Ivanhoe Estate Redevelopment - Stage 2, Macquarie Park (SSD-15822622)

Green Travel Plan

Macquarie Park
5/08/2021
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APPENDICES

1 Introduction

1.1 Background

This Green Travel Plan (GTP) has been developed with reference to the State Significant Development Application (SSDA) for Stage 2 of the proposed Ivanhoe Estate redevelopment at Herring Road, Macquarie Park (the Site).

The Site is located within the City of Ryde Council (Council) Local Government Area and has been assessed under that Council's controls.

This GTP has been prepared to address the following requirements, as outlined in the Secretary's Environmental Assessment Requirements (SEARs):

- proposals to improve walking and cycling, such as connections into existing walking and cycling networks, high quality end-of-trip facilities and adequate bicycle parking for visitors, employees and residents (provided in accordance with the relevant rates, specifications and standards).
- measures to promote sustainable travel choices for employees and 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 and how this can be demonstrated to be implemented.
- a detailed Framework Green Travel Plan

2 Site Audit

2.1 Introduction

An audit of the site and proposed development was conducted to determine existing facilities in the area and current modal splits. The audit considered the following:

- Public transport services in the area, including proximity to the site, frequency of services and accessibility;
- Existing bike and pedestrian facilities, including accessibility, connectivity and safety;
- Location of nearby car share pods; and
- Existing mode-split data for the Site and local area.

This section reviews existing transport choices and behaviour to inform the proposed targets set out in Section 7. These targets are set to be realistic but ambitious enough to initiate substantive behavioural change to achieve the desired outcomes. The Green Travel Plan shall be reviewed regularly as part of an ongoing review to ensure it remains relevant and reflective of current conditions.

2.2 Existing Site and Surrounds

The Ivanhoe Estate site is located in Macquarie Park near the corner of Epping Road and Herring Road within the Ryde Local Government Area (LGA). The site is approximately 8.2 hectares and is currently an active construction site. Previously, the site accommodated 259 social housing dwellings, comprising a mix of townhouse and four storey apartment buildings set around a cul-de-sac street layout. An aerial photo of the site is provided in Figure 1.

Immediately to the north of the site are a series of four storey residential apartment buildings. On the north-western boundary, the site fronts Herring Road and a lot that has been development into high density housing. Epping Road runs along the south-western boundary of the site and Shrimptons Creek, an area of public open space, runs along the south-eastern boundary. Vehicle access to the site is via Herring Road.

Ivanhoe Estate is owned and managed by the NSW Land and Housing Corporation. The Approved Masterplan Site incorporates adjoining land, being a portion of Shrimptons Creek and part of the commercial site at 2-4 Lyonpark Road. This land is included to facilitate a bridge crossing and road connection to Lyonpark Road.

Figure 1: Aerial Photograph of The Site

2.3 Rail Services

2.3.1 Rail Infrastructure

The Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area (TfNSW, December 2013), states that train services influence the travel mode choices of areas within 800 metres walking distance (approximately 10 minutes) of a train station.

It is therefore noteworthy that the main access of the Masterplan Site is located approximately 400 metres from Macquarie University Metro Station, which is situated along the Sydney Metro Northwest Line, which provides access between Rouse Hill (Tallawong Station) and Chatswood (Chatswood Station).

Accordingly, a significant proportion of future commuters travelling from the Masterplan Site would be expected to use train services. An overview of the distance from the intersection of Herring Road and Ivanhoe Place to available public transport is presented in **Figure 2.**

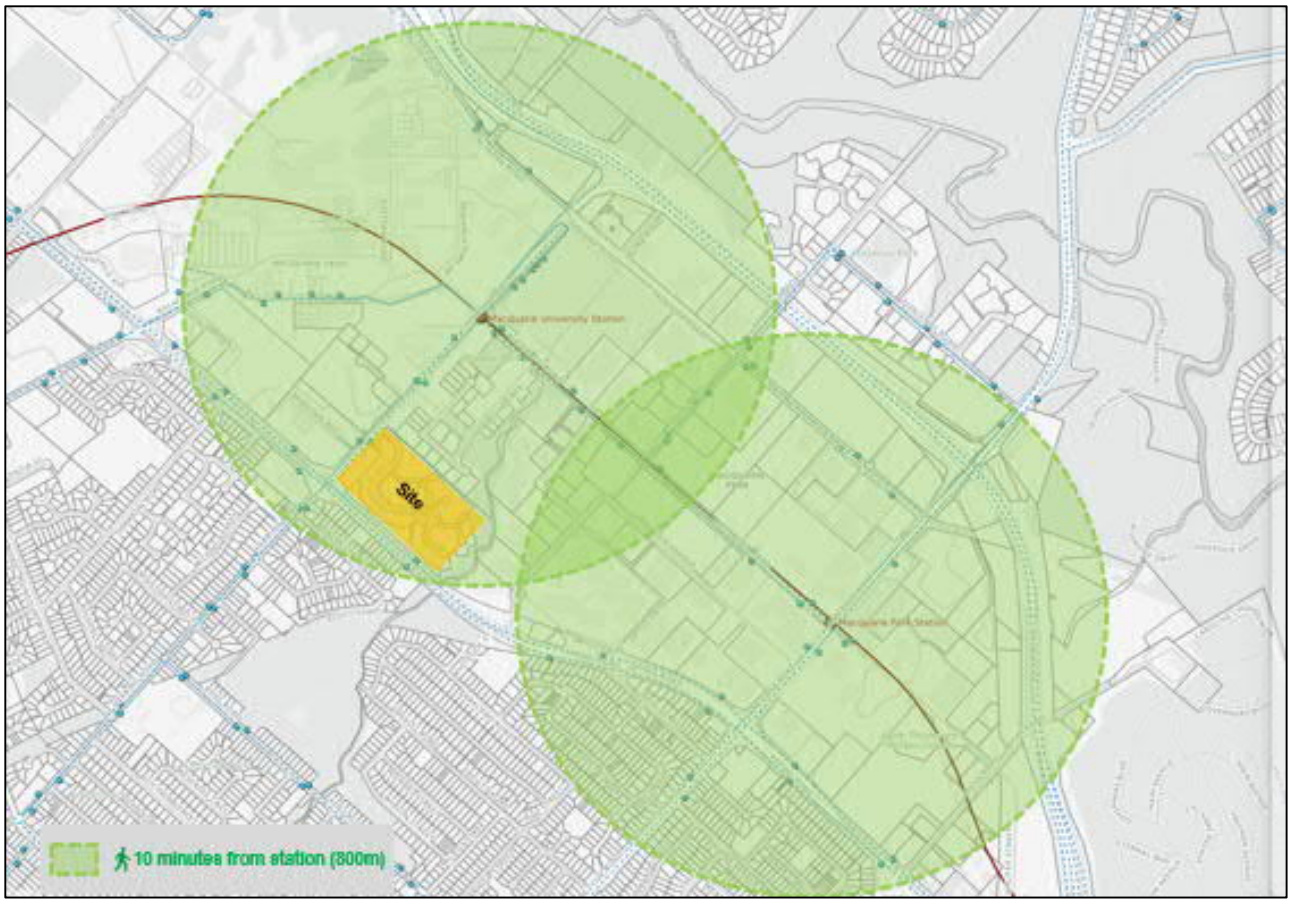


Figure 2: Public Transport Services Radius

Metro currently operates approximately every four minutes during peak periods and 10 minutes outside of these periods, with services operating every 10 minutes on Saturdays and Sundays **Table 1** summarises the Metro Northwest operating times.

Table 1: Metro Northwest Operating Days and Times

	OPERATING TIMES
Monday to Thursday	5:00am to 12:45am
Friday	5:00am to 2:30am
Saturday	5:15am to 2:30am
Sunday and Public Holidays	5:15am to 12:45am

Source: https://transportnsw.info/documents/timetables/93-M-Sydney-Metro-North-West-20201221.pdf

Sydney's Metro Northwest Line and Connections to the broader network are shown below in **Figure 3**, which has been sourced from Transport for NSW.

Figure 3: Sydney Rail Network

2.4 Bus Services

2.4.1 Existing Bus Services

The Macquarie Park precinct and specifically the Herring Road precinct is well serviced by bus infrastructure with a number of Bus Routes operating from the Macquarie University Metro Station, as shown below in **Figure 4.**

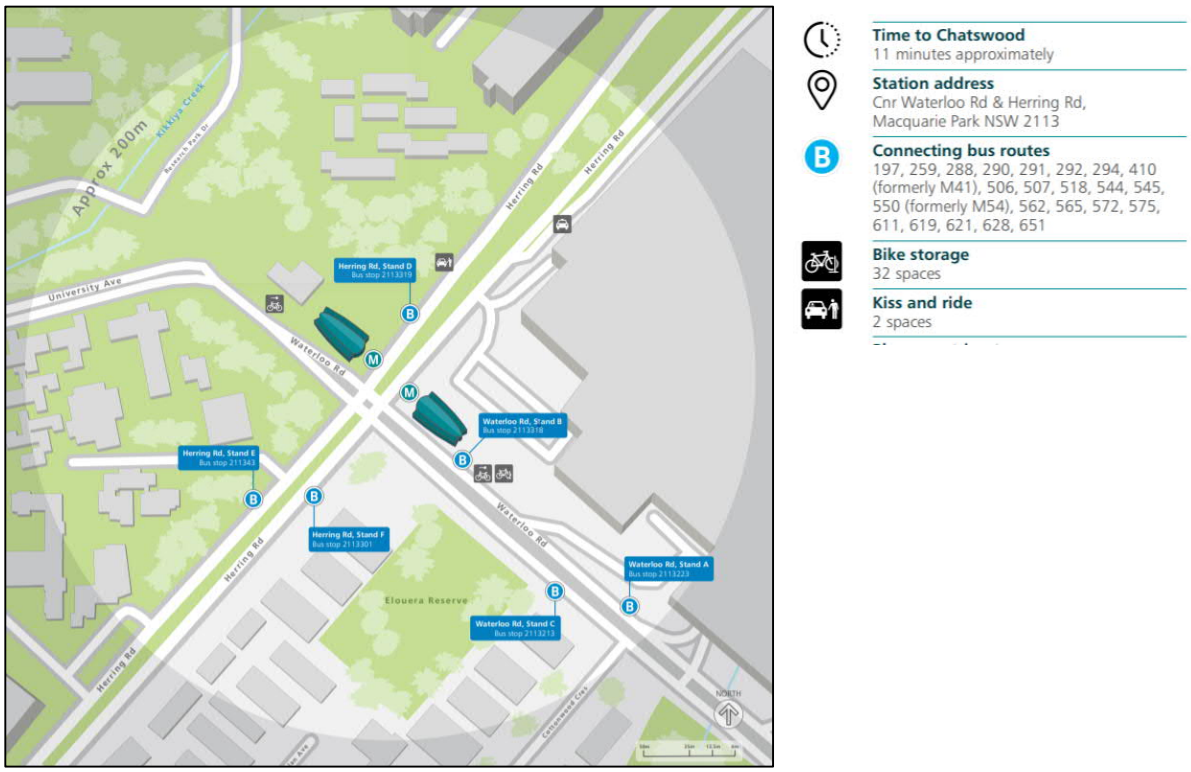


Figure 4: Macquarie University Metro Station Connecting Bus Routes

The broader bus network surrounding the Masterplan site is shown in **Figure 5.**

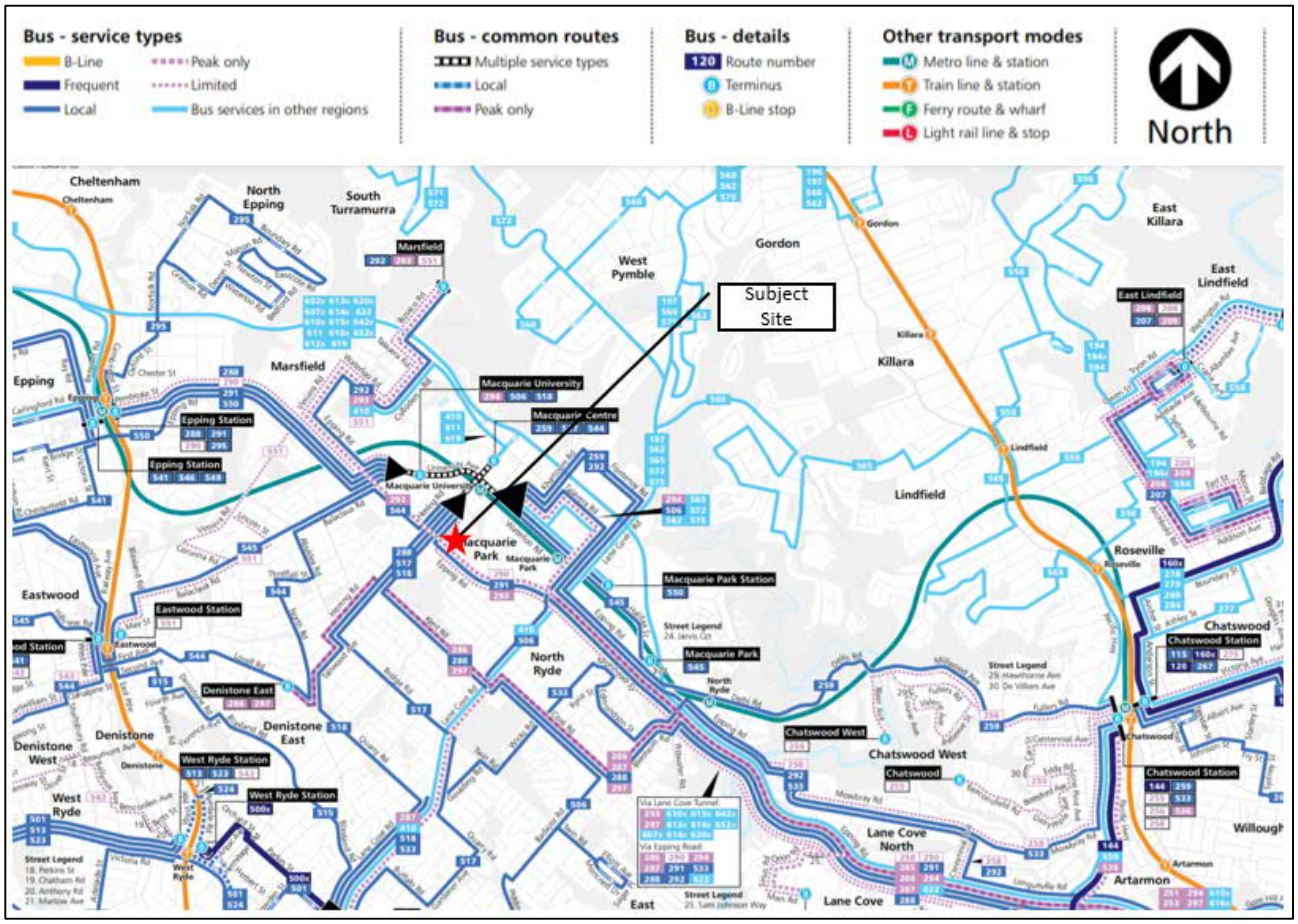


Figure 5: State Transit North Shore and West Network Map (Region 7 Bus Network)

2.4.2 Macquarie Park Bus Priority and Capacity Improvement

The Macquarie Park Bus Priority and Capacity Improvement (MPBPCI) project is being undertaken by TfNSW to improve the road network in Macquarie Park as part of the Bus Priority Infrastructure works, aimed to increase the reliability and efficiency of bus services, while easing congestion for all road users.

Key features of the Macquarie Park Bus Priority and Capacity Improvement (MPBPCI) project include:

- upgrading the intersection of Herring Road and Epping Road;
- upgrading the roundabout intersection of Herring Road and Ivanhoe Place to a signalised intersection;
- adjusting the median along Herring Road, between Ivanhoe Place and Waterloo Road to provide continuous bus lanes in both directions;
- upgrading the intersection of Herring Road and Waterloo Road;
- widening Waterloo Road between Cottonwood Crescent and Lane Cove Road to provide continuous bus lanes in both directions;
- upgrading the roundabout intersection of Byfield Street and Waterloo Road to a signalised intersection;
- upgrading the roundabout intersection of Khartoum Road and Waterloo Road to a signalised intersection;
- upgrading the intersection of Waterloo Road and Lane Cove Road;

- extending the existing southbound bus lane on Lane Cove Road, between Waterloo Road and Epping Road;
- upgrading the intersection of Lane Cove Road and Epping Road; and
- extending the right turn lane northbound on Lane Cove Road onto Epping Road eastbound, between Allengrove Crescent and Lorna Avenue.

The proposal, as outlined in the MPBPCI Project Review of Environmental Factors March 2017, would provide bus priority infrastructure and general capacity to address public transport reliability and cater for travel demand now and into the future for the Macquarie Park precinct. The project has been undertaken in two stages, with Stage 1 complete. The road upgrades now in place aim to provide some much needed capacity improvements and should ease congestion for all road users and to support the additional buses travelling through the area as part of the Station Link Scheme.

Stage 2 of the project is currently in the planning stage, with the Stage 2 work aiming to provide long term improvements for buses, general traffic and pedestrians. The upgrades to the road will reduce congestion and improve access for all road users.

2.5 Existing Active Transport Provision

The City of Ryde promotes active transport through providing accessible walking and cycling routes for the community. The Macquarie Park area has several recreational walks and cycling facilities, as discussed in detail below.

2.5.1 Pedestrian Infrastructure

The existing pedestrian infrastructure through the Macquarie Park Precinct is presented in **Figure 6** and demonstrates existing footpath and pedestrian crossing locations. In general, pedestrian facilities are provided along public roadways within limited permeability at midblock locations.

In relation to the Masterplan Site, footpaths are provided on both sides of Herring Road to allow pedestrian access between the Masterplan Site and Macquarie University Metro Station and Waterloo Road. A pedestrian underpass links the residential land uses to the south of Epping Road with Shrimptons Creek. This same pedestrian link along Shrimptons Creek provides access to Macquarie Shopping Centre to the north. Signalised crossing facilities are also provided at major intersections along Herring Road, Epping Road and Waterloo Road.

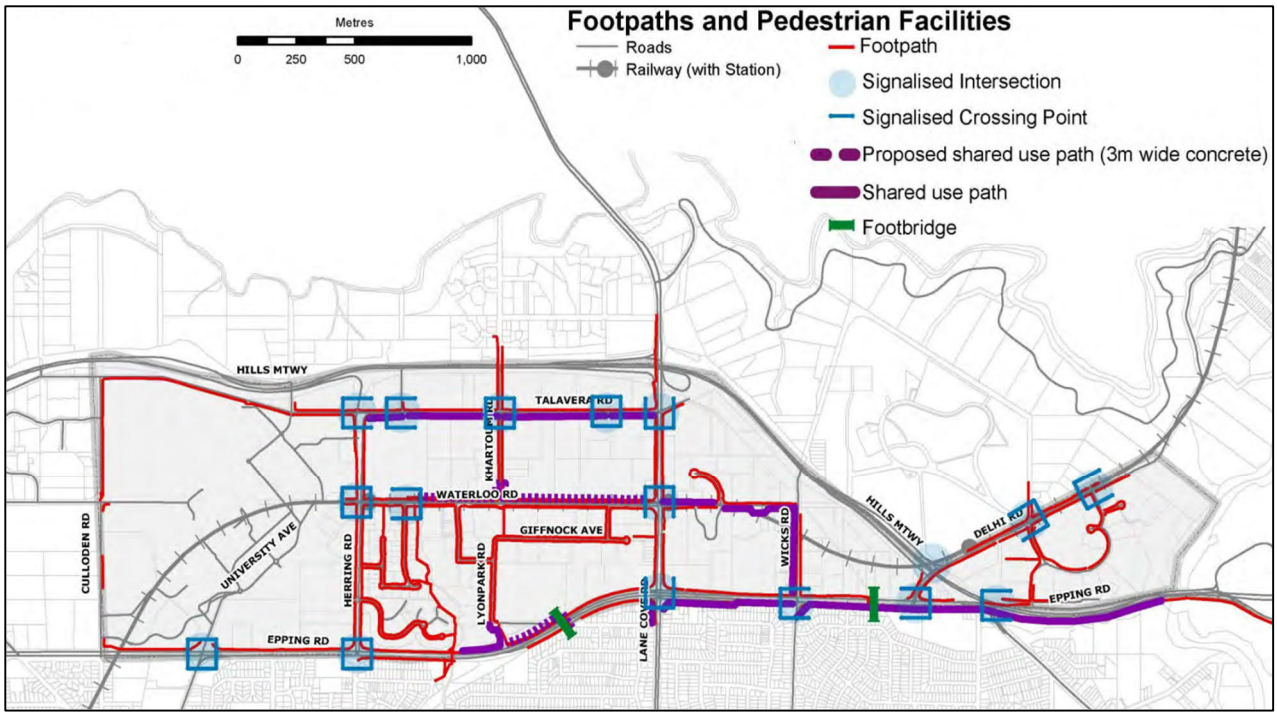


Figure 6: Existing Macquarie Park Pedestrian Facilities (Source: Arup)

The accessibility of the Site to surrounding land uses is shown in **Figure 7** which demonstrates the 5 to 15 minutes walkable catchment to and from Herring Road / Ivanhoe Place intersection. The walking catchment includes the Macquarie University Station, Macquarie University, Macquarie Shopping Centre, employment precincts along Waterloo Road and recreational areas.

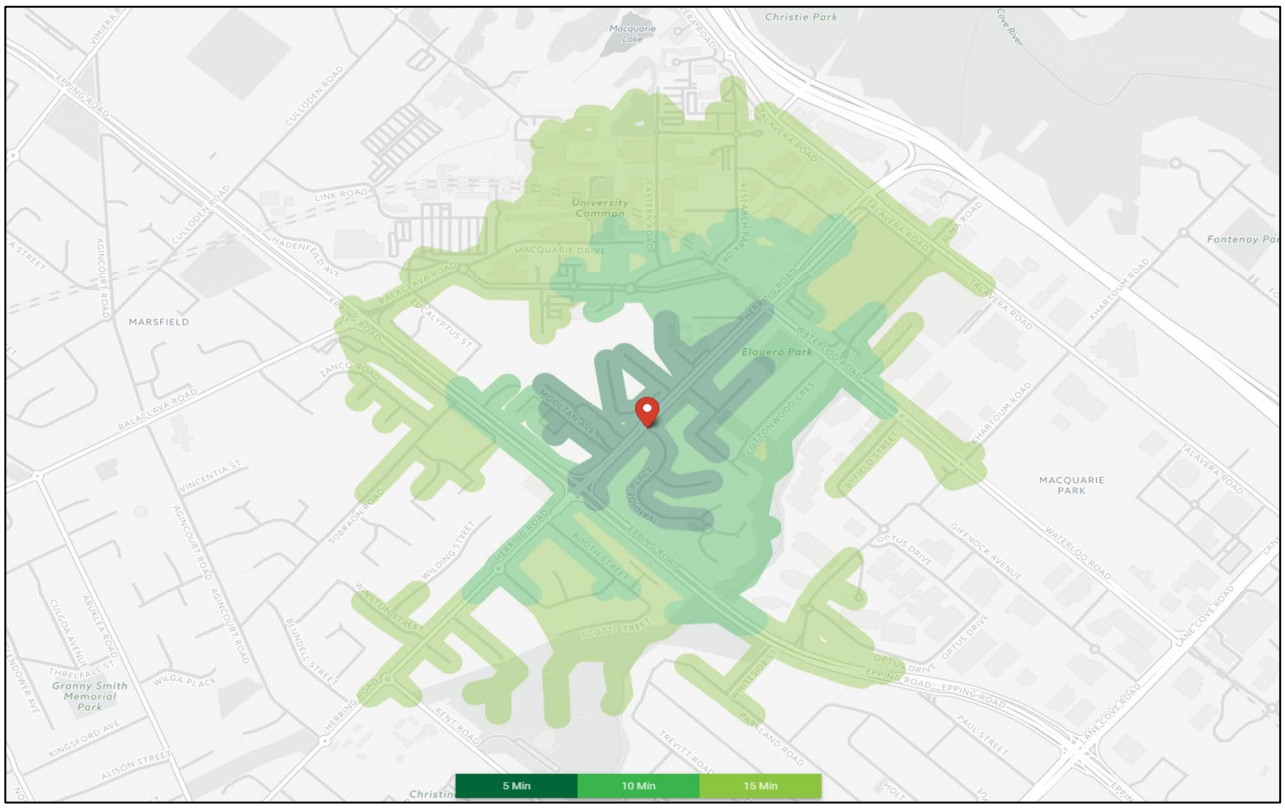


Figure 7: Walkable Catchment from Ivanhoe Place / Herring Road Intersection

2.5.2 Cycling Infrastructure

The bicycle network surrounding the Masterplan Site is illustrated below in **Figure 8**. As shown below, the Masterplan Site has access to a number of off-road shared paths along Epping Road, Shrimptons Creek and Waterloo Road, which provides access to the broader cycling network.

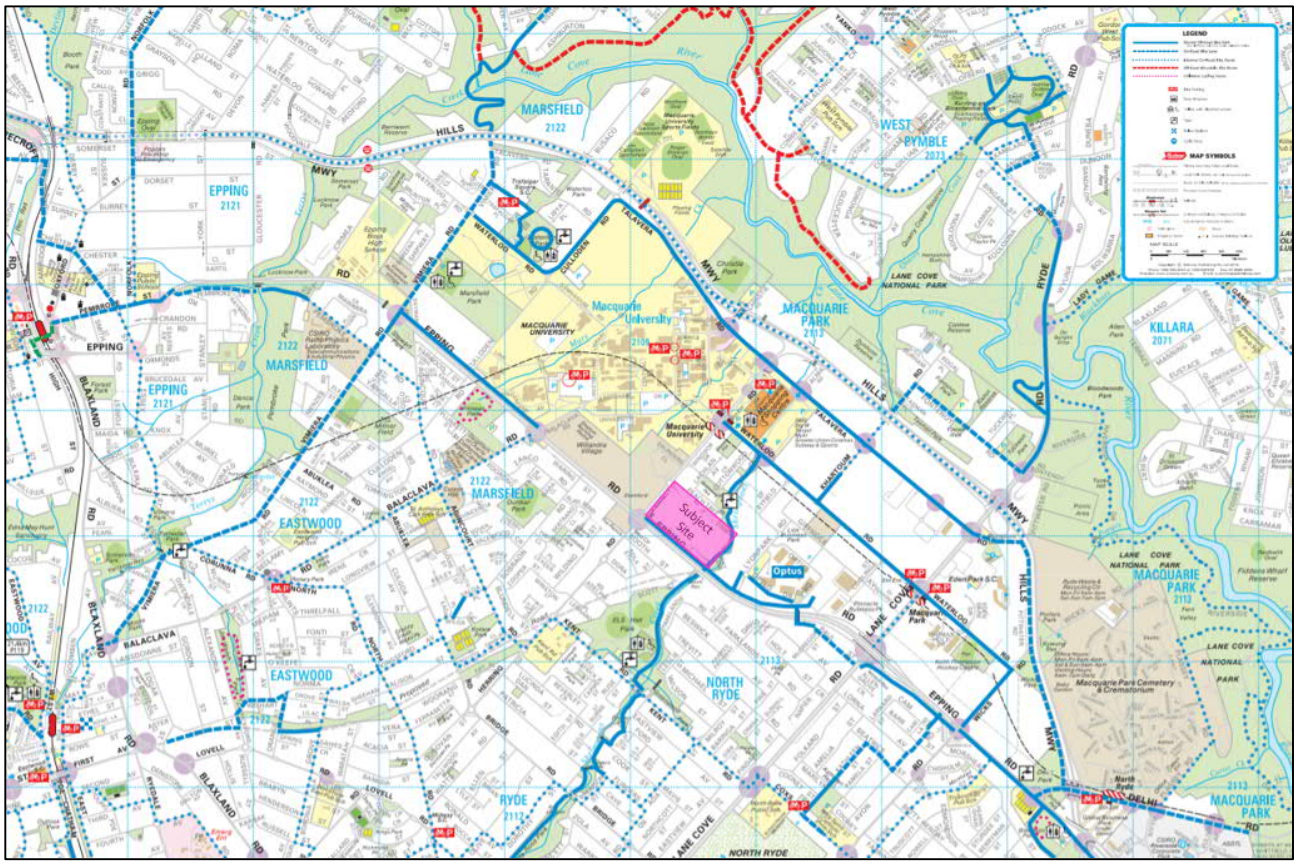


Figure 8: Ryde Cycle Maps (Macquarie Uni_Tsmart)

In addition, the Macquarie University Metro Station provides 32 secure bicycle parking spaces for the storage of bicycles. Refer to **Figure 4** above, for the location of the secure bicycle parking spaces.

2.5.3 Car Share

Car share schemes offer a viable alternative to individual vehicle ownership, with members able to book vehicles on an as needs basis either online or by phone. Ideal for transport to a meeting or other work-related travel.

Car share schemes are a more cost effective and more environmentally friendly alternative transport option to the private motor vehicle. Even when driving 3-4 times per week, the cost of using a car share (approximately $350 per month) is far less than the costs of owning and operating a car (approximately $650 per month)[1]. Car share schemes also result in less carbon emissions, with fewer vehicles being produced and less kilometres travelled per person compared to private car ownership, with car share members more likely to use car share only when necessary.

[1] Goget.com.au

GoGet provides a car share service allowing members to book cars for private use. Within 800m of the Site, there are 10 existing car pods that provide 1 or more cars including vans, 4WDs, and smaller hatchbacks. The location of these pods is detailed in **Figure 9.**

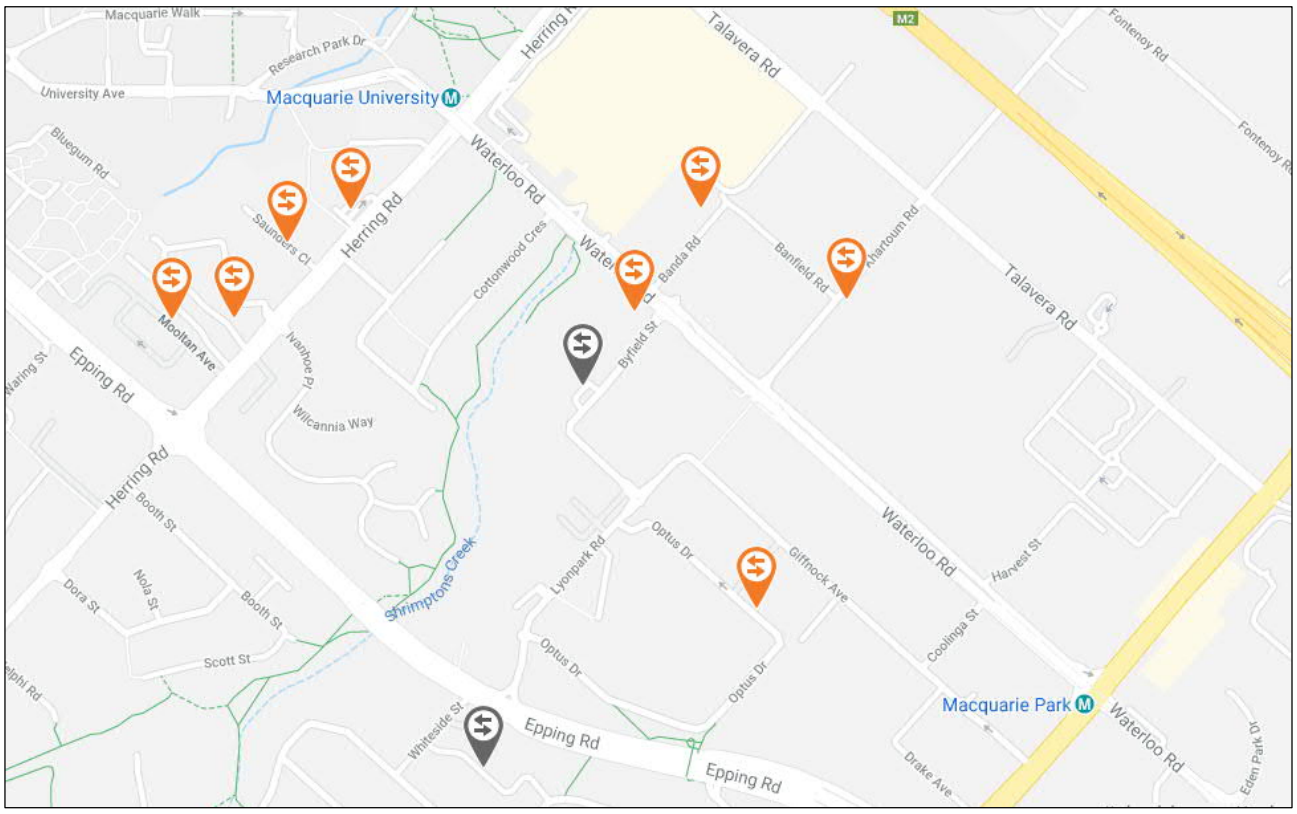


Figure 9: Existing Goget Car Share Locations

2.6 Existing Employee Travel Patterns

2.6.1 Journey to Work Data Analysis

A review of the Australian Bureau of Statistics (ABS) 2016 Census Data has been undertaken to establish the existing travel mode behaviour and patterns of workers to and from the Site. Reference to the ABS Maps indicates that the Site is located within Destination Zone (DZN) 115000001 and Statistical Area 1 (SA1) 12602150026 (as shown in **Figure 10**). The Journey to Work (JTW) travel mode data for the existing Site (from the site to a place of work and to the site from a place of residence) is provided in **Table 2** and **Table 3**.

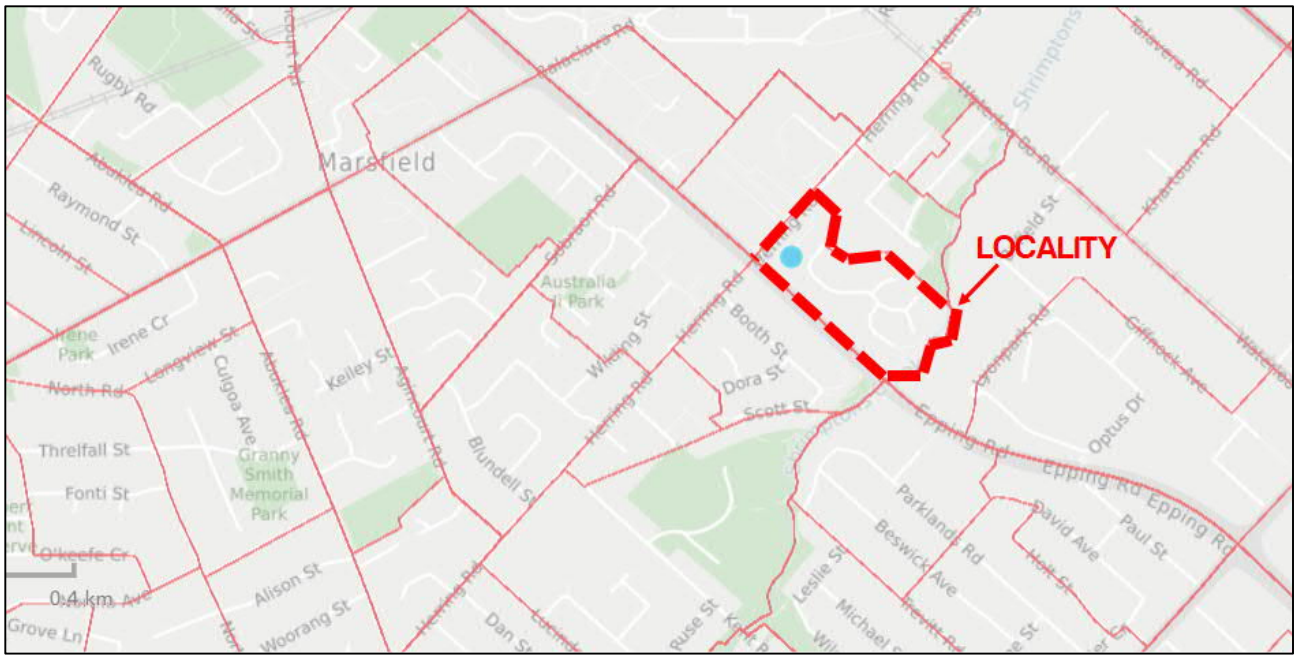


Figure 10: Journey to Work Statistical Area 1 Area

Table 2: Existing Mode Share Splits (SA1 – Journey to Work [from the site to a place of work])

TRAVEL MODE	EXISTING
Car, as driver	46%
Car, as passenger	5%
Train / Metro	18%
Bus	8%
Walked only	11%
Cycle	1%
Motorbike/scooter	0%
Other mode (worked at home, did not go to work or not stated)	12%

Table 3: Existing Mode Share Splits (SA1 – Journey to Work [to the site from a place of residence])

TRAVEL MODE	EXISTING
Car, as driver	60%
Car, as passenger	4%
Train / Metro	11%
Bus	7%
Walked only	6%
Cycle	1%
Motorbike/scooter	0%
Other mode (worked at home, did not go to work or not stated)	11%

With reference to the table above, it is evident that the predominant modes of travel to the Site are vehicle (driver and passenger) and train / metro which made up 64% and 11% respectively. This data shows that there is currently a heavy reliance on travelling to work by private vehicle with room for improvement by increased uptake to other modes of travel.

With reference to the table above, it is evident that the predominant modes of travel from the Site are vehicle (driver and passenger) and train / metro which made up 51% and 18% respectively. Similar to those arriving at the site, this data shows that there is currently a heavy reliance on travelling to work by private vehicle with room for improvement by increased uptake to other modes of travel.

3 Ivanhoe Estate Redevelopment

3.1 Introduction

The Aspire Consortium was awarded a contract by the NSW Government to redevelop the Ivanhoe Estate at Macquarie Park. The Consortium comprises development partners, Frasers Property Australia and community housing partner, Mission Australia Housing.

The Masterplan was approved in April 2020 and establishes the planning and development framework, which forms the basis for the detailed design of the future buildings and against which the future detailed Development Applications will be assessed, including the current Stage 2 Application.

3.2 Internal Road Network and Site Access

As shown in the approved Masterplan and provided below in **Figure 11**, to maximise the accessibility of the site to the external road network, access to Ivanhoe Estate Redevelopment shall be provided via two locations:

- A signalised intersection of Herring Road and Ivanhoe Estate Redevelopment; and
- A new bridge connection between Ivanhoe Estate Redevelopment and Lyonpark Road.

These accesses will provide for the distribution of traffic onto the broader road network and assist in minimising the impacts of the development on the existing operation of the road network.

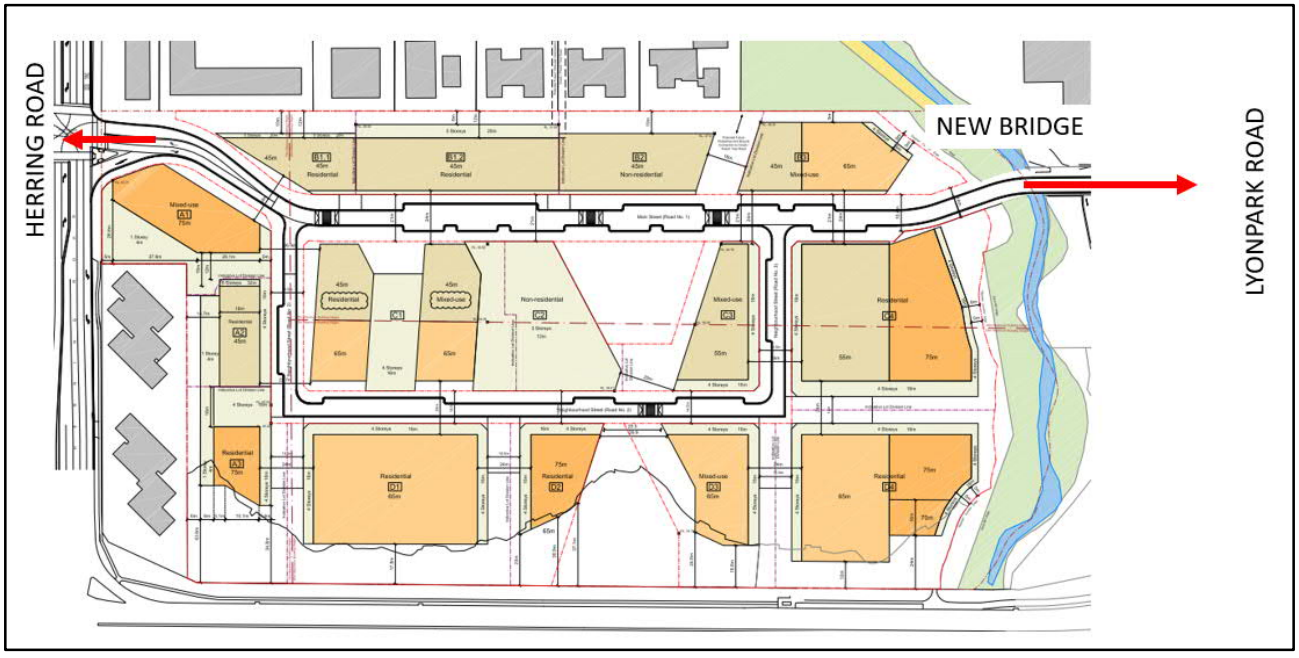


Figure 11: Ivanhoe Estate Masterplan Site Access

The street network has been set to provide a logical integration of the Site with the surrounding road network, future access locations and pedestrian desire lines, providing permeability through the future development. The proposed road network includes the provision of a Main Street traversing an east-west connection between Herring Road and the Lyonpark Road via a proposed new bridge connection.

Lower order roads have been set and aligned with the surrounding street network to create walking and cycling connections between Ivanhoe Estate and the neighbouring recreational, educational and employment zones. **Figure 12** demonstrates the proposed internal road hierarchy.

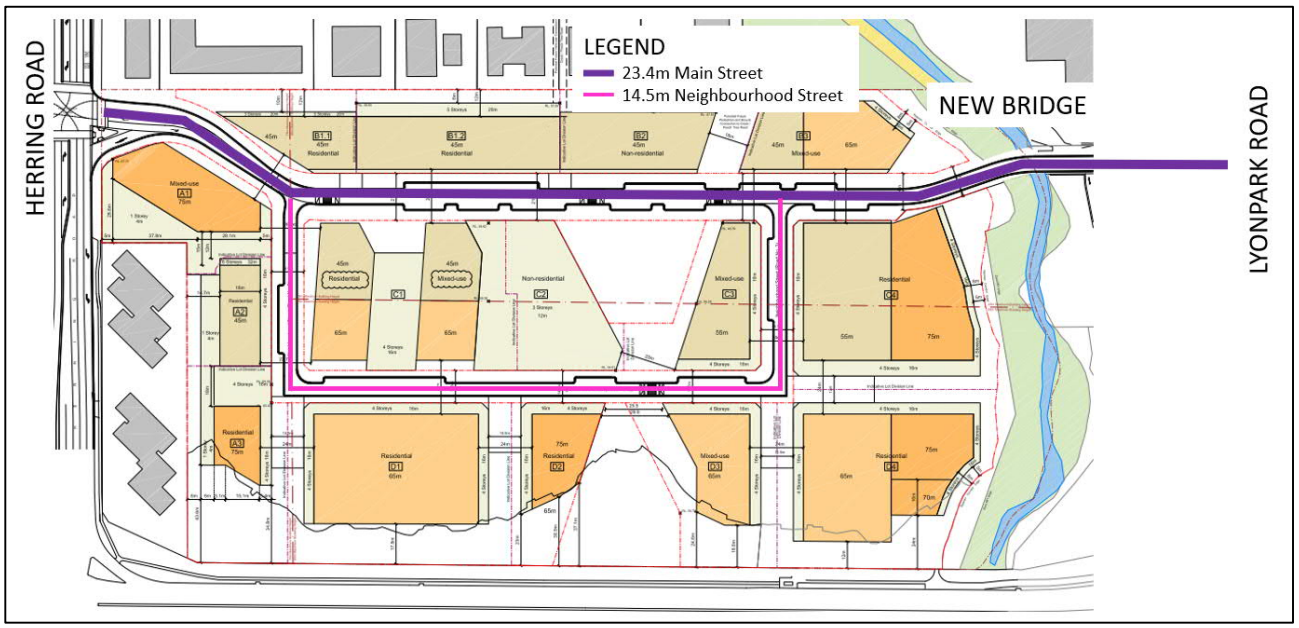


Figure 12: Ivanhoe Estate Internal Road Hierarchy

The typical road cross sections for the proposed 23.4m Main Street and 14.5m Neighbourhood Streets are provided in **Figure 13.** These roads have been developed having regard for Council's DCP and both accommodate two traffic lanes in either direction with parking provided on both sides of Main Street and on one side of the Neighbourhood Streets.

As a consequence of the signalisation of the intersection of Herring Road with Ivanhoe Place, developments on the western side of Herring Road will no longer be able to utilise the existing roundabout, currently relied on by southbound vehicles.

The Masterplan road network has been designed to facilitate the redistribution of these vehicles through the provision of a connected streets, effectively providing a "U-Turn" facility. This will ensure that existing and future residents of developments on the western side of Herring Road are not adversely affected by the proposed signalisation of Ivanhoe Place.

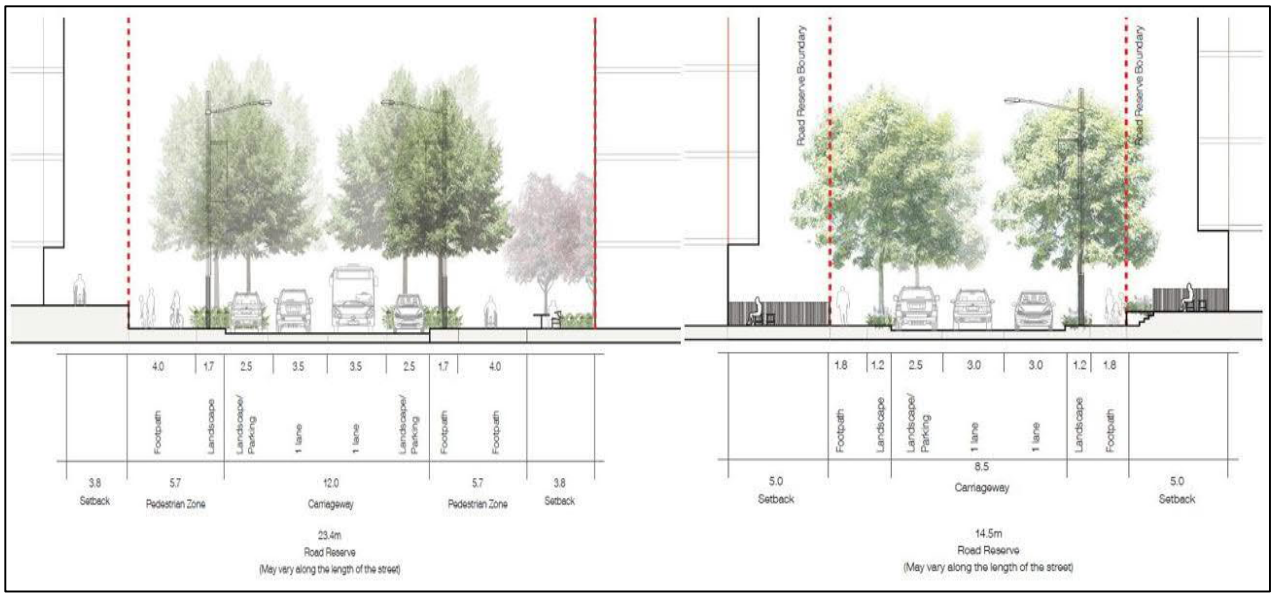


Figure 13: Ivanhoe Estate Typical Cross Sections

3.3 Pedestrian and Cycle Access

The pedestrian paths through the Site have been designed with a varying width between 1.8 to 2.4m. The routes – shown on **Figure 14** – connect along open space links providing access to the local road network and along key pedestrian desire lines, linking the site with Macquarie Park Shopping Centre and Macquarie University Railway Station.

Shared paths at 4.0m in width are also provided along the length of Main Street and along the proposed bridge linking Herring Road with Lyonpark Road. This connection provides an important new pedestrian link between the employment zones of Lyonpark Road with Herring Road.

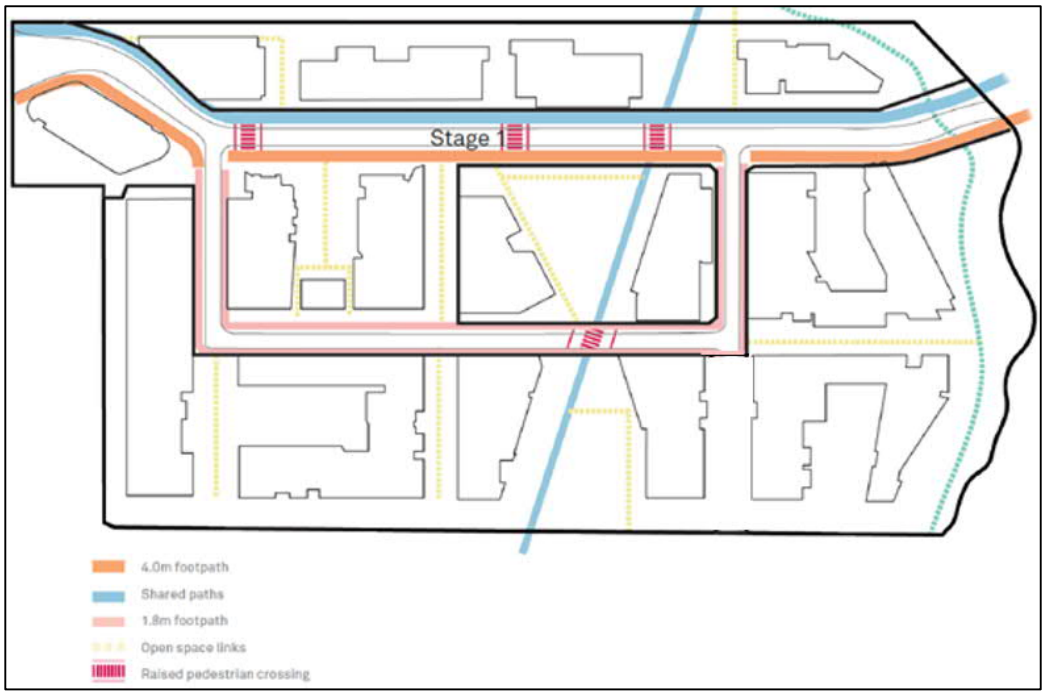


Figure 14: Pedestrian and Cycle Network

The proposal also includes the upgrade of the existing Shrimptons Creek pedestrian and cycle path which provides access to the regional cycle network traversing a north-south direction from the residential zones to the south of Epping Road to the north via Macquarie Shopping Centre. The cycle network approved as part of the Masterplan is shown in **Figure 14.**

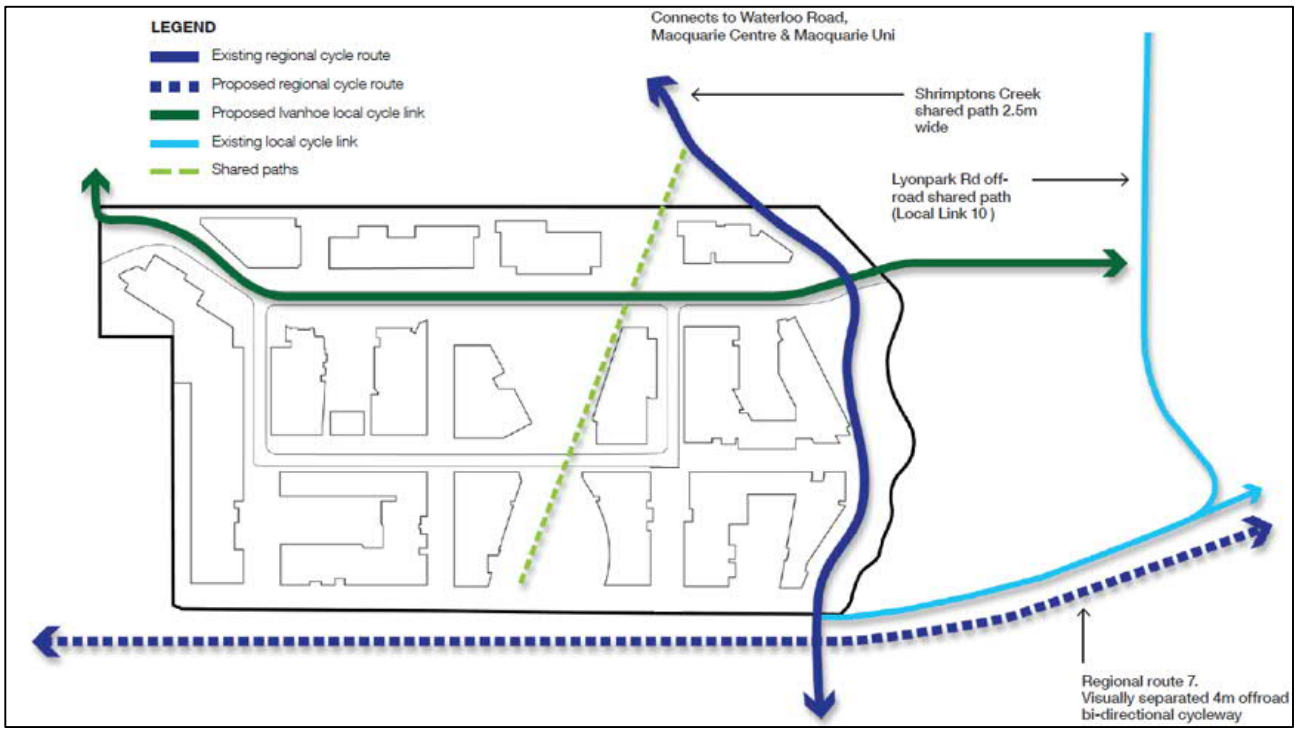


Figure 15: Ivanhoe Estate Masterplan Bicycle Network

4 The Proposal

The Stage 2 Development Application seeks approval for:

- the construction and use of Buildings C2, C3 and C4 comprising residential uses (including market and social housing) and retail / community spaces. Refer to **Figure 16** below.

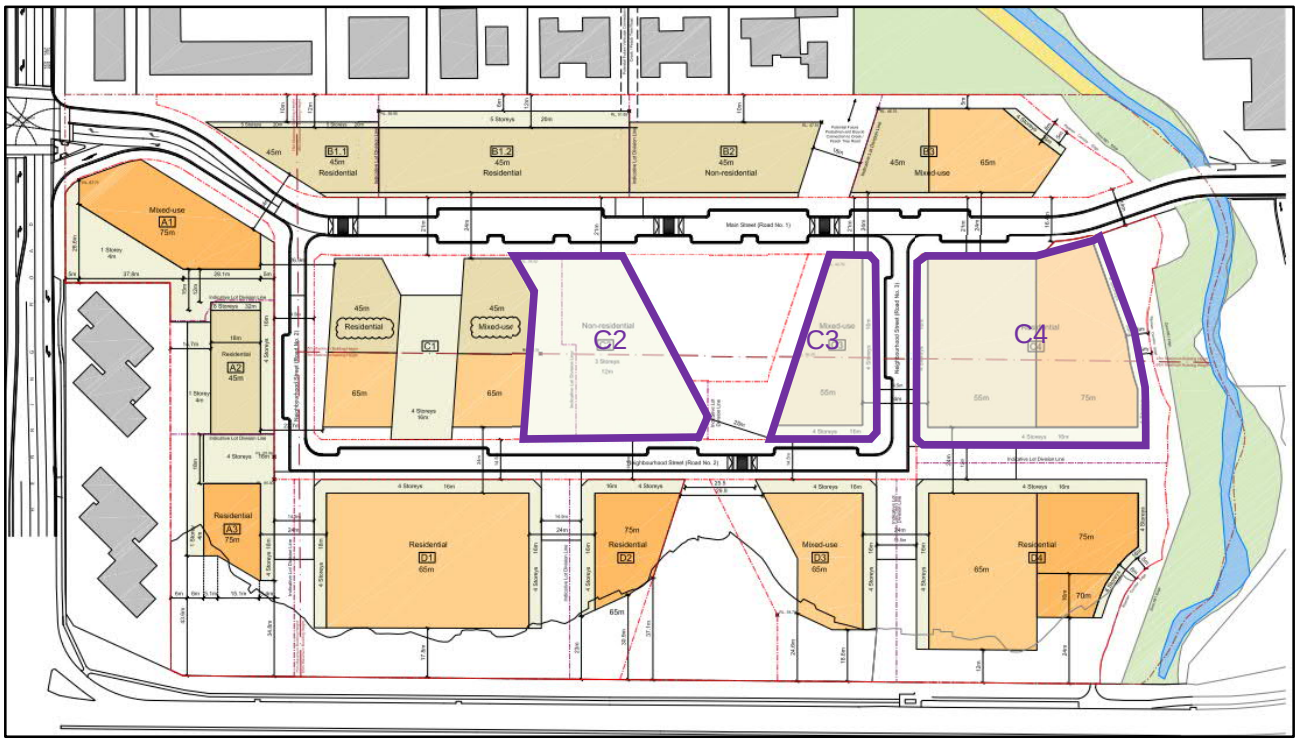


Figure 16: Approved Ivanhoe Redevelopment Concept and Stage 2 Development Application

In particular, each of the buildings comprise the following elements:

4.1.1 Building C2

- Village Green and Community Centre
- All car parking associated with the C2 building has been incorporated as part of the C1 building within the Approved Stage 1 development

4.1.2 Building C3

- 168 Residential Market Apartments
- 997 square metres of retail use (GFA)
- 163 on-site car parking spaces, comprising:
  - 145 resident spaces (including 9 accessible/adaptable spaces and 9 tandem pairs);
  - 8 residential visitor spaces; and

  - 10 retail spaces (including 1 accessible space).
- Car Wash Bay
- 178 bicycle parking spaces, comprising:
  - 168 resident bicycle spaces; and
  - 10 visitor bicycle parking spaces.

It is noted that the proposal also provides two on-street car shared spaces.

4.1.3 Building C4

- 272 Residential Market Apartments
- 216 Residential Social Apartments
- 397 car parking spaces, comprising:
  - 372 resident spaces (including 24 accessible/adaptable spaces); and
  - 25 residential visitor spaces.
- 488 resident bicycle parking spaces.

Reference should be made to the plans prepared by McGregor Coxall & Chrofi (C2), Fox Johnston (C3) and Cox Architecture (C4) which are submitted separately.

5 Green Travel Plan Objectives

The primary objectives of this Green Travel Plan (GTP) include:

- Reduce the environmental footprint of the development and congestion in the local area;
- Promote the use of 'sustainable transport' modes such walking and cycling, particularly for short-medium distance journeys and public transport;
- Encourage higher vehicle occupancy rates including but not limited to the uptake of car share and car-pooling;
- Reduce reliance on the use of private vehicles for all journeys;
- Increasing accessibility to the Site through the increased travel options;
- Reduction in greenhouse emissions and pollution to create a safe and healthy environment;
- Encourage a healthier, happier and more active social culture
- Reducing the journey times

Having regard for the above, this GTP adopts the movement hierarchy shown by **Figure 17**, with priority given to Active Transport (Walking and Cycling) followed by mass public transport and lastly the use of cars and other private vehicles.

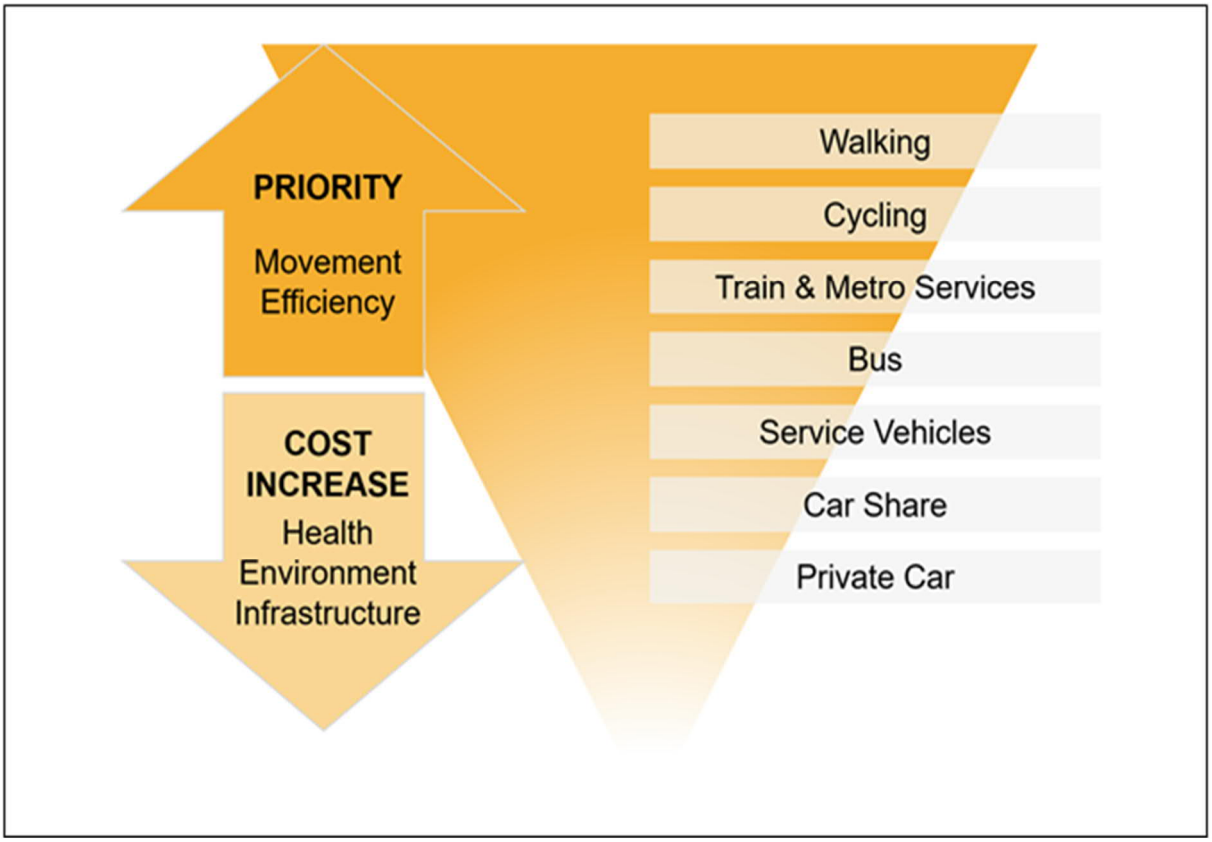


Figure 17: Movement Hierarchy

6 Targets

6.1 Mode Share Targets

The ultimate vision for the Site is to encourage all users (residents, staff and visitors) to travel by sustainable modes of transport and utilise the excellent existing alternative transport modes in the area. This includes the approach of providing on-site car parking below the maximum allowances and promoting the use of alternative transport modes, which is reflected by the proposed targets.

The objectives for the Site aim to deliver public transport, walking, and cycling journeys in line with NSW government state targets and the City of Ryde's Travel Plan Guidelines (2015). A target of at least 40% of public transport and/or sustainable transport trips and a target of less than 60% for private transport trips is proposed within this document, which seeks to minimise drive-alone vehicle trips and to encourage sustainable transport modes to/ from and within the Ivanhoe Estate Redevelopment.

The following high level objectives are outlined within NSW state government transport targets for Metropolitan Sydney, which should apply to the Ivanhoe Estate Redevelopment. The relevant state government targets for transport are as follows:

- 28% public transport mode share for journeys to work; and
- 5% bicycle mode share for trips of less than 10km.

It is noted that the below Stage 2 targets, as shown in **Table 4** and **Table 5** are generally consistent with the Masterplan and Stage 1 development as well as the NSW state government targets.

Table 4: Mode Share - Existing and Proposed Target (from the site to a place of work)

TRAVEL MODE	EXISTING	PROPOSED	CHANGE
Vehicle driver	46%	40%	-6%
Vehicle passenger	5%	2%	-3%
Train / Metro	18%	23%	5%
Bus	8%	10%	2%
Walked only	11%	15%	4%
Cycle	1%	5%	4%
Other mode	12%	5%	-7%

Table 5: Mode Share - Existing and Proposed Target (to the site from a place of residence)

TRAVEL MODE	EXISTING	PROPOSED	CHANGE
Vehicle driver	60%	50%	-10%
Vehicle passenger	4%	2%	-2%
Train / Metro	11%	16%	5%
Bus	7%	10%	3%
Walked only	6%	9%	3%
Cycle	1%	5%	4%
Other mode	11%	8%	-3%

- Public Transport usage increases of between 2% and 5% are considered achievable based on the proposed proximity, accessibility, and frequency of infrastructure and services.
- Bicycle usage increases to 5% mode share is consistent with the NSW state government transport targets. The site proposes to provide bicycle parking in excess of the minimum requirements, with end of trip facilities provided for staff. These increases are considered achievable, based on the proposed proximity and accessibility of infrastructure and services.
- Car driver and passenger reductions as well as other modes have been subtracted from sustainable transport (public transport, and bicycle and walk) increases. A large number of rigorous empirical studies link urban development and travel patterns, indicating that even after accounting for socioeconomic and demographic differences, residents of communities with frequent, reliable, easily accessible public transport services and well designed pedestrian and bicycle networks drive significantly less, and walk, bicycle and ride public transport more than their counterparts in 'traditional' communities.

This GTP is intended to implement a package of site-specific measures to promote and maximise the use of sustainable travel modes, including walking, cycling, public transport and car sharing. It reviews the existing transport choices and has set targets so that the effective implementation of the Plan can be assessed. The Plan shall be reviewed regularly as part of an ongoing review to ensure it remains relevant and reflective of current conditions.

It is noted that Council's minimum mode split target (at least 40% sustainable transport and not more than 60% private vehicles), according to Council's 2015 Travel Plan Guidelines, is not subject to review by the development at a later date as it reflects Council's goals towards sustainable transport across Ryde LGA.

7 Measures & Action Strategies

7.1 Measures

The below is a range of measures to achieve the objectives of this GTP.

- An introduction to the Travel Plan for all users, setting out its purpose and objectives.
- Provision of public transport travel information for all users in the various aspects of the Development. This could include the provision of up to date arrival and departure information for bus and train services within the lobbies.
- Encouragement of car sharing.
- Assisted cycle purchase schemes.
- Interest free loans to assist with cycle purchase, cycle equipment purchase etc.
- The provision of transport information for visitors to the Site.

7.2 Implementation

A Travel Plan Coordinator (TPC) should be appointed to act as the primary point of contact for enquiries relating to the progress of the future Travel Plan. The TPC contact details should be provided in the implemented Travel Plan.

7.3 Strategies

Six main strategies have been identified and the actions required for each are detailed in **Table 6** below. The table details how the targets the specific actions to be implemented as part of this GTP and who will be responsible for implementing each action.

The GTP will further develop a package of site-specific measures to promote and maximise the use of sustainable travel modes, including walking, cycling, public transport, car sharing, car-pooling, on-demand services, and other alternative means of transport.

These measures will be further developed and it is expected that a condition of consent will be imposed requiring approval by Council before the issue of any Occupation Certificate and in accordance with all requirements under Council's planning controls and *Travel Plan Guidelines*.

It will be the Developer's responsibility to explain to future users of the building the expectations of travel planning in accordance with the Action Plan, alongside the required implementation and monitoring strategies.

Table 6: Proposed Ivanhoe Estate Redevelopment GTP Strategies

	STRATEGY	HOW IT WORKS	IMPLEMENTATION	RESOURCES / RESPONSIBILITY
1 Travel Planning and Demand Management				
1.1	Car Sharing	Extend the provision within Stage 2 of the established car share schemes to set up a car sharing network of 50 vehicles for Ivanhoe Estate, reducing residents need to own and operate their own vehicle.	City of Ryde Council should consider extending the provision of established car share schemes to Ivanhoe Estate, reduce residents need to own and operate their own vehicle, safe in the knowledge that they can get access to a vehicle if they require one.	Developer, council
1.2	Carpooling	Establish a car pooling program to help people find someone to share in their daily commute.	Prepare information sheets specific to residential commuters and employees on site.	Building Management, commercial space staff
1.3	Travel Plans	Provide information for Workplace Travel Plans. Management of Travel Plans Promotion of Travel Plans	Provide information and resources, and implement a range of additional initiatives to reward and encourage those who travel actively to help develop a healthy, active culture and meet travel targets. Continued support of the person/organisation in charge of managing the GTP. Undertake a GTP event annually. Promote the follow initiatives via bulletins and web pages: Travel Survey Results; and Progress and update of GTP.	Developer
1.4	Flexible Working hours	Allowing staff the flexibility to commute outside peak periods to reduce overall congestion and travel time.	Manage staff rosters where possible.	Employers
1.5	Teleworking	Provide the option to work remotely to reduce the number of vehicles on the road and encourage teleconferencing rather than travelling to meetings.	Manage staff rosters, and develop work-from-home policies and procedures, where possible.	Employers

2 Promoting Public Transport				
2.1	Pre-loaded Travel Pass	To promote travel via public transport and reduce private vehicle usage	Provide each occupied dwelling with a pre-loaded travel pass (minimum value of $20)	Developer
2.2	Free Community Bus Service	To encourage bus usage and reduce private vehicle usage between the site and the Macquarie Park Employment Zones, Macquarie Shopping Centre and Macquarie Park Station during the weekday AM and PM peak hours.	To provide a free bus service for residents and employees within the site, operated and funded by the Applicant to connect the site and the Macquarie Park Employment Zones, Macquarie Shopping Centre and Macquarie Park Station during the weekday AM and PM peak hours.	Developer
2.3	Travel Pass Loan Schemes	Commercial business may consider subsidising staff travel passes to increase public transport use. Alternatively, staff can pay for their own annual travel pass through their salary, spreading the cost over the year to make it more affordable.	Subject to owner/tenant negotiations and incentives.	Commercial tenant responsibility
2.4	Integration of Public Transport Services	Maximise integration of bus and train services providing linked timetables for residents to/from local and regional employment, retail, and commerce centres.	Dedicated bus-rail interchange designed. Increased headway and service commitments already made for bus and Metro services. Monitor and review services periodically.	Transport for NSW, Developer
2.5	Maximise Bus Service Coverage	Maximise coverage of the development and to provide connections for residents to major services.	The proposed bus network should be designed to maximise the coverage of the development throughout the different stages.	Transport for NSW, Developer
2.6	Implement Early Start-up Buses	Reduce car dependency by development and staging early 'Start-up' buses.	Bus service should be established from "Day of opening" to encourage the use of public transport by the residents. Bus routes will connect EPS, EP Park Station, Site, as well as regional destinations.	Transport for NSW, Developer
2.7	Maximise Bus Service Frequency	Meet or exceed Transport NSW bus planning guidelines.	Decrease headway where possible, especially during peak periods.	Transport for NSW, Developer
2.8	Good Quality Bus Stops with Pedestrian Links	Account for service frequency and potential patronage with high standards of infrastructure.	Design with high standards of infrastructure, to provide shelter, seating, information such as timetable and network map (real-time information?). Facilities provided at each bus stop will be determined by surrounding land	Transport for NSW, Developer

			uses, account for service frequency and potential patronage.	
2.9	Public Transport for Business travel	The commercial space tenants can promote public transport as the first preference for business travel. This should be supported by employees having access to travel passes.	Subject to owner/tenant negotiations and incentives.	Commercial tenants
3 Promoting Cycling				
3.1	Providing & Maintaining End of Journey Facilities	Providing facilities such as showers, change rooms, lockers.	Bicycle parking spaces will be provided for residents and staff. Commercial tenant will provide access to other facilities such as showers.	Developer, commercial tenant
3.2	Bicycle Fleets	Building management staff and commercial tenant may consider having bicycle fleets which employees can use for local trips.	Utilisation of on-site bicycle parking facilities and purchase/lease of shared bicycles.	Building management
3.3	Promote Bicycle User Groups	Set up dedicated Bicycle User Group (BUG) for Ivanhoe Estate to encourage bicycle use and promote bicycle rides and initiatives.	Encourage the local community to set up a dedicated Bicycle User Group (BUG) for Ivanhoe Estate, or join an existing BUG which is active in the local area.	Developer, local BUGs
3.4	Promote Bicycle Initiatives	Promotion of bicycle initiatives – NSW bicycle week, cycle to work day etc.	In addition to a local BUG, promote and encourage cycling in the precinct. Local schools, businesses and councils should actively participate in recognised NSW government bicycle initiatives such as bicycle week and cycle to work day.	Local schools, businesses, City of Ryde Council
3.5	Provide Cycle Training	Encourages those who wouldn't previously consider cycle as a mode choice to do so.		Developer/Employer
4 Promoting Walking				
4.1	Provide a Pedestrian Network	Provision of a high quality, highly permeable pedestrian network throughout Ivanhoe Estate.	Design and construct continuous pedestrian footpaths and pedestrian crossing facilities at key locations. Limit delays to walk trips and make them pleasant convenient, direct, and integrated with land uses. Consider safety in design to provide well-lit links for safety and ambience to encourage pedestrian travel.	Developer

4.2	Providing End of Journey Facilities	Provision of sufficient end of trip facilities such, showers, change rooms, lockers etc to maximise pedestrian activity throughout the site and the wider precinct.	Provide pedestrian facilities and amenities in close proximity to schools and sports facilities, in the Site and at the rail station.	Developer, commercial tenants
5 Restraining Parking				
5.1	Reduce Residential Parking Rates	Restrain parking requirements for the Site high density residential apartments to account for the availability of other travel options.	The high density residential development in the Site will have very good access by public transport, as well as good quality pedestrian and cycle networks, and a good range of local shops, services and facilities in close proximity, thereby reducing residents need to own and operate a car.	Developer
5.2	Site Co-sharing Parking	Provision of co-ordinated and shared parking in the Site.	Provide parking in the Site that is co-ordinated and where possible shared across multiple land uses or shared between retail and residential visitor parking that don't have similar peak parking demands.	Developer, Employers, Councils
5.3	Transport Access Guide	Provide residents and staff with a Transport Access Guide (Example provided in Appendix A) and advise them of the transport options available in the area.	Keep a copy of the Transport Access Guide current, relevant, useful and accessible. The TAG should be clearly displayed in communal areas.	Building management, employers
6 Influencing Travel Behaviour				
6.1	Provision of Sustainable Travel Packs to Residents	Introduces residents to the GTP and provides information on walking and cycling routes, and travel by bus & train. Contact details for who is responsible for the GTP will also be provided	To be provided on first occupation of dwellings	Developer
6.2	Sustainable Home Deliveries Guide	Encourage sustainable home deliveries of groceries using local producers.	Adopt sustainable practices for deliveries and sustainable principles in local food production to reduce peoples' need to travel (for shopping) and hence reduce travel demand for residents, whilst also reducing the transport of food produce.	Developer, local community organisations

Bicycle parking spaces and end of trip facilities will be provided on-site to support the Action Plan. Additional bicycle parking spaces may be recommended in the future; however, this would be subject to further review as part of the ongoing Travel Plan maintenance which is discussed further below.

To encourage ride sharing between staff (to assist with Item 5.2 identified in the Action Table), business management may consider the signposting of desirable parking spaces close to building entrances for use by vehicles with multiple occupants.

A copy of the Travel Access Guide (TAG) shall be emailed to all occupants. An example TAG can be found in **Appendix A** and will be further developed for the final Travel Plan (in consultation with Council). The TAG shall be presented in a form that is reflective of the commitment to achieving positive transport objectives. The TAG is not to be presented on loose paper.

8 Monitoring Strategy

8.1 Plan Maintenance

This Plan shall be subject to ongoing reviews and will be updated accordingly. Regular reviews will be undertaken by the TPC. As a minimum, a review of the Travel Plan would occur every year for a minimum of five years.

The key considerations when reviewing or monitoring the Travel Plan are as follows:

- Update baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes etc.
- Track progress against target travel mode targets.
- Identify any shortfalls and develop an updated action plan to address issues.
- Ensure travel modes targets are updated (if necessary) to ensure they are realistic and remain ambitious.

8.2 Monitoring

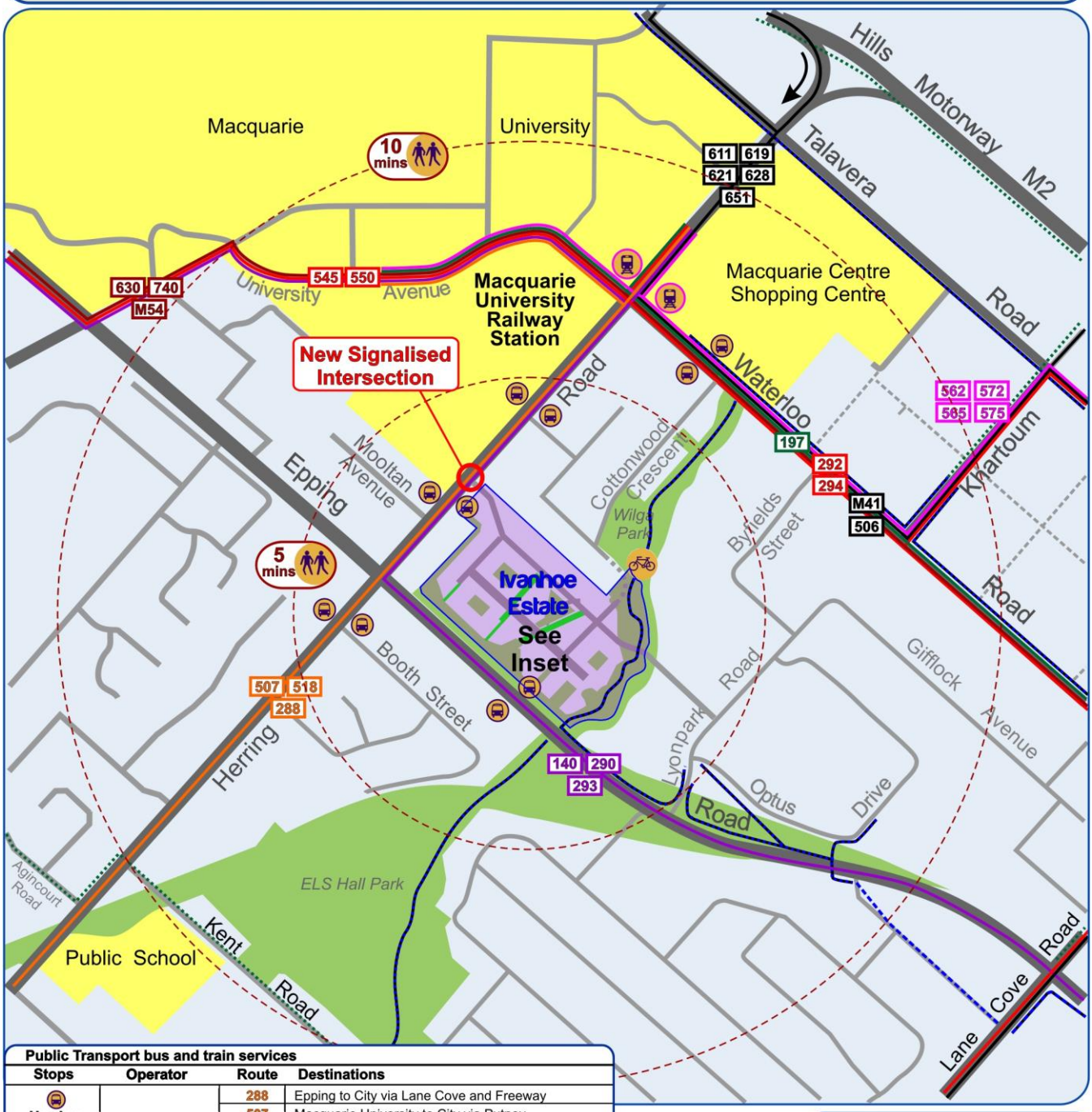
So as to record the overall success, as well as the effectiveness of the individual measures, monitoring and review of the Travel Plan is to be conducted at regular intervals. The TPC will act as the primary point of contact for all enquiries relating to the Travel Plan's progress.

The Travel Plan will be monitored every year, with the first survey being carried out shortly after first occupation of the Development. Travel mode surveys would determine the proportion of persons travelling to/from the Site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the site, as far as practicable.

If targets are not met at the end of the initial period of monitoring, the Travel Plan will be reviewed, new measures introduced and would be reassessed at the next monitoring stage.

Appendix A. Example Travel Access Guide

Transport Access Guide: Ivanhoe Estate, Macquarie Park



Public Transport bus and train services

Stops	Operator	Route	Destinations
Herring Road	Sydney Buses	288	Epping to City via Lane Cove and Freeway
		507	Macquarie University to City via Putney
		518	Macquarie University to City via Drummoyne
Epping Road and Herring Road		140	Epping to Manly
		290	Epping to City via Pacific Highway
		293	Marsfield to City via Lane Cove Tunnel
		292	Marsfield to City via Freeway
		294	Macquarie University to City via Freeway
		506	Macquarie University to City via Hunters Hill
		545 550	Chatswood to Parramatta
		M41	Metrobus Macquarie Centre to Hurstville
		M54	Metrobus Macquarie University to Parramatta
Waterloo Road	Hillsbus	611 630	Macquarie Park to Blacktown
		619 628	Macquarie Park to Rouse Hill via Castle Hill / Norwest
		621 651	Castle Hill to City
	Busways	740	Macquarie Park to Plumpton via M2 Motorway
	Forest Coachlines	197	Macquarie University to Mona Vale
	Transdev ShoreLink	562	Macquarie University to Gordo
		565	Macquarie University to Chatswood
		572	Macquarie University to Turramurra Station
		575	Macquarie University to Hornsby

Macquarie University Railway Station	Sydney Trains	T1 Northern Shore, Northern and Western Line	Hornsby to Emu Plains and Richmond via Chatswood
	Sydney Metro	Stage 1: NorthWest (2019)	Cudgegong Road to Chatswood
		Stage 2: City & SouthWest (2024)	Chatswood to Sydenham and Bankstown

Active Transport cycle routes

	Shared Off-Road Bike Path
	On-Road Bike Lanes
	Informal On-Road Bike Routes
	Pedestrian Pathway Links

Inset