Proposed Mixed Use Development
Doran Drive Precinct – 2 Mandala Parade, Castle Hill
Green Travel Plan

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1. Overview

1.1 Background and Introduction

Varga Traffic Planning has been engaged to prepare a *Green Travel Plan (GTP)*, to accompany a State Significant Development Application (SSDA) to the Department Planning and Environment (DPIE) to promote sustainable travel choices for employees, residents and visitors of the proposed Doran Drive Precinct development.

The Hills Showground Station Precinct is one of eight station precincts along the Sydney Metro Northwest Places corridor along the Metro North West Line.

Landcom on behalf of *Sydney Metro* lodged a concept proposal as part of a State Significant Development (SSD) application – SSD 9653, which was approved by the Executive Director, Industry and Key Sites, as delegate to the Minister for Planning and Public Spaces in January 2021.

The approved concept of the Hills Showground Station Precinct includes:

- three development precincts (Precinct West, Doran Drive Precinct and Precinct East)
- building envelopes of varying heights between three to 20 storeys (12m to 68m)
- a maximum total gross floor area (GFA) of 166,486m², consisting:
    - a maximum residential GFA of 152,546m²
    - a maximum non-residential GFA of 13,940m²
- a maximum of 1,620 dwellings (including a minimum 5% affordable housing), of which a total of 431 dwellings are within the Doran Drive Precinct – i.e. the subject site
- a maximum of 1,957 cars and 705 bicycle spaces

- public domain improvements, public open space and a new road

- concept subdivision of Lot 56 DP 1253217 (Precinct East).

This Green Travel Plan (GTP) has been prepared on behalf of *Deicorp Projects Showground Pty Ltd*, in accordance with The Hills Shire Council's requirements for the 'Doran Drive Precinct' – Lot 55 DP 1253217, involving a mixed-use development to be located within the *Hills Showground Station Precinct* in Doran Drive, Castle Hill.

The Secretary's Environmental Assessment Requirements (SEAR's) requires a GTP to be prepared that outlines the proposal to encourage sustainable travel choices and details programs for implementation for the subject site – *Doran Drive Precinct*.

This GTP has been prepared to address part of Requirement 10 set out in the SEARs, which reads:

"measures to promote sustainable travel choices for employees, residents or visitors, such as minimising car parking provision, encouraging car share and public transport, cycling and walking, implementing a green travel plan and providing end of trip facilities."

As such, the implementation of the Green Travel Plan for the 'Doran Drive Precinct' is intended to be part of a suite of responses to ensure that sustainable travel behaviours are encouraged for the future residents, employees and visitors of the abovementioned mixed use development.

The information in this GTP can be disseminated to future residents and employees via building management, strata meetings, community newsletters and to staff in employment information packs, tenancy agreements, and staff email/noticeboards.

1.2 Green Travel Plan Objectives

The purpose of the Green Travel Plan is to set site-specific actions and influence the travel behaviour of the end users prior to it being occupied. A number of objectives are introduced to manage travel demands, and are listed as follows:

- Reducing dependence on private cars

- Improving pedestrian and cycling facilities
- Promoting public transport and car sharing
- Reducing congestion in the local area

This Green Travel Plan encourages the use of transport modes that have a lower environmental impact, for example sustainable transport modes including walking, cycling, public transport and better management of car use.

The use of sustainable modes of transport will provide a range of public benefits including:

- improved personal health
- improved community connectivity
- reduced traffic congestion
- reduced competition for car parking
- reduced noise and air pollution
- potential cost savings.

This Green Travel Plan therefore aims to provide a package of coordinated strategies and actions to facilitate a shift towards sustainable modes of transport and reduce private vehicle trips. To ensure that the Green Travel Plan meets its intended objectives, it has incorporated guidelines set-out within City of Sydney Council's, *'Guide to Travel Plans'*.

From the above review, the essential elements applicable to this GTP include:

- **Site audit and data collection:** A desktop audit has been undertaken in order to identify and document the existing issues and opportunities relevant to the site and its accessibility, particularly by sustainable forms of transport. Opportunities to improve amenity, incentivise non private vehicle usage and remove barriers to the use of these sustainable transport modes are then dealt with under the site-specific measures later detailed in this report.

- **Actions:** This GTP provides a strategy to facilitate a shift towards sustainable forms of transport and reduce private vehicle travel by providing restricted car parking provision, with a large number of alternative sustainable options available.

- **Promoting and marketing:** an information/welcome package will be provided upon occupation of the residency/tenancy, with a Transport Access Guide (TAG) included, informing the end users of the available sustainable forms of transport located in the vicinity of the site.

- **Commitment of resources:** Cycling to/from the site would be promoted with secure off-street bicycle parking facilities available within the development, located in an easily

accessible area. The security and caretakers of the development would inform the end users of these facilities and ensure proper maintenance of the area to encourage further use.

- **Governance Support:** The development of relationships between the Proponent and various stakeholders (such as Council, RMS and TfNSW) will assist in delivering improved transport options.

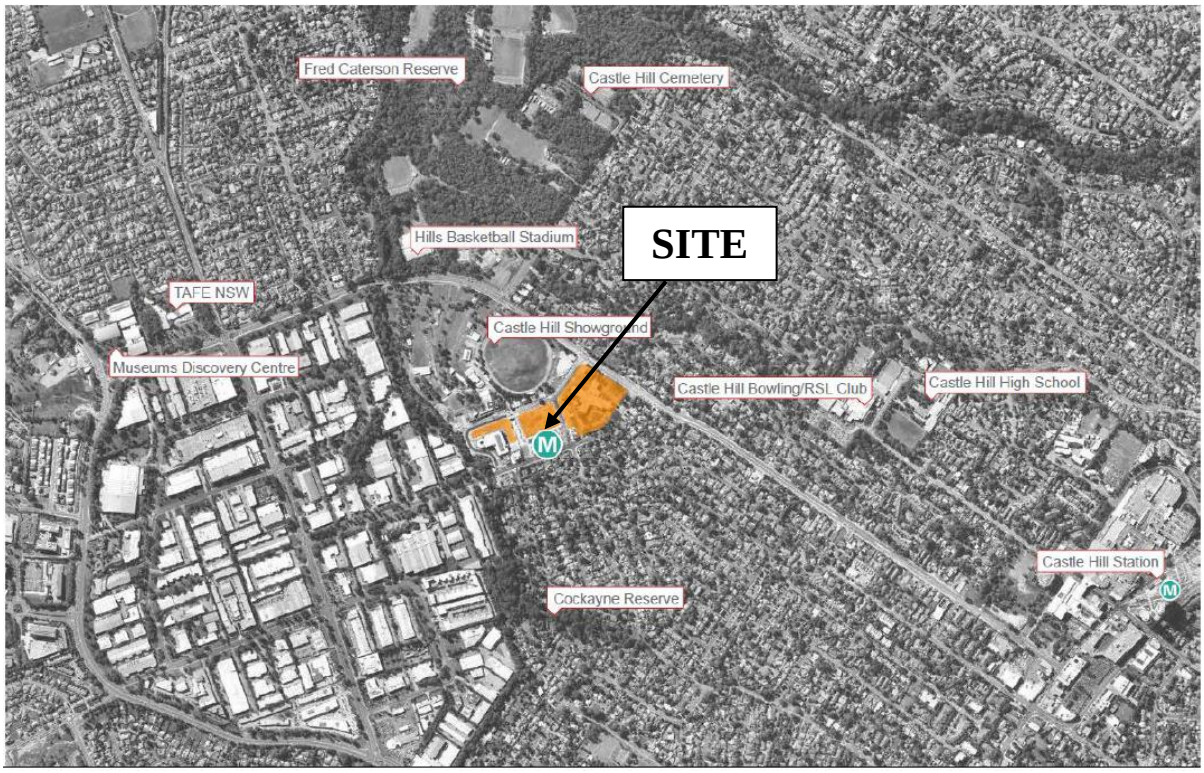
2. Site

2.1 Location

The subject site is bounded by Doran Drive, Mandala Parade, Andalusian Way and De Clambe Drive and forms part of the *Hills Showground Station Precinct* located within The Hills Local Government Area (LGA), as indicated in the aerial photograph of the site and its surroundings below.

The site is known as the 'Doran Drive Precinct' and forms part of the three development lots located adjacent to the Hills Showground Station which opened in 2019. Hills Showground Station is south of the site on the opposite side of Mandala Parade and is one of eight station precincts along the new Metro North West Line (MNWL) urban corridor.

MNWL connects the site to key employment and retail centres located within the Hills LGA, including Castle Hill to the east, Norwest Business Park to the west and Rouse Hill Town Centre to north-west, as shown in the map below.

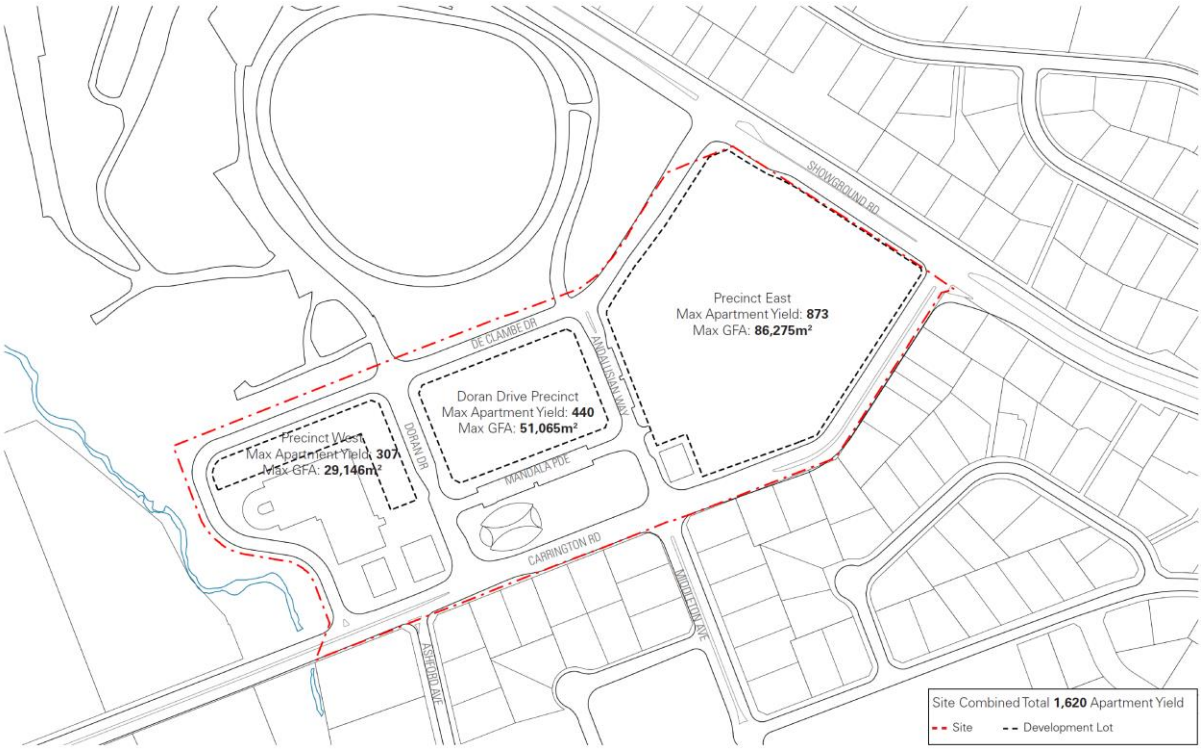


Hills Showground Station Precinct (highlighted) and its surroundings.

2.2 Approved Concept of the Hills Showground Station Precinct

The concept application for the Hills Showground Station Precinct was approved on 29th January 2021 and related to the three development lots that were created by the previous subdivision of Lot 140 DP 1180973. The location of these three development lots within the precinct is demonstrated in the figure below.

Figure 2.1 Approved site and development lots plan



Source: Cox Architecture

A Concept Masterplan was prepared for the precinct as part of the concept application, as shown in the figure on the following page, which demonstrated the general layout of the buildings, public open space provision and landscaping areas. The concept was made possible by the rezoning of the Hills Showground Station Precinct, which occurred as part of the Showground Planned Precinct Planning Proposed prepared by the DPIE.

Condition C3 of the development consent for the approved concept application requires that future development applications must demonstrate that buildings are contained within the building envelopes, consistent with the plans prepared by *Cox Architecture* that were approved as part of the concept application.

Figure 2.2 Concept Masterplan

Source: Cox Architecture

Urban Design Guidelines to guide future development were also prepared by *Cox Architecture* in partnership with *Oculus*, which were submitted and endorsed as part of the concept approval are reflected within the UDGs that have been prepared. Condition C5 of the development consent for the concept application also requires that future development applications for the three development lots are to address compliance with the endorsed UDGs.

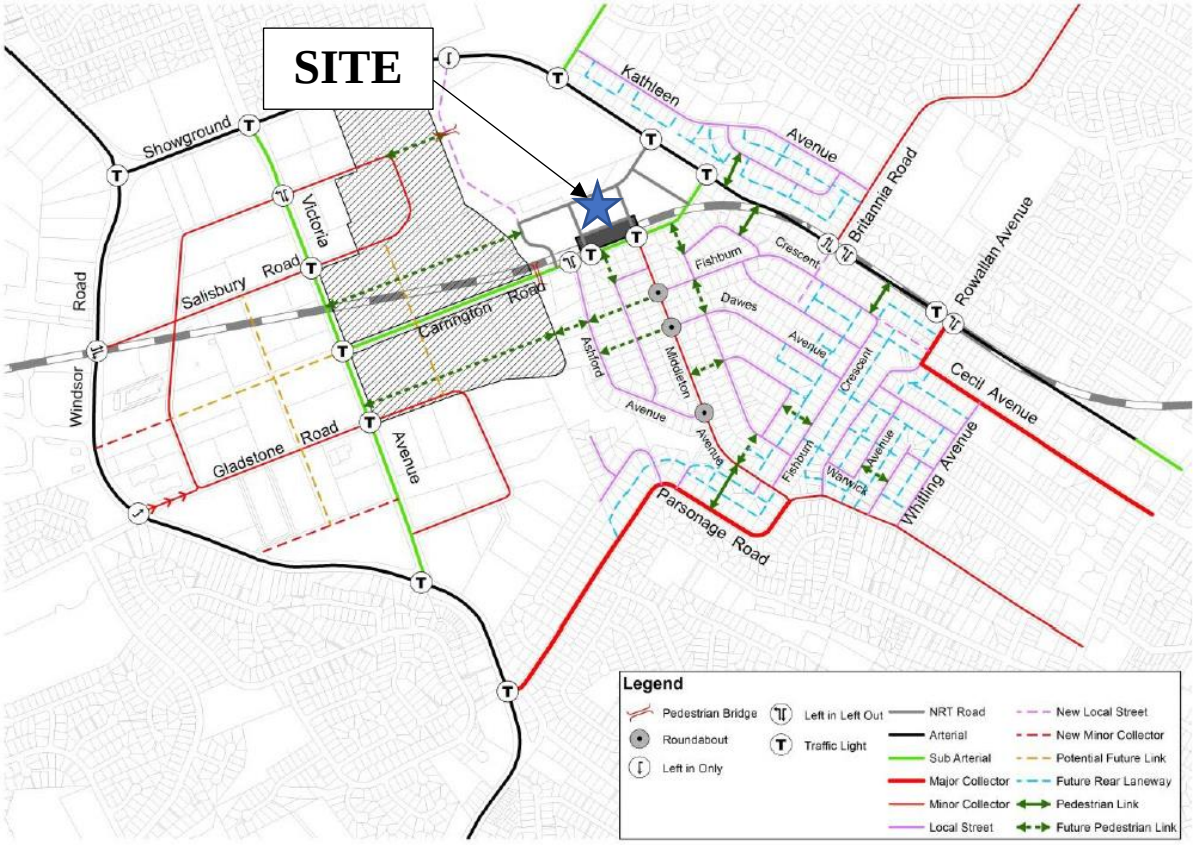
2.3 Showground Station Planned Precinct Area

Showground Station Precinct DCP (Part D Section 19) forms part of The Hills DCP 2012. The purpose of the DCP is to guide the future development of the Showground Station Precinct by identifying the vision, development principles, key elements and indicative structure for the future development of the precinct.

Relevant to this Green Travel Plan is the Precinct Road Hierarchy Map and Pedestrian & Cycle Network Map which promotes sustainable public transport integration of the precinct in order to achieve high quality urban design outcomes.

Plan extracts from the *Showground Station Precinct DCP* are reproduced on the following page, which include locations of the various pedestrian links through the precinct.

Figure 2.2: Indicative Street Network and Road Hierarchy Map



Source: Showground Station Precinct DCP (September 2018)

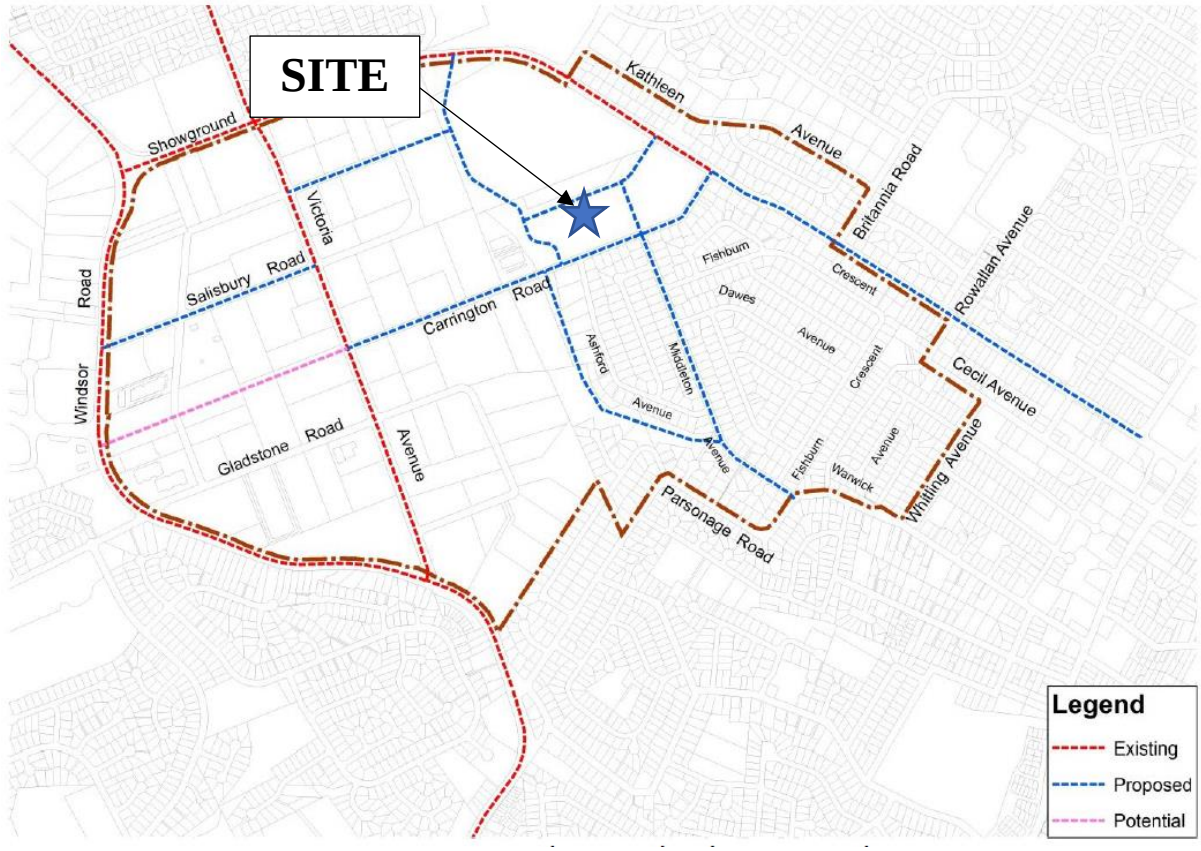
As mentioned in the foregoing, the site is located directly opposite the Hills Showground Station – Mandala Parade site frontage, with a bus interchange comprising bi-directional bus stops located along the Doran Drive site frontage (as detailed in Chapter 4 of this report).

The site is therefore classified as a Transit Oriented Development (TOD) as defined by the DCP and is supported by good access to services, community facilities and transport.

A key goal of TODs is to increase the number of people who walk, cycle or use public transport as their main form of transport. This is supported by the substantial bicycle parking provision as well as paved footpath areas linking to the entrance of the Hills Showground Station.

In this regard, it is noted that TODs have densities that result in increased patronage of public transport and provide more opportunities for people to live near the station and reduce their reliance on private vehicles, which is in accordance with the objectives of this GTP as well as the Showground Station Precinct DCP.

Figure 2.3: Existing and Proposed Cycleway Network



Source: Showground Station Precinct DCP (September 2018)

2.4 Proposed Development

The development comprises a large format retail/commercial component, including a supermarket located on the ground and upper floor levels of the development. A total of up to 431 dwellings are also located on the above levels over a six level basement, as follows:

- six basement levels, including three levels of retail/commercial/supermarket parking areas

- dedicated undercover at-grade loading dock located in the south-eastern corner of Level 01, which includes 3 loading bays with dock levellers, all capable of accommodating 12.5m HRV trucks

- retail/commercial tenancies within the podium levels of the development with a cumulative floor area of approximately 10,935m^2, allowing retail activation of the precinct

- a large supermarket with deli/bakery/liquor sections, with a retail floor area of approx. 4,270m^2

- a total of 431 residential apartments over 20 levels as follows:

1 bedroom apartments:	77
2 bedroom apartments:	311
3 bedroom apartments:	43
TOTAL APARTMENTS:	**431**

Loading / servicing for the proposed development will be undertaken by a variety of commercial vehicles ranging from courier vans and small trucks up to and including 12.5m long large rigid (HRV) trucks. It is expected that given the size of the retail tenancies, the majority of the deliveries associated with the specialty shops will typically comprise of courier vans and utes up to and including 6.4m long SRV trucks. The supermarket however will likely receive their deliveries via medium and large trucks up to and including 12.5m in length.

A truck turntable is provided within the loading dock to allow these trucks to enter and exit the loading dock whilst travelling in forward gear at all times. All of these trucks can access each of the loading bays *independently*.

Vehicular access to the loading dock is provided via a service vehicle driveway located at the southern end of the Andalusian Way site frontage.

3. Existing Transport Planning Context

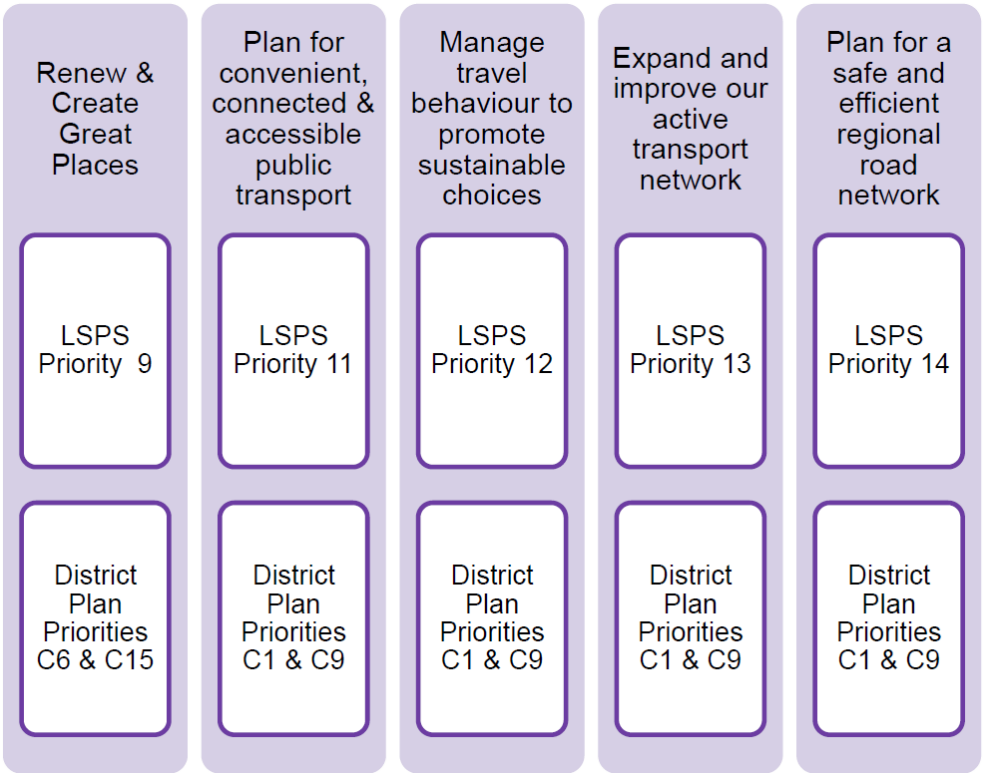
3.1 Strategic Directions

The Hills Shire Council has prepared an Integrated Transport & Land Use Strategy (2019) to establish the basis for strategic planning of the traffic, transport and movement network to 2036. The overall aim is to deliver a cohesive transport network that meets the needs of the existing and future population by providing a framework for how growth will be managed to 2036.

To achieve the aspiration of a 30-minute City as defined in the Greater Sydney Region Plan it is critical to integrate transport, infrastructure and land-use planning.

The Integrated Transport and Land Use Strategy complements the Hills Future Community Strategic Plan and will contribute to the themes of building a vibrant community and prosperous economy, shaping growth and delivering and maintaining infrastructure.

The Strategy is framed around five key planning priorities contained in the Local Strategic Planning Statement (LSPS) that respond to priorities and actions in the Central City District Plan. These strategic priority measures are summarised in the table below.



The responsibility for the provision of transport planning in The Hills Shire is shared between Council and the State government.

The shared responsibility for transport means that in delivering the Strategy, Council has direct responsibility for some transport actions and policies, whilst in other instances it contains advocacy actions for issues beyond Council's jurisdiction.

As such, a summary of other relevant transport planning policy and their objectives are also summarised in the tables below.

Local Government

Policy/Strategy	**Key Aims/Objectives/Goals**
Hills Future 2036 Local Strategic Planning Statement	The Local Strategic Planning Statement (LSPS) communicates the long-term land use strategy for The Hills Shire between 2016 and 2036. The Strategy sets out planning priorities and corresponding actions to be delivered over the next 5 years that will provide for housing, jobs, parks and services for our growing population.
The Hills Corridor Strategy	The Hills Corridor Strategy identifies the Metro North West Line as a significant transport project that enhances the liveability of The Hills Shire. The objectives of The Hills Strategy align with 'A Plan for Growing Sydney' and provides a detailed response to how the citywide vision can be effectively delivered at the local level.
Showground Station Precinct DCP (Part D Section 19)	The DCP developed to guide the future development of the Showground Station Precinct by identifying the vision, development principles, key elements and indicative structure for the future development of the precinct. It seeks to ensure the orderly, efficient and environmentally sustainable development of the precinct to achieve high quality urban design outcomes. The DCP has been developed with consideration to the Apartment Design Guide, which sets minimum requirements for compliance and builds on these same principles to facilitate the delivery of a distinct local character that aligns with Council's vision for the Showground Station Precinct. To achieve the vision, future development within the Precinct must address the following key principles and strategic priorities of Council: - Transit oriented development involves the creation of compact, walkable, mixed-use communities around public transport nodes - The need to locate high density housing in centres with good access to services, community facilities and transport is well recognised and will support the on-going operation of the Metro North West Line. Centres should provide a mixture of residential, retail and commercial activities that are centred around transport.

NSW State Government

Policy/Strategy	Key Aims/Objectives/Goals
Future Transport Strategy 2056	Future Transport 2056 is an overarching strategy, supported by a suite of plans to achieve a 40-year vision for our transport system. The Strategy aims to increase the mode share of public transport services and reduce the use of single occupant vehicles. The Strategy also considers how active transport can play more of a role in our everyday journeys through providing better facilities and more extensive network of bicycle paths and safer networks for cyclists and pedestrians where they share road space with vehicles.
State Infrastructure Strategy	The strategy sets out the government priorities for the next 20 years, and combined with the Future Transport Strategy 2056, the Greater Region Plan and the Regional Development Framework, brings together infrastructure investment and land-use planning for our cities and regions. Sydney's Rapid Transit has been identified as a strategic priority and will extend the Sydney Metro Northwest under Sydney Harbour, through the Sydney CBD and west to Bankstown.[1] This will enable residents and workers in The Hills Shire to rely on public rail transport for access to the CBD as well as other major destinations and centres across Sydney. As such, the site which directly adjoins the new Sydney Metro is well placed to benefit from current capacity without the need for significant additional expenditure.
The Central City District Plan	The vision for the Central City District is to help residents have quicker and easier access to a wider range of jobs, housing types and activities as part of the transformation of their District. The vision will improve the District's lifestyle and environmental assets. The plan covers Blacktown, Cumberland, Parramatta and The Hills Local Government Areas and is a 20-year plan to manage growth in the context of economic, social and environmental matters to achieve the 40-year vision of Greater Sydney. The Hills Showground Station Precinct site is identified as a Transit Oriented Development area that has direct access to fast and reliable transport connections to the network. The Metro North West Line and new station at Hills Showground will provide the opportunity to transform the existing area into a transit-oriented, more vibrant and diversified centre with a mix of residential uses and supporting services as well as enabling faster and more reliable business-to-business connections to other centres such as Macquarie Park and Chatswood.
Greater Sydney Region Plan: A Metropolis of Three Cities – Connecting People	A Metropolis of Three Cities, the first regional plan prepared concurrently with Future Transport 2056 and the State Infrastructure Strategy, aligning land use, transport and infrastructure planning to reshape Greater Sydney as three unique but connected cities, enabling the majority of the people to commute to their nearest city within 30 minutes. The site Doran Drive Precinct, is bounded by De Clambe Drive, Andalusian Way and Doran Drive, and would be classified as places for people as they are part of the fabric of the suburban neighbourhood where residents/customers reside. These streets also

[1] This major project combined with the Western Sydney Rail upgrade program will allow a 60 per cent increase in the number of trains accessing the CBD during the peak hour and provide the capacity to cater for the additional 100,000 passengers per hour.

	facilitate local community access to the Metro Station directly adjoining the site. These means that future occupants of the building can have easy access to the alternative forms of transport with a number of services located within their doorstep.
North West Rail Link Corridor Strategy	The North West Rail Link (NWRL – now the Metro North West Line) Corridor Strategy was prepared in 2013 to identify future visions for precincts surrounding NWRL stations and establish frameworks for managing future land use changes. This strategy enables infrastructure agencies to identify, prioritise and co-ordinate the delivery of infrastructure upgrades in accordance with each precinct's long-term growth potential, providing increased transparency about the area's growth infrastructure pipeline.
Sydney Metro Northwest Pedestrian-Cycle Network & Facilities Strategy (TfNSW)	The purpose of the Strategy is to assist TfNSW and Sydney Metro in delivering on the stated transport hierarchy for the project, prioritising pedestrians and cyclists in the transport planning for the new stations including the Hills Showground Station. One of TfNSW's objectives is to plan for a transport system that meets the needs and expectations of the public including encouraging sustainable transport modes that support alternatives to car use.
The Showground Station Precinct Plan	The Showground Station Precinct, along with the Bella Vista and Kellyville Station Precincts, were announced as Priority Precincts by the NSW Government in August 2014. The redevelopment of the precinct will transform the area around Hills Showground Station into a vibrant local centre and contributing to Castle Hill as a strategic centre, delivering nearly two hectares of parks and new open space and provide community facilities, recreation areas and a mix of housing choice for people at all life stages.
Sydney's Cycling Future, Cycling for Everyday Transport (NSW Government 2013)	Sydney's Cycling Future's key Strategy is to improve cycling infrastructure. The Three Pillars of Sydney's Cycling Future include: • **Connect:** Providing safe, connected networks • **Promote:** Better use of existing infrastructure • **Engage:** Policy and partnerships The site aligns with the objectives of the plan by providing a number of bicycle parking as well as end-of-trip facilities located on the lower ground floor level. The proposed bicycle facilities along with Iglu's commitment in promoting cycling as an easy and fun transport choice will support the objectives of this plan.

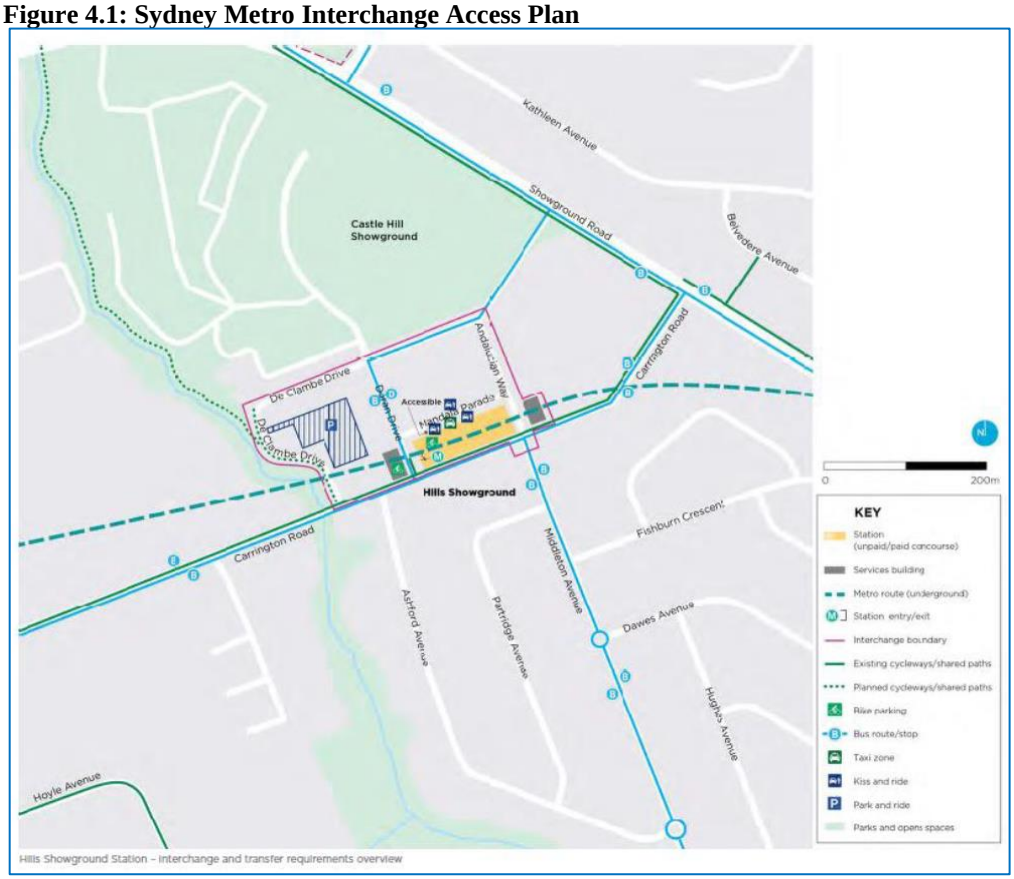
4. Existing Forms of Transport

The existing public transport services available in the vicinity of the site are illustrated on the Sydney Metro Interchange Access Plan below and also shown on the Transport Access Guide. The Hills Showground Station Precinct (the Site) is located adjacent the Metro North West Line corridor, which sits within the broader Central City District of Metropolitan Sydney.

The Metro North West Line which commenced operations in 2019, will be extended from Chatswood, under Sydney Harbour, through new CBD stations and south west to Bankstown.

To meet overarching State Government strategic objectives, the Department of Planning, Infrastructure & Environment (DPIE) developed a Corridor Strategy to maintain and improve the lifestyle available in the local area while allowing for well-planned and sustainable growth. Whilst the metro will be directly accessible to a large number of new and future residents, supporting bus networks remain critical to ensuring equitable access to public transport options and supporting the operations of the metro.

Figure 4.1: Sydney Metro Interchange Access Plan



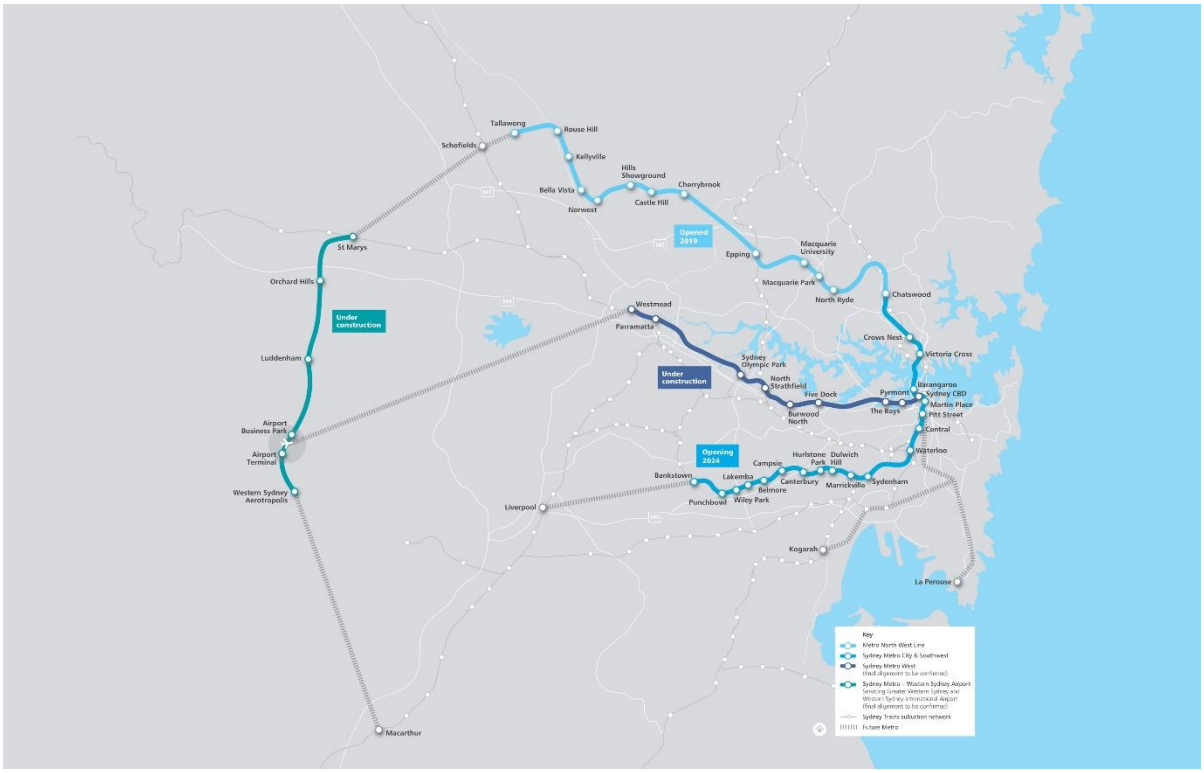
Source: Sydney Metro Interchange Access Plan (September 2018)

4.1 Existing Public Transport Services

Metro North West Line

Sydney Metro offers a new generation of fast, safe and reliable train services. Sydney's first metro line, the Metro North West, opened on 26th May 2019. Services at the 13 metro stations operate every four minutes in the peak in each direction on Australia's first driverless railway. The line is being extended into the Sydney CBD and beyond, to open in 2024.

Figure 4.2: Sydney Metro Network



Source: Sydney Metro Greater West Scoping Report (June 2020)

Hills Showground Station is the catalyst for the evolution of the Showground Station Precinct into a village centre. The Showground station supports the Castle Hill Showground and provides access to current and future employment, as well as existing and future residential development (including the subject site) in the area.

The station strategy includes:

- Providing easy, safe and intuitive transfer to and from the metro station within the existing network and road environment;

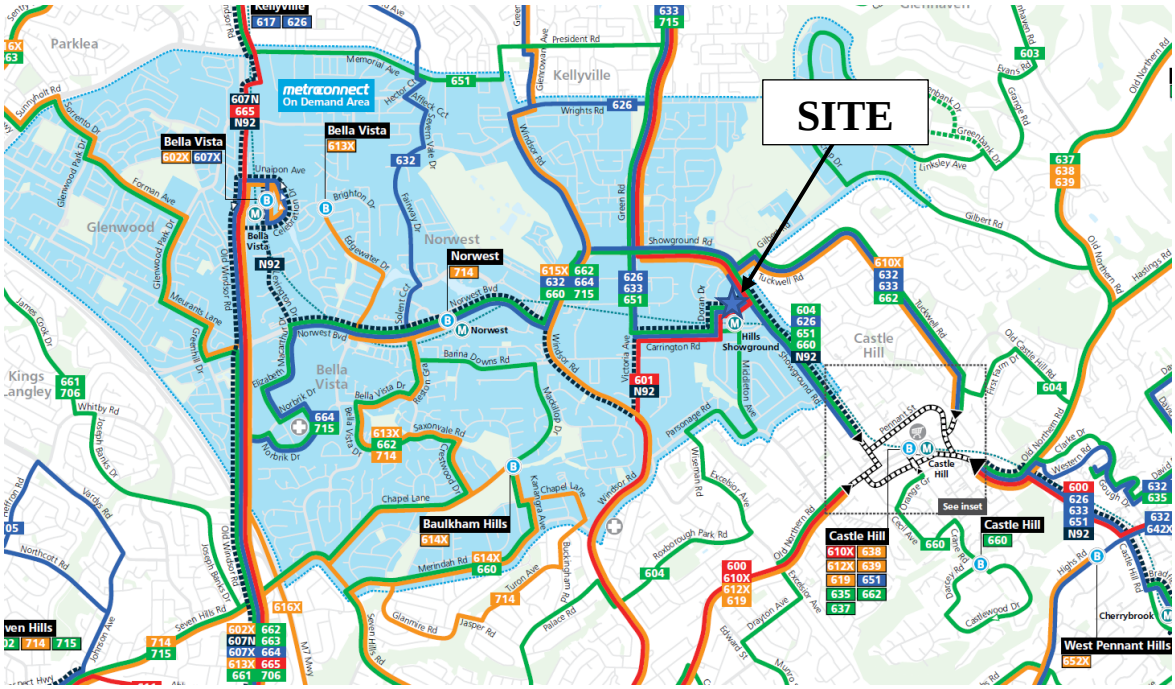
- Increasing public transport access to the surrounding existing and future employment, recreational and residential areas;
- Maximising legibility and connectivity with the local urban structure; and
- Integrating the station with local improvement plans and make a positive contribution to the sense of place.

The station is located at the corner of Carrington Road and Doran Drive – adjoining directly to the south of the site, with a bus interchange located on Doran Drive, a bicycle storage facility as well as bike racks located close to the entrance plaza as well as kiss and ride spaces and taxi ranks along Mandala Parade.

Bus Services

The bus network will remain vital to supporting movement of residents and workers to and from The Hills area including Blacktown and Parramatta. Current bus services have been supplemented by the implementation of on-demand bus services around Bella Vista, Norwest and Hills Showground stations.

Figure 4.3: Sydney Bus Network



Source: Hillsbus - On demand Bus operation area (blue)

On Demand services are a flexible public transport service designed to improve connections to transport hubs and popular destinations like shopping centres or hospitals and can pick you up from home or an easy to access location, and take you where you need to go.

In addition, The Shire is traversed by seven strategic bus corridors. These corridors act as carriers of people to and from key employment areas within the region. They are further supported by permeable local routes throughout The Hills Shire to encourage use of alternative modes of transport as well as decreasing car dependency.

Given the site is located in a relatively newly developed area, significant investment in the bus network including additional services, bus priority measures and supporting infrastructure has seen a steady rise in bus patronage and a small but significant mode shift away from private vehicle use. Continued investment in bus infrastructure will support developing growth in bus patronage as well as support the operation of the Sydney Metro Northwest.

The following bus priority measures have been identified in The Hills LGA for Arterial and local roads:

Bus Priority Measures – Arterial Roads
▪ Showground Road from Old Northern Road to Carrington Road. ▪ Norwest Boulevarde – Full length. ▪ Green Road – from St Pauls Avenue to Showground Road. ▪ Memorial Avenue – Full length. ▪ Old Northern Road – Castle Hill to Baulkham Hills. ▪ Windsor Road – Norwest Boulevarde to Rembrandt Drive
Bus Priority Measures – Local Roads
▪ West Pennant Hills – Highs Road, Taylor Street and Aiken Road (from Taylor Street to Oakes Road). In the longer term this bus lane would be extended to Castle Hill with a bus only bridge link over Excelsior Creek). ▪ North Kellyville – Bridge from Ross Street to Edwards Road. ▪ Railway Station Precincts.

Source: The Hills Shire Council: Integrated Transport and Land Use Strategy 2019

In particular, the bus interchange located on both sides of Doran Drive – i.e. along the site frontage – will continue to service bus routes that operate along Carrington Road and Showground Road connecting residents and employees between the station and other surrounding centres.

The locations of the bus stops in the vicinity of the site are also illustrated on the attached Transport Access Guide, with the typical servicing frequencies during *commuter* peak periods summarised in **Table 4.1** below, noting all these bus services are made available along the Doran Drive site frontage.

Table 4.1: Existing Bus Services

Route Number	Bus Route Description	Typical Servicing Frequency		
		Weekday	Saturday	Sunday
601	Rouse Hill Station to Parramatta via Hills Showground	15-30min	30min	30min
604	Dural to Parramatta via Castle Hill	15min	60min	60min
626	Pennant Hills to Kellyville Station via Cherrybrook	15-30min	30min	60min
632	Pennant Hills to Rouse Hill Station via Norwest & Castle Hill	30min	60min	60min
633	Pennant Hills to Rouse Hill Station via Kellyville & Castle Hill	30min	30min	30min
651	Epping to Rouse Hill Station via Castle Hill	30min	60min	60min
660	Castlewood to Parramatta	30min	60min	60min
662	Parramatta to Castle Hill via North West Tway & Bella Vista	20-30min	60min	60min
730	Castle Hill to Blacktown via Glenwood	15-20min	30min	60min

Other bus stops in the vicinity of the site are also located in for bi-directional travel on Middleton Avenue (around 50 meters south of the Carrington Road / Middleton Avenue intersection), Carrington Road (around 75 meters southwest of the Carrington Road / Showground Road intersection) and Showground Road (around 70 meters of the Carrington Road / Showground Road intersection).

The proximity to bus stops to the station allows efficient access of future residents and patrons to the Doran Drive Precinct site.

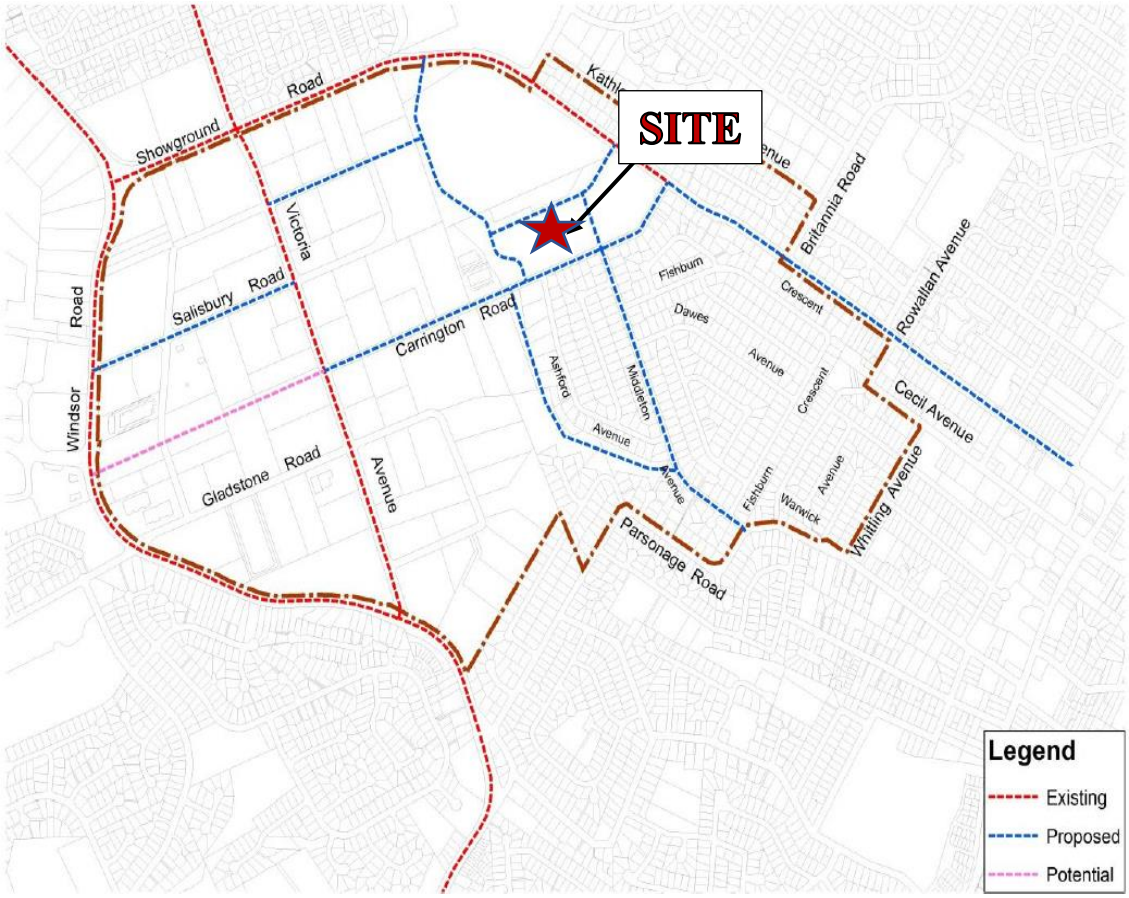
Bus and train timetables can be found via the Transport Info website at https://transport.info.

4.2 Existing & Proposed Bicycle Routes

As part of the development of the Sydney Metro Northwest, a pedestrian and cycle strategy were developed which identified preliminary options for improvements to on and off-road cycle and pedestrian networks.

The existing cycleways in the immediate vicinity of the site are shown below, with Showground Road and Carrington Road forming the major cycling network in the local area. Carrington Road, De Clambe Drive (along Cattai Creek) and Showground Road in the vicinity of the site all have off-road shared paths which connecting to the wider cycling network.

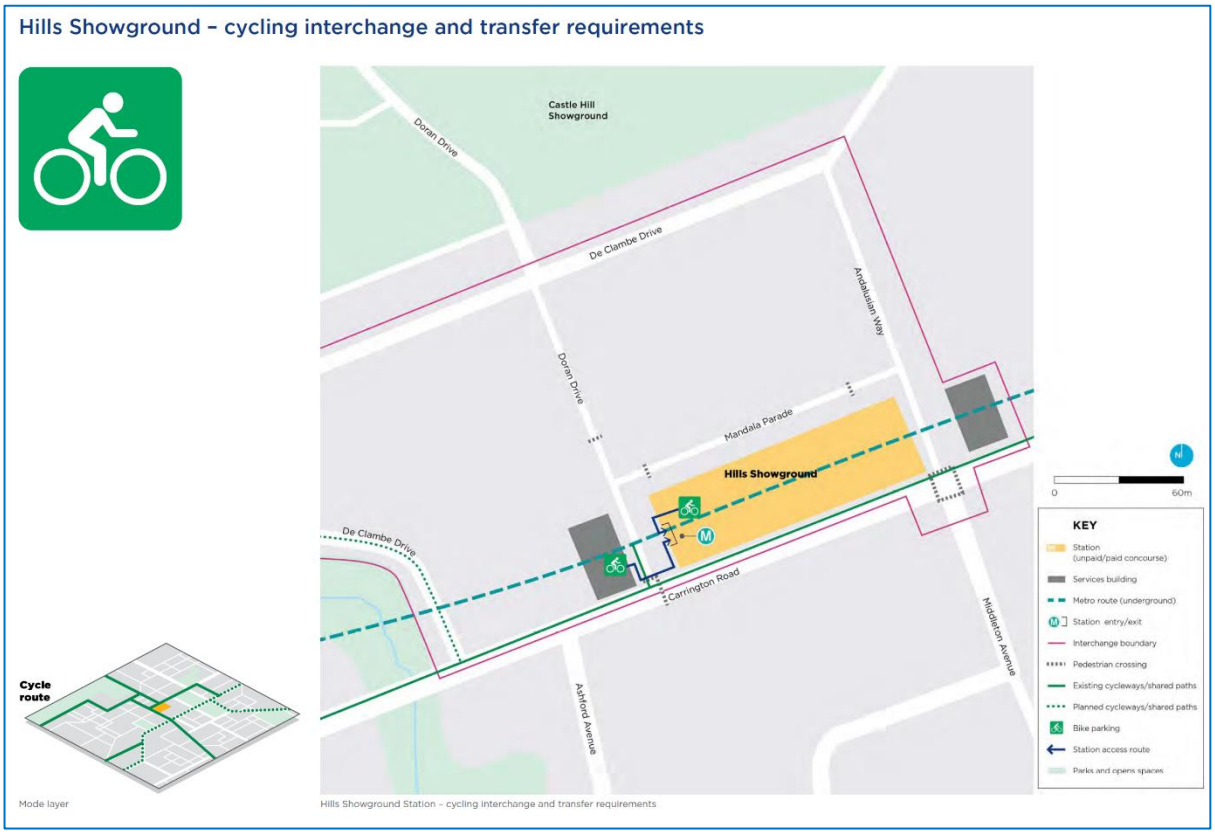
Figure 4.4: Existing Cycleways



Source: Showground Station Precinct DCP (September 2018)

In addition, the Hills Showground Interchange Access Plan describes cycling access for the station precinct have been reproduced in the figure on the following page. An off-road cycle path exists on Carrington Road and main cycling routes connecting to the station are provided along Cattai Creek to the west of the site.

Figure 4.5: Hills Showground Bicycle Interchange Access Plan



Source: Interchange Access Plan - Sydney Metro Northwest - Hills Showground, cycling interchange (September 2018)

There is also a smart phone app *"Bike Citizens - Bicycle GPS"* available for download, designed to help cyclists in urban areas and provides the following features:

- **Routing Profile -** the route navigation feature can adapt to suit personal needs and cyclists are able to choose between leisurely, fast or convenient route.

- **Bicycle Type -** the route navigation feature takes the cyclists type of bicycle into account. For example, if a person is riding a road bike, roads with tram tracks or cobblestones are avoided.

- **Gradient Profile -** *Bike Citizens* always highlights the route with the most suitable gradient. More or less tolerance will be allowed depending on the routing profile.

- **Surfaces -** the cycling app searches for the most suitable route in accordance with the type of bicycle that is selected and avoids surface features such as cobblestones or unsurfaced routes.

- **Offline Map Material –** once the map material has been downloaded, cyclists do not need an internet connection to use the navigation tool. This means that the phone battery will last longer and avoiding potential high roaming charges.

The *Bike Citizens* app can be downloaded via the following links (valid as of 29/11/18):

- Link to App Store: https://itunes.apple.com/app/bikecityguide/id517332958
- Link to Google Play: https://play.google.com/store/apps/details?id=org.bikecityguide

4.3 Existing Taxi Services

Due to the site's proximity to the metro station, the area is readily accessible by taxi, including taxi ranks provided along Mandala Parade. The following taxi services are available in the area and can be contacted on:

- Premier Cabs – 1300 795 608 – www.premiercabs.com.au
- Taxis Combined – 133 300 – www.taxiscombined.com.au
- Silver Service – 133 100 – www.silverservice.com.au

4.4 Car Share

Car sharing is becoming increasingly popular in Sydney and offers a convenient, affordable and sustainable alternate transport option for residents and businesses located in close proximity to public transport.

Car sharing encourages more sustainable travel habits and helps keep everyone connected. It also makes more efficient use of available parking by allowing a single vehicle to be used by a large number of people. This reduces road congestion and the competition for parking spaces, which ultimately benefits all road users.

Car share involves signing up to a membership plan offered by car share operators. Plan fees vary depending on how frequent the user intends to use the service and affects hiring costs.

Car share users are charged by time and distance, at a rate set by each operator. Costs associated with fuel, vehicle maintenance and insurance are usually included in the operator's hire fees which are in the order of $5/hr or $25/day (plus $0.20/km) depending on the type of vehicle.

Car share vehicles mostly comprise small hatchbacks but can also include SUVs, vans and luxury vehicles depending on location. Each vehicle has a designated "home" location referred to as a "pod", in a publicly accessible location.

In this regard, given the *Hills Showground Station Precinct* is newly established, no existing car share operators are currently available in the vicinity of the site. Notwithstanding, as part of Council's DCP objectives, opportunities to implement car sharing initiatives in high density residential and commercial areas close to transport hubs will be supported through targeted development controls.

These include:

- Requirements for dedicated car sharing spaces for new developments; or

- Provision of dedicated on-street parking for shared vehicles, which are subject to implementation by Council's Local Traffic Committee.

The proposed development will provide dedicated 8 x car share spaces within the basement car park and will be retained as common property, managed by the Owners Corporation of the site for residential use only. In addition, on-street designated car share spaces will also be provided for the specific use of visitors and/or customers.

Contact information for the various car share companies are shown below:

- Go Get – 1300 769 389 – www.goget.com.au
- Car Next Door – (02) 8035 8000 – www.carnextdoor.com.au
- Green Share Car – 1300 575 878 – www.greensharecar.com.au
- Hertz 24/7 – 1300 146 897 – www.hertz247.com

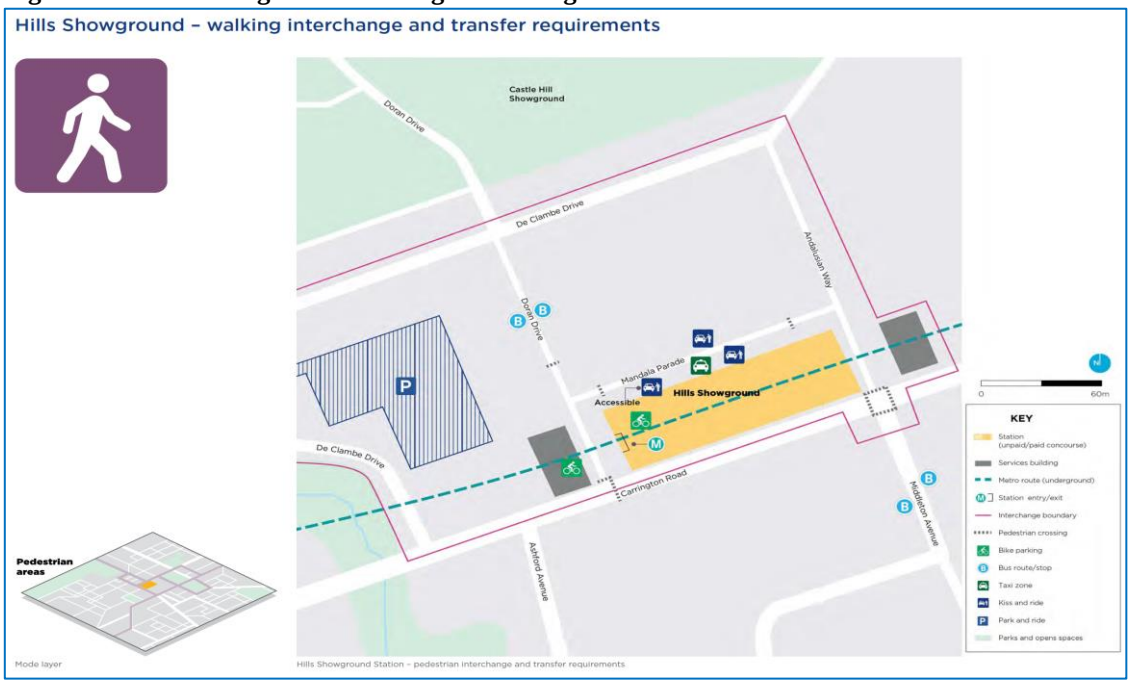
4.5 Pedestrian Infrastructure

Hills Showground Station is an origin station, meaning that in the morning peak, majority of trips are from Hills Showground Station to other destinations on the metro due to the predominately residential nature of land uses around the station.

Pedestrian activity clusters around the station entry points and dissipates further afield from entrance points. Adequate pedestrian activities are provided to connect to the surrounding land uses in a safe and convenient manner.

The Hills Showground Interchange Access Plan describes walking access requirements for the station precinct have been reproduced below.

Figure 4.6: Hills Showground Walking Interchange Access Plan



Source: Interchange Access Plan - Sydney Metro Northwest - Hills Showground, pedestrian interchange (September 2018)

Pedestrian infrastructure includes a footpath network that provides safe and accessible access for pedestrians to station entry points, including:

- Footpaths along both sides of the new local roads created surrounding the metro station including Doran Drive, Andalusian Way and Mandala Parade;

- A shared path (off-road), linking Carrington Road to Cattai Creek in the west;

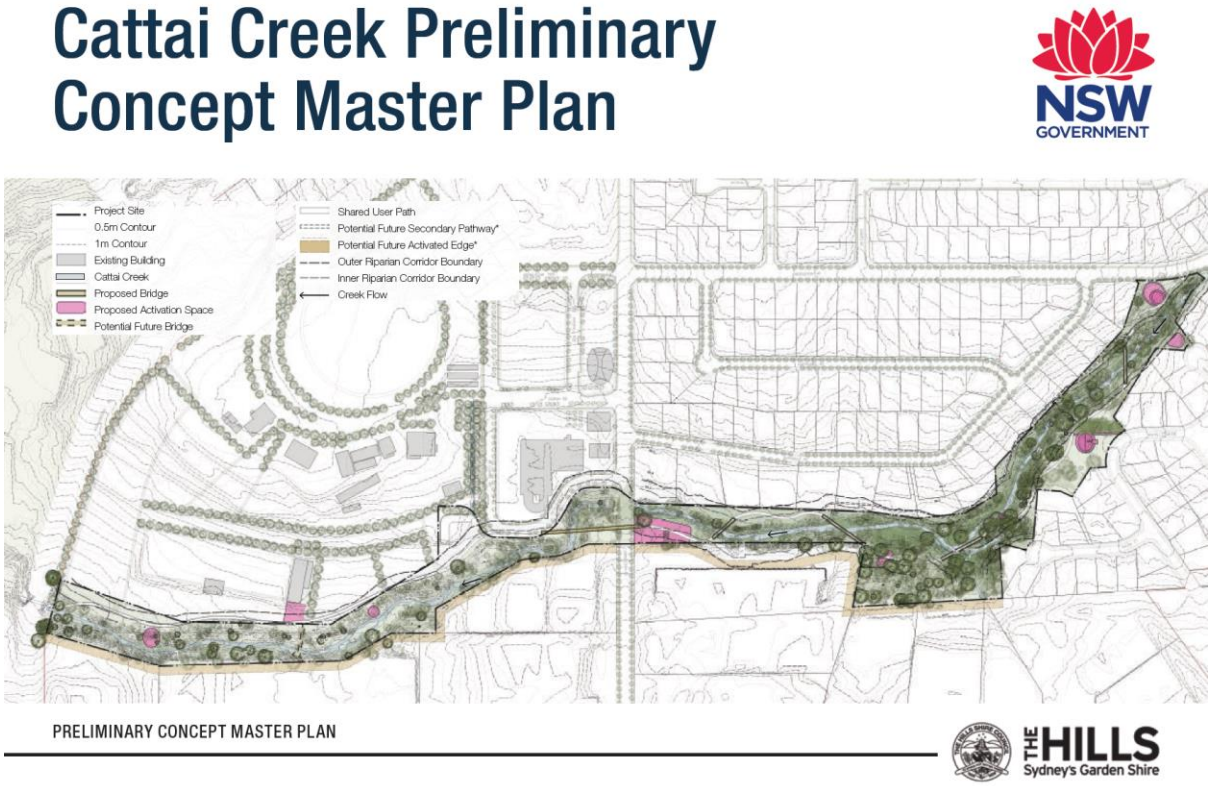
- A shared 2.5m wide pathway from Carrington Road at De Clambe Drive to the existing pathways at the site;

- Multiple crossings on Doran Drive and Mandala Parade; and

- Signalised pedestrian crossings at the intersection of Showground Road / De Clambe Drive, Showground Road / Carrington Road, Doran Drive / Carrington Road, Andalusian Way / Carrington Road, connecting residents from surrounding areas (including the site) to the station via these crossing points along Showground Road and Carrington Road.

In addition to the above, Council has developed a draft Concept Master Plan for Cattai Creek Corridor, between Middleton Avenue and Showground Road in Castle Hill, as indicated in the image below. Council is currently undergoing investigation for a potential pedestrian bridge over Carrington Road, adjacent to Cattai Creek for a future active transport link between Cattai Creek Corridor and the Hills Showground Precinct.

Figure 4.7: Cattai Creek Preliminary Masterplan



The draft Concept Masterplan shows Council's vision for the creek, which is to connect the community with the creek and deliver environmental, social and recreational needs of the community. This will include areas for:

- recreational activities such as walking and running
- enjoying the natural and environment of the Creek
- play spaces
- picnic and rest area
- shared pathways.

The project will also improve access to the Cattai Creek Corridor while protecting the natural environment that makes the Creek so special. The aim of the Masterplan is to create a link between the Creek and the Castle Hill Showground as well as existing open spaces in the area.

4.6 Existing Transport Modal Split

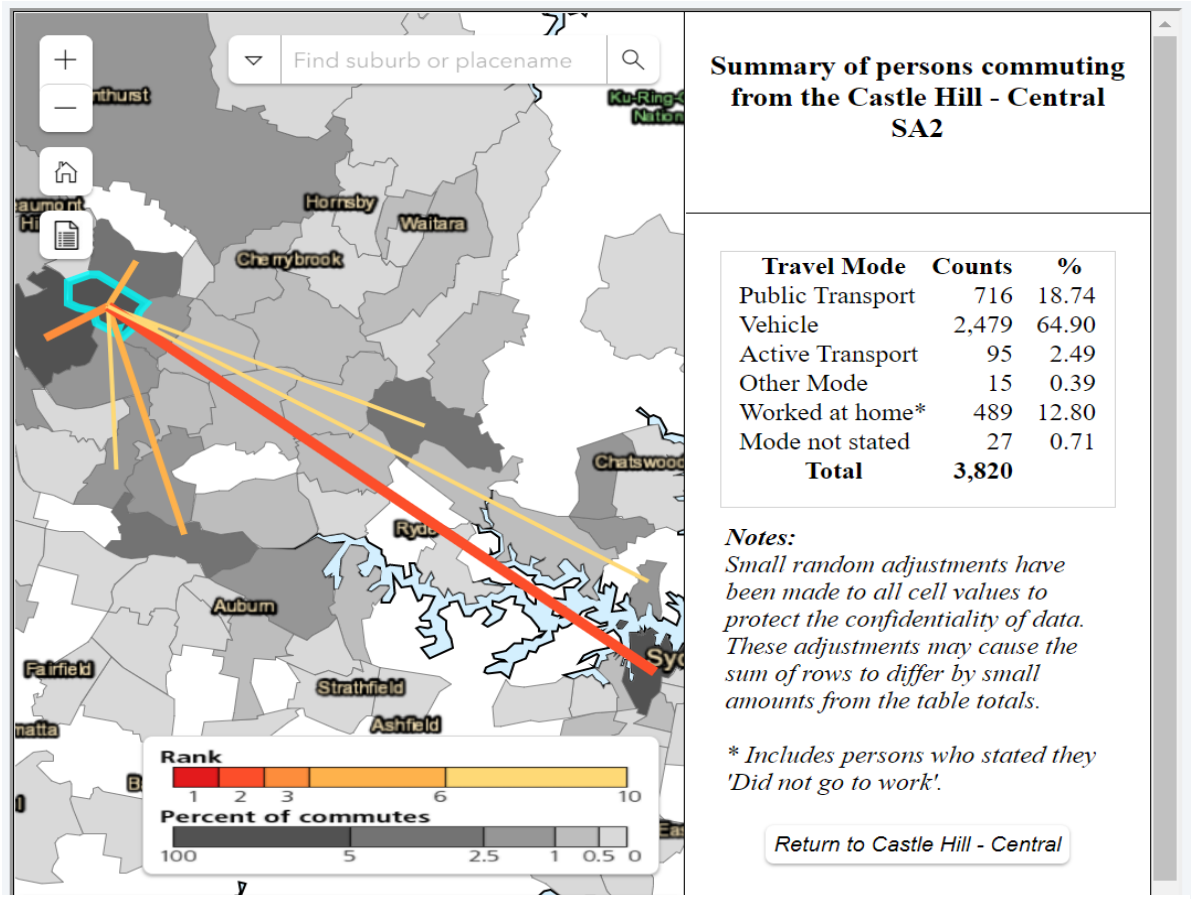
2016 Census data from Australian Bureau of Statistics (ABS) has been obtained to understand the existing method of travel to work for residents living within the Statistical Area (SA2), Castle Hill – Central and is summarised in **Table 4.2.**

The existing transport modal split to the destination areas for commuters living within the SA2 area have also been reproduced in **Figure 4.8** on the following page.

At the time of the journey-to-work (JTW) data being collected in 2016, approximately 3,800 trip data were included in the survey for Castle Hill, specifically located in proximity of the Hills Showground Station.

Table 4.2 indicates that 62% of commuters living within the SA2 area drives to work, with 17% utilising bus transport services and only 3% utilising train services. Comparatively, 2016 Census Data shows that 63% of workers in the Greater Sydney region drives to work and 26% utilise train or bus services.

Figure 4.8: Summary of persons commuting from the Castle Hill – Central (SA2)



Source: Australian Bureau of Statistics - Census of Population and Housing: Commuting to Work

Table 4.2: Existing Transport Modal Split (2016 Census Data)

	Number of Trips	% of Total Trips*
Vehicle Driver	2,323	62%
Vehicle Passenger	126	3%
Train	95	3%
Bus	627	17%
Taxi	0	0%
Bicycle	11	1%
Walk Only	84	2%
Other	483	12%
TOTAL	**3,775**	**100%**

**percentages have been rounded to the nearest whole number*

Notwithstanding, it evident that these statistics underrepresent the number of persons utilising public transport given the 2016 census was conducted prior to the operation of the Metro North West, which commenced in 2019.

Accordingly, it is clear that the Castle Hill – Centre SA2 area is currently well served by public transport services, with a metro station and bus interchange located at the heart of the SA2 area and should expect higher train and bus usage by further discouraging driving as a mode of transport.

In addition, it is noted that the proposed development will have reduced car parking provision given its direct proximity to the Hills Showground Station.

5. Travel Mode Targets

5.1 Objectives

The following objectives are set out to achieve the vision of this Green Travel Plan to encourage a shift towards sustainable modes of transport:

- **Accessibility –** Improve access, safety, amenity and convenience of sustainable transport modes for travel to and from the site.

- **Incentives –** Provide incentives for staff when they travel to work via public transport, car pool or cycle and establish a culture of active and public transport use.

- **Restrict –** Continue to limit the convenience of car access to the site to encourage other, more sustainable modes of transport.

5.2 Mode Share Targets

As the site is not currently occupied, the mode share targets for the site have been based on the existing mode share of residents residing within the SA2 area – Castle Hill-Central.

Given the location of the site, which directly adjoins the Hills Showground Station will provide future residents and employees with improved access to high frequency public transport services, which will provide an alternative to private vehicle use which is evident in the 2016 Census data.

The additional footpath and pedestrian crossing facilities in the vicinity of the site which have been completed in the recent years will provide a safe and convenient walk to/from the Hills Showground Station.

Dedicated cycle routes around the site connecting to the regional routes will also cater for more short trip commutes by cycling to the surrounding road network.

Additionally, the development site provides a maximum off-street car parking restriction as it is situated within the heart of the *Hills Showground Station Precinct*. The precinct masterplan concept has been imposed with a *maximum* of 1,957 car parking spaces, of which 772 (including 341 retail/commercial spaces) are proposed by *Deicorp Projects Showground Pty Ltd* within the subject site. This approach will ensure an ongoing modal shift towards a more sustainable transport outcome.

On the above basis, it is fair to consider that the target modal share for the site, particularly visitors/customers of the precinct would not favour cars as a mode of transport. As such, a target of 20% for car modal share, with 5% as vehicle passengers is proposed for the site.

The GTP also envisages to achieve a 60% modal shift towards sustainable transport, that is, with the 40% less private vehicle trips, with increases in Train, Bus & Bicycle modal shares. Given the recently completed metro station as well as supporting infrastructure which are provided for this transit-oriented development, the mode share targets are very promising.
A summary of the targeted transport modal split is provided in **Table 5.1** below.

Table 5.1: Target Transport Modal Split

	Existing Modal Split	Target Modal Split
Vehicle Driver	62%	20%
Vehicle Passenger	3%	5%
Train	3%	30%
Bus	17%	20%
Taxi	0%	5%
Bicycle	1%	10%
Walk Only	2%	10%
Other	12%	0%
TOTAL	**100%**	**100%**

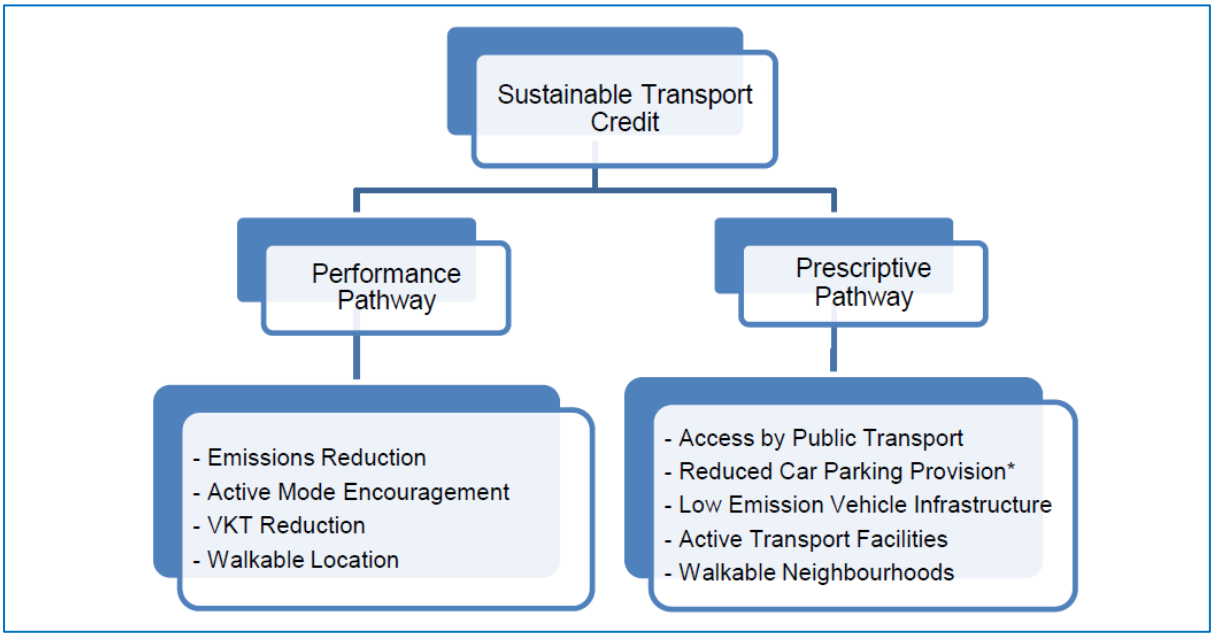
5.3 Green Star Considerations

The Green Building Council of Australia (GBCA) is Australia's leading authority on sustainable buildings and communities. The GBCA was established in 2002 to develop a sustainable property industry in Australia and drive the adoption of sustainable practices. Today, the GCBA operates Australia's only national voluntary, comprehensive sustainability rating system for the built environment – Green Star.

Green Star is an internationally recognised rating system that delivers independent verification of sustainable outcomes throughout the life cycle of the built environment. The particular rating tool of relevance is the *Green Star – Design & As Built* – a holistic rating tool for the design and construction of new buildings and major refurbishments.

Points awarded in the 'Sustainable Transport' credit can be achieved using the Performance Pathway or a Prescriptive Pathway (see **Figure 5.1** below). The aim of these credit is to reward projects that implement design and operational measures that reduce the carbon emissions arising from occupant travel to/from the proposed development, when compared to a reference building.

Figure 5.1: 'Sustainable Transport' Credit Pathways



Source: Green Star Sustainable Transport Performance Pathway Calculator Guide (Release 3 – September 2015)

The two credit criteria for project teams to demonstrate improvements in the building's access to transport are summarised below.

17A	**Performance Pathway**	**Up to 10 points** are available where projects provide access to sustainable transport infrastructure which decreases greenhouse gas emissions from transport, decreases mental and social impacts of commuting, and encourages the uptake of healthier active transport options.
17B	**Prescriptive Pathway**	**Up to 7 out of 10 points** are available where projects provide access to sustainable transport infrastructure as demonstrated using specified prescriptive criteria.

In this regard, the criteria the proposed development seeks to be assessed by is Credit 17B – Prescriptive Pathway, as summarised below.

17B PRESCRIPTIVE PATHWAY

The Prescriptive Pathway applies to *regular building occupants* and *visitors*.

Up to **seven (7) points** are available based on the following credit elements:

	Credit Element	Points Available
17B.1	**Access by Public Transport**	**Up to 3 points** are available based on the accessibility of the site by public transport.
17B.2	**Reduced Car Parking Provision**	**1 point** is available where there is a reduction in the number of car parking spaces in the proposed building when compared to a standard-practice building.
17B.3	**Low Emission Vehicle Infrastructure**	**1 point** is available where parking spaces and/or dedicated infrastructure is provided to support the uptake of low-emission vehicles.
17B.4	**Active Transport Facilities**	**1 point** is available where bicycle parking and associated facilities are provided to regular building occupants and visitors.
17B.5	**Walkable Neighbourhoods**	**1 point** is available where the project is located conveniently to amenities or the project achieves a specified Walk Score.

The proposed development does not seek to qualify for Credit 17B.2, however does seek to qualify for the remaining Credit 17B categories above.

The performance criteria for Credit 17B.1 is determined by the accessibility of the site by public transport. Based on the *Access by Public Transport Calculator*, the proposed development achieves **2 points**.

The performance criteria for Credit 17B.3 is determined by the level of low emission vehicle infrastructure. In this regard, the proposed development makes provision for 10% of parking spaces dedicated to electric vehicles, with charging infrastructure provided for each space, thereby exceeding the 5% requirement to satisfy the credit. In addition, 1.6% of the parking spaces will be allocated to car share spaces, thereby exceeding the 1.4% requirement to satisfy the credit. As such, the full **1 point** is achieved for Credit 17B.3.

The performance criteria for Credit 17B.4 is awarded where bicycle parking and associated facilities are provided to a proportion of the building's regular occupants and visitors. In this regard, extensive facilities are proposed, including private residential storage cages within B4-B6 capable of accommodating a bicycle, residential visitor bicycle parking on B4, and retail bicycle parking and end-of-trip showers and lockers on B1. As such, the full **1 point** is achieved for Credit 17B.4.

Lastly, the performance criteria for Credit 17B.5 is awarded where at least 8 amenities are located within 400m walking distance of the site, or where a *WalkScore* of at least 80 is achieved. As the precinct is undergoing significant transformation from a previously car-dependent modal split, the *WalkScore* requirement of 80 is not achieved, therefore reliance on providing at least 8 differing amenities has been assessed. Amenities include, but not limited to, convenience stores, pharmacies, post offices, restaurants, food & beverage outlets, gyms, pools and sports facilities, clinics and healthcare services, childcare centres, supermarkets, banks or ATMs and public parks. Given the proposed development provides some 10,935m^2 GFA of retail/commercial floor area, the provision of 8 amenities is expected to be comfortably achieved, thereby also achieving the full **1 point** for Credit 17B.5.

In summary, based on the Prescriptive Pathway method, the proposed development achieves a total of **5 points** out of a possible 7 points.

5.4 Methods of Encouraging Sustainable Transport

A series of actions are recommended in this Green Travel Plan which forms the strategies and initiatives that can be implemented to achieve the desired transport modal split targets towards an increase in trips made using sustainable modes. It is pertinent to note that these actions should be regularly monitored and updated as required to reflect current transport conditions.

Table 5.4: Green Travel Plan Actions

Strategy	Objectives	Actions	Resources
1. Promoting Public Transport			
1.1 Travel Pass	Encourage greater public transport usage.	Consider subsidy for staff travelling via public transport, provide Opal Travel Cards to staff for any work-related travels during their shift.	Building management responsibility.
1.2 Transport information notice board	Encourage greater public transport usage.	Provision of a transport information notice board in the residential and commercial building foyer to assist in making residents and employees more aware of the alternative transport options available at the site. The information to be provided includes the TAG and is to comprise detailed timetable information, estimated costs and route maps for all the bus services identified on the Transport Access Guide.	Building management.
1.3 Flexible working hours	Encourage greater public transport usage	Allowing staff, the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Future Retail/Commercial Occupants

2. Promoting Car Pooling			
2.1 Car Sharing	Encourage reduced private car usages	As detailed in Section 4.4, the proposed development will provide car share spaces which are made accessible to the public. If car use is required, residents and staff will be encouraged to use existing car share facilities in the area, noting that these spaces provide guaranteed free parking exclusively for car share vehicles.	Building management.
2.2 Car Pooling Programmes	Encourage reduced private car usages	Establish a car-pooling program to help future residential occupants and employees find someone to car pool with in their daily commute	Building Management & Future Tenants.
2.3 Restricted Car Parking Provision	Restricting private car usages	Off-street car parking has been restricted by The Hills Council as part of their DCP. The initiative is part of a suite of responses to ensure that sustainable travel behaviours are encouraged for future residents, employees and visitors of the proposed development.	The Proponent.
3. Promoting Cycling and Walking			
3.1 Bicycle Parking	To promote use of Active Transport	204 secured bicycle parking is provided within the future Doran Drive Precinct basement car park	The Proponent.

3.1 End of Trip Facilities	Encourage cycling and walking.	Providing end-of-trip facilities in the building as well as in the vicinity of the metro station such as change rooms, showers and secured bicycle parking. All staff including security and caretakers of the development are to be aware of the location of these facilities allowing them to inform the end users of the facilities. In this regard, the end-of-trip facilities provided as part of the development include separate male, female and adaptable amenities comprising secured lockers, change rooms, toilets and shower facilities (x 10 shower stalls) within the upper basement level. Furthermore, proper maintenance of the area is to be implemented to encourage increased and continued use.	The Proponent, Council & Building management.
3.2 Cycling & Walking Groups	Encourage cycling and walking.	Establish walking & cycling groups for residents and employees within the proposed mixed use development, with associated online forums	Travel Plan Coordinator

4. Other Incentives			
4.1 Travel Access Guide	Provide up to date and easy to access information on existing transport options on day one of occupation.	Provide Travel Access Guide to residents and employees as part of induction package and regularly review / update to ensure information are up to date.	Travel Plan Coordinator

6. Monitoring and Implementation

The *Green Travel Plan* and *Transport Access Guide* are living documents which will need to be updated on a regular basis.

It is important that the *Green Travel Plan* is reviewed regularly, ideally every 12 months, to monitor the progress of targets as documented in **Table 4.1** and also to ensure contact details/websites of the various alternative transport providers are up to date or if any additional providers/schemes have entered the marketplace.

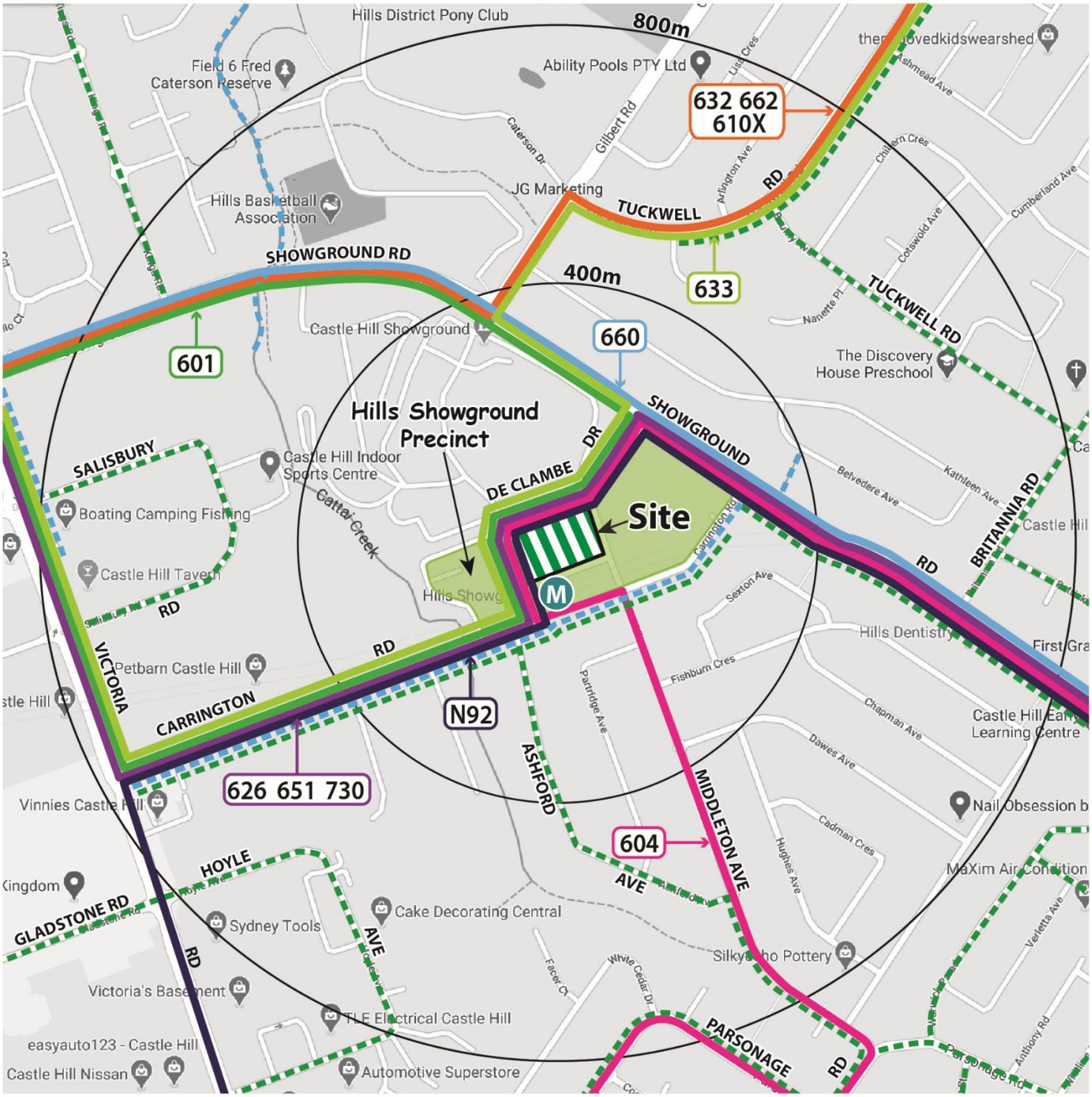
The *Travel Plan* Coordinator (usually building manager) will have responsibility for the ongoing monitoring and development of the *Green Travel Plan* and the *Transport Access Guide*. The key tasks of the *Green Travel Plan* Coordinator will include:

- undertake regular surveys to identify the travel modes of building occupants
- maintain and update the information provided in the Transport Access Guide as well as encouraging carpooling
- set new travel mode targets on an ongoing basis
- to respond to online queries through the intranet

A monitoring and review process for the Green Travel Plan will be set out by building management to ensure that the information contained within reflects any changes to the transport conditions and building facilities. This Coordinator will also monitor and assess the modal-split for staff working on the site and revisit the proposed targets if necessary.

A number of incentives could also be implemented to encourage change in the travel modes of staff/employees working on the site including the provision of a pre-loaded *OPAL* card for all new and existing staff in order to encourage them to switch to public transport, managed by the future shop tenants. It is pertinent to note that the travel mode targets are aspirational and requires continual monitoring.

Appendix A: Transport Access Guide



Bus Routes

- 601 — Rouse Hill Station to Parramatta via Hills Showground
- 604 — Dural to Parramatta via Castle Hill
- 626 — Kellyville Station to Pennant Hills via Cherrybrook
- 632 — Rouse Hill Station to Pennant Hills via Norwest & Castle Hill
- 633 — Rouse Hill Station to Pennant Hills via Kellyville & Castle Hill
- 651 — Rouse Hill Station to Epping via Castle Hill
- 660 — Castlewood to Parramatta
- 662 — Castle Hill to Parramatta via Bella Vista & North West Twy
- 610X — Kellyville to City QVB via Lane Cove Tunnel (Express Service)
- N92 — Tallawong to City Town Hall (Night Service)
- 730 — Castle Hill to Blacktown via Northwest & Glenwood

Cycle Routes

- Off-Road Cycleway
- On-Road Cycleway

M — Hills Showground Station

TRANSPORT ACCESS GUIDE

Doran Drive, Castle Hill