



City & Southwest

Interchange Access Plan

Crows Nest

October 2023
Version 5.1



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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: Crows Nest Station entrance looking south from Oxley Street across Pacific Highway

Right: Pacific Highway Crows Nest Metro Station entrance



M CROWS NEST

Crows Nest





1.0 Introduction

Crows Nest Station concourse

1.0 Introduction

1.1 Sydney Metro

Sydney Metro has four core components:

Sydney Metro Northwest

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

Sydney Metro City & Southwest

The Sydney Metro City & Southwest project includes a new 30 kilometre metro line extending metro rail from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through new central business district (CBD) stations and southwest to Bankstown. It is due to open in 2024, and will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Gadigal, 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.

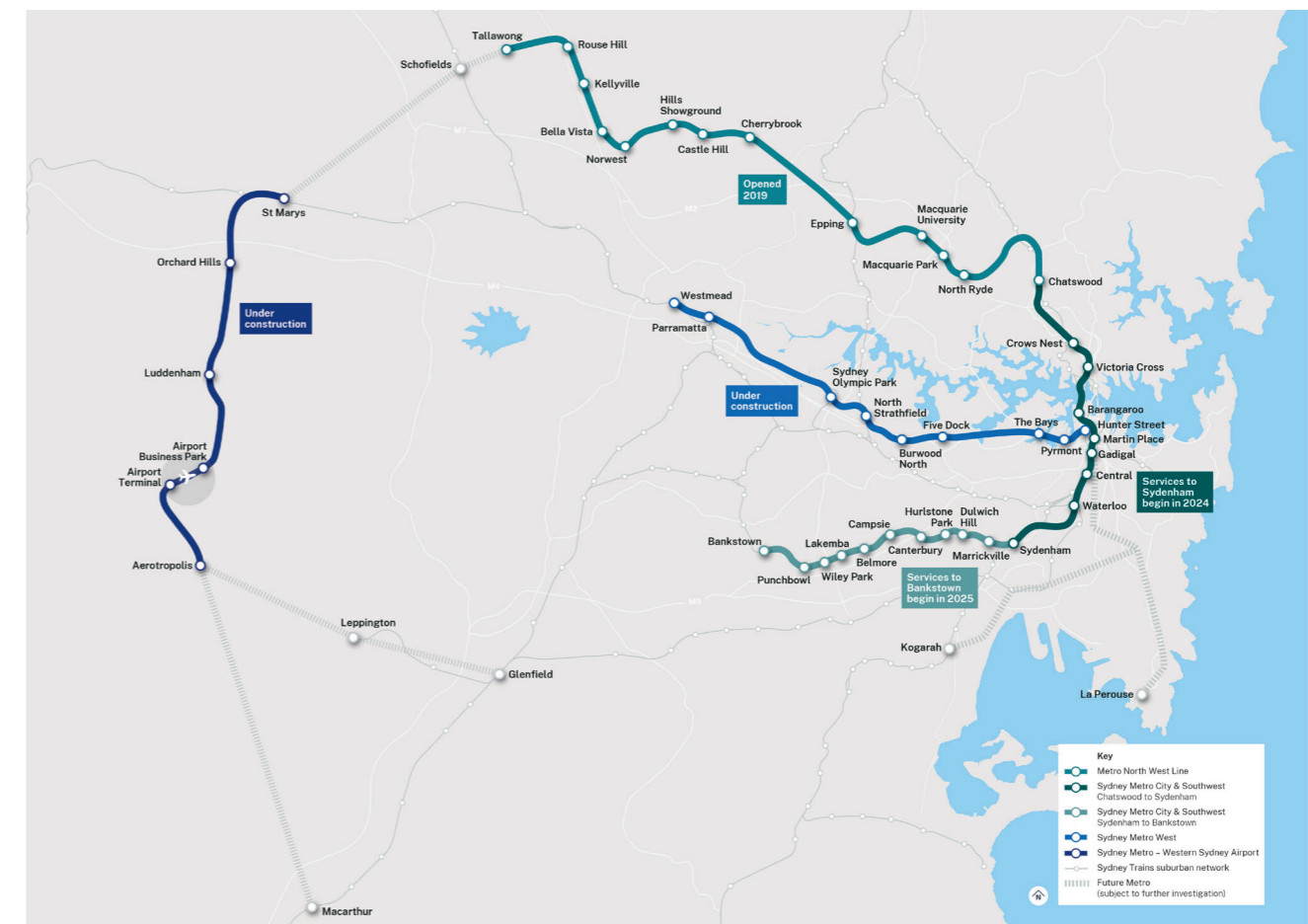
1.4 Purpose of the plan

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.



Sydney Metro



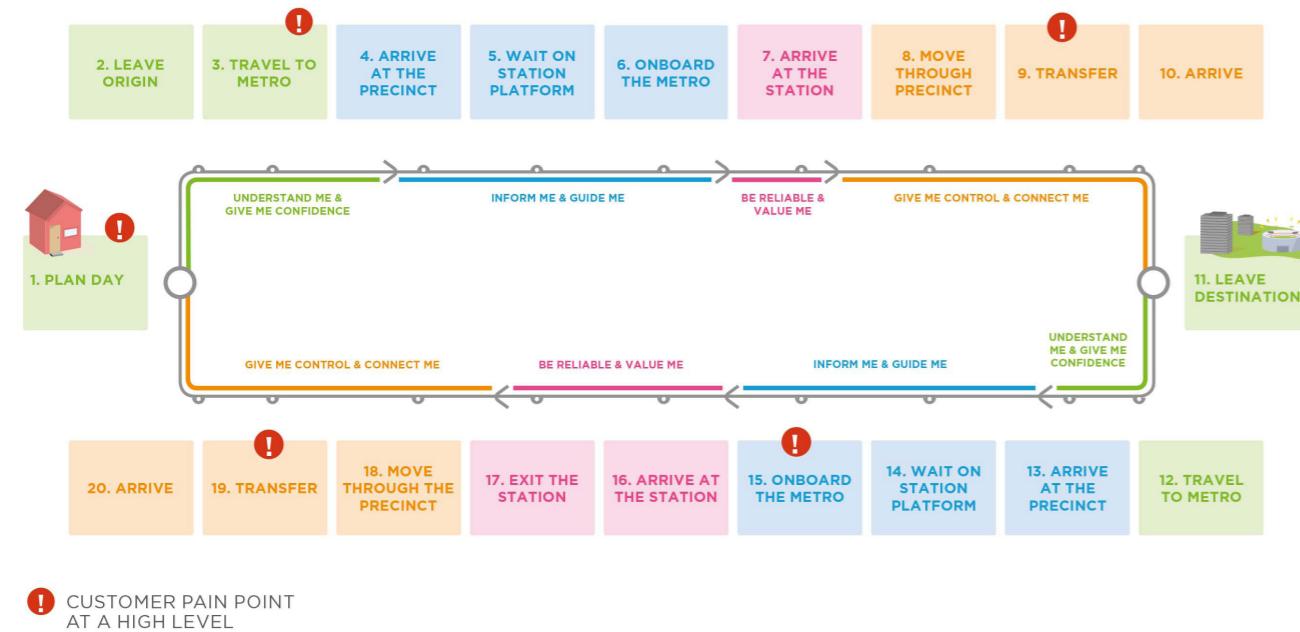
2.0 Interchange and transfer planning

Crows Nest Station platform

2.0 Interchange and transfer planning

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

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



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

2.1 Customer-centred design

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

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

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

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

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

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

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

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

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

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

2.2 Sydney Metro customer principles

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



Sydney Metro customer principles

Interchange and transfer planning continued

2.3 An integrated customer journey

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

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

2.4 Interchange functionality and role

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

In order to facilitate a range of trips across the

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

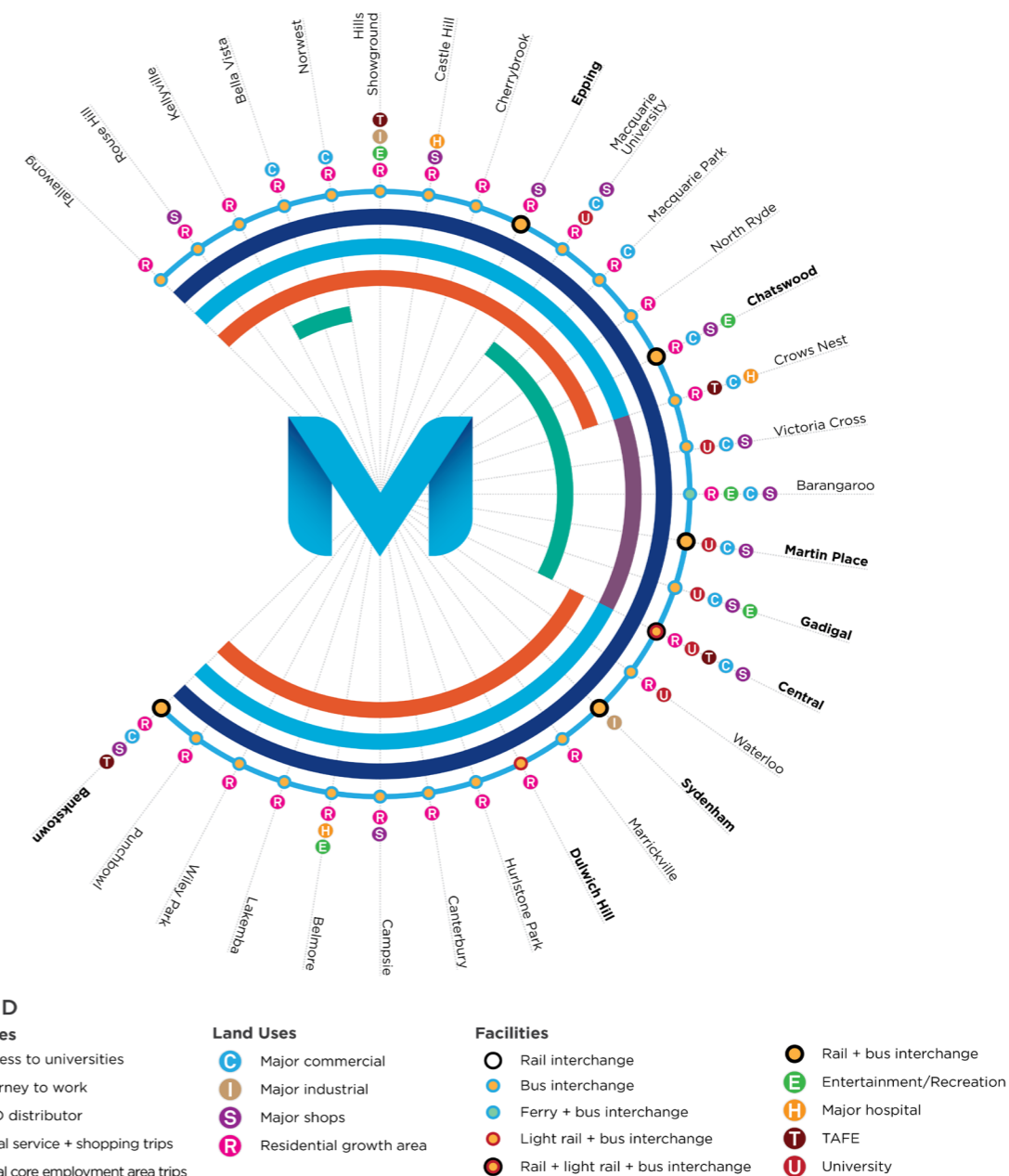
In general, stations with high levels of surrounding employment and/or educational institutions, such as Victoria Cross, Gadigal or Macquarie University, tend to be destination stations in the morning peak period. Stations with high surrounding residential areas, such as Cherrybrook and Dulwich Hill,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

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

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

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

Examples of this include Tallawong, Rouse Hill and Kellyville where customers key travel choices are based around these modes and the design is driven by these modal considerations that may be external to the station.



Sydney Metro trip diversity and accessibility.

Interchange and transfer planning continued

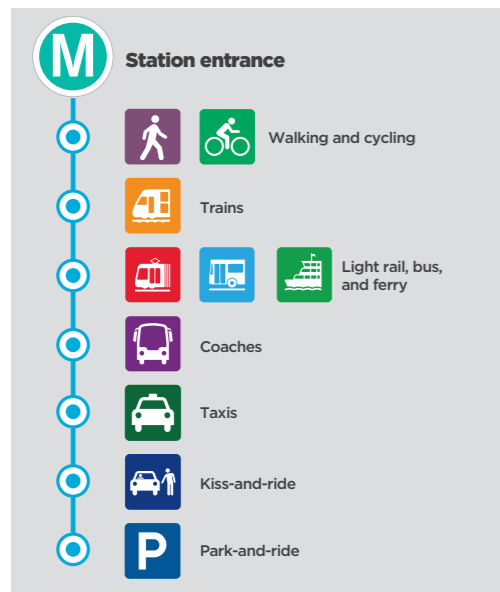
2.5 Modal hierarchy

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

Due to the location of each station, particularly within the Sydney CBD, 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 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 <i>Disability Discrimination Act 1992</i> (DDA) requirements. Through-site links to stations should be open 24 hours a day (or as long as metro is operating).</p> <p>Pedestrian infrastructure shall be designed to accommodate modelled volumes/demands and to protect pedestrians from other road users in accordance with relevant Australian Standards, and Austroads and NSW Government guidelines.</p> <p>For bicycle riders, the interchange must provide safe and clear bicycle access in the vicinity of the station, signage and bike parking facilities at stations, in order to encourage cycling to Sydney Metro.</p> <p>Cycle routes must be of a high quality outside the stations, be designed to accommodate forecasted modelled user demands in accordance with Australian Standards and Austroads Guidelines, and be safely integrated with the local network.</p> <p>The station must enable through-access to allow for bicycles to be taken on metro trains. Cycleways need to be separated from vehicles, pedestrians and parked cars in accordance with Austroads Guidelines and NSW Government directions.</p> <p>Bicycle access and bike parking must be provided at all stations in accordance with Australian Standards, Austroads Guidelines and NSW Government directions.</p>
Rail	<p>Customer transfer from rail services will occur between platforms at Epping, Chatswood, Martin Place, Central, Sydenham, and Bankstown stations. At these stations clear and intuitive wayfinding should be provided to ensure an easy customer transfer. At other stations customers will need to exit the stations and use existing footpaths to connect to other rail stations.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities, and safe, accessible paths of travel between Sydney Metro platforms and other rail platforms, in accordance with the <i>Disability Standards for Accessible Public Transport 2002</i> (DSAPT).</p>
Light rail, bus and ferry	<p>Transfer to other public transport modes is a high priority in station planning. These services expand the effective catchment area of Sydney Metro. Seamless and safe transfer is required in order to encourage linked trips within the public transport network.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities and safe, accessible paths of travel between station and light rail, bus and ferry facilities, in accordance with the DSAPT.</p>
Coaches	<p>Transfer to coaches is the next highest priority after public transport in station planning. Coach services provide connection to major city and regional NSW destinations. Safe transfers between coaches and the connecting public transport services and/or surrounding land use is important to ensure high level customer experience.</p> <p>Sydney Metro interchanges shall incorporate accessible facilities and safe, accessible paths of travel between the station and the coach facility, in accordance with the DSAPT.</p>

Interchange and transfer planning continued

Transport mode	Description
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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, due to the extent of likely station catchments and the nature of the local transport networks, 4,000 parking spaces will be provided for metro customers at Tallawong, Kellyville, Bella Vista, Hills Showground and Cherrybrook Stations. 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		
GADIGAL	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
PUNCBOWL	Walking	Cycling			Bus			Taxi	Kiss-and-ride	P
BANKSTOWN	Walking	Cycling	Trains		Bus			Taxi	Kiss-and-ride	P

Modes serving each station

Interchange and transfer planning continued

2.6 Legislative requirements and applicable guidelines

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

Legislation or guideline	Description
Legislation	
Disability Discrimination Act 1992	Designated Sydney Metro stations and interchange facilities will be fully compliant with the <i>Disability Discrimination Act 1992</i> .
Disability Standards for Accessible Public Transport 2002	The purpose of <i>Disability Standards for Accessible Public Transport 2002</i> (Transport Standards) (DSAPT) is to enable public transport operators and providers to remove discrimination against people with disabilities from public transport services 'as far as possible'.
Strategy and policy	
Future Transport 2056	The strategy is an update of the 2012 <i>NSW Long Term Transport Master Plan</i> . It outlines a vision, strategic directions and customer outcomes. The strategy acknowledges the vital role transport plays in the land use, tourism, and the economic development of towns and cities. It includes issue-specific and place-based supporting plans that focus on integrated solutions rather than individual modes of transport. The strategy also focusses on the role of transport in delivering movement and place outcomes that support the character of the places and communities needed for the future.
North City District Plan	Prepared by the Greater Sydney Commission (GSC), the <i>North City District Plan</i> 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 <i>Greater Sydney Region Plan: A Metropolis of Three Cities</i> , at a district level and is a bridge between regional and local planning. 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.
St Leonards/Crows Nest 2036 Plan (draft)	Prepared by NSW Department of Planning and Environment (DPE), this plan will identify opportunities for renewal and rezoning in the area to 2036. A draft special infrastructure contribution scheme has been developed alongside the draft plan to assist with funding and delivery of State and Regional Infrastructure.
Guidelines	
Australian Standards	Standards relevant to construction, operation and maintenance of interchanges and all relevant modes. The relevant standards have been considered throughout the development of this plan and were used to guide the design development of the interchange. The standards were used to ensure the provision of safe and efficient multi-modal interchange facilities.
Austrroads guidelines	Austrroads' levels of service (LoS) establish standards of performance for key infrastructure, based on its ability to accommodate forecast use and movements safely and efficiently. Levels range from A to F, in descending order of performance. Austrroads guidelines were considered throughout the development of this plan, and were used to guide the design development process to provide safe and efficient interchange facilities.
TfNSW Traffic and Transport Technical Directives	These documents are Transport for NSW (TfNSW) complementary documents to the <i>Austrroads Guide to Traffic Management</i> and the Australian Standards AS1742, 1743 and 2890. The content of the directives were applied in conjunction with the relevant Austrroads guidelines, and were incorporated in the design of the multi-modal interchange facilities, such as crossing facilities, and changes to the existing road layout.
Local council guidelines	Interchange facilities must comply with relevant local council guidelines.
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.

Interchange and transfer planning continued

Legislation or guideline	Description
Guidelines	
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.

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

2.7 Operations and maintenance

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

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

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.

Interchange and transfer planning continued

2.9 Terms and definitions

Term	Definition	Ownership/responsibility
Station	<p>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.</p> <p>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.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> • Sydney Metro operator. • TfNSW. • Other transport operators.
Interchange*	<p>The area and assets that facilitate easy, safe and intuitive customer access to and egress from the public transport network, transfer between modes by accessible paths, entry to urban centres, and an efficient customer journey. The interchange includes the station (see above).</p> <p>The interchange can have multiple sites that may not be connected, and includes areas that are owned by other stakeholders.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> • Sydney Metro operator. • TfNSW. • Other transport operators. • Local council. • Private property owners.
Precinct	<p>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.</p> <p>The precinct includes areas that are owned by other stakeholders.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> • TfNSW. • Local council. • Private property owners.
Catchment	<p>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.</p> <p>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.</p>	<p>One or more of the following:</p> <ul style="list-style-type: none"> • TfNSW. • Local council. • Private property owners.

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

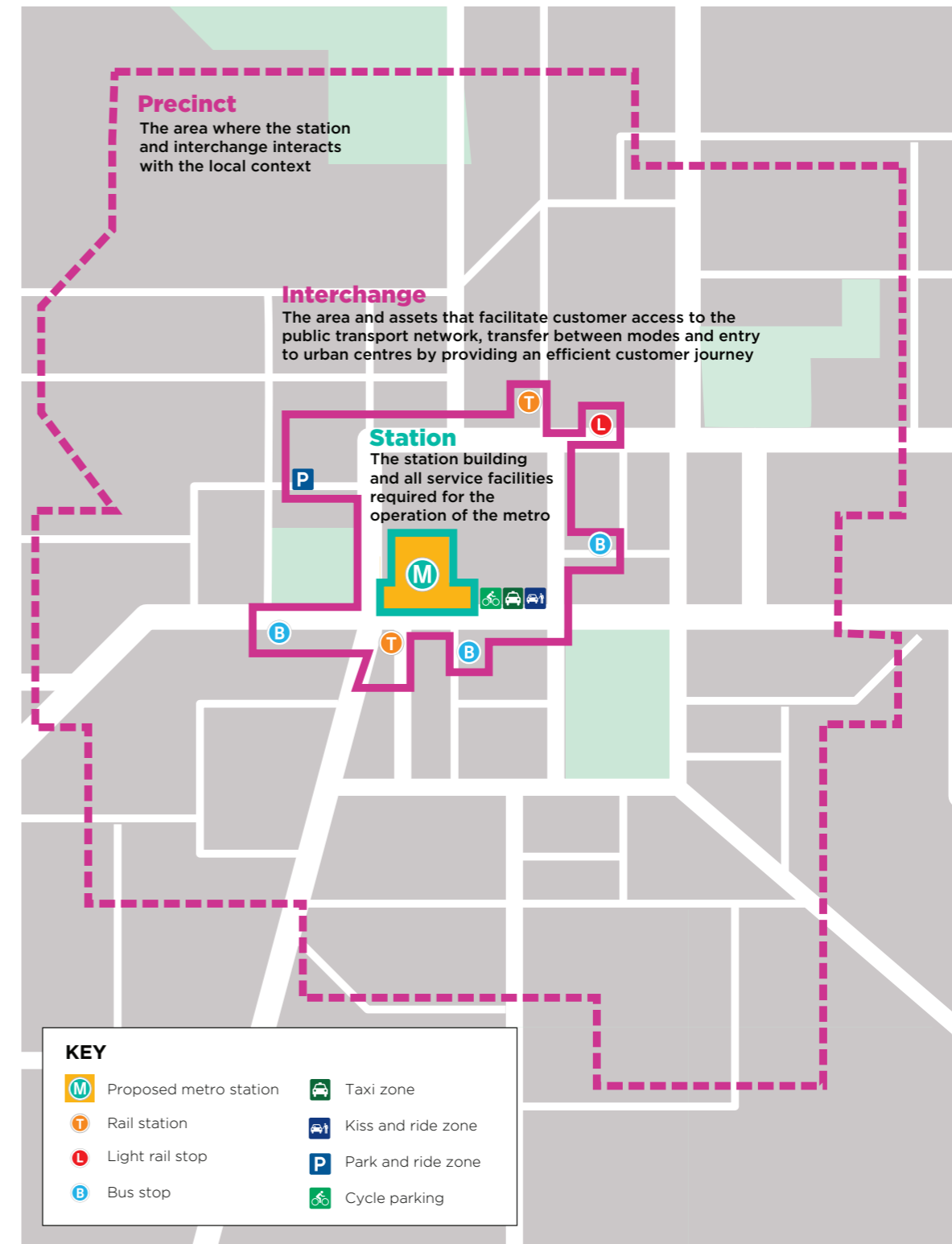


Illustration of terms and definitions

Interchange and transfer planning continued

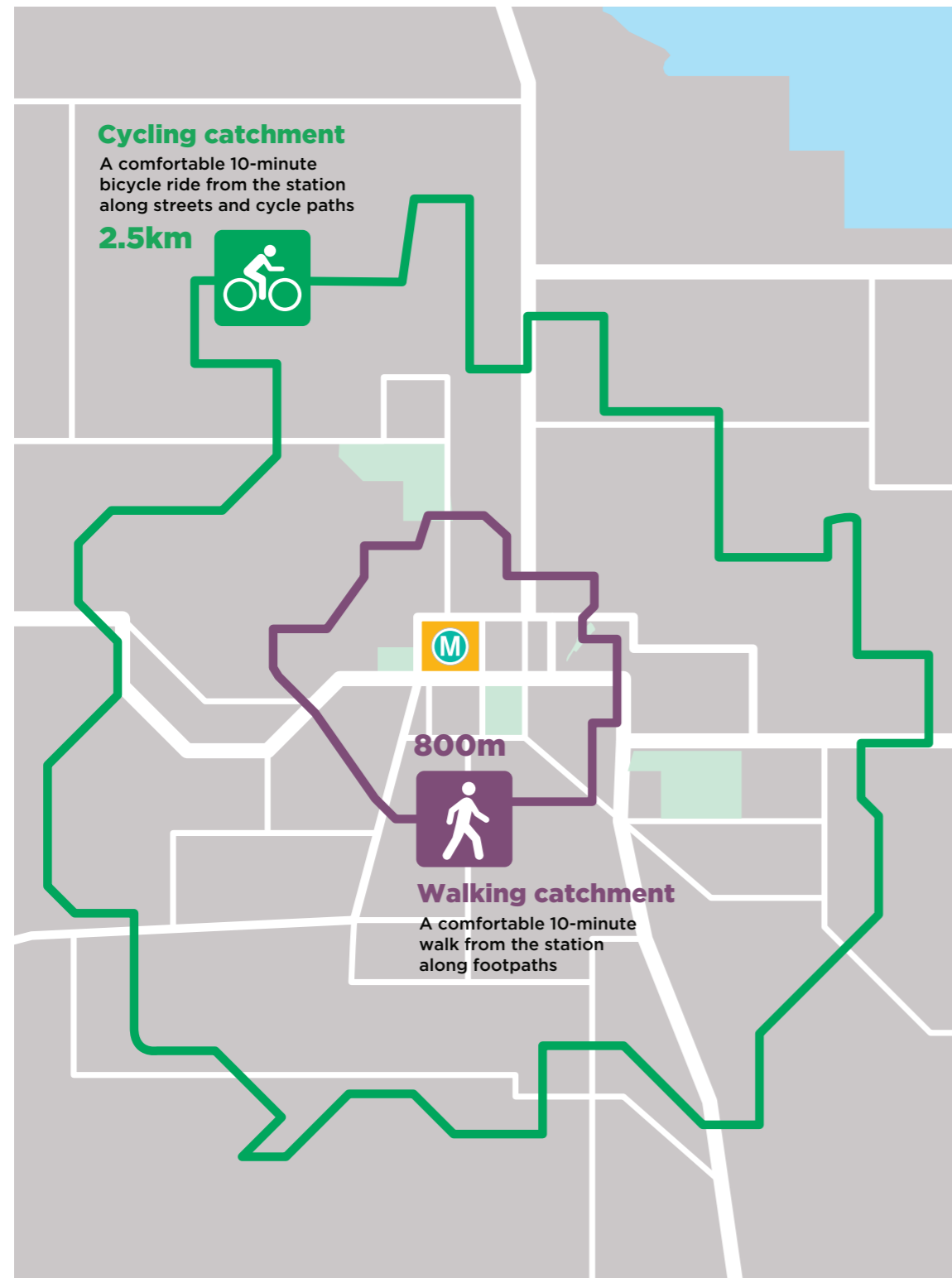
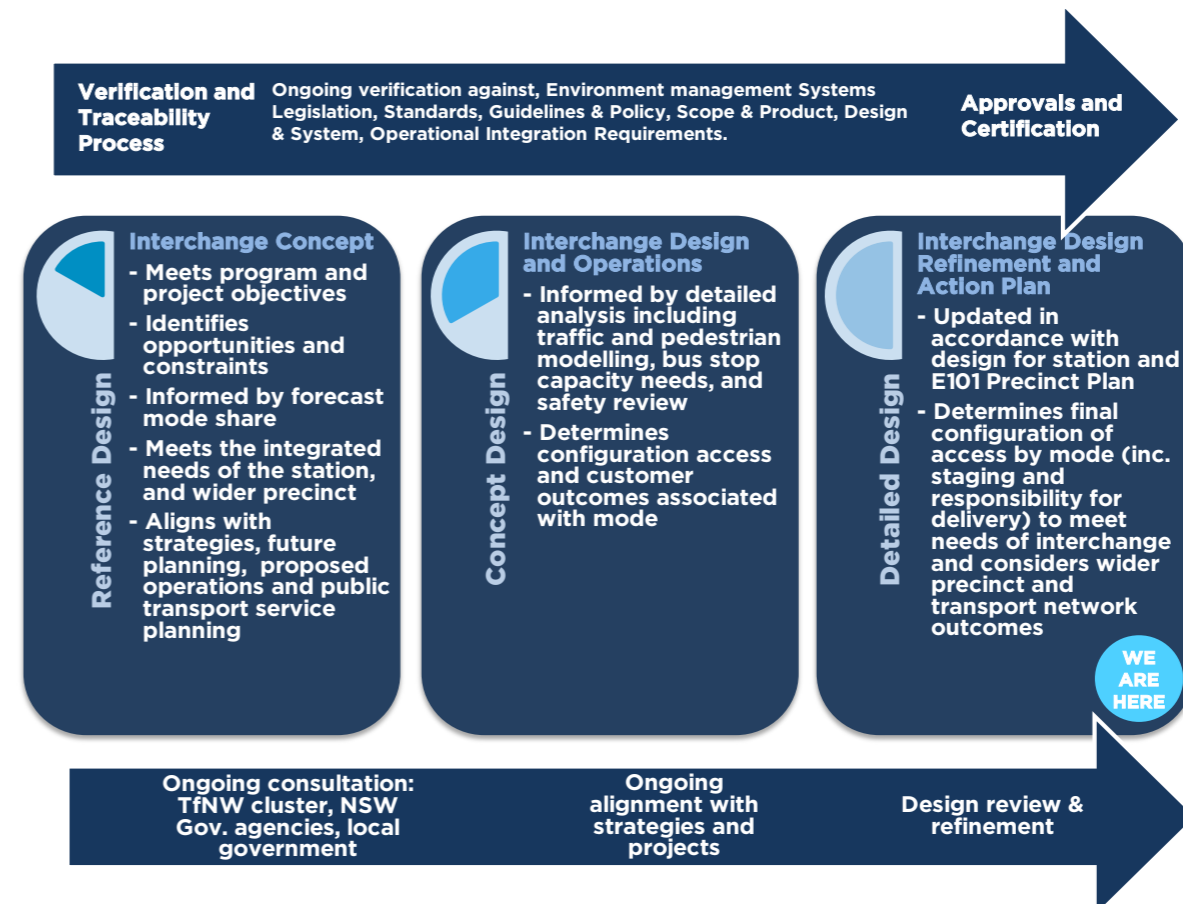


Illustration of terms and definitions

2.10 Design development process

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

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



Interchange and transfer planning continued

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 Crows Nest Station, and enables other programs to develop the potential for wider place improvements. The IAP demonstrates urban and place making outcomes by identifying a new plaza that facilitates a safe and comfortable movement through to interchange facilities. The SDPP equally considers items in the IAP, for example, by identifying pedestrian amenity and the kerbside facilities required to bring about an integrated customer journey. Refer to the following sections in the SDPP:

- Section 4.1 on design objectives, principles and standards.
- 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 the needs of customers.
- 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 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.



3.0 Consultation

Crows Nest Station concourse

3.0 Consultation

Targeted consultation was undertaken for the Crows Nest IAP and included all major stakeholders. The consultation process involved the following steps:

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

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

This section refers to the consultation undertaken during the detailed design process via various working groups and forums. A summary of the consultation undertaken for the Crows Nest Station IAP is presented in the following table.

Forum/organisation	Meeting dates	Key Aspects
Design Review Panel	19 November 2021	Presented IAP final design of transport access, facilities and services. Design Review Panel supportive of the IAP transport access, facilities and service arrangements. Recommendation for Sydney Metro to consult with TfNSW cluster about reducing speed along Pacific Highway. Sydney Metro note the feedback and will communicate the suggestion onto TfNSW Greater Sydney for formal adjudication.
	2 June 2020	Presented overview of IAP to seek panels feedback. The discussion and feedback was focused on the local context, OSD, network role and demand, safeguarding of underground connection below Pacific Highway, future speed of Pacific Highway and within the precinct, and actions by Sydney Metro and by others.
Traffic and Transport Liaison Group: • TfNSW Greater Sydney Division (formerly RMS) • North Sydney Council • Emergency Services • Transport operators	18 October 2023	Presented updates to IAP implementation strategy regarding the changed traffic configuration on Hume Street and design challenges / outcome for the kiss and ride spot on Clarke Street.
	27 January 2022	Presented permanent bicycle facility location and Hume Street cycleway design. Council noted preference for place opportunity on Hume Street as a preferred end-state arrangement.
	24 November 2021	Presented Crows Nest Station interchange facilities and services design. This included the local context, OSD overview, operations, maintenance and management provisions, network role and demand, modal provisions, and actions. Sydney Metro will continue to work with the TfNSW Greater Sydney division to investigate options that include traffic modelling for minimising traffic into Hume Street.
	29 January 2020	Presented IAP context, OSD, access, network role and demand, and modal provisions at Crows Nest. Sydney Metro undertaking assessment and design of a traffic signal control at Clarke Street and Hume Street. TfNSW noted this would allow traffic and pedestrian flows to potentially be more balanced. North Sydney Council expressed preference for unsignalised treatment with raised threshold.
TfNSW GS Bus Planning	10 November 2021	Sydney Metro to seek advice from Accessible Transport Advisory Committee (ATAC) for placement of security bollards around bus stops. Sydney Metro have received advice from ATAC that provided guidance to the detailed design.
	30 September 2021	Security bollards are to be off set as per standards to accommodate customers adjoining or disembarking buses.
	24 September 2021	Bus stop provisions as per standards. 40 metre bus zone required to meet future demand and frequency of services.
Sydney Metro / TfNSW Working Group	27 October 2021	Presented IAP to working group including interchange overview, and informed working group the final design of transport facilities and services.
	14 March 2019	
	14 November 2018	Provided an update to the proposed options for minimising traffic onto Hume Street, either restricted turn movement or partial closure from Pacific Highway. Traffic modelling results to be provided.
	17 October 2018	
	19 September 2018	
Traffic Coordination Group • TfNSW Greater Sydney Division (formerly RMS) • North Sydney Council	14 January 2020	IAP proposals for Pacific Highway median fence and reinstatement of parking bays. Sydney Roads gave direction to Sydney Metro to not reinstate parking on Pacific Highway in front of metro entrance. North Sydney Council opposed loss of parking. Hume Street/ Clarke Street intersection options discussed.
Movement and Place	1 December 2020	Provided update to Movement and Place team on the IAP on movement and place outcomes.
	27 October 2020	Presented status of precinct and interchange and design at Crows Nest including current issues and opportunities for place-based approaches.

Consultation continued

Forum/organisation continued	Meeting dates	Key Aspects
TfNSW Greater Sydney Division (Formerly RMS)/SCO Working Group	18 February 2022	Presented traffic modelling results for 2036 and sought further feedback in relation to minimising traffic into Hume Street, enabling place opportunities. Sydney Metro indicated a preferred option based on the traffic modelling assessment, indicating a left turn ban from Pacific Highway southbound into Hume Street. This was identified as being less impactful out of all tested scenarios to maintain road network performance along Pacific Highway. Planning and Programs to assess and adjudicate on the matter.
	15 December 2021	Presented traffic modelling results and sought further feedback in relation to minimising traffic into Hume Street, enabling place opportunities. Discussed OSD construction phasing and potential reallocation of road space. Planning and Programs raised concern about impact to Pacific Highway as a result of modelling and Sydney Metro continue to work closely with Planning and Programs to resolve their concern.
	4 November 2021	Presented traffic modelling results to explore the opportunity to minimise traffic onto Hume Street to enable place based opportunities. Sydney Metro received feedback in relation to the traffic model and will continue to work with TfNSW Greater Sydney division.
	11 December 2019	Presented pedestrian crossing analysis of Clarke Street and Hume Street intersection including demand, scenarios, and performance.
	13 November 2019	Clarke Street/Hume Street proposed crossings presented including: <ul style="list-style-type: none"> • Traffic signals may be required to manage all modes and pedestrian flows. • Relocation of kiss and ride to align with network functionality. Working group recommended investigation into whether traffic signals would be necessary.
	12 June 2019	Crows Nest Station Construction Logistic Plan presented including site context, station and OSD strategy, station design and program, logistics plan (crane strategy, construction changes on streets, construction vehicle swept paths) and stakeholder impacts and mitigation measures.
	North Sydney Council	14 October 2022
14 January 2021		Sydney Metro provided update on responses to Council IAP comments, and informed council further traffic modelling is to be conducted as requested by TfNSW. Minimising traffic and incorporating a placemaking option for Hume Street is yet to be determined.
10 November 2021		Presented IAP final design of transport access facilities and services. Discussion around traffic modelling results around turn restriction and partial closure of Hume Street to enable OSD construction footprint, reallocation of road space, minimise traffic entering the station precinct, and implement Hume Street cycleway design option.
25 August 2021		Council prefers hedge treatment for Pacific Highway frontage over previously proposed fence. Sydney Metro to work with Council on maintenance plan.
7 October 2021		40 metre bus zone supported 'in principle' for Pacific Highway. Council opposes traffic signals at Hume Street and Clarke Street, as the proposed does not align with the future strategy for Hume Street park extension and place making opportunities. Council support 'in principle' options to minimise traffic on Hume Street and enable place based opportunities. Kiss and Ride supported to be relocated from Clarke Street to Oxley Street.
9 October 2020		Hume Street/ Clarke Street intersection options design.
3 July 2020		Update on status of Crows Nest IAP Hume Street/ Clarke Street intersection, Pacific Highway entrance.
13 August 2019		Meeting to discuss IAP implementation plans.
5 July 2018		Meetings to discuss North Sydney Council feedback on draft IAP.
27 March 2018		Sydney Metro/ North Sydney Council workshop held on Victoria Cross and Crows Nest IAP.

Consultation continued

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

Group/organisation	Feedback themes
NSW Centre for Road Safety	Pacific Highway's role as a Movement Corridor should be noted, to align with Future Transport. Clarke Street 40 km/h zone should be referred to as a "High Pedestrian Activity Area".
Customer, Technology and Strategy (Bus & Ferry Planning and Development)	Supportive of the relocation of the Pacific Highway bus stop from south of Hume Street to south of Oxley Street. This would improve spacing of bus stops and service coverage. Increase in length from 20 metres to 40 metres for bus zones to support future bussing operations.
TfNSW Greater Sydney Division (GSD) (formerly RMS)	Location of the metro entrance on the Pacific Highway introduces the risks of unsafe kiss and ride vehicle movements on the Pacific Highway and uncontrolled mid-block pedestrian crossings. Greater Sydney proposes addressing this by installing a pedestrian fence along the Pacific Highway footpath between Oxley Street and Hume Street intersections. Sydney Metro's preferred option of a median fence would be subject to technical approvals. Reinstatement of parking bays on the Pacific Highway outside the metro entrance (currently suspended for the logistics lane) is not supported by Greater Sydney. Any proposal to install traffic signals at Clarke Street/ Hume Street intersection would need to meet criteria for warrants. Discussion around partial closure of Hume Street to enable OSD construction footprint, reallocation of road space, minimise traffic entering the station precinct, and implement Sydney Metro to provide traffic modelling assessment for review and comment.
TfNSW Greater Sydney Division (Customer Journey Planning, formerly Sydney Coordination Office)	Changes to the local street network need to consider the effect on local traffic operations. Over station development servicing should be considered alongside the measures being proposed in the IAP.
North Sydney Council	North Sydney Council supportive of the IAP transport access, facilities and service arrangements. Consultation will continue with North Sydney Council on the detailed design, Hume Street placemaking opportunities, and implementation of wayfinding signage and minimising linemarking, bollards and other street furniture in line with Councils urban design strategy. Crows Nest IAP to consider State Government transport initiatives and plans including the St Leonards/ Crows Nest 2036 Plan and the Pacific Highway Road Network Plan. This includes proposing a right turn for southbound Pacific Highway traffic into Oxley Street (towards Wollstonecraft) and identifying Pacific Highway as a 'Living Street' instead of a 'Movement Corridor'. Proposal of a cycleway on the Pacific Highway, cycleway on Oxley Street instead of Hume Street. Kiss and ride and taxi bays should be relocated to Oxley Street from Clarke Street, with a reduced number of bays provided. Recommend more amenable walking facilities, particularly due to concern for pedestrian movement across Pacific Highway. Support for visitor bicycle parking to be provided as part of the over station development. Support for significant urban realm improvements at Crows Nest, including pedestrianising Hume Street and shared zone of Clarke Street.



4.0 Interchange Access Plans planning conditions

Crows Nest Station retail frontage on Pacific Highway

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.

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: Crows Nest - local context. Section 7.0: Crows Nest - interchange and transfer requirements overview. Section 10.0: Crows Nest - actions.
(c)	the maintenance or improvement of pedestrian and cyclists level of service within a justified proximity to stations;	The level of service for pedestrians and cyclists was considered and used to inform the design of pedestrian thoroughfares and crossings, planned cycleways and other infrastructure. Refer to: <ul style="list-style-type: none"> Section 7.1: Walking interchange and transfer requirements. Section 7.2: Cycling interchange and transfer requirements. Section 10.0: Crows Nest - actions.
(d)	current transport initiatives and plans;	All current transport initiatives and plans were considered, including state government strategies, Council plans and general transport design guidelines. Refer to: <ul style="list-style-type: none"> Section 2.6: Legislative requirements and applicable guidelines. Section 5.2: Related projects. Section 6.0: Crows Nest - local context. Section 7.0: Crows Nest - interchange and transfer requirements overview. Section 10.0: Crows Nest - actions.
(e)	opportunities and constraints presented by existing and proposed transport and access infrastructure and services;	Key opportunities and constraints affecting the design are presented in Section 6.7: Opportunities and constraints.
(f)	patronage changes resulting from land use, population, employment, transport infrastructure and service changes;	Forecast patronage is presented in Section 6.0: Crows Nest - local context and accounts for future land use, population and employment, and further outlined in Section 7.0: Crows Nest - 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: Crows Nest - interchange and transfer requirements overview for further information on each mode's provisions within the interchange area.
(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: Crows Nest - interchange and transfer requirements overview for further information on each mode's provisions within the interchange area. Emergency vehicle access is accommodated within the station's adjacent kerbside spaces.
(l)	legislative requirements and applicable guidelines;	All applicable legislation, standards and guidelines were used in the development of the design and IAP. Refer to Section 2.6: Legislative requirements and applicable guidelines.

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 was undertaken for the Stage 1 design and used to inform further development of the Interchange Access Plan. A number of safety audit findings, including the cycleway configuration were raised. Cycleway configuration has been updated through design stages and an updated safety audit will be undertaken based on the latest design.
	(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 Crows Nest - 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: Crows Nest - operations, maintenance and management provisions.
	The Interchange Access Plan(s) must be prepared in consultation with the Traffic and Transport Liaison Group (TTLG) and the Design Review Panel and must be supported by traffic and transport analysis. Where necessary, consultation must also be undertaken with major landholders adjoining station precincts. The Plan(s) must detail a delivery and implementation program which must be provided to and agreed by the Secretary before commencement of permanent aboveground facilities at any station site	The Interchange Access Plan has undergone various levels of consultation with stakeholders including council, the TTLG and the DRP, as documented in Section 3.0: Consultation. This document also details a program for delivery and implementation of the works required for the interchange, listed in Section 10.0: Crows Nest - 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: Crows Nest - 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.	The Interchange Access Plan has been reviewed by an independent traffic and transport professional (Samsa Consulting) in March 2020 and December 2021. The outcomes of the review identify the Interchange Access Plan is within a satisfactory rating.





5.0 Regional context

Crows Nest Station concourse

5.0 Regional context

5.1 Crows Nest to Waterloo

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

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

Providing seamless multi-modal journeys for customers is a key outcome of *Future Transport Strategy 2056*. In this context, Sydney Metro will deliver interchanges that help achieve this outcome by putting the customer at the centre.

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

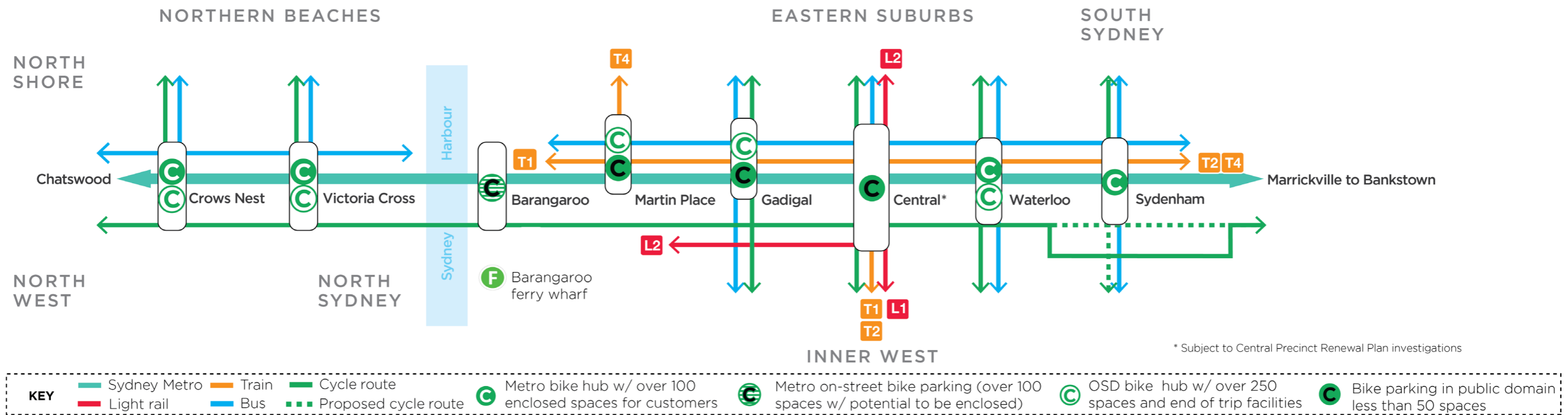
Improved cycling infrastructure and bike parking will enable easier travel by bike, connecting metro stations to surrounding cycle routes. Each metro station will connect into the surrounding walking and cycling network, and will provide bike parking facilities.

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

5.2 Related projects

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

- Pacific Highway Road Network Plan (TfNSW, formerly RMS).
- St Leonards/Crows Nest 2036 Plan (DPE, 2020).
- Bus network changes associated with the introduction of Sydney Metro City & Southwest (TfNSW).



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, aimed to offer appropriate choices, manage access and network impacts, and enable increases in the typical station catchment size.

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

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

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

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

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





6.0 Crows Nest – local context

Crows Nest Station concourse

6.0 Crows Nest – local context

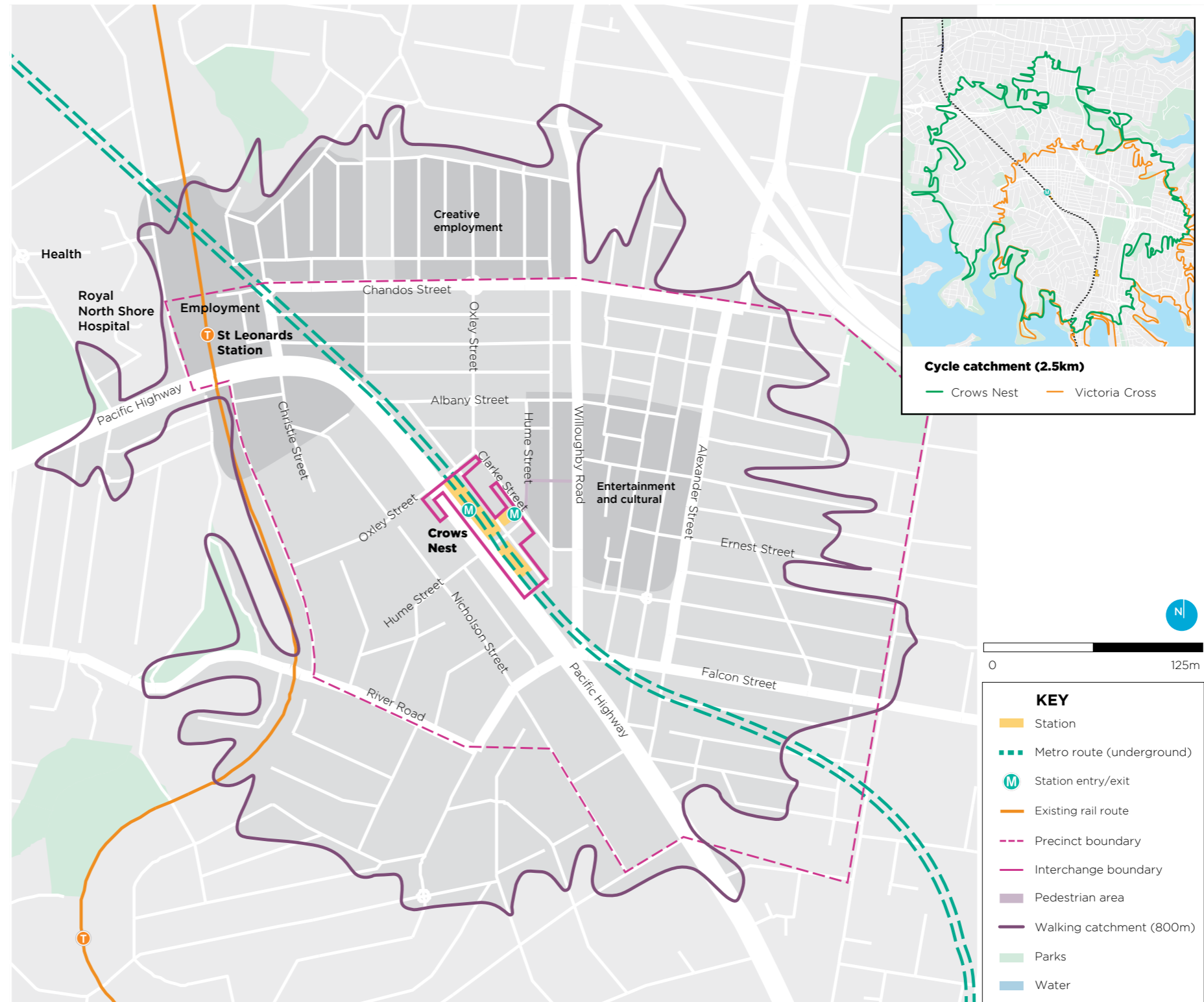
6.1 Station interchange enhancements

Crows Nest Station is a new underground station located south-east of the St Leonards strategic centre. The new Crows Nest station will extend the rail catchment in this area and provide new options for customers to travel to and from the area.

Crows Nest Station will have two entrances. It will be accessible from the Pacific Highway between Oxley Street and Hume Street and from the corner of Clarke Street and Hume Street. The Pacific Highway entrance will open on to business and retail along the highway. The Clarke and Hume Streets entrance will open onto residential, commercial, retail and community facilities.

A metro station at Crows Nest will support the St Leonards strategic centre as a southern gateway to commercial and mixed-use activities, and service the surrounding residential catchment.

The station will also improve access to the restaurants and specialist shops in the Crows Nest village.



Crows Nest Station – local context

Crows Nest – local context continued

6.2 Station strategy

The station strategy for Crows Nest 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 on the southern side of the St Leonards specialised centre.
- Maximise legibility and connectivity with the local urban structure.
- Integrate the station with local improvement plans and make a positive contribution to the sense of place.

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 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 Crows Nest:

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

6.5 Current land use and characteristics

Existing land use and characteristics

Crows Nest Station will be located between the Pacific Highway and Clarke Lane. Station entries will be close to the intersection of Clarke and Hume streets and on the Pacific Highway towards Oxley Street.

Currently, low-scale showroom developments are along the Pacific Highway, with a concentration of 19th century two-storey shopfront facades south of Hume Street.

Oxley, Hume and Clarke streets contain a mixture of office and apartment buildings (up to ten storeys), and an indoor sports complex, child care centre, community centre and post office.

To the north is a mixed-use commercial and retail area with a large number of creative and professional services businesses. Hume Street Park is located opposite the station site on Clarke Street, and is the only local green space.

To the south is a transitional precinct with a mixture of high-density housing, office towers, home-office conversions, community facilities, educational institutions and the Mater Hospital.

To the west extending along Hume Street towards Nicholson Street and the areas on the western side of the Pacific Highway are large pockets of medium density housing, interspersed with lower-density residential areas and pocket parks.

Existing station precinct strategic planning context

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

The *North District Plan* (Greater Sydney Commission, 2018) sets priorities and actions for the Harbour CBD, including driving the growth of the North District through the planning and delivery of regionally significant infrastructure. Crows Nest, sitting adjacent to St Leonards, is identified as a Health and Education Strategic Precinct in the North City District Plan performing as both an intense place and movement function.

North Sydney Community Strategic Plan 2018-2028 (North Sydney Council, 2018) sets the future direction for the North Sydney LGA, identifying community priorities. The plan highlights the changing needs of the community, prioritising transport and recreational infrastructure and housing.

North Sydney Council Local Strategic Planning Statement (North Sydney Council, 2020) aligns with the Community Strategic Plan, setting clear strategic direction for land use planning and actions on how the Council's vision will be achieved. The plan concentrates ensuring infrastructure and asset management, social vitality, land use planning controls, environmental preservation and stakeholder engagement. Crows Nest Station represents a significant opportunity to improve North Sydney's access whilst manufacturing a vibrant place for people.

St Leonards and Crows Nest 2036 plan, (DPE, 2020) provides a comprehensive land use and

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

Feature	Description
Location	Underground, between the Pacific Highway and Clarke Lane (eastern side of the Pacific Highway) and between Oxley Street and south of Hume Street.
LGA	North Sydney Council.
Station entry	<ul style="list-style-type: none"> • An eastern entry on the corner of Hume and Clarke streets. • A western entry on the Pacific Highway towards Oxley Street.
Transport interchange	Walking, cycling, bus, taxi and kiss-and-ride.
Main features and traffic arrangements	<ul style="list-style-type: none"> • A new signalised pedestrian crossing and widened pedestrian crossings at the Pacific Highway/Oxley Street intersection. • New pedestrian crossings on Clarke and Hume streets. • Widened pedestrian crossing at the Pacific Highway/ Hume Street intersection. • New bike parking on the corner of Hume Street and the Pacific Highway. • A new separated cycleway on Hume Street. • New kiss-and-ride bays on Oxley Street. • New taxi bays on Clarke Street. • Potential reallocation of road space on Hume Street between Pacific Highway and Clarke Street. • Existing bus stops close to the station retained and relocated on the Pacific Highway. • Enhancement of pedestrian infrastructure around the station will be investigated further in consultation with Transport for NSW and North Sydney Council.
Customers	Local retail, leisure, residential and existing employment precincts.

Crows Nest – local context continued

infrastructure strategic assessment, guiding future development in the precinct. The plan envisions a revitalisation of the precinct’s core, through a balance of residential and commercial development, thriving off continued growth of the health and technology sectors, enhanced connectivity driven by the future Crows Nest Station all supported by open public green spaces. St Leonards and Crows Nest 2036 has been informed by a Green Plan (DPE, 2018), which provides a framework for the provision of new open space and a Local Character Statement (DPE, 2020).

North Sydney Council has prepared planning precinct studies for the area, including the *St Leonards/Crows Nest Planning Study Precinct 1* (North Sydney Council, 2012) and the *St Leonards/Crows Nest Planning Study Precincts 2 and 3* (North Sydney Council, 2015). These studies identify strategies and initiatives for new open space, investment along the Pacific Highway, improved connectivity, urban design, street-level and residential amenity, and building design; and results in several options for future development within the

6.7 Opportunities and constraints

Crows Nest Station has the following opportunities and constraints.

Opportunities	Constraints
<ul style="list-style-type: none"> A well-designed station with public amenities can contribute to the sense of place (community) and public domain. Support access to the St Leonards and Crows Nest area through a new node in the transport network, which can support bus/metro and cycling/metro transfer. Provide new east-west link in local cycling network to improve access to the metro station. Activate the station precinct, improve pedestrian access and enhance amenity for the potential over station development (following North Sydney Council’s upgrade to Hume Street Park and the partial pedestrianisation of Hume Street, a new pedestrian connection to Willoughby Road and new community uses). Enhance the east-west connections, improving pedestrian permeability through Crows Nest and across the Pacific Highway, as a future ‘vibrant’ street. Support development proposed for the area. 	<ul style="list-style-type: none"> The Pacific Highway is a prominent movement corridor and may act as a barrier to pedestrian and cyclist movement. Intersections crossing the Pacific Highway lack priority for pedestrians (long wait time). Road network general traffic growth rate throughout the precinct..

precinct, including provisions for preferred built form, pedestrian circulation and amenity, and open space.

6.6 Future changes and functional needs

Land use, transport integration and opportunities

A metro station at Crows Nest will support state and local strategic and planning controls by providing an incentive for investment along the Pacific Highway, enhancing urban design and amenity, and improving connectivity in Crows Nest. It is expected that a metro station at Crows Nest will have the following specific benefits:

- The station will form part of the interchange that provides safe and direct access to residential and mixed-use land uses surrounding the station that will directly benefit from additional transport connectivity to the Global Economic Corridor.
- The station will provide the opportunity for further development of the area as a vibrant and active

mixed-use centre with strong public transport links to North Sydney and the Sydney CBD and other centres throughout the Global Economic Corridor; as well as to offices, retail, housing, and community, recreational, cultural, leisure, educational facilities.

- The increased utilisation of the existing employment area extending along Willoughby Road, Christie Street and the Pacific Highway will deliver an increase in new jobs in an area with high levels of amenity, recreation opportunities and good access to public transport.
- The station will provide opportunities to increase residential densities within walking distance of the station.

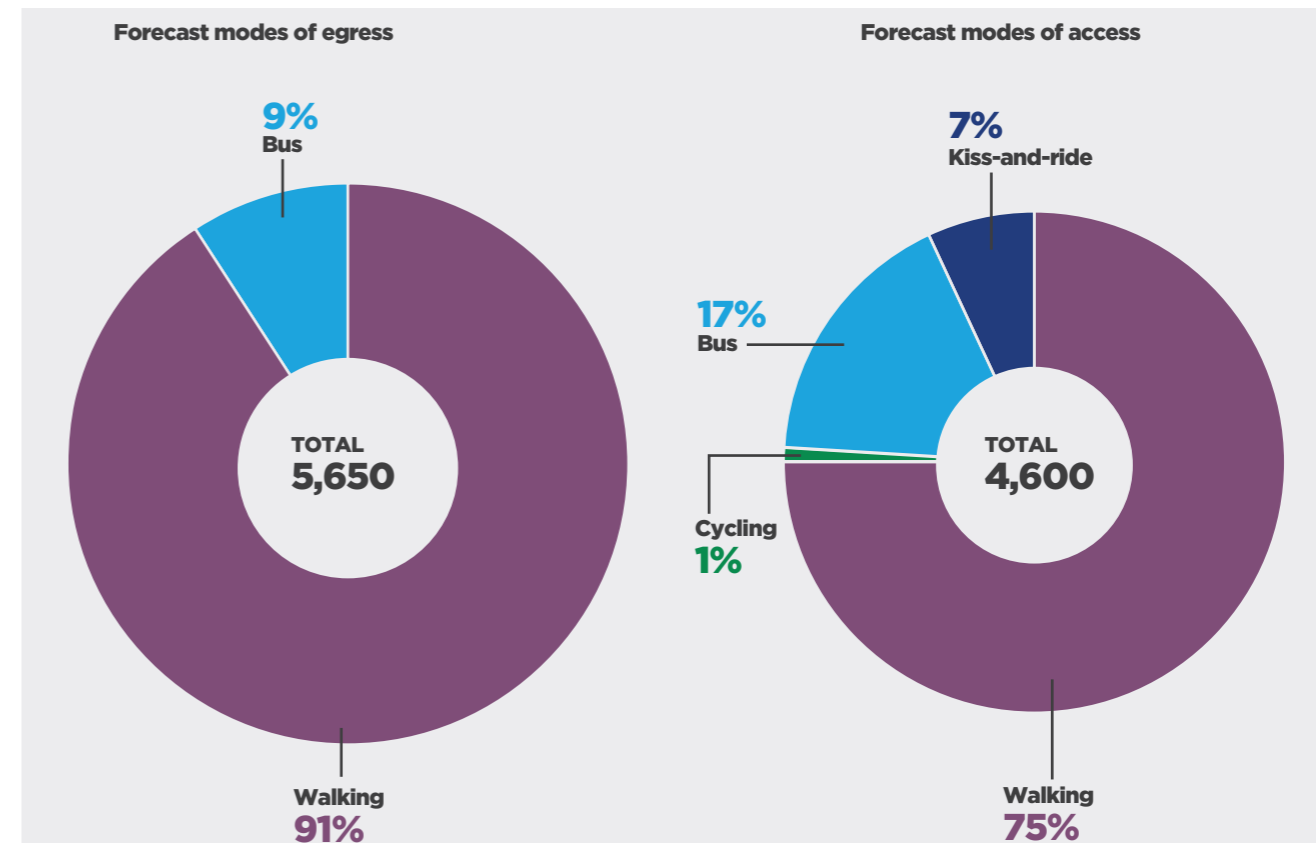
These strategies and opportunities will be further developed in consultation with DPE, the Greater

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 presents a broad level understanding of the functional role of the metro service at Crows Nest Station. The 2036 AM peak hour demand profile and customer connectivity profiles present the following characteristics:

- Majority of customers accessing and egressing the station are walking.
- Bus makes up a higher access mode than it does for egress mode.
- These observed trends are likely to be reversed in the PM peak.



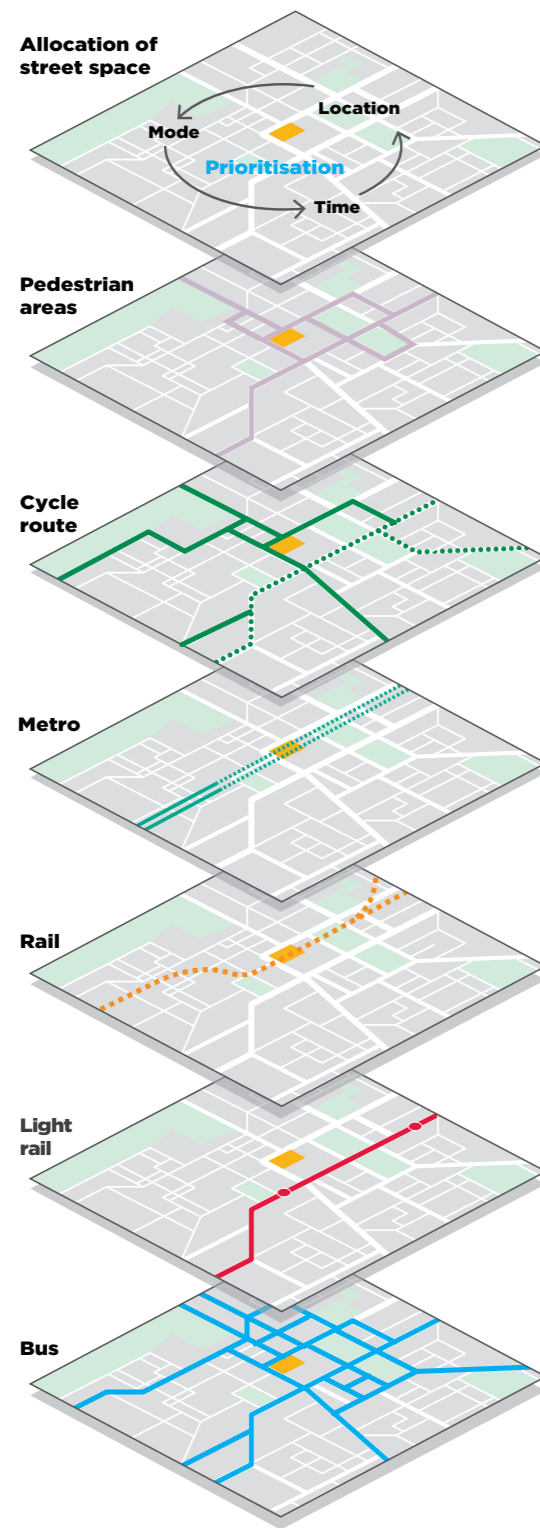
2036 1-hour AM peak demand and mode splits (Sydney Metro Chatswood to Sydenham Environmental Impact Statement)



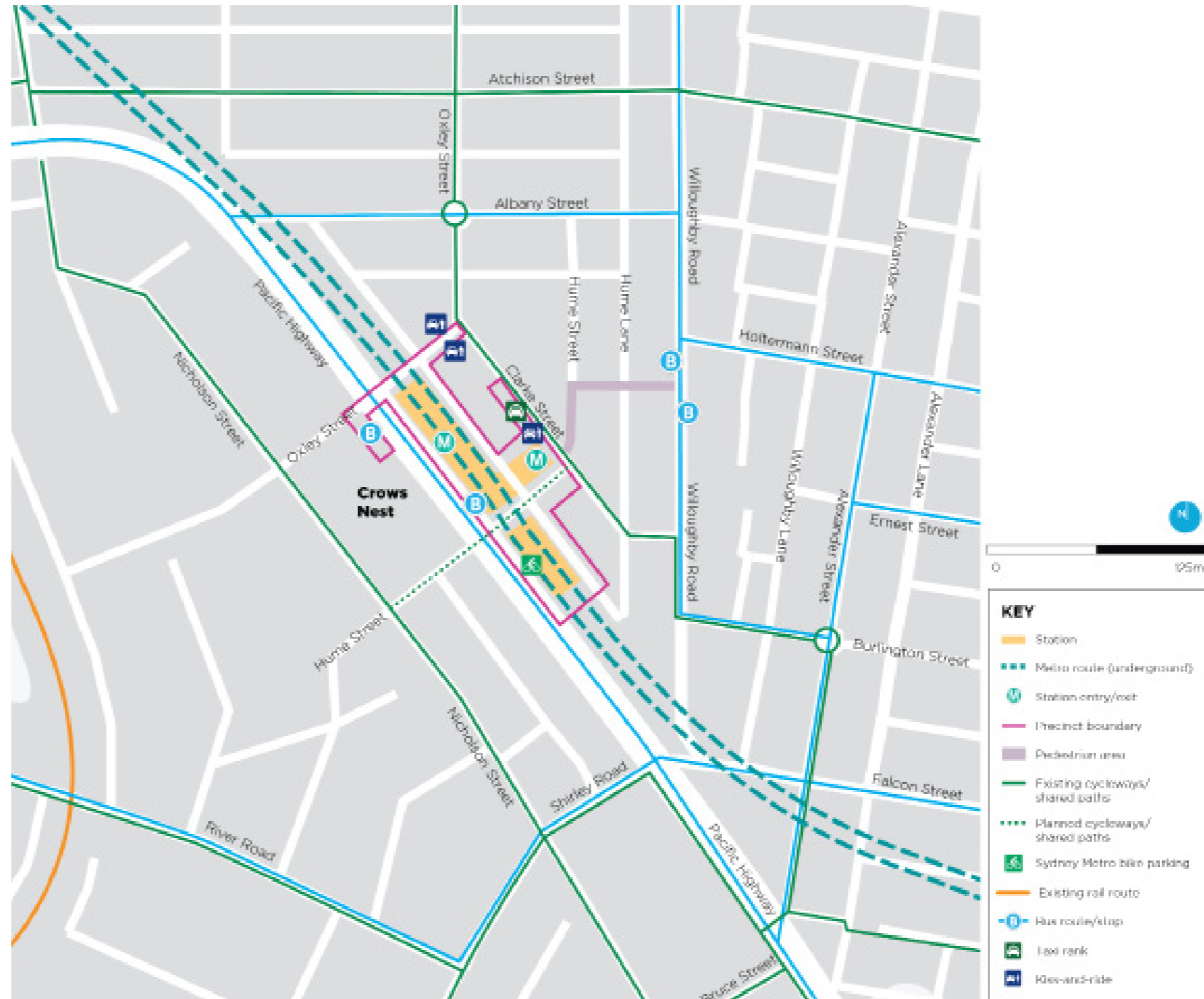
7.0 Crows Nest – interchange and transfer requirements overview

Crows Nest Station platform

7.0 Crows Nest - interchange and transfer requirements overview

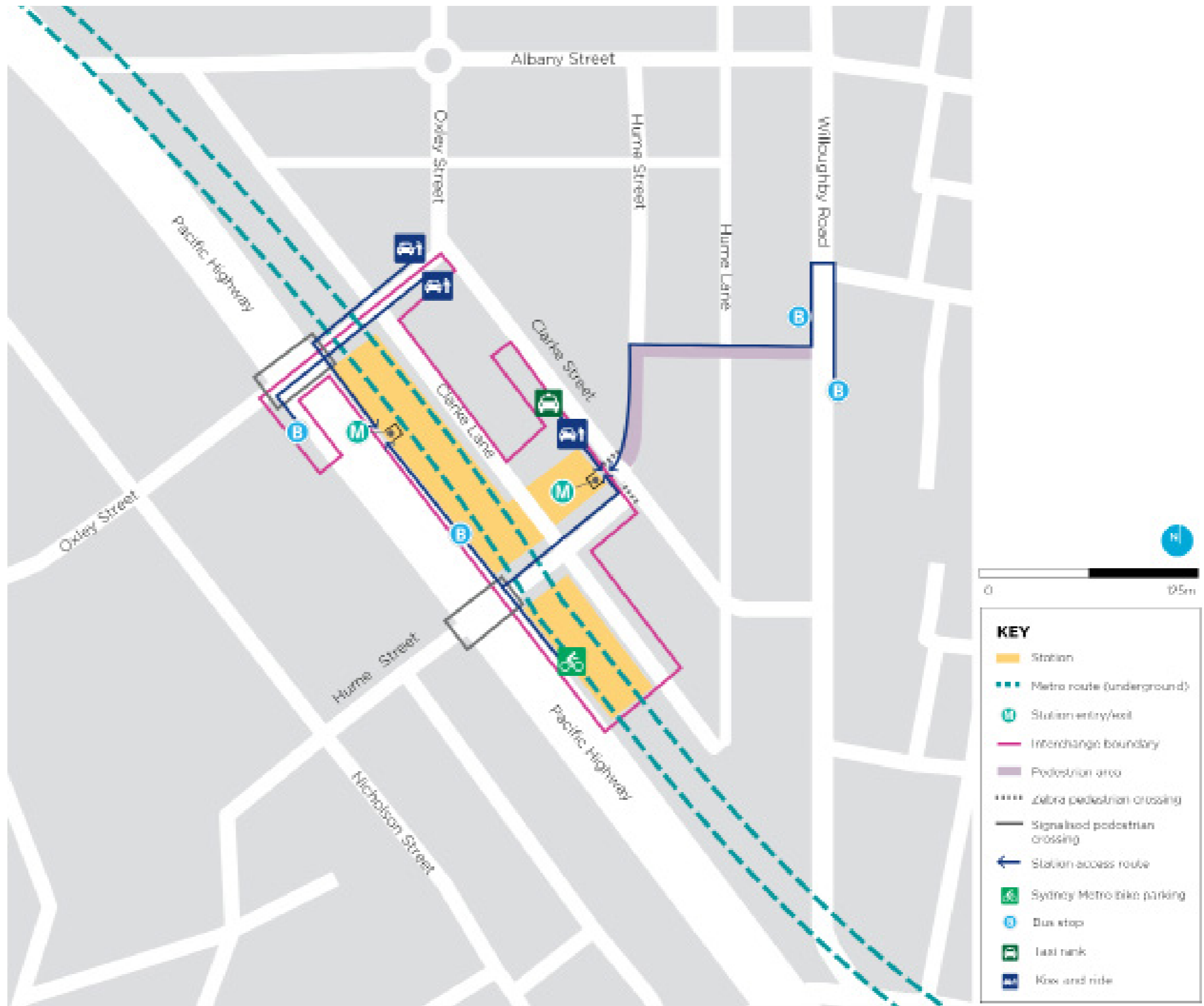


Mode layers



Crows Nest Station - interchange and transfer requirements overview

7.1 Crows Nest – walking interchange and transfer requirements



Mode layer - pedestrian areas

Crows Nest Station – pedestrian interchange and transfer requirements

Crows Nest – walking interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<ul style="list-style-type: none"> • The pedestrian network immediately surrounding the site is well served by an existing network of footpaths. • The main source of pedestrian demand is towards the St Leonards commercial area and station, and towards the Crows Nest retail and leisure precinct on Willoughby Road. • Pedestrian crossings exist at intersections on the Pacific Highway. There are no formal pedestrian crossings on Hume Street, Clarke Street, Clarke Lane or Oxley Street.
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 access will be on the corner of Hume and Clarke streets. • The southern access will be from the Pacific Highway towards Oxley Street.
Pedestrian environment and design considerations	<p>The overall pedestrian environment in the catchment accommodates pedestrian movement associated with retail areas and eateries to the east, residential areas to the west and employment areas to the north.</p> <p>Design outcomes to accommodate pedestrian movement include:</p> <ul style="list-style-type: none"> • Western station access: <ul style="list-style-type: none"> – A proposed signalised crossing on the north-western leg at the intersection of the Pacific Highway and Oxley Street to facilitate movement across the Pacific Highway. – A widened pedestrian crossing on the north-eastern leg at the intersection of the Pacific Highway and Oxley Street to facilitate movement towards the St Leonards precinct. – A widened pedestrian crossing on the south-eastern leg at the intersection of the Pacific Highway and Oxley Street. – Building setbacks provided along the metro frontages at the Pacific Highway and Oxley Street to help accommodate pedestrian flows. • Eastern station access: <ul style="list-style-type: none"> – Marked pedestrian crossings on Clarke Street and Hume Street to accommodate safe pedestrian movement to the north and east. – Building setbacks provided along the metro frontages at Hume Street and a widened footpath to maximise public space. – A widened pedestrian crossing on the north-eastern leg at the intersection of the Pacific Highway and Hume Street. – A future pedestrian link between Hume Street and Willoughby Road planned by North Sydney Council, providing an additional connection between the station and Willoughby Road. – Safeguarding of a future potential underground pedestrian link from the station concourse to the western side of the Pacific Highway. – Implement a changed traffic configuration from a two-way operation to a one-way westbound operation on Hume Street between Pacific Highway and Clarke Street.
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> <p>Pedestrian modelling has been assessed to 2036 and is of an acceptable level of service.</p> <ul style="list-style-type: none"> • Western station access: <ul style="list-style-type: none"> – Provide logical connectivity with surrounding transport interchanges, retail and commercial precincts and entertainment areas. – Provide for high pedestrian movement across the Pacific Highway at Oxley Street. • Eastern station access: <ul style="list-style-type: none"> – Allow for Hume Street as an urban realm with planned increased densities and pedestrian activity. – Ensure that access is not impacted by spatial and operational limitations at the station access point.

Crows Nest – walking interchange and transfer requirements continued

Item	Description
Future station integration continued	
Safe, convenient, efficient and sufficient pedestrian access and transfer outcome	<p>Safe, convenient efficient and sufficient pedestrian access and transfer to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> • Urban design and road design reports. • Pedestrian modelling reports. • A road safety audit. • Technical notes supporting Works Authorisation Deeds (WADs). • Crows Nest Station Design and Precinct Plan (SDPP).
	<p>Transport and pedestrian analyses were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> • Sufficient public domain and footpath space to accommodate pedestrian flows in the vicinity of the station. • Safe pedestrian crossings (signalised and zebra) at surrounding intersections which provide direct paths of travel along pedestrian desire lines. <p>All outcomes were designed to comply with relevant legislation and guidelines such as the Disability Discrimination Act, DSAPT and Austroads guides.</p>
Underground pedestrian connection	<p>Safeguard for a possible future underground pedestrian link that will support further improvements in easy transfer. This includes a connection to:</p> <ul style="list-style-type: none"> • Areas to the west under the Pacific Highway.
Transfer to and from bike parking	<ul style="list-style-type: none"> • Class B bike facility within close proximity to the station entry. • Class C bike racks outside of the station entries adjacent to the footpaths,
Transfer to and from bus	<ul style="list-style-type: none"> • The station will provide easy transfer to bus stops on Willoughby Road, the Pacific Highway and Burlington Street.
Transfer to and from taxi	<ul style="list-style-type: none"> • Provides easy access to a new taxi rank on western side of Clarke Street, north of the station entrance.
Transfer to and from kiss-and-ride	<ul style="list-style-type: none"> • Provides easy access to proposed kiss-and-ride zones on northern and southern sides of Oxley Street, between Clarke Lane and Clarke Street. • Provides easy access to proposed kiss-and-ride zone on western side of Clarke Street, between Hume Street and Oxley Street.
New pedestrian infrastructure by Sydney Metro	<ul style="list-style-type: none"> • Proposed new signalised pedestrian crossing on the north-western leg, and widened pedestrian crossing on the north-eastern leg and south-eastern leg at the intersection of Pacific Highway and Oxley Street. • Widened pedestrian crossing on the north-eastern leg of the intersection of the Pacific Highway and Hume Street. • Building setbacks to Pacific Highway and Hume Street to accommodate increased pedestrian flows and maximise the public space. • Marked pedestrian (zebra) crossings on Clarke and Hume streets.

Crows Nest - walking interchange and transfer requirements continued

Pedestrian access



Pedestrian egress



0 125m

KEY

- Station
- Station entry/exit
- Interchange boundary
- Pedestrian area
- Signalled pedestrian crossing
- Pedestrian access
- Existing cycleways
- Planned cycleways
- Ride parking
- Bus stop
- Taxi rank
- Kiosk and ride

Crows Nest – walking interchange and transfer requirements continued

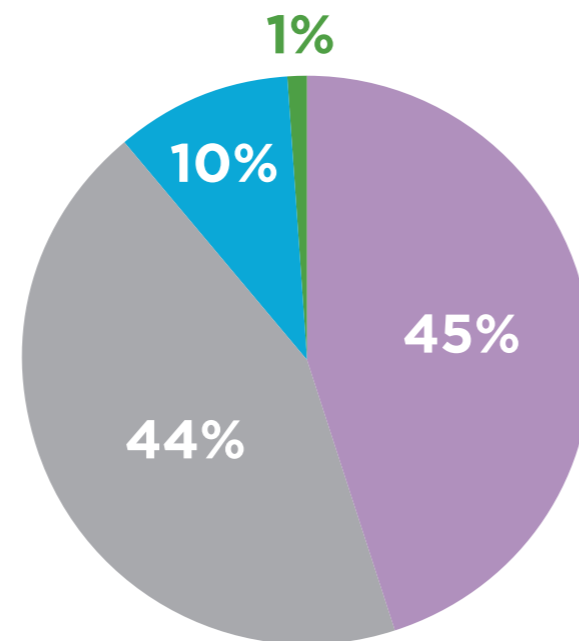
Allocation of space changes in the Crows Nest Station precinct

The metro station at Crows Nest will support a reduction in the amount of space allocated to vehicles, and the reallocation of space to pedestrians to support to increased pedestrian volumes within the precinct. This aligns with the TfNSW Reallocation of Road Space Policy.

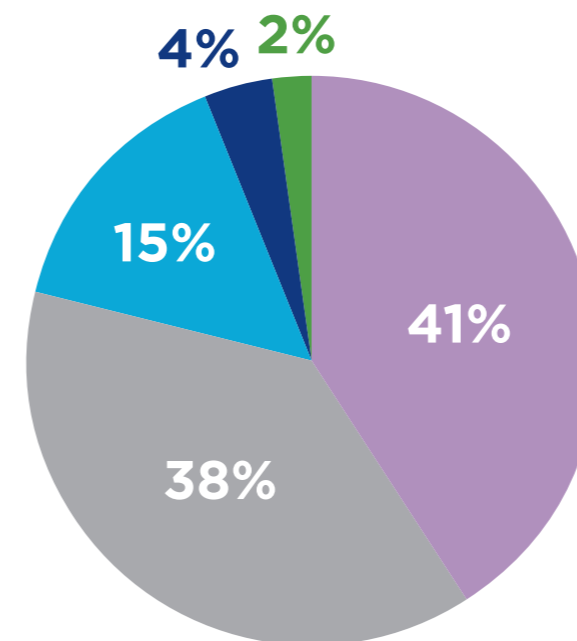
The reallocation of space changes presented in the two pie charts presents the reallocation of road space within the Crows Nest Station precinct, displaying:

- Increased building setbacks resulting in more space for footpaths in the precinct.
- New cycleway on Hume Street between Nicholson Street and Clarke Street.
- Reduction of space allocated to roads due to new Clarke Lane shared zone, increased footpath space and new Hume Street cycleway
- Implement a changed traffic configuration from a two-way operation to a one-way westbound operation on Hume Street between Pacific Highway and Clarke Street to enable OSD construction, safe movement of pedestrians and cyclists, and to support future placemaking opportunities.

2017 Configuration



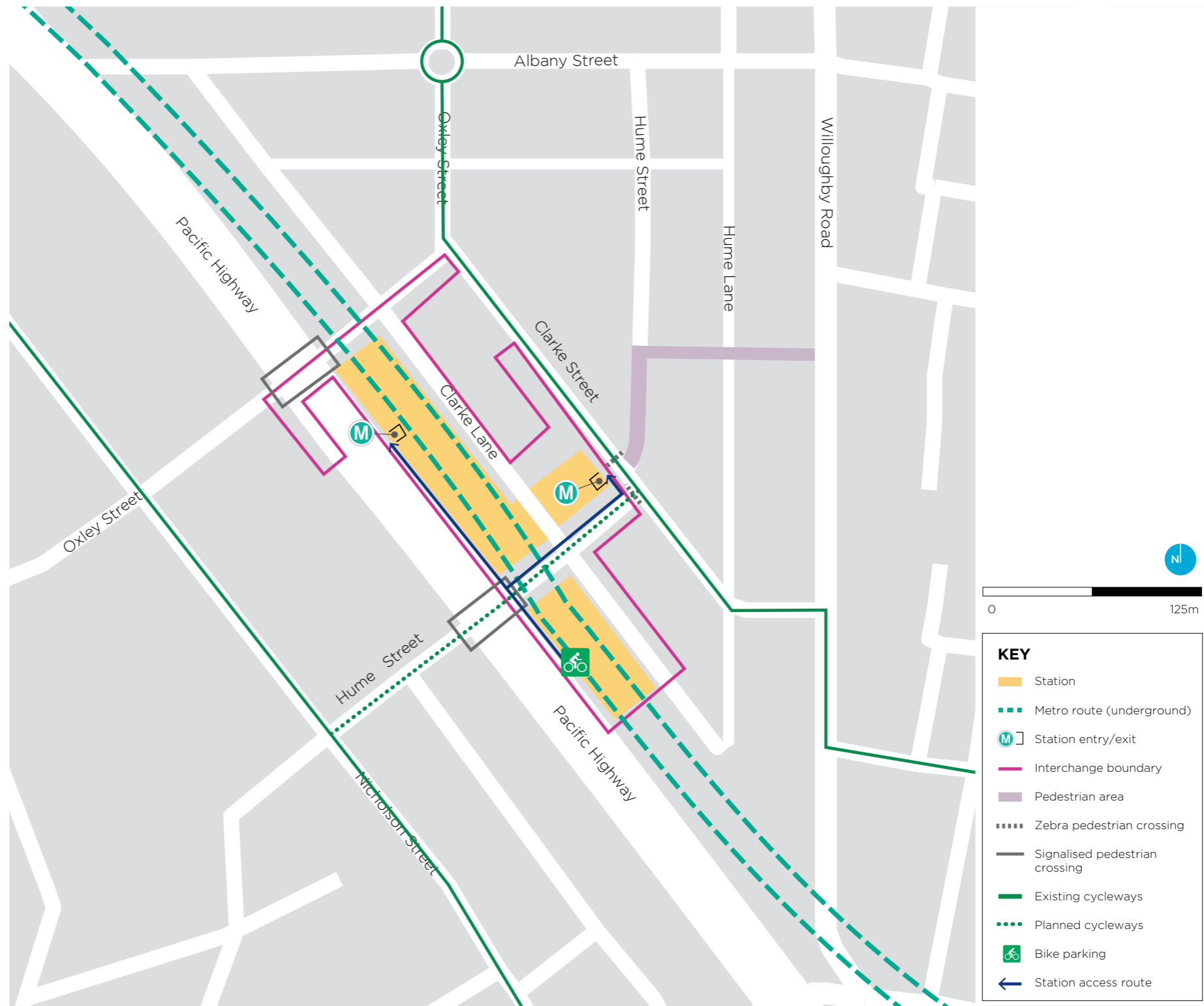
Future state with metro



Key

- Buildings
- Footpath
- Roads
- Cycleway
- Shared Zone

7.2 Crows Nest - cycling interchange and transfer requirements



Mode layer - cycle route

Crows Nest Station - cycling interchange and transfer requirements

Crows Nest – cycling interchange and transfer requirements continued

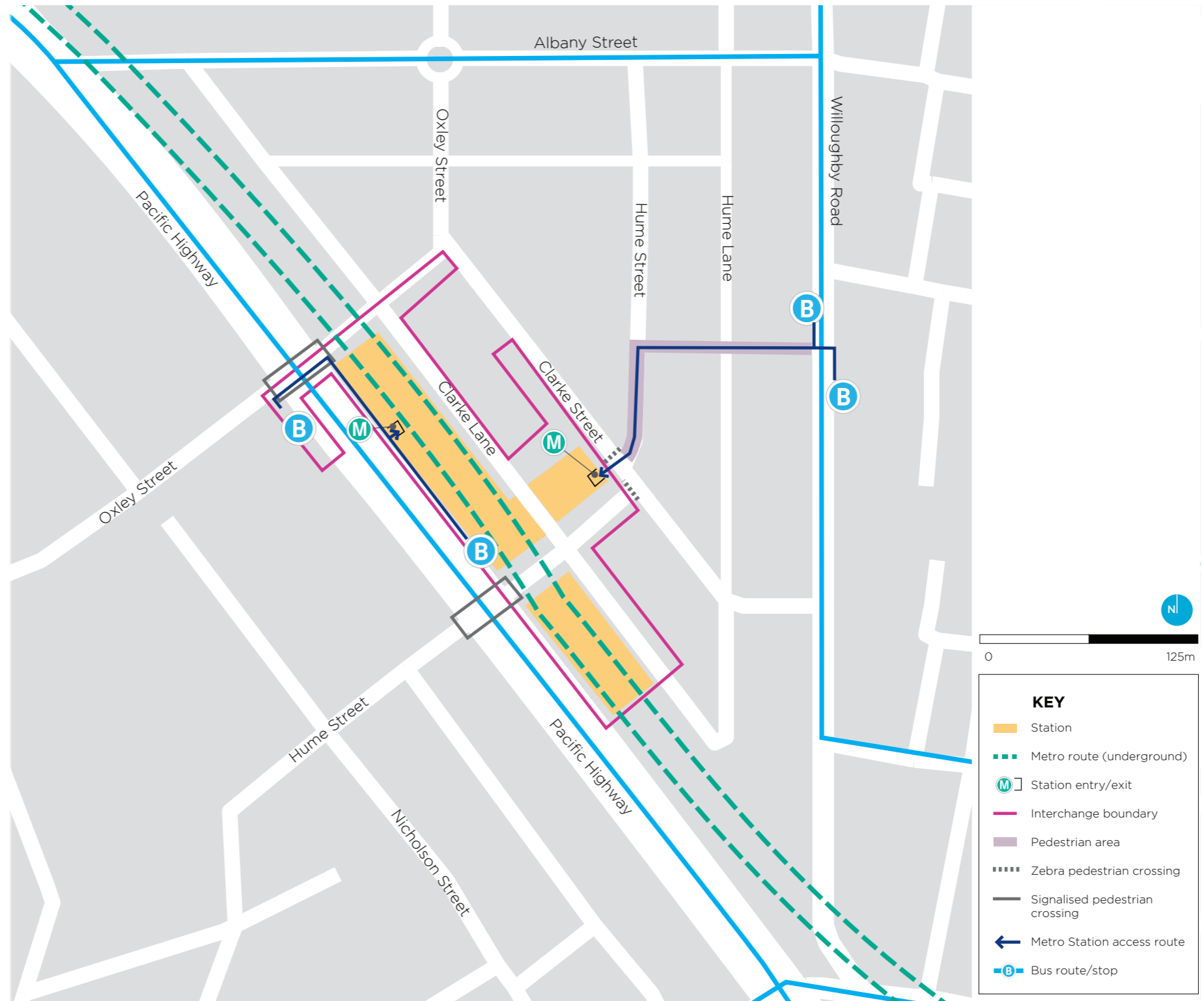
Item	Description
Current state	
Current levels of access and service	<p>The station is located close to a well-connected cycle network that links St Leonards, Crows Nest and Cammeray. The closest cycle routes to the station are:</p> <ul style="list-style-type: none"> • North-south Sydney Harbour Bridge to Cammeray route via West Street (North Sydney priority construction route). • East-west Cammeray to Crows Nest route via Holterman Street and Willoughby Road to Chandos Street (North Sydney priority construction route). • East-west route along Atchison Street. • Clarke Street outside the proposed station entry (with cycle lane southbound), north to Chandos Street St Leonards and to the east-west route on Atchison Street. It runs south east to Willoughby Road then connects east-west to West Street via Burlington Street, Alexander Street, across Falcon Street and along Hayberry Street. • North-south route west of the Pacific Highway via Nicholson Street. • Holterman Street between West Street and Willoughby Road (to be confirmed by North Sydney Council). <p>The station and interchange will be designed to allow bicycles to move through them and to be able to board Sydney Metro services.</p>
Future Station Integration	
Bike parking location principles	<ul style="list-style-type: none"> • Entry/ access to bike parking should be at street level, convenient, easily visible and intuitive for customers. • Bike parking should be located on the main desire line of the cycle network where feasible, and guided by wayfinding. • Bike parking and vehicle parking locations and access arrangements should be separated (i.e. no access through a loading dock).
Bike parking location requirements	<ul style="list-style-type: none"> • Bike parking located within close proximity to the station entrance and the cycle network. • Bike facilities must be in accordance with Australian Standards and Austroads Guidelines.
Bike parking facilities provision	<p>To enable cycle interchange with the station, cycle parking will be provided:</p> <ul style="list-style-type: none"> • Bike parking facility located on Pacific Highway, south of Hume Street (Class B: weather protected bike parking facility) • On the footpaths near the station entrances (Class C: bike parking hoops).
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 about 146 bicycles. • Class C bike parking for 30 bicycles.
Safe, convenient, efficient and sufficient cycling access outcomes	<p>Safe, convenient, efficient and sufficient cycling access to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> • Urban design and road design reports. • A road safety audit. • Technical notes supporting Works Authorisation Deeds (WADs) • The North Sydney Integrated Cycling Strategy. <p>Transport analyses were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> • Cycle parking facilities (Class B and Class C) situated in convenient locations in the station plazas with efficient access to cycle routes. • Safe and efficient integration with the existing and proposed cycle networks in alignment with Council strategies. • Controlled (signalised) or separated direct paths of travel along key cyclist desire lines to minimise vehicle-cyclist conflict.
New cycle routes by Sydney Metro	<ul style="list-style-type: none"> • A proposed separated on-road cycle route on Hume Street between Clarke Street and Nicholson Street.
New cycle routes by others	<ul style="list-style-type: none"> • Potential upgrades to the Clarke Street cycle route to provide a separated cycleway between Oxley Street and Willoughby Road. • The Greater Sydney Infrastructure and Services Plan, published in 2018 with Future Transport 2056, identifies a vision for 2036 of a connected cycle network which connects all strategic centres. These will be investigated through TfNSW's detailed corridor and place plans and development of strategic business cases for place outcomes.

7.3 Crows Nest - bus interchange and transfer requirements



Bus

Mode layer - bus

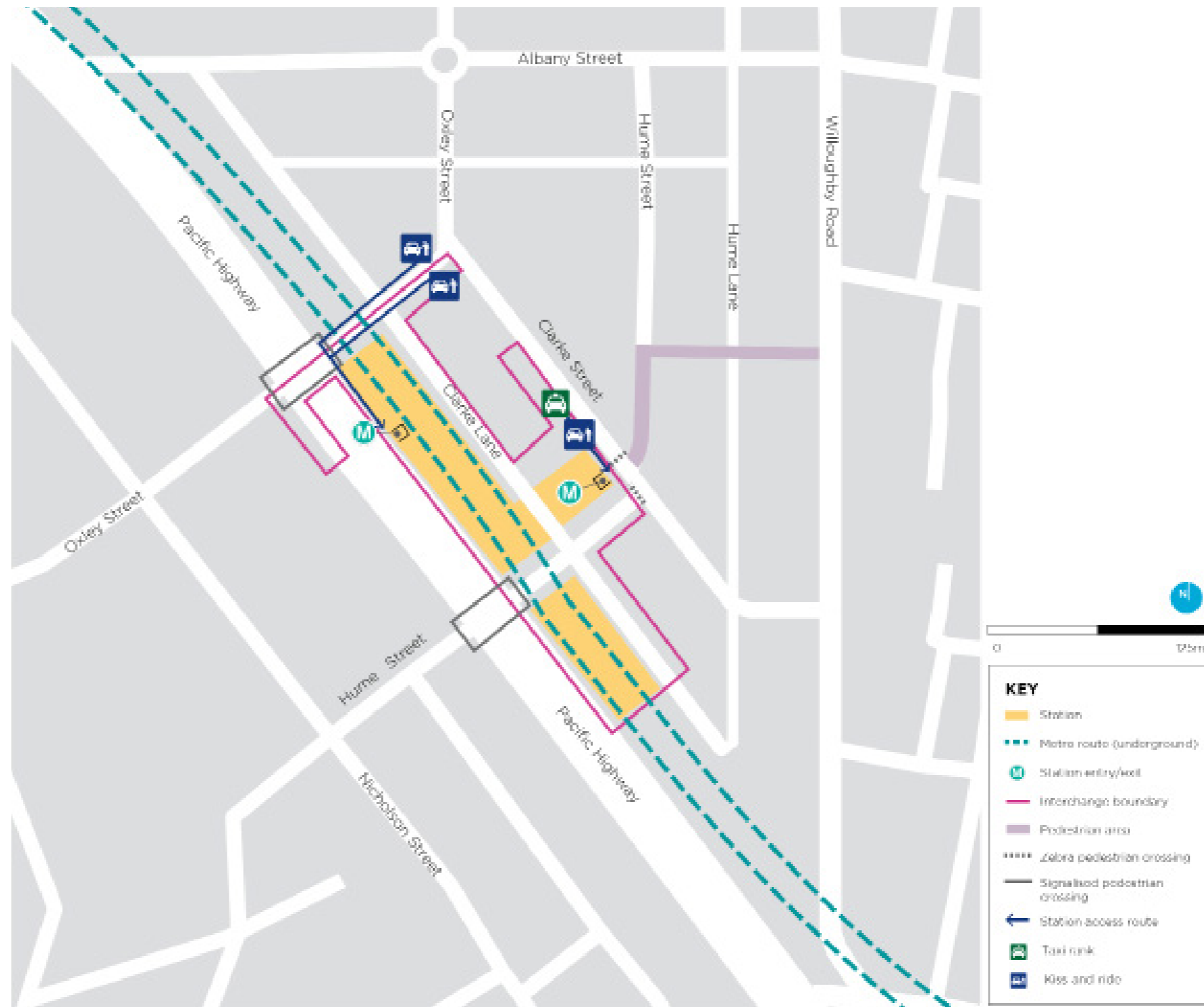


Crows Nest Station - bus interchange and transfer requirements

Crows Nest – bus interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<p>A number of bus routes operate outside of Crows Nest Station along Pacific Highway and Willoughby Road. These routes primarily serve the northern suburbs. The primary bus stops within and near the interchange are:</p> <ul style="list-style-type: none"> • Pacific Highway – one stop, northbound, south of Oxley Street (relocated from south of Hume Street). • Pacific Highway – one stop, southbound, north of Hume Street. • Willoughby Road – one stop, northbound, south of Holtermann Street. • Willoughby Road – one stop, southbound, south of Holtermann Street.
Future Station Integration	
Bus stop location principle	Bus services shall be easily and visibly accessible from the station entrance, located as close as feasible to the gateline.
Bus bay principle	Bus bays provided or modified by the project will be designed in accordance with relevant Australian Standards, Austroads Guidelines and NSW Government Technical Directives.
Transfer to and from bus principle	Customers will be able to transfer between bus stops at metro station entries using existing footpaths and new pedestrian through-site links. Where necessary, improvements will be made to signage, crossings and wayfinding to ensure an easy customer transfer.
Safe, convenient, efficient and sufficient access and transfer outcome	<p>Safe, convenient, efficient and sufficient pedestrian access and transfer to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> • Customers Urban design and road design reports. • Pedestrian modelling reports. • A road safety audit. • Technical notes supporting Works Authorisation Deeds (WADs). • Crows Nest Station Design and Precinct Plan (SDPP). <p>Transport and pedestrian analyses were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> • Sufficient public domain and footpath space to accommodate pedestrian flows from the stations to bus stops, including queuing space at the bus stops. • Controlled (signalised), direct paths of travel along key pedestrian desire lines to bus interchange areas on Pacific Highway. • Pedestrian (zebra) crossings on Clarke Street and Hume Street to facilitate transfer to and from bus stops on Willoughby Road. • Where necessary, improvements will be made to signage and wayfinding to ensure an easy connected transfer through improved provision of information. Customers will also be prevented from making uncontrolled crossings of Pacific Highway. • Weather shelter at bus stops. <p>All outcomes were designed to comply with relevant legislation and guidelines such as the Disability Discrimination Act, DSAPT and Austroads guides.</p>
Transfer to and from bus (overnight)	Regular bus stops on the Pacific Highway will be used for overnight bus operations.
Changes to bus stops/routes provision	<ul style="list-style-type: none"> • The northbound bus stop on the Pacific Highway, currently south of Hume Street, will be moved south of Oxley Street to facilitate access to the station. • Reinstate the southbound bus stop on Pacific Highway, north of Hume Street.
New bus stops/routes provision	Pacific Highway - one stop, northbound, south of Oxley Street.

7.4 Crows Nest - vehicle drop-off interchange and transfer requirements



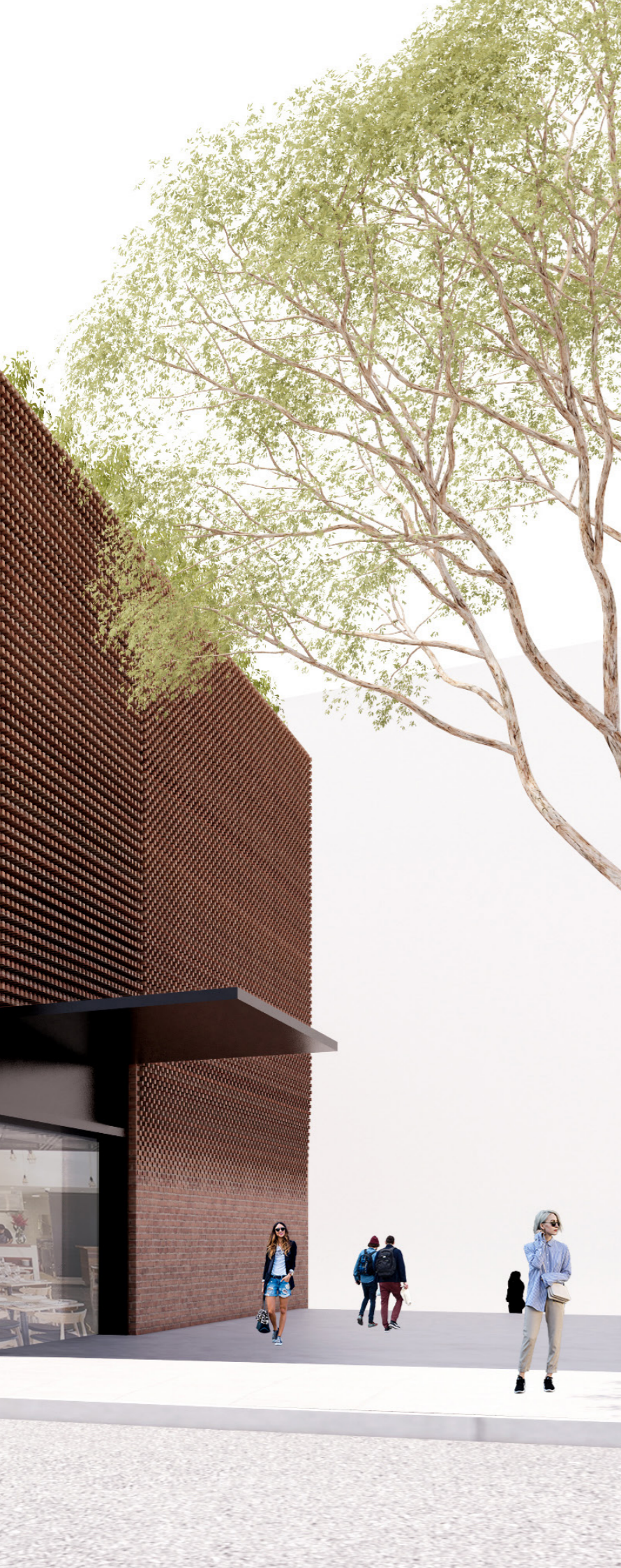
Crows Nest Station - vehicle drop-off interchange and transfer requirements

Crows Nest – vehicle drop-off interchange and transfer requirements continued

Item	Description
Current state	
Current levels of access and service	<p>There are no existing taxi ranks near the station.</p> <p>There are no existing kiss-and-ride or park-and-ride facilities.</p>
Future Station Integration	
Safe, convenient, efficient and sufficient access and transfer	<p>Safe, convenient, efficient and sufficient pedestrian access and transfer to and from the station and between transport modes was developed through the design process and supported through various documents including:</p> <ul style="list-style-type: none"> • Customers Urban design and road design reports. • Pedestrian modelling reports. • A road safety audit. • Technical notes supporting Works Authorisation Deeds (WADs). • Crows Nest Station Design and Precinct Plan (SDPP). <p>Transport and pedestrian analyses were used to provide the high quality provisions identified above, which enable the following outcomes:</p> <ul style="list-style-type: none"> • Sufficient public domain and footpath space to accommodate pedestrian flows from the stations to taxi and kiss-and-ride spaces, including queuing space. • Controlled (signalised) and direct paths of travel along key pedestrian desire lines to kiss-and-ride interchange areas on Oxley Street. • Further pedestrian safety treatments will be implemented around the station precinct such as pedestrian fence and landscaping. This will provide safe transfer between modes. • No road crossings required from taxi to the station entrance. • Where necessary, improvements will be made to signage and wayfinding to ensure an easy connected transfer through improved provision of information. <p>All outcomes were designed to comply with relevant legislation and guidelines such as the Disability Discrimination Act, DSAPT and Austroads guides.</p>
Transfer to and from taxi	A new taxi rank (2 spaces) will be provided on the western side of Clarke Street, north of the station entrance.
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	<p>Kiss-and-ride bays will be provided on:</p> <ul style="list-style-type: none"> • The northern side of Oxley Street between Clarke Lane and Clarke Street, west of the metro station. • The southern side of Oxley Street between Clarke Lane and Clarke Street, west of the metro station. <p>Kiss-and-ride bay will be provided on:</p> <ul style="list-style-type: none"> • The western side of Clarke Street, between Hume Street and Oxley Street, north of the metro station.
Kiss-and-ride zone design	The dimensions of kiss-and-ride spaces shall comply with TfNSW and Australian Standards and Guidelines.
On-street parking	<p>On-street parking will be removed to allow for introduction of a separated cycleway through Hume Street.</p> <p>On-street parking on Pacific Highway will be removed outside of metro entrance to allow for emergency vehicle access and bus zone.</p>



CROWS NEST

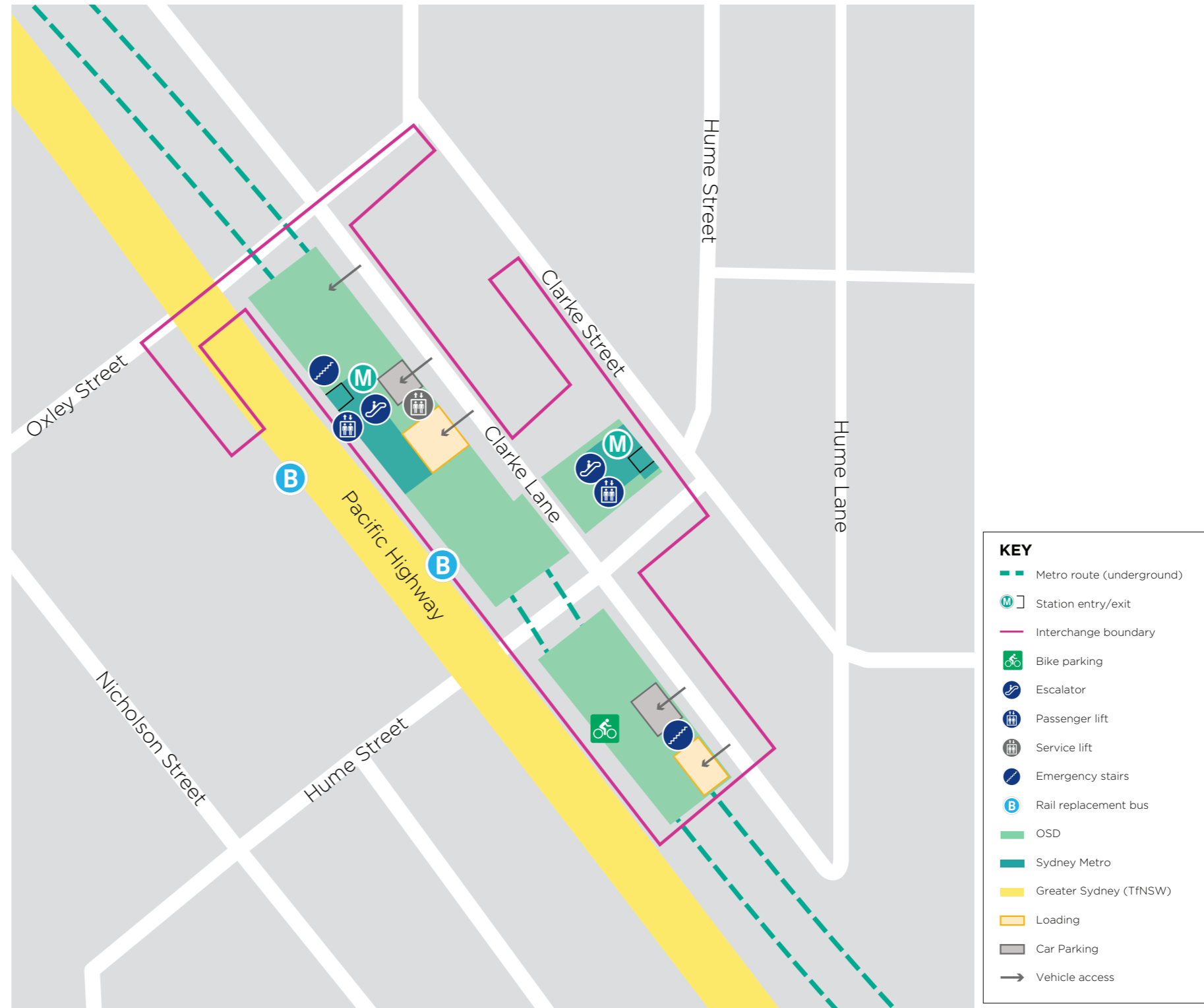


8.0 Crows Nest – operations, maintenance and management provisions

Crows Nest Station entrance, looking north from Hume Street across Pacific Highway

8.0 Crows Nest – operations, maintenance and management provisions

The spatial plan of the Crows Nest 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.



Crows Nest Station – operations, maintenance and management provisions

Crows Nest – operations, maintenance and management provisions continued

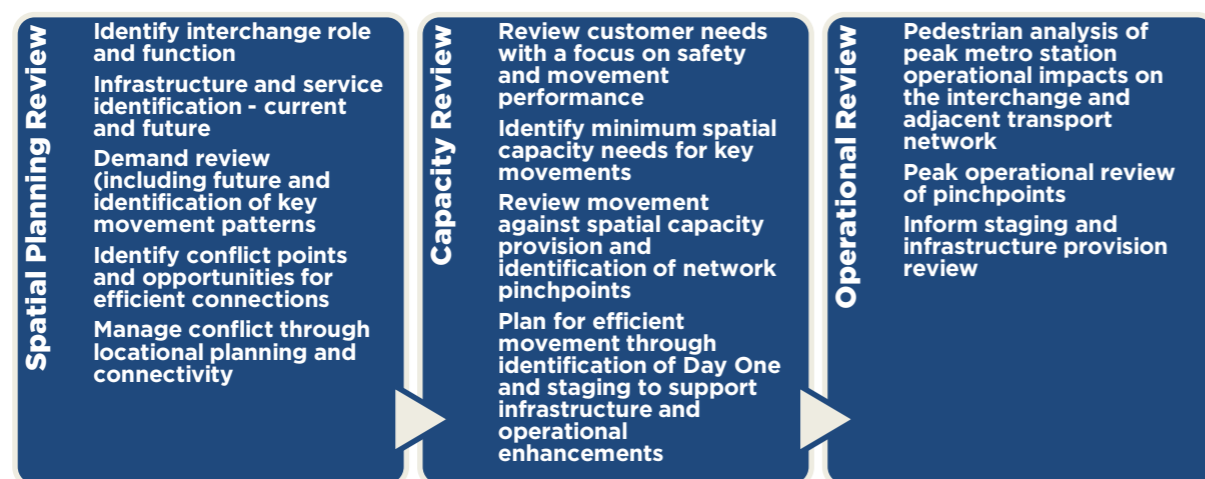
8.1 Reviews and assessment process

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 operational provisions

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

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

The table 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 zone on Pacific Highway outside metro station to be managed to accommodate access requirements of 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 for possessions, degraded operations and incidents	Rail replacement buses will use the existing and relocated bus zones on the Pacific Highway.
Delivery access (retail and operational)	Will be within the over station development – see reference design for provision.
Mail zone (Australia Post) requirements	Will be relocated to Pacific Highway or Clarke Street, corner of Hume Street, if required.
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.

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

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

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





9.0 Modal hierarchy review

Crows Nest Station concourse

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 Crows Nest 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 Crows Nest Station.

Mode	Provision	Consideration and Benefit
Pedestrian	<ul style="list-style-type: none"> • New signalised pedestrian crossing on the north-western leg of Pacific Highway and Oxley Street. • Widened signalised pedestrian crossings on the north-eastern and south-eastern legs of Pacific Highway and Oxley Street. • Widened signalised pedestrian crossing on the north-eastern leg of Pacific Highway and Hume Street. • New pedestrian zebra crossings on the north-western and south-western legs at the intersection of Clarke and Hume streets. • Building setbacks along Pacific Highway, Oxley Street and Hume Street. • Dedicated pedestrian link connecting Willoughby Road to the station precinct. • Clarke Lane shared zone. • Implement a changed traffic configuration from a two-way operation to a one-way westbound operation on Hume Street between Pacific Highway and Clarke Street. 	<ul style="list-style-type: none"> • The new pedestrian crossings align with the interchange modal hierarchy principles in prioritising pedestrians. The crossings will provide efficient, effective and safe access to Crows Nest Station precinct from the northern and southern side. • The building setbacks along the metro frontages are considered as an effective method to assist in pedestrian movement. • Pedestrian links assist in making interchange accessible by directly integrating the station with its surroundings. Connecting Willoughby Road will enhance the stations integration with the highly vibrant retail and commercial surroundings to the north. Pacific Highway currently stands as a barrier for pedestrian accessibility to the station concourse. • Pedestrian modelling has been assessed to 2036 and is of an acceptable level of service. • The changed traffic configuration of Hume Street will enable OSD construction, safe movement of pedestrians and cyclists, minimise traffic circulating the precinct, and to support future placemaking opportunities.
Bike	<ul style="list-style-type: none"> • 146 Class B (weather protected bike parking facility) bike spaces located south of the station entry on Pacific Highway, 40 metres south of Hume Street and cycleway. • 30 Class C bike spaces located on footpaths near stations entrances. • A further 50 spaces will be safeguarded. • On-road cycleway on Hume Street between Clarke Street and Nicholson Street. 	<ul style="list-style-type: none"> • The bike parking provision at Crows Nest Station satisfy the city station bike parking hub strategy, and are aligned with customer demand and encourages cycling as a transit mode to access the station. • The bike parking can be easily accessed by cyclists from both northern and southern sides of the station via the existing cycle network on Clarke Street and Nicholson Street, which will be linked by the new cycleway on Hume Street. This cycleway will be facilitated through the removal of on-street parking. • These provisions support, promote and improve active transport as a primary mode of access, fully aligning with the interchange modal hierarchy principles. • Forecast mode access for 2036 has indicated the bicycle facilities maintain an adequate level of service, subject to Condition E98 review and audit.
Bus	<ul style="list-style-type: none"> • Movement of northbound bus stop on Pacific Highway south of Hume Street to south of Oxley Street. • Bus provisions along Pacific Highway and Willoughby road are retained inclusive of overnight operations. • Increased length of bus zones to cater for future bussing operations. 	<ul style="list-style-type: none"> • Relocating the bus stop located opposite the station entry will prevent uncontrolled crossings of Pacific Highway by providing an easily accessible connection to the station. • The bus stop along Willoughby Road seamlessly interchange with the pedestrian link from Willoughby Road directly to the station precinct entry at Clarke Street, providing a highly intuitive design, that is accessible and well connected. The bus zone provision was recommended by TfNSW and implemented by Sydney Metro.
Taxi and kiss-and-ride	<ul style="list-style-type: none"> • On street taxi rank at the western side of Clarke Street. • Kiss-and-ride bays on Oxley Street between Clarke Lane and Clarke Street. • Kiss-and-ride bay on western side of Clarke Street. • Removal of on-street parking on Pacific Highway adjacent to station entry for emergency vehicle access and bus zone. 	<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. The provisions are located on the western entrance of the station entry on Clarke Street. Provisions will be delivered to ensure a fully accessible path. The locality aligns with the modal hierarchy, minimising conflict with pedestrians and cyclists, prioritising active and efficient transit modes.



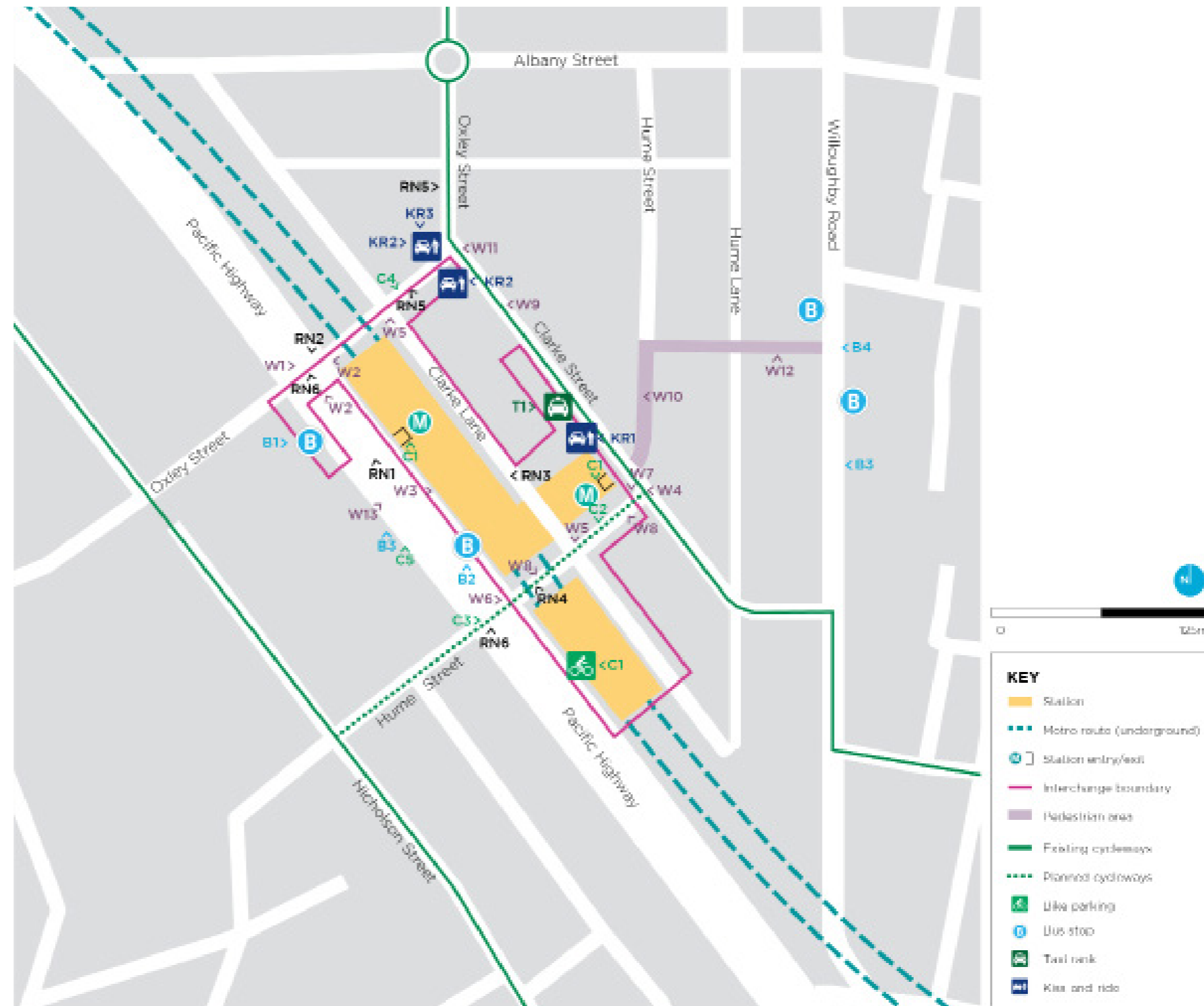
10.0 Crows Nest – actions

Crows Nest Station Pacific Highway facade

10.0 Crows Nest – actions

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

Section 10.1 and Section 10.2 detail the committed changes and enhancements to the station and interchange facilities, which are separated into two clear implementation plans. Section 10.1 contains the committed implementation plan for Sydney Metro City & Southwest project at Crows Nest 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.



Crows Nest Station – actions

10.1 - Crows Nest Station – City & Southwest Delivery & Implementation Program

This IAP sets out the intended design and operating outcomes required for customers to achieve an easy, safe and seamless transfer between modes at Crows Nest 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	Sydney Metro	2021-2024
W2	Sydney Metro	2021-2024
W3	Sydney Metro	2021-2024
W4	Sydney Metro	2021-2024
W5	Sydney Metro	2021-2024
W6	Sydney Metro	2021-2024
W7	Sydney Metro	2021-2024
W8	Sydney Metro and Over station developer	2021-2024
W9	Sydney Metro and North Sydney Council	2021-2024
Cycling		
C1.1	Sydney Metro	2024
C1.2	Sydney Metro	2024
C1.3	Sydney Metro	2024
C2	Sydney Metro	2024
C3	Sydney Metro	2024
Bus		
B1	Sydney Metro	2024
B2	Sydney Metro	2024
Taxi		
T1	Sydney Metro	2024
Kiss-and-ride		
KR1	Sydney Metro	2024
KR2	Sydney Metro	2024
KR3	Sydney Metro and North Sydney Council	2024-2025

Crows Nest Station – City & Southwest Delivery & Implementation Program continued

Action	Delivered by	Timing (start to finish)
Management and maintenance		
OM1 Identify operations, maintenance and management provisions for assets within the interchange and identify responsibility for operation and maintenance.	Sydney Metro	2024
Road network modifications		
RN1 Provide a median fence on Pacific Highway between intersections of Hume Street and Oxley Street, and kerbside hedge treatment along Pacific Highway (eastern side) between Oxley Street and Hume Street (north of the bus zone) to minimise illegal drop-off and pick-up activities.	Sydney Metro and Greater Sydney Division	2024
RN2 Ensure red arrow protection for pedestrians is maintained at the signalised intersections of Hume Street and Oxley Street to separate turning vehicles from Pacific Highway (southbound) into Oxley Street (eastbound), and Pacific Highway (southbound) into Hume Street (eastbound).	Sydney Metro and Greater Sydney Division	2024
RN3 Implement a 10 kilometres per (10km/h) shared zone on Clarke Lane between Hume Street and Oxley Street.	Sydney Metro and Greater Sydney Division	2024
RN4 Remove on-street parking on Hume Street as required for separated cycleway as well as on Pacific Highway between Hume Street and Oxley Street	Sydney Metro and Greater Sydney Division	2024

10.2 - Crows Nest Station – Other Implementation Plans





A number of items are to be delivered by stakeholders as part of other projects or have been identified for further investigation as a means to achieve additional improvements beyond the Sydney Metro City and Southwest project at Crows Nest 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 St Leonards/Crows Nest precinct. These items are complementary and their delivery is not required for the operation of Sydney Metro at Crows Nest Station.

Due to their proximity to Crows Nest 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			
W10	Pedestrianise Hume Street north of Clarke Street to accommodate forecast pedestrian activity and facilitate access to Willoughby Road as part of the Hume Street park upgrade project.	North Sydney Council	2021-2024
W11	Consider providing kerb extensions at the intersection of Clarke Street and Oxley Street to support place making and public domain outcomes.	North Sydney Council	2024 onwards
W12	Deliver a new pedestrian link between Hume Street and Willoughby Road to support place making and urban domain outcomes.	North Sydney Council	2021-2024
W13	Investigate treatments that will enable and deliver place making and urban domain outcomes for the Pacific Highway as identified in the St Leonards/Crows Nest 2036 plan.	Infrastructure and Place and Greater Sydney divisions	2024 onwards
Cycling			
C4	Investigate cycle improvements on Oxley Street.	Infrastructure and Place	2024 onwards
C5	Investigate Future Transport principle bicycle network improvements (Pacific Highway Corridor).	Greater Sydney Division	2026 onwards
Bus			
B3.1	Review current and future bus route service provision to support a safe and efficient modal transfer between buses and Sydney Metro as part of ongoing Integrated Servicing Planning.	Greater Sydney Division	2024
B3.2	Implement recommended bus route and timetable changes identified from Action B2.1.	Greater Sydney Division	2024 onwards
B4	Investigate the provision of an accessible connection between the station and the bus stops on Willoughby Road.	North Sydney Council	2021-2024
Road network modifications			
RN5	Extend the High Pedestrian Activity Area 40 kilometres per hour (40km/h) speed zone on Clarke Street from the intersection at Oxley Street west to the Pacific Highway and north to Albany Street.	North Sydney Council and Greater Sydney Division	2024
RN6	Investigate signal timing optimisation to maximise pedestrian movement outcomes along and across the Pacific Highway corridor.	Greater Sydney Division	2024 onwards
RN7	Investigation and implement wider local traffic management treatment and measures as identified in the St Leonards/ Crows Nest 2036 Plan.	Greater Sydney Division and Infrastructure and Place	2024 onwards

Contact us

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

Fill Cerone
Director of Sustainability, Environment and Planning
Sydney Metro
PO Box K659
HAYMARKET NSW 1240

Attention: Dylan Jones – Senior Environment Manager

20/11/2023

Subject: Sydney Metro City and Southwest (SSI 7400) Chatswood to Sydenham – Crows Nest ISD – Interchange Access Plan – Ver 5.1

Dear Mr Cerone

Thank you for submitting the Crows Nest Station Interchange Access Plan, (IAP) rev 5.1, dated October 2023 to the Planning Secretary for approval as required by condition E92 for the Sydney Metro City and Southwest Chatswood to Sydenham project.

I note the SDPP:

- contains only minor updates and updates regarding the traffic configuration on Hume Street
- has been prepared in consultation with the TTLG and North Sydney Council;
- has been reviewed by Sydney Metro and no issues have been raised with the Department;

Accordingly, as nominee of the Planning Secretary, I approve the IAP (ver 5.1, October 2023) under condition E92 of SSI 7400.

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

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

If you wish to discuss the matter further, please contact Lincoln de Haas at Lincoln.deHaas@dpie.nsw.gov.au

Yours sincerely



Grant Rokobauer

Acting Team Leader – Rail
Infrastructure Management

As nominee of the Planning Secretary