



City & Southwest

Interchange Access Plan

Victoria Cross

February 2023
FINAL VERSION



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	Victoria Cross – local context	31
7.0	Victoria Cross – interchange and transfer requirements overview	35
8.0	Victoria Cross – operations, maintenance and management provisions	49
9.0	Modal hierarchy review	53
10.0	Victoria Cross – actions	55

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: Victoria Cross South station entrance

Right: Victoria Cross Station platform



↑ Denison St Miller St South Stands A-B ↑

↓ Lift ↑ Denison St Miller St South Stands A-B ↑ Lift ↓

Victoria Cross



ST LUNCH CAFE



coffee roaster

VICTORIA CROSS



BE BAR

cell



1.0 Introduction

Left: Victoria Cross South station entrance

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 between Chatswood and the Sydney CBD 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 IAP 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 IAP 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 IAP is provided to inform planning and investment decisions. This document will be updated in response to station design as required.










Right: Sydney Metro

Western Parkland City

Central River City

Eastern Harbour City

Key

-  Metro North West Line
-  Sydney Metro City & Southwest
-  Sydney Metro West
-  Sydney Metro - Western Sydney Airport
-  Sydney Trains suburban network
-  Future Metro (subject to further investigation)
-  Western Parkland City
-  Central River City
-  Eastern Harbour City







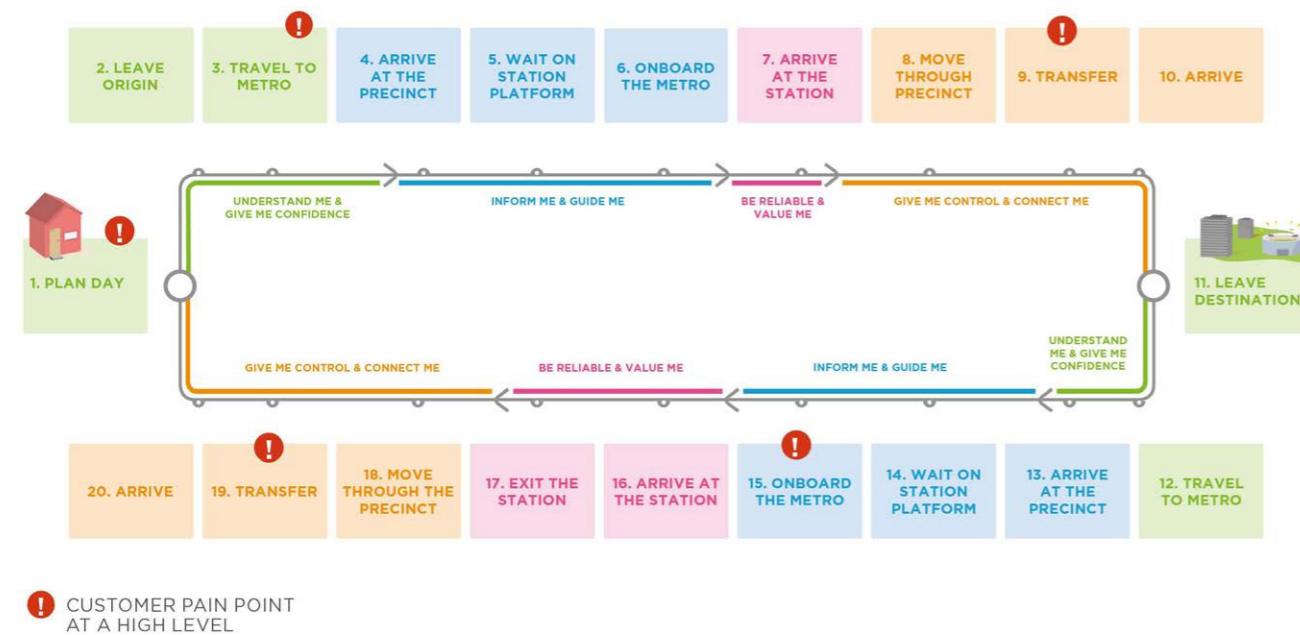
2.0 Interchange and transfer planning

Left: Victoria Cross South Denison Street Public Domain area

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 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 use categories.

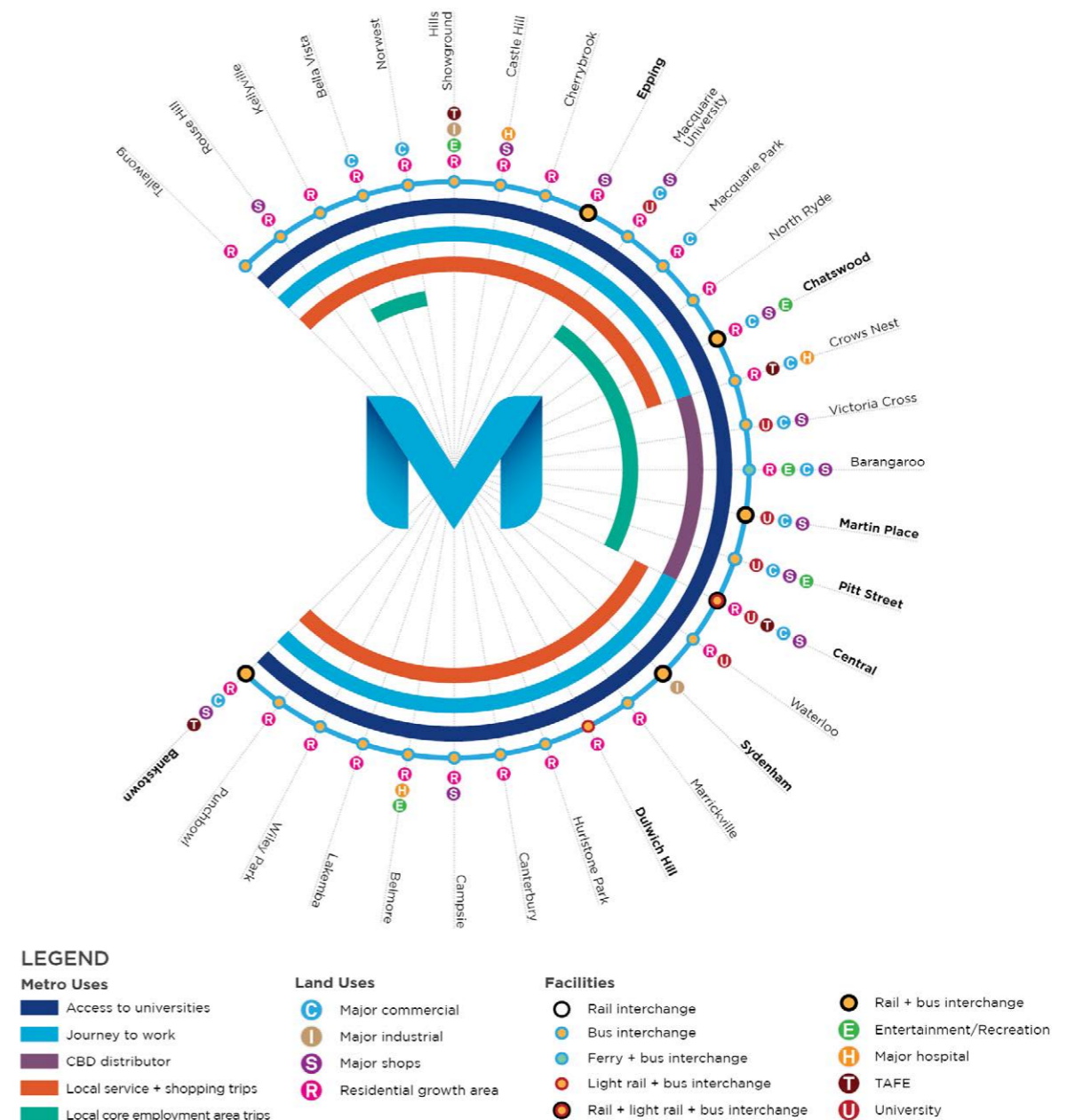
In general, stations with high levels of surrounding employment and/or educational institutions, such as Victoria Cross, Pitt Street or Macquarie University, tend to be destination stations in the morning peak period. Stations with high surrounding residential areas, such as Cherrybrook and Dulwich Hill, tend to be origin stations in the morning peak period. This trend reverses in the 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 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 providing customers with the opportunity to connect between rail to rail, or metro or light rail lines. In less established locations, the focus may be

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

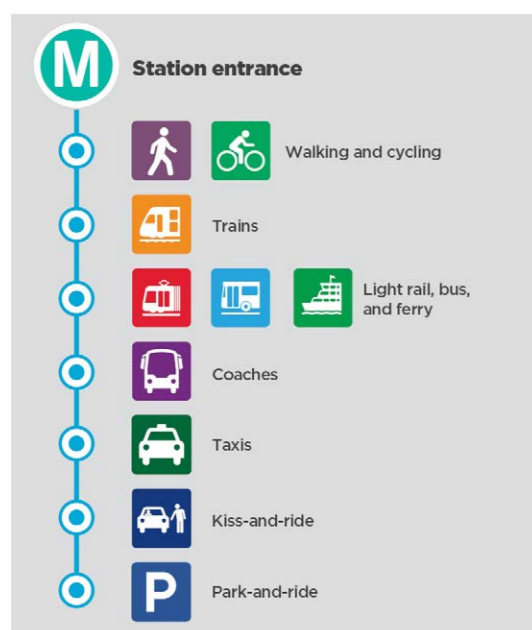
2.5 Modal hierarchy

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, in general, 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 safe 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 stations.</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. Transfer between coaches and the connecting public transport services and/or surrounding land use is important to ensure a 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
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. Taxi access and parking should be provided at all stations, with shelters, seating and taxi providers' contact details. 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. Sydney Metro interchanges shall incorporate accessible facilities, and accessible paths of travel between station and taxi facilities, in accordance with the DSAPT.

Kiss-and-ride
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. 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 will not be provided for exclusively, but could occur in existing short-term parking zones. Access must be safe and easy for vehicles to enter and exit, minimising conflicts with pedestrians, cycles, buses and other vehicles. Ridesharing services, such as GoCatch and Uber, will use kiss-and-ride zones to pick up and drop off passengers. 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.

Park-and-ride
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 line, due to the extent of likely station catchments and the nature of the local transport networks, 4,000 parking spaces were provided for metro customers at Tallawong, Kellyville, Bella Vista, Hills Showground and Cherrybrook Stations. 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. 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. Park-and-ride shall be compliant with the Sydney Metro Northwest Parking Management Strategy and the Sydney Metro City & Southwest Parking Management Strategy.

	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		Taxi	Kiss-and-ride	
MARTIN PLACE	Walking	Cycling	Trains		Bus			Taxi	Kiss-and-ride	
PITT STREET	Walking	Cycling			Bus			Taxi		
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	
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
PUNCHBOWL	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 Strategy	<p>The strategy is an update of the <i>2012 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 focuses on the role of transport in delivering movement and place outcomes that support the character of the places and communities needed for the future.</p> <p>The principles of this strategy have been applied in the development of this plan, including the six state-wide outcomes to guide the provision of interchange facilities, integration of the metro station with the future strategic transport networks and consideration of future changes in technology and innovation affecting customer transfers. Future Transport also commits to the Towards Zero vision by creating a safe system road environment that is free from fatalities and reduces serious injury. Safe integration of metro stations within the existing environment is key to achieving this commitment around metro stations.</p>
A Metropolis of Three Cities	A Metropolis of Three Cities sets a 40-year vision (to 2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters, informs district and local plans and the assessment of planning proposals, assists infrastructure agencies to plan and deliver for growth and change and to align their infrastructure plans to place-based outcomes, informs the private sector and the wider community of the growth management and infrastructure investment intentions of government.
The North District Plan	<p>Prepared by the Greater Sydney Commission (GSC), the North 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.</p> <p>The North City District covers the Hornsby, Hunter's, Ku-ring-gai, Lane Cove, Mosman, North Sydney, Northern Beaches, Ryde and Willoughby local government areas.</p>
North Sydney CBD Public Domain Strategy	North Sydney CBD Public Domain Strategy has been developed to establish a vision and guidance for future upgrades of Council's public spaces. This strategy proposes the pedestrianisation of Miller Street between Berry Street and Pacific Highway to create 'Miller Place'. The project is being investigated by TfNSW as part of the North Sydney Integrated Transport Program.
The North Sydney Transport Strategy	The North Sydney Transport Strategy (NSTS) is Council's guiding document for the delivery of its transport planning and management functions. This includes strategic transport planning, transport advocacy and the delivery of local transport projects. This strategy has identified Sydney Metro as a significant transport infrastructure which has the potential to deliver a paradigm shift in the way Sydney's residents and workers travel to, from and through North Sydney. Sydney Metro will connect Sydney's north-western suburbs to the Bankstown Line via Chatswood, Crows Nest, North Sydney and the Sydney CBD.
Strategic Cycleway Corridors for the Eastern Harbour City	This program identifies the strategic cycleway network for the Eastern Harbour City and will identify how each corridor should be prioritised. The primary focus is to provide safe cycleways for people of all ages and abilities and better connect centres, precincts, and places.
Guidelines	
Australian Standards	<p>Standards relevant to construction, operation and maintenance of interchanges and all relevant modes.</p> <p>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.</p>
Austrroads guidelines	<p>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.</p> <p>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.</p>

Interchange and transfer planning continued

Legislation or guideline	Description
Guidelines continued	
TfNSW Traffic and Transport Technical Directives	These documents are TfNSW complementary documents to the Austroads Guide to Traffic Management and the Australian Standards AS1742, 1743 and 2890. The content of the directives were applied in conjunction with the relevant Austroads 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.
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 Austroads 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.
Practitioner's guide to Movement and Place	Practitioner's Guide to Movement and Place explains how to collaborate on strategies, plans, and projects, across all stages of design and delivery of our street environments, transport projects, and the places they serve, to create a better built environment.
Walking Space Guide	This Walking Space Guide provides a set of standards and tools to assist those responsible for Walking Spaces on streets, to ensure that sufficient space is provided to achieve comfortable environments which encourage people to walk.
Cycleway Design Toolbox	The Cycleway Design Toolbox provides guidance for practitioners on how to design for cycling and micromobility in the context of New South Wales and Greater Sydney.
Bus Priority Infrastructure Planning Toolbox	This Bus Priority Infrastructure Planning Toolbox provides strategic planning guidance on bus priority infrastructure that improves the overall travel time and reliability outcomes for bus customers.
Freight and Servicing Last Mile Toolkit	The Toolkit is to give greater consideration to freight and servicing demands for new buildings and precincts as part of the planning process and building managers and freight and servicing operators will find helpful information on managing loading docks and servicing demands as well as ideas about more efficient ways of consolidating and distributing freight.

Interchange and transfer planning continued

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.

2.8 Defining the interchange area

The area to be included in the IAP 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.

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 that will be used for over station development, 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 to right). 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. • 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. This IAP acknowledges the need to consider the broader principles of customer transfer as an integral part of station design.

Interchange and transfer planning continued

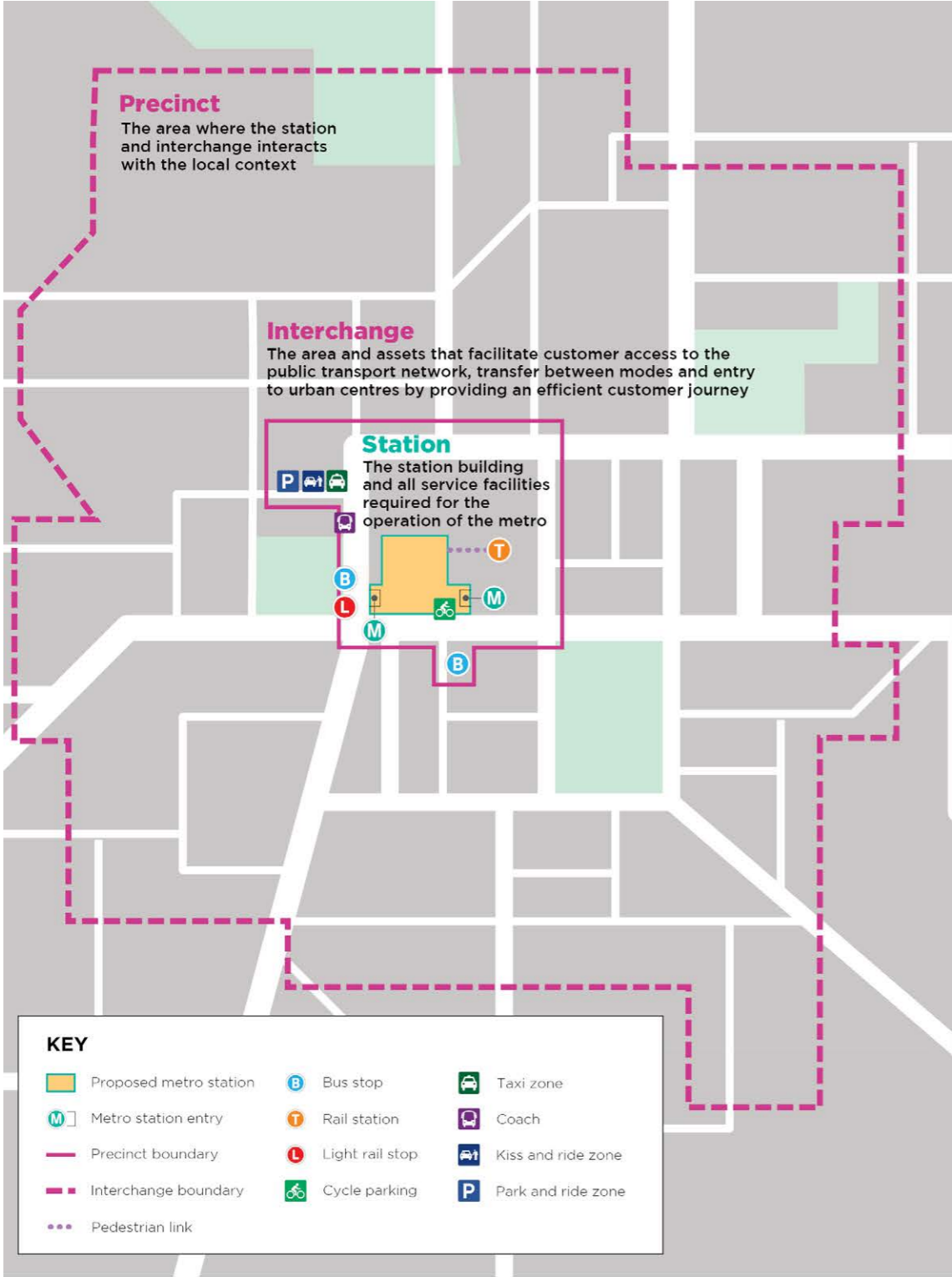


Illustration of terms and definitions

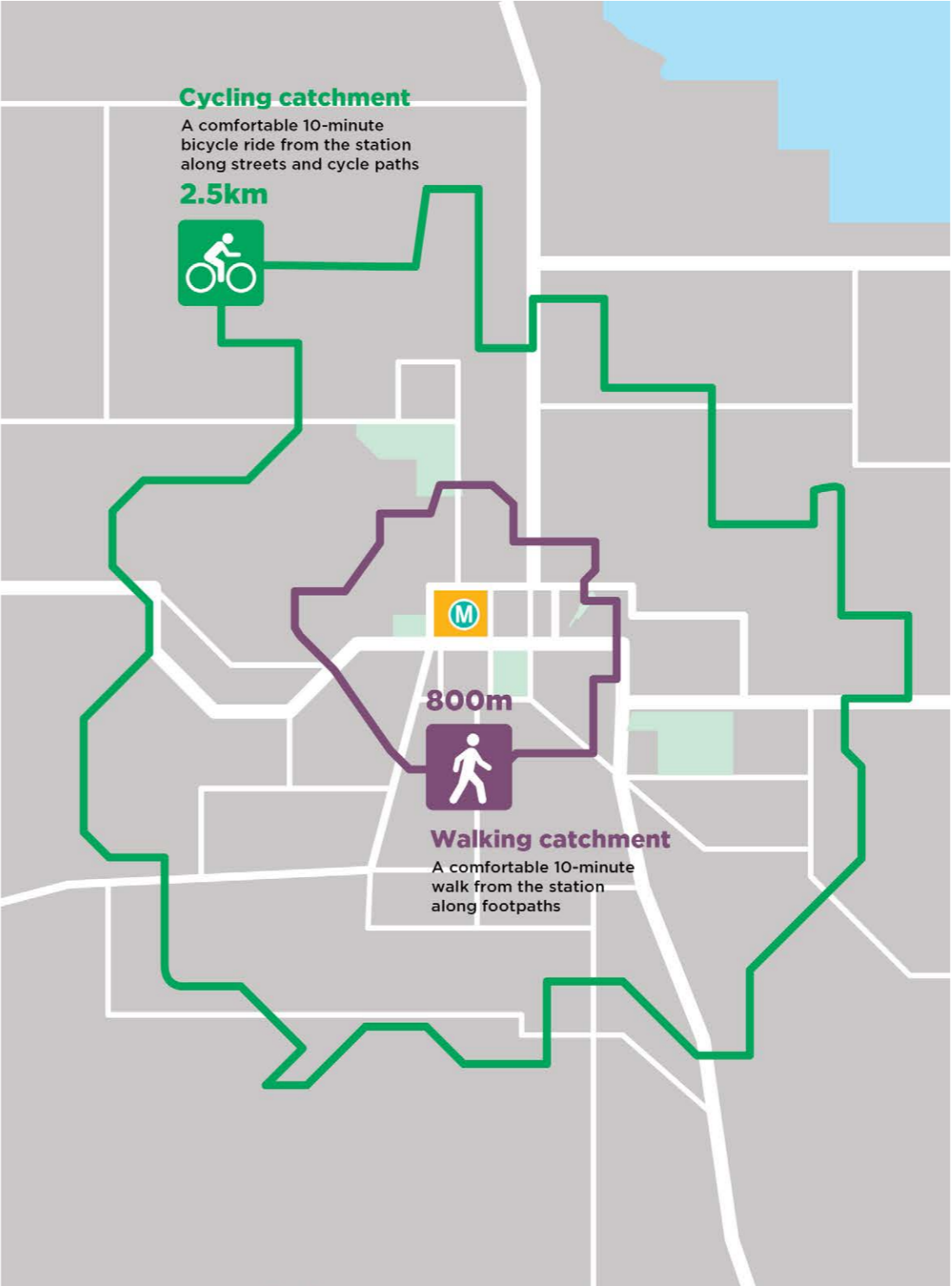


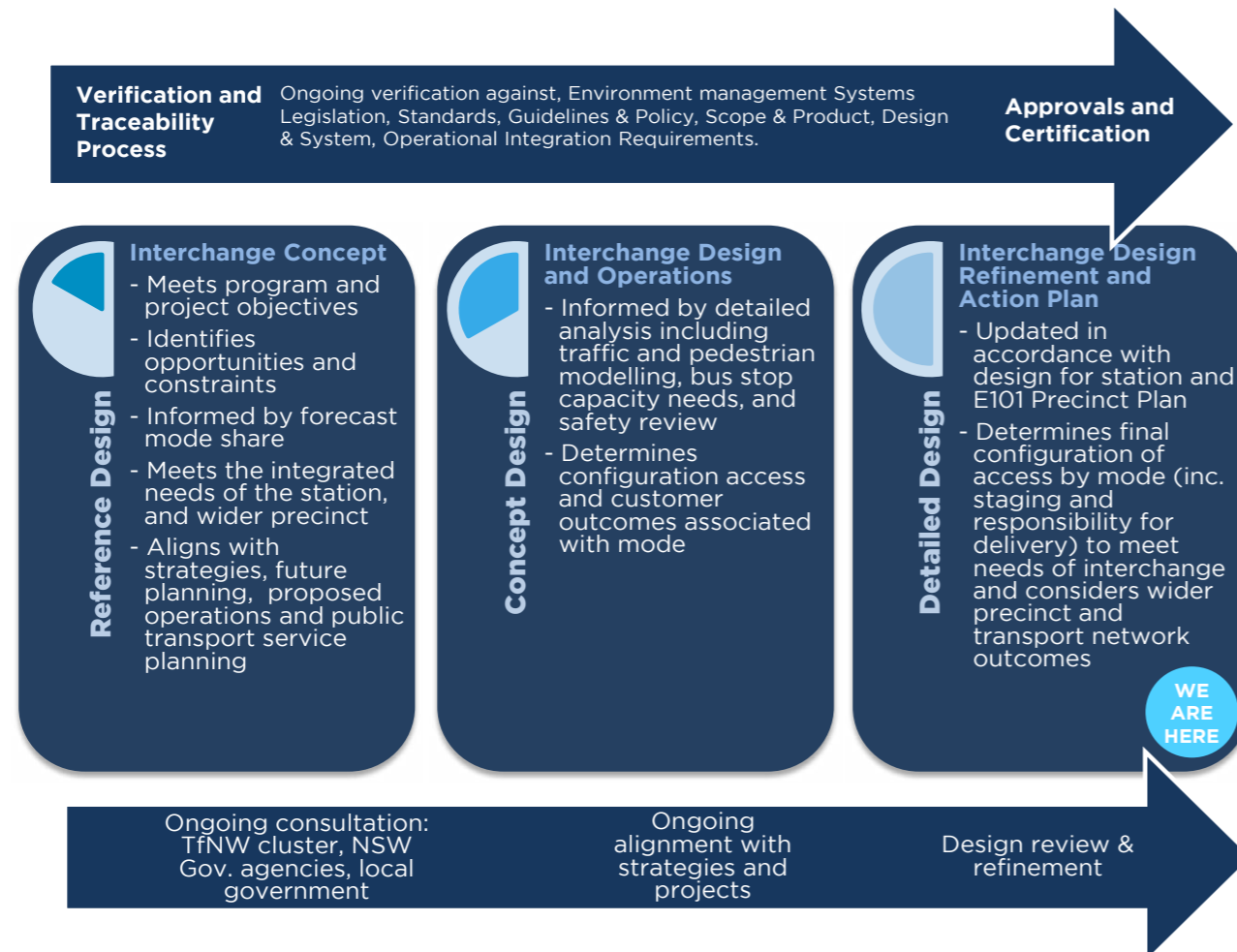
Illustration of terms and definitions

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 Critical State Significant Infrastructure (CSSI) Conditions of Approval (CoA) for the new metro platform, station entry and associated connections within Victoria Cross, 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.



2.11 Consideration of Station Design and Precinct Plan

The IAP is developed in conjunction with the Station Design and Precinct Plan (SDPP). The SDPP highlights urban outcomes within the precinct surrounding Victoria Cross 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 and how these facilitate safe and comfortable movement through to interchange facilities. The SDPP equally considers items in the IAP, for example, by identifying pedestrian amenity and kerbside facilities that are required to bring about an integrated customer journey. Refer to the following sections in the SDPP:

- Section 4.1 on design objectives.
- Section 4.2 on public space and permeability.
- Section 4.4 on urban design context.

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.

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.

2.13 Over station development

The following principles will apply to the integration of the over station development and the metro station:

- All modal access points to the proposed over station 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 and maintenance bays with the station and/or surrounding development.
- The design should allow for shared maintenance access for the over station development and station.



3.0 Consultation

Left: Victoria Cross South OSD

3.0 Consultation

Targeted consultation was undertaken for the Victoria Cross Station IAP and included all major stakeholders. The consultation process involved the following steps:

- organising briefing sessions with key 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 seeking 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 in the table.

Forum/organisation	Meeting dates	Key Aspects
Design Review Panel	17 April 2018	Presented Victoria Cross Station interchange facilities and services design. This include the local context, OSD overview, operations, maintenance and management provisions, network role and demand, modal provisions, and actions. Panel commented that the current work appears to be logical, noting that the IAP work is in progress. Some suggestions included to provide adequate kiss & ride space and review the graphics to improve clarity.
	17 September 2019	DRP has been consulted and the IAP was consistent with the relevant Planning Conditions.
	26 October 2022	DRP has been consulted and the IAP was consistent with the relevant Planning Conditions.
North Sydney Integrated Transport Program (NSITP)	6 December 2022	Draft IAP was submitted for review and the comments received were on Miller Place Design & Delivery. The Design to be completed by Sydney Metro, TfNSW and North Sydney Council and delivery by Sydney Metro & TfNSW (Sydney Project Delivery). The IAP (actions) have been updated accordingly.
TfNSW Bus Planning	8 September 2021	Presented Victoria Cross Station interchange facilities and services design. This include the local context, OSD overview, operations, maintenance and management provisions, network role and demand, modal provisions, and actions. Sydney Metro undertook consultation with the TfNSW Bus Planning in search of the feedback to the conceptual scope of works for end state bus arrangement for Victoria Cross North – intersection of Miller Street and McLaren Street where Sydney Metro was advised to provide 40m long bus stops on both sides of Miller Street, north of McLaren Street in close proximity to the station.
	1 January 2022	Submitted the draft IAP for review and had comments on the length of the bus zone which is 40m and have been addressed.
Traffic Transport Liason Group (TTLG) consists of: Greater Sydney (Planning & Program) Customer Journey Planning (CJP) Councils Emergency Services Construction Contractors	21 December 2017	Presented Victoria Cross Station interchange facilities and services design. This include the local context, OSD overview, operations, maintenance and management provisions, network role and demand, modal provisions, and actions. Sydney Metro provided general overview of IAPs and proposed Victoria Cross interchange configuration. North Sydney Council expressed their vision to see Miller Street and make a more pedestrian friendly CBD.
	19 December 2018	Sydney Metro presented IAP and alignment with North Sydney Council's Transport Master Plan. The IAP was subsequently distributed and no comments were received.
	19 October 2022	Presented Victoria Cross Station interchange facilities and services design. This include the local context, OSD overview, operations, maintenance and management provisions, network role and demand, modal provisions, and actions. TTLG supported the IAP and raised no objection.
	9 December 2022	Submitted draft IAP for review and comments were received on bike parking access at northern station, bus stop clear path of minimum 2.0m and pedestrian modelling which have been addressed/ responded. Strategic cycling connections through North Sydney will be investigated part of North Sydney Integrated Transport Program (NSITP).
	12 April 2018	Advised Sydney Metro to provide safe access to all modes around the stations. Sydney Metro to consider footpath widening and improvement to pedestrian crossings. Queue from the bus stops in Miller Street should not impact Pacific Highway operations. The impact of the proposed midblock crossing on bus and traffic operations should be understood however mid block crossing is not considered part of the implementation plan.

Consultation continued

Forum/organisation	Meeting dates	Key Aspects
North Sydney Council	23 June 2017	Presented Victoria Cross Station interchange facilities and services design. This include the local context, OSD overview, operations, maintenance and management provisions, network role and demand, modal provisions, and actions. Sydney Metro provided an overview of the IAP to Council. Council advised Sydney Metro to consider Miller Street to be pedestrian friendly which has been considered in the design.
	25 August 2021	Initial consultation was undertaken with Council on proposed locations of interchange elements such as; taxi zones, kiss & ride, loading zone, accessible drop-off and pick-up spaces.
	13 September 2021	Consultation was undertaken with Council regarding locations, design and length of the bus shelters and bus stops which was supported by TfNSW Bus Planning team to facilitate interchange functionality, and was also supported by Council. Further consultation was undertaken with Council regarding taxi zones, kiss & ride and accessible parking spaces adjacent to Victoria Cross Station.
	5 October 2021	Council enquiry on reasons for the new bus stops on Miller Street north of McLaren Street as there are bus stops south of McLaren Street. New bus stops on Miller Street north of McLaren Street will be critical for servicing the interchange functionality, future growth of the civic precinct and surrounding area. Council will monitor and review the usage of existing and new bus stops on Miller Street between Ridge Street and Berry Street, 12 months from implementation. Council enquiry about DDA compliant at new bus stops in Miller Street and was confirmed that all new bus stops are DDA compliant. Council enquiry regarding changes to the bus routes or any new route for bus stops along Miller Street, which will be reviewed by TfNSW Bus Planning team. Council supported widening of signalised crossings part of Sydney Metro Victoria Cross Station project, which will improve accessibility. Council supported locations of taxi zones, accessible drop-off & pick-up spaces, kiss & ride spaces on McLaren Street at Victoria Cross Station North and was approved by the Local Traffic Committee.
	7 December 2022	Draft IAP was submitted for review. The comments were received on cycleway routs and maps that include existing and future cycleways. The maps have been updated accordingly.

Consultation continued

A brief summary of the presentations given to key stakeholders on the IAP and the main issues raised during each session.

Group/organisation	Meeting dates	Feedback themes
North Sydney Integrated Transport Program (NSITP)	6 December 2022	Commented on actions by Sydney Metro and actions by others.
NSW Centre for Road Safety	12 April 2018	Pedestrian network in and around station must encourage walking and should provide safe access to the station and all modes.
Customer, Technology and Strategy (Bus & Ferry Planning and Development)	8 September 2021	Sydney Metro was advised to provide 40m long bus stops on both side of Miller Street, north of McLaren Street adjacent to Victoria Cross Station North.
TfNSW Greater Sydney Division (Planning & Program and Customer Journey Planning)	21 December 2017 19 December 2018 19 October 2022 9 December 2022	Commented on to consider required footpath widening and improvement to the nearby pedestrian crossings. Potential operational impact of the mid-block pedestrian crossing should be understood. And queues from the bus stops in Miller Street should not impact Pacific Highway operations. Bus stop clearance, bike parking and cycleway connections.
Design Review Panel	17 April 2018 17 September 2019 26 October 2022	The DRP supported Metro's strategic design of Miller Place. Opportunity for future pedestrianisation of Miller Street between Berry Street and Pacific Highway to create Miller Place.
North Sydney Council	23 June 2017 25 August 2021 13 September 2021 5 October 2021 7 December 2022	Sydney Metro to consider Miller Street to be pedestrian friendly which has been considered in the design. All new bus stops should be DDA compliant. Council supported proposed footpath widenings around stations. Council supported proposed taxi zones, kiss & ride and accessible drop-off/ pick-up areas. Commented on existing and future potential cycleway routes and maps.



4.0 Interchange Access Plans planning conditions

Left: Victoria Cross South Denison Street Public Domain area

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. 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: Victoria Cross - local context. • Section 7.0: Victoria Cross - interchange and transfer requirements overview. • Section 10.0: Victoria Cross - actions and the following Section 10.1 and Section 10.2.
(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: Victoria Cross - 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.
(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 6.6: 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: Victoria Cross - local context and accounts for future land use, population and employment and are further outlined in Section 7.0: Victoria Cross - 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: Victoria Cross - interchange and transfer requirements overview for further information on each mode's provisions within the interchange area (except those excluded in Section 6.4: Modes without provision).
(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 Victoria Cross - interchange and transfer requirements overview for further information on each mode's provisions within the interchange area (except those excluded in Section 6.4: Modes without provision). Emergency vehicle access is accommodated within the station's adjacent kerbside spaces.
(l)	legislative requirements and applicable guidelines;	All applicable legislation, standards and guidelines were used in the development of the design and Interchange Access Plan. Refer to Section 2.6: Legislative requirements and applicable guidelines.

Interchange Access Plans planning conditions continued

Condition	Description	Relevance in the document
E92 continued	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:	
	(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 will be undertaken in Design Stage 3 (DS3) of the road network and will be used to inform further development of the IAP.
	(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 Victoria Cross - 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	This IAP has undergone various levels of consultation with stakeholders including council, the TTLG and the Design Review Panel, 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 Victoria Cross - 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 Roads and Maritime Services standards. Refer to: <ul style="list-style-type: none"> • Section 2.6: Legislative requirements and applicable guidelines. • Section 10.0: Victoria Cross - 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.
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.	This IAP is undergoing a review by independent traffic and transport professionals from various agencies. Refer to Section 3.0: Consultation.

VICTORIA CROSS



Victoria Cross





5.0 Regional context

Left: Victoria Cross South station entrance

5.0 Regional context

5.1 Crows Nest to Victoria Cross

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.

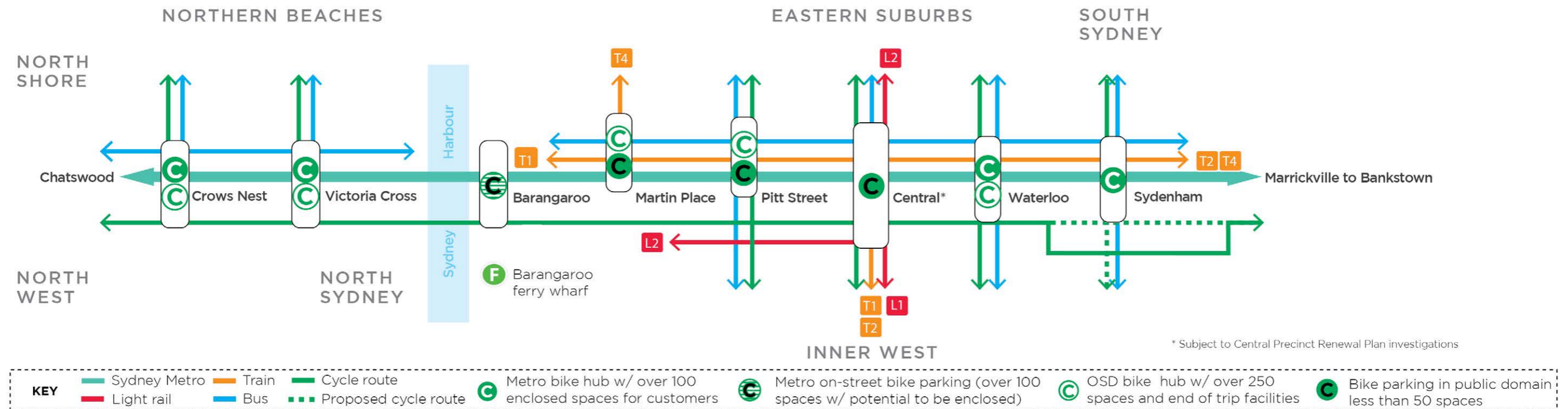
Improved cycling infrastructure and bike parking will enable easier travel by bike, connecting metro stations to surrounding cycle routes. Each metro station will connect into the surrounding walking and cycling network, and will provide bike parking facilities.

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 either in planning and implementation, or completed and operational when the Sydney Metro City & Southwest commences operations:

- Western Harbour Tunnel and Beaches Link Program
- Federal Road Safety Project for Pacific Highway / Miller Street intersection improvements
- Miller Place (as part of the North Sydney Integrated Transport Program)



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 needs for long term bike parking needs associated with interchange customers wanting to access the metro service.
2. Access and provision needs for long term bike parking needs associated with the over station development.
3. Access and provision needs 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.

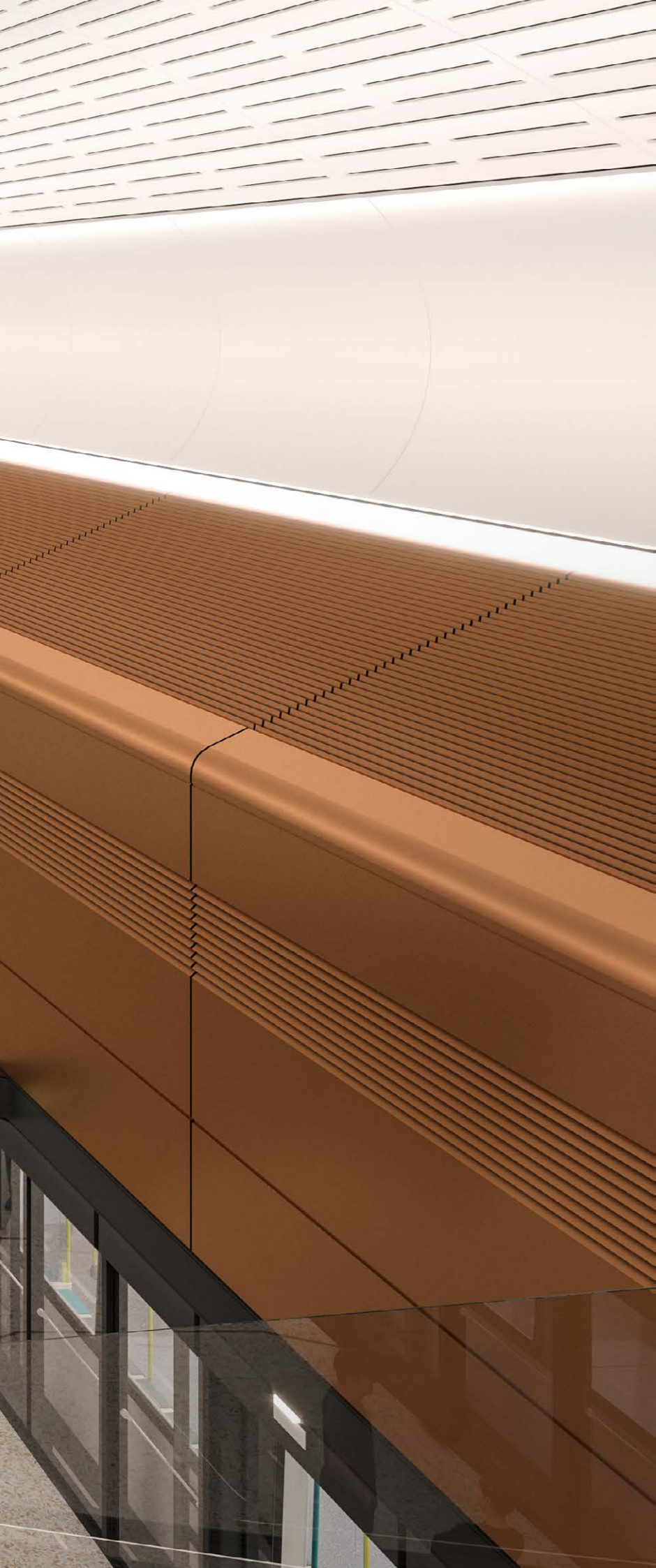
These key elements have contributed towards the design and future delivery of approximately 1,000 bike parking spaces for city station customers with approximately 70% of these situated at four nominated bike parking hubs.

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 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.



Way out → 1 Metro to Bankstown Metro to Tallawong 2 ← Way out



6.0 Victoria Cross – local context

Left: Victoria Cross Station platform

6.0 Victoria Cross – local context

6.1 Station interchange enhancements

Victoria Cross Station will provide a new underground station in the centre of the North Sydney commercial centre. The new station will be to the north of the existing North Sydney Station, providing an alternative station for travel to and from the area.

The Victoria Cross Station will be strategically located within the North Sydney CBD and close to a number of educational institutions and mixed employment areas along Miller Street, Walker Street and the Pacific Highway.

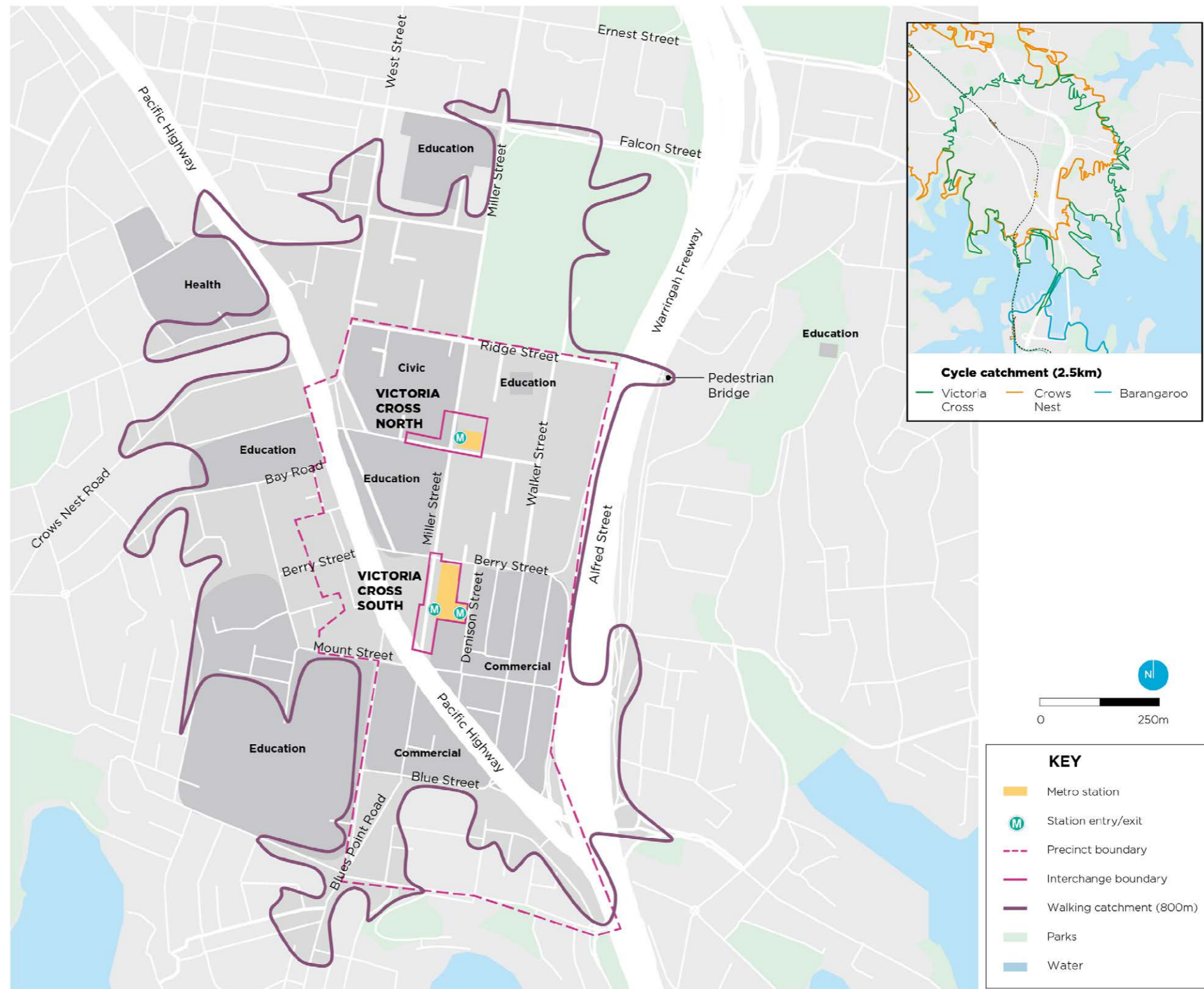
Victoria Cross Station will have two station entries:

- Victoria Cross North – Accessible from Miller Street near McLaren Street.
- Victoria Cross South – Accessible from Miller Street and Denison Streets between the Pacific Highway and Berry Street.

The entrances will open onto commercial, educational, retail and community facilities.

A metro station at Victoria Cross will support the continued growth of the North Sydney CBD as an integral part of Sydney, and service the surrounding residential catchment. The new station will also relieve congestion at North Sydney Station.

Victoria Cross interchange interfaces with and overlaps adjacent interchanges, including North Sydney.



Victoria Cross Station - local context

Victoria Cross – local context continued

6.2 Station strategy

The station strategy for Victoria Cross is to:

- Provide easy, safe and intuitive transfer to and from the metro station within the existing network and road environment.
- Create a new transport focus in the North Sydney CBD.
- Contribute to the attractiveness of the North Sydney CBD by adding to and integrating with the public domain.
- Improve the pedestrian permeability of the immediate station context.

6.3 Over Station Development strategy

The following principles will apply to the integration of the over station development and the metro station:

- All modal access points to the proposed over station 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 table below summarises the overall features of Victoria Cross Station, including the interchange area's key attractions

Feature	Description
Location	On Miller Street (underground) between McLaren Street and south of Berry Street, (north of the Pacific Highway).
LGA	North Sydney Council.
Station entry	<ul style="list-style-type: none"> • A northern entry from Miller Street near McLaren Street. • A southern entry via a pedestrian plaza opening to Miller, Denison and Berry streets.
Transport interchange	Walking, cycling, bus, taxi and kiss-and-ride.
Main features and traffic arrangements	<ul style="list-style-type: none"> • New bike parking. • New kiss-and-ride bays on McLaren Street. • Bus stops on Miller Street near the northern and southern entrance. • Wayfinding signage and Sydney Metro information within the North Sydney CBD. • Enhancement of pedestrian infrastructure around the station will be investigated further in consultation with the Transport Cluster and North Sydney Council.
Customers	Employment, education and residential precincts.
Key attractions	<ul style="list-style-type: none"> • Australian Catholic University • Cammeraygal High School • Greenwood Shopping Centre • Marist College • Mater Hospital • Monte Sant' Angelo Mercy College • North Sydney Boys High School • North Sydney Council Chambers • North Sydney Girls High School • North Sydney Oval • St Leonards Park • Sydney Church of England Grammar School (SHORE) • Wenona School

- The design should allow for shared loading dock and maintenance bays with the station and/or surrounding development.
- The design should allow for shared maintenance access for the over station development and station.

6.4 Modes without provision

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

- Rail.
- Light rail.
- Ferry.
- Coach.
- Park and ride.

6.5 Current land use and characteristics

Existing land use and characteristics

Victoria Cross South will be located underground beneath Miller Street (north of the Pacific Highway) between Berry and McLaren streets, in the commercial core of North Sydney. A northern station entry will be on Miller Street, just north of McLaren Street. A southern station entry will be on Miller Street between Berry Street and the Pacific Highway.

To the north and west is a mixed-use precinct with educational institutions, residential, and commercial, health and community facilities. This precinct extends north along Miller Street to Falcon Street and south to the Pacific Highway.

To the east of the station is the North Sydney CBD including commercial and retail facilities towards the Warringah Freeway.

To the south are a continuation of commercial and retail facilities, and North Sydney Station.

Existing station precinct strategic planning context

A Plan for Growing Sydney identifies the Victoria Cross Station area as part of the North District and Global Sydney. The following priorities in the report will be potentially relevant to the project:

- Enable delivery of key transport projects to facilitate better connections to Global Sydney including Sydney Metro.
- Work with councils to identify suitable locations for housing intensification and urban renewal, including employment agglomerations, particularly around established and new centres, and along key public transport corridors including Sydney Metro.
- Investigate potential future employment and housing opportunities associated with a Sydney Metro station at Victoria Cross.

The draft *North District Plan* (Greater Sydney Commission, 2018) sets priorities and actions for the Central District, including driving the growth of the Eastern City through the planning and delivery of regionally significant infrastructure.

In addition to the *North Sydney DCP 2013, the North Sydney Commercial Centre Study* (North Sydney Council, 2013) and other supporting documents aim to manage the appropriate supply of office development to meet the demand for employment uses appropriate to the area, and support the strategic role of the centre and its overall vitality.

North Sydney CBD Public Domain Strategy (September 2020) identifies a number of public domain projects including new plazas and parks, and an enhanced network of streets and laneways to improve pedestrian safety and amenity including Miller Place - a new open public plaza by closing Miller Street between Pacific Highway and Berry Street, adjacent to Sydney Metro Victoria Cross Station.

6.6 Future changes and functional needs

Land use, transport integration and opportunities

North Sydney is undergoing massive transformation. Numerous sites in the vicinity of Victoria Cross are undergoing redevelopment, increasing the density and transport demand for the area. A metro station at Victoria Cross will support the transformation of

Victoria Cross – local context continued

North Sydney, as well as state and local strategic and planning controls, by enhancing North Sydney’s character and improving connectivity to employment, residential properties, services, cultural and recreational activities. It is expected that a metro station at Victoria Cross will have the following specific benefits:

- The station will form part of the interchange that provides safe and direct access to the North Sydney commercial core, centred on Berry, Miller, Denison, McLaren and Walker Streets, and the Pacific Highway, which will benefit from additional transport connectivity to the Global Economic Corridor.

The station will benefit significant educational institutions including the Australian Catholic University, Northern Sydney Institute of TAFE

Bradfield Campus and the nearby high schools and colleges.

- The station will further reinforce North Sydney as the northern anchor of the Eastern Harbour City and the largest employment centre for Sydney’s north. The station, located within the existing commercial core, will provide further incentive for North Sydney to evolve as an active centre of business for the region, comprising offices, retailing, recreation, cultural facilities, educational institutions and housing.
- The station will work in tandem with the existing North Sydney Station, serving the northern periphery of the commercial core and stimulating further growth along the Miller Street corridor.

There may be an opportunity to integrate expanded retailing, community uses and cultural

facilities within the North Sydney catchment, which would activate a number of new pedestrian links, plazas and squares and cater for the increased numbers of workers, residents and visitors.

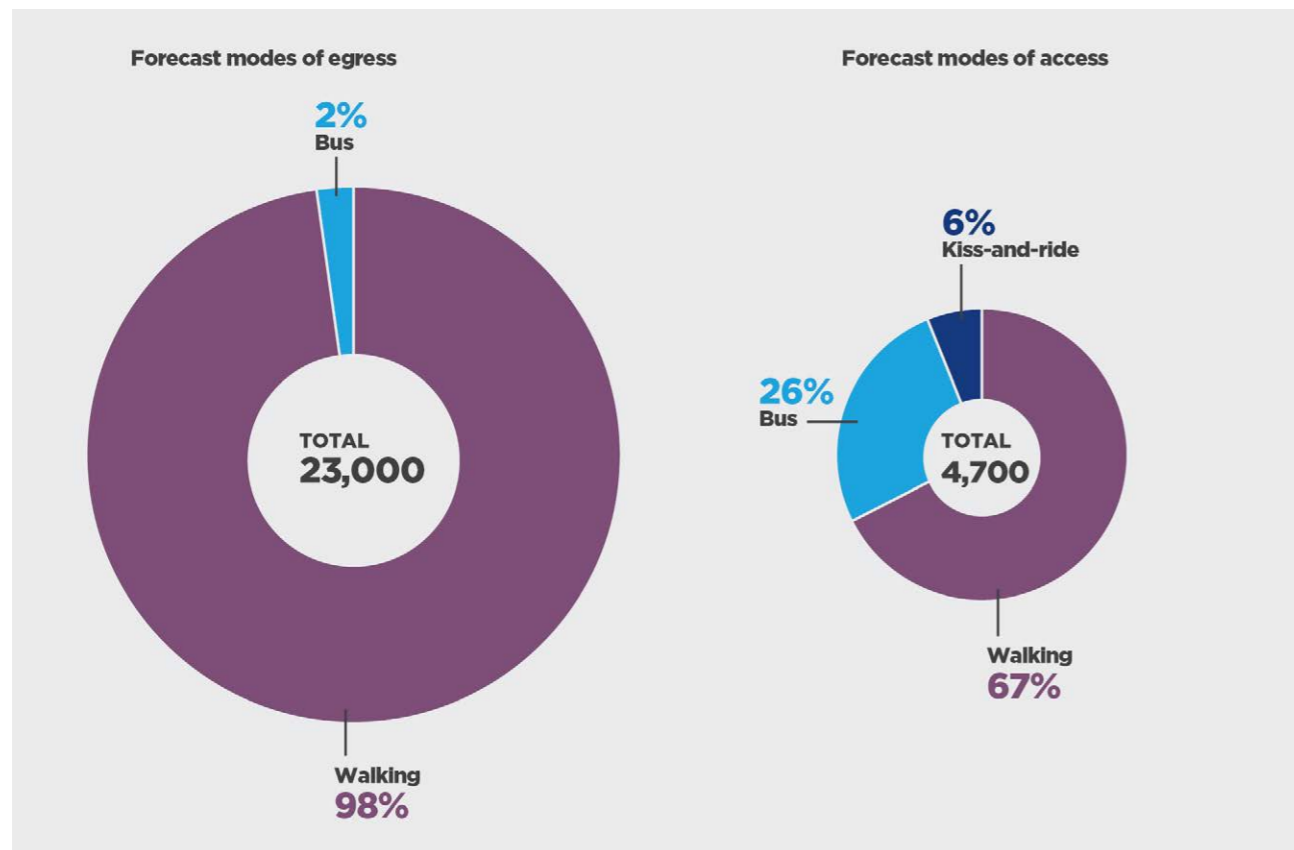
- The station will provide opportunities to support residential densities in the North Sydney commercial core.
- The station will provide the opportunity for the renewal and development of a number of sites, such as commercial premises and under-utilised sites west of the Pacific Highway.

These strategies and opportunities will be further developed in consultation with the Department of Planning and Environment (DPE), Greater Sydney Commission and North Sydney Council.

Future metro demand and modal transfer splits

The demand and mode split data presented in the two pie charts present a broad level understanding of the functional role of the metro service at Victoria Cross Station. The 2036 AM peak hour demand profile and customer connectivity profiles present the following characteristics:

- Majority of people accessing and egressing the station are walking.
- Bus makes up a higher access mode than it does for egress mode.
- Kiss and Ride represents a small proportion of the total demand generated by customers boarding metro services.
- These observed trends are likely to be reversed in the PM peak.



2036 3.5-hour AM peak demand and mode splits (PTPM4.1 City and Southwest Final Business Case 2026 and 2036 Project LUTI Scenarios (Run 143 and Run 144))

Note: The cyclist transfer volumes are not shown as they aren't included in the PTPM model.

6.7 Opportunities and constraints

Victoria Cross Station has the following opportunities and constraints.

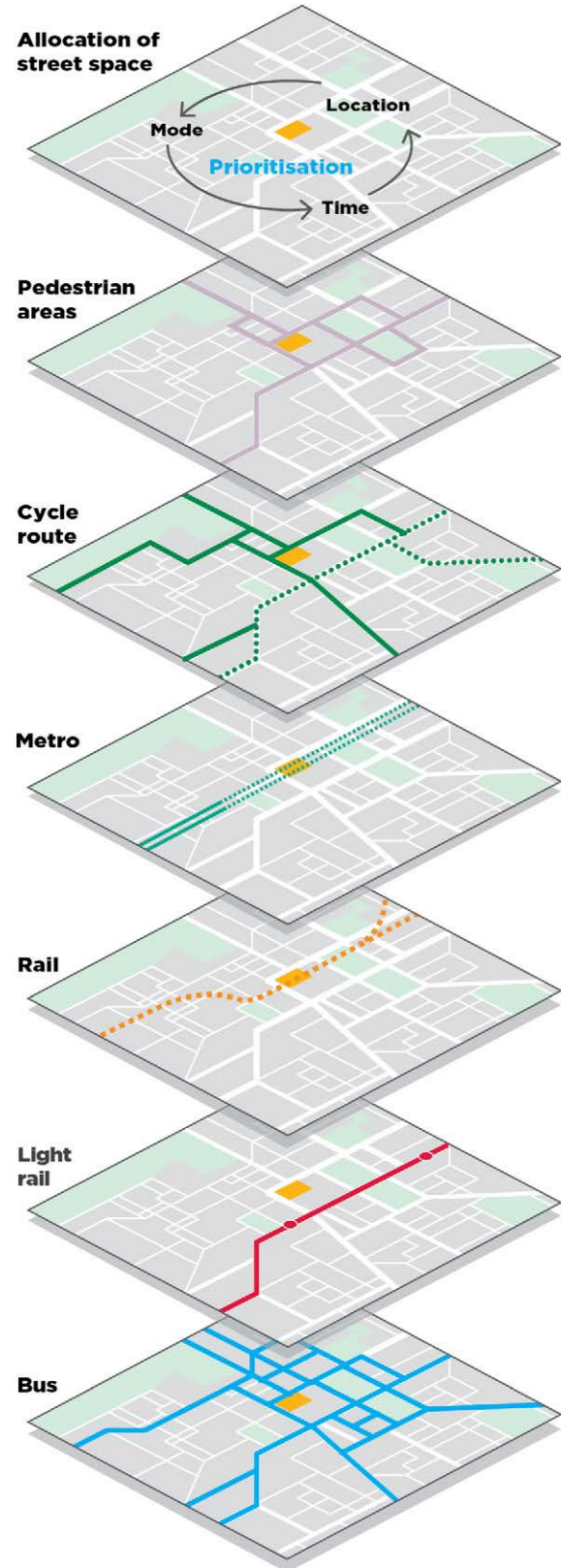
Opportunities	Constraints
<ul style="list-style-type: none"> • Support North Sydney’s role as an integral part of an internationally competitive CBD. • Promote sustainable transport access and outcomes enhancing walking and cycling access to Victoria Cross Station. • Ensure safe integration of the metro station with the existing road network to facilitate safe transfers to and from the station and passengers’ destinations. • Provide a number of landscape and urban design improvements to the streetscape and public domain around the station. These include: <ul style="list-style-type: none"> – Create a high-quality urban plaza with historic interpretation/urban artwork, street furniture and street trees. – Provide pathway improvements and activation around the edges of the station site. – Provide a street tree-avenue to Miller Street. • Retain and reinforce the building line to Miller Street. • Improve pedestrian permeability in the North Sydney CBD. • Provide kerbside uses in lower-traffic streets, minimising conflict with traffic flow. 	<ul style="list-style-type: none"> • Consider the terrain and steep gradient of Miller Street to ensure the metro building entry thresholds are accessible and integrated. • Existing building footprints, heritage, environmental conditions and road corridor provisions. • Traffic volumes in the area may be a barrier for pedestrian and bike-rider access.



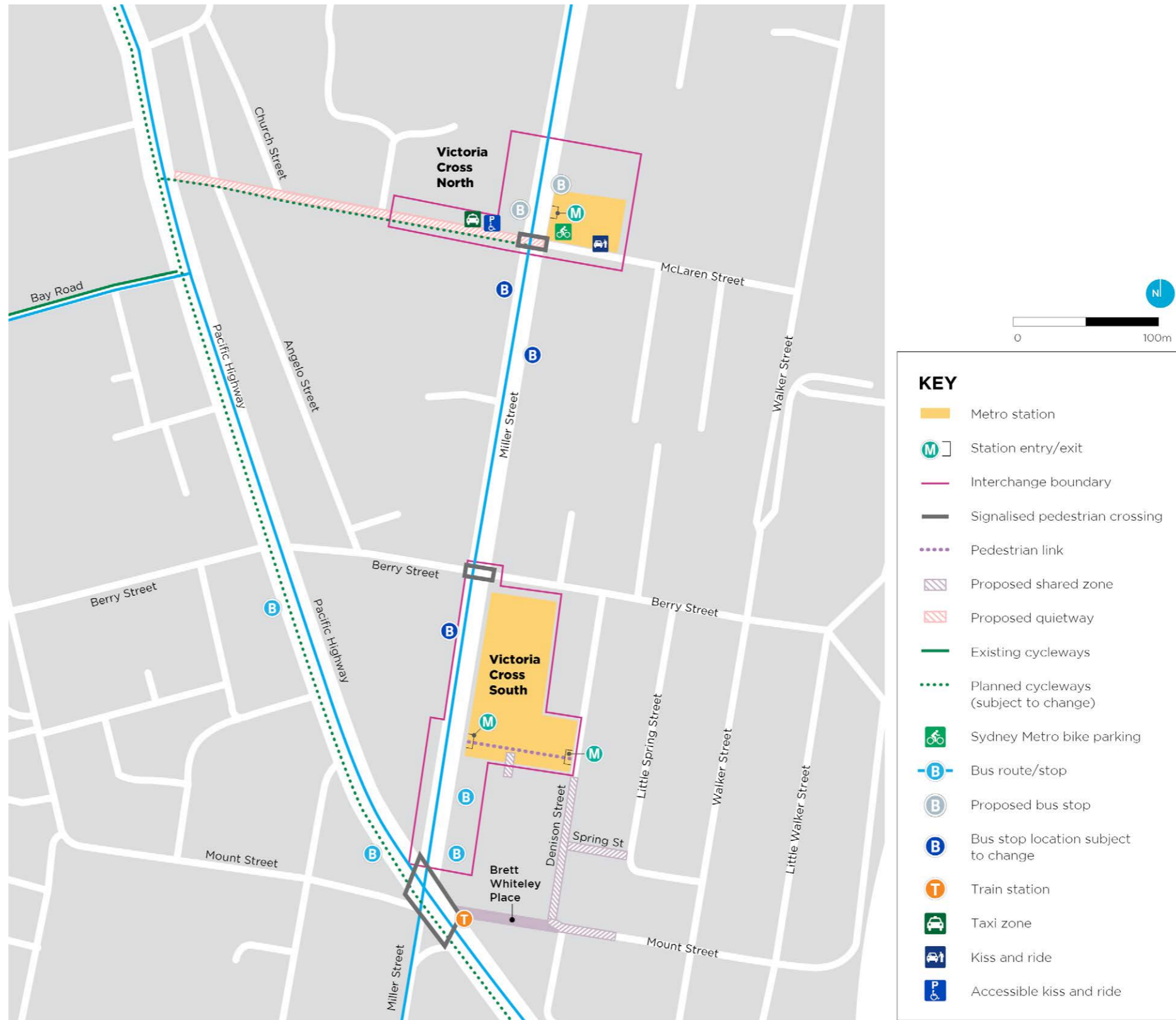
7.0 Victoria Cross – interchange and transfer requirements overview

Left: Miller Street Public Domain area

7.0 Victoria Cross - interchange and transfer requirements overview



Mode layers



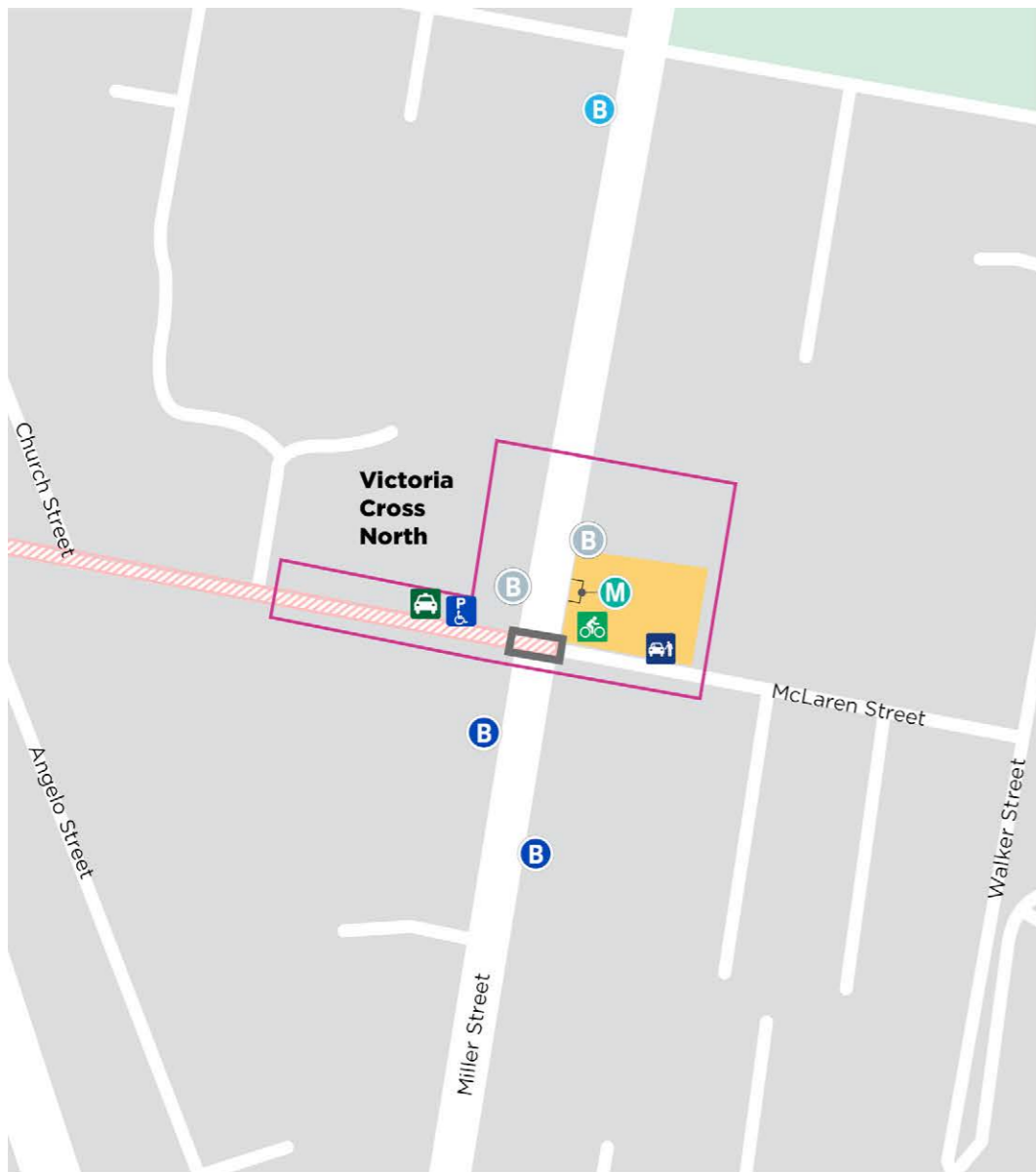
Victoria Cross Station - interchange and transfer requirements overview

7.1 Victoria Cross - walking interchange and transfer requirements

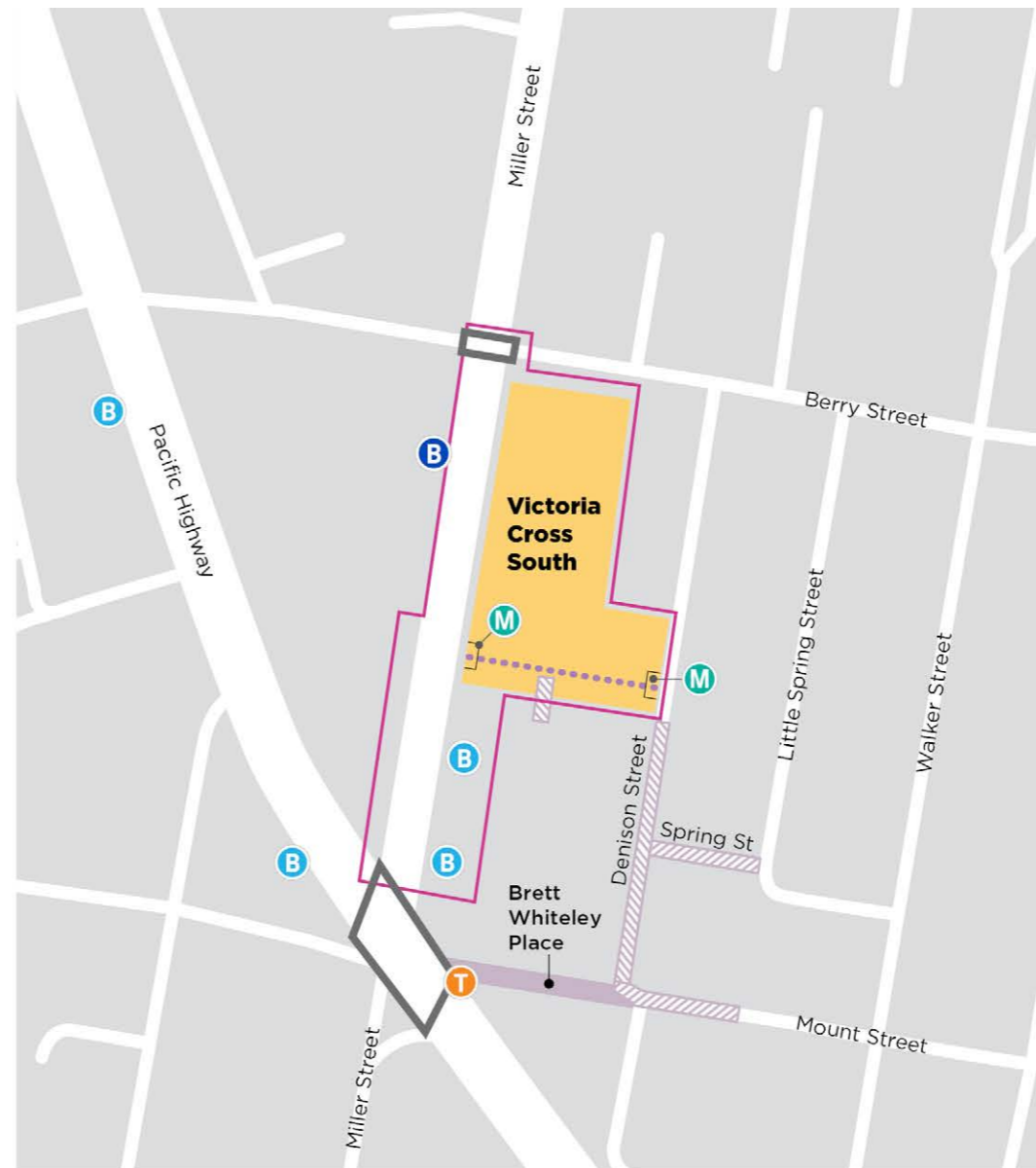


Pedestrian areas

Mode layer



Victoria Cross Station northern entry - pedestrian interchange and transfer requirements



Victoria Cross Station southern entry - pedestrian interchange and transfer requirements

KEY

- Metro station
- Station entry/exit
- Interchange boundary
- Signalled pedestrian crossing
- Pedestrian link
- Proposed shared zone
- Proposed quietway
- Sydney Metro bike parking
- Bus stop
- Proposed bus stop
- Bus stop location subject to change
- Train station
- Taxi zone
- Kiss and ride
- Accessible kiss and ride



Victoria Cross – walking interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<p>North Sydney's formal pedestrian crossing facilities currently experience congestion due to a lack of footpath space. This includes the Pacific Highway/Miller Street and Pacific Highway/Walker Street intersections.</p> <p>Underground pedestrian connections exist from North Sydney Station to nearby commercial developments, through Greenwood Plaza.</p> <p>A pedestrian bridge across Denison Street provides an above ground connection between the retail areas of Tower Square and Berry Square.</p>
Current mode splits and intermodal transfer	<p>The catchment has a high mode share for walking to bus and rail transfer, which is based on existing bus and rail services. The new metro system is planned to support both the expected growth in the North Sydney CBD and the capacity limitations of the existing public transport system.</p>
Future station integration	
Station access location	<p>The station supports two access points, which require safe, convenient and direct pedestrian routes:</p> <ul style="list-style-type: none"> • The northern station entry will be via a western lift-only entrance on Miller Street. • The southern station entry will be via a eastern entrance on Miller Street and a western entrance on Denison Street.
Pedestrian environment and design considerations	<p>The overall pedestrian environment in the catchment accommodates pedestrian movement associated with prime retail areas to the south and west, education areas to the north, and surrounding employment areas.</p> <p>The pedestrian environment potentially impacted by the proposed station includes:</p> <ul style="list-style-type: none"> • Station Access <ul style="list-style-type: none"> – North-south route on Miller Street. – North-south route along Walker Street, east of the station – East-west route along Mount Street east of the Pacific Highway and Miller Street, connecting across the Warringah Freeway – Underground and overbridge pedestrian connections across the Pacific Highway from Brett Whitely Place, and from Mount Street to Greenwood Plaza.
Spatial considerations	<p>The design should consider and integrate with North Sydney Council's planned actions.</p> <p>The design should also ensure that transfer between modes within the defined station interchange allows for accessible provision that is DDA compliant.</p> <ul style="list-style-type: none"> • Station Access <ul style="list-style-type: none"> – Allow for customer access through a combined plaza function for access to metro and other modes. – Provide logical connectivity with surrounding retail, commercial and education precincts, entertainment and civic areas. – Provide for high pedestrian movement at intersection of Miller Street and Berry Street, and at Denison Street. – Provide for high pedestrian movement at intersection of McLaren Street and Miller Street. – Provide for high pedestrian movement to bus stops and educational facilities along Miller Street. – Ensure that access is not impacted by spatial and operational limitations at station access point.
Underground pedestrian connection	<p>Safeguard for possible future underground pedestrian that will support further improvements in easy transfer. This includes a connection to:</p> <ul style="list-style-type: none"> • West under Miller Street.
Safe, convenient, efficient and sufficient pedestrian access and transfer outcome	<p>Ensure the safety of pedestrians and protect them from other road users by providing:</p> <ul style="list-style-type: none"> • Safe integration with existing networks. • Controlled (signalised), direct paths of travel along pedestrian desire lines within low speed environments.
Transfer to and from bike parking	<p>A secure access bike parking facility will be located within the Victoria Cross Station. Uncovered bike racks will also be provided, outside of the station entry on the footpath.</p>
Transfer to and from bus	<p>The station will provide easy transfer to bus stops on both sides of Miller Street and the Pacific Highway.</p>

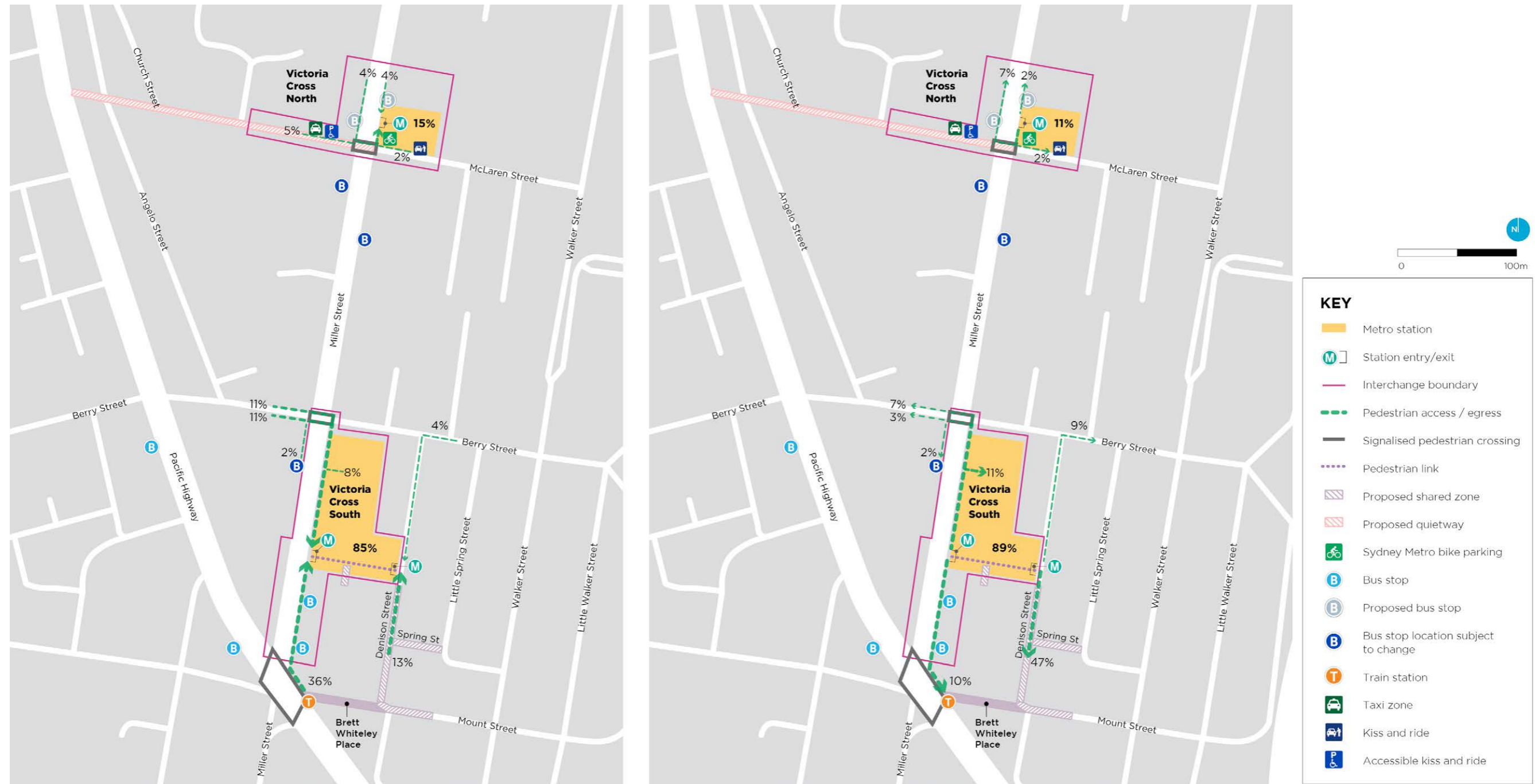
Victoria Cross – walking interchange and transfer requirements continued

Item	Description
Current state	
Transfer to and from taxi	Provides easy access to existing taxi rank at: <ul style="list-style-type: none">• North side of McLaren Street, west of Miller Street.
Transfer to and from kiss-and-ride	Provides easy access to proposed kiss-and-ride zone at: <ul style="list-style-type: none">• North side of McLaren Street, east of Miller Street.• North side of McLaren Street, west of Miller Street for accessible kiss-and-ride.

Victoria Cross - walking interchange and transfer requirements continued

Pedestrian access

Pedestrian egress



Victoria Cross – walking interchange and transfer requirements continued

Sydney Metro Victoria Cross Station will support a reduction in the amount of space allocated to building footprint, and the reallocation of space to pedestrians to support to increased pedestrian volumes within the precinct. The reallocation of space changes presented in the four pie charts presents the reallocation of road space within the Victoria Cross Station precinct, displaying:

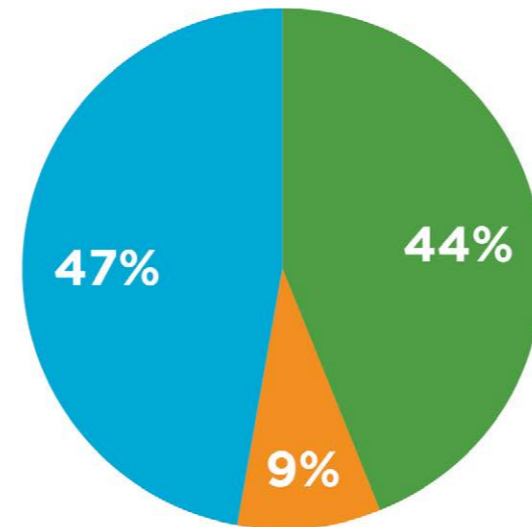
- Increased building setbacks resulting in more space for footpaths in the precinct.
- The design has facilitated more space for site through link.

The North Sydney Public Domain Strategy (September 2020) proposes to close Miller Street to general traffic between Berry Street and Pacific Highway to create Miller Place, a new plaza in the heart of the CBD. Bus services will be diverted from this section of Miller Street and access to Northpoint car park and loading dock will be provided via a shared zone from Berry Street. Council’s vision is to plant large trees, publicly accessible lawns and good access to sunlight, where Miller Place would potentially become a place to relax, a place for entertainment, and outdoor dining activities. It can become the civic, retail and social heart of the North Sydney CBD. North Sydney Council is working closely with TfNSW and Sydney Metro to progress the design of Miller Place.

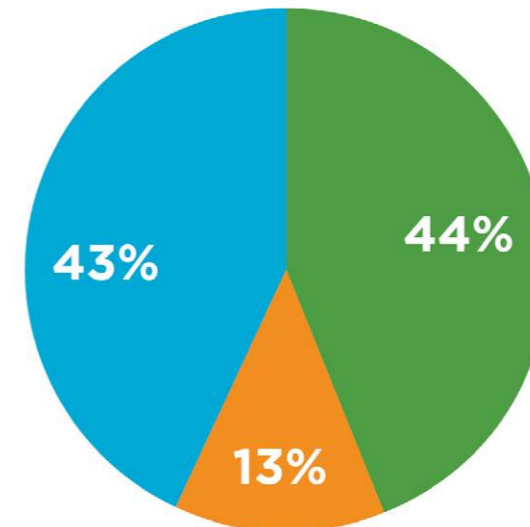
The North Sydney Public Domain Strategy (September 2020) has also identified Denison Street and Spring Street as an active pedestrian area around Sydney Metro Victoria Cross Station by pedestrianisation of Denison Street from the new eastern Victoria Cross Station entrance to Mount Street, new shared zones in Spring Street and Little Spring Street and reversal of Little Spring Street’s one-way system, and new shared zone with two-way traffic at the northern end of Denison Street, north of the Victoria Cross Station entrance.

Allocation of space changes in the Victoria Cross North precinct

2018 Configuration

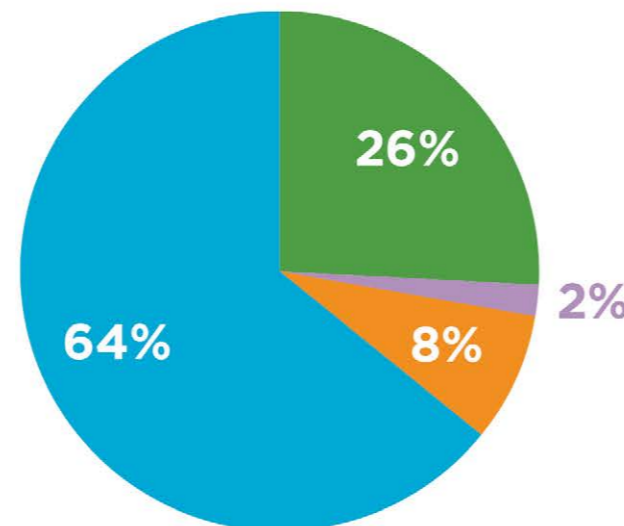


Future State with Metro

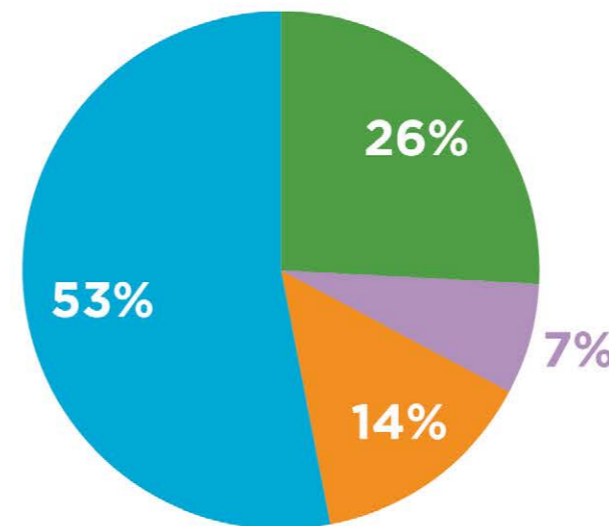


Allocation of space changes in the Victoria Cross South precinct

2018 Configuration



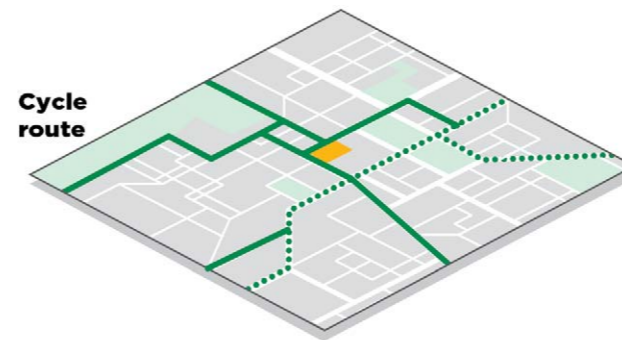
Future State with Metro



Key

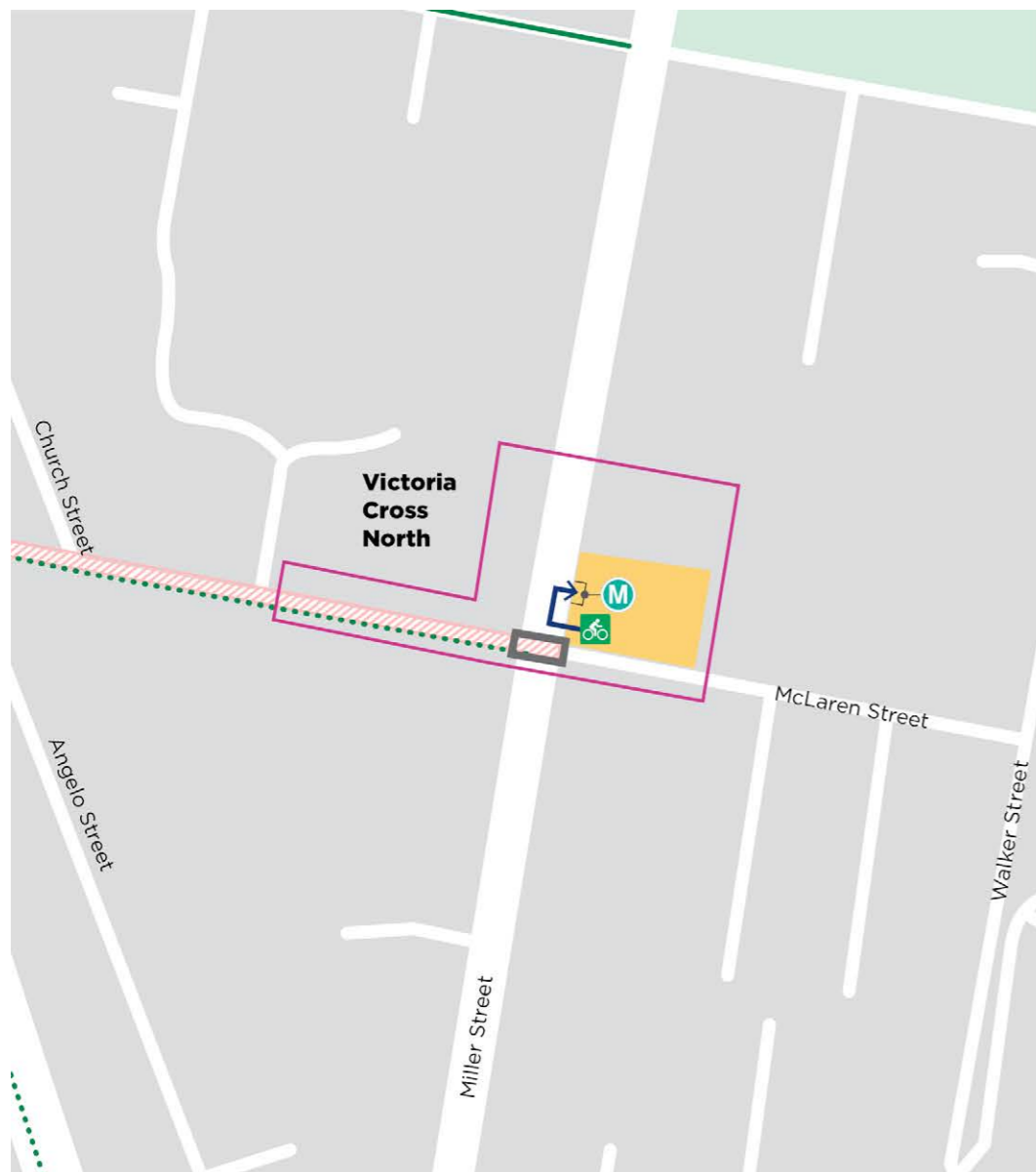
- Buildings
- Footpath
- Through-site link
- Roads

7.2 Victoria Cross - cycling interchange and transfer requirements

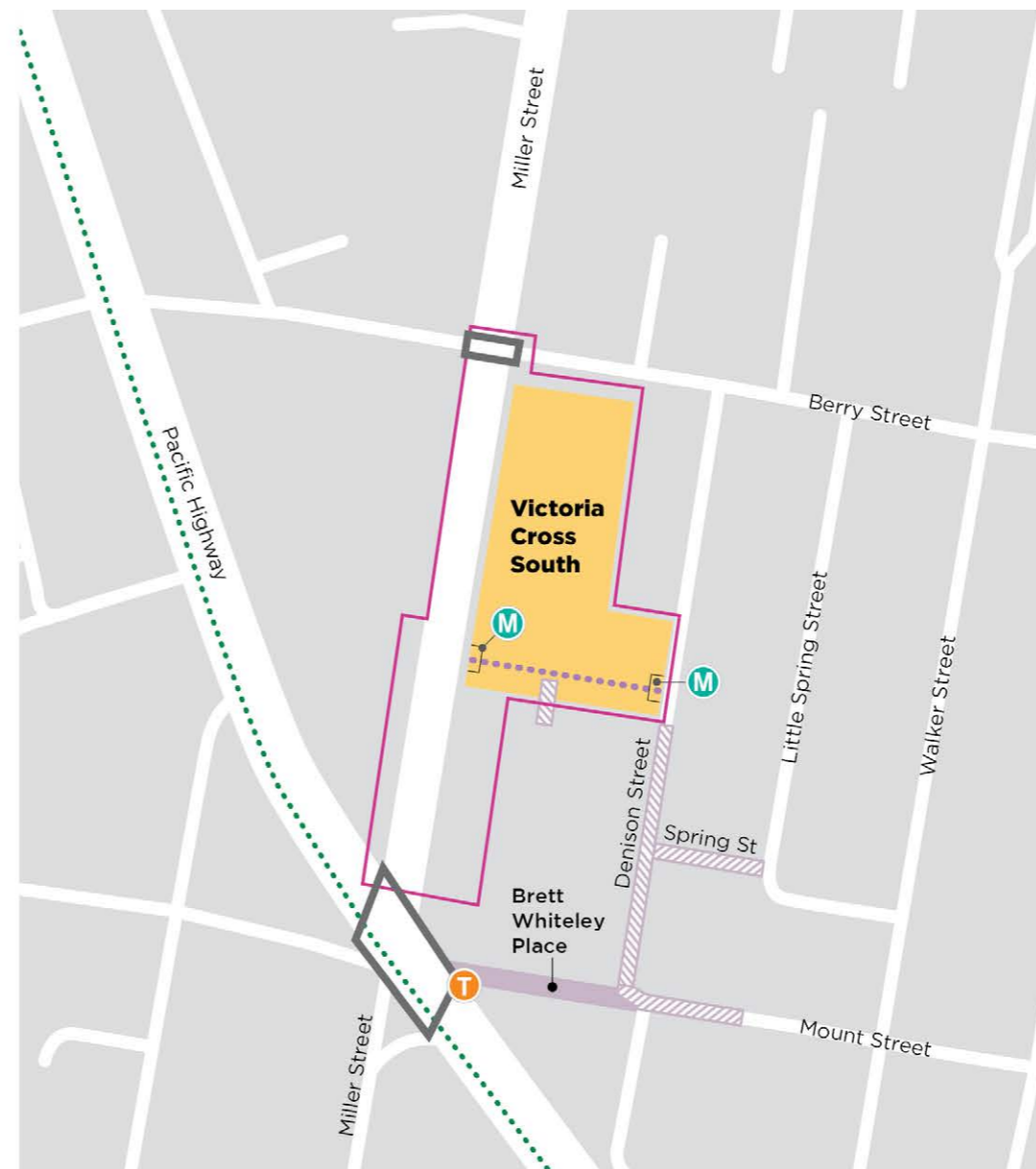


Cycle route

Mode layer



Victoria Cross Station northern entry - cycling interchange and transfer requirements



Victoria Cross Station southern entry - cycling interchange and transfer requirements



KEY	
	Metro station
	Station entry/exit
	Interchange boundary
	Sydney Metro bike parking
	Existing cycleways
	Planned cycleways (subject to change)
	Station access route
	Train station
	Signalised pedestrian crossing
	Pedestrian link
	Proposed shared zone
	Proposed quietway

Victoria Cross – cycling interchange and transfer requirements continued

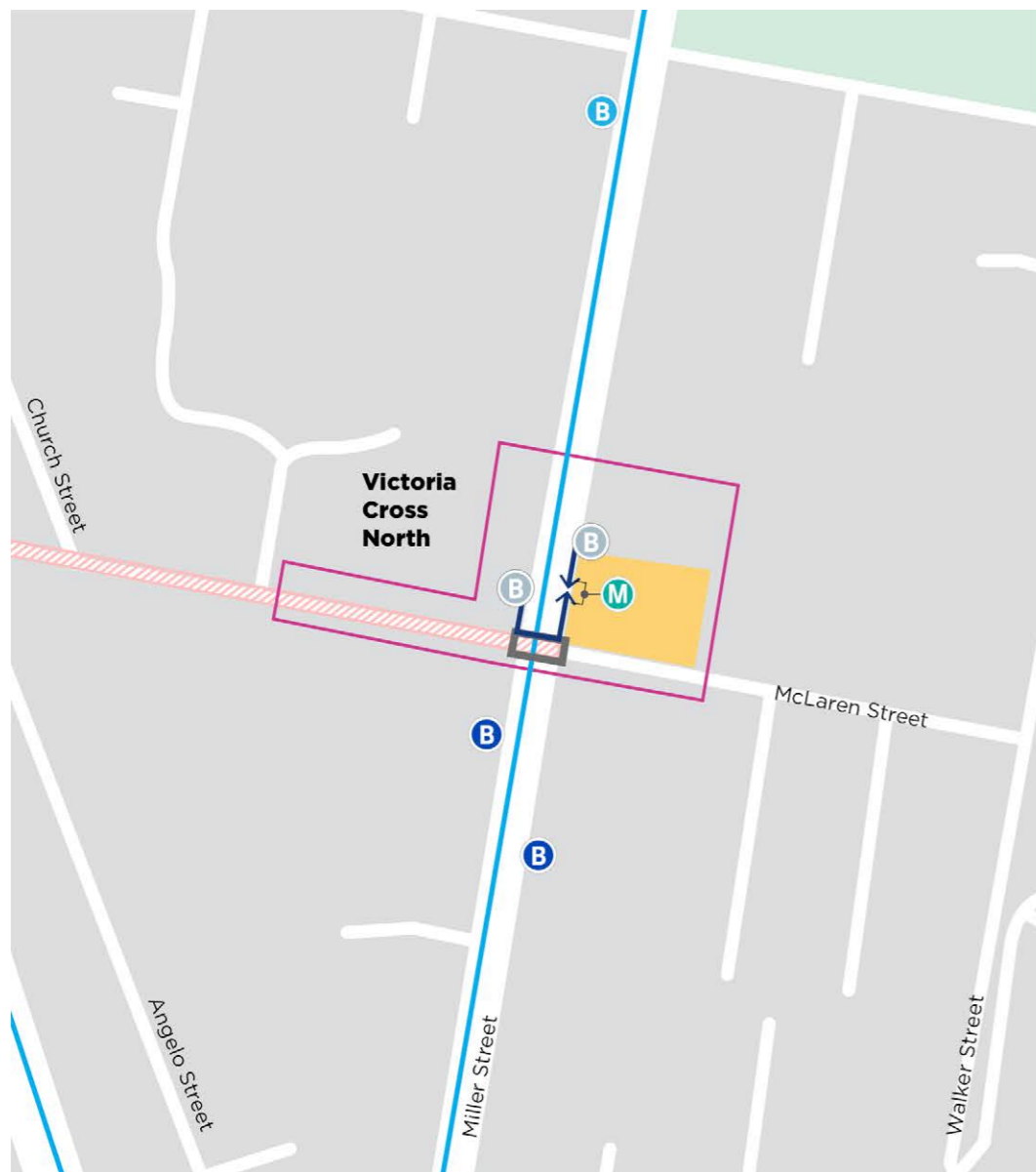
Item	Description
Current state	
Current and future level of access and service	<p>On-road marked cycle lanes exist along the Pacific Highway, Angelo Street and Miller Street.</p> <p>Some existing cycle parking facilities are currently located on Mount Street (adjacent to the subsurface entrance to Greenwood Plaza).</p> <p>The station and interchange will be designed for bicycles to move through and board Sydney Metro services.</p> <p>The station is located close to an extensive network of cycle routes with a range of facilities including green cycle lanes and marked shared streets. The closest cycle routes to the station are:</p> <ul style="list-style-type: none"> • North-south Sydney Harbour Bridge to Cammeray route via West Street (North Sydney priority construction route). • North-south route along Miller Street outside the northern station entry, which connects with Ridge Street bi-directional separated cycleway. It connects south to routes on the Pacific Highway, Miller Street south and Mount Street west of the Pacific Highway. • West of the Pacific Highway an east-west route from Victoria Cross runs along Mount Street then north-south along Edward Street to the Bay Road marked on-road bicycle route. • East-west route along Ridge Street connecting West Street, which crosses the Warringah Freeway and connects to the Warringah Freeway. • There is no on-road cycleway along Pacific Highway.
Proposed or potential access and services	<ul style="list-style-type: none"> • Two future improvement options are under consideration – a dedicated lane on Pacific Highway or a route along Little Walker Street, and Angelo Street. Both these options run close to the station. North Sydney Council’s upgraded civic spine, Miller Place and Miller Walk, with a new public plaza outside Victoria Cross Metro Station through closure of Miller Street between Berry Street and the Pacific Highway. • Quiet way cycleway: a potential east-west on road cycleway along McLaren Street between Pacific Highway and Miller Street connecting Victoria Cross North with Pacific Highway dedicated bicycle lane.
Future station integration	
Bike parking location principles	<ul style="list-style-type: none"> • Entry/access to bike parking must be at street level, convenient, easily visible and intuitive for customers. • Bike parking should be at street level, where feasible, with automated vertical bike parking considered, as entry/access to bike parking should not impede pedestrian customer flows to/from the station entry. • Bike parking and vehicle parking locations and access arrangements should be separated (that is, there should be no access through a loading dock). • Bike parking must be located on the main desire line of the cycle network where feasible.
Bike parking location requirements	<ul style="list-style-type: none"> • A bicycle rider must be able to ride within 30 metres of the bike parking entrance. • Bike parking should be within 50 metres of the gateline. • 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 on Miller Street at the north and south station entrances.</p> <p>A minimum of 200 bicycle parking spaces will be provided within the interchange.</p>
Types of parking facilities	<p>The interchange will have the following bicycle parking provisions:</p> <ul style="list-style-type: none"> • Class B bike parking for 160 bicycles. • Class C bike parking for 40 bicycles.
Safe, convenient, efficient and sufficient cycling access outcomes	<p>Ensure the safety of bicycle riders and protect them from other road users by providing:</p> <ul style="list-style-type: none"> • Safe integration with existing networks. • Controlled (signalised) or separated direct paths of travel along known cycling routes within low speed environments.
New cycle routes by others	<ul style="list-style-type: none"> • Proposed cycleway on Pacific Highway by TfNSW • Proposed shared zone in Denison Street between Mount Street and Victoria cross South entrance, Spring Street between Denison Street and Little Spring Street and Mount Street between Denison Street and 100 Mount Street by North Sydney Council (subject to change).

7.3 Victoria Cross - bus interchange and transfer requirements

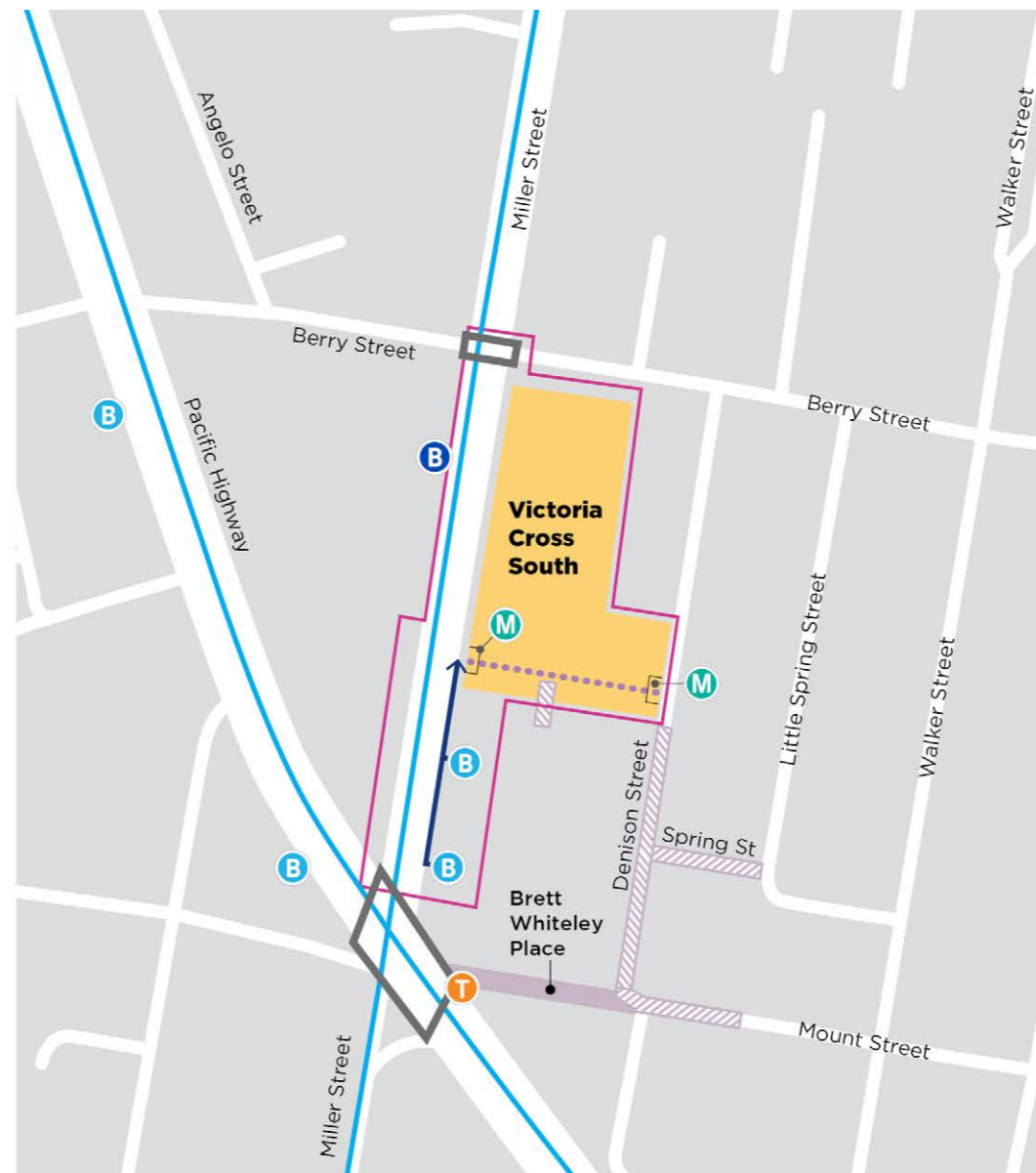


Bus

Mode layer



Victoria Cross Station northern entry - bus interchange and transfer requirements



Victoria Cross Station southern entry - bus interchange and transfer requirements

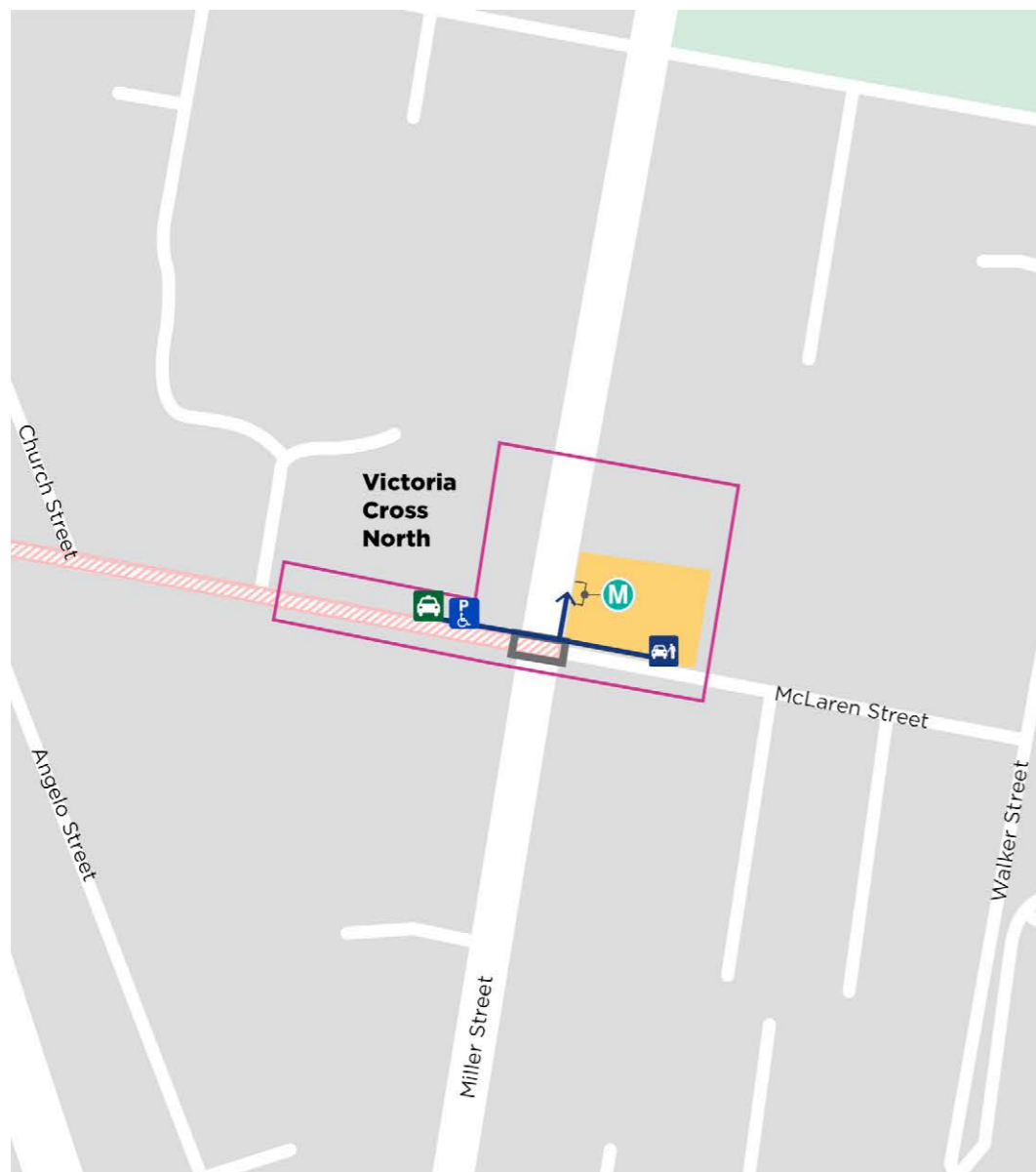
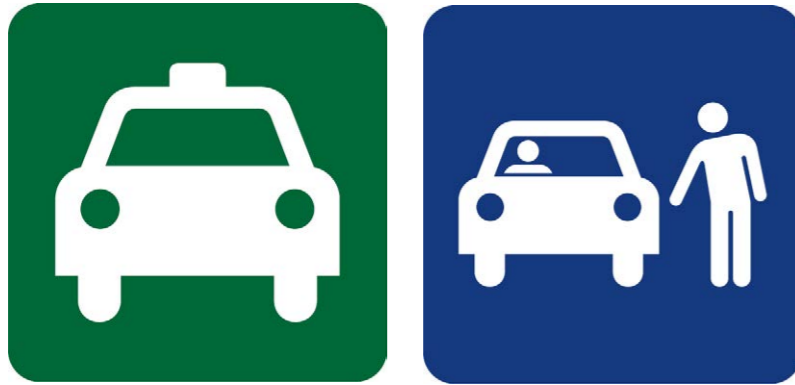


KEY	
	Metro station
	Station entry/exit
	Interchange boundary
	Bus route/stop
	Proposed bus stop
	Bus stop location subject to change
	Station access route
	Train station
	Signalised pedestrian crossing
	Pedestrian link
	Proposed shared zone
	Proposed quietway

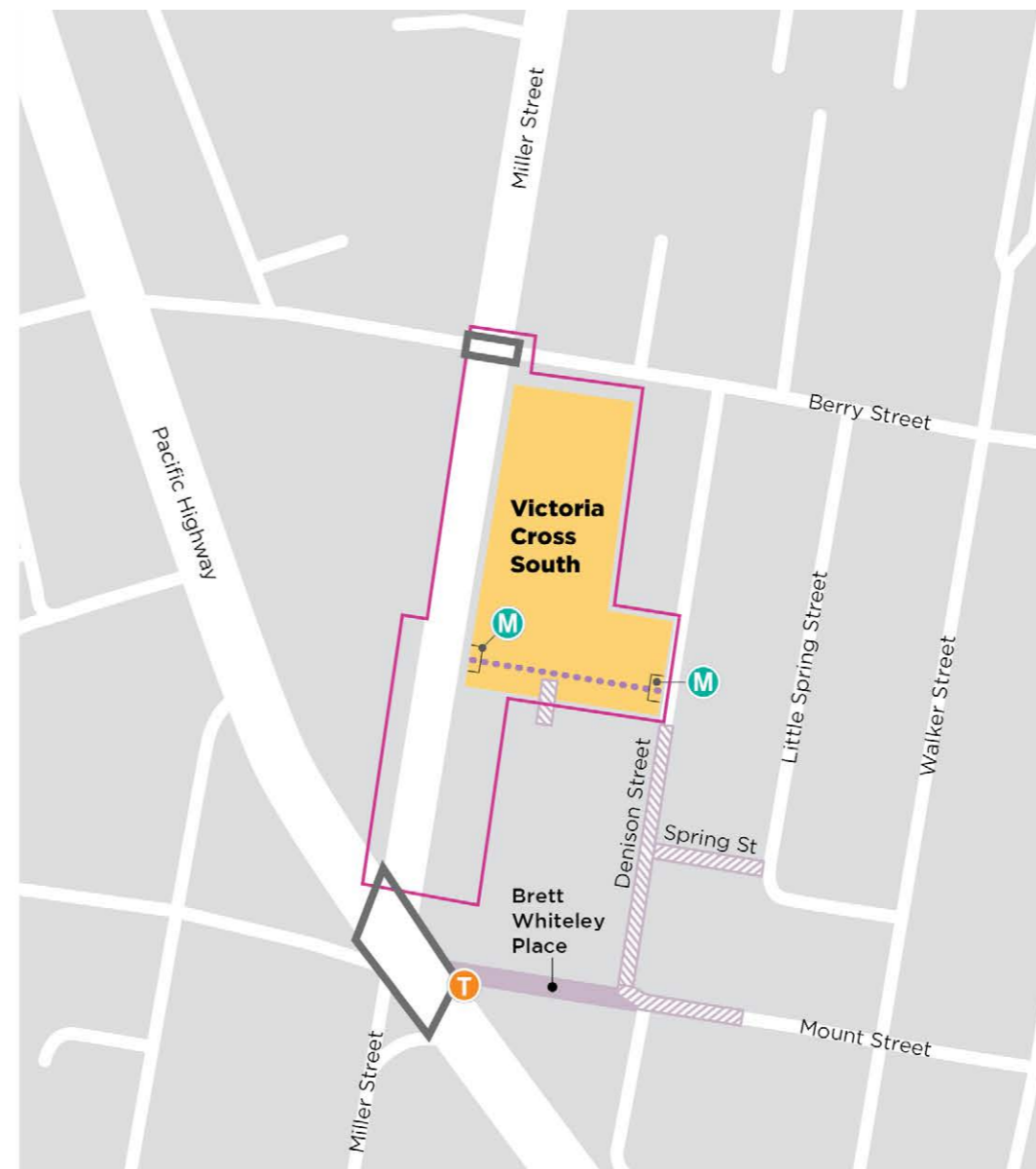
Victoria Cross – bus interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	A number of bus routes operate outside of Victoria Cross Station along Miller Street. These routes primarily serve northern and northern beaches suburbs along Pacific Highway, Willoughby Road and Military Road.
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 and no more than 100 metres away.
Bus bay principle	Bus bays provided or modified by the project shall meet NSW state and Commonwealth guidelines for size and layout. Where a conflict exists, the Commonwealth standard will apply. Where the Commonwealth standard cannot practically apply, the highest practical standard should be provided in excess of NSW state standards and guidelines.
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 and wayfinding to ensure an easy customer transfer through improved provision of information.
Safe, convenient, efficient and sufficient access and transfer outcome	Ensure the safety of pedestrians and protect them from other road users by providing: <ul style="list-style-type: none"> • Safe integration with existing networks. • Controlled (signalised), direct paths of travel along pedestrian desire lines within low speed environments.
Transfer to and from bus (overnight)	Regular bus stops on Miller Street will be used for overnight bus operations.
Transfer to and from bus (school)	The current northbound bus stop south of McLaren Street will be converted to a school bus stop (subject to change).
Transfer to and from bus (possessions, degraded operations, incidents)	See <i>Operations, maintenance and management provisions</i> .
Closest bus stops/routes	The primary bus stops within the interchange are: <ul style="list-style-type: none"> • Miller Street – two stops, northbound, north of Pacific Highway. • Miller Street – two stops, southbound, north of Pacific Highway. • Miller Street – one stop, northbound, north of McLaren Street (planned). • Miller Street – one stop, southbound, north of McLaren Street (planned).

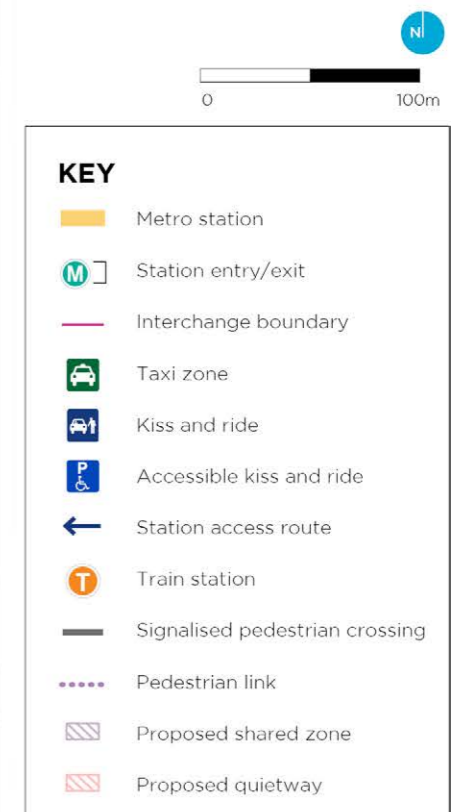
7.4 Victoria Cross - vehicle drop-off interchange and transfer requirements



Victoria Cross Station northern entry - vehicle drop-off interchange and transfer requirements



Victoria Cross Station southern entry - vehicle drop-off interchange and transfer requirements



Victoria Cross – vehicle drop-off interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	Existing taxi ranks are at: <ul style="list-style-type: none"> • Miller Street south of Berry Street • McLaren Street east of Miller Street There are no existing kiss-and-ride or park-and-ride facilities.
Future station integration	
Safe, convenient, efficient and sufficient access and transfer	Ensure the safety of pedestrians and protect them from other road users by providing: <ul style="list-style-type: none"> • Safe integration with existing networks. • Controlled (signalised), direct paths of travel along pedestrian desire lines within low speed environments.
Transfer to and from taxi	A taxi rank will be provided on the north side of McLaren Street, west of Miller Street.
Taxi rank locations	Multi-purpose ranks that service local centres as well as stations are supported as long as they are located within 100 metres of the station access point.
Transfer to and from kiss-and-ride	<ul style="list-style-type: none"> • Kiss-and-ride zone will be provided on the north side of McLaren Street, east of Miller Street. • Accessible kiss-and-ride zone will be provided on the northern side of McLaren Street, west of Miller Street.
Kiss-and-ride zone design	The dimensions of kiss-and-ride spaces shall comply with TfNSW and Australian Standards and Guidelines.
Accessible kiss-and-ride location	A time restricted accessible kiss-and-ride space will be provided on the northern side on McLaren Street west of Miller Street.





8.0 Victoria Cross – operations, maintenance and management provisions

Left: Denison Street Laneway artist impression

8.0 Victoria Cross – operations, maintenance and management provisions

The spatial plan of the Victoria Cross 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.



Victoria Cross Station – operations, maintenance and management provisions

Victoria Cross – operations, maintenance and management provisions continued

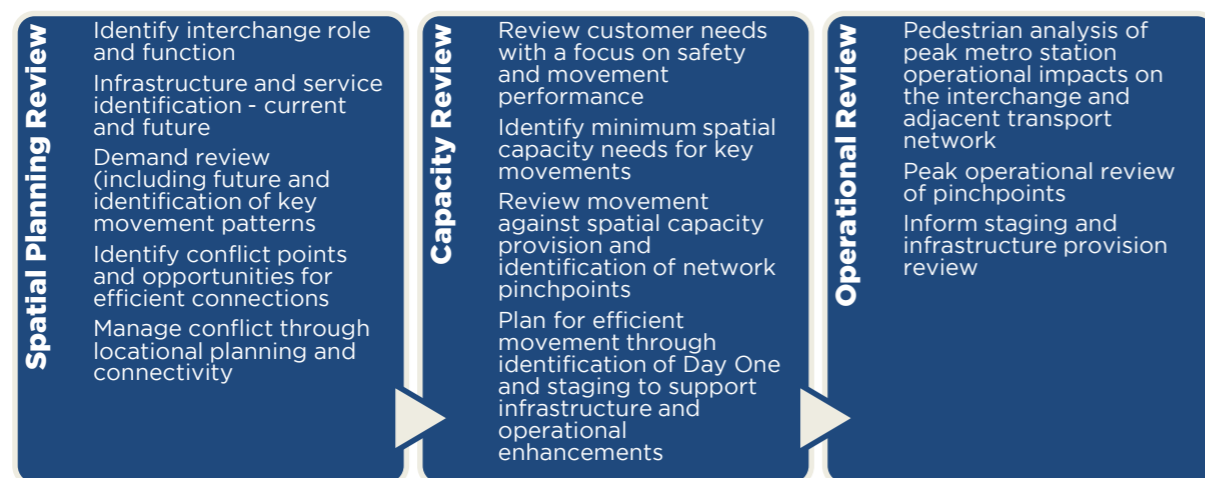
8.1 Reviews and assessment process

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.



8.3 Interchange operation provisions

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

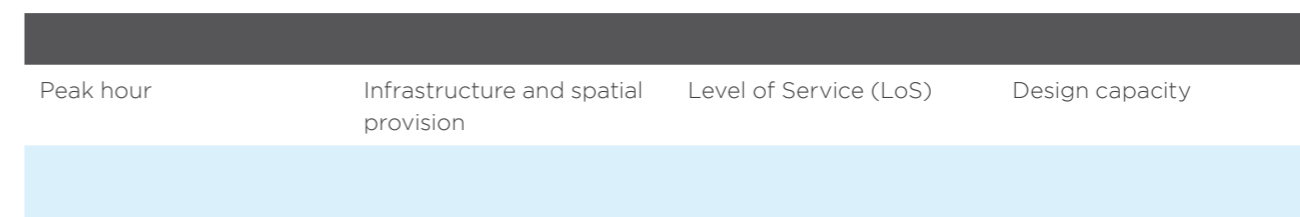
- Description of the asset owners, operators and maintainers.
- Asset operations description.
- Asset maintenance arrangements.

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

Item	Description
Integration	
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	Kerbside parking in the vicinity of the station should be managed to accommodate emergency vehicles.
Servicing and maintenance access (day-to-day)	Will be within the over station development – see reference design for provision.
Servicing and maintenance access (major)	Will be within the over station development – see reference design for provision.
Rail replacement bus service access	Rail replacement buses will use the existing bus zone on Miller Street (subject to change).
Delivery access (retail and operational)	Will be within the over station development – see reference design for provision.
Mail zone (Australia Post) requirements	Mail zones will be maintained at: <ul style="list-style-type: none"> • Pacific Highway, between Miller and William streets. • Mount Street, near the corner of Denison Street. • Miller Street, north of McLaren Street.
Staff car parking	As staff will be encouraged to travel by public transport or active transport, no designated car parking for staff will be required.
Interchange Operation and Maintenance Plan (IOMP)	The IOMP documents the assets within the interchange and who is responsible for their operation and maintenance.

8.2 Facility Testing Process

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



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.





9.0 Modal Hierarchy Review

Left: Victoria Cross Denison Street Laneway approach

9.0 Modal Hierarchy Review

The interchange has been designed to prioritise access following the transport modal hierarchy design principles. Adopting these principles in the Victoria Cross 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 Victoria Cross Station.

Mode	Provision	Consideration and Benefit
Pedestrian	<ul style="list-style-type: none"> • Provide widened crossings at the Berry Street Miller Street intersection. • Provide safe and efficient access to the southern station entrance to Denison Street as part of public domain works. • Provide a widened crossing at Pacific Highway at Miller Street intersection. • Provide widened crossings at McLaren Street and Miller Street intersection. • Denison Street pedestrianisation by rearranging the vehicular traffic flows, closing part of the street for vehicular traffic, upgrading paving with granite, tree plantation, street lighting and street furniture. 	<ul style="list-style-type: none"> • The southern and northern station entries align with the interchange modal hierarchy principles in prioritising pedestrians, allowing for direct and efficient movement. • Integrating with North Sydney transport plans will ensure connectivity with surrounding precincts and support high pedestrian movement. • The closure of Denison Street will accommodate the flow of pedestrian movements to/from Victoria Cross South Station. Denison Street (Council's Central Laneway Masterplan) will encourage a range of new retail and food and beverage opportunities within the internal streets adjacent to Victoria Cross South.
Bike	<ul style="list-style-type: none"> • A minimum of 200 bicycle parking spaces will be provided within Victoria Cross Station on Miller Street at the north and south station entry points. This includes 160 Class B bike parking provisions in the form of secure bike parking facility within the Station and 40 Class C bike parking provisions in the form of undercover bike rails. • Existing cycle parking facilities located on Mount Street will be retained and on-road marked cycle lanes surrounding the station will be utilised. • A quietway on McLaren Street linking Victoria Cross station to the broader cycling network is being investigated as part of the NSITP. 	<ul style="list-style-type: none"> • Bike parking provisions at Victoria Cross Station satisfy the city station bike parking hub strategy, and is aligned with customer demand and encourages cycling as a transit mode to access the station. • The bike parking can be easily accessed by cyclists via the existing cycle network and is within close proximity to station entry. • These provisions support, promote and improve active transport as a primary mode of access, fully aligning with the interchange modal hierarchy principles. • A new connection from the northern entrance will further enhance the station's integration with the surrounding network and improve cycle access to the station.
Bus	<ul style="list-style-type: none"> • Provide new bus stops outside of Victoria Cross North, on both sides of Miller Street. The existing bus stops on the southern side of McLaren Street will be retained for use by school buses. • Surrounding bus stops are under review by TfNSW and are subject to change. 	<ul style="list-style-type: none"> • The two new bus stops outside of the northern station entry will allow for direct interchange for users, improving the northern entry's accessibility and ease of transfer.
Taxi and kiss-and-ride	<ul style="list-style-type: none"> • Two taxi spaces will be provided on north side of McLaren Street, west of Miller Street. • Five kiss-and-ride spaces will be provided on north side of McLaren Street, east of Miller Street. • One accessible space on McLaren Street, west of Miller Street. 	<ul style="list-style-type: none"> • Taxi and Kiss-and-ride provisions are required to provide for those unable to access the station through active transit modes despite demand to be minimal. • Compliant taxi and kiss-and-ride bays and their respective locality aligns with the modal hierarchy, minimising conflict with pedestrians and cyclists, prioritising active and efficient transit modes.



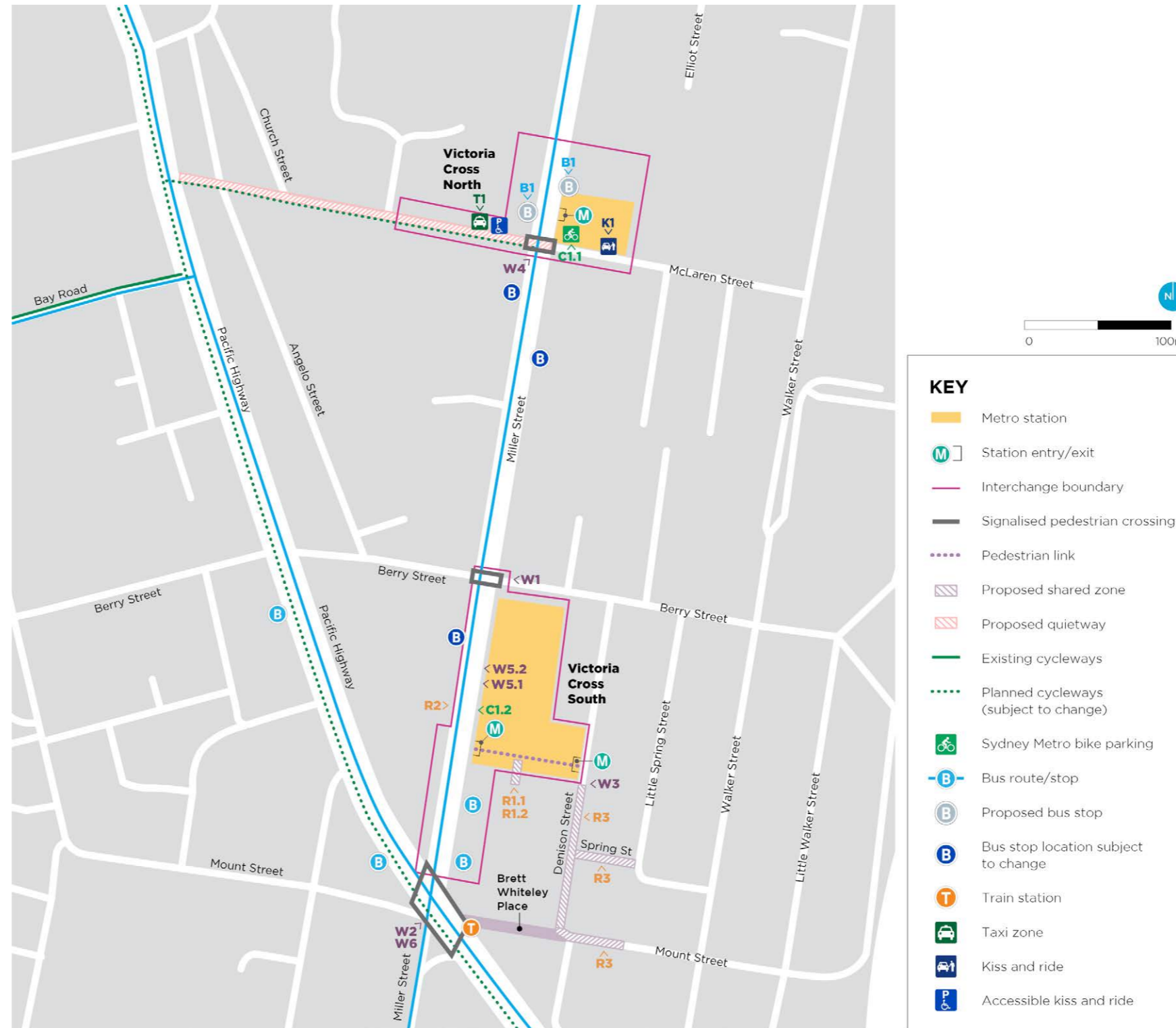
10.0 Victoria Cross – actions

Left: Victoria Cross South OSD

10.0 Victoria Cross – actions

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

Appendices A and B 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 Victoria Cross 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.



Victoria Cross Station – actions

10.1 - Victoria Cross Station – City & Southwest Delivery & Implementation Program

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 Victoria Cross 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 (start to finish)
Walking		
W1 Provide widened pedestrian crossings at the Berry Street and Miller Street intersection.	Sydney Metro	2024
W2 Providing a widened pedestrian crossing at Pacific Highway and Miller Street.	Sydney Metro	2024
W3 Provide safe and efficient access to the southern station entrance to Denison Street as part of public domain works.	Sydney Metro	2024
W4 Provide widened pedestrian crossings at the McLaren Street and Miller Street intersection.	Sydney Metro	2024
Cycling		
C1.1 Provide secure bike parking (class B) for a minimum of 160 bike parking spaces.	Sydney Metro	2024
C1.2 Provide bike rails (class C) for a minimum of 40 bike parking spaces.	Sydney Metro	2024
Bus		
B1 Provide new bus stops (40m in length) outside of Victoria Cross North, on both sides of Miller Street. Surrounding bus stops are under review by TfNSW and are subject to change.	Sydney Metro	2024
Taxi		
T1 Provide two taxi spaces during peak hours, on the northern side of McLaren Street, west of Miller Street.	Sydney Metro	2024
Kiss-and-ride		
K1 Provide five kiss and ride spaces on the northern side of McLaren Street, east of Miller Street near the intersection of Victoria Cross North.	Sydney Metro	2024
Management and maintenance		
OM1 Prepare an Interchange Operations and Maintenance Plan (IOMP) in accordance to the Interchange Operations and Maintenance Framework to allocate clear responsibility for all aspects of day-to-day running of the interchange, and to ensure that nominated infrastructure and assets in the interchange are monitored and maintained to a high standard.	Sydney Metro	2024
Road network modifications		
R1.1 Safeguard an underground breakthrough connection between Victoria Cross ISD and the MLC building.	Sydney Metro	2024

10.2 - Victoria Cross Station - Other precinct opportunities





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 Victoria Cross 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 Victoria Cross precinct. These items are complementary and their delivery is not required for the operation of Sydney Metro at Victoria Cross Station.

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

Action	Delivered by	Timing (start to finish)
Walking		
Miller Place design and delivery (as part of the North Sydney Integrated Transport Program).	Sydney Metro, TfNSW and North Sydney Council	2023 onwards
W5.1 The Miller Place design to be completed by Sydney Metro, TfNSW and North Sydney Council.		
W5.2 Miller Place delivery to be completed by Transport cluster.	Transport cluster	
W6 Investigate a network design/operational solution to improve pedestrian connectivity and safety at the intersection of Miller Street and Pacific Highway.	Transport Cluster, North Sydney Council	2024
Cycling		
C2 Investigate strategic cycling connections through North Sydney as part of the North Sydney Integrated Transport Program.	TfNSW	2024 onwards
Road network modifications		
R1.2 Investigate providing a vehicle connection between the Victoria Cross integrated station development (ISD) and MLC, and the closure of the existing vehicle access point to the MLC building.	MLC, North Sydney Council, Sydney Metro	2021 onwards
R2 Investigate reducing the capacity and function of Miller Street for vehicle traffic between Berry Street and the Pacific Highway.	Transport Cluster, North Sydney Council	2021 onwards
R3 Provide public domain upgrades at Denison, Mount and Spring streets.	North Sydney Council and delivery partners	2021 onwards

Contact us

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-  If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

