements. Refer to Section 8.0: Operations, maintenance and management provisions.
	The Interchange Access Plan(s) must be prepared in consultation with the Traffic and Transport Liaison Group (TTLG) and the Design Review Panel and must be supported by traffic and transport analysis. Where necessary, consultation must also be undertaken with major landholders adjoining station precincts. The Plan(s) must detail a delivery and implementation program which must be provided to and agreed by the Secretary before commencement of permanent aboveground facilities at any station site.	The Interchange Access Plan has undergone various levels of consultation with stakeholders including council, the TTLG and the DRP, as documented in Section 3.0: Consultation. This document also details a program for delivery and implementation of the works required for the interchange, listed in Section 10.0: Barangaroo - actions. Traffic and transport analysis was undertaken to support the design and action plan.
E93	In developing the Interchange Access Plan(s), the Proponent must consider:	
(a)	traffic and accessibility design requirements; and	Traffic and accessibility design requirements were accounted for, including the Disability Discrimination Act, Disability Standards for Accessible Public Transport and Transport for NSW standards. Refer to: <ul style="list-style-type: none"> Section 2.6: Legislative requirements and applicable guidelines. Section 10.0: Barangaroo - actions.
(b)	the Station Design and Precinct Plan(s) required by Condition E101.	The Interchange Access Plan and Station Design and Precinct Plan are being developed in conjunction with one another. Refer to Section 2.11: Consideration of Station Design and Precinct Plan.

Interchange Access Plans planning conditions continued

Condition	Description	Relevance in the document
E94	The Proponent must in consultation with the TTLG review the need and opportunities for lift access between Hickson Road and High Street and which meets the objective of increasing the patronage catchment to Barangaroo Station and improved community accessibility. The review must be presented in the Interchange Access Plan and the findings implemented by the Proponent.	<p>A review on the need for additional lift between Hickson Road and High Street and consultation with key stakeholders and TTLG has concluded that:</p> <ul style="list-style-type: none"> • Additional lift provision is not required due to the available lifts provision; limited population growth forecast within the catchment area; available alternative transport options and holistic precinct access solution to be provided from the future Central Barangaroo development. • It is recommended existing wayfinding signage to the Cutaway lift to be improved and additional wayfinding be provided at the new Barangaroo Station to ensure customers aware of existing access options. • Subject to the outcomes of the on-demand transport pilot trial, it is recommended that on-demand transport is investigated to improve access to the study area. • Sydney Metro design and works will ensure that it does not preclude the future provision of a lift or land bridge between Barangaroo or Hickson Road and High Street
E96	The Interchange Access Plan(s) must be reviewed by a qualified traffic and transport professional(s), independent of the detailed design process for the CSSI, having regard to the requirements of this approval.	<p>The Interchange Access Plan will undergo review by an independent traffic and transport professional(s) once complete.</p> <p>Refer to Section 3.0: Consultation.</p>
E78	The Proponent must undertake supplementary analysis and modelling as required by the TTLG to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, public including changes to and the management of pedestrian, bicycle and public transport networks transport services, pedestrian and cyclist movements. Revised traffic management measures, must be incorporated into the Construction Traffic Management Plan(s), Interchange Access Plan(s) and Station Design and Precinct Plan(s).	<p>The Barangaroo Interchange Access Plan was presented to the TTLG on 21 December 2017 and 27 July 2022. TTLG did not require supplementary analysis and modelling on operational traffic.</p>



5.0 Regional context

Barangaroo Station plaza facing north towards Barangaroo Reserve

5.0 Regional context

5.1 Crows Nest to Waterloo

Sydney Metro will deliver a world-class metro rail system for the people of Sydney. The most obvious benefit will be to people in local communities from Rouse Hill to Bankstown walking to their nearest metro station.

The schematic map below shows metro's role in the context of the wider transport system. Many more people will be able to benefit from fast, accessible, reliable and frequent metro services by travelling to a metro station by bike or other public transport modes.

Providing seamless multi-modal journeys for customers is a key outcome of *Future Transport*

Strategy 2056. In this context, Sydney Metro will deliver interchanges that help achieve this outcome by putting the customer at the centre.

Metro's high-frequency service means that there will never be a long wait between transferring between services. Interchange connectivity, combined with high-quality links between rapid and suburban buses will help transform the travel experience and enable access to more places.

Improved cycling infrastructure and bike parking will enable easier travel by bike, connecting metro stations to surrounding cycle routes. Each metro station will connect into the surrounding walking and cycling network, and will provide bike parking facilities.

The integration of walking and cycling and public transport will increase metro's accessibility to more people in Sydney, helping to make journeys faster and more reliable and providing greater travel choices to communities.

5.2 Related projects

The following projects will be in planning and implementation, or completed and operational when the Sydney Metro City & Southwest commences operations:

- Sydney CBD cycle routes (consistent with the Sydney City Centre Access Strategy)

- City North Public Domain Plan (City of Sydney, 2015)

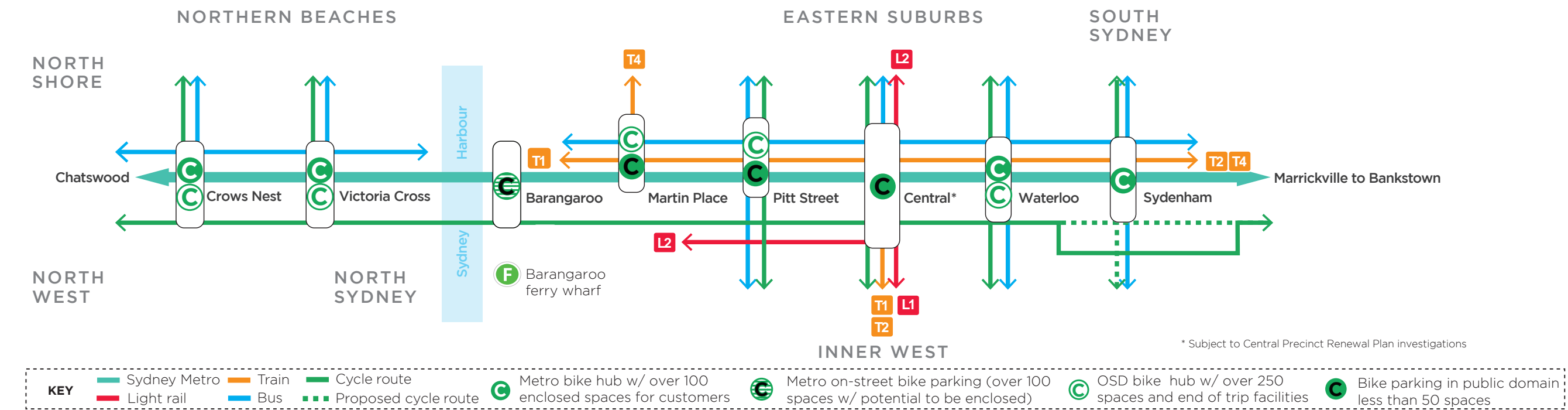
- Barangaroo Masterplan (NSW) and associated developments inclusive of the following:

- Central Barangaroo development

- Southern Barangaroo precinct including One Sydney Harbour residential buildings, Hickson Park, Watermans Cove, Crown Sydney Hotel Resort and a new public pier

- Upgrade of Hickson Road

- Re-mediation of the Old Millers Point Gaswork under Hickson Road.



Regional context - Chatswood to Sydenham

Regional context continued

5.3 City station bike parking hub strategy

The planning and design of a city station bike hub parking strategy considered access to interchanges and the supporting facility provisions required for different customer types and how they can be effectively accommodated. The strategy recognised the following unique customer and integrated station development profiles:

1. Access and provision for long term bike parking needs associated with interchange customers wanting to access the metro service.
2. Access and provision for long term bike parking needs associated with the over station development
3. Access and provision for short term bike parking needs associated with the over station development and in some cases customers travelling by metro.
4. Spatial provision and consideration of the design flexibility to accommodate shared bike parking schemes as an option for customers, if required.
5. Spatial provision and consideration of the station and metro train-sets to enable customer to travel on metro with bikes.

All customer designated bike parking is aligned with customer demand profiles, aim to offer appropriate choices, manage access and network impacts, and enable increases in the typical station catchment size.

The strategy consolidates customer bike parking provision at select station locations situated on approaches to the core CBD, and all choices are well connected to the bike network and:

- avoid areas of high activity levels and conflict.
- have the spatial availability to accommodate an enclosed bike parking hub.
- offer opportunities for activation and community support.

These key elements have contributed towards the design and future delivery of approximately 1,000 bike parking spaces for city station customers with approximately 70 per cent of these situated at four nominated bike parking hubs.

More than 3,000 bike parking spaces have also been allocated within five over station developments along the city section of the Sydney Metro City & Southwest corridor. Designated bike parking space provisions at the over station development directly aligns with a high Greenstar building rating and Council's Development Control Plan (DCP).

Promoting cycling through this hub concept is only one part of the Sydney Metro's contribution to access and travel by cycling. These facilities, together with the fast and frequent metro services, help minimise car parking provision at these strategic and highly constrained nodes and the likely knock-on effects to the network.



6.0 Barangaroo – local context

Context of Barangaroo Station and Central Barangaroo development site

6.0 Barangaroo – local context

6.1 Station interchange enhancements

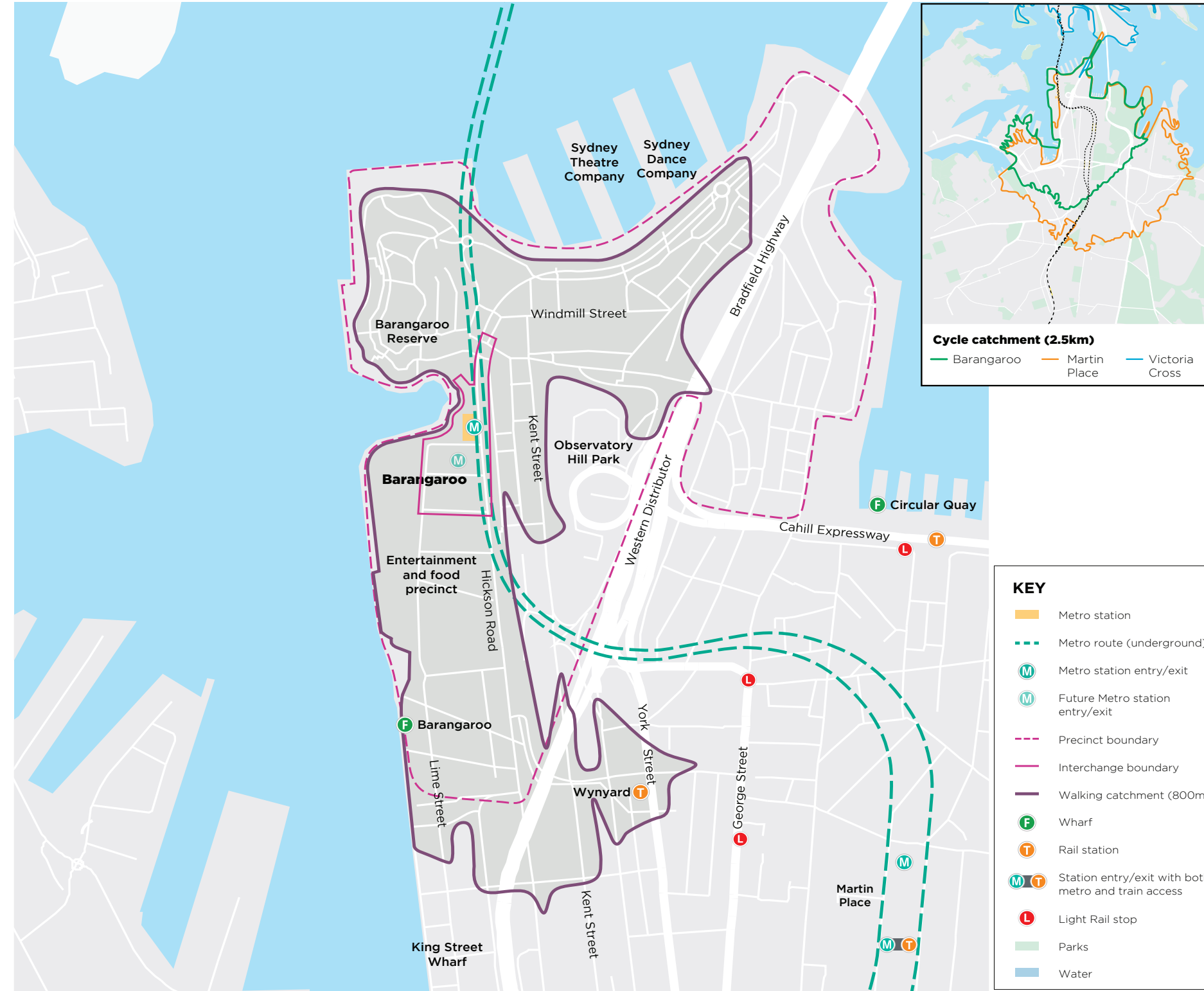
Barangaroo Station will be located underground at the northern end of Hickson Road, south of Munn Street, in Millers Point. The station will improve access to the Walsh Bay Arts and Culture precinct, as well as providing easy access to Central Barangaroo, Barangaroo Reserve and Millers Point. The new Barangaroo Station will further reinforce the Sydney CBD as the anchor of global Sydney providing direct western access to the city.

There will be an entrance plaza which will provide convenient access for customers accessing central and northern Barangaroo precincts. The proposed Central Barangaroo development will provide a future southern entrance integrated within the development with subterranean connections to Barangaroo Metro station.

Around the station precinct, there will be two new bus stops on Hickson Road (one northbound and one southbound).

Kiss-and-ride bay and taxi zone will be provided at the proposed Hickson Road interchange south of Street D, and coach bays underneath Munn Street bridge.

Residential areas at Millers Point, Walsh Bay and future residents of Barangaroo will benefit from high-quality public transport access to the best attraction destinations in Sydney.



Barangaroo Station – local context

Barangaroo – local context continued

6.2 Station strategy

The station strategy for Barangaroo is to:

- Provide easy, safe and intuitive transfer to and from the metro station within the existing network and road environment.
- Maximise connectivity and legibility to the primary uses within and nearby the Barangaroo precinct.
- Ensure legible and direct access to Central Barangaroo, Barangaroo Reserve and Barangaroo Wharf.
- Integrate with development plans for Barangaroo
- Contribute to place-making and precinct outcomes

6.3 Adjacent future development strategy

The following principles will apply to the integration of the adjacent future development of Central Barangaroo and the metro station:

- All modal access points to the proposed adjacent future development will be managed and designed to not conflict with station operations.
- The design will ensure that separate access points are provided that don't interfere with kerbside activity associated with the station interchange serving both the northern and southern access points.
- The design should allow for shared loading dock

The table below summarises the overall features of Barangaroo Station, including the interchange area's key attractions

Feature	Description
Location	Barangaroo Station will be located underground at the northern end of Hickson Road, south of Munn Street bridge, in Millers Point.
LGA	City of Sydney.
Station entry	Entry to Barangaroo Station will be via the following new entrance: <ul style="list-style-type: none"> • An entry plaza at Barangaroo Reserve near Nawi Cove • A future southern entry will be provided within the Central Barangaroo development
Transport interchange	Walking, cycling, bus, ferry, coach, taxi and kiss-and-ride.
Main features and traffic arrangements	<ul style="list-style-type: none"> • DDA-compliant station entries to maximise accessibility for all customers. • New marked pedestrian crossings on Hickson Road • New bike parking hoops for 110 bicycles. • New bus bays on the western and eastern side of Hickson Road. • New kiss-and-ride, taxi zone and coach bay on the western side of Hickson Road.
Customers	Employment, recreation, tourist and residential precincts.
Key attractions	<ul style="list-style-type: none"> • Barangaroo Reserve • Central Barangaroo • Barangaroo South • Barangaroo Wharf • Crown Hotel Resort Sydney • King Street Wharf • Sydney Theatre Company • Sydney Dance Company • Walsh Bay • Millers Point • Sydney Observatory • The Rocks

and maintenance bays

6.4 Modes without provision

There is no design provision considered for the following modes at Barangaroo:

- Rail
- Light rail
- Park and ride

6.5 Current land use and characteristics

Existing land use and characteristics

Barangaroo Station will be located underground at the northern end of Hickson Road, south of Munn Street bridge. A northern station entry will be provided from within Barangaroo Reserve. The completion of the adjacent future development, Central Barangaroo development, will allow for a future southern station entry, which will be provided from within the development.

The local area is defined by a complex mix of uses, including residential, recreational and commercial activities.

To the north is Walsh Bay and Barangaroo Reserve – a six-hectare harbour foreshore park with walking and cycle paths, recreation spaces and a cultural centre.

To the south is the Central Barangaroo development – a 5.2-hectare site, and will be the cultural and civic focal point of Barangaroo, with a combination of recreational, residential, retail and commercial uses, creating a vibrant 24/7 mixed use precinct.

To the east is the historical precinct of Millers Point, characterised by a mix of sandstone residences and terrace housing, and the suburb highpoint of Observatory Hill Park.

Along the foreshore is the Wulugul Walk, a shared promenade for pedestrians and cyclists, extending from Barangaroo House in the south to the northern

part of Barangaroo Reserve, connecting to the 11km harbour-side walk.

Existing station precinct strategic planning context

The *Greater Sydney Region Plan* (Greater Sydney Commission, 2018) identifies the Harbour CBD as a Metropolitan Centre. The Harbour CBD is part of the Global Economic Corridor and a global financial, professional, health and education, and innovation centre. Barangaroo Station is located within the Harbour CBD.

The *Eastern City District Plan* (Greater Sydney Commission, 2018) sets priorities and actions for the Harbour CBD, including driving the growth of the Harbour CBD, including driving the growth of the regionally significant infrastructure. Barangaroo is located within the Walsh Bay Precinct, which is an innovation corridor in the Sydney CBD.

The *Sustainable Sydney 2030: Community Strategic Plan 2017-2021* (City of Sydney, 2013) and its respective updated version, the *Draft Community Strategic Plan: Delivering Sustainable Sydney 2030-2050* (City of Sydney, 2022) sets the following strategic directions that are supported by the project:

- A globally competitive and innovative city by providing public transport infrastructure to support a growing city.
- Integrated transport for a connected city through the delivery of a new metro station which is integrated with existing infrastructure and the city.
- Sustainable development, renewal and design through the delivery of sustainable transport which supports long term access to the city.

City of Sydney's *City Plan 2036: Local strategic planning statement* (City of Sydney, 2013), aligns with the Community Strategic Plan, setting clear strategic directions for land use planning and actions on how the Council's vision will be achieved. The plan concentrates on ensuring for infrastructure and asset management, enhancing liveability and social vitality, maintaining economic productivity driving land use planning controls, sustaining environmental

Barangaroo – local context continued

preservation and ensuring for stakeholder engagement. Barangaroo Station represents a significant opportunity to improve accessibility to Barangaroo, whilst facilitating the cultivation of a vibrant place for people.

6.6 Future changes and functional needs

Land use, transport integration and opportunities

A metro station at Barangaroo will support state and local strategic and planning controls by meeting the needs of residents, workers and visitors to the precinct and providing connections between the established commercial core within the Sydney CBD and the development at Barangaroo. It is expected that a metro station at Barangaroo will have the

following specific benefits:

- The station will form part of the interchange that provides safe and direct access and further reinforce the Sydney CBD as the anchor of Global Sydney and the largest employment centre within Australia.
- The station will serve a growing and evolving concentration of global economic activities located within the heart of the western extension of the Sydney CBD, including international headquarters, financial institutions, law firms, accountants and insurers.
- The broader station catchment will benefit the western corridor of the Sydney CBD, encompassing a vibrant and active precinct of commercial, residential, entertainment, cultural

and leisure opportunities.

- The station will serve an increasingly diverse role throughout the day and week as an events, cultural, retail, employment and transport interchange precinct. The station will provide western access to the city – from Barangaroo Reserve to the north to Darling Harbour in the south – and provide direct connections to the Sydney Metro network, ferry services, and existing heavy rail services at Wynyard station.

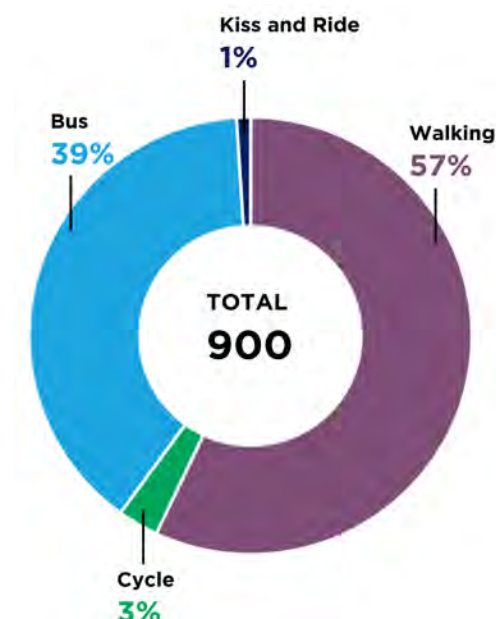
These strategies and opportunities will be further developed in consultation primarily with the Department of Planning and Environment, Infrastructure NSW, and the City of Sydney.

6.7 Opportunities and constraints

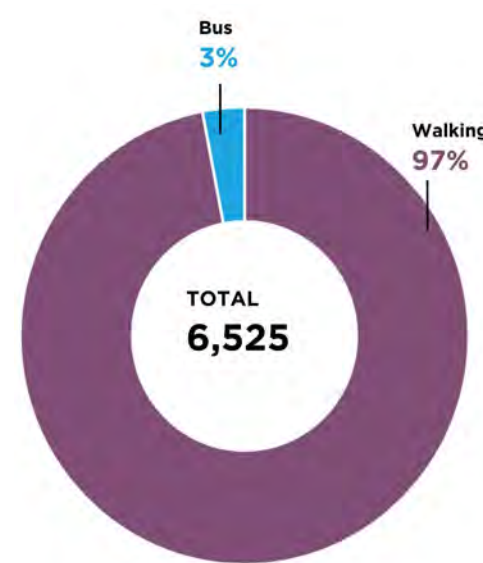
Barangaroo Station has the following opportunities and constraints.

Opportunities	Constraints
<ul style="list-style-type: none"> • Support and enhance the outcomes of the state and local government plans to redevelop the area. • Activate the station precinct, improve pedestrian access and enhance amenity for the adjacent Central Barangaroo development. • Embed sustainable transport into Central Barangaroo development. • Improve connectivity to nearby key destinations including Barangaroo South, Central Barangaroo, Wulugul Walk, Barangaroo Reserve, Millers Point and the Walsh Bay Arts and Cultural Precinct. • Support the reactivation of Hickson Road as a key walking and cycling connection by providing landscaping improvements, dedicated cycle lanes and walking connection. • Relieves capacity constraints at Wynyard station 	<ul style="list-style-type: none"> • Highly sensitive area for heritage and public amenity. Key measures in the design that address the heritage sensitivity and unique public amenity of the area include: Reuse of heritage elements particularly the salvaged sandstone, the Hungry Mile installation, commissioned artwork by local indigenous artists and purposeful landscaping and a design that minimising impact to Nawi Cove and the Barangaroo Headland. Refer to the Heritage Interpretation Plan for Barangaroo Station Stage 3 and Barangaroo SDPP for more detail. • Requirement to protect the heritage wall and minimise impact. The service pods are purposefully located on the eastern side of Hickson Road, designed to be low-key and sculptural items. • Function and role of Hickson Road to support the operation of cruise ships at the Circular Quay Overseas Passenger Terminal. The precinct design minimises pedestrian need to cross Hickson road. This is achieved through placement of kiss and ride, taxi and coach facilities on the station side. To contain pedestrians crossing Hickson Road, one permanent zebra crossing (providing access to the southbound bus stop) and a second temporary zebra crossing will be delivered.

Forecast modes of access



Forecast modes of egress



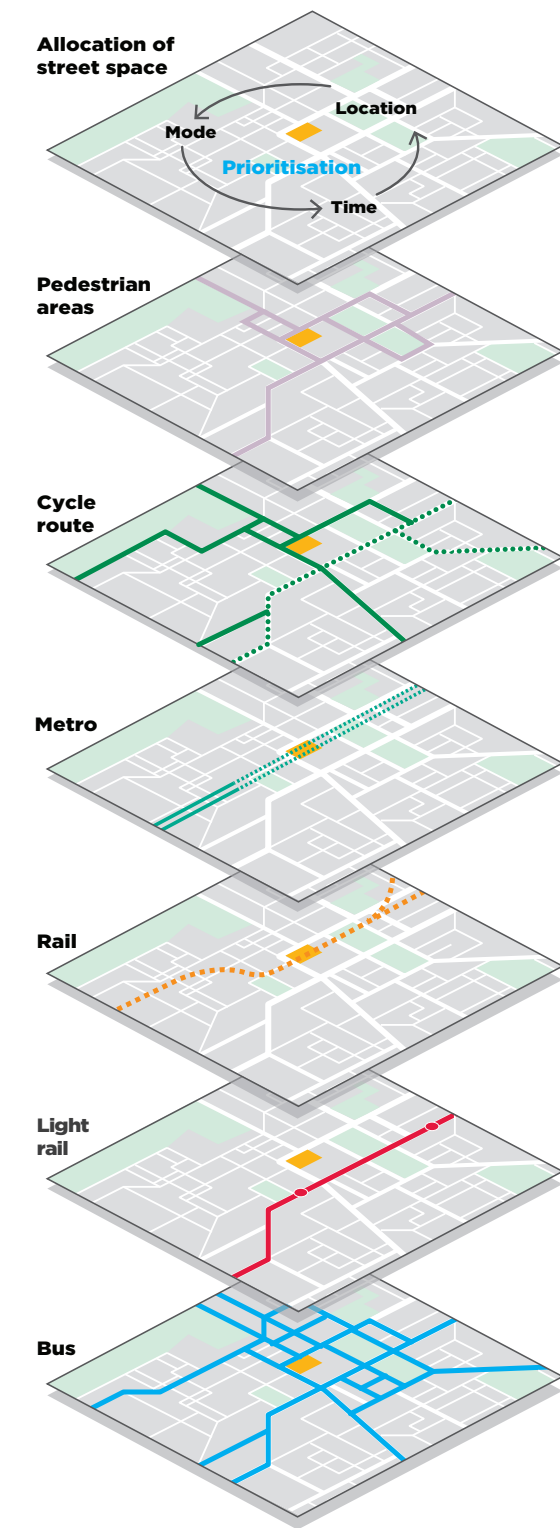
2036 1-hour AM peak demand and mode splits
(Sydney Metro Chatswood to Sydneyham Environmental Impact Statement)



7.0 Barangaroo – interchange and transfer requirements overview

Barangaroo Station entrance

7.0 Barangaroo - interchange and transfer requirements overview

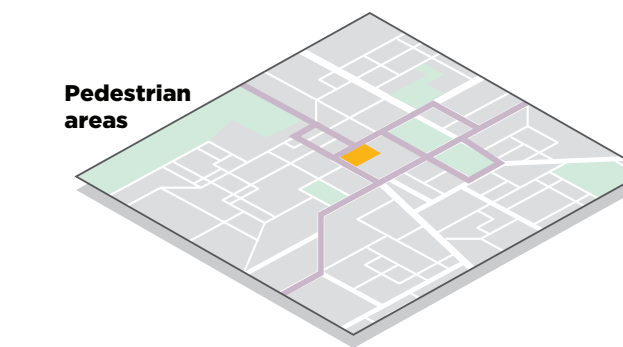


Mode layers



Barangaroo Station - interchange and transfer requirements overview

7.1 Barangaroo - walking interchange and transfer requirements



Mode layer - pedestrian areas



Barangaroo Station - pedestrian interchange and transfer requirements

Barangaroo – walking interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<p>In the vicinity of Barangaroo Station, Hickson Road comprises of footpaths on the eastern and western kerbs, as well as at grade marked pedestrian crossing north of the proposed station box. Immediately north of the station box, Barangaroo Reserve includes a comprehensive network of footpaths including Wulugul Walk which links Darling Harbour with Walsh Bay. Pedestrian access between Barangaroo Station and Millers Point, The Rocks and the Sydney CBD is currently provided by:</p> <ul style="list-style-type: none"> Two mechanical lifts - one immediately north of the station box at The Cutaway within Barangaroo Reserve and one south of the station box at 30 The Bond. High Street Stairs immediately east of the station box. Wynyard Walk which provides an accessible path of travel between Barangaroo South and Wynyard station.
Future station integration	
Station access location	<p>Entry to Barangaroo Station will be via the new entrance located at the northern plaza at Barangaroo Reserve near Nawi Cove. A future southern subterranean entry within the Central Barangaroo development is proposed. The completion date is to be confirmed..</p>
Pedestrian environment and design considerations	<p>The overall pedestrian environment in the catchment accommodates pedestrian movement associated with commercial, mixed-use, residential, entertainment and tourist areas to the north, east and south of the station.</p> <p>Design outcomes to accommodate pedestrian movement include:</p> <ul style="list-style-type: none"> Upgraded pedestrian footpath on the eastern kerb of Hickson Road from the High Street Stairs to the project boundary under Windmill Street. Upgraded pedestrian footpath on the western kerb of Hickson Road from Street C to the project boundary under Windmill Street. A new marked raised zebra pedestrian crossing outside of 25 Hickson Road adjacent to the station plaza and north of station entry. Retain interim pedestrian zebra crossing on Hickson Road aligning with the High Street stairs. <p>The pedestrian environment potentially impacted by the proposed station includes:</p> <ul style="list-style-type: none"> Eastern and western footpaths of Hickson Road. Network of footpaths through Barangaroo Reserve. Wulugul Walk linking Darling Harbour with Walsh Bay. The Cutaway lift.
Spatial considerations	<p>The design should consider and integrate with <i>Sydney City Centre Access Strategy</i> actions including pedestrian areas and priority pedestrian improvements, CBD bus planning and kerbside zones.</p> <p>The design should also ensure that transfer between modes within the defined station interchange allows for accessible provision that is DDA compliant. Pedestrian modelling has been assessed to 2036 and is of an acceptable level of service. This is achieved through:</p> <ul style="list-style-type: none"> Allowing for customer access through a combined plaza function for access to metro and other modes. Providing logical connectivity with surrounding retail and commercial precincts and entertainment areas. Providing for high pedestrian movement during special events at Barangaroo Reserve, which would be subject to special event pedestrian management.

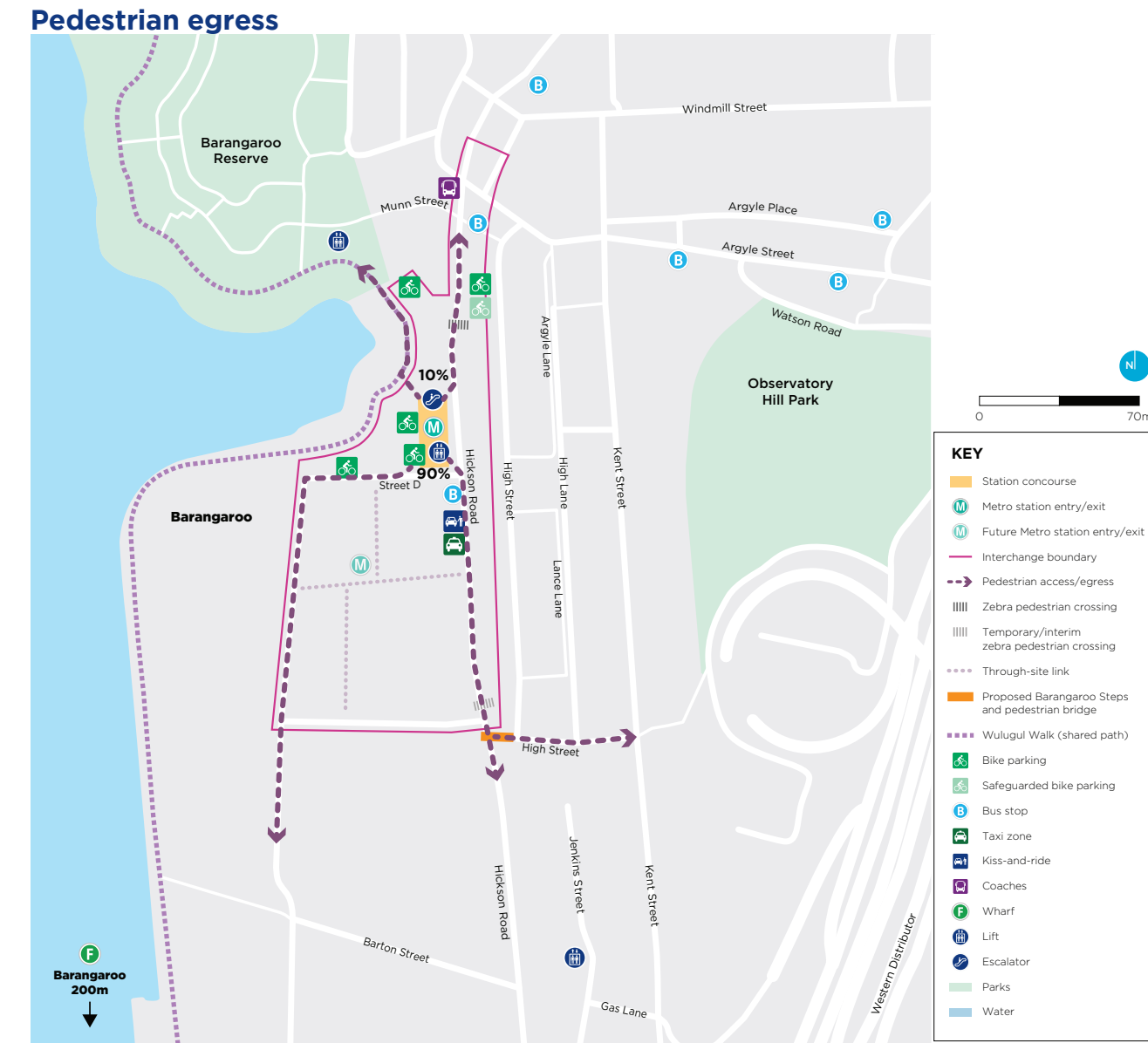
Barangaroo – walking interchange and transfer requirements continued

Item	Description
Future station integration <i>continued</i>	
Safe, convenient, efficient and sufficient pedestrian access and transfer outcome	<p>Safe, convenient efficient and sufficient pedestrian access and transfer to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> Urban design and road design reports. Pedestrian modelling reports Road safety audit Barangaroo Station Design and Precinct Plan (SDPP). <p>Transport and pedestrian analysis were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> Sufficient public domain and footpath space to accommodate pedestrian flows in the vicinity of the station. Safe pedestrian crossings (zebra) at surrounding intersections which provide direct paths of travel along pedestrian desire lines. <p>All outcomes were designed to comply with relevant legislation and guidelines such as the Disability Discrimination Act, DSAPT and Austroads guides.</p>
Connection to future entry	Provide direct access path connecting metro station with the Central Barangaroo development.
Transfer to and from bike parking	Class C bike racks outside of the station entry plaza and adjacent to the footpaths and cycleway.
Transfer to and from other rail	Interchange between Baranagroo station and Wynyard station is anticipated given the rail station lies within 800m walking catchment. A connected series of footpaths and DDA access will be provided to Wynyard walk.
Transfer to and from light rail	Given the nearest light rail station - Bridge Street station - lies beyond the 800 metre walking catchment for Barangaroo Station, the design will not specifically accommodate interchanges between metro services and the L2 & L3 light rail.
Transfer to and from bus	The station will provide easy transfer to the proposed new bus stops on Hickson Road.
Transfer to and from ferry	The station will provide easy transfer to ferry services at Barangaroo Wharf.
Transfer to and from taxi	The station will support safe and direct transfer to the proposed taxi rank located on the western side of Hickson Road south of Street D.
Transfer to and from kiss-and-ride	Provides easy access to the proposed kiss-and-ride zone located on western side of Hickson Road south of Street D.
New pedestrian infrastructure by Sydney Metro	<p>Proposed new raised pedestrian zebra crossing on Hickson Road north of the entry.</p> <p>Upgraded pedestrian footpath on the eastern kerb of Hickson Road from the High Street Stairs to the project boundary under Windmill Street. Upgraded pedestrian footpath on the western kerb of Hickson Road from Street C to the project boundary under Windmill Street.</p>
Condition E94 Recommendation	Improve the existing wayfinding signage to the Cutaway and 30 The Bond lifts and additional wayfinding be provided at the new Barangaroo Station to ensure customers are aware of the existing access option.

Barangaroo - walking interchange and transfer requirements continued



Barangaroo Station - pedestrian access distribution



Barangaroo Station - pedestrian egress distribution

Barangaroo - walking interchange and transfer requirements continued

Allocation of space changes in the Barangaroo Station precinct

Barangaroo Station supports diversification of land use and reduction in restricted access space by relocating space for open use, walking and cycling. This aligns with the TfNSW Reallocation of Road Space Policy.

The reallocation of space changes displayed in the two cross-sections of Hickson Road and pie charts presents the reallocation of space within the precinct, displaying:

- Creation of new station pedestrian plaza
- Wider footpaths on Hickson Road western and eastern kerbs
- New cycleway on Hickson Road between High Street stairs and Windmill St
- Removal of kerbside car-parking

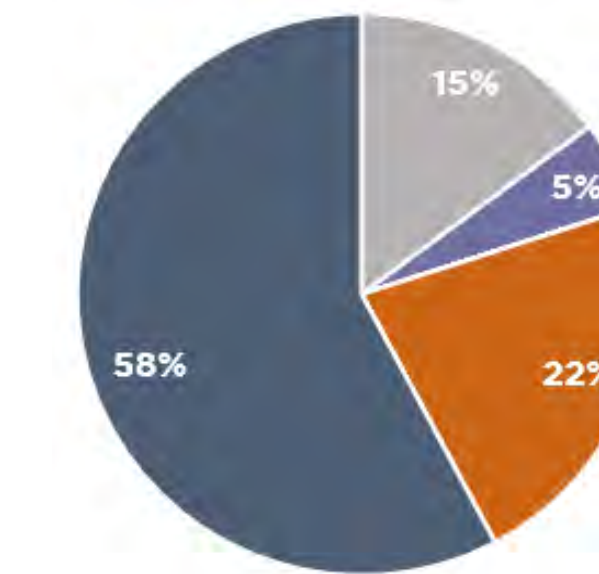
2012 Configuration Hickson Road cross section



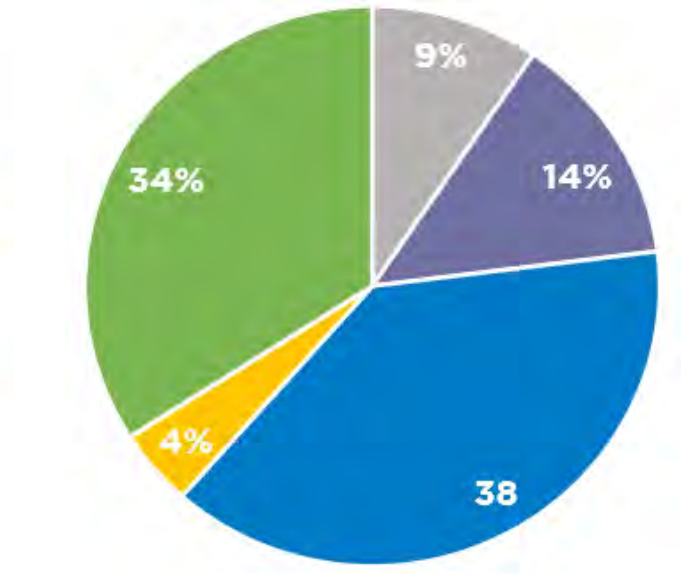
Future state with metro configuration Hickson Road cross section



2012 Configuration Hickson Road percentage allocation



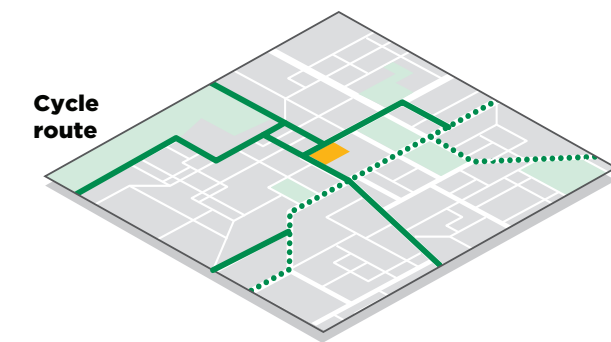
Future state with metro configuration Hickson Road percentage allocation



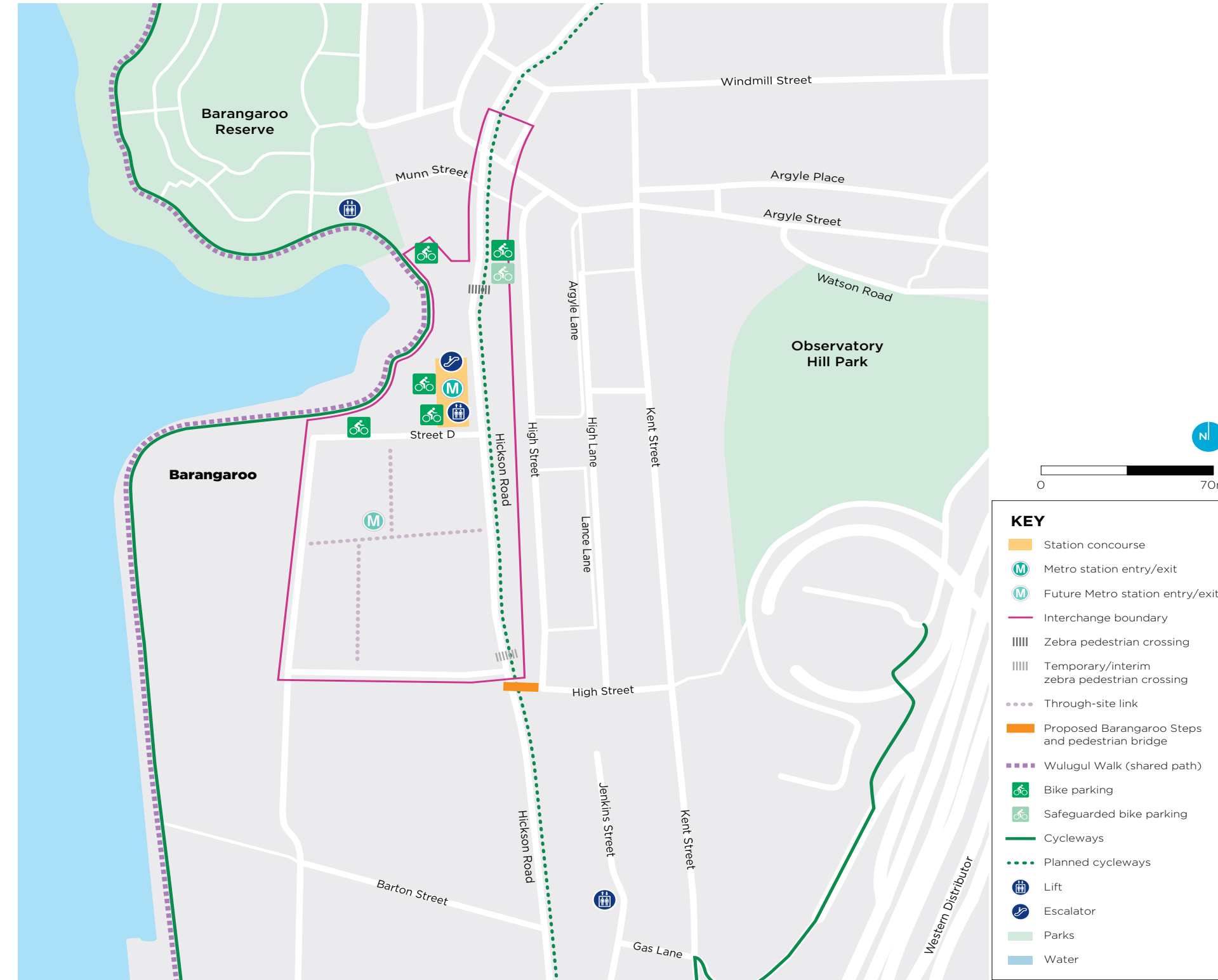
Legend

- Road
- Footpath
- Pedestrian Plaza
- Cycleway
- Car Parking
- Landscaping
- Pavement

7.2 Barangaroo – cycling interchange and transfer requirements



Mode layer - cycle route



Barangaroo Station – cycling interchange and transfer requirements

Barangaroo – cycling interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<p>The following cycle infrastructure is located in the vicinity of the new Barangaroo Station:</p> <ul style="list-style-type: none"> Marked on-road with mixed traffic on Hickson Road, Town Place, Dalgety Road, Argyle Place and Kent Street between Argyle Place and Gas Lane. Wulugul Walk shared path linking Barangaroo Reserve, Central Barangaroo and Barangaroo South. Separated bi-directional cycleways on Kent Street, south of Gas Lane. Marked road shoulder on Hickson Road from Towns Place along the foreshore. Bicycle parking on numerous footpaths.
Future station integration	
Bike parking location principles	<ul style="list-style-type: none"> Entry/access to bike parking should be at street level, convenient, easily visible and intuitive for customers. Bike parking and vehicle parking locations and access arrangements should be separated (i.e., there should be no access through a loading dock). Bike parking should be located on the main desire line of the cycle network where feasible, and guided by wayfinding.
Bike parking location requirements	<ul style="list-style-type: none"> Bike parking located within close proximity to the station entrance and the cycle network. Bike facilities must be in accordance with Australian Standards and Austroad Guidelines.
Bike parking facilities provision	<p>To enable cycle interchange with the station, cycle parking will be provided:</p> <ul style="list-style-type: none"> A minimum of 110 bicycle spaces (Class C: bike parking hoops) will be provided within the station precinct and nearby footpaths and cycleways. A secure bike parking facility will be safeguarded adjacent to the new zebra pedestrian crossing.
Types of bike parking facilities	Class C bike parking for 110 bicycles (55 bike hoops)
Safe, convenient, efficient and sufficient cycling access outcomes	<p>Safe, convenient, efficient and sufficient cycling access to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> Urban design and road design reports. Road safety audit City of Sydney Cycling Strategy. <p>Transport analysis were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> Cycle parking facilities (Class C) situated in convenient locations in the station plazas with efficient access to cycle routes. Safe and efficient integration with the existing and proposed cycle networks in alignment with Council strategies. Controlled (signalised) or separated direct paths of travel along key cyclist desire lines to minimise vehicle-cyclist conflict.
New cycle routes by Sydney Metro	Sydney Metro will deliver part of the proposed new separated cycleway along the eastern side of Hickson Road between High Street stairs and Windmill Street
New cycle routes by others	<p>The following cycle improvements are proposed in the vicinity of the new Barangaroo Station:</p> <ul style="list-style-type: none"> Provision of a new separated cycleway along Hickson Road (Infrastructure NSW). Provision of a new cycle link on Watsons Road linking the Hickson Road cycleway with the Cahill Express cycleway (City of Sydney). Provision of a new cycle link on Napoleon Street linking the existing Kent Street cycleway with the proposed separated cycleway along Hickson Road (Infrastructure NSW).

7.3 Barangaroo – bus, coach and ferry interchange and transfer requirements



Mode layer - bus



Barangaroo Station – bus, coach and ferry interchange and transfer requirements

Barangaroo – bus, coach and ferry interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<p>Hickson Road in the vicinity of Barangaroo Station is currently being serviced by the following three bus routes:</p> <ul style="list-style-type: none"> • 311 City to Millers Point. • 324 Watsons Bay to Walsh Bay via Old South Head Road. • 325 Watsons Bay to Walsh Bay via Vaucluse Road. <p>For coach parking in the vicinity of Barangaroo Station, a dedicated off-street facility is provided south of the station box at King Street Wharf off Lime Street. Barangaroo Wharf, located on the harbour foreshore at Barangaroo South, opened in June 2017 and is serviced by the following ferry services:</p> <ul style="list-style-type: none"> • F3 Parramatta River to Circular Quay. • F4 Pyrmont Bay to Circular Quay via Barangaroo • F10 Blackwattle Bay to Barangaroo.
Future Station Integration	
Bus stop location principle	Bus services shall be easily and visibly accessible from the station entrance, located as close as feasible to the gateline.
Bus bay principle	Bus bays provided or modified by the project will be designed in accordance with relevant Australian Standards, Austroads Guidelines and NSW Government Technical Directives.
Transfer to and from bus principle	Customers will be able to transfer between bus stops at metro station entries using existing footpaths. Where necessary, improvements will be made to signage, crossings and wayfinding to ensure an easy customer transfer.
Safe, convenient, efficient and sufficient access and transfer requirements	<p>Safe, convenient, efficient and sufficient pedestrian access and transfer to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> • Customers Urban design and road design reports • Pedestrian modellings reports • Road safety audit • Barangaroo Station Design and Precinct Plan (SDPP) <p>Transport and pedestrian analysis were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> • Sufficient public domain and footpath space to accommodate pedestrian flows from the stations to bus stops, including queuing space at the bus stops. • Direct paths of travel along key pedestrian desire lines to bus interchange areas on Hickson Road • A new pedestrian (zebra) crossings on Hickson Road to facilitate transfer to and from bus stops. • Where necessary, improvements will be made to signage and wayfinding to ensure an easy connected transfer through improved provision of information. • Weather shelter at bus stops. <p>All outcomes were designed to comply with relevant legislation and guidelines such as the Disability Discrimination Act, DSAPT and Austroads guides.</p>
Transfer to and from bus	<p>There will be two new bus stops within the interchange:</p> <ul style="list-style-type: none"> • Hickson Road – one stop, northbound, South of Street D. • Hickson Road – one stop, southbound, north of station entry, underneath Munn Street bridge.
Transfer to and from bus (overnight)	Regular bus stops on Hickson Road will be used for regular overnight bus services.
Changes to bus stops/routes provision	Existing bus routes will have an additional stop at the new bus stops on Hickson Road.
Transfer to and from coach	Customers will be able to transfer between coach stops and metro station entries using upgraded footpaths.
Potential changes to coach parking	A 55 metre coach bay will be provided on Hickson Road northbound under Munn Street bridge and Dalgety Road.
Transfer to and from Ferry	Customers interchanging from Barangaroo ferry services and Sydney Metro (and vice-versa) will use existing footpath along Wulugul Walk.
Potential changes to ferry services	Sydney Metro proposes no changes to existing ferry services in the vicinity of the Barangaroo Station.

7.4 Barangaroo – vehicle drop-off interchange and transfer requirements



Barangaroo Station – vehicle drop-off interchange and transfer requirements

Barangaroo – vehicle drop-off interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	There are no existing taxi ranks near the station. There are no existing kiss-and-ride facilities.
Future Station Integration	
Safe, convenient, efficient and sufficient access and transfer	<p>Safe, convenient and sufficient pedestrian access and transfer to the from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> • Customers Urban design and road design reports • Road safety audit • Pedestrian modellings reports • Barangaroo Station Design and Precinct Plan (SDPP). • Prioritised, direct paths of travel along pedestrian desire lines within low speed environments. <p>Transport and pedestrian analysis were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> • Sufficient public domain and footpath space to accommodate pedestrian flows from the station to taxi and kiss-and-ride space, including queuing space. • Direct paths of travel along key pedestrian desire lines to kiss-and-ride area on Hickson Road. • Further pedestrian safety treatment will be implemented around the station precinct such as pedestrian fence and landscaping. This will provide safe transfer between modes. • No road crossings required from taxi to the station entrance. • Where necessary, improvements will be made to signage and wayfinding to ensure an easy connected transfer through improved provision of information. <p>All outcomes were designed to comply with relevant legislation and guidelines such as the Disability Discrimination Act, DSAPT and Austroads guides</p>
Transfer to and from taxi	A new taxi rank (1 space) will be provided on the western side of Hickson Road, south of Street D.
Taxi rank locations	Taxi facilities is required to be a maximum of 130m walking distance from the head of the taxi rank to the station northern entrance.
Transfer to and from kiss-and-ride	Kiss-and-ride bay (1 space) will be provided on the western side of Hickson Road .south of Street D.
Kiss-and-ride zone design	The dimensions of kiss-and-ride spaces shall comply with TfNSW and Australian Standards and Guidelines and are to be a maximum of 130m walking distance from the head of the kiss and ride rank to the station northern entrance..
On-street parking	On street parking will be provided north of Dalgety Road on the western and eastern side of Hickson Road.



8.0 Barangaroo – operations, maintenance and management provisions

Barangaroo Station bike parking

8.0 Barangaroo – operations, maintenance and management provisions

The spatial plan of the Barangaroo Station and interchange provides a broad understanding of the future station infrastructure and interchange facilities, and the interfaces and integration planned by the Sydney Metro project. This includes interfaces with the existing street network, and the future function of these streets to provide access to and from the metro station.



Barangaroo Station – operations, maintenance and management provisions

Barangaroo – operations, maintenance and management provisions continued

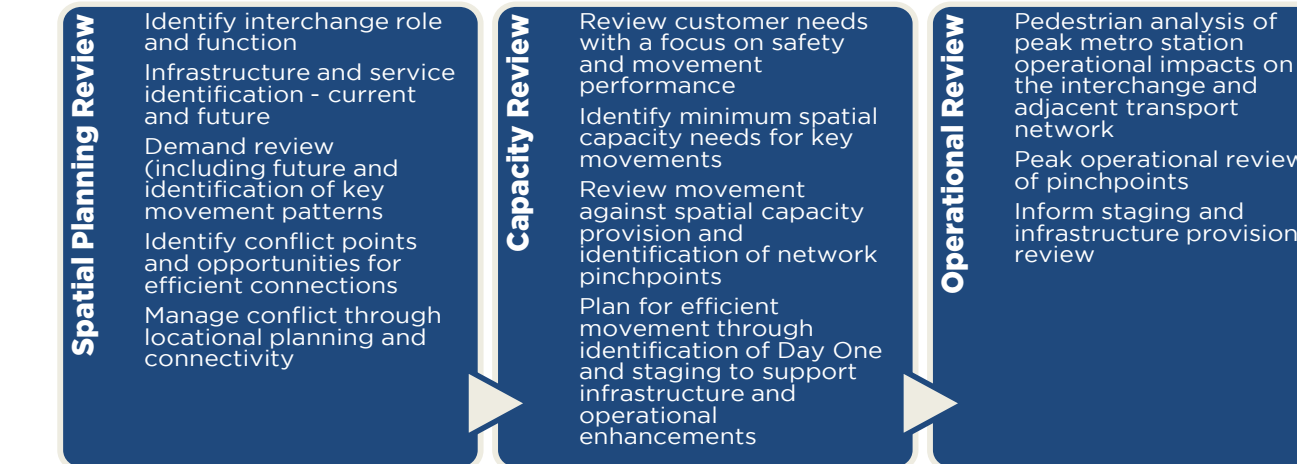
8.1 Reviews and assessment process

A performance review of the station facilities, vertical transport provision, footpaths and intersections has been undertaken using both pedestrian and traffic static analytical and simulation modelling tools.

The outputs from the models have been used to understand the operating performance of the

interchange, points of conflict and potential deficiencies, and to inform the design development process.

An overview of the process for assessing the proposed interchange design is provided in the figure below.



8.2 Facility testing process

The performance of the design was tested through the application of the following assessment techniques.

Demand Profile	Design Testing	Measure	Review Type
Peak hour	Infrastructure and spatial provision	Level of Service (LoS)	Design capacity
Peak 15 minutes (average)	Peak infrastructure and spatial provision	LoS	Peak design capacity
Peak minute (surge)	Customer experience	LoS & duration	Operational experience

The above three levels of testing enables a design to be reviewed against both standard peak capacity applications and to understand how infrastructure performs under more short term demand surges relating to the operation of the system or the surrounding transport network.

An assessment against the peak 15 minute period provides a measure to determine required infrastructure to accommodate forecast peak demand. While assessment of the peak minute demand provides further insight into customer experience during peak surges from train arrivals and similar events associated with network operations.

Barangaroo – operations, maintenance and management provisions continued

8.3 Interchange operational provisions

The operations and maintenance provisions will be documented, which will include:

- Description of the asset owners, operators and maintainers.
- Asset operations description.
- Asset maintenance arrangements.

The table below outlines the principles for access to assets for operational and maintenance purposes.

Intergration item	Description
Safe access	Ensure the safety of: <ul style="list-style-type: none"> • Maintenance workers and staff, and protect them from other road users by providing safe exclusion zones. • Pedestrians and protect them from service vehicles and working equipment.
Emergency vehicle access	The utilities access corridor (Street D) and/or the maintenance parking (where the crane operation area is located) to be managed to accommodate requirements of emergency vehicles. The cycleway on Hickson Road to be managed to accommodate requirements for emergency vehicles to enable access of the fire control room and cabinets.
Servicing and maintenance access (day-to-day)	Day-to-day servicing and maintenance vehicles to utilise the Central Barangaroo loading dock. Prior to the completion of the Central Barangaroo Development, a day 1 interim operation to be devised to allow for the utilisation of the loading zone located in-front of the lift pod (where the crane operation area is located). Planned maintenance will occur during overnight engineering hours and during planned weekend station closures. Detailed operation plans for planned and unplanned events are being developed by the O&M Contractor. O&M contractors KPIs require lifts and escalators to be available during station opening hours.
Servicing and maintenance access (major)	Day-to-day servicing and maintenance vehicles will utilise the Central Barangaroo loading dock. Prior to the completion of the Central Barangaroo Development, a day 1 interim operation to be devised to allow for the utilisation loading zone located in-front of the lift pod, (where the crane operation area is located). The pods adjacent to the heritage wall to provide for additional access for major servicing and maintenance operations. Detailed operation plans for planned and unplanned events are being developed by the O&M. Planned maintenance will occur during overnight engineering hours and during planned weekend station closures. The O&M Contractor will coordinate with TfNSW to obtain Road Occupancy Licenses and to re-plan traffic movements in the area.
Rail replacement bus service access for possessions, degraded operations and incidents	Sydney Metro is currently investigating the need for rail replacement buses to service Barangaroo Station. If required, proposed kerbside parking allocation may change to accommodate rail replacement buses.
Delivery access (retail and operational)	Day-to-day delivery vehicles will utilise the Central Barangaroo loading dock. Prior to the completion of the Central Barangaroo Development, a day 1 interim operation to be devised to allow for the utilisation of the loading zone located in front of the lift pod (where the crane operation area is located).
Staff car parking	As staff will be encouraged to travel by walking, cycling or public transport, no designated staff car parking will be required.



9.0 Modal hierarchy review

Barangaroo Wulugul Walk

9.0 Barangaroo - Modal hierarchy review

The interchange has been designed to prioritise access following the transport modal hierarchy design principles. Adopting these principles in the Barangaroo Station design will help manage existing conflict, provide safer and efficient access, and improve amenity and connectivity for customers moving through the interchange, so that the station can support continued growth.

This table lists the considerations and benefits of interchange access enhancements and the modal access hierarchy provision for Barangaroo Station.

Mode	Provision	Consideration and Benefit
Pedestrian	<ul style="list-style-type: none"> A new marked raised pedestrian crossing on Hickson Road will be provided on Hickson Road north of the station entry. Retain existing interim pedestrian zebra crossing on Hickson Road that aligns with the High Street stairs. Upgraded pedestrian footpath on the eastern kerb of Hickson Road from the High Street Stairs to the project boundary under Windmill Street. Upgraded pedestrian footpath on the western kerb of Hickson Road from Street C to the project boundary under Windmill Street. 	<ul style="list-style-type: none"> The new pedestrian crossing aligns with the interchange modal hierarchy principles in prioritising pedestrians. The crossing will provide efficient, effective and safe access to Barangaroo Station precinct from the High Street Stairs, Wynyard Walk and the two mechanical lifts north and south of the station precinct. The existing interim pedestrian crossing intends to support safe access directly from High Street Stairs and northbound cyclists. The temporary nature of the crossing is to be investigated as part of INSW upgrade of Hickson Road. The upgrade of the footpaths along Hickson Road will improve the pedestrian environment and cater for higher pedestrian volumes. The existing surrounding pedestrian amenities will be utilised to ensure safety of pedestrians and facilitate direct connectivity. The design of the plaza will reconnect the wider Barangaroo Precinct to the harbour and the Nawi Cove Parkland with informal and intuitive pedestrian routes. Pedestrian modelling has been assessed to 2036 and is of an acceptable level of service.
Bike	<ul style="list-style-type: none"> A minimum of 110 bicycle spaces (Class C: bike parking hoops) will be provided within the station precinct and nearby footpaths and cycleways. Provision for a safeguarded secure bike parking facility. A new separated cycleway along Hickson Road to be partly delivered by Sydney Metro between High Street stairs and Windmill Street. 	<ul style="list-style-type: none"> Bike parking provisions at Barangaroo Station satisfy the city station bike parking hub strategy and Australian Standards and are aligned with customer demand and encourages cycling as a transit mode to access the station. Bike parking can be easily accessed by cyclists from both northern and southern sides of the station via the new cycleway on Hickson Road, supported by the surrounding existing and proposed cycleway network as a part of City of Sydney's Cycling Strategy. These provisions support, promote and improve active transport as a primary mode of access, fully aligning with the interchange modal hierarchy principles. Forecast mode access for 2036 has indicated the bicycle facilities maintain an adequate level of service, subject to Condition E98 review and audit.
Bus and ferry	<ul style="list-style-type: none"> There will be two new bus stops within the interchange: <ul style="list-style-type: none"> Hickson Road – one stop, northbound, south of Street D. Hickson Road – one stop, southbound, north of the station entry, underneath Munn Street bridge. Regular bus stops on Hickson Road will be used for overnight bus operations. Maintain the Barangaroo ferry wharf, access via the Wulugul Walk. 	<ul style="list-style-type: none"> The new bus stops along Hickson Road seamlessly interchange with the station precinct entry, being highly accessible and visible from the station precinct. The bus zone provision was recommended by TfNSW and implemented by Sydney Metro. Direct access to the Barangaroo ferry services via Wulugul Walk support and enhance the interchange function of Barangaroo Station.
Coaches	<ul style="list-style-type: none"> New coach bay (3 bays) will be provided on Hickson Road northbound, north of Dalgety Road 	<ul style="list-style-type: none"> The new coach bay will provide comprehensive interchange offering. It intends to provide interchange for the nearby conference hall and events at Barangaroo.

9.0 Barangaroo - Modal hierarchy review continued

Mode	Provision	Consideration and Benefit
Taxi and kiss-and-ride	<ul style="list-style-type: none"> A new taxi rank (1 space) will be provided on the western side of Hickson Road south of Street D. Kiss-and-ride bay (1 space) will be provided on the western side of Hickson Road south of Street D. Short term on street parking will be provided north of Dalgety Road on the western and eastern side of Hickson Road. 	<ul style="list-style-type: none"> Taxi and kiss-and-ride provisions are required to provide for those unable to access the station through other public transport and active transport modes. Kiss-and-ride in CBD areas is not generally provided due to the public transport network coverage, except if deemed beneficial to support point to point, car sharing and ride sharing to improve station access given the local context and location of the station. A single kiss-and-ride space will exclusively be provided for at Barangaroo Station given the unique development landscape of Barangaroo and the location of the station in relation to the CBD public transport network. The kiss-and-ride space will support point to point, car sharing and ride sharing to provide access to Central Barangaroo and other adjacent developments south of the station, and to further support the integration of the station by allowing for direct north-south accessibility from Millers Point, Barangaroo House and Darling Harbour. Provisions will be delivered to ensure a fully accessible path. The locality aligns with the modal hierarchy, minimising conflict with pedestrians and cyclists, prioritising active and efficient transit modes.



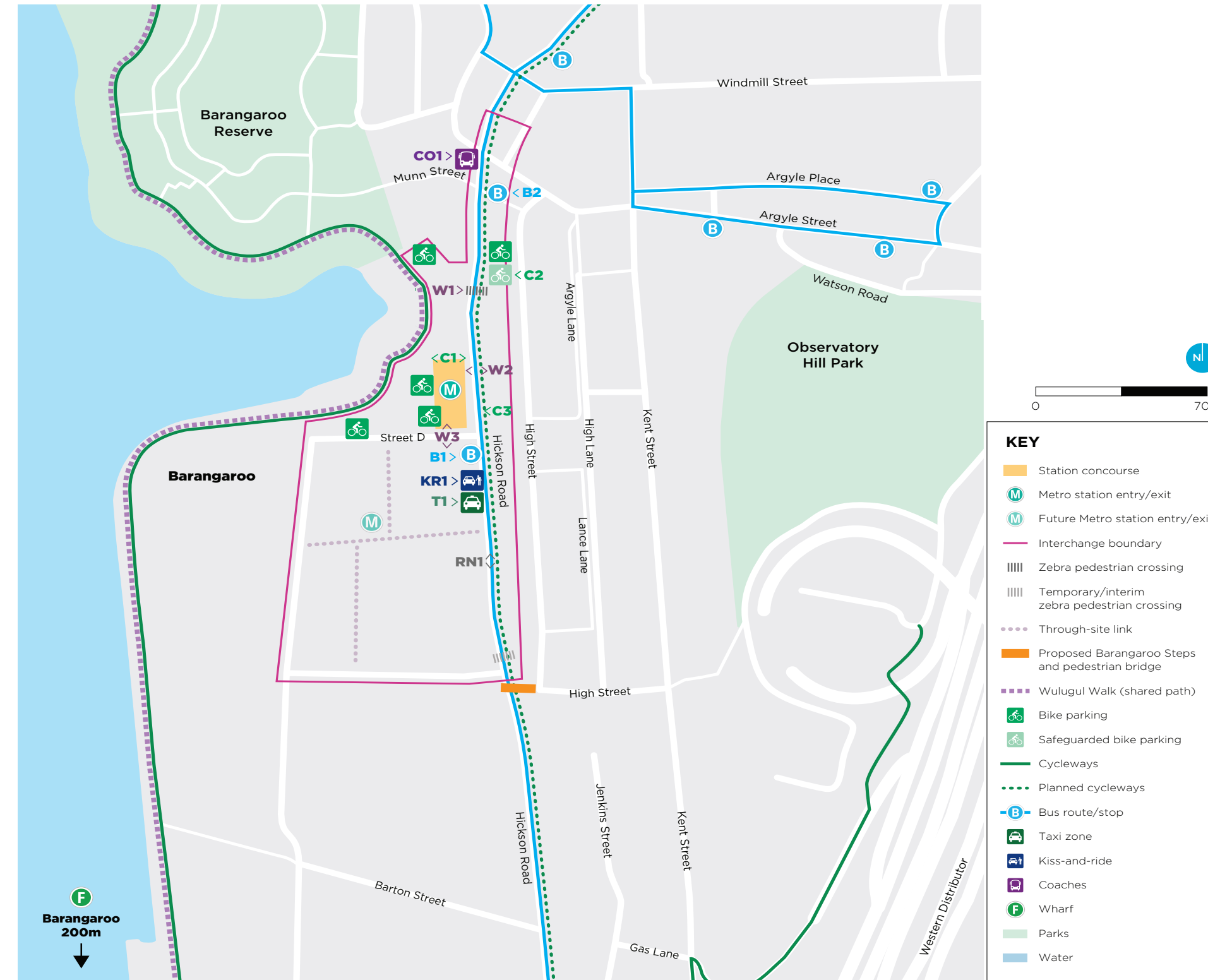
10.0 Barangaroo – actions

Girri Girri Steps

10.0 Barangaroo – City & Southwest delivery & implementation program

The action plan provides an integrated planning response by capturing both Sydney Metro planned project commitments that help to enhance Barangaroo Station while recognising other project commitments and investigations. This action plan, together with information contained in Section 10.1 and Section 10.2, provide a comprehensive understanding of the continuous planning and staged changes to Barangaroo Station. This also shows how the Sydney Metro project contributes and enables improved amenity and connectivity choices, and an easy, safe and seamless customer journey.

Sections 10.1 and 10.2 detail the committed changes and enhancements to the station and interchange facilities, which are separated into two clear implementation plans. Section 10.1 contains the committed implementation plan for Sydney Metro City & Southwest project at Barangaroo Station, and Section 10.2 recognises the implementation plans and opportunities to be delivered by other programs. These other changes are recognised by the project to be delivered by other parties and would help enhance and complement the planned works contained in Section 10.1.



Barangaroo Station – actions

10.1 - Barangaroo – City & Southwest delivery & implementation program continued

This Interchange Access Plan sets out the intended design and operating outcomes required for customers to achieve an easy, safe and seamless transfer between modes at Barangaroo Station.

A number of actions have been identified for Sydney Metro to deliver in order to achieve these outcomes, and are summarised below.

Action	Delivered by	Timing of delivery (start to finish)
Walking		
W1 Provide a new marked raised pedestrian crossing on Hickson Road adjacent to the station plaza, north of the station entry.	Sydney Metro	2021-2024
W2 Provide a pedestrian footpath on the eastern kerb of Hickson Road from the High Street Stairs to the project boundary under Windmill Street. Provide a pedestrian footpath on the western kerb of Hickson Road from Street C to the project boundary under Windmill Street.	Sydney Metro	2021-2024
W3 Provide an efficient pedestrian link between the integrated development and the Barangaroo Station future southern entry.	Sydney Metro and INSW	2024-completion of Central Barangaroo
W4 Implement a proposed crowd-management plan at Barangaroo Station during major events	Sydney Metro	2024-ongoing
W5 Improve existing wayfinding signage to the Cutaway lift and 30 the Bond to ensure customers are aware of existing access options (Condition E94 Recommendation).	Sydney Metro	2024
Cycling		
C1 Provide a minimum of 55 class C bike hoops (capacity for 110 bicycles)	Sydney Metro	2024
C2 Safeguard for Class B bike parking facility	Sydney Metro	2024
C3 Provide a separated bi-directional on-road bicycle path on Hickson Road between the northern station entry and the foreshore route	Sydney Metro and INSW	2024
Bus and ferry		
B1 Provide a new northbound bus stop on Hickson Road, south of Street D	Sydney Metro	2024
B2 Provide a new southbound bus stop on Hickson Road, opposite to the station entry, underneath Munn Street Bridge.	Sydney Metro	2024
Coaches		
CO1 Provide a new coach bay on Hickson Road northbound under Munn Street bridge.	Sydney Metro	2024
Taxi		
T1 Provide a new taxi zone on the western side of Hickson Road south of Street D	Sydney Metro	2024
Kiss-and-ride		
KR1 Provide a new Kiss-and-ride bay on the western side of Hickson Road south of Street D	Sydney Metro	2024
Management and maintenance		
OM1 Identify operations, maintenance and management provisions for assets within the interchange and identify responsibility for operation and maintenance	Sydney Metro	2021-2024
OM2 Metro to monitor on-site operations and customer feedback during planned and unplanned disruptions for the first 12 months of operations	Sydney Metro	2024-2025
Road network modifications		
RN1 Enhance Hickson Road including improved pedestrian connections, cycle lanes and, integrated services	Sydney Metro	2024

10.2 - Barangaroo – Other implementation plans

A number of items are to be delivered by stakeholders as part of other projects or have been identified for further investigation as a means to achieve additional improvements beyond the Sydney Metro City and Southwest project at Barangaroo Station.

These investigation items will inform delivery programs carried out by these stakeholders as part of other projects and will enable the progressive improvement of the wider Barangaroo precinct. These items are complementary and their delivery is not required for the operation of Sydney Metro at Barangaroo Station.

Due to their proximity to Barangaroo Station, the complementary items and investigations are listed in the table below to help understand their contribution and integration with wider area planning goals.



Barangaroo Station – actions by others

10.2 - Barangaroo – Other implementation plan continued

Action	Delivered by	Timing of delivery (start to finish)
Walking		
W6 Upgrade of Hickson Road south of High Street stairs including undertaking a Road Safety Audit on the design.	INSW	2022 onwards
W7 Investigation of retaining existing interim pedestrian zebra crossing on Hickson Road upon completion of Central Barangaroo.	INSW	2024 onwards
W8 Development of Central Barangaroo and integrated network of pedestrian connections including undertaking a Road Safety Audit on the design.	Aqualand	2022 onward
W9 Aqualand to deliver additional Metro entrance within the Central Barangaroo development including undertaking a Road Safety Audit on the design.	Aqualand	-2027
Cycling		
C4 Deliver Hickson Road cycleway south of High Street stairs connecting to the new separated cycleway by Sydney Metro including undertaking a Road Safety Audit on the design.	INSW	-2027
Bus and ferry		
B3 Review current and future bus route service provision to support a safe and efficient modal transfer between buses and Sydney Metro as part of ongoing Integrated Services Planning.	Greater Sydney Division	2024
B4 Implement recommended bus route, stops and timetable changes identified from Action B3.	Greater Sydney Division	2024

Contact us

- 1800 171 386 Community information line open 24 hours
- sydneymetro@transport.nsw.gov.au
- Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240
- If you need an interpreter, contact TIS National on 131 450 and ask them to call 1800 171 386

Fil Cerone
Director of Sustainability, Environment and Planning
Sydney Metro
Level 43, 680 George Street
Sydney, NSW, 2000

23/09/2022

Subject: Barangaroo Interchange Access Plan

Dear Mr. Cerone,

I refer to your submission dated 1 September 2022, requesting approval of the Barangaroo Interchange Access Plan (IAP) in accordance with Condition E92 of the approval for the City and Southwest Chatswood to Sydenham project (SSI-7400). I also acknowledge your response to the Department's review comments and request for additional information.

I note the document name:

- has adopted the modal hierarchy consistent with the principles defined in the EIS;
- was prepared in conjunction with the Station Design and Precinct Plan
- has been prepared in consultation with the Design Review Panel, Traffic and Transport Liaison Group, City of Sydney, Infrastructure NSW and Transport for NSW;
- has been reviewed by an independent consultant and found to be satisfactory; and
- contains the information required by the conditions of approval.

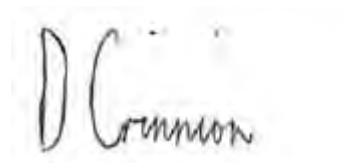
Accordingly, as nominee of the Planning Secretary, I approve the Barangaroo IAP (version 6, dated September 2022).

You are reminded that if there are any inconsistencies between the Barangaroo IAP and the conditions of approval, the conditions prevail.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Ellena Tsanidis on ellena.tsanidis@planning.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read "D Crinnion". The signature is written in a cursive style with a large initial "D".

Dominic Crinnion
Acting Director
Infrastructure Management

As nominee of the Planning Secretary