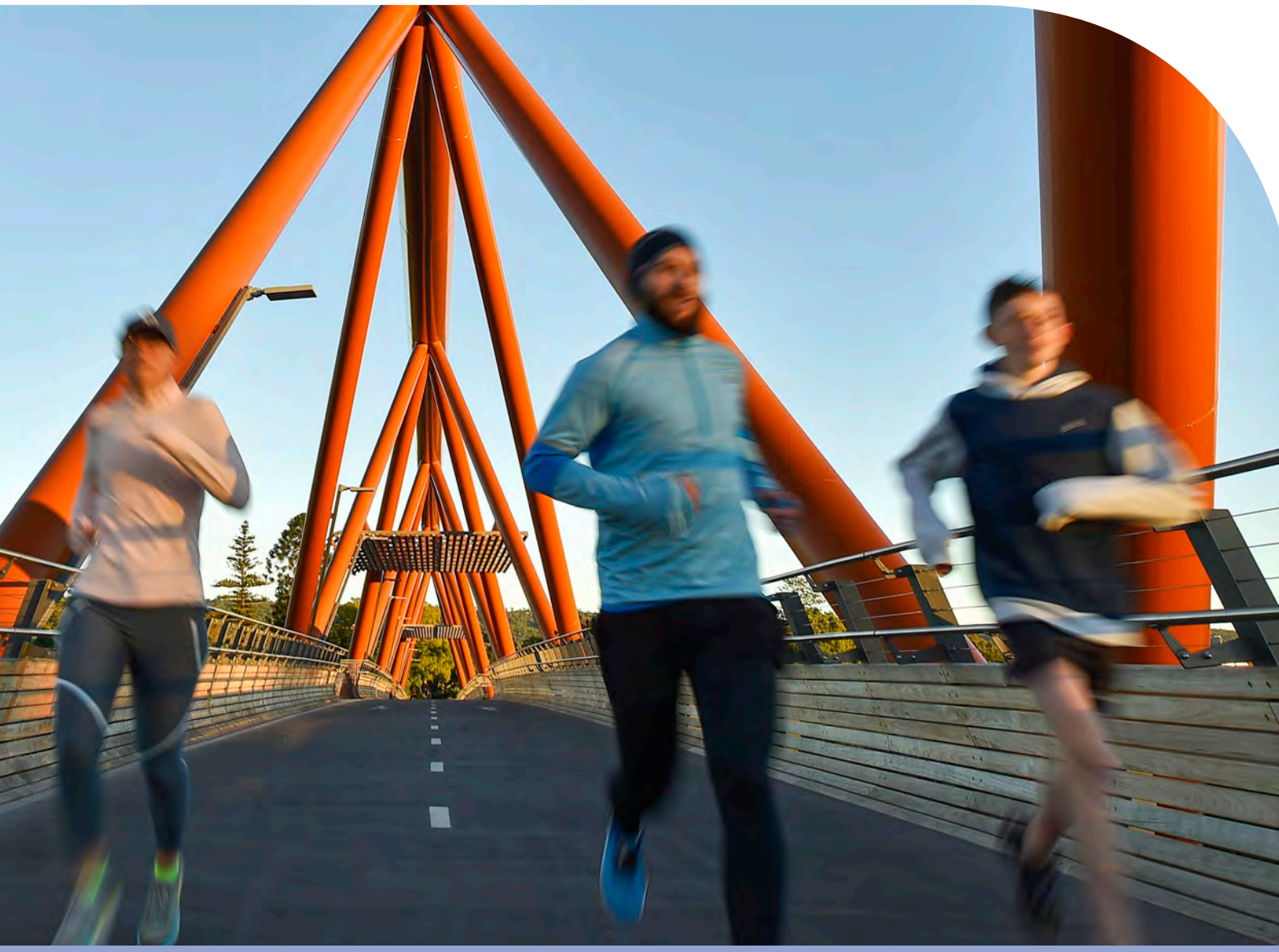
Positively PENRITH

Implementation Plan

2022-32



Penrith Accessible Trails Hierarchy Study (PATHS)

PENRITH CITY COUNCIL

penrith.city

Statement of recognition of Aboriginal and Torres Strait Islander Cultural Heritage

Council values the unique status of Aboriginal people as the original owners and custodians of lands and waters, including the land and waters of Penrith City. Council values the unique status of Torres Strait Islander people as the original owners and custodians of the Torres Strait Islands and surrounding waters. We work together for a united Australia and City that respects this land of ours, that values the diversity of Aboriginal and Torres Strait Islander cultural heritage and provides justice and equity for all.

Version History

Report File Name	Prepared	Reviewed	Issued	Date
P5519.001R Penrith Accessible Trails Hierarchy Strategy 2022 - Preliminary Draft	R.Jain, G.Yin	G.Yin	G.Yin	16/06/2022
P5519.002R Penrith Accessible Trails Hierarchy Study - 2022 -2026 Implementation Plan - Draft	R.Jain, G.Yin	G.Yin	G.Yin	01/08/2022
P5519.003R Penrith Accessible Trails Hierarchy Study - 2022 -2026 Implementation Plan - Draft	R.Jain, G.Yin	G.Yin	G.Yin	04/08/2022
P5519.004R Penrith Accessible Trails Hierarchy Study - 2022 -2032 Implementation Plan - Draft	R.Jain, G.Yin	G.Yin	G.Yin	26/08/2022
P5519.005R Penrith Accessible Trails Hierarchy Study - 2022 -2032 Implementation Plan - Draft_Local and State	R.Jain, G.Yin	G.Yin	G.Yin	07/09/2022
P5519.006R Penrith Accessible Trails Hierarchy Study - 2022 -2032 Implementation Plan - Draft_Local and State_Exhibition	R.Jain, G.Yin	G.Yin	G.Yin	16/09/2022
P5519.007R Penrith Accessible Trails Hierarchy Study – 2022-2032 Implementation Plan - Final_Local and State_Exhibition	T.Islam	A.Eke	R.Jain	09/11/2022
P5519.008R Penrith Accessible Trails Hierarchy Study - 2022-2032 Implementation Plan - Final_Local and State	R.Jain	A. Eke	G. Yin	18/11/2022
P5519.009R Penrith Accessible Trails Hierarchy Study - 2022-2032 Implementation Plan - Final_Local and State	R.Jain	G. Yin	G. Yin	23/11/2022
P5519.010R Penrith Accessible Trails Hierarchy Study - 2022-2032 Implementation Plan - Final_Local and State	R.Jain, G. Yin	G. Yin	G. Yin	23/01/2023

Contents

Executive summary

Penrith City Council (in conjunction with Bitzios Consulting) has undertaken a review of its existing active transport strategies and is developing an updated active transport implementation plan to determine priority projects, routes and infrastructure to be implemented.

This *Penrith Accessible Trails Hierarchy Study* (PATHS) *Implementation Plan 2022-2032* intends to support the long-term goals of providing a planned and cohesive walking and cycling network. This document aims to present a clear implementation plan over the next ten years to deliver shared user paths and other bicycle infrastructure across Penrith City to:

- Make walking and bike riding the most desirable option for short trips
- Increase the safety for bicycle riders and pedestrians by providing separated facilities
- Provide a quality and connected active transport network, reduce the dependence on private vehicle travel for local trips, and encourage healthy and active lifestyles.

The Plan aims to include and align with various NSW State Government and Council strategies, including the Western City District Plan and Green Grid plans, to promote and support active transport. Actions developed as a result of this Plan are to be embedded into various Council resourcing, delivery and operational plans.

Council in the past 10 years, in collaboration with the NSW Government, have invested over $18 million in the delivery of an active transport network, including: over 30km of shared user paths; and the 'Yandhai' accessible active transport bridge, which now connects the two sides of Penrith City over the Nepean River.

The process and development of the Study and resulting Implementation Plan included:

- The review of previous plans including PATHS 2012, Penrith Green Grid, Principal Bicycle Network and Sydney Metro Active Transport strategies
- Desktop review of the best practice design to improve infrastructure and align local routes with State active transport plans
- The review of previous demographic research to understand the needs, concerns and opportunities of the community
- Involvement of community and Council stakeholders to capture feedback and understand the alignment with other initiatives
- Preparation of a GIS-based analysis to develop and extend the existing active transport network and determine route and project priorities.

As part of the Implementation Plan (2022-32), the highest ranked *Local Priority Projects* for which Council Officers will seek funding to progress through design and construction include:

Project Reference	Project Name	Total Length
1	School House Creek Corridor from Glenmore Parkway to Mulgoa Road	9.2km
2	South Penrith to Jamisontown via York Road	4.4km
3	Old Bathurst Road Corridor, Emu Plains	3.6km
4	Queen Street Corridor, St Marys	1.0km
5	North St Marys to St Marys via Glossop Street	2.0km
6	Penrith City Centre Connections	3.9km
7	Glossop Street to Queen Street	0.8km
8	Bringelly Road and Maxwell Street	4.0km
9	Cranebrook to Penrith City Centre	5.6km
10a	Evan Street, Penrith	3.1km
10b	WSU Kingswood to Jamison Park	5.0km

Council's lead role will be to secure funding to progress these projects through design, consultation and delivery.

As part of the commitment to expand the active transport network within the Penrith LGA, Council will continue to advocate to the Federal and State Governments for delivery of active transport infrastructure as part of its development projects.

This Implementation Plan outlines the projects and routes to be implemented in the next ten years, including activities to be undertaken, nominated budget and time frame between 2022 and 2032, aligning with Council's Delivery Program and Operation Plan.

1. Walking and cycling in Penrith City

Background

The Penrith region is undergoing a period of transition and significant change as a result of major infrastructure investments.

Penrith's status as a Metropolitan Cluster and proximity to the Western Sydney Aerotropolis will catalyse a transformational change in the area, with an increased demand for jobs, services, housing and recreation opportunities. The increase in population and employment inherently increases the importance of the integrated transport network available to the residents and workers of Penrith City, including active transport as both a primary travel mode and as part of a longer journey.

While the walking and cycling network is a current priority for Penrith City, the large geographic spread of the population, differences in socio-economic status, age, physical ability and work patterns create challenges to supporting a mode shift from the current high private vehicle dependency rates and encourage wider active transport use. Only 5% of all trips in Penrith are made by public transport (buses and trains). Walking only trips account for 8% of all trips and bike riding trips account for 1%.

In order to promote and increase the uptake of walking and cycling across the Penrith region, the walking and cycling network should provide convenient, connected and enjoyable routes.

The need for the study

Walking and cycling are vital to the integrated transport network across Penrith City. It provides healthy, fast and convenient travel with minimal impact on the environment. The Penrith community values being able to get around Penrith City easily, quickly and safely, whether by car, bike, motorised scooter, public transport, or walking.

Walking and cycling have significant benefits for residents and the wider City:

- Supporting active and healthy lifestyles that prevent chronic illnesses
- Presents an affordable and accessible travel mode
- Reduce congestion on roads
- Provides efficient and community-centred ways to travel
- Extends public transport catchments
- Lower carbon emissions and air pollutants

The development of an active transport implementation plan and associated network are a current priority for Penrith City. There are a series of existing footpaths, shared paths, separated pathways and other connecting links which together can support a coordinated focus on providing an efficient and safe active transport network for existing and future residents.

As such, Penrith City Council (Council) has undertaken a review of its existing active transport strategies and is developing an updated active transport implementation plan to determine priority projects, routes and infrastructure to be implemented. This *Penrith Accessible Trails Hierarchy Study* (PATHS) *Implementation Plan 2022-2032* intends to support the short and medium-term goals of providing a planned and cohesive walking and cycling network.

Objectives

This Implementation Plan aims to reach a number of objectives, including:

- Make walking and bike riding the most desirable option for short trips around local centres and local areas, supported by a safe road environment and suitable pathways
- Increase the separation of people on bicycles from motor vehicles, on separate bicycle paths or on protected bicycle lanes, in high speed and high movement traffic corridors and ensure connection to major public transport, shopping and employment centres, schools and universities
- Identify and outline a prioritised hierarchy or projects (local and priority routes) of walking and bike riding paths within the Penrith region for people of all ages and abilities, in order to enhance opportunities for safe, healthy and effective personal mobility
- Provide project descriptions, project prioritisation and cost estimates for Council to deliver over the next ten years.

Overall, the objective of the *Implementation Plan* is to provide Council a clear strategy outlining prioritised walking and cycling routes, which will inform active transport works and to secure funding over the next ten (10) years. The *Plan* will provide recommendations on prioritised initiatives and projects, based upon the NSW Government Principal Bike Network and Walking Plans as well as key projects identified in Council's Strategy documents including the Green Grid Strategy, Place Plans and Transport Master Plans.

Understanding Penrith

The City of Penrith is Sydney's Parkland City, consisting of and characterised by:

- 36 suburbs consisting of urban residential or rural living areas
- Multiple CBDs, town centres, and local neighbourhood centres
- Several centres for industry, manufacturing, and employment
- Vast range of parklands, nature reserves and open spaces dotted across the City
- Numerous natural creek and river corridors, including the Nepean River
- Community, sporting, and recreation facilities across the City

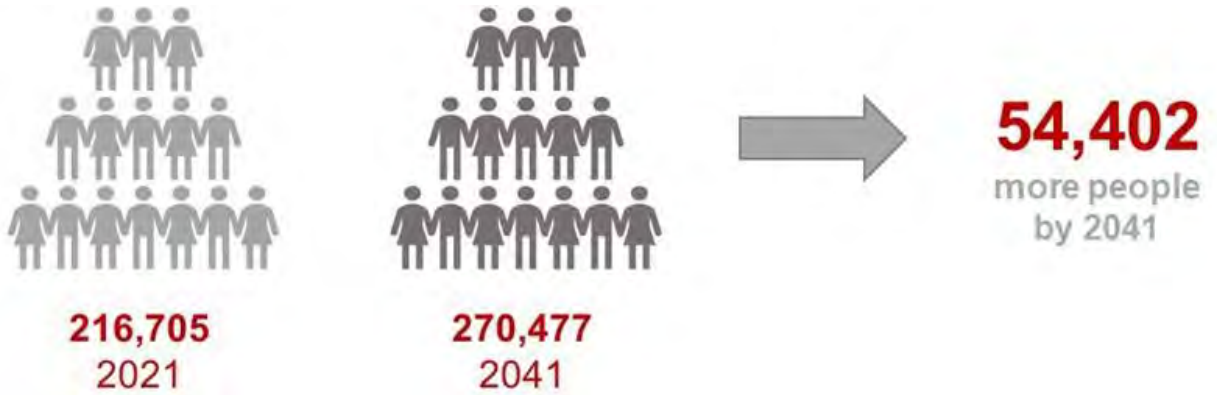
- Tertiary education campuses (Western Sydney University and TAFE) and schools
- Western Sydney's main health precinct (Nepean Hospital)

Population and demographics

Based on 2021 Census data, the Penrith City population is estimated at 216,075 people with a median age of 35 years old. The population is expected to grow up to 270,477 (25%) by 2041.

Key population and demographics statistics include:

- Historical population increase of approximately 1.8% per year since 2011 (greater than the Sydney average)
- Despite covering a large geographical area, Penrith City features a higher population density at 4.84 persons per hectare (than the Greater Sydney average)
- The population of Penrith City is distributed across the span of age groups, with the largest age groups being parents and home builders (35-49 years of age), the young workforce (25-34 years of age) and the older workforce / pre-retirees (50-59 years of age)
- A higher-than-average proportion of the younger age groups presents a greater need to provide active transport links to schools, as well as older aged students who are likely to be more reliant on connections to public transport
- Key employment industries in Penrith City include construction, healthcare and social assistance, manufacturing and retail trade.



Source: NSW Department of Planning – NSW Population Projections

Figure 1.1: Penrith population forecast

Attitudes and behaviours towards active transport

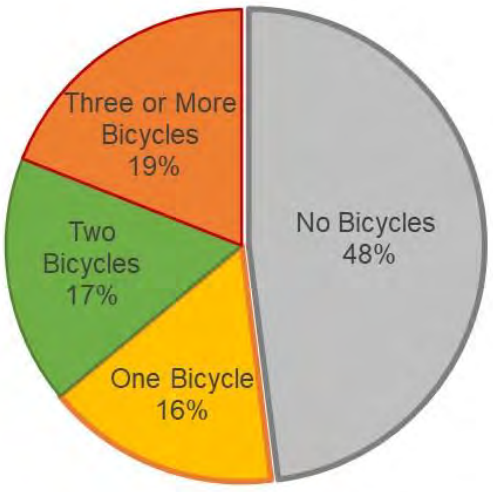
Statistics providing a snap-shot of attitudes and behaviours towards active transport were gathered from the *National Cycling Participation Survey 2020 for Penrith City Council* (the Survey), the *Penrith Community Engagement Strategy – Community Participation Plan*, and *Census* data and found:

- 93% of households within Penrith City own at least one (1) car
- Up to 4% of residents and workers in Penrith City use public transport or walk
- Less than 1% of residents and workers in Penrith City ride by bicycle
- Penrith City residents have highlighted closeness to work, services, and facilities would encourage more walking and cycling.

Furthermore, the Survey revealed key findings about cycling participation:

- 15% of respondents cycled in a typical week
- Cycling amongst children (younger than 18 years of age) is higher than adults
- Of those who cycled in the past month, a significant proportion of residents in Penrith City cycle for recreational purposes (94%), while a smaller portion of these residents (14.2%) travel mostly for shopping purposes (8%).

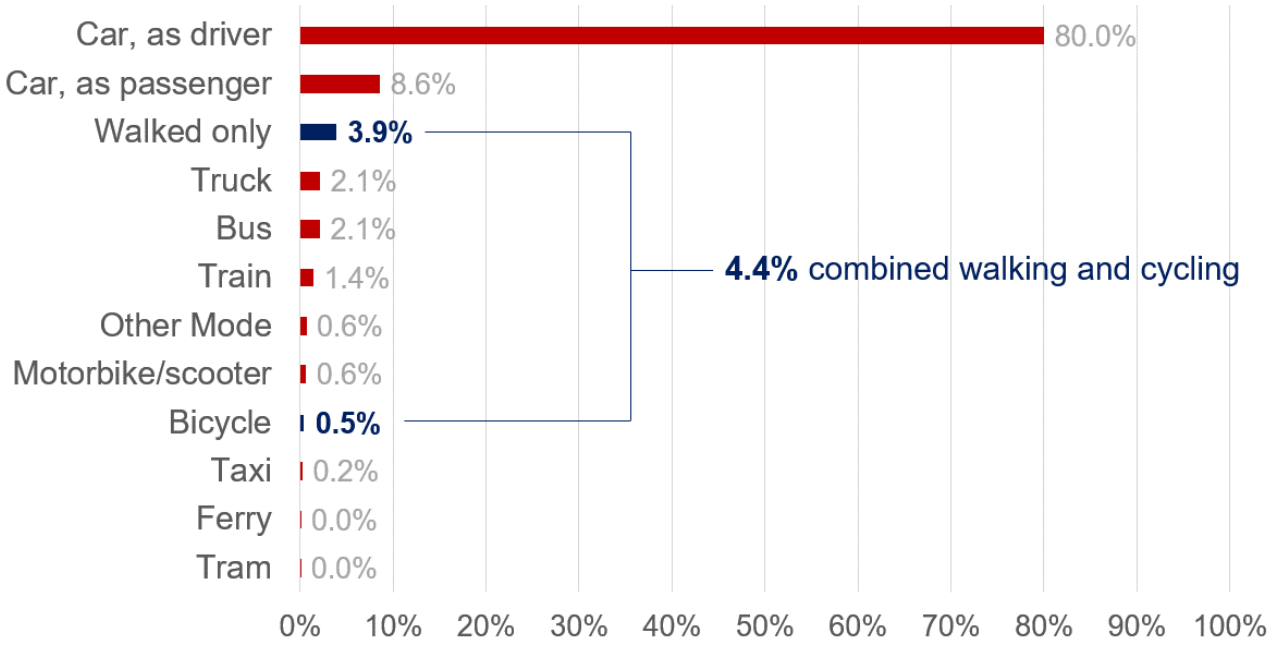
The Survey also obtained data on bicycle ownership in Penrith City, which is summarised in Figure 1.2.



Source: National Cycling Participation Survey – Penrith City Council (2020)

Figure 1.2: Bicycle ownership by household in Penrith City Council

These findings are further complemented by the summary of travel modes of residents and workers in Penrith City in Figure 1.3.



Source: TfNSW Open Data Hub

Figure 1.3: Travel modes of people who both live and work in the Penrith LGA

Barriers and constraints to active transport

Key themes gathered from the Survey outlined various barriers and constraints residents towards cycling in Penrith City:

- Approximately 78% of respondents expressed lack of interest in cycling for transport
- 35% respondents felt uncomfortable cycling in Penrith City
- Respondents who had not cycled recently revealed work being too far as a barrier to cycling to work
- Lack of and insufficient off-road cycling facilities, forcing riders to ride on footpaths or mix with traffic on-road (which is dangerous and less comfortable)
- Insufficient routes are provided across the LGA.

Additionally, within Penrith City there are a number of geographical constraints impacting the viability of cycling across the region, including:

- Natural and built features e.g. the Western Railway Line and the South Creek
- Long detours and circuitous routes due to large impermeable industrial areas and the few existing bridges (some being inadequate for cyclists)
- Limited crossing opportunities or facilities over arterial roads or major road corridors.

Barriers and constraints to walking in the Penrith City included:

- Lack of opportunities for social connections, fostered by access to public transport

- Maintaining clean streets and public spaces
- Concern for providing access for residents to the outdoors for recreation and exercise.

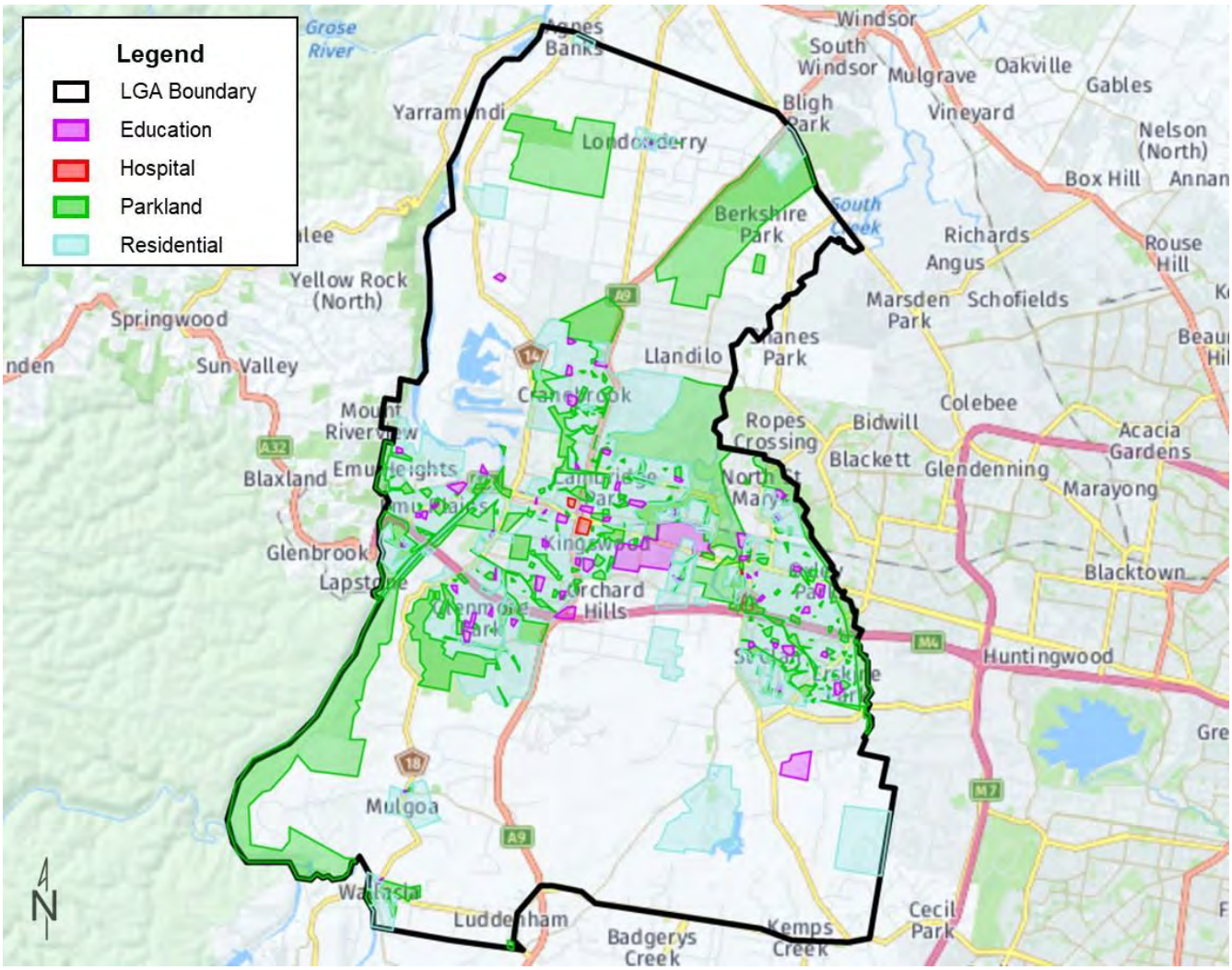
Key land uses and employment

The majority of key land uses within Penrith are concentrated in the central region of the LGA along the Great Western Highway (the east-west corridor). This includes:

Town Centres	Employment Areas	Health Precincts	Tertiary Education
▪ Penrith CBD ▪ St Marys Town Centre ▪ Local neighbourhood centres	▪ Industrial precincts (St Marys, Dunheved, Erskine Park)	▪ Nepean Hospital and health precinct	▪ Western Sydney University ▪ NSW TAFE

The City also includes a broad range of recreational facilities, areas and open spaces including parks, nature reserves, creek corridors and sporting grounds.

The map outlining the key land use areas within the Penrith City is shown in Figure 1.4.



Source: Profile.id

Figure 1.4: Map of key land uses

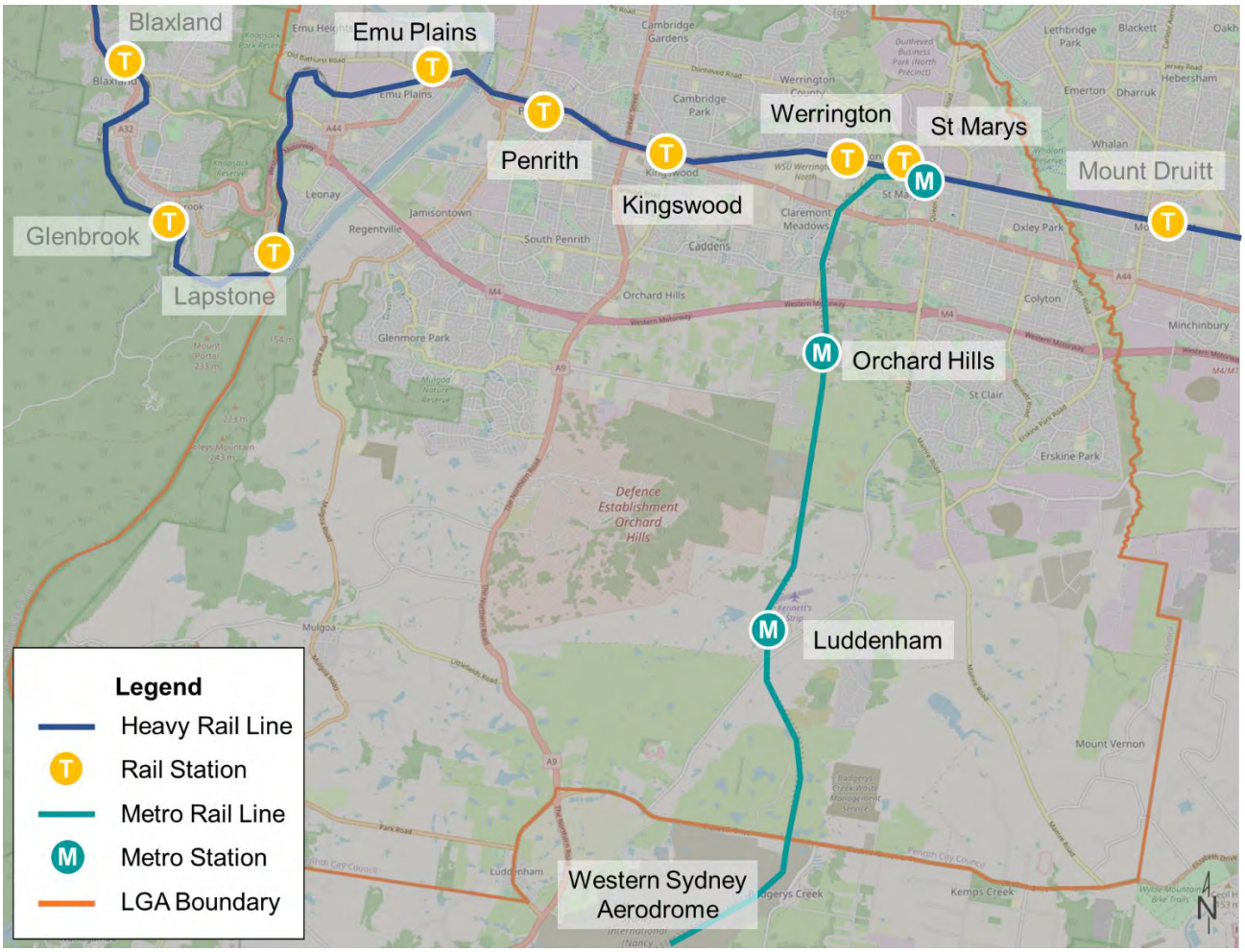
Transport network

Penrith LGA is serviced by several key arterial / sub-arterial road corridors, including the Great Western Highway, M4 Motorway, The Northern Road and Mulgoa Road / Castlereagh Road.

The T1 Western railway line runs east-west across the LGA, with a total of five stops from St Marys Station to Emu Plains Station. The nearby Lapstone Station is located along the western border of the LGA.

The railway line will be further complemented by the future Western Sydney Airport Metro proposed between the Western Sydney Aerodrome precinct at Luddenham and St Marys. It features three stops within Penrith City, including St Marys (interchange with heavy rail services), Orchard Hills and Luddenham.

The proposed metro service is expected to be completed by 2031. Locations of the railway and metro stations within Penrith City are shown in Figure 1.5.



Adapted from OpenStreetMap

Figure 1.5: Rail lines and stations

Numerous bus routes are available within the Penrith City with the majority being concentrated within the east-west corridor and surrounding suburbs. The main bus interchanges within the Penrith LGA are located at Penrith Station and St Marys Station.

The Penrith City pedestrian network of footpaths and shared paths is extensive, spanning across residential areas, town centres, and parklands, providing connectivity across Penrith City. The footpath network primarily exists in residential and town centre areas along the east-west corridor and new development areas to the north and south. This network is further complemented by the key recreational routes of the Great West Walk and Great River Walk.

The cycling network and routes in Penrith City are primarily concentrated within the established urban areas along the east-west corridor, and mostly follow main roads. Cycling routes throughout Penrith City feature a mix of off-road shared paths, on-road cycling (shoulder), and mixed traffic conditions (in lane).

2. Strategic alignment

Overview

The PATHS 2022 – 2032 Implementation Plan is intended to work alongside and complement various state and local level strategies and plans. The alignment of this Plan and its context with these strategies and documents is illustrated in Figure 2.1 .

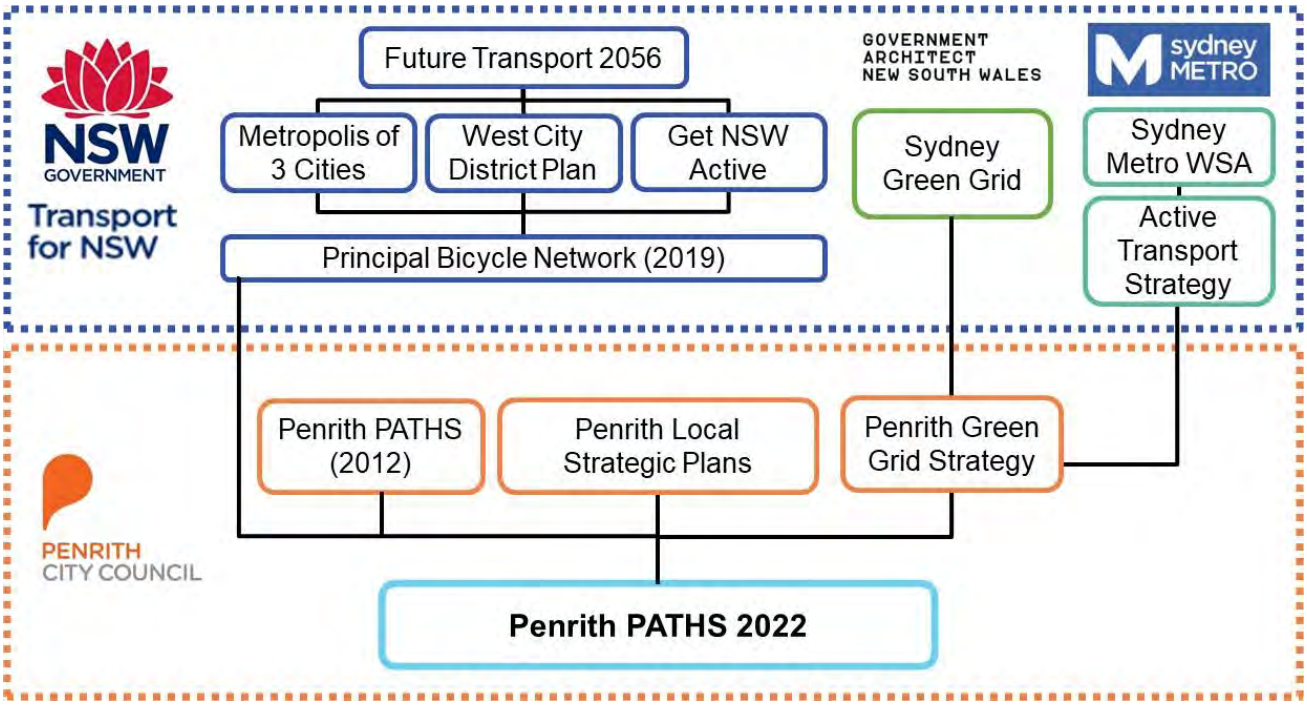


Figure 2.1: Strategic hierarchy and context

State strategies

A number of current state level strategies outline key objectives and goals such as:

- Encouraging active transport and promoting walking and cycling as the preferred mode of travel, particularly for shorter trips – those less than two kilometres for walking – and less than ten kilometres for bike riding
- Reducing dependency on private vehicle travel to reduce congestion, reduce emissions, and improve air quality
- Improve active transport to support the existing public transport network and Greater Sydney / Three Metropolis vision to meet future needs with sustainable transport
- Providing infrastructure to realise a 30-minute city for the Western Parkland City and connect key centres and destinations.

Local strategies

This Plan intends to build on and / or complement a number of existing Council strategies in order to provide for a quality and connected active transport network. Key objectives include:

- Providing a connected and safe off-road shared path or pathway network across Penrith City, and connecting key centres and residential areas with recreation spaces and destinations
- Improving the natural environment to improve amenity and comfort of pedestrians and cyclists
- Increase the number of people walking and cycling within Penrith City to create a healthy and active community
- Having an open and collaborative leadership in the implementation of this Plan.

Penrith City Council vision for the community

Council will embed the actions in the PATHS Implementation Plan (2022 – 2032) throughout the organisation within its key planning and resourcing documents, including:

- **The Resourcing Strategy:** a ten-year document that captures Council's long-term financial position and workforce and asset management plans
- **The Delivery Program:** a ten-year document that details the strategies for how Council will address the community's aspiration
- **The Operational Plan:** a one-year document that breaks down the activities to be delivered each year.

3. What did Council achieve between 2012 and 2022?

Penrith Accessible Trails Hierarchy Strategy (PATHS) 2012

The Penrith Accessible Trails Hierarchy Strategy 2012 (PATHS 2012) was developed in 2012 with the goal to outline a network of prioritised shared path routes across Penrith City and develop a prioritised implementation guide. PATHS 2012 aimed to enhance the opportunities for pedestrians and cyclists to access places for health, recreational, and destination purposes. Key objectives included improving safety, accessibility, connectivity, promoting a healthier lifestyle, and reducing private vehicle usage.

Of the 30km of delivered shared paths since 2012, approximately 25km were associated with routes and shared path projects proposed under PATHS 2012. A progress review of PATHS 2012 routes was undertaken shown in Figure 3.1.

Routes under each of these programs were reviewed and categorised into the following status groups:

- **Complete** – shared pathway exists, signage and line marking provided
- **Unmarked** – path (of shared path width) exists, no signage and/or no line marking provided
- **Incomplete** – no shared pathway exists, or sub-standard path provided (i.e footpath).

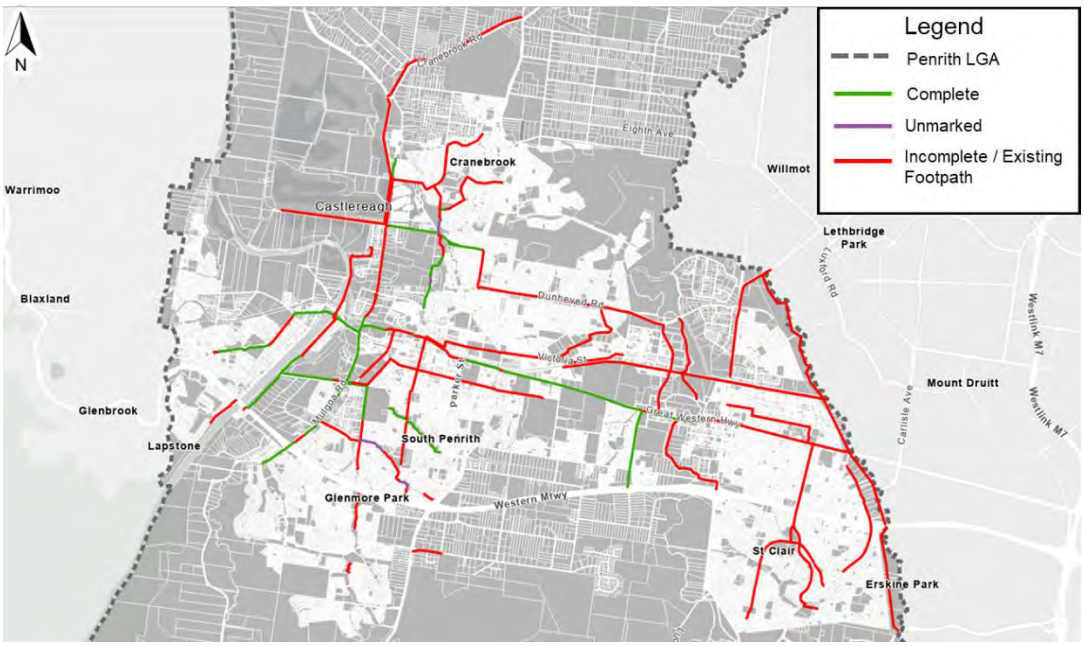


Figure 3.1: PATHS 2012 network status

Council delivered shared user path projects

Since 2012, Penrith City Council in partnership with the NSW Government has achieved substantial funding of over $18M for the design and construction of 30km of shared user path infrastructure across the city. These include routes outlined in Table 3.1.

Table 3.1: Completed works 2012-2022

Shared user path completed works 2012 - 2022			
Description	**km**	**Year**	**Total**
Great River Walk, River Rd, Emu Plains and missing links (Greenspace Program etc.)	2.4	2007/15	$3,139,730
Memorial Ave and High St, between Worth St and Memorial Ave	0.6	2010/11	$1,080,079
Castlereagh Rd and Mulgoa Rd, between Jane and Batt St, Penrith	2	2011/12	$1,404,325
Mulgoa Rd, between Batt St Jamisontown and Glenmore Parkway, Glenmore Park incl bridge	4	2012/13	$1,557,037
GWH between Parker St Kingswood to Pages Rd, St Marys (1)	4.5	2012/13	$1,735,527
GWH between Parker St Kingswood to Pages Rd, St Marys (2)		2013/14	$1,432,181
GWH, between River Rd and Russell St, Emu Plains	2.5	2014/15	$1,057,086
GWH, St Marys, bridge over South Creek plus and path (3)	0.7	2014/15	$2,063,966
Jamison Rd, between Jamison Park and Tench Reserve incl bridge, Jamisontown	2.0	2014/15	$329,801
Tench Reserve between Nepean Ave and Jamison Rd, Jamisontown	0.7	2015/16	$93,453
Jane St, between Castlereagh Rd and Westfield	0.5	2016/17	$364,292
High St, Between Parker St and North St (ambulance boundary)	0.3	2016/17	$103,647
Maxwell St, between Aspen St and Greenway Drive (Safer Cycling/Blackspot)	0.5	2016/17	$500,000
Cranebrook to Thornton via Coombes Drive – construction of 3rd stage of the shared-use path along Andrews Road Southern side	1.0	2018/19	$940,000
Andrews Road between Laycock and Greygums Streets (north side)	0.6	2019/20	$450,000

Shared user path completed works 2012 - 2022			
Description	**km**	**Year**	**Total**
Erskine Park Road between Coonawarra Drive and Illawarra Drive (WSIP)	1.3	2020/21	$440,000
Mulgoa Road - Castlereagh Road, (eastern side) and Great Western Highway intersection.	1.0	2020/21	*
The Northern Road, between Jamison Road and Glenmore Parkway	4.0	2020/21	*
Great Western Highway, Emu Plains northern side between Russell Street to Mitchells Pass Knapsack Viaduct	1.5	2019/21 2021/22	$1,800,000
	30.1		$18,491,124

*Note: *NSW Government shared user path costs are not available for Council.*

In addition to the projects delivered above, the delivery of the 'Yandhai' accessible active transport bridge in 2018, now provides access over the Nepean River for use by pedestrians and bike riders, which connects with The Great River Walk, Bridge to Bridge Loop, existing and future pedestrian paths, and bike links.

4. Developing the PATHS Implementation Plan (2022 – 2032)

As part of the development of the Implementation Plan, Council undertook the following steps to develop the final Plan for 2022-32:

- ✓ Review of PATHS 2012, Penrith Green Grid Strategy, Principal Bicycle Network 2019 and Sydney Metro Western Sydney Airport (WSA) Active Transport Strategy
- ✓ Undertook desktop research to identify the current best practice design to improve walking and bike infrastructure design to align local routes with the NSW Government Active Transport Plans and targets
- ✓ Prepared a GIS analysis and methodology to provide spatial layers that identified key land-use, destinations and existing walking and cycling infrastructure
- ✓ Undertook demographic research including the Local Government Bike Participation Survey (2022). Community feedback from the exhibition of the Community Plan and other Strategies was also used to understand the needs, concern and opportunities raised by local communities
- ✓ Involved the community and stakeholders to capture feedback from residents, the Local Traffic Committee, the Access Committee
- ✓ Penrith City Council staff participated in the review to understand what other initiatives, projects and ideas should be for the next ten years and the alignment to emerging studies, strategies and plans being developed
- ✓ Public Exhibition of the draft Plan 2022-2032.

Following the period of public engagement, the received feedback was considered and incorporated (where appropriate) into the development of this final Plan 2022-32, to be presented to Councillors for consideration and endorsement. Following Council endorsement, final engagement will be necessary to ensure the success of the Plan through its ten-year implementation.

5. Methodology and development of routes

Strategic basis

The development and inclusion of routes considered within this Plan were primarily based on the following documents and active transport routes presented within them:

- **PATHS 2012** – Incomplete routes of the previous PATHS 2012 strategy forms the starting point of potential routes throughout the LGA, with some routes identified to provide direct connections between town centres and key land uses. Completed sections of route are also to be built upon to extend the network and provide a well-connected series of routes
- **Penrith Green Grid** – The Penrith Green Grid Strategy (PGGS) aims to establish a link between waterways, open space, and parklands, delivering a connected network of open spaces to ensure ecological resilience and public amenity. The PGGS provides the basis for recognising and developing opportunities to introduce new green and active transport links. By providing quality and accessible greenspace within a 10-minute walking catchment from residential areas, the Grid aims to increase natural overall canopy cover, increasing comfort for walking and cycling path users and reducing urban heat island effects
- **NSW Principal Bicycle Network (PBN) 2019** – The Principal Bicycle Network (PBN) 2019 provides an indicative network of direct cycling routes and guidance on the provision of quality infrastructure to achieve the 30-minute city objective for active transport under the Metropolis of Three Cities Strategies
- **Sydney Metro Western Sydney Airport – Active Transport Strategy** – The Sydney Metro WSA (SMWSA) is an ongoing transport project that will connect the future Western Sydney International Airport to the existing transport network of metropolitan Sydney, forming a major transport corridor for the future Western Parkland City. The Metro project is complemented by a preliminary Active Transport Strategy which aims to support journeys within 5km catchments from future Sydney Metro stations via walking, cycling, and micro-mobility.

The existing shared path network was also considered to determine missing links and routes which would assist in providing connected routes.

Figure 5.1: Strategic basis – route development

Development of routes

Guiding principles

With consideration of the preliminary active transport and shared path network across the study area, the development of additional walking and cycling routes was guided by the following key principles:

Connectivity
Creating a cohesive path network that provides direct connections between key land use areas and across Penrith City

Accessibility
Enhancing universal accessibility and mobility choice for recreational and transport purposes

Attractivity
Forming an appealing and engaging path network to help encourage active transport

Amenity
Providing convenient and comfortable routes for all pedestrians and cyclists

Safety
Improving the safety of all vulnerable road users across the LGA via separation from vehicular traffic.

Land use and attractor/generators

The following transport hubs and key land use regions were considered when proposing new active transport links and connections.

Public transport hubs

- Train stations and network
- Future Sydney Metro stations

Key land use regions

- Schools/universities
- Parks and Recreation facilities
- CBDs and Shopping Centres
- Key employment precincts
- Hospitals

With reference to the guiding principles, active transport routes were developed to maximise links between these attractor/generator locations with the intention of creating a permeable active transport network across Penrith City.

Locations of attractor/generator within the central region of Penrith City are shown in Figure 5.2.

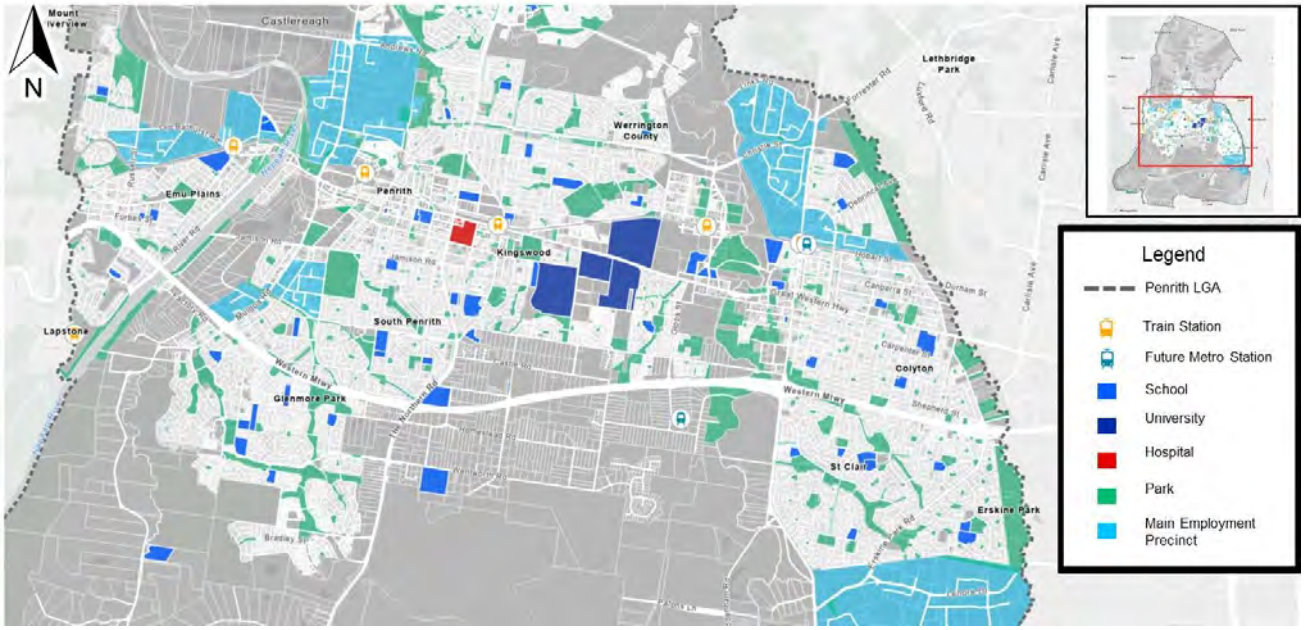


Figure 5.2: Transit network stations and key land use regions within Penrith

Determining priority projects

Definition of projects

To assist in the determination of routes to be implemented as part of this Plan, sections of routes were grouped together to form 'projects' that can be implemented concurrently, based on the following principles:

- Continuous and linking route segments that form a longer continuous corridor or route alignment (e.g along Mulgoa Road or Northern Road)
- Discontinuous route segments contributing to an overall link / alignment across an area (e.g east-west across a suburb)
- Collection of route segments related to the one area or alignment (e.g within a park / off-road reserve)

This process was also applied to the remaining incomplete routes from PATHS 2012.

Prioritisation of projects

A prioritisation system was developed to determine the priority of projects to be implemented over the next ten (10) years under this Plan (2022 – 2032). The system aimed to assign a level of importance to projects based on their proximity and connection to key locations, and contribution to the overall active transport network.

The prioritisation of projects is of particular importance due to the size of Penrith City, and to effectively facilitate the development and implementation of active transport connections within the LGA-wide network.

Principles of prioritisation

The system followed on from the guiding principles for route development and identification. Higher scores were assigned to projects which aligned with the following principles:

- Projects which aligned with strategic plans or strategies like the Penrith Green Grid Strategy or the Principal Bicycle Network
- Projects which service a higher number of attractors and generator facilities
- Projects which provide valuable connections to public transport hubs and stops
- Projects which exhibited existing safety risks or crash patterns
- Projects along existing key recreational routes.

The scoring scheme was developed with reference to the Transport for NSW Pedestrian Access and Mobility Plan (PAMP) guidelines, with the criteria subsequently adjusted to reflect the nature and objectives of this Strategy more closely.

A detailed breakdown of these principles and associated criteria is provided in **Appendix A**. The criteria were then used to develop the scoring system to determine route and project priority.

Scoring system and criteria

A point scoring system was developed to assign points based on the principles outlined above. A detailed breakdown of the priority scoring system applied to the proposed routes and projects is provided in **Appendix A**.

The total score of each project was used for comparison and ranking purposes.

6. Priority projects and actions

Project delivery – PATHS 2022-32 Implementation Plan

The study methodology and prioritisation process has identified the total list of *Priority Projects* to be undertaken in the future. As part of the PATHS Implementation Plan (2022-32), the highest ranked projects will progress through the design, consultation and construction phases.

A selection of these *Priority Projects* will be delivered over the next ten years (2022-2032) through Council maximising:

- Capital infrastructure budgets
- Grant funding
- Delivery by government agencies and others (e.g. developer contributions).

Council will continue to advocate to the Federal and State Governments for delivery of active transport infrastructure as part of its development projects.

Alignment to Council's Integrated Planning and Reporting Framework

All local councils across the state are required to plan and report in line with the NSW Office of Local Government's Integrated Planning and Reporting Framework (IP&R). The framework recognises that Council plans and policies are directed by the community's desired outcomes and should not exist in isolation, that they are inter-connected and allow Council to draw its various plans together, understand how they interact and get the maximum leverage from their efforts by planning holistically and sustainably for the future.

Penrith 2036+ Community Strategic Plan (CSP)

This plan identifies the shared vision, aspirations and values of our community and its desired outcomes to inform long-term planning and the strategies to achieve them.

Council's CSP community outcomes include:

1. We protect and enhance an ecologically sustainable environment
2. We are welcoming, healthy, happy, creative and connected
3. We plan and shape our growing City
4. We manage and improve our built environment
5. We have open and collaborative leadership.

The Delivery Program 2022 – 2026

The Delivery Program 2022-2026 is Council's four-year commitment to achieving the outcomes and strategies of the CSP. It sets out the Principal Activities that Council will deliver and how our performance will be measured during its term of office. All plans, projects, activities, and funding allocations during the term are linked to this four-year program.

The coordination and delivery of PATHS is aligned under the CSP Outcome 4 'We manage and improve our built environment', as shown in Figure 6.1. As part of this outcome, we will continue to work in close partnership with the Federal and NSW Governments to ensure active transport infrastructure is designed and delivered that meets our communities' diverse needs.

Figure 6.1: Penrith City Council 2022-2026 CSP Outcome 4 – community engagement feedback relating to the built environment

Annual Operational Plan and budgets

The Annual Operational Plan (and its associated budgets) specify the details of the Delivery Program – the individual projects and actions that will be undertaken and reported on during each financial year to achieve the Principal Activities.

Once a priority project has a budget allocated to its delivery it will be included within Council's Delivery Program and Operational Plan to ensure we track and measure our delivery of the PATHS.

Resourcing Strategy

To support the Delivery Program effectively Council is required to develop a ten-year Resourcing Strategy. The strategy ensures Council has the necessary people, budget, technology and infrastructure in place to meet its commitments.

Council reports on its performance through the IP&R framework with twice yearly reports on progress towards our four-year Delivery Program and four times a year on progress towards our current Operational Plan. We've developed indicators to measure progress towards the outcomes our community wants to achieve and we use performance measures to track our success in achieving what we set out to do within the Delivery Program, as illustrated in Figure 6.2.

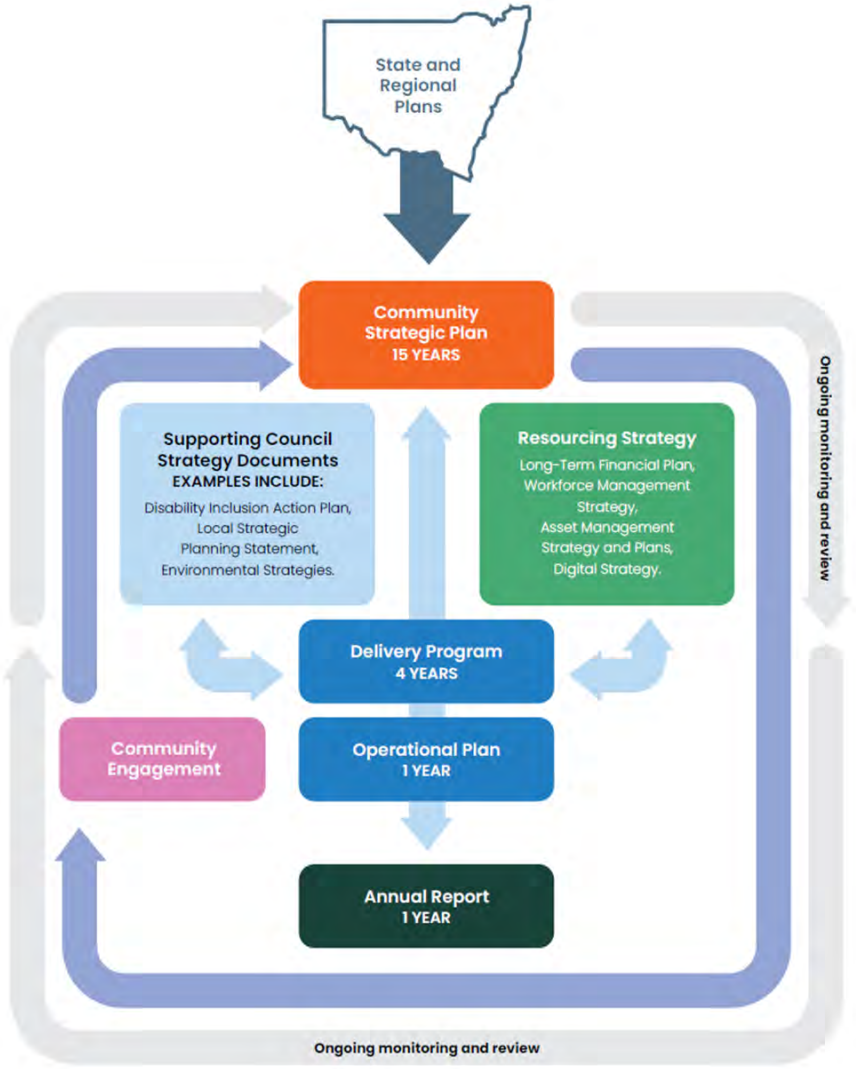


Figure 6.2: Penrith City Council 2022-2026 Integrated Planning and Reporting Framework

Delivery of projects

The following section outlines the *Priority Projects* in more detail. The *Priority Projects* are identified due to their importance as described under the Methodology Section. The *Local Priority Projects* are not currently funded. After the priority project receives funding, the nominated project will proceed to a design phase or construction phase of delivery as shown in Figure 6.3.

It is important that projects follow this process as it allows for refinement through consultation and further design development ahead of construction. Complex projects may also require various approvals to be granted by Government agencies and additional studies or plans to be prepared.

The nominated project will be included in Council's Operational Plan as required under the Integrated Planning and Reporting requirements.

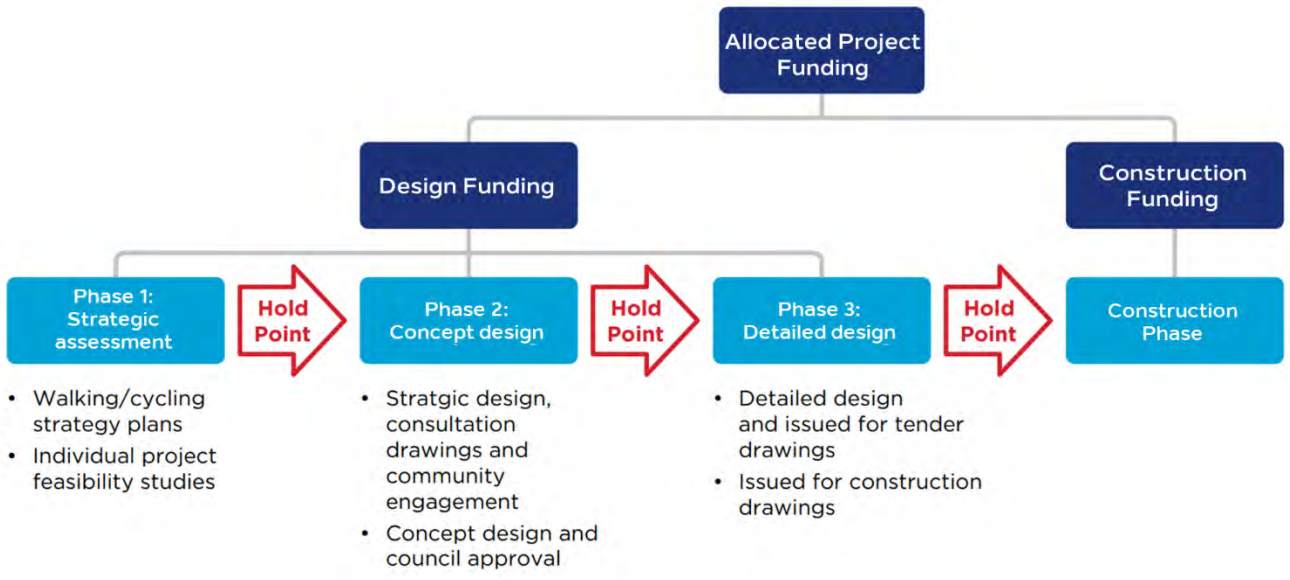


Figure 6.3: Funding and delivery process (source: adapted from the NSW Government)

Funding opportunities

Funding may be obtained from various sources, including:

- State or Federal government
- Council levies and capital works
- Voluntary Planning Agreements (VPA)
- Levies raised under the Special Infrastructure Contributions program and conditions of consent.

Council will consider current budgets and work programs to align with *Priority Projects* or additional projects (such as smaller missing links and maintenance) that have been identified in the PATHS review and prioritisation process.

Further details on available funding streams are provided in Section 7.

Priority projects

The Priority Projects have been divided into three categories being regional, local and other network connections. The highest-ranking Priority Projects have been determined for each category and are found in the Tables below.:

Appendix B: Table B.1 presents potential active transport projects and routes along Classified Roads (including State and Regional classified roads) under the responsibility of the NSW State Government. These routes will be delivered by the NSW State Government and its relevant agencies.

Appendix B: Table B.2 presents the prioritised and potential active transport projects identified along Local Roads and off-road corridors under the responsibility of, and to be delivered by, Penrith City Council.

Appendix B: Table B.3 presents transport projects currently committed or proposed by the NSW State Government and Federal Government and are to include an active transport component. These projects are intended to complement the top *Priority Projects* under this Implementation Plan.

Appendix B: Table B.4 presents active transport projects that Council has lodged funding applications for and may complement the top *Priority Projects* under this Implementation Plan.

Strategic corridors - Regional Priority Projects

We have identified strategic corridors that will support improved active transport routes along NSW Government classified roadway routes.

The top 10 *Regional Priority Projects* are presented in Table 6.1. Figure 6.4 provides a map showing the location of these projects. Appendix B provides the full list of Regional Priority Projects.

Council's lead role will be in the **advocacy** of the design and delivery of these routes when the NSW Government is planning for major roadway upgrades or via funding applications. These projects will be provided to the NSW Government as part of the consultation for the strategic active transport planning of the Western Parkland City.

Table 6.1: Regional Priority Projects (NSW Government classified roadways)

Project Number	Street Location	Description	Suburb(s)	Length (km)
1	Great Western Hwy from Mamre Rd to Russell St	The project is composed of the following sections along the Great Western Hwy: 1) From Mamre Rd to Pages Rd 2) From Gipps St (near Putland St) to Claremont Meadows Creek 3) Crossing at Bringelly Rd 4) From Parker St to Riley St 5) From Willow Tree Ave to Park St 6) From Dukes Pl to Russell St	St Marys - Emu Plains	3.5
2	Mamre Rd	Mamre Rd from Great Western Hwy to Ainsbury Rd, Mamre Rd from M4 to Elizabeth Dr	St Marys - Mount Vernon	13.2
3	The Northern Rd from South Penrith to Cranebrook	The Northern Rd from South Penrith to Cranebrook	Kingswood - Cranebrook	7.7

Project Number	Street Location	Description	Suburb(s)	Length (km)
4	Werrington Creek Park to Nepean River	Coreen Ave from Castlereagh Rd to Richmond Rd, Boundary Creek Corridor from Nepean River to Castlereagh Rd, Oxford St from Francis St to Richmond Rd	Penrith - Cambridge Park	5.1
5	Mulgoa Rd	Mulgoa Rd from Park Rd to Glenmore Pkwy	Mulgoa, Wallacia, Glenmore Park	12.2
6	Londonderry Rd	Londonderry Rd from The Driftway to The Northern Rd	Londonderry - Cranebrook	7.3
7	Agnes Banks to Cranebrook	Cranebrook Rd from Olive Ln to Castlereagh Rd, Castlereagh Rd from Cranebrook Rd to The Driftway	Agnes Banks, Cranebrook, Castlereagh	13.9
8	St Clair to Oxley Park via Roper Road	Erskine Park Rd and Roper Rd from Coonawarra Dr to Great Western Hwy	St Clair - Colyton	3.0
9	Penrith to Cranebrook via Castlereagh Rd	Castlereagh Rd from Penrith Station to Cranebrook	Penrith - Cranebrook	5.0
10	The Northern Rd from Bligh Park to Cranebrook	The Northern Rd from Londonderry Rd to Richmond Rd	Llandilo, Berkshire and Londonderry	7.6

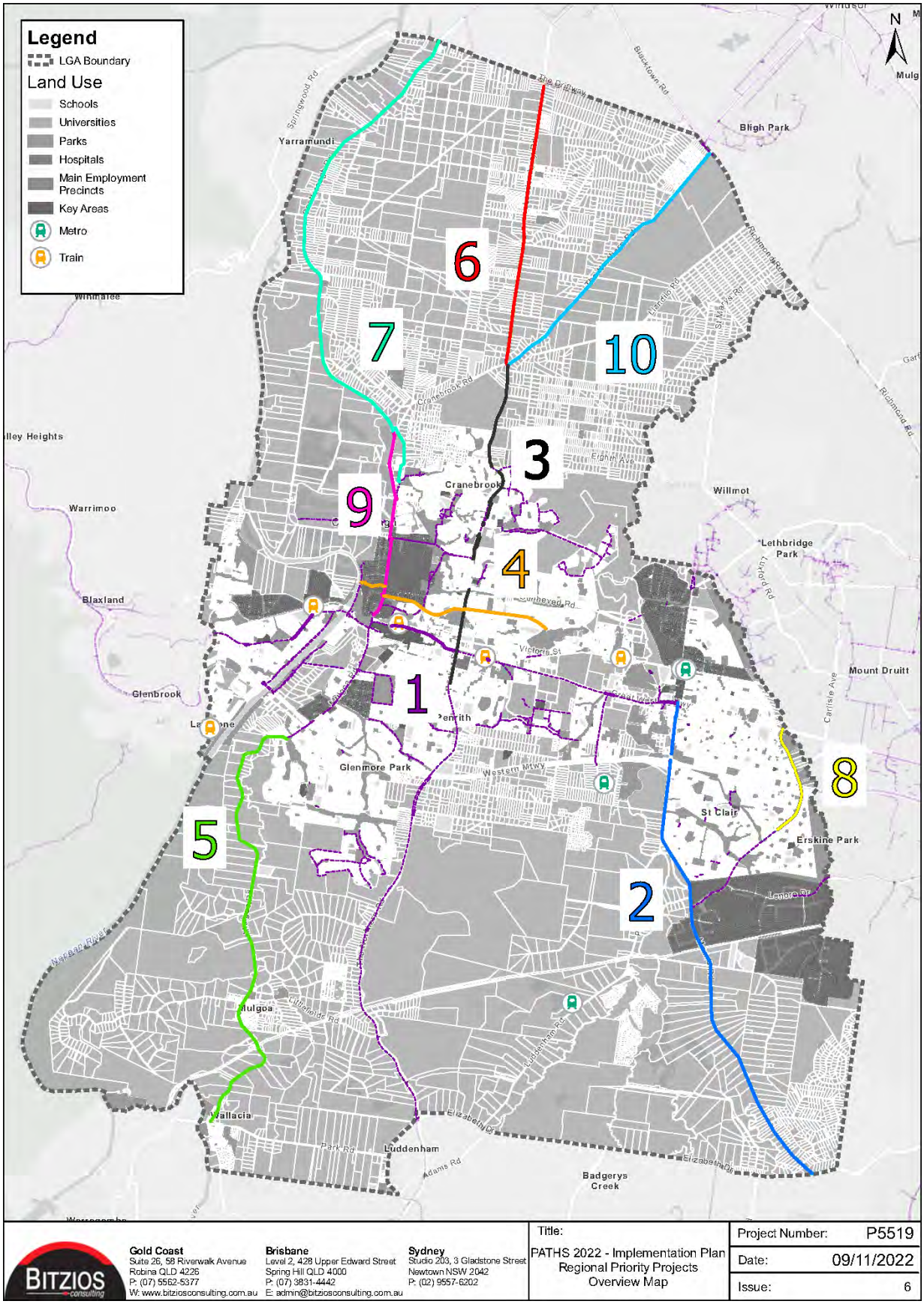


Figure 6.4: PATHS 2022 Regional Priority Projects – Implementation Plan

Local Priority Projects

We have identified the *Local Priority Projects* that are predominantly along local roadways or open space corridors. These routes form the local network that connect to the regional network providing greater opportunities for our communities and visitors to access local recreational and leisure activities, services, work and educational destinations.

These Local Priority Projects have undergone community and Council consultation and have subsequently been revised for this final document.

The top 10 *Local Priority Projects* are presented in Table 6.2. Figure 6.5 provides a map showing the location of these projects. **Appendix B** provides the full list of *Local Priority Projects*.

Council's lead role will be to secure funding to progress these projects through design, consultation, and delivery.

Table 6.2: Local Priority Projects 2022 – 2032

Project Number	Street Location	Description	Suburb(s)	Length (km)
Top 10 Priority Projects				
1	School House Creek Corridor from Glenmore Parkway to Mulgoa Road	Apple Gum Reserve, Rotary Park Corridor and the Glenmore Park Space Corridor	Glenmore Park	9.2
2	South Penrith to Jamisontown via York Road	From M4 to Mulgoa Rd via Mulgoa Creek and Surveyors Creek Corridors	South Penrith - Jamisontown	4.4
3	Old Bathurst Road Corridor, Emu Plains	East-west link between CathWest Innovation College and Penola Catholic College and Gosling Street, Emu Plains	Emu Plains - Emu Heights	3.6
4	Queen Street Corridor, St Marys	North-south corridor from St Marys Station to Great Western Highway using West Lane and East Lane	St Marys	1.7
5	North St Marys to St Marys via Glossop Street	North-south link from Maple Road to Phillip Street via Glossop Street, Oleander Road and Wattle Avenue	North St Marys - St Marys	2.0

Project Number	Street Location	Description	Suburb(s)	Length (km)
Top 10 Priority Projects				
6	Penrith City Centre Connections	Entirety of Henry Street and Lethbridge Street, and Woodriff Street from Henry Street to Derby Street	Penrith	3.9
7	Glossop Street to Queen Street	Entirety of Station St and Chesham St, Phillip St from Lethbridge St to Glossop St	St Marys	0.8
8	Bringelly Road and Maxwell Street	Kingswood Station to Jamison Park via Bringelly Road, Maxwell Street and Racecourse Road	Kingswood - South Penrith	4.0
9	Cranebrook to Penrith City Centre	Cranebrook to Penrith City Centre via Andromeda Drive, Laycock Street and Greygums Oval	Cranbrook - Penrith	5.6
10a*	Evan Street, Penrith	Evan Street from Belmore Street to Tukara Road	Penrith – South Penrith	3.1
10b*	WSU Kingswood to Jamison Park	Woodriff St from York Rd to Derby St, York Rd from Batt St to Ikin St, Second Ave from John Flack Ave to Bringelly Rd, Derby St from Bringelly Rd to Woodriff St	Kingswood - South Penrith	5.0

**Both projects obtained equal scores / ranking and have therefore both have been included within the list of Local Priority Projects.*

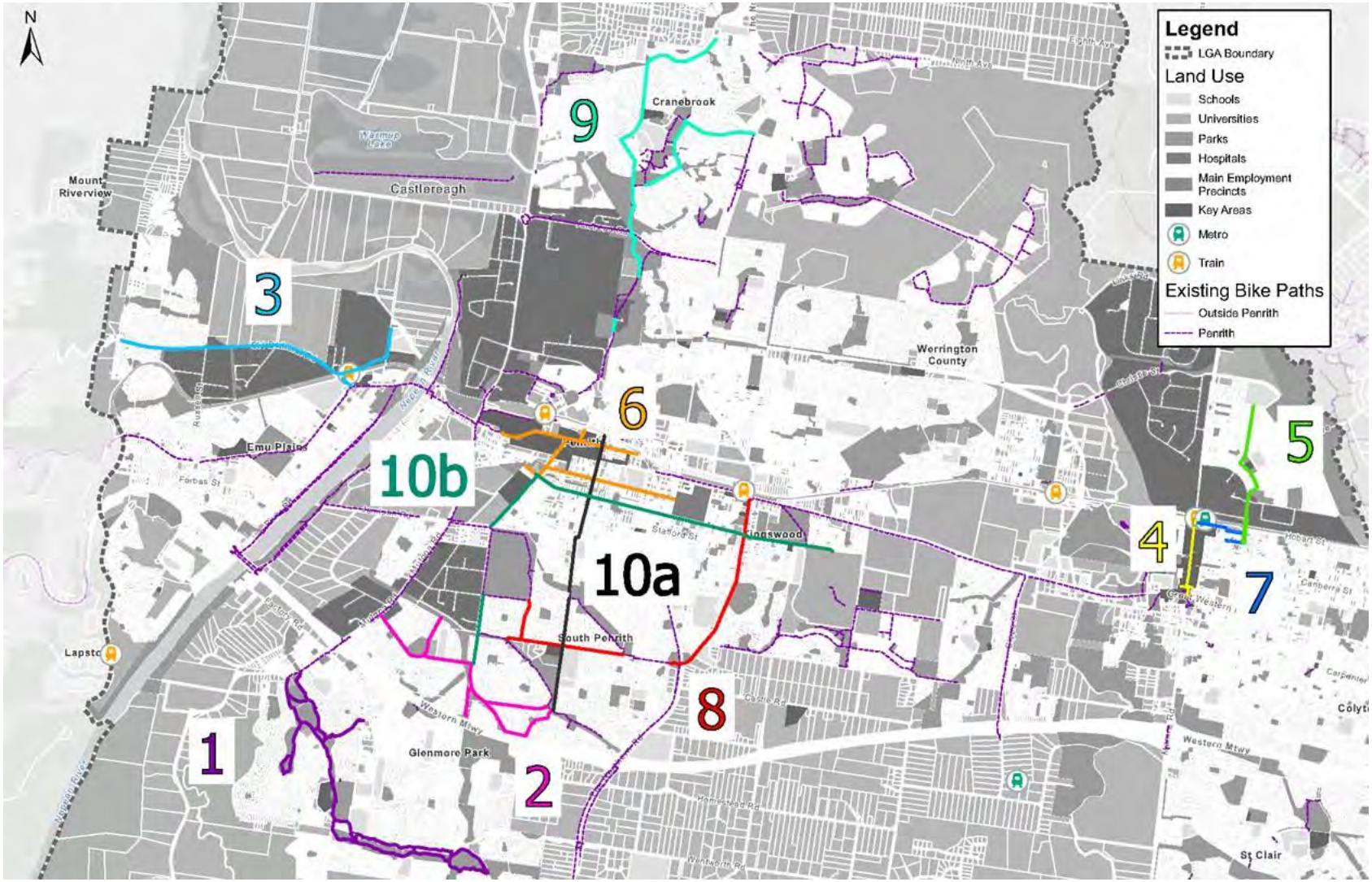


Figure 6.5: PATHS 2022 Local Priority Projects – Implementation Plan

Other network connections

Projects presented in Table 6.3 includes other segments of projects or routes which may be undertaken by Council in addition to *Local Priority Projects* and other complementary projects. Council will aim to prioritise and deliver these projects as resources permit, including missing links and undertake maintenance works. These projects are to be delivered under existing and future budgets as resources permit.

Nepean Avenue shared path project has been included in Table 6.3 as a missing link forming part of the Great River Walk (Nepean River Bridge to Bridge Trail). This project has been successful in receiving NSW Government grant funding as well as Council funds to progress a design for a shared path link and requires further development of design options.

Table 6.3: Additional active transport infrastructure projects

Route / Project	Suburb	Length	Description
Nepean Avenue	Penrith	1000m	2.5m shared path on the western side of Nepean Avenue
Northern Road – Andrews Road to Sherringham Road	Cranebrook	500m	Upgrade the existing asphalt pathway to concrete and install new signage and line marking
Jamison Road – West of Mulgoa Road	Penrith	270m	Construct missing 270m of concrete shared use path and provide missing link to existing path on Jamison Road
Hickeys Road – at Hickeys Park	Penrith	400m	Deliver new signage and line marking to improve delineation of this existing pathway

Route / Project	Suburb	Length	Description
Off-road Path – Greygums Road to Andrews Road	Cranebrook	430m	Deliver new signage and line marking to improve delineation of this existing pathway
Bike Racks at parks and town centres	Various	N/A	Provide additional bike racks at key locations and improve parking for bicycles
Street Furniture, seating, rest areas	Great River Walk	N/A	Provide seating and rest areas along major recreational routes
Upgrade of The Northern Road to Jordan Springs Boulevard	Cranebrook, Jordan Springs	410m	Upgrade the existing asphalt pathway between Sherringham Road and Jordan Springs Boulevard to concrete and install new signage and line marking
Bike facilities	Penrith	N/A	Install bike storage facilities (including secure bike storages) at Nepean Village, Penrith Westfield and other key destinations within the Penrith LGA e.g. train stations
Bike ramp	Nepean Avenue	N/A	Install a bike ramp to the Nepean Avenue stairs to access the Nepean River pathway
Kerb ramps	Penrith	N/A	Install kerb ramp from the oval path to Aviators Road roadway, and then some kerb ramps and concrete for the few metres from the end of Engineers Place to the laneway behind Quest Penrith.

Route / Project	Suburb	Length	Description
Review of shared path - Great Western Highway	Penrith	370m	Review of shared path on the southern side of the Great Western Highway and crossing the Great Western Highway near Ladbury Avenue
Shared Path - Great Western Highway, between Ladbury Avenue and Bruce Neale Drive	Penrith	150m	Upgrade footpath on southern side of Great Western Highway between Ladbury Avenue and Bruce Neale Drive to shared path
Shared path - Greenwood Parkway between Bowen Close and Izaac Circuit	Jordan Springs	250m	Upgrade footpath to shared path: Greenwood Parkway between Bowen Close and Izaac Circuit
Upgrade to shared paths – between Mistletoe Avenue and Great Western Highway, and between Mistletoe Avenue and Dahlia Place	Claremont Meadows	265m	Upgrade existing footpaths to shared user paths along Claremont Creek Corridor between Great Western Highway and Mistletoe Avenue (140m), and between Mistletoe Avenue and Dahlia Place (125m)

7. Funding opportunities

Overview

Many of the active transport routes and associated infrastructure contained in this Plan are unlikely to be financed by Council alone.

Substantial portions of the network, particularly along regional routes that include physical separation from motorised traffic will need State and/or Federal Government funding, in addition to potential developer contributions and delivery through development.

There are several current and potential funding options and opportunities available for the construction of active transport infrastructure as described below.

Council funding

Council will consider current budgets and work programs to align with *Priority Projects* or additional projects (such as smaller missing links and maintenance) that have been identified in the PATHS 2012 review or presented within this Implementation Plan over the ten years to fund the PATHS Implementation Plan (2022 - 2032). The *Priority Projects* and the nominated annual funding will be provided as identified in the Tables in Section 6.

Grants and funding

A summary of the variety of potential sources for grants and funding streams is provided in Table 7.1.

Federal funding

There are currently limited federal funding pathways for active transport projects. This is something that may change in the future and should be reviewed should the federal government allocate additional funding for active transport projects.

Development contributions

Developer contributions is a funding source that enables Council to receive additional funding for new developments requiring additional supporting infrastructure to service them. The funding amounts are outlined in Development Contribution Plans.

Current developer contribution plans already include a consideration towards transport infrastructure. As cycle paths are outlined in the contributions plan, this funding stream can be used on active transport infrastructure.

Table 7.1: Summary of various funding / grant programs

Grant	Description	Funding for Projects
NSW State Government		
Get NSW Active Program	▪ Supports safe, easy and enjoyable walking and cycling trips across Sydney and NSW ▪ Aims to assist the delivery of projects aligning with the NSW Government's Future Transport Strategy 2056	▪ Walking and cycling infrastructure projects ▪ Design and construction projects ▪ The concept or detailed design stages of projects
Metropolitan Greenspace Program	▪ Helps create liveable places, great neighbourhoods and build sustainable communities in Sydney and across NSW ▪ Aligns with NSW Government's Greater Sydney Region Plan, A Metropolis of Three Cities, and the Green Grid Strategy	Eligible capital works projects include: ▪ Shared pedestrian and cycle pathways ▪ New or improved parks and open spaces ▪ Improved signage and accessibility
Community Building Partnership Program	▪ Aims to deliver positive social, environmental, and recreational outcomes ▪ Aims to promote community participation, inclusion and cohesion	▪ Priority given to projects that are partially funded
Classified Roads	▪ Active transport routes and associated infrastructure along and across classified (State and Regional) road corridors are developed and funded in consultation with TfNSW	▪ Any active transport route coinciding with future road upgrade project(s) or program(s) along a classified road corridor
Train and Metro Stations	▪ Upgrades and end-of-trip facilities as part of train stations are funded by TfNSW	▪ Routes and associated infrastructure associated with the Sydney Metro WSA

8. Monitoring and evaluating our Plan

Overview

The implementation of the PATHS Implementation Plan (2022-2032) will be monitored and reported through the Delivery Program and Operational Plan.

Defining success

During its implementation, the effectiveness of PATHS Implementation Plan (2022-2032) can be measured by its success in meeting the key project objectives:

- Increasing the uptake of walking and bike riding, particularly for short trips around local centres and as connections to public transport
- Enhancing opportunities for Penrith residents to have safe, healthy and effective personal mobility options
- Improving road safety for vulnerable road users (VRU) by mitigating hazardous conditions caused by a conflict with higher speed vehicular traffic.

To this effect, an intervention logic map is depicted in Figure 8.1.

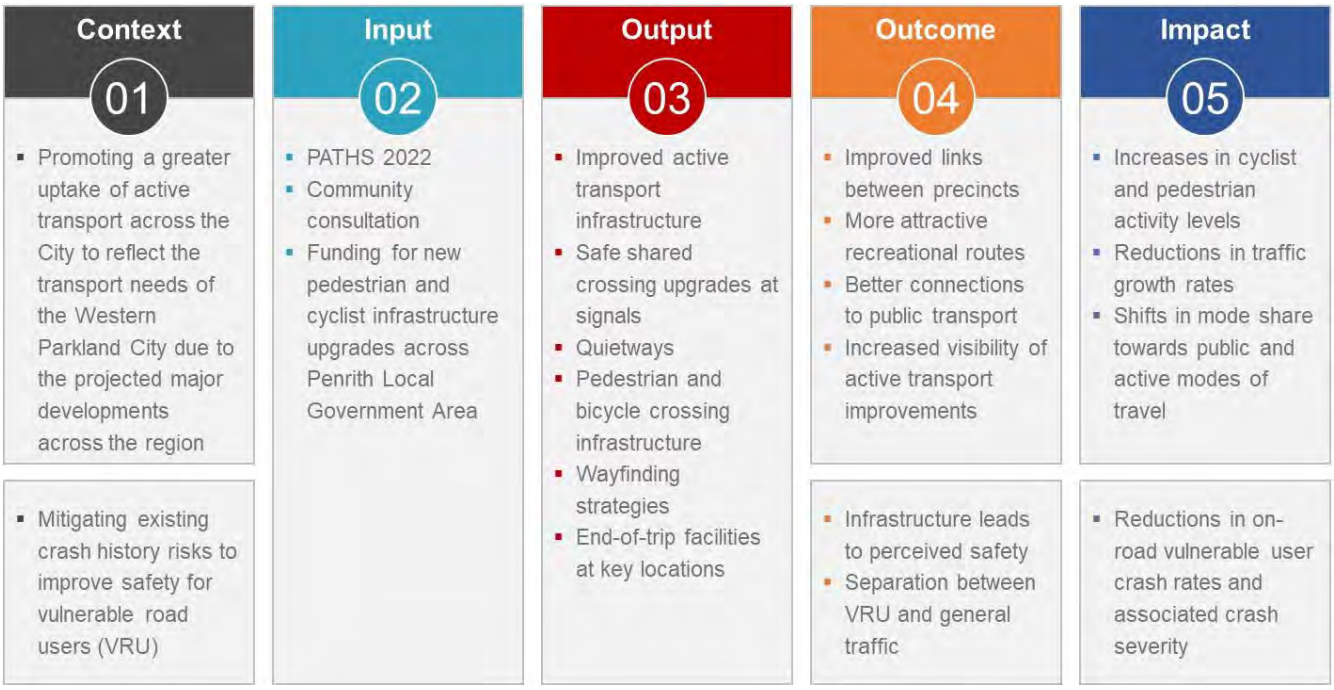


Figure 8.1: Intervention logic map

Appendix A: Project prioritisation and scoring

Prioritisation principles and criteria

Table A.1: Prioritisation principles and criteria

Item	Description	Criteria	Rationale
Alignment with Strategic Plans	Routes and corridors which have been identified within: ▪ Penrith Green Grid Strategy (active transport links or supporting biodiversity corridors) ▪ Principle Bicycle Network (2019)	▪ Part of Penrith Green Grid ▪ Part of Principle Bicycle Network	▪ Support the development of the Green Grid and provide better access for pedestrians and cyclists to open/green spaces ▪ Align with key cycling routes identified by Transport for NSW to support the development of the River City and provide convenient and direct routes across Penrith City
Connections to Attractors and Generators	Routes accessing key origins or destinations which will create a demand for walking and/or cycling and influence the need to provide a route or infrastructure. This includes: ▪ Educational facilities, including schools and universities ▪ Childcare centres ▪ Hospitals.	▪ Number of schools ▪ Number of universities ▪ Number of hospitals ▪ Number of childcare centres	▪ Provide for potential traffic accessing these attractors / generators ▪ Provide greater reach and access between key destinations and the surrounding area ▪ Promote a greater uptake of active transport as a transport mode within Penrith City ▪ Support safer active transport routes to school
	Routes accessing key origin / destinations featuring a recreational	▪ Number of parks / reserves	▪ Penrith residents value access to parks and green spaces, with recreation trips the most common purpose for cycling trips

Item	Description	Criteria	Rationale
	use and access to green spaces, including ▪ Parks and Reserves ▪ Other recreation areas	▪ Number of recreational centres (such as public swimming pools).	▪ Greater active transport access to parks also encourages healthy active lifestyles
Proximity to Adjacent Key Land Use	Routes accessing areas which form key origins or destinations which will create a demand for walking and/or cycling, such as CBDs and town centres featuring high commercial and retail activity. This may include areas such as: ▪ St Marys Town Centre ▪ Penrith CBD ▪ Local Shopping areas and strips	▪ Proximity to CBD / Town Centre Areas	▪ Promote a greater uptake of active transport as a transport mode for local trips to activity hubs ▪ Provide sufficient infrastructure for high pedestrian / cycling traffic areas and routes
	Routes accessing key areas with a high density of employment such as business parks, commercial centres, or industrial precincts. This includes areas such as: ▪ St Marys North / Dunheved Industrial Area ▪ Erskine Park	▪ Proximity to Key Employment Areas and precincts	▪ Promote a greater uptake of active transport as a commuting method within Penrith City

Item	Description	Criteria	Rationale
Links to Public Transport Hubs	Routes accessing bus stops or follow bus routes located along local streets	▪ Proximity to bus stops / follows part of bus route.	▪ Provide better pedestrian access to local bus stops
	Routes accessing existing train stations and proposed future Metro stations across Penrith City, where a high walk-up or cycle up catchment is present	▪ Proximity to train stations (approx. 200m)	▪ To facilitate better pedestrian and cyclist connectivity between public transport hubs and other origin/destinations and surrounding areas ▪ Provide sufficient infrastructure for high pedestrian / cycling traffic areas near stations
Crash History	Routes which have featured a vulnerable road user (pedestrian or cyclist) crash in the past five years	▪ Crash rate greater than acceptable benchmark rates	▪ Minimise crash risks and provide safe, separated facilities for cyclists and pedestrians
Key Recreational Routes	Routes following existing key recreational routes within and across Penrith City, including: ▪ Great West Walk (Parramatta to Blue Mountains) – Local and Main routes ▪ Great River Walk – existing routes and future extension	▪ Part of Great North Walk ▪ Part of Great River Walk	▪ Improve existing major recreational routes and enhance the experience for pedestrians and cyclists

Scoring system

Table A.2: Prioritisation criteria and scoring system

Category	Criteria	Performance Conditions	Score
Alignment with Strategic Plans	Part of Penrith Green Grid	No Yes	0 10
	Part of Principle Bicycle Network	No Yes	0 10
Connections to Attractors and Generators	Number of Schools	None 1 More than 1	0 5 10
	Proximity to Universities	No Yes	0 5
	Proximity to Hospital	No Yes	0 5
	Number of childcare centres	None 1 More than 1	0 5 7
	Number of parks / reserves	None Between 1 and 5 Between 5 or 10 10 or more	0 3 5 10
Proximity to Adjacent Key Land Use	Town Centre	No Yes	0 10
	Key Employment Area	No Yes	0 10
Links to Public Transport Hubs	Number of bus stops	None Between 1 and 5 Between 5 or 15 15 or more	0 3 5 10
	Number of train stations	None At least 1	0 10
Crash History	Crash rate *(crashes / km / yr)*	0 Between 0 and 0.2 Between 0.2 and 0.4 0.4 or higher	0 5 10 15
Key Recreational Routes	Part of Great North Walk and/or Part of Great River Walk	No Yes	0 10

Appendix B: Full list of Regional and Local Priority Projects and Routes

Table B1 - Full list of potential Regional Routes / Projects - NSW State Government roadways

Note: The following routes presented within this table include all potential routes and projects identified under the PATHS 2012 Strategy or developed as part of the 2022 Study and are within a State or Regional Road corridor. These projects are under the jurisdiction of the NSW State Government and will be delivered by its various agencies. Highlighted projects indicate Priority Projects for consideration, as included in Strategic Corridors - Regional Priority Projects.

Council will continue to lobby the State Government to complete routes and provide active transport facilities along these corridors.

Table B.1: Potential State Government Routes and Projects – all routes

Project Number	Street Location	Score	Description	Suburb(s)	Length
1	Great Western Hwy from Mamre Rd to Russell St	80	The project is composed of the following sections along the Great Western Hwy: 1) From Mamre Rd to Pages Rd 2) From Gipps St (near Putland St) to Claremont Meadows Creek 3) Crossing at Bringelly Rd 4) From Parker St to Riley St 5) From Willow Tree Ave to Park St 6) From Dukes Pl to Russell St	St Marys - Emu Plains	3.5
2	Mamre Rd	65	Mamre Rd from Great Western Hwy to Ainsbury Rd, Mamre Rd from M4 to Elizabeth Dr	St Marys - Mount Vernon	13.2

Project Number	Street Location	Score	Description	Suburb(s)	Length
3	The Northern Rd from South Penrith to Cranebrook	60	The project is composed of the following sections along the Northern Road: 1) From Dunheved Rd to Jamison Rd 2) From Andrews Rd to Sherringham Rd 3) From Greenwood Pkwy to Sandstock Cres 4) From Jordan Springs Blvd to Sandstock Cres (Western Side) 5) From Sherringham Rd to Hortsmann Cirt 6) From Sherringham Rd to Southern End of Footpath (Eastern Side) near Wianamatta Regional Park 7) From Borrowdale Way to Londonderry Rd 8) From Citronelle Cirt to Mahogany Cl	Kingswood - Cranebrook	7.7
4	Werrington Creek Park to Nepean River	50	Coreen Ave from Castlereagh Rd to Richmond Rd, Boundary Creek Corridor from Nepean River to Castlereagh Rd, Oxford St from Francis St to Richmond Rd	Penrith - Cambridge Park	5.1
5	Mulgoa Rd	48	Mulgoa Rd from Park Rd to Glenmore Pkwy	Mulgoa, Wallacia, Glenmore Park	12.2
6	Londonderry Rd	38	Londonderry Rd from The Driftway to The Northern Rd	Londonderry - Cranebrook	7.3
7	Agnes Banks to Cranebrook	35	Cranebrook Rd from Olive Ln to Castlereagh Rd, Castlereagh Rd from Cranebrook Rd to The Driftway	Agnes Banks, Cranebrook, Castlereagh	13.9
8	St Clair to Oxley Park via Roper Road	35	Erskine Park Rd and Roper Rd from Coonawarra Dr to Great Western Hwy	St Clair - Colyton	3.0

Project Number	Street Location	Score	Description	Suburb(s)	Length
9	Penrith to Cranebrook via Castlereagh Rd	33	The project is composed of the following sections: 1) Cranebrook Rd to Nepean St, 2) Castlereagh Rd from Mullins Rd to Jack Williams Drive 3) Castlereagh Rd from Jack Williams Drive to Lugard Street 4) Castlereagh Rd from Lugard Street to Andrews Rd roundabout 5) Castlereagh Rd from Peachtree Rd to Mullins Rd (Eastside) 6) Castlereagh Rd from IMO Car Wash to Mullins Rd (Westside) 7) Castlereagh Rd from Bega Dairy & Drinks to Museum Dr 8) Castlereagh Rd from Museum Dr to Peachtree Rd 9) Cranebrook Rd (west side) from Andrews Rd to Nepean Street	Penrith - Cranebrook	5.0
10	The Northern Rd from Bligh Park to Cranebrook	30	The Northern Rd from Londonderry Rd to Richmond Rd	Llandilo, Berkshire and Londonderry	7.6
11	Debrincat Ave	28	Debrincat Ave from Ropes Creek to Glossop St, North-South Link passing Forthorn Pl from Glossop St to Harris St	North St Marys	1.6
12	Bakers Ln and Aldington Rd	25	Bakers Ln from Aldington Rd to South Creek, Compass Dr from Lenore Dr to Aldington Rd, Aldington Rd from Bakers Ln to Abbotts Rd, Abbotts Rd from Mamre Rd to Aldington Rd	Kemps Creek	8.6

Project Number	Street Location	Score	Description	Suburb(s)	Length
13	Elizabeth Dr	25	Elizabeth Dr from The Northern Rd to Luddenham Rd	Mount Vernon - Luddenham	11.0
14	Wallacia to Luddenham	23	Park Rd from Luddenham Rd to Mulgoa Rd, Willmington Rd from Eaton Rd to Elizabeth Dr, Future Rd - Luddenham Aerotropolis EW5 from Wilmington Rd to M12	Wallacia - Luddenham	8.4
15	M12 Corridor	23	M12 from Mamre Rd to Park Rd	Luddenham, Badgerys Creek, Kemps Creek	16.0
16	M4 Corridor	23	M4 from Kingswood Rd to Claremont Creek, Lansdowne Rd and Homestead Rd via Calverts Rd from South Creek to Darvill Rd	Orchard Hills	1.9
17	Russell St	23	Russell St from Emu Plains Park to Leonay Oval	Emu Plains - Leonay	1.4
18	Llandilo to Cranebrook via Ninth Ave	21	Eight Ave and Ninth Ave via Third Ave from South Creek to Terrybrook Rd	Llandilo - Jordan Springs	3.6
19	Mulgoa Rd from Glenbrook St to M4	20	Mulgoa Rd from Jane St to M4	Jamisontown	0.3
20	Jamison Rd from York Rd to Harris St	18	Jamison Rd from York Rd to Harris Street	Penrith	0.6
21	Luddenham Rd	16	Luddenham Rd from Mamre Rd to Elizabeth Dr	Luddenham - Orchard Hills	9.2
22	Cranebrook to Windsor	15	Llandilo Rd and Second Ave from Richmond Rd to Ninth Ave	Berkshire Park - Llandilo	7.4

Project Number	Street Location	Score	Description	Suburb(s)	Length
	Downs through Llandilo Rd				
23	Route 2 - Strategic Shared Pathways	15	Cranebrook Rd from Castlereagh Rd to The Northern Rd	Cranebrook	3.6
24	Sydney Regetta International Centre Path	10	From Gate A Penrith Lakes entrance to Castlreagh Rd	Castlereagh	2.3
25	Bells Line of Road - Castlereagh Connection	8	Bells Line of Rd - Castlereagh Connection from South Creek to The Northern Rd, Bells Line of Rd - Castlereagh Connection from Londonderry Rd to Nepean River	Castlreagh, Cranebrook, Llandilo	12.8
26	Surveyors Creek Corridor from Buyu Rd to M4	6	Glenmore Park, Glenmore Park, South Penrith, Glenmore Park	South Penrith - Glenmore Park	1.0
27	Tunnel under M4 near St Clair Park	3	Tunnel under M4 near St Clair Park from Caines Cres to Northern End of Melville Rd	Colyton, St Clair, St Marys	0.1
28	Tunnel under M4 near Main Western Railway Line	0	Tunnel under M4 near Main Western Railway Line from Jamison Creek to Knapsack Gully	Emu Plains - Leonay	0.04

Table B2 - Full list of potential Local Routes and Projects – Council road and off-road corridors

The following routes presented within this table include all potential routes and projects identified under the PATHS 2012 Strategy or developed as part of the 2022 Study and are within a local roadway or open space corridors. Highlighted projects indicate Priority Projects for which Council will proceed with by securing funding for their design, consultation and delivery.

Table B.2: Potential Local Routes and Projects – all routes

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
1	School House Creek Corridor from Glenmore Parkway to Mulgoa Road	65	Glemore Parkway Corridor from Town Tce to Blue Hills Dr, Allison Dr from Luttrell St to Glenmore Pkwy, Apple Gum Reserve path from Bursaria Cres to Floribunda Ave, Town Tce from Glenmore Pkwy to Morrison St, and Rotary Park path from Morrison St to Mulgoa Rd	Glenmore Park	9.2
2	South Penrith to Jamisontown via York Road	65	Ikin St from Glenbrook St to York Rd, Glenbrook St from Mulgoa Rd to Cobb Ave, York Rd from Tukara Rd to Ikin St, Kiaka Cres from M4 to York Rd, and Moolana Pde via Mardu Pl, Narang Cirt and Ballah Cirt from Tukara Rd to York Rd	South Penrith - Jamisontown	4.4
3	Old Bathurst Road Corridor, Emu Plains	63	Mackellar St from Old Bathurst Rd to northern end of St, and Old Bathurst Rd from Russell St to Gosling St	Emu Plains - Emu Heights	3.6
4	Queen Street Corridor, St Marys	63	Queen St from King St to Great Western Hwy, King St and Carson Ln from East Ln to West Ln, West Ln from Carson Ln to Nariel St, East Ln from Station St to King St, and Queen St from Station St to Penrith Station	St Marys	1.0
5	North St Marys to St Marys via Glossop Street	60	Wattle Ave from Maple Rd to Oleander Rd, Oleander Rd from Wattle Ave to southern end of St, and off-Rd path north-west of drainage reserve on Kurrajong Rd North St Marys from Oleander Rd to Glossop St	North St Marys - St Marys	2.0
6	Penrith City Centre Connections	60	Henry St from North St to Worth St, Lethbridge St from Woodriff Sto Parker St, Derby St from Station St to Woodriff St, Woodriff St from Derby St to Henry St, and Lawson St from Henry St to Belmore St	Penrith	3.9
7	Glossop Street to Queen Street	58	Station St and Chesham St via Lethbridge St from Queen St to Glossop St, and Phillip St from Lethbridge St to Glossop St	St Marys	0.8
8	Bringelly Road and Maxwell Street	55	Bringelly Rd via Maxwell St from Great Western Hwy to Aspen St, Maxwell St via Racecourse Rd from Mosely Ave to Greenway Dr, from Maxwell St to Batt St	Kingswood - South Penrith	4.0
9	Cranebrook to Penrith City Centre	55	Borrowdale Way from The Northern Rd to Sherringham Rd, Sherringham Rd from Borrowdale Way to McHenry Rd, McHenry Rd from Sherringham Rd to Farmview Dr, Hindmarsh St from Andromeda Dr to Boundary Rd, Laycock St from Boundary Rd to Greygums Rd, Greygums Rd from Laycock St to Ariel Cres, Greygums Oval path from Ariel Cres to Andrews Rd, off-Rd path from Andrews Dr to Cooper St	Cranebrook - Penrith	5.6
10a	Evan Street, Penrith	55	Evan St via Jamison Rd from North St to Greenhill Ave, Evan St from Stevenson St to Eileen Cammack Reserve	Penrith - South Penrith	3.1
10b	WSU Kingswood to Jamison Park	55	Woodriff St from York Rd to Derby St, York Rd from Batt St to Ikin St, Second Ave from John Flack Ave to Bringelly Rd, Derby St from Bringelly Rd to Woodriff St	Kingswood - South Penrith	5.0
11	Ched Towns Reserve to Nepean River	53	Ched Towns Reserve Path via William Howell Dr from Morrison St to TownTce, Factory Rd and Jeanette St from Kenneth Slessor Dr to Bellevue Rd, William Howell Dr via Morrison Dr from TownTce to The Lakes Dr, William Howell Dr and Luttrell St via Kenneth Slessor Dr from Jeanette St to Morrison St	Glenmore Park - Regentville	3.8
12	Queen St to South Creek	53	Creek Rd via Blair Oval Path from The Kingsway to Main Western Railway Line, Nariel St, Merinda St and South Creek Park Path via Queen St, Carinya Ave and Kalang Ave from Station St to Creek Rd, Kungala St via Charles Hackett Dr and Queen St from East Ln to Charles Hackett Dr, Creek Rd from Kungala St to South Creek	St Marys	2.3
13	Station Street and Braemar Drive, Penrith	53	Station St from Jane St to Jamison Rd	Penrith	1.5

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
14	Claremont Meadows to Penrith	50	Jamison Rd from Parker St to Woodriff St, Peppermint Cres and WSU, Kingswood Reserve Path via Calgaroo Cres, Manning St Reserve from Bringelly Rd to WSU - Penrith Campus Library, O'Connell St and Nullaga Way via Sunflower Dr from UWS - Werrington South Campus to Geewan Pl, Sunflower Dr via Primrose Cirt from Claremont Creek to Gipps St, San Diego St from Gipps St to Claremont Creek, WSU-Kingswood path (WSU - Penrith Campus Library and Student Services, Penrith building) via Dustan Ave from Second Ave to John Flak Ave, Gipps St and Reserve Rd via Putland St from Sunflower Dr to Great Western Hwy, WSU-Kingswood Reserve Path from Second Ave to Grochowski Ave, O'Connell St and Nullaga Way via Sunflower Dr from UWS - Werrington South Campus to Geewan Pl, Jamison Rd from Bringelly Rd to Parker St	South Penrith - Kingswood	7.7
15	Preston St and Smith St	50	Smith St from Bringelly Rd to Greenhills Ave, Preston St via Jamison Park Path from Jamison Park to Mulgoa Rd, Jamison Park path from Ron Stonestreet Pavilion to Racecourse Rd	South Penrith - Kingswood	3.2
16	Ron Mulock Oval Connections	50	Lord Sheffield Cirt Lord Sheffield Cirt, Lemongrove Rd via Macquarie Ave from Coreen Ave to Lord Sheffield Cirt, Peachtree Rd from Castlereagh Rd to Mullins Rd, The Crescent Macquarie Ave Lord Sheffield Cirt	Penrith	2.2
17	Route 2 - Local Strategic Shared Pathway Priorities	50	Victoria St from Park Ave to Richmond Rd, Victoria St from Richmond Rd to The Northern Rd, From M4 to Evan St through Copeland St and The Crescent, Victoria St from Lethbridge Ave to William St, Victoria St from William St to Park Ave, Victoria St from Park Ave to Shaw St	Penrith - Werrington	4.6
18	Bennett Road, Colyton	50	Mark Leece Reserve from Bennett Rd/St Clair Ave to Endeavour Ave, Woodland Ave between Adelaide St and Great Western Hwy, Bennett Rd from Great Western Hwy to Endeavour Ave, Adelaide St from Woodland Ave to Carinya Ave	Oxley Park - St Marys	5.7
19	Lapstone Station to M4	48	Buring Ave from River Rd to Leonay Pde, Reserve Path from Leonay Pde to Lapstone Station, Leonay Pde and River Rd from Parklands Ave (Northern End) to Leonay Oval	Leonay	3.4
20	Claremont Meadows to Nepean Rugby Park	48	Werrington Rd from Great Western Hwy to Dunheved Rd, Dunheved Rd from The Northern Rd to Werrington Rd	Penrith - Werrington	7.7
21	Route 5 - Strategic Shared Pathways	48	Great Western Hwy from Queen Street to Ropes Creek	Oxley Park - St Marys	2.8
22	Route 6 - Strategic Shared Pathways	48	Forrester Rd from St Marys Railway Station to Ropes Creek	North St Marys	2.5
23	Access to Trinity Drive Reserve	47	Trinity Dr, and Carlyle Cres from Richmond Rd to Dunheved Rd, and from Carlyle Cres to Allsopp Dr, Boomerang Pl from Richmond Rd to Eastern End of Boomerang Pl, Reserve Path from Cambridge Gardens Public School to Newham Dr	Cambridge Gardens	1.9
24	Claremont Creek Corridor	45	Claremont Creek Corridor from Northern End of Henze Cres to Homestead Rd, Claremont Creek Corridor from Henze Cres to Mistletoe Ave, Claremont Creek Corridor (eastern path) from Egret Pl to Nullaga Way, Claremont Meadows Park path from Mistletoe Ave to Great Western Hwy	Orchard Hills, Claremont Meadows	5.6
25	Desborough Rd and Carlisle Ave	45	Desborough Rd and Tullipwood Dr via Lonsdale St, Monfarville St and Blueberry Dr from Roper Rd to Collins Rd, Carlisle Ave from Roper Rd to South Creek	Orchard Hills - Claremont Meadows	3.6
26	Riverside Rd to Old Bathurst Rd	45	Riverside Rd and Wedmore Rd from Strathdon Rd to Old Bathurst Rd, Russell St via Palomino Rd from Old Bathurst Rd to Drainage Culvert under Palomino Rd (in Emu Green Reserve), Emu Green Reserve path from Wedmore Rd to Ambler Cl	Emu Heights	2.6
27	Gidley St and Blair Ln	43	Gidley St from King St to Station St, Blair Ln from Brock Ave to Blair Ave	St Marys	1.0
28	The Northern Rd to Luttrell St via Garswood Rd	43	Knox St and Tarrabundi Dr via Wallan Ave from Harwood Cirt to The Lakes Dr, Garswood Rd from Surveyors Creek Rd to The Northern Rd, The Lakes Dr from Alston St to Luttrell St	Glenmore Park	3.9

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
29	Werrington County Park Connections	43	John Batman Ave Henry Lawson Ave, Henry Lawson Dr via Leichhardt Ave from Armoury Rd to Dunheved Rd, Singleton Ave from Henry Lawson Ave to Harvest Dr, Harvest Dr from Singleton Ave to Greenbank Dr	Werrington County, Werrington Downs, Jordan Springs	2.2
30	Cambridge Park to Cranebrook via Andrews Rd	43	Castlereagh Rd from Andrews Rd to Nepean St, Nepean St between Cranebrook Rd and Camelot Dr, Laycock St via Camelot Dr Laycock St to Nepean St, The Northern Rd from Dunheved Rd to Andrews Rd	Cambridge Gardens - Cranebrook	2.9
31	South Penrith Open Space Corridor	43	Off Rd reserve path from Tukara Rd to Pindari Dr, Bilwara Cres Pindari Dr to Timaru Grove, Open space corridor from Timaru Grove to the Northern Rd, Surveyors Creek from Henderson Cres to Mulgoa Rd, Surveyors Creek from Birmingham Rd to Thurwood Ave, Maxwell St from Mosely Ave to York Rd, Tukara Rd from Surveyors Creek to York Rd, Surveyors Creek from Birmingham Rd to Maxwell St	South Penrith - Jamisontown	3.2
32	Cambridge Park to Kingswood Station	40	College St from Dunheved Rd to Richmond Rd, Park Ave from Abacus Pde to Richmond Rd, Richmond Rd from Oxford St to Park Ave	Kingswood - Cambridge Park	4.1
33	Jordan Springs Path Improvements	40	Jordan Springs Lake Park Jordan Springs Lake Park, Greenwood Pkwy, and Sinclair Pde from The Northern Rd to Alinta Prom, from Greenwood Pkwy to Sharp Ave, Cullen Ave and Water Gum Dr from McGarritys Pde to Bormla Ln, Lakeside Pde (Eastern Side) via Jordan Springs Blvd (Northern Side) from Greenwood Pkwy to The Northern Rd, Sandstock Cres from McGarritys Pde to The Northern Rd	Jordan Springs	4.0
34	Peppertree Dr, Erskine Park	40	Peppertree Dr from Swallow Dr to Erskine Park Rd, Fantail Cres from Swallow Dr to Ropes Creek	Erskine Park	1.5
35	Ropes Creek to South Creek via Carpenter St	40	Carpenter St from Monfarville St to Roper Rd, Cook St from Monfarville Street Park to Collins St, Saddington St and Putland St via George St from South Creek to Monfarville St	Colyton - St Marys	4.2
36	Swallow Dr	40	Swallow Dr from Peppertree Dr (West) to Erskine Park Rd	Erskine Park	3.0
37	Werrington Creek Park Connections	40	Herbert St and Francis St from Wrench St to Dunheved Rd and Lavin Cres, Burton Street Oval Path along Glencoe Ave from Burton St to Francis St, Malcolm Ave from John Oxley Ave to Ellison Reserve, Heavey St via Ellison Reserve path and Burton St from Malcolm Ave to Werrington Creek Park	Werrington County, Werrington, Cambridge Parks	3.0
38	St Clair Connections	40	Endeavour Ave from Bennett Rd to Banks Dr, Lukes Lane Reserve from Banks Dr to Cook Pde, Parroo Cl from Pine Creek Cirt to Cooke Pde, Off-Rd reserve path from Endeavour Ave to Erskine Park Rd, Reserve Path from Erskine Park Rd to Swallow Dr via Cepheus Pl, Bennett Rd from Endeavour Ave to Erskine Park Rd	St Clair - Erskine Park	5.7
39	Route 8 - Local Strategic Shared Pathway Priorities	40	Old Ferry Rd from Memorial Ave to Yandhai Bridge, Leland St and Cassola Pl via Lugard St and Borec Rd from Old Castlereagh Rd to Great River Walk, Sandy Brennan Reserve path from Yandhai Nepean Crossing to Cassola Pl	Penrith	2.7
40	O'Connell St and French St	38	O'Connell St and French St from Abacus Pde to O'Connell Ln, Park Ave crossing Main Western Railway Line from Abacus Pde to Victoria St	Caddens - Werrington	1.4
41	Queen St Corridor to St Marys Village	38	Carinya Ave, Taroona Ave, Kokoda Park path and Lang Park path via Waratah St from St Marys Village to Merinda St, Carinya Ave via Lang Park path from St Marys Village to Charles Hackett Dr, Kokoda Park path from St Marys Village to Queen St	St Marys	1.5
42	South Penrith to Orchard Hills via Tukara Rd	38	Frogmore Rd and Tukara Rd via The Northern Rd from Evan St to Kingswood Rd, Evan St from Blackford Cres to Tukara Rd	South Penrith - Orchard Hills	2.7

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
43	St Clair to Erskine Park via Saunders Park	38	Shakespeare Drive Reserve Path from Bennett Rd to Mimosa Cl, Shakespeare Dr Reserve Path via Saunders Park from Endeavour Ave to Illawarra Dr, Regulus St from Chameleon Dr to Swallow Dr, Reserve Path (between Capri Pl and Sorrento Pl) from Chameleon Dr to Erskine Park Rd, Shakespeare Dr from Caesar Way to Tonga Cl, Berrigan Cl via Coowarra Dr from Blackwell Ave to Shakespeare Drive Reserve, Shakespeare Drive Reserve path from Othello Pl to Bennett Rd, Shakespeare Dr Reserve path from Bard Cirt to Illawarra Dr, Shakespeare Dr Reserve path from Erskine Park Rd to Illawarra Dr	St Clair - Erskine Park	4.0
44	The Main Western Rail Line to South Creek via Pages Rd	38	Charles Hackett Dr and Pages Rd via Kalang Ave From Wilson St to Kungala St, Reserve path via Pages Rd From Wilson St to South Creek, Kalang Ave From Camira St to Kungala St	St Marys	2.1
45	The Main Western Rail Line to Western Sydney University - Werrington North	38	Second Ave from O'Connell St to Dunstan Ave, UWS Penrith Campus path from Chapman St to Great Western Hwy, Rance Rd and Chapman St via Railway St and Landers St from Werrington Rd to WSU - Werrington North, King St via Second Ave from Great Western Hwy to O'Connell St, TAFE NSW - Nepean Kingswood Reserve Path near Nepean Arts and Design Centre from O'Connell St to King St	Kingswood, Werrington, Caddens	4.4
46	Flinders Ave and Lansdowne Rd	36	Flinders Ave from South Creek to Kent Rd, Lansdowne Rd from Calverts Rd to South Creek	Orchard Hills	3.1
47	Melville Rd to South Creek via Rochford St	36	Rochford St From Melville Rd to St Clair Ave, Garrick Rd From St Clair Ave (North) to St Clair Ave (South), Kunipipi St via M4 From Garrick Rd to Mamre Rd, M4 Corridor From Mamre Rd to South Creek	St Clair - Orchard Hills	2.2
48	The Kingsway	36	The Kingsway from Werrington Rd to Charles Hackett Dr	St Marys	1.1
49	Troy St and Forbes St	36	Troy St via Tattersall Pl from Great Western Hwy to Nepean St, Forbes St from Russell St to Nepean St	Emu Plains	1.9
50	Banks Dr	35	Banks Dr from Bennett Rd to Mamre Rd, Reserve Path near Olympus Dr from Banks Dr to Mamre Rd	St Clair	3.2
51	Caddens Rd	35	Caddens Rd from The Northern Rd to Caddens Rd	Colyton - South Penrith	4.0
52	M4 Corridor from Mamre Rd to Ropes Creek	35	Caines Cres and Orchard Rd from Witley Cl to Shepherd Street Park, Shepherd St from Ropes Creek to Bennett Rd, Monfarville Park Path from Mamre Rd to Caines Cres, Shepherd Street Park path near Bennett Rd and M4 from Shepherd St to Orchard Rd	St Marys - Colyton	4.1
53	St Clair Ave and Explorers Way	35	Explorers Way from Bennett Rd to Erskine Park Rd, St Clair Ave from Banks Dr to Ballarat Ave	St Clair	3.4
54	St Marys Community Centre to Monfarville Park	35	Collins St from Monfarville Park to Great Western Hwy, St Marys Corner Access Rd from Swanston St to St Marys Memorial Hall, Swanston St from Collins St to St Marys Corner Access Rd	St Marys	1.6
55	Vincent Rd to Andrews Rd via Andromeda Dr and Nereid Rd	35	Andromeda Dr from The Northern Rd to Vincent Rd, Sherringham Rd from McHenry Rd to The Northern Rd, Borrowdale Way, Nereid Rd and Goldmark Cres via Maser St, Barry Coe Pl and Robinson Rd from Goldmark Crescent Reserve to Laycock St, Goldmark Cres Reserve path from Andromeda Dr to Goldmark Cres	Cranebrook	4.2
56	Banks Dr to St Clair Ave via Timesweep Dr	33	Mark Leece Sporting Complex (western) path from St Clair Ave to Endeavour Ave, Timesweep Dr from Banks Dr to Endeavour Ave, Shakespeare Drive Reserve path via tunnel underneath Banks Dr from Timesweep Dr to Othello Pl	St Clair	1.8
57	Future Sydney Metro - Western Sydney Airport shared Path	33	Future Sydney Metro - Western Sydney Airport shared Path from Elizabeth Dr to Caddens Rd	Claremont Meadows - Badgerys Creek	10.6
58	Great River Walk from Penrith to Wallacia	33	Great River Walk from Mulgoa Rd to Cross Rd	Regentville, Mulgoa, Wallacia	18.5

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
59	Great River Walk from The Agnes Banks to Castlereagh	33	Lugard St from Borec Rd to Castlereagh Rd, Great River Walk from Cassola Pl to Smith Rd	Agnes Banks, Castlereagh, Penrith	18.1
60	Marsden Rd and Sydney St	33	Marsden St from Caines Cres to Great Western Hwy, Sydney St from Great Western Hwy to Hobart St	St Marys - Colyton	2.4
61	Melbourne St and Hewitt St	33	Hewitt St from Francis St to Shepherd St, Melbourne St from Hobart St to Great Western Hwy	Colyton - Oxley Park	2.4
62	Pyramid St and Short St	33	Short St and Ithaca St via Dukes Oval path, Lawson St and Mundy St from Great Western Hwy to Russell St, Pyramid St from Russell St to Great Western Hwy, Great Western Hwy from Emerald St to Dukes Oval	Emu Plains	2.2
63	Werrington Rd to Dunheved Rd via John Oxley Ave	33	Victoria St via Main Western Railway Line from Lethbridge Ave to Werrington Rd, John Oxley Ave via Lethbridge Ave from Charles Sturt Dr to Victoria St, Parkes Ave from Werrington Rd to Victoria St, Princess St from John Oxley Ave to Werrington Park, Range Oval path and Parkes Avenue Sporting Complex from Princess St to Victoria St	Werrington - Werrington County	3.4
64	South Creek to Melaleuca Lake	31	Lakeside Pde from Melaleuca Lake path to Greenwood Pkwy, Wianamatta Regional Park Path via Ninth Ave from South Creek to Callistemon Cirt, Greenwood Pkwy from Lakeside Pde to Callistemon Cirt, Melaueca Lake Path from Lakeside Pde to Bungendore St	Jordan Springs - Llandilo	4.1
65	Cook Park Connections	30	Mary Mackillop Park path, Cook Park path and Atchison St via Saddington St, Wilson St and Hall St from Pages Rd to Mamre Rd, Hall St from Atchison St to Barker St, John St from Pages Rd to Byrnes Creek, John St from Warwick St to Byrnes Creek, Edgar St and John St via Warwick St from Mitchell St to Mamre Rd	St Marys	2.5
66	Greenbank Dr	30	Pasturegate Ave from Trinity Dr to Greenbank Dr, Brookfield Ave from Greenbank Dr to Dunheved Rd, Greenbank Dr from Francis St to Dunheved Rd (West), Reserve path from Greenbank Dr to Wianamatta Regional Park	Werrington Downs - Cambridge Gardens	3.2
67	Penrith Golf Club to Apple Gum Reserve	30	Buyu Rd, Muru Dr and Bulu Dr via Womra Cres and Ched Towns Reserve Path from Town Tce to Surveyors Creek Rd, Bursaria Cres from Camellia Ave (Western End) to Camelia Ave (Eastern End), Glenmore Pkwy and Camelia Ave via Bursaria Cres and Harriett Ln from Harriett Cl to Woodlands Dr, Laguna Dr via Woburn Pl from St Andrews Dr to Surveyors Creek Rd, East-West Reserve Path from Buyu Rd to Muru Dr, Town Tce from Ched Towns Reserve to Glenmore Pkwy	Glenmore Park	4.3
68	Blackwell Ave	28	Blackwell Ave From Banks Dr to Van Dieman Rd	St Clair	1.4
69	Harris St	28	Harris St via Roundabout on Forrester Rd (near St Marys Station) from St Marys Station to Glossop St, St Marys Commuter Cark Park (Western Side) from Harris St to St Marys Station	North St Marys - St Marys	0.9
70	Maple Rd and Griffiths St	28	Maple Rd from Wattle Ave to Kurrajong Rd, Griffiths Rd via Forrester Rd and Wordoo St from Power St to Wattle Ave, Wordoo St from Power St to Forrester Rd, Forrester Rd from Griffiths St to Wordoo St	North St Marys - St Marys	2.2
71	Melbourne St to Carinya Ave via Brisbane St	28	Brisbane St, Champness Cres and Blair Ave via Lethbridge St and Ross Pl from Melbourne St to Lethbridge St, Belar St via Queen St from Carinya Ave to East Ln	St Marys - Oxley Park	2.6
72	Warragamba Pipeline Open Space Corridor	28	Warragamba Pipeline Open Space Corridor from South Creek to The Northern Rd	Kemps Creek to Mulgoa	15.2
73	Route 14 - Strategic Shared Pathways	28	Railway corridor link from Glossop St to Ropes Creek, Railway corridor link from Blair Oval to Werrington Rd	Oxley Park, St Marys, Werrington	2.2
74	Boronia Rd and Sycamore St	26	Boronia Rd from Forrester Rd to Debrincat Ave, Sycamore St from Boronia Rd to Maple Rd	North St Marys	1.8
75	MacArthur Dr and Moore St	26	Todd Row and MacArthur Dr via Maurice St and Denzil Ave from Todd Ln to St Clair Ave, Moore St from Melville Rd to Endeavour Ave	St Clair	1.5

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
76	River Rd and Bellevue Rd	26	Open space corridor on eastern side of River Rd from Parklands Avenue to the M4, Bellevue Rd under M4, Off Rd path east of Tench Ave, Bellevue Rd from M4 to Bundarra Rd	Regentville, Jamisontown, Leonay	0.9
77	Access to Bunyarra Drive Reserve	25	Lapstone Creek via Koorine Ave from Koloona Dr to Banjo Cres, Jamison St and Koloona Dr, Grey St from Russell St to Koorine Ave, from Jamison St to Great Western Hwy, Bunyarra Dr via Bunyarra Drive Reserve Path from Russell St to Great Western Hwy	Emu Plains	2.7
78	Homestead Rd and Calverts Rd	25	Homestead Rd from The Northern Rd to Darvill Rd, Calverts Rd from Homestead Rd to Wentworth Rd, Darvill Rd from Homestead Rd to Wentworth Rd	Orchard Hills	5.7
79	Old Freight Corridor and Wianamatta Pkwy	25	Old freight rail trail from Ropes Crossing Blvd to Christie St, Christie St from Links Rd to Werrington Rd, Links Rd via old freight rail trail from Christie St to Armoury Rd	Orchard Hills	4.0
80	River Rd	25	River Rd via Great Western Hwy from York St to Willow Tree Ave	Emu Plains	0.6
81	South Creek Corridor	25	South Creek Corridor from Elizabeth Dr to Hall St, Blaxland Creek Corridor from South Creek to Bordeaux Pl	St Marys - Kemps Creek	15.4
82	Route 4 - Local Strategic Shared Pathway Priorities	25	Forrester Rd from Ropes Creek to Susannah Dr, Ropes Creek Corridor from Forrester Rd to Lenore Dr	Erksine Park - North St Marys	9.4
83	Fairlight Rd to Luddenham Rd via Littlefields Rd	23	Littlefields Rd and Fairlight Rd from The Great River Walk to The Northern Rd, Future Rd - Luddenham Aerotropolis EW3 from Cosgrove Creek to The Northern Rd	Mulgoa - Luddenham	13.6
84	Kurrajong Rd Corridor	23	Kurrajong Rd from Forrester Rd to Ropes Creek, Reserve path along Mount Druitt Transmission Substation and Main Western Railway Line from Kurrajong Rd to Ropes Creek	North St Marys	2.6
85	Peachtree Creek Corridor	23	Batt St from York Rd to Mulgoa Rd, Peachtree Creek Corridor from Nepean River to Mulgoa Rd	Penrith - Jamisontown	4.4
86	Phillip St to King St	23	Lethbridge St and Magdalene St via King St from Chesham St to Great Western Hwy, King St from Magdalene St to East Ln	St Marys	1.1
87	Second Ave to Wentworth Rd via Kingswood Rd	23	Manning St and Bargo Blvd from Second Ave to Gilja Glen, Kingswood Rd from Wentworth Rd to Caddens Rd	Caddens - Orchard Hills	3.3
88	Surveyors Creek Corridor from M4 to Ridgetop Dr	23	Surveyors Creek from Musselburgh Cl to Bardo St, Along Surveyors Creek from Kukundi Dr to Bardo St, Along Surveyors Creek from Laguna Dr to Musselburgh Cl, Avalon Cres from Blue Hills Wetland to Waterford Way, Avalon Cres to Gallinulla Pl through Waterford Way and Ridgetop Dr	Glenmore Park	1.7
89	Ball Street Reserve to Desborough Rd	21	Brooker St from Day St to Bennett Rd, Day St and Blamey St via Dan Cres and Ball St from Desborough St to Great Western Hwy	Colyton	1.3
90	Glenmore Pkwy to M4 via St Andrews Dr	21	Sunningdale Dr from St Andrews Dr to Surveyors Creek, Surveyors Creek Recreation Area near M4 from Alston St to BallybunnionTce, St Andrews Dr from Glenmore Pkwy to Garswood Rd, Reserve Path following BallybunnionTce from Surveyors Creek to Garswood Rd	Glenmore Park	2.4
91	Vallance St and Power St	21	Vallance St from Dunheved Cirt to Links Rd, Power St from Christie St to Tributary Creek (of South Creek)	St Marys	2.2
92	Werrington Creek Corridor	21	Castle Rd from Claremont Creek to The Northern Rd, Werrington Creek Corridor from Caddens Rd to Castle Rd, Future Rd - Orchard Hills EW via Werrington Creek from The Northern Rd to Caddens Rd	Orchard Hills	6.0
93	Blaxland Creek Corridor from The Northern Rd to Luddenham Rd	20	Blaxland Creek Corridor from Luddenham Rd to The Northern Rd, Future Rd - Luddenham Aerotropolis EW2 from Luddenham Rd to Blaxland Creek Tributary	Luddenham - Orchard Hills	10.0
94	Nepean St	20	Nepean St from Brechin Cl to Imperial Ave, Hunter Rd via River Rd from Nepean St to Nepean River, Cary St from Nepean St to Great Western Hwy	Emu Plains	2.1

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
95	Ridgetop Dr and Shearwater Dr	20	Ridgetop Dr from Glenmore Park Open Space to Kingsfield Ave, Woodlands Dr and Shearwater Dr from Scrubwren Pl to Ridgetop Dr, Kingsfield Ave from Ridgetop Dr to Blue Hills Dr	Glenmore Park	2.8
96	The Northern Rd to Blue Hills Wetland	20	Brigadoon Ave, Roseville Tce and Glenmore Pkwy via Glengarry Dr and Windorra Ave from The Northern Rd to Blue Hills Dr, Glengarry Dr via Westerly Way and Blue Hills Oval Path from Glenmore Pkwy to Blue Hills Dr, Glenmore Pkwy from Windorra Ave to Maidstone Pl, Westerly Way and Blue Hills Oval Path from Glengarry Dr to Blue Hills Wetland	Glenmore Park	3.1
97	Victoria St to Richmond Rd via Harrow Rd	20	Harrow St and Cambridge St via Lincoln Dr and Breyley Rd from Herbert St to Richmond Rd, William St from Herbert St to Victoria St, Armstein Cres and Roebuck Rd via Burton St from William St to Victoria St	Werrington - Cambridge Park	3.5
98	Vincent Rd and Grays Ln	20	Vincent Rd from Cranebrook Rd to The Northern Rd, Grays Ln and Tornado Cres from Hanlan St to Vincent Rd	Cranebrook	4.2
99	Wianamatta Regional Park to The Sydney International Regatta Centre	20	Reserve Path along Wianamatta Regional Park from Tedbury Rd to The Northern Rd, Ironbark Drive Park path, Lakeview Dr and Knot St via Greygums Oval path, Lakes Walk and Gannet Dr from Sherringham Rd to Castlereagh Rd	Jordan Springs - Cranebrook	5.8
100	Route 1 - Local Strategic Shared Pathway Priorities	20	John Oxley Ave from Dunheved Rd to Ellison Reserve, Charles Sturt Dr from John Oxley Ave to Burton St, Werrington Lake Reserve from Burton St to Victoria St	Werrington County - Werrington	2.1
101	Dukes Oval to Old Bathurst Rd	18	Dukes Oval (Eastern) Path from Lawson St to Imperial Ave, David Rd via tunnel under Main Western Railway Line from Nixon St to Old Bathurst Rd, Nixon St from Pyramid St to McAuley Cres, McAuley Cres from Nixon St to Park St, Great Western Hwy from Dukes Oval to Park St	Emu Plains	2.1
102	Melville Rd	18	Byrnes Park Path from St Clair Ave to M4, Melville Rd from Banks Dr to St Clair Ave	St Clair	1.2
103	South St Clair Connections	18	Strauss Rd via Coowarra Dr from Blackwell Ave to Van Dieman Rd, Corio Dr and Kasie Pl via Kasie Ln and Jeffrey Ave from Blackwell Ave to Pine Creek Cirt, St Clair Park Path from Strauss Rd to Walkers Ln, Pine Creek Cirt via Horseshoe Cirt from Mamre Rd (Northern End) to Mamre Rd (Southern End), Clarence Ln from Walkers Ln to Clarence Rd	St Clair	2.0
104	Thompson Ave and Braddon St	18	Thompson Ave and Braddon St from Australia St to Melbourne St	St Marys	1.4
105	Van Dieman Rd and Chameleon Dr	18	Chameleon Dr from Swallow Dr to Erskine Park Rd, Van Dieman Rd from Mamre Rd to Erskine Park Rd	Erskine Park - St Clair	2.2
106	Coonawarra Dr and Colorado Dr	15	Colorado Dr from Coonawarra Dr to Explorers Way, Coonawarra Dr from Bennett Rd to Erskine Park Rd	St Clair	1.6
107	Dunheved Rd to Park Ave via Wrench St	15	Heath St from Victoria St to Park Ave, Walter St from Victoria St to Park Ave, Wrench St from Victoria St to Dunheved Rd	Kingswood - Cambridge Park	1.8
108	Endeavour Ave to Mamre Rd via Clyde Ave	15	McIntyre Ave from Mamre Rd to Cook Pde, Rotorua Rd from Rotorua Ln to Feather St, Feather St from Naoli Pl to McIntyre Ave, Clyde Ave from Naoli Ln to Cook Pde, Aldan Pl from Cook Pde to Eastern End of Aidan Pl, Reserve Path from Lukes Lane Reserve to Eastern End of Aldan Pl, Naoli Pl from Naoli Ln to Feather St, Naoli Ln from Naoli Pl to Clyde Ave, Rotorua Ln from Rotorua Rd to Mamre Rd	St Clair	2.3
109	Erskine Park Rd to Banks Dr via Cook Pde and Walkers Ln	15	Auber Glen, Auber Ln, Walkers Ln and Cook Pde via Fontana Cl and Coowarra Dr from Erskine Park Rd to Banks Dr	St Clair	2.2
110	Hobart St to Shepherd St	15	Australia St from Great Western Hwy to Hobart St, Fleming St, Adams Cres, Schultz St, Murray St via Maranie Ave, Bega St, Desborough Rd, Balog St and Shepherd St from Great Western Hwy to Marsden Rd, Great Western Hwy Corridor from Glossop St to Fleming St	St Marys	2.9
111	Lenore Dr	15	Lenore Dr from Erskine Park Rd to western end of existing shared path on Lenore Rd (between Compass Dr and Grady Cres)	Erskine Park	1.8

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
112	School House Creek Corridor from Nepean River to Mulgoa Rd	15	School House Creek Corridor from Nepean River to Mulgoa Rd	Regentville	1.7
113	Route 6 - Local Strategic Shared Pathway Priorities	15	South Creek Corridor from Mamre Rd to Great Western Hwy	St Marys	2.4
114	Bennett Rd to Henley Grv via Reddington Ave and Denver Rd	13	Denver Rd, Shearer St and Reddington Ave via Martin Park Path and Shearer Ln, passing Clairgate Public School from Henley Grv to Chatres St, Denver Rd, Shearer St and Reddington Ave via Martin Park Path and Shearer Ln, passing Clairgate Public School from Bennett Rd to Chardonnay Rd, Denver Park Path from Shearer St to Laura Pl, Martin Park Path from Shearer St to Denver Park	St Clair	2.0
115	Fragar Rd and Bickley Rd	13	Fragar Rd from Smith St to Tukara Rd, Bickley Rd from Tukara Rd to Drainage Culvert (near M4 and The Northern Rd)	South Penrith	1.9
116	Green Grid Connection from The Northern Rd to South Creek	13	Spence Rd and Herb Trail via St Marys Rd (near Ninth Ave, Government Rd and Spinks Rd from South Creek to The Northern Rd	Berkshire Park - Llandilo	6.0
117	Kungala St	13	East-west link between Ross Pl and Blair Ave from East Ln to Gidley St	St Marys	0.1
118	O'Connell Ln and Braeburn St	13	Braeburn St from Murcott Tce to future North Orchard Hills Village Centre, O'Connell Ln from Caddens Rd to M4	Orchard Hills - Caddens	1.9
119	Route 5 - Local Strategic Shared Pathway Priorities	13	South Creek Corridor from The Kingsway to the Penrith BMX Club, Crossing trainline from Troy Adams Archery Field to The Kingsway Rigby Fields, Along South Creek Corridor from Christie St to Penrith BMX Club	Jordan Springs - St Marys	6.0
120	South Creek to Penrith Anglican College	11	Wentworth Rd and Muscatel Way via Verdelho Way and Traminer Grv from Cross Rd to Sweetwater Grv, Samuel Marsden Rd via Sweetwater Grv from South Creek to Muscatel Way	Orchard Hills	7.1
121	South Creek to Peter Kearns Reserve	11	Reserve Path from Peter Kearns Reserve to South Creek, Peter Kearns Reserve (western) path from Solander Dr to Madison Ln, Banks Drive Reserve path from Banks Dr to Madison Ln, Madison Ln from Madison Cirt to Banks Public School, Cameo Cres from Solander Dr to Como Ln, Peter Kearns Reserve path via Solander Dr from Madison Ln to Banks Dr	Orchard Hills - St Clair	2.6
122	Littlefields Creek Corridor	10	Kings Hill Rd via St Thomas Rd from The Northern Rd to Mulgoa Rd	Mulgoa	3.2
123	Mamre Rd to Warragamba Pipeline passing Luddenham Metro Station	10	Future Rd - Luddenham Aerotropolis EW1 from Cosgrove Creek to Warragamba Pipeline, East-west link via Farmingdale Cirt from Cosgrove Creek to South Creek	Luddenham, Kemps Creek, Badgerys Creek	7.3
124	South Creek Corridor from M4 to Elizabeth Dr	10	Kemps Creek Corridor from South Creek to Elizabeth Dr	Kemps Creek	5.8
125	South Creek Corridor from Wianamatta Pkwy to Richmond Rd	10	South Creek Corridor from Wianamatta Pkwy to Richmond Rd	Berkshire Park - Jordan Springs	11.1
126	Bradley Street Connections	8	Bradley St from Greenlink Dr to The Northern Rd, Greenlink Dr from Bradley St to Southern End of Greenlink Dr, Torquay Park path via Glengarry Dr from Bradley St to Westerly Way, Domus St from Tall Trees Dr to Glengarry Dr	Glenmore Park - Mulgoa	3.0
127	Mulgoa Rise to Mulgoa Nature Reserve	8	Bluestone Dr via Forestwood Dr from Ridgetop Dr to Darug Ave, Glenmore Ridge Dr from Bluestone Dr to Gallinulla Pl, Darug Ave from Glenmore Ridge Dr to James Riley Dr	Glenmore Park	1.9
128	Route 14 - Local Strategic Shared Pathway Priorities	8	Wentworth Rd from The Northern Rd to the Penrith Anglican College	Orchard Hills	0.6
129	Jamison Creek Corridor	3	Jamison Creek Corridor following M4 from Russell St to The Sanctuary Dr, Knapsack Gully Corridor from M4 to Main Western Railway Lin, Reserve Path from Beltana Pl to Jamison Creek	Leonay - Emu Plains	1.4

Project Number	Street Location	Score	Description	Suburb(s)	Length (km)
130	Kent Rd	3	Kent Rd from M4 to Bordeaux Pl	Orchard Hills	1.9
131	Future Routes near Oaky Creek	0	Future Road - Cosgrove Creek Local Loop Road from M12 to Luddenham Rd, Future Road - Luddenham Aerotropolis NS3 from Cosgrove Creek to Elizabeth Dr	Badgerys Creek - Luddenham	5.6
132	Future Twin Street Corridor of Luddenham Rd	0	Future Road - Luddenham Aerotropolis NS2 from Luddenham Metro Station to Elizabeth Dr, Future Road - Luddenham Aerotropolis NS1 from Elizabeth Dr to future M12, Future Road - Luddenham Aerotropolis EW4 from The Northern Rd to Luddenham Aerotropolis NS2, Luddenham Metro Station Link from Luddenham Rd to Luddenham Metro Station	Luddenham	7.9
133	Jordan Springs East Path Improvements	0	Infantry St from Armoury Rd to Jordan Springs East NS, Off-road north of Sailor St from Commodore St to South Creek Corridor, Future Road - Jordan Springs East NS from Wianamatta Pkwy to Sailor St, Poynting St from Academy St to Wianamatta Pkwy, Flynn Cirt via Armoury Rd and Lasetter St from Jordan Springs East NS to Wianamatta Pkwy, Wianamatta Pkwy from Armoury Rd to Ropes Crossing Blvd, Commodore St Extension from Sailor St to End, Future Road - Jordan Springs East EW from Commodore St to End	Jordan Springs	3.5

Table B3 – Current committed state and federal projects

The projects presented below in Table B.3 include announced NSW State Government and Federal Government projects which feature active transport improvements as part of the project design. It should be noted Council is not the authority delivering these projects. For further information please refer to the relevant websites and contact details presented below. Further consultation will occur between Council and the NSW Government, and this table will be updated.

Table B.3: NSW State Government and Federal Government projects

Route / Project	Description	Pending funding application process
Mulgoa Road, Jamisontown	The Australian and NSW Governments are planning the upgrade of Mulgoa Road, Jamisontown between Jeanette Street and Blaikie Road including upgrading the M4 Motorway off ramps. The second stage will include Mulgoa Road between Glenmore Parkway to Jeanette Street and Blaikie Road to Union Road to support current and future traffic demands and expected growth in the area.	Phone: 1800 733 084 Email: mulgoaroadupgrade@transport.nsw.gov.au Web: https://nswroads.work/glenmorepkwyunionrd
The Driftway and Richmond Road improvements	The Australian Government and NSW Government are funding traffic improvements including a new bridge over the Hawkesbury River between Richmond and North Richmond. The Australian Government's $400 million funding is being provided through its commitment to the Hawkesbury River Third Crossing project.	Phone: 1800 370 778 Email: richmondbridge@transport.nsw.gov.au Website: www.nswroads.work/richmond-bridge
Elizabeth Drive (between The Northern Road and M7)	The NSW Government is investigating improvements to Elizabeth Drive which runs between the M7 Motorway at Cecil Hills and The Northern Road at Luddenham. The road is approximately 14 kilometres long and runs parallel to the proposed M12 Motorway.	Phone: 1800 517 155 Email: m12motorway@transport.nsw.gov.au Web: www.nswroads.work/m12
M12 Motorway	The Australian Government and the NSW Government are jointly funding the construction of this project. The new M12 Motorway would provide direct access to Western Sydney Airport at Badgerys Creek and connect to Sydney's motorway network.	Phone: 1800 517 155 Email: m12motorway@transport.nsw.gov.au Website: https://caportal.com.au/rms/m12
Mamre Road (M4 to Erskine Park Road)	The NSW Government has committed funding to deliver the Mamre Road upgrade between the M4 Motorway, St Clair and Erskine Park Road, Erskine Park.	Phone: 1800 696 564 Email: mamreroadupgrade@transport.nsw.gov.au Website: http://nswroads.work/mamreroadupgrade

Table B4 – Active transport projects pending grant funding determination

Projects presented in Table B.4 include the current projects that Council has applied for grant funding, at the time of finalising this document.

Table B.4: Other Local Priority Projects pending funding

Route	Description	Pending funding application process
Debrincat Avenue St Marys	From Glossop Street to Ropes Creek	2022-23 WestInvest grant (pending determination)
Factory Road and School House Creek	Factory Rd between Mulgoa Road to Nepean River, and School House Creek Corridor between Factory Rd and Glenmore Loch	
The Kingsway	From Charles Hackett Drive to Werrington Road (Kurrambee) South Creek Bridge Crossing	
Peachtree Creek	Open Space and hydrological corridor between Great Western Hwy and Jamison Road	2022-23 WestInvest grant (pending determination) Metropolitan Green Space Grant (pending determination)
Factory Road, Jamisontown	Factory Road between Mulgoa Road to Nepean River	2022-23 Get Active grant (pending determination)

PATHS 2022 - Priority Projects - Maps

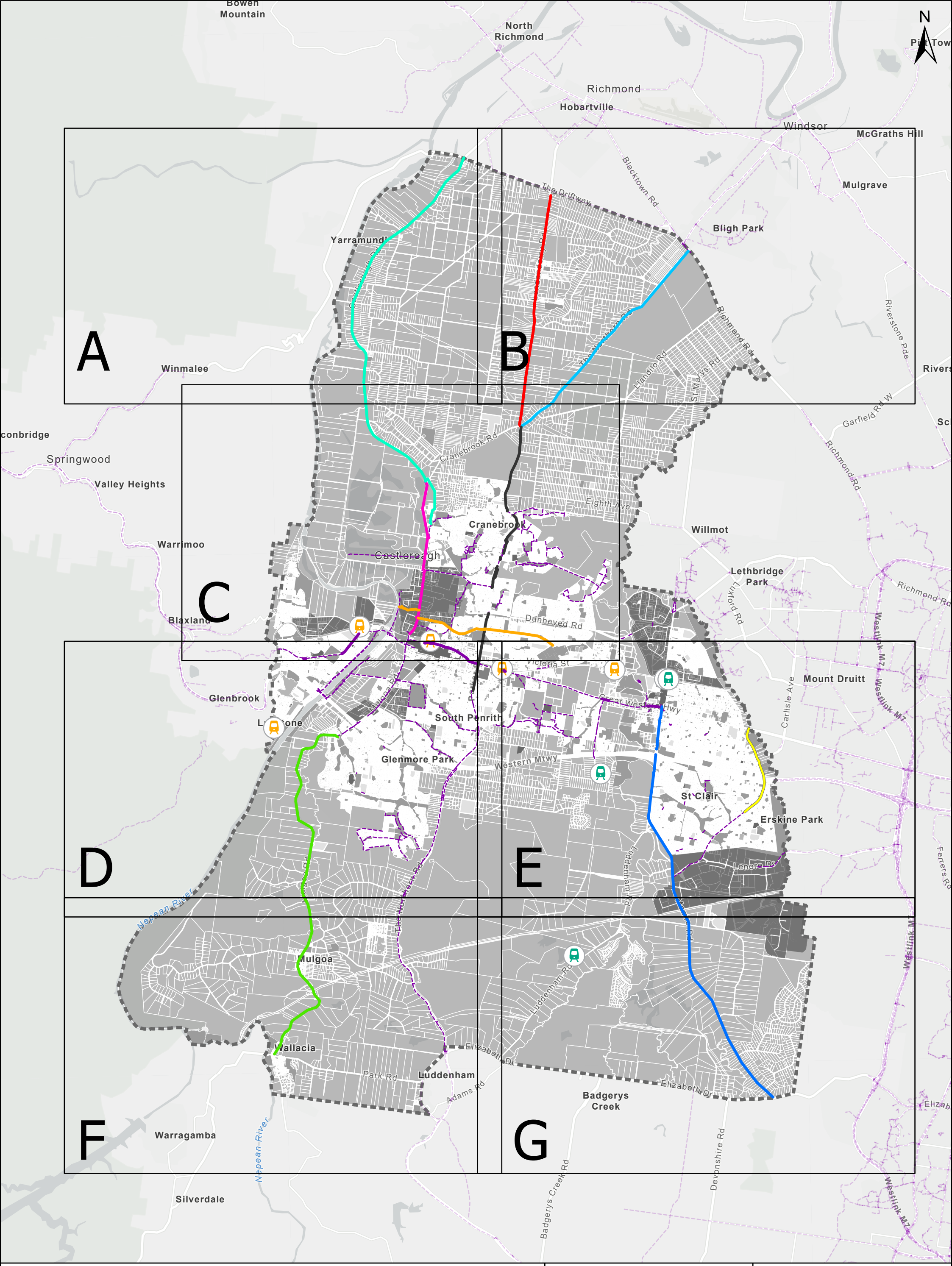
These maps include the *Priority Projects* presented as part of the PATHS 2022-2032 Implementation Plan. The *Priority Projects* include a mix of projects developed in the PATHS 2022 Study and incomplete routes from the PATHS 2012 Strategy.

Maps include:

- **Regional Priority Projects** - Routes and projects along Classified Roads (State and Regional) under the jurisdiction of the NSW Government and agencies
- **Local Priority Projects** – Routes and projects along Local Road corridors and off-road reserves to be delivered by Council

The following maps are provided below:

- **Map B1 – Regional Priority Projects**
- **Map B2 – Local Priority Projects**



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Title:

PATHS 2022 - Implementation Plan
Regional Priority Projects
Overview Map

Project Number:	P5519
Date:	09/11/2022
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N

Grose River
Burralow Creek
Avoca Rd
Scotts Fa
Jacket
Ashtons Rd
Nutmans Rd
Grose River
Price Ln
Castlereagh R
Agnes Banks
Bonner Rd
Nepean River
Mountain Ave
Springwood Rd
Jockbet St
Wilshire Rd
Thornbill Way
Yarramundi
Hillcrest Rd
Rickards Rd
Devlin Rd
Tickner St
Post Office Rd
Fire Trail Rd
Hinxman Rd
Smith Rd
West Wilchard
Sheridan Rd
Jolly St
Smeeton Rd
Quinn St
Nutt Rd
Booker Rd
Hawkesbury Heights
Hawkesbury Rd
Nepean River

Clarendon
Winmalee
Llandilo
Colyton
Mulgoa
Wallacia

Legend

- LGA Boundary

Land Use

- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

State Priority Projects

- Agnes Banks to Cranebrook

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PATHS 2022 - Implementation Plan
Regional Priority Projects
Map A

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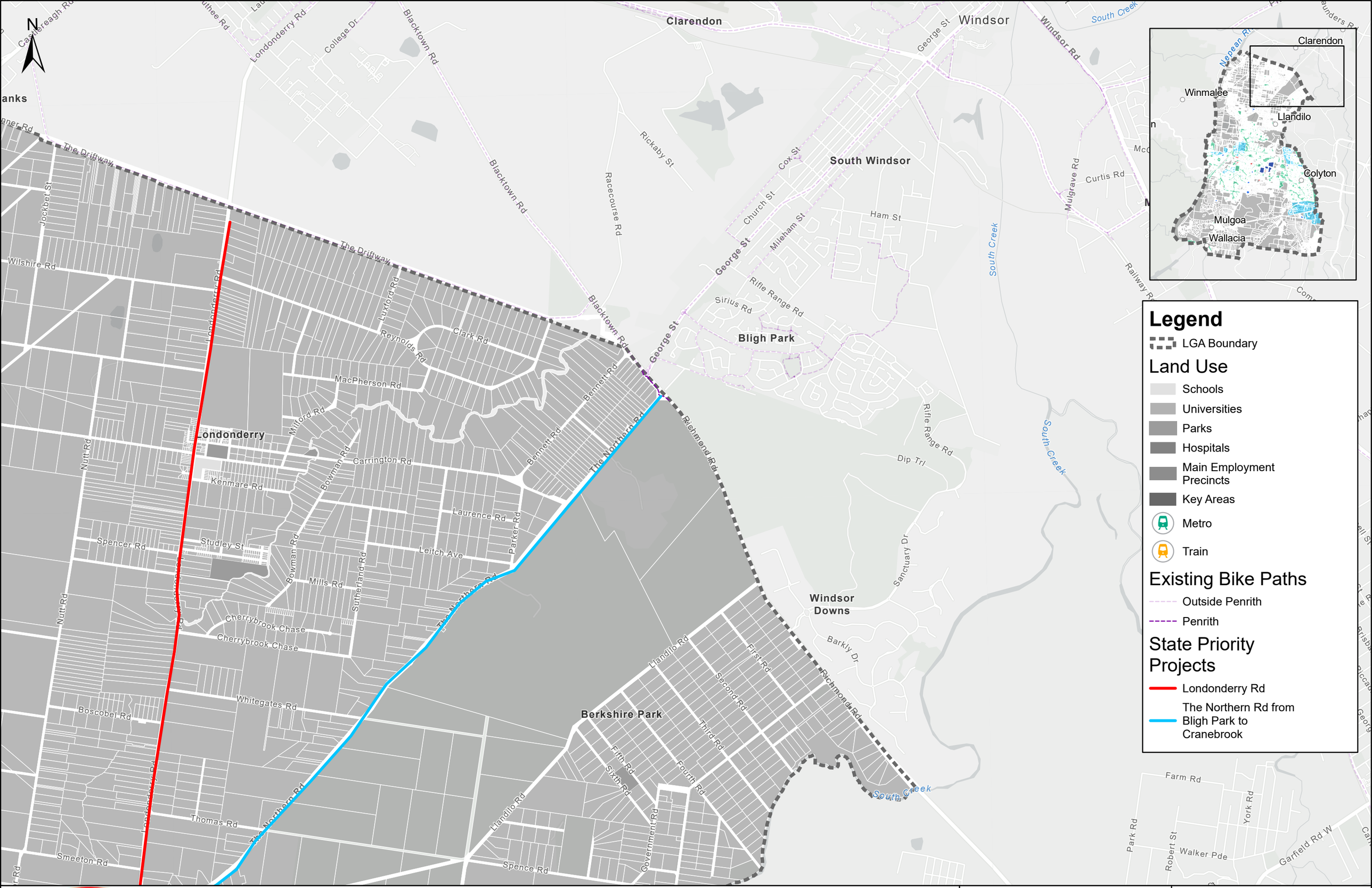

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Title:
PATHS 2022 - Implementation Plan
Regional Priority Projects
Map B

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Issue:	6

N

Legend

LGA Boundary

Land Use

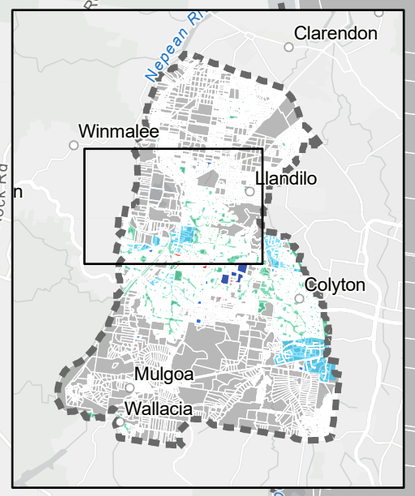
- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

State Priority Projects

- Great Western Hwy from Mamre Rd to Russell St
- Penrith to Cranebrook via Castlereagh Rd
- Agnes Banks to Cranebrook
- Londonderry Rd
- The Northern Rd from Bligh Park to Cranebrook
- Werrington Creek Park to Nepean River
- The Northern Rd from South Penrith to Cranebrook



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Title:
PATHS 2022 Implementation Plan
Regional Priority Projects
Map C

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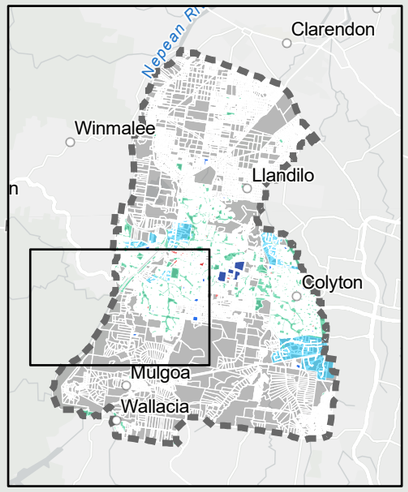

Legend

- LGA Boundary

Land Use

- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

State Priority Projects

- Mulgoa Rd
- The Northern Rd from South Penrith to Cranebrook
- Great Western Hwy from Mamre Rd to Russell St

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PATHS 2022 - Implementation Plan
Regional Priority Projects
Map D

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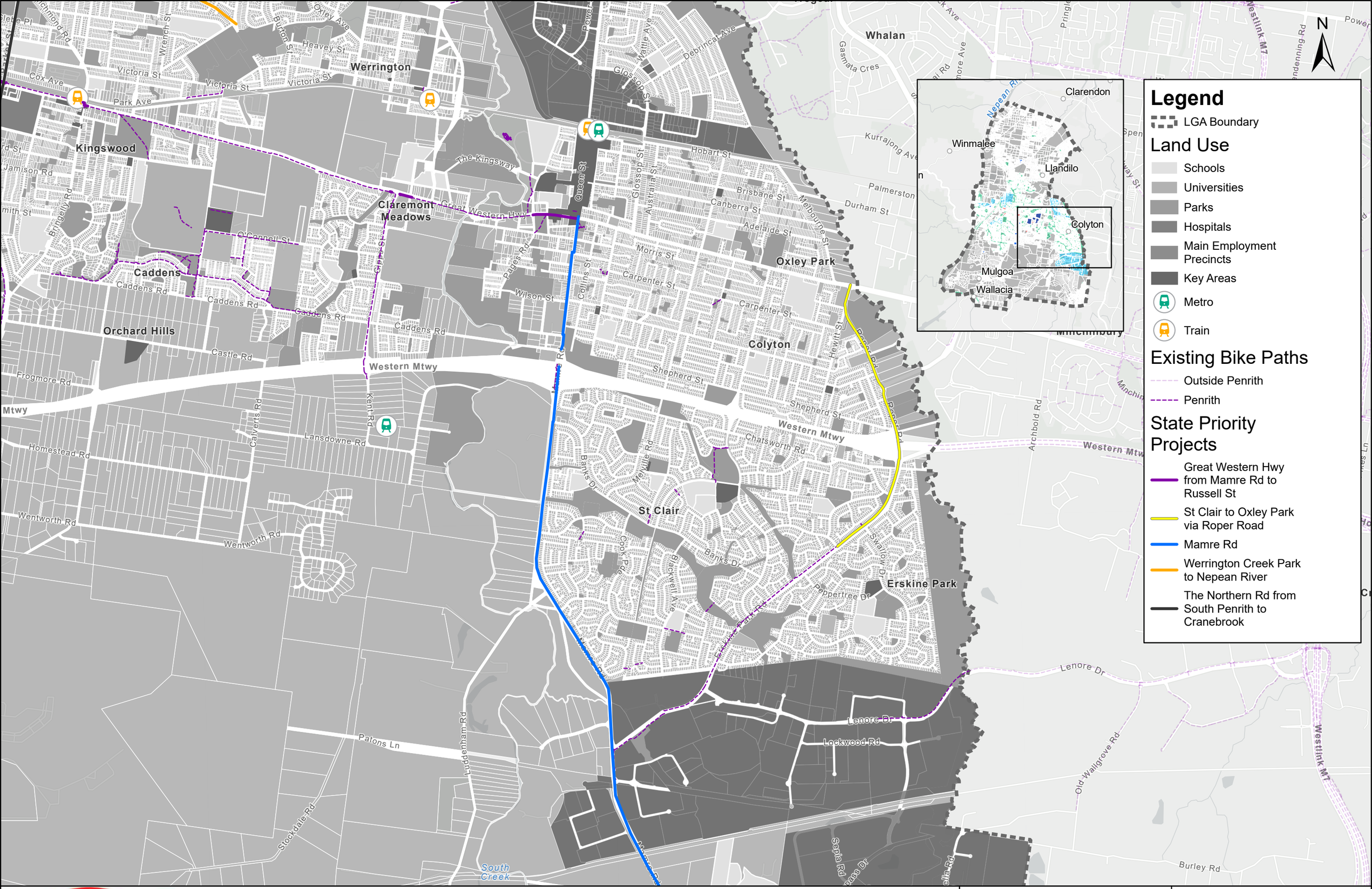

Legend

- LGA Boundary

Land Use

- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

State Priority Projects

- Great Western Hwy from Mamre Rd to Russell St
- St Clair to Oxley Park via Roper Road
- Mamre Rd
- Werrington Creek Park to Nepean River
- The Northern Rd from South Penrith to Cranebrook

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Title:
PATHS 2022 - Implementation Plan
Regional Priority Projects
Map E

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N

Pisgah Ridge Firetrail

Nepean Lookout Trl

Nepean River

Fairlight Rd

Park River Clos

Donohoes Ave

Mulgoa

Allan Rd

St Thomas Rd

Longview Rd

Littlefields Rd

Gates Rd

The Northern Rd

Vincent Ave

Roscrea Dr

Queenshill Dr

Nortons Basin

Wallacia

Park Rd

James St

Greendale Rd

Matingara Way

Bents Basin Rd

Willowdene Ave

Luddenham

Campbell St

Elizabeth Dr

Adams Rd

Anton Rd

Legend

- LGA Boundary

Land Use

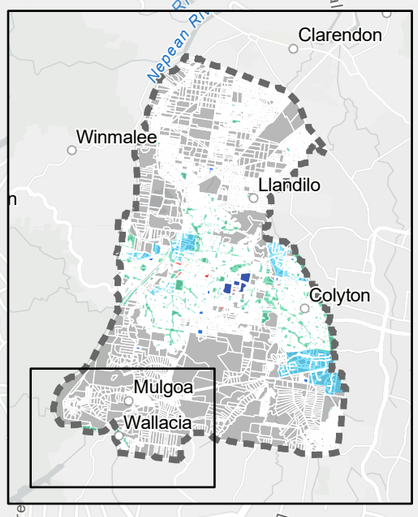
- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

State Priority Projects

- Mulgoa Rd



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Map F

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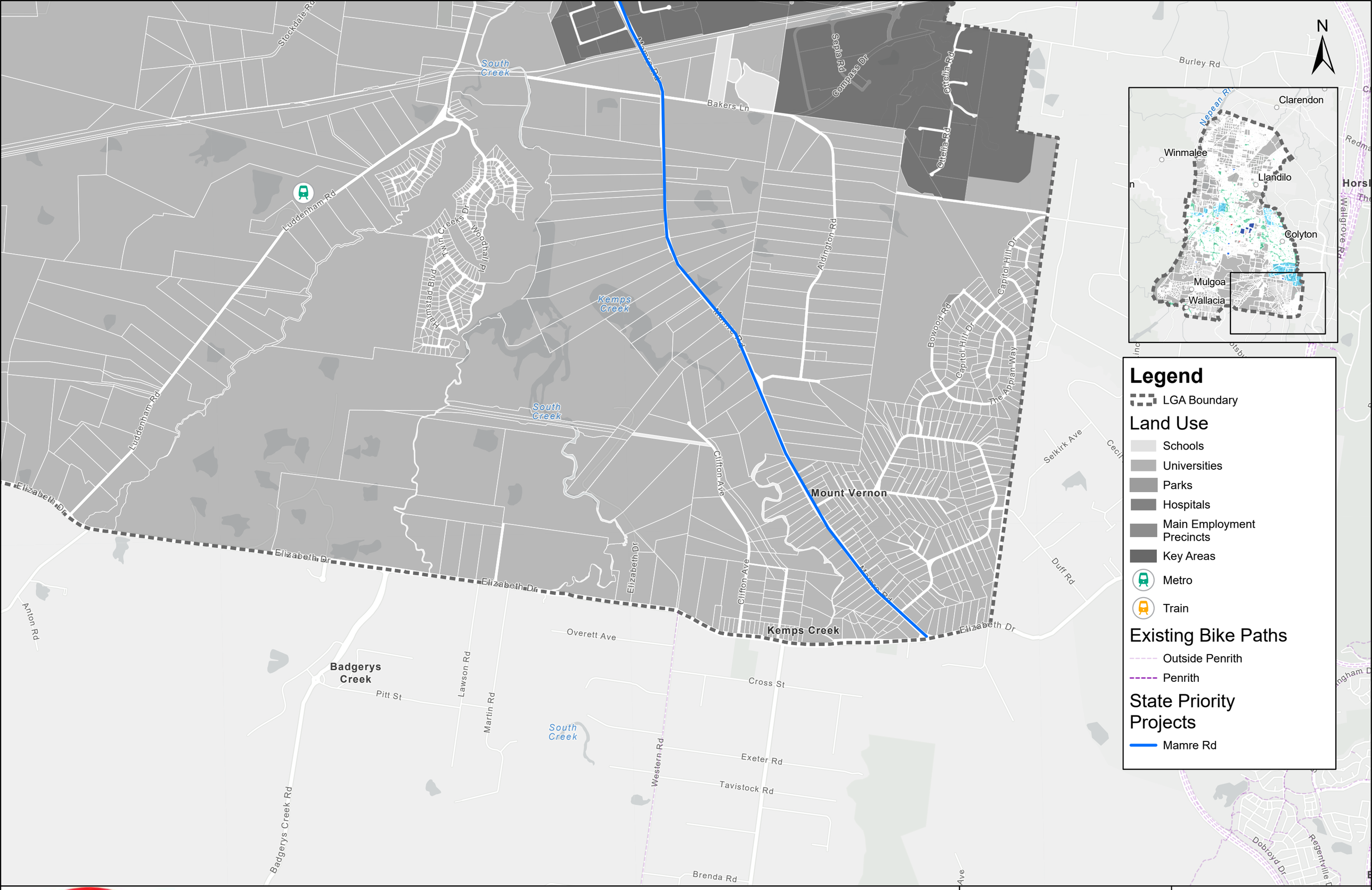

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Title:
PATHS 2022 - Implementation Plan
Regional Priority Projects
Map G

Project Number:	P5519
Date:	09/11/2022
Issue:	6

N

A

B

Springwood Rd
Yarramundi
Castlereagh Rd
The Driftway
Londonderry Rd
Blacktown Rd
Bligh Park
The Northern Rd
Richmond Rd
Llandilo Rd
St Marys Rd
Winmalee
Cranebrook Rd
Eighth Ave
Cranebrook
Willmot
Warrimoo
Castlereagh
Lethbridge Park
Luxford Rd
Blaxland
Dunheved Rd
Victoria St
Mount Druitt
Glenbrook
Mulgra Rd
Parker St
Great Western Mtwy
Carlisle Ave
South Penrith
Glenmore Park
Western Mtwy
St Clair
Erskine Park
Lenore Dr
Mamre Rd
Luddenham Rd
Nepean River
Mulgoa Rd
The Northern Rd
Mulgoa
Littlefields Rd
Wallacia
Park Rd
Luddenham
Elizabeth Dr
Adams Rd
Badgerys Creek

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PATHS 2022 - Implementation Plan
Local Priority Projects
Overview Map

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N

Legend

LGA Boundary

Land Use

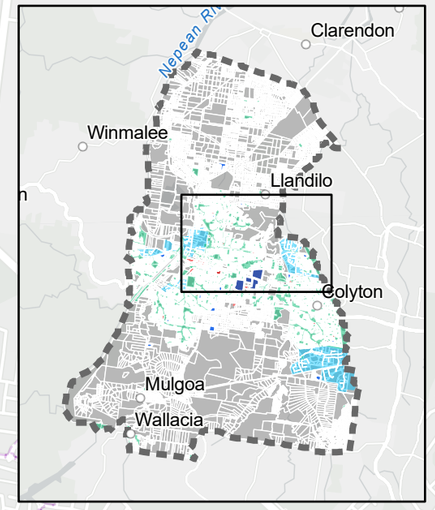
- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

Local Priority Projects

- Cranebrook to Penrith City Centre
- Evan Street, Penrith
- WSU Kingswood to Jamison Park
- Bringelly Road and Maxwell Street
- Glossop Street to Queen Street
- North St Marys to St Marys via Glossop Street
- Penrith City Centre Connections
- Queen Street Corridor, St Marys



Cranebrook
Jordan Springs
Cambridge Gardens
Werrington Downs
Werrington County
Cambridge Park
Penrith
Kingswood
Werrington
Claremont Meadows
St Marys
Lethbridge Park
Tregear

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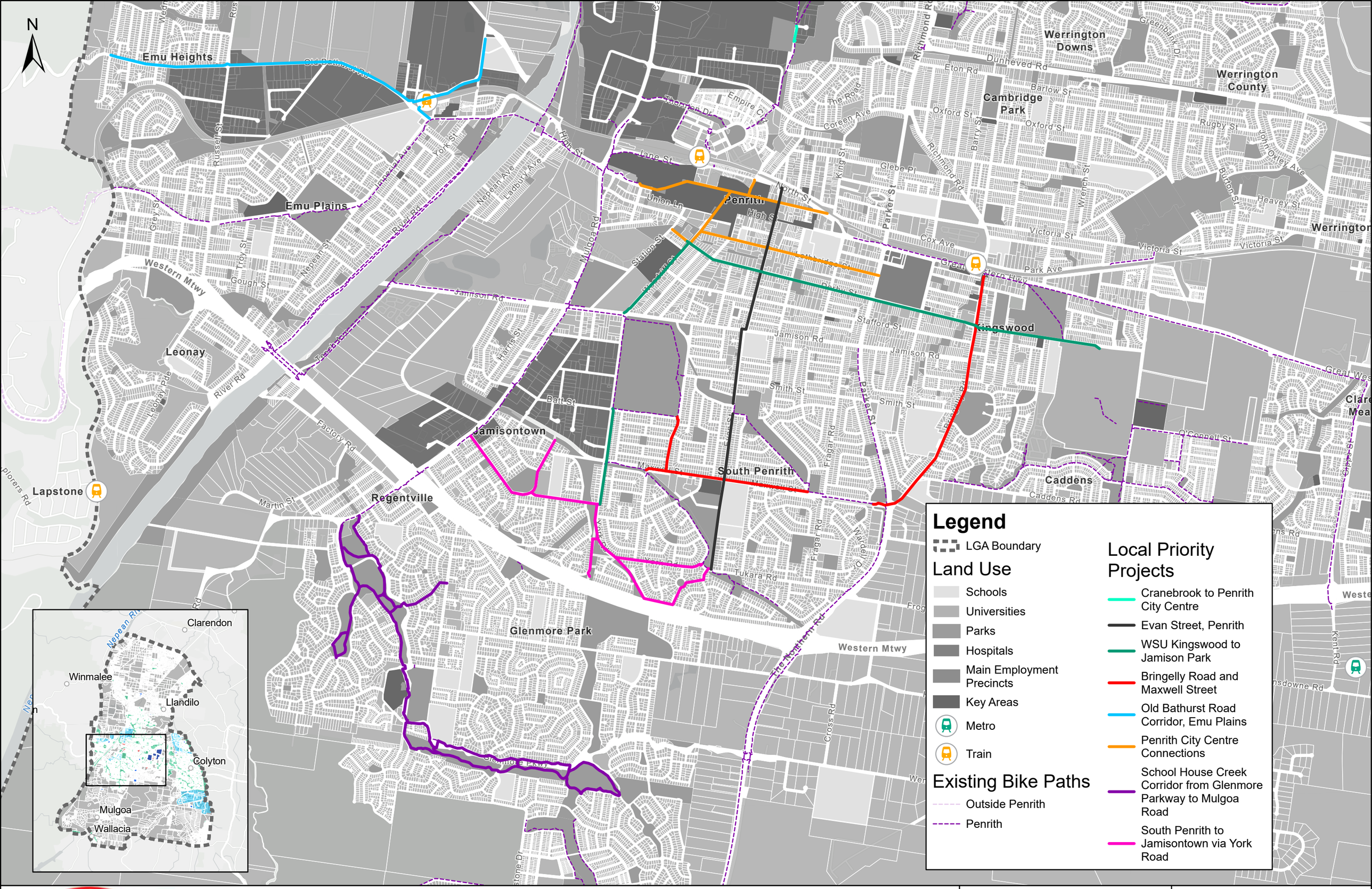
Title:
PATHS 2022 Implementation Plan
Local Priority Projects
Map A

Project Number:	P5519
Date:	09/11/2022
Issue:	6



Legend

- LGA Boundary

Land Use

- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train

Existing Bike Paths

- Outside Penrith
- Penrith

Local Priority Projects

- Cranebrook to Penrith City Centre
- Evan Street, Penrith
- WSU Kingswood to Jamison Park
- Bringelly Road and Maxwell Street
- Old Bathurst Road Corridor, Emu Plains
- Penrith City Centre Connections
- School House Creek Corridor from Glenmore Parkway to Mulgoa Road
- South Penrith to Jamisontown via York Road

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Title:
PATHS 2022 Implementation Plan
Local Priority Projects
Map B

Project Number:	P5519
Date:	09/11/2022
Issue:	6

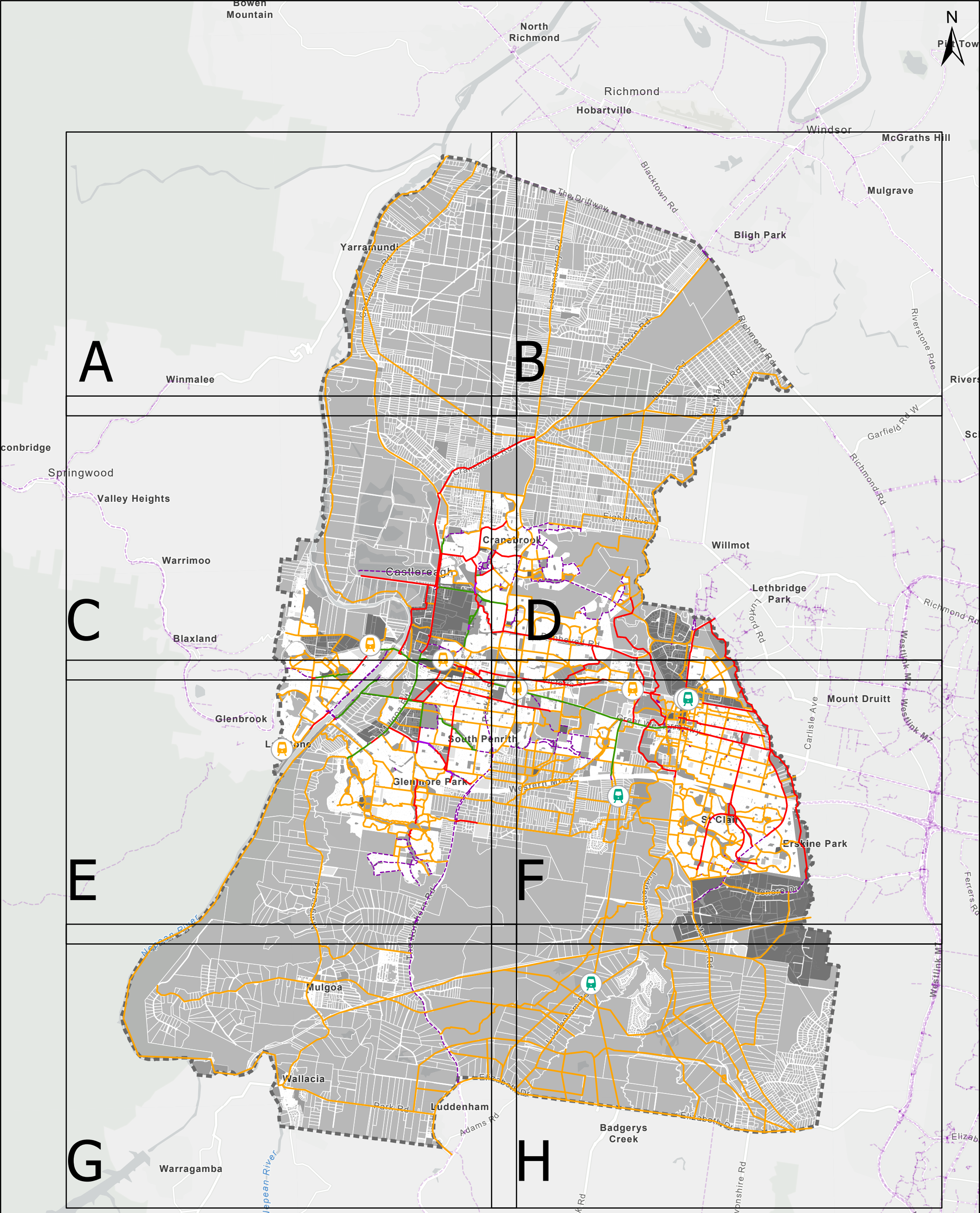
PATHS 2022 – All developed projects and routes - Maps

These maps include all routes and projects developed as part of the PATHS 2022 Study and incomplete routes as a part of the PATHS 2012 Strategy.

These routes can be considered for future active transport projects and strategies beyond the scope of the 2022-2032 Implementation Plan.

The following maps are provided below:

- **Map B3 – All developed projects and routes**



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Title:

PATHS 2022 - Implementation Plan
Preliminary Routes
Overview Map

Project Number:	P5519
Date:	09/11/2022
Issue:	6

N

Legend

LGA Boundary

PATHS 2012

- Complete
- Unmarked
- Incomplete

Proposed PATHS 2022 - Implementation Plan

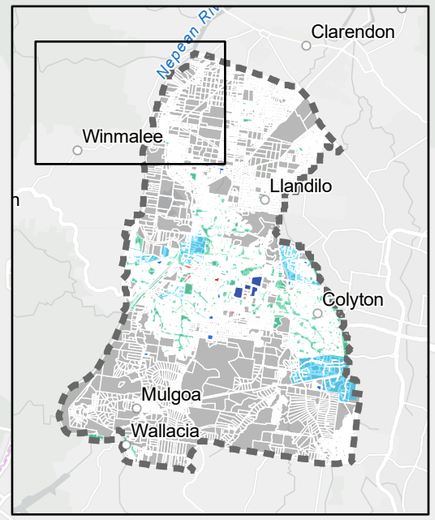
- Proposed Routes

Existing Bike Paths

- Outside Penrith
- Penrith

Land Use

- Schools
- Universities
- Parks
- Hospitals
- Main Employment Precincts
- Key Areas
- Metro
- Train



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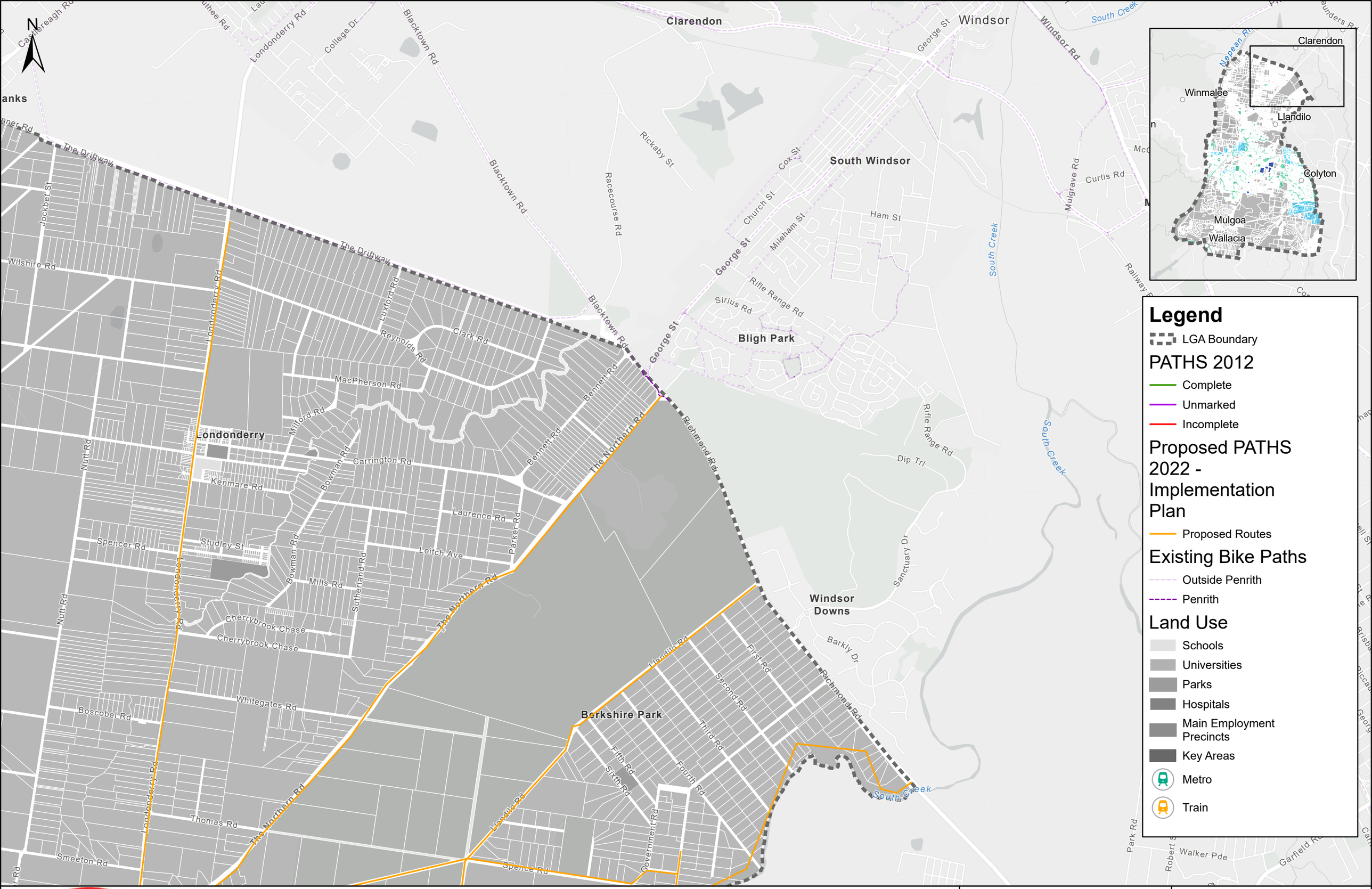
Title:

PATHS 2022 - Implementation Plan
Preliminary Routes
Map A

Project Number:	P5519
Date:	09/11/2022
Issue:	6



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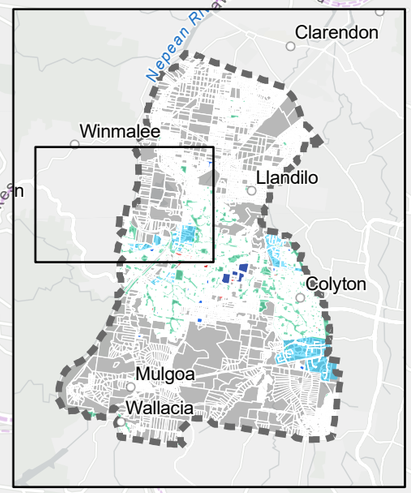
Title:
PATHS 2022 - Implementation Plan
Preliminary Routes
Map B

Project Number:	P5519
Date:	09/11/2022
Issue:	6



Legend

- LGA Boundary

PATHS 2012

- Complete
- Unmarked
- Incomplete

Proposed PATHS 2022 - Implementation Plan

- Proposed Routes

Existing Bike Paths

- Outside Penrith
- Penrith

Land Use

- Schools
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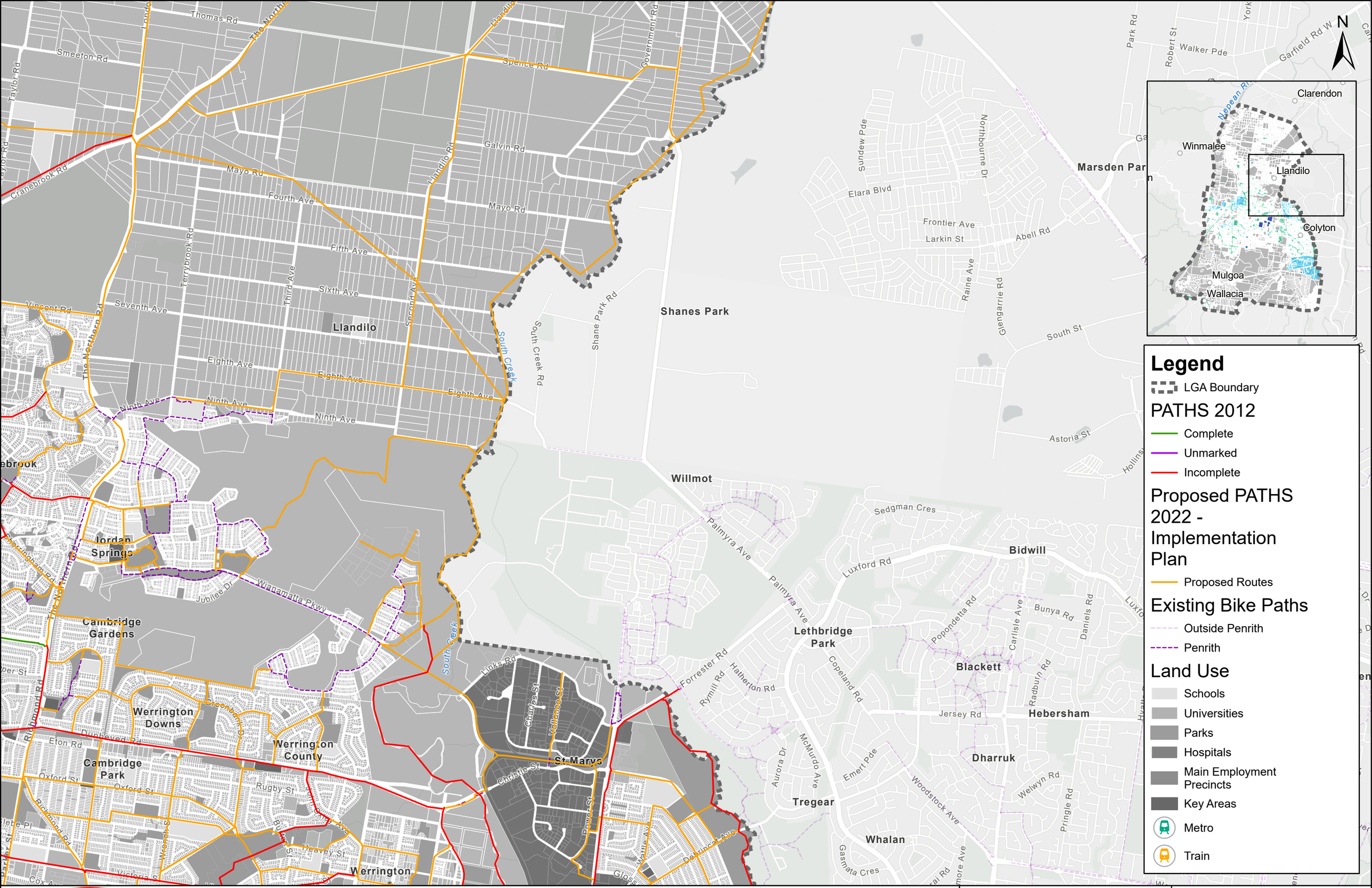
Title:
PATHS 2022 - Implementation Plan
Preliminary Routes
Map C

Project Number:	P5519
Date:	09/11/2022
Issue:	6



Legend

- LGA Boundary

PATHS 2012

- Complete
- Unmarked
- Incomplete

Proposed PATHS 2022 - Implementation Plan

- Proposed Routes

Existing Bike Paths

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Land Use

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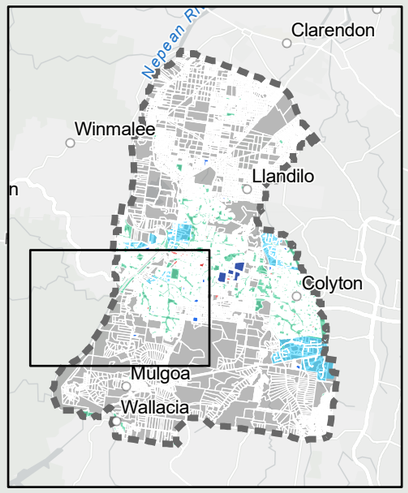
Title:
PATHS 2022 - Implementation Plan
Preliminary Routes
Map D

Project Number:	P5519
Date:	09/11/2022
Issue:	6

N



Legend

- LGA Boundary

PATHS 2012

- Complete
- Unmarked
- Incomplete

Proposed PATHS 2022 - Implementation Plan

- Proposed Routes

Existing Bike Paths

- Outside Penrith
- Penrith

Land Use

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- Universities
- Parks
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Title:

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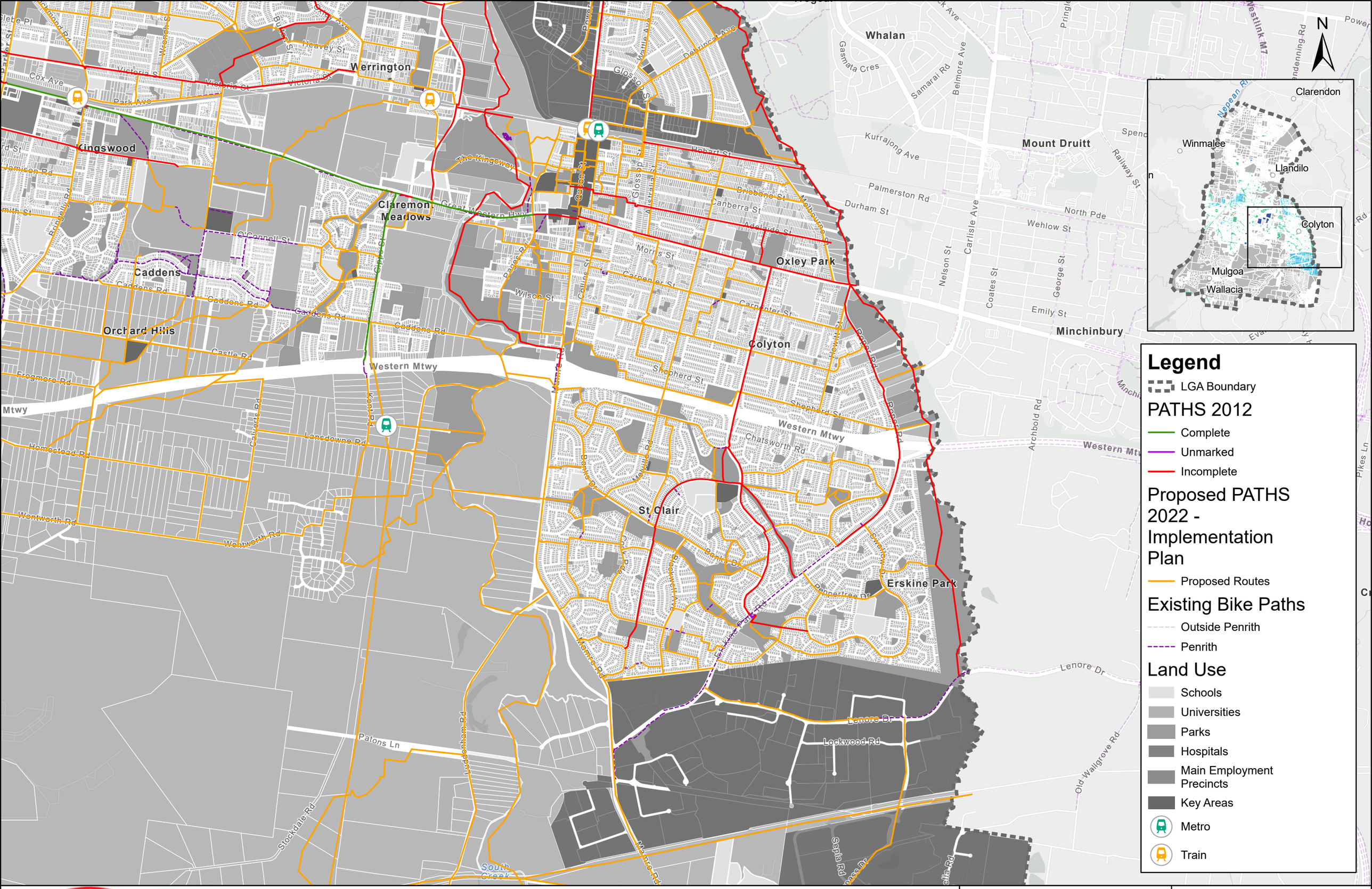
Preliminary Routes
Map E

Project Number:	P5519
Date:	09/11/2022
Issue:	6



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Preliminary Routes
Map F

Project Number:	P5519
Date:	09/11/2022
Issue:	6

N

Pisgah Ridge Firetrail

Nepean River

Nepean Lookout Trl

Fairlight Rd

Park River Clos

Donohoes Ave

Mulgoa

Allan Rd

St Thomas Rd

Longview Rd

The Northern Rd

Littlefields Rd

Gates Rd

Vincent Ave

Mulgoa Rd

Roscrea Dr

Queenshill Dr

Nepean River

Nortons Basin

Wallacia

Park Rd

James St

Greendale Rd

Matingara Way

Bents Basin Rd

Willowdene Ave

Luddenham

Campbell St

Adams Rd

Anton Rd

Elizabeth Dr

Legend

- LGA Boundary

PATHS 2012

- Complete
- Unmarked
- Incomplete

Proposed PATHS 2022 - Implementation Plan

- Proposed Routes

Existing Bike Paths

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- Penrith

Land Use

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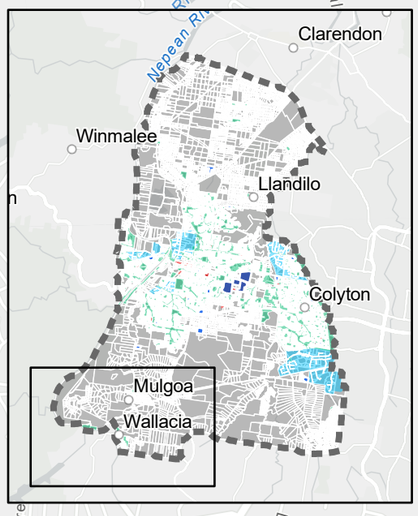

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Map G

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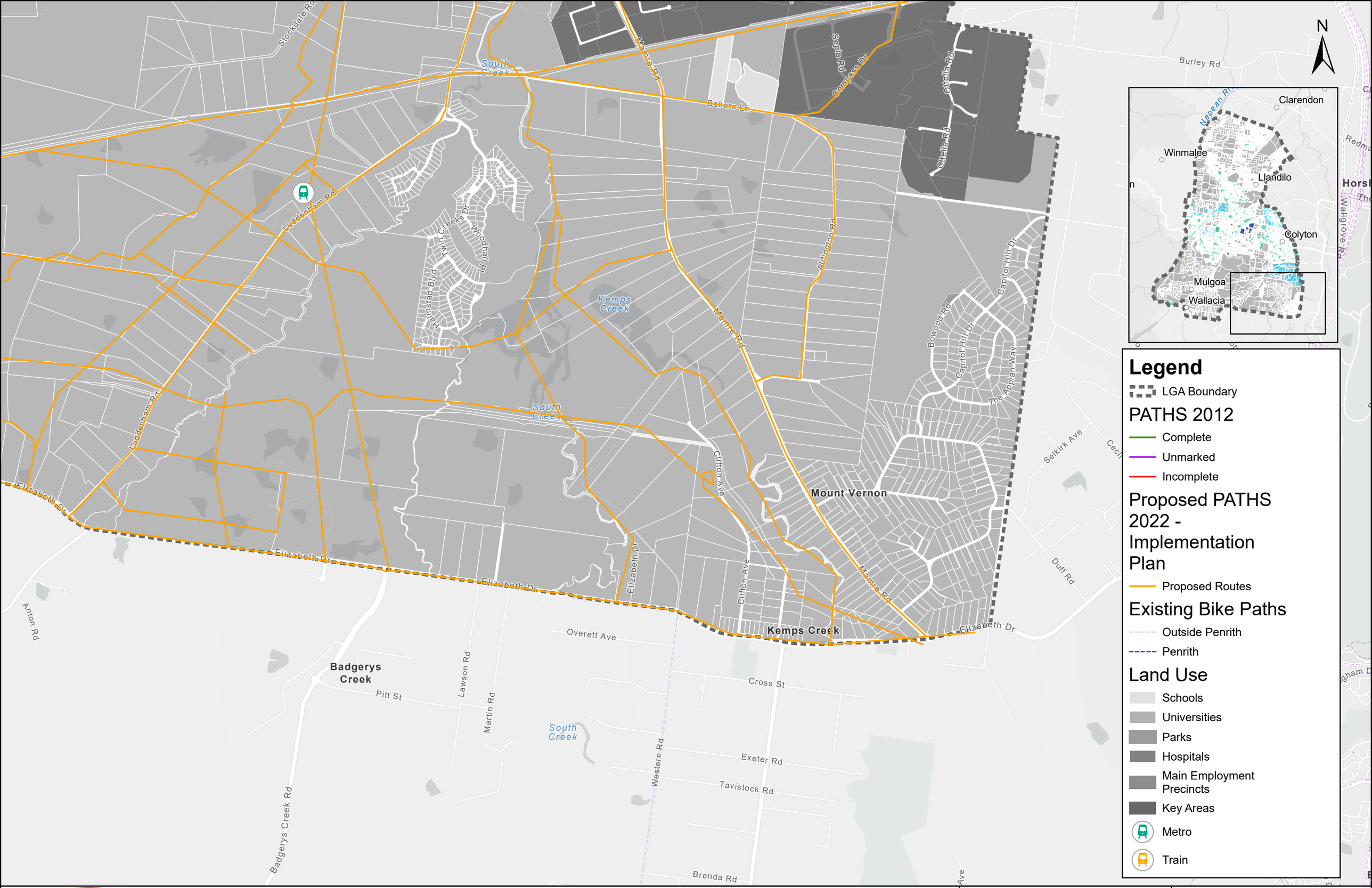
Issue:	6



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Title:
PATHS 2022 - Implementation Plan
Preliminary Routes
Map H

Project Number:	P5519
Date:	09/11/2022
Issue:	6

Appendix C: Treatment and path types

Treatment and path types

The selection and implementation of the network and type of paths should consider the needs of the community, context of the surrounding road environment, and end users, including factors such as:

- Types of road corridors and level of vehicle traffic (major road, local street etc)
- Topography
- Existing facilities (shared paths, on-road routes)
- Off-Road connections (through parks and reserves etc)
- Diverse accessibility needs
- Type of route (busy recreational vs commuter route)

Preferred treatments

Based on the context of the Penrith City area, opportunities and strategic objectives, there is a preference to provide separated facilities (i.e. separated from motor traffic) for bicycle riders and pedestrians where feasible, including:

- **Separated Bicycle paths (or Cycleways)** – Provides a dedicated bicycle path separated from both motor traffic and pedestrians
- **Shared Users Paths (Shared Paths)** – Provides a wide path for both pedestrian and bicycle use.

Where separated off-road facilities cannot be provided, the following on-road treatments are preferred:

- **Bicycle Quietways** – Provides on-road links between off-road sections, using quiet local streets
- **Shared Zone** – Provides a slow speed traffic environment for pedestrians and cyclists
- **Bicycle Lane / Shoulder** - Provides a marked lane for bicycle use.

Where pedestrian facilities are not currently provided along routes, footpaths appropriate for the level of pedestrian traffic are to be installed with any separated cycling facility.

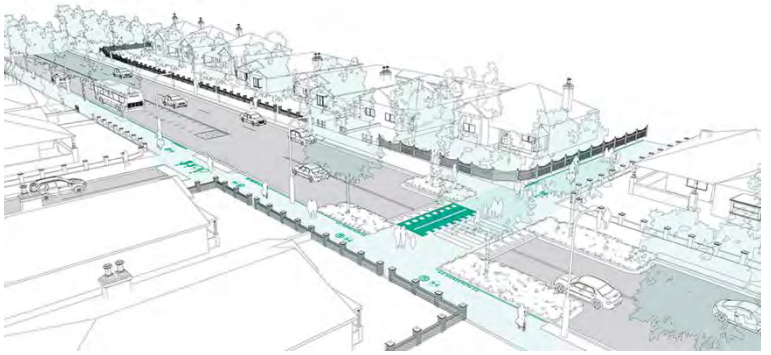
Further design development

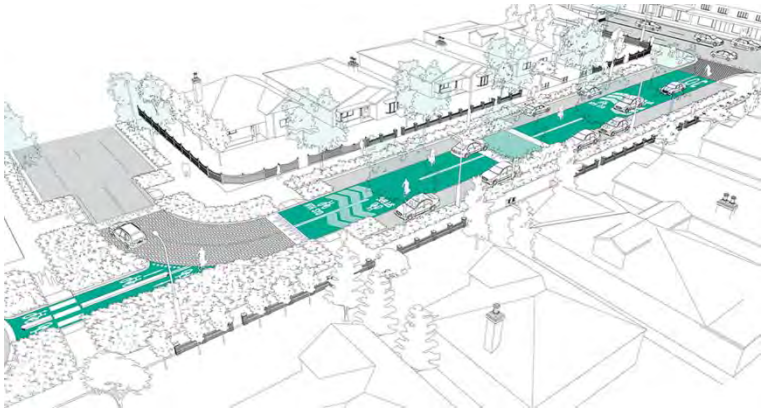
The ultimate selection of treatments and path types will be subject to further investigation and feasibility assessments as part of design development of each project. In addition to selection criteria provided the investigation will take into consideration of road environment and design elements, such as:

- Available geometry
- Roadside objects including trees, power poles, existing street furniture
- Road crossings and intersections
- Driveways and vehicle cross overs

Table C.1: Typical cycling treatments and path types

Treatment	Description	Benefits	Illustration
Off-Road treatment			
Separated cycleway	**Uni-directional** ▪ Separated off-road bicycle facility ▪ Separate paths per direction ▪ Provides for bicycle riders and other micromobility users	▪ Separated facility from motor traffic and pedestrians, reducing conflicts ▪ Greatly improves level of service for cycling and promotes level of priority ▪ Establishes cycling corridors ▪ Flexible intersection treatments	
	Bi-directional ▪ Separated off-road bicycle facility ▪ One path for both directions ▪ Provides for bicycle riders, potentially for micro mobility users	▪ As per uni-directional cycleways ▪ More efficient use of available space ▪ Flexibility of choice of side of road to install on	

Treatment	Description	Benefits	Illustration
Shared paths	▪ Separated off-road facility ▪ Along roadways or through off-road reserves (i.e. parks) ▪ Provides for two-way pedestrian AND bicycle movements	▪ Separated facility ▪ Accommodates needs of all users (pedestrians, bicycle riders, mobility aid users) ▪ Contributes to public spaces	
Pedestrian footpaths	▪ Separated off-road facility ▪ Along roadways or through off-road reserves (i.e. parks) ▪ Provides for two-way pedestrian movements ▪ Accommodates typical needs of pedestrians (including mobility aid users and aged people)	▪ Separate facility ▪ Contributes to public spaces ▪ Accommodates needs of mobility aid users and aged people ▪ Can be implemented separate to cycling facilities	

Treatment	Description	Benefits	Illustration
On-Road Treatments			
Quietway	▪ High-quality mixed traffic treatment ▪ Bicycle riders share roads with motorised traffic ▪ Operating within roads environments with relatively low traffic speeds and volumes	▪ Relatively low implementation costs ▪ Improves streetscape and cycle route lighting	
Shared zone	▪ On-road facility ▪ Alternative to footpaths in constrained locations ▪ Road space shared by pedestrians, bicycle riders and motorised traffic ▪ Low traffic speed limit (10km/h)	▪ Provides a priority facility for pedestrians ▪ Low traffic speed area for bicycle riding ▪ Relatively low implementation costs ▪ Contributes to public space	

Treatment	Description	Benefits	Illustration
Bicycle lane	▪ On-road bicycle facility ▪ Provided on road cycling space between kerb or parked cars and moving traffic lanes ▪ Line marked with symbols, surface paint at intersections and conflict zones	▪ Relatively low implementation costs with minimal physical construction	
Pop-up lanes and cycleways	▪ Temporary separated bicycle facility ▪ Can be for one-way or two-way bicycle movements ▪ Can be implemented as on-road or off-road	▪ Separated facility ▪ Opportunity to test new cycling facilities or routes ▪ Installation is quicker and relatively simple ▪ Results in limited or no permanent changes to road / corridor	

Treatment	Description	Benefits	Illustration
Mixed traffic	▪ On-road bicycle facility ▪ Bicycle riders share road space with motor vehicle traffic (formally marked)	▪ Relatively low implementation costs ▪ Little physical intervention or modification of roadway	

Source: NSW Cycleway Design Toolbox, Austroads Guide 2017 and Walking Space Guide

Types of treatments

It needs to be acknowledged that different users and customers have differing expectations, needs and concerns relating to active transport. Decision making on preferred routes uses a range of data sets and consultation feedback from affected properties and communities.

The selection and ultimate implementation of any paths or routes under this strategy will be subject to consultation with the community and relevant stakeholders. It is also expected for Local traffic committees to help facilitate the consultation on proposed treatments and designs with the communities as part of the process.

Cycling facilities

A selection criteria of cycling path and treatment types for **priority routes** is provided in Figure C.1. Roads that exhibit higher traffic speeds and volumes present the greater need for separated facilities.

Street typology (Movement and Place)	Civic space	Local street	Main street	Main road
Motor vehicle speed	≤10 km/h	≤30 km/h	≤50 km/h	>50 km/h
Motor vehicles / day	n/a	≤2,000	>2,000	n/a
Bicycle path (One and two-way)		●	●	●
Quietway		●		
Shared path (Low pedestrian activity and low cross-cycleway movement)				
Shared path (High pedestrian activity or high cross-cycleway movement)				
Shared zone	○			

● Required for priority routes ○ Suitable, but not preferred for priority routes

Source: Transport for NSW Cycleway Design Toolbox

Figure C.1: Selection tool for cycling facilities – priority routes

A set of similar selection criteria for **local routes** is shown in Figure C.2.

Street typology (Movement and Place)	Civic space	Local street	Main street	Main road
Motor vehicle speed	≤10 km/h	≤30 km/h	≤50 km/h	>50 km/h
Motor vehicles / day	n/a	≤2,000	>2,000	n/a
Bicycle path (One and two-way)		●	●	●
Quietway		●		
Shared path (Low pedestrian activity and low cross-cycleway movement)		●	●	●
Shared path (High pedestrian activity or high cross-cycleway movement)				
Shared zone	●			

● Required for priority routes ● Suitable, but not preferred for priority routes

Source: of Transport for NSW Cycleway Design Toolbox

Figure C.2: Selection tool for cycling facilities – local routes

Designing the treatments

Design guidelines

The principal guidelines to be used in the implementation of the active transport network and bicycle facilities include:

- NSW Cycleway Design Toolbox
- NSW Walking Spaces Guide
- Austroads Guide to Road Design – Parts 3, 4, 4A, 4B, 6A
- Austroads Guide to Traffic Management – Parts 6, 7, 8, 10.
- Australian Standard AS1742.9 – Manual of Uniform Traffic Control Devices, Part 9 Bicycle Facilities
- Penrith Accessible Trails Hierarchy Strategy (PATHS) 2012
- NSW Bicycle Guidelines (if referred to by the other principal guidelines).

A summary of design requirements per path type is provided in Table C.2.

Some projects may be complex and require multi-year design and construction. Routes that require bridges; suspended boardwalks; paths through creek corridors or flood affected lands may require additional studies prior to the preferred concept design being determined.

Items such as the following will have an impact on the feasibility of routes and intended infrastructure:

- Driveways, particularly in older neighbourhoods and suburbs
- Bus stops
- Intersections and crossing points
- Utilities such as power poles and lighting
- Street trees and other street furniture
- Drainage and flooding issues.

The selection of proposed treatments will require further feasibility reviews as part of design development.

Table C.2: Typical treatment types for cycling and walking

Type	Reference	Requirements	Design Details	Application
Off-Road Cycle Treatments				
Cycleway	CW01	2.5m width bi-directional	▪ Minimum width cycleway ▪ Separated two-way cycleway on one side of the road ▪ Ideal 1m separation from traffic and/or parking ▪ Separate pedestrian facility to be considered	▪ Constrained route corridors ▪ Local or collector road corridors
	CW02	3.0m width bi-directional	▪ Preferred minimum width cycleway ▪ Separated two-way cycleway on one side of the road ▪ Ideal 1m separation from traffic and/or parking ▪ Separate pedestrian facility to be considered	▪ Primary, regional and major recreation routes ▪ Collector and arterial road corridors
	CW03	4.0m width bi-directional	▪ Ideal cycleway width	
	CW04	1.5m width uni-directional	▪ Separated one-way cycleways on each side of the road ▪ Paths follow direction of adjacent traffic ▪ Ideal 1m separation from traffic and/or parking	▪ To be used where bi-directional cycleway would provide poor access
Shared path	SP01	2.5m width	▪ Minimum width shared path ▪ Supports cycling speeds up to 20km/h	▪ Constrained route corridors ▪ Low pedestrian volumes

Type	Reference	Requirements	Design Details	Application
				▪ Off-road areas, reserves and parks ▪ Local and residential areas
	SP02	3.0m width	▪ Preferred minimum path type ▪ Supports cycling speeds of 20km/h (for recreation) and 30km/h (for commuting)	▪ Primary cycling routes ▪ Medium pedestrian and bicycle volumes ▪ Off-road areas, reserves and parks
	SP03	3.5m-4.0m width	▪ Ideal minimum path width ▪ Supports cycling speeds of 20km/h (for recreation) and 30km/h (for commuting) ▪ Greater buffer width between travel directions and overtaking width	▪ Major recreation routes and regional routes ▪ High pedestrian and bicycle volumes
Footpaths				
Footpaths	FP01	2.0m width	▪ Minimum width concrete footpath	▪ Constrained corridors ▪ Low traffic residential areas
	FP02	2.3m width	▪ Preferred minimum footpath width	▪ Medium traffic areas ▪ Collector Roads
	FP03	2.5m – 3.0m width	▪ Ideal footpath width	▪ High traffic areas ▪ Recreational routes

Type	Reference	Requirements	Design Details	Application
On-road treatments				
Quietway	QW01	3.0m per direction (ideal maximum)	▪ Bicycle priority street ▪ Contrasting pavement surface and road environment ▪ Narrow roadway (<3m per travel lane) and low vehicle speeds (<30km/h) ▪ Enhanced with modal filters	▪ Low traffic volume and speed streets (local streets in residential areas ▪ On-road links between off-road facilities
Bicycle lane	BL01	1.5m width	▪ Minimum width ▪ Line marking and symbols ▪ Painted surface at conflict areas (driveways, intersections etc) ▪ Parking may need to be removed to accommodate	▪ Local or collector roads with low to medium traffic and relatively slower traffic speeds ▪ Where off-road kerbside area does not provide width for off-road facility
	BL02	2.0m width	▪ Additional width provides more buffer space between door zone and adjacent traffic ▪ Line marking and symbols ▪ Painted surface at conflict areas (driveways, intersections etc) ▪ Parking may need to be removed to accommodate	

Type	Reference	Requirements	Design Details	Application
Mixed traffic	MT01	Low volumes and speeds	▪ Bicycles and traffic share roadway (formally marked) ▪ Denoted with on-road bicycle symbols within travel lane	▪ Low volume and low speed local streets ▪ Where off-road facilities or bicycle lanes cannot be provided
Shared zone	SZ01	< 100 veh / day No footpaths provided	▪ Pedestrians and traffic share roadway (pedestrians have priority) ▪ 10km/h speed limit and regulatory signage ▪ Contrasting pavement and road environment ▪ Further details refer to TfNSW TDT 2016/001	▪ Very low volume and low speed streets ▪ Service roads or laneways ▪ Where footpaths cannot be provided ▪ Pedestrian link required between usable offroad facilities ▪ Further details refer to TfNSW Safer Speeds Guideline SS/12/01

Design considerations for specific treatments

Separated bike paths (cycleways)

Separated bike paths or cycleways are the preferred facility for high priority cycling routes, particularly where on-road operating speeds exceed 30 km/h. These off-road facilities are physically separated from motor vehicle traffic and pedestrians and are exclusively for use by bicycles (and potentially other micro mobility users). Some examples of cycleways and separated cycle paths are provided in Figure C.3.

Top left: Uni-directional cycleway, Campbell Street, Surry Hills (City of Sydney); Top right: crossing of bi-directional cycleway, Bourke Street,Surry Hills (City of Sydney); Bottom left: separated cycle path and pedestrian path, Bay Run, Rozelle (Inner West Council); Bottom right: Semi-permanent bi-directional cycleway, The Strand, Dee Why (Northern Beaches Council)

Figure C.3: Separated cycleways and cycle paths – examples

The separation of different types of traffic is preferred as it minimises conflict and the risk of injury for all road users. In doing so, cycleways provide a safe and comfortable facility for bicycle riders, particularly those with lesser confidence to ride on-road, improving the level of service for cycling, and maximising potential ridership.

Cycleways often define key bicycle movement corridors, are highly legible to all road users and can be implemented as two-way path or a pair of one-way paths. With the combination of appropriate intersection treatments, cycleways provide continuous priority of bicycles along the corridor.

Main design considerations for cycleways include:

- Cycleway facility width to accommodate expected cyclist volumes and expected travel speeds
- Degree of separation from traffic or parking and pedestrian paths
- Intersection treatments to maintain bicycle priority or provide safe crossings
- Integration with signalised and un-signalise intersections

Further details on the design of cycleways are provided in the NSW Cycleway Design Toolbox.

Shared paths

Shared paths may be considered where demand for both pedestrian and bicycle facilities exist but separated facilities may not be required or cannot be provided. Shared paths are usually considered in environments such as:

- Within parklands and nature reserves
- Local links to priority cycleways and local destinations
- Links between separated cycleways
- Within new estates.

Examples of existing shared paths and their markings are provided in Figure C.4

Top left: Bourke Street, Waterloo, Top right: Powells Creek Reserve, North Strathfield, Bottom left: Erskine Park Road, St Clair, Bottom right: River Road, Emu Plains

Figure C.4: Shared path – examples

The design and implementation of shared paths may appropriately address principles such as:

- Contributing to a network of public spaces, where people can live healthy productive lives, meet each other, interact and go about their daily activities
- Accommodating the needs of all users, including people walking and using public transport
- Contributing to networks of urban green corridors
- Consideration of the whole street, including footpath facilities, from property line to property line and the interfaces with land use.

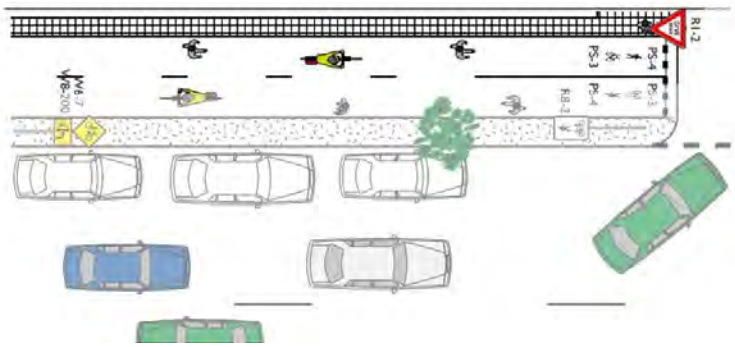
The width of a shared path is dependent on a number of factors including:

- Expected pedestrian and bicycle riding volumes
- Expected speed of people bicycle riding
- Amount or frequency of interactions between pedestrians and cyclists.

The separation of a shared path is also considerate on the nature of vehicular traffic adjacent to the shared path, including speed and traffic volumes.

Shared paths may be marked and signed according to the details provided in Table C.3. The selection and implementation of line marking should consider existing line marking schemes and infrastructure to maintain consistency across the network. Further line marking details of shared paths are provided in the NSW Cycleway Design Toolbox, City of Sydney Shared Path Markings Guideline, Austroads GTRD Part 6A and TfNSW Delineation Section 12 – Pavement Markings for Bicycle Facilities.

Table C.3: Shared path signage and line marking

Item	Description	Illustration
Regulatory and general signage	• Regulatory signage to define start and end of shared paths • Behavioural signs (e.g 'Give way to pedestrians', 'Ring your bell')	
Line marking (Blue City of Sydney Style)	• Line marking to define the shared path • Blue edge line and Shared Path symbolic markings • Reminder markings at slow points (e.g 'SLOW' or 'Give way to pedestrians') • Line marking at driveways and conflict zones	
Line marking (Edge Line and Centre Line Style)	• Alternative line marking methodology • Marked path edges and centreline, shared path pavement symbols • Used on existing shared paths in Penrith	

Bicycle quietways

The key design philosophy of a quietway is the safe integration of bicycle riders as equal road users to motor vehicles and providing an environment where the motor vehicle is a guest on the roadway. Quietways can be applied to quiet local streets and laneways with low volumes and speeds of motorised traffic, and the implementation of quietways must always be delivered in conjunction with a reduction in speed limits. Some examples of quietways are shown in Figure C.5.

Top row: Bicycle Quietway / Boulevard with traffic calming and contrasting pavement surface – Beulah Road, Norwood (Adelaide SA)
Bottom left: Bike Quietway using red asphalt – May Street, Bayswater (Perth WA), Bottom right: Reduced speed limit and red asphalt – Shakespeare Street, Mount Hawthorn (Perth WA)

Figure C.5: Bicycle quietways – examples

The design and implementation of quietways can address the following principles:

- Sensitive to place with self-explaining speed limits and infrastructure that aligns with the surrounding context
- Contributes to networks of urban green corridors although economic viability is a consideration
- Mitigate against very hot days through increased shading such as urban street tree planting
- Limits through traffic where vehicle volumes are high

- Improve streetscape and cycle route lighting.

Some of the design considerations that must be taken into account with the implementation of quietways includes the presence of heavy vehicles, high traffic volumes, and traffic speeds. The key design elements include:

- Contrasting pavement treatments to increase awareness and adjust behaviour of all road users (such as green pavement to indicate priority to bicycle riders)
- Use of narrow traffic lanes and median strip to discourage overtaking
- Modal filters to restrict through vehicle traffic while allowing pedestrians and bicycle riders full access
- Bicycle markers and pavement arrows to indicate bicycle priority
- Traffic calming features to reduce traffic speeds (such as flat top speed humps, or kerb buildouts)
- Intersection priority treatments (over side streets and driveways) at entry and exit points to the quietway.

Further details on Quietway design elements are provided in the NSW Cycleway Design Toolbox. In order to provide a safe, quiet and comfortable quietway, several key design considerations dictate when a Quietway is appropriate as outlined in Table C.4.

Table C.4: Quietway considerations

Item	Consideration	Description
Traffic volumes	< 2000 vehicles/day Low through traffic	• Bicycle riders should not mix with too many vehicles • Intended bicycle priority may be lost with increased vehicle traffic
	Heavy vehicles volumes, bus routes	• Mixing with large/heavy vehicles increases the safety risk for bicycle riders • Heavy vehicle volumes should be limited
	Provide modal filter	• Reduce through traffic volumes and traffic volumes overall and allow through bicycle and pedestrian traffic

Item	Consideration	Description
Vehicle speeds	Reduction to 30km/h	• Bicycle riders should not mix with faster moving traffic • Slower vehicle speeds improve outcomes in the event of a collision and reduces potential conflict with motor vehicles/drivers
	Traffic calming	• Reduce motor vehicle speeds
Topography	Ideally flat	• Uphill sections would increase potential conflicts with motor vehicles and drivers
Contraflow	Provide contraflow for one-way road sections	• Enable contra flow to increase route options
Lane Widths	< 3.0m	• Reduce traffic speeds and discourage overtaking • Can be further enhanced using a median
Parking	Locate outside of main carriageway	• Reduce potential for dooring

Pop-up cycleways

Temporary measures like pop-up cycleways provides an opportunity to offer more people an alternative mode of transport without the commitment of a permanent facility. They also provide opportunities to showcase how improved cycling connections can look, feel like and function as a popular or encouraging travel option.

Pop-up or temporary cycleways have become a quick solution to provide bicycle connections featuring benefits such as:

- Allowing for the trial of a proposed cycleway or cycle route
- Temporary measures are easier to implement and remove.

Example pop-up cycleways are provided in Figure C.6.

Top left: Uni-direction lanes, Bridge Street, Glebe (City of Sydney), Top right: Uni-direction lanes, Dunning Avenue, Rosebery (City of Sydney)
Bottom left: Bi-directional cycleway, Railway Parade, Erskineville (City of Sydney); Bottom right: Sydney Park Road, Erskineville (City of Sydney)

Figure C.6: Pop-up and temporary cycleways – examples

Key considerations when implementing temporary cycleways include:

- Removal of parking – implementation of pop-up cycleway will likely require the need to remove on-street parking
- Reduction of road speeds – on roadways adjacent to separated cycleways to enable safe navigation for all road users
- One-way bicycle paths – can be the quickest type of cycleway to implement; they are less disruptive to other road users and are less likely to require changes to traffic control signals
- Two-way bicycle paths – may require less street space but can take more time to implement as they require changes to adjacent intersections (particularly if signalised)
- Bus Routes – Temporary separated cycleway can be installed on bus routes and adjacent to bus stops but not in bus lanes
- Changes to signalised intersections – require TfNSW approval, with the level of intervention impacting on approval time

- Risk Assessment – A two-stage risk assessment to be carried out by a suitably qualified road safety auditor in line with the NSW Centre for Road Safety Guidelines
  - On final designs prior to construction
  - After construction and prior to opening.

Pedestrian facilities

The design of pedestrian facilities, in particular footpaths, are to follow the procedure outlined in the NSW Walking Space Guide.

The Guide provides an outline on the assessment and design of walking spaces (including footpaths) to suit the appropriate level of service. The amount of space to be provided is determined according to the intensity of pedestrian use predicted for the life of the infrastructure, with consideration of path side obstacles and effective walkable space.

The Guide provides a new standard of providing pedestrian infrastructure considering the needs of all path users including those with mobility needs. Path types covered under the guide are outlined in Table C.6.

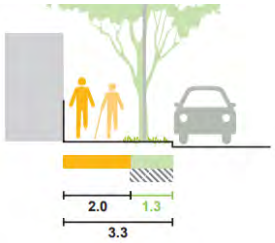
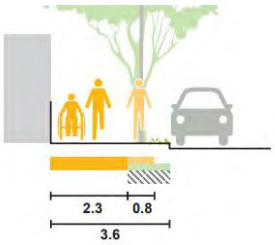
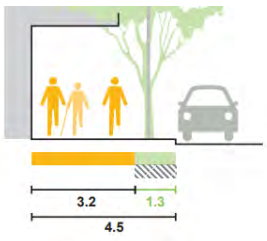
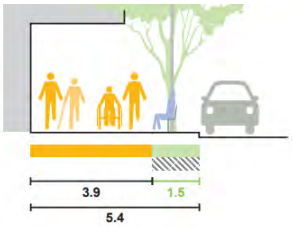
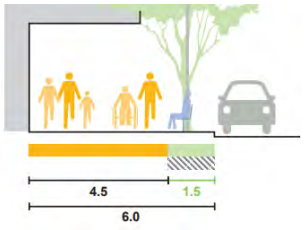
The Walking Space Guide provides guidance on the relation between pedestrian intensity, walkable space and comfort, detailed as Level of Service (LOS). LOS provides a measure of comfort level (percentile bands) as shown in Table C.5: showing target and intervention levels.

More details on the assessment and design of footpaths can be found in the NSW Walking Space Guide.

Table C.5: Walking space level of service

Level of Service	Target	Comfort Percentile
LOS A		85th
LOS B		66th
LOS C	Minimum Target	50th
LOS D		33rd
LOS E	At risk	15th
LOS F	Intervention Trigger	Less than 15th

Table C.6: Walking space guide – path types

Path type	Description	Path width	Illustration
Type 1	▪ Low activity local footpaths ▪ Appropriate where people walking are unlikely to pass other people coming the other way. ▪ Supports 2 people walking together and passing if walking in single file.	2.0m	
Type 2	▪ Medium activity local footpaths ▪ Appropriate where people walking are more than likely to pass other people coming the other way ▪ Support 2 people passing abreast or 2 friends walking together passing another person ▪ Provide for good wheelchair access.	2.3m	
Type 3	▪ Medium activity main street footpaths ▪ Appropriate where two-way pedestrian traffic is certain ▪ Support 2 friends walking together and passing another person without having to walk in single file.	3.2m	
Type 4	▪ High activity main street footpaths ▪ Appropriate where two-way pedestrian traffic is certain in large groups ▪ Supports 2 people passing other groups of 2 people coming the other way without either group having to walk in single file.	3.9m	
Type 5	▪ Very high activity main street footpaths ▪ Appropriate where it is very busy most of the time ▪ Provide enough space for large numbers of people to walk comfortably.	4.5m	

Appendix D: Wayfinding and signage

Overview

Wayfinding and directional signage are an integral component of any transport system, helping users to navigate networks easily and efficiently by:

- Reinforcing system connectivity and coherence
- Providing high visibility and recognition to the routes composing the network
- Encouraging walking and cycling for transport and recreation

An effective wayfinding strategy clearly communicates paths with visual, verbal and/or auditory clues such as:

- Materials
- Patterns
- Signs
- Maps
- Landmarks

While each mode has different needs in terms of the information required from signage, they also have common needs for:

- Consistent and coherent approach to sign design
- Sign placement
- And sign convention

Consistent regular presentation of information should underpin any successful wayfinding system. Further, clear wayfinding associated with bicycle routes presents the route and associated infrastructure as a legitimate transport facility, encouraging the take up of bicycle riding as a mode of transport.

Benefits of wayfinding

Wayfinding benefits both network users and road users, by providing a degree of legibility to the network and to assist with navigation within the network. Benefits of bicycle and route wayfinding include:

- Directional signs allow riders and pedestrians to quickly and easily find their way around the network.

- Signage can assist riders and pedestrians to make safer decisions by following established routes
- Signage advertises the presence of the route to other road users
- Signage is important on complex routes that transition between on and off the road.

Current level of wayfinding

There is little signage present across Penrith City to denote existing bicycle routes, particularly along key routes such as Northern Road and Great Western Highway.

Some wayfinding signs are present along the Mulgoa Road shared path, indicating the route and end destinations (Glenmore Park and Penrith), as shown in Figure D.1.

Temporary detour signage is also present along the Great Western Highway corridor as part of the M4 cycle path detours.

The expansion of the active transport network under PATHS 2022-2032 will provide additional routes and effective wayfinding will be required to assist users in navigating to and from destinations.

Left: Re-assurance sign near Glenbrook Street; Centre: Re-assurance sign near Jamison Road; Right: Directional sign near M4

Figure D.1: Existing wayfinding – Mulgoa Road

Wayfinding

The wayfinding and signage serve as the functional framework (and associated line-marking) across the network, assisting network users with individual travel choices. Wayfinding can serve by:

- Identifying and adapting intuitive wayfinding and line-marking elements from contemporary guidelines for use in Penrith City, including but not limited to:
  - Austroads Research Report AP-R492-15 Bicycle Wayfinding
  - Guide to Traffic Management Part 10 -Transport Control Types of Devices
  - Australian Standards AS1742.9
  - NSW Cycleway Design Toolbox and NSW Bicycle Guidelines
- Providing generic principles for an overall wayfinding and identification signage system
- Identifying principles to plan a logical sequence of directional signs and information
- Recognising and planning decision points and the hierarchy of messages
- Preparing a standard signage template and an implementation plan for bicycle directional signage
- Developing a focal-points map including the locations/destinations on wayfinding signage
- Providing clear guidelines and criteria for placing signs at key decision points
- Graphics design (including type and colour)
- Providing indicative line-marking designs for on-road and off-road cycle facilities
- Identifying distances on signs to enable the user to plan their journey with confidence.

Signage general principles

Directional signs are required to communicate information quickly to cyclists. General principles to achieve good directional signage include:

- Keeping signage simple, easy to identify and consistent
- Using graphics and symbols
- Legible and logical locations, and at all relevant intersections
- Considerate placement to avoid signage becoming lost in the clutter of other signs, or confusing motorised traffic, particularly when used for on-road routes

Signage types and location

Examples of typical bicycle network route directional signage are presented and described in Table D.1.

The selection and installation of the various signage types may vary depending on the type of route and situation. Table D.2 provides guidance on the selection of wayfinding signs and appropriate locations.

Directional sign plan

A directional sign plan outlines the location of each sign within the cycling network. It aims to identify where in the network cyclists will need guidance and what type of signage will provide that guidance. A successful directional sign plan conveys the required information for users to navigate the network and produces the least amount of clutter.

Focal and destination points

Focal and destination points form a key part in the development of wayfinding signage and the information to be displayed to network users. The distinction between focal and destination points and examples are outlined in Table D.3.

Table D.1: Examples of typical bicycle wayfinding signage

Sign Types	Description	Example
Fingerboard	▪ Double sided direction signs used at route junctions and where the route changes direction ▪ Can show destinations at turning points ▪ Can show destinations and distances when placed at route junctions ▪ These signs can fit up to 2 focal points	
Direction indication signs	▪ Use these signs instead of fingerboards if fingerboards are not suited to the site ▪ Can show destinations at turning points ▪ Can show destinations and distances when placed at route junctions ▪ These signs can fit up to 2 focal points	

Advance direction sign	▪ Use these signs to indicate destination and focal point choices on routes in advance of a junction ▪ For higher speed routes, 50–70m ▪ For primary routes, 35–50m ▪ These signs can fit 2 focal points	
Re-assurance sign	▪ Use these signs following complex junctions or along routes to reassure cyclists they are on the right route ▪ Place these signs on the departure side of more complex intersections ▪ Can show multiple destinations or focal points and distances	
Location sign	▪ Use these signs where paths track under or over the road network or at cross streets ▪ Typically used at underpasses or bridges ▪ Assist riders to determine where they are in the network	
Map sign	▪ Used on primary routes ▪ These signs provide additional assistance and often indicate multiple route options and wayfinding possibilities ▪ Use these signs at significant junctions of multiple routes and key entry points to the network ▪ Typically placed 1.5m from the path or road at a safe, well-lit area with set-down space for bikes	

Source: Austroads AP-R492-15 Bicycle Wayfinding

Table D.2: Cycle routes and sign types based on route type

	Route Types				
Sign Types	**Veloway**	**Primary**	**Local**	**Tourist / Recreational**	**Detour**
Route type description	High-speed, limited-access routes usually paralleling major arterial roads or motorways	The main arterial routes of urban cycle transport networks	Shorter routes connecting primary routes to local destinations	Off-road, shared path and tourist / recreational routes	Long-term detour routes for veloways, primary or tourist / recreational routes.
Fingerboards	Yes, at junctions with other routes and where the route changes direction	Yes, at junctions with other routes and where the route changes direction	Yes, integrated with street signs	Yes	Yes
Direction indication signs	Yes, at junctions with other routes and where the route changes direction	Yes, at junctions with other routes and where the route changes direction	No, use markers instead	No, use markers instead	Yes
Advance direction signs	Yes, before route junctions with veloways or primary routes	Yes, before route junctions	No, use markers instead	No, use markers instead	No
Reassurance signs with distances	Yes, after route junctions with other veloways or primary routes	Only on lengthy remote routes for reassurance	No, use markers instead	No, use markers instead	No
Route markers	No, use direction indication signs	No, use direction indication signs	Yes	Yes	No, use direction indication signs
Route numbering	Yes	Yes	No	Yes	Yes, if route replaced by detour is already numbered
Route branding	Yes	Yes	No	Yes	No
Street signs	Yes, if none exist	Yes, if none exist	Yes, if none exist	Yes, if none exist	Yes, if none exist

Source: Austroads AP-R492-15 Bicycle Wayfinding

Table D.3: Example wayfinding focal and destinations points list

Type	Description	Examples
Focal point	▪ A destination where routes join, cross or end ▪ Key locality or areas within a network that attract or produce cyclists ▪ Area encompassing numerous route junctions	▪ Town Centres ▪ CBDs ▪ Shopping centres ▪ Major parks or precincts
Destination point	▪ Points along or at the end of a route ▪ A single or specific destination which may serve a particular purpose ▪ Facilities that serve a specific purpose and may attract bicycle traffic or pedestrians ▪ Landmarks in neighbouring areas	▪ Train Stations ▪ Tertiary education and schools ▪ Recreation areas and parks ▪ Community and leisure facilities ▪ Libraries

Wayfinding methodology

A general wayfinding development methodology is outlined in Table D.4. The methodology is designed to determine and produce the required directional sign plan based on the proposed and existing network, including:

- Identifying cycling routes, facilities and focal points
- Labelling or numbering of key routes
- Identification of route junctions
- Determination of an appropriate sign schedule for each route.

The combined sign schedules form the overall directional sign plan.

The methodology includes:

- Identify Cycle Routes
- Identify Focal Points and Create Focal Point Map
- Identify any Facilities that need to be named on signs

- Create Route Numbering System
- Provide Branding for Routes (e.g. names, colours)
- Conduct pre-sign, risk assessment survey
- Identify and Document all route junctions
- Create a Sign Schedule for each Route
- Prepare Sign Artwork for Sign Manufacturer.

The methodology has been developed based on Austroads AP-R4925-15 – Bicycle Wayfinding.

Table D.4: Methodology to develop directional signage plan

Step	Procedure	Description	Example(s)
1	Identify cycle routes	▪ Primary routes – key cycling corridors and wider connective routes supporting main cycling movements across the proposed network ▪ Local Routes – links connecting key destination and residential areas to the primary route network	▪ Great Western Highway – from St Marys to Penrith ▪ Mulgoa Road - from Mulgoa to Penrith
2a	Identify and map focal points and destination points	▪ Locate and define focal and destination points on the map in relation to the network ▪ Focal and destination points as defined in Table D.3	▪ Penrith CBD, St Marys Town Centre ▪ St Marys Interchange ▪ Western Sydney University / TAFE Campus
2b	Identify key facilities	▪ Identify key local facilities that would benefit as part of the wayfinding strategy ▪ These locations will supplement the focal and destination points in the network	▪ Ripples Leisure Centre ▪ Werrington Lakes Reserve ▪ Kingsway Sports Fields
3	Create labelling system for primary routes	▪ Develop a naming or numbering convention for primary routes to aid in the identification of routes ▪ Can be based on general direction, origin – destinations or route description	▪ Route 1 ▪ Great Northern Road ▪ Luddenham – Cranebrook

Step	Procedure	Description	Example(s)
5	Provide branding for primary routes (e.g. names, colours)	▪ Each route can be branded by assigning: ▪ A **name**, based on: ▪ Route alignment – where a route follows a major road corridor, the road name can be used ▪ Origin-destination – where a route passes through multiple suburbs, the origin and destination of the route can be used in its name ▪ Or number – where the above convention produces complicated names ▪ And colour – identifying regional, primary and local routes in the cycling network	▪ Mulgoa Road ▪ Penrith to Mulgoa via Glenmore Park ▪ Route 3 – Mulgoa Road
6	Conduct pre-sign risk assessment	▪ Undertake a physical risk assessment of the route prior to sign installation ▪ Identify deficiencies and determine remedial actions ▪ Ensure route is legally rideable and will not mislead users	
7	Identify and document all route junctions	▪ Route junctions are key decision points for cyclists because cyclists generally utilise more than one strategic route for most of their trips	▪ Intersection of Jamison Road and Mulgoa Road ▪ Intersection of Gipps Street and Great Western Highway

Step	Procedure	Description	Example(s)
		▪ Junctions will determine the type, amount and location of wayfinding signage to be implemented	
8	Create a sign schedule for each route	▪ Develop a key reference document used to specify location and content of signs: ▪ Detailing location, type and sizes of sign ▪ Detailing content such as destinations, distances and direction arrows ▪ Detailing sizes ▪ Additional works to implement the signs (i.e other regulatory signage, poles and posts)	
9	Prepare sign artwork for sign manufacturer	▪ The sign uses the branding (name / colour) convention to convey: ▪ Which route the rider is on ▪ The nearest focal point(s) or destination(s) ▪ How far the rider is from the nearest focal point(s) or destination(s) ▪ The estimated travel time to the nearest focal point(s)	

Signage design

Signage appearance and types presented in Figure D.2 are typical examples, outlining the information required and general appearance.

As part of the strategy and signage schedule (Table D.4:), customised signage following these examples can be developed:

- Appropriate to the type of route (local, primary, regional etc)
- Suiting the context, nature and appearance of Penrith City
- Font and colour schemes consistent with Council design codes.

Figure D.2 provides examples of fingerboard signage designs that can be adopted as part of the wayfinding strategy development. The development of signage designs should consult relevant stakeholders within Council.

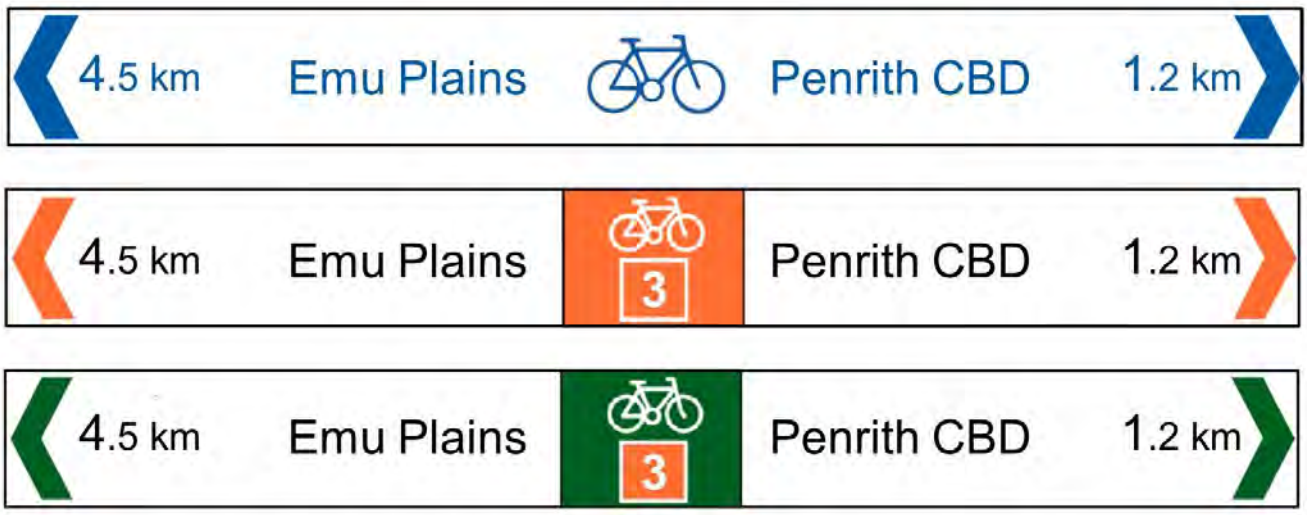


Figure D.2: Fingerboard signage concept design – examples

Appendix E: End-of-trip facilities

Overview

End-of-trip facilities play a vital role in the formation of cycling routes and have a significant influence on the useability of routes and take up of active transport. Facilities at the beginning and/or end of journeys are extremely useful, allowing users to comfortably transition to or from other modes of transport or reach their destination.

Typical end-of-trip facilities include (but are not limited to):

- Bicycle parking
- Repair stations
- Change rooms, showers and lockers
- Water refill stations.

Need for end-of-trip facilities

End-of-trip facilities are often overlooked as part of implementation of bicycle infrastructure and fills in the gap between travelling along a built route and the end use of the destination. The investment in new or existing routes may not reach their full potential if end-of-trip facilities are not considered as part of the planning and design stages of a route.

End-of-trip facilities support the objectives of PATHS by:

- Supporting people who ride, walk or jog to destinations, including work and recreation
- Encouraging people to use non-motorised transport
- Promoting an active and healthy community
- Reducing reliance on cars

The provision of end-of-trip facilities greatly improves the convenience of cycling and active transport, creating a more feasible method of travel, and in turn encourage more people to walk or ride their bicycle (particularly for shorter trips).

Lack of parking and end-of-trip facilities has created a barrier to cycling within Penrith City, with some survey respondents citing ‘nowhere to park’ as one of the barriers to riding to the shops.

Key trip purposes and key locations

As outlined in the NSW Cycleway Design Toolbox, the provision of end-of-trip facilities (including parking) considers a range of tactors, including the type or purpose of their trip and destination / location.

Table E.1: provides an outline of key trip purposes considered and the location and comprehensiveness of bicycle parking varies depending on the destination served. The type of facility provided should be considerate of the context and needs of the destination and should be appropriate to the given location and environment.

Table E.2 provides an outline of key destinations and design considerations associated with providing bicycle parking.

Table E.1: Key trip purposes

Purpose	Consideration
Shopping	▪ The rider may be away from the bike for as much as an hour, and will require somewhere to secure their bike ▪ Bikes should be able to be secured within a short walk of the destination or near the entrance
Public transport	▪ The rider may be away from the bike for a large range of time, from hours to multiple days and will require somewhere to secure their bike appropriate to the time away from the bike ▪ Regular use requires a higher level of security parking facilities (sheds or lockers) ▪ Casual use prefers rapid accessible parking facilities (racks and stands) ▪ Parking facilities to factor weather and environment conditions
Workplace	▪ This is for all-day use on a regular basis ▪ Demand for such parking is more likely to justify grouping of racks, often within areas where there is controlled access, CCTV, monitoring, or individual lockers
Collection and Delivery of Items	▪ Providing “ride-in” facilities may reduce the risks caused by bikes clustered around entrances to buildings or lying on pavements ▪ Parking for such short-stay users does not necessarily need to be very secure, but it does need to be near the entrance of, or inside, the place visited

The location and comprehensiveness of bicycle parking varies depending on the destination served. The type of facility provided should be considerate of the context and needs of the destination and should be appropriate to the given location and environment.

Table E.2: Key locations and design elements

Location	Design elements
Transport interchanges	Vital to maximising potential for multi-modal trips: ▪ Increases the reach of public transport services and enables longer multi-modal journeys incorporating cycling ▪ Bicycle parking placed closer to station entrance than all available car parking – typical maximum distance 50m ▪ Provision based on accommodating target cycling access mode share (ideally a minimum 2%), plus additional capacity of at least 20% for additional growth and flexibility ▪ Spare capacity of at least 20% ▪ Opportunity to consider provision of bicycle hub for large-scale bicycle parking with complementary facilities ▪ Access to lockable bike parking facilities should be integrated with public transport ticketing systems
Town centres and high streets Community destinations Educational facilities	Most common destination for daily trips: ▪ Bicycle parking facilities dispersed throughout commercial centre ▪ Reallocation of car space to bike parking prioritised over footpath space ▪ Position bike parking in locations that do not impinge on key pedestrian desire lines and use customised or high-quality designs to minimise the visual impact ▪ Provision of special bicycle parking zones for short-term bicycle parking needs such as delivery riders and bicycle couriers

Location	Design elements
Community destinations and educational facilities	Most common destination for daily trips: ▪ Provision of bicycle parking facilities located at or near entrances/exits ▪ Consideration of passive surveillance for students and staff ▪ Reallocation of car space to bike parking prioritised over footpath space ▪ Consideration of temporary bicycle parking zones designated by council for community events and meetings
Parks, sporting fields and reserve areas	Often combined with recreational activities: ▪ Provision of bicycle parking facilities located at or near entrances/exits ▪ Separation between people walking and bicycle riders where pedestrian activity is high ▪ Low cycling speeds achieved through appropriate design measures such as carefully located seating, slight curves to the alignment or planting buffers
Residential streets	▪ Provision of a mix of bicycle parking types, including potential for long-term storage solutions such as bicycle sheds and short-term solutions such as bicycle racks ▪ Consideration of active and passive surveillance for people and property

Public bicycle parking

Parking facility types

Public bicycle parking facilities offer different levels of security and convenience and should be chosen to meet the needs and preferences of target user groups at different locations. As outlined in the NSW Cycleway Design Toolbox, the types of public bicycle parking facilities are described in Table E.3.

Table E.3: Public bicycle parking facilities

Facility Hub	Description
Bicycle hub	▪ Large-scale solution suitable for long-term parking at public transport hubs or town centres ▪ Appropriate when integrated within a town centre or at key transport interchanges ▪ Features ▪ Can include supporting amenities such as workshops, changerooms, lockers and showers ▪ Always have active and passive surveillance ▪ Funded by the relevant state or local authorities and provided free of charge to users ▪ Can be supplemented by additional bicycle parking facilities such as racks or lockers
Bicycle locker	▪ Suitable for long-term parking that includes overnight storage and weather protection ▪ Highest level of bicycle parking security ▪ Store bike at train stations, ferry wharves and bus interchanges ▪ Funded by the relevant state or local authorities and provided free of charge to users
Bicycle shed	▪ Enclosed shared shelters that typically accommodate 20 to 50 bicycles ▪ Suitable for medium to long-term parking that includes daily storage and weather protection ▪ Users to store their bike at train stations, ferry wharves and bus interchanges

Facility Hub	Description
	▪ Funded by the relevant state authority and provided free of charge to users
Bicycle rack	▪ Accommodates short-term, local trips ▪ Consistent passive surveillance ▪ Should be carefully located so as not to impede on pedestrian movements and conveniently located considering the destination and end use

With the increasing use of non-standard bikes (e.g larger electric bikes and cargo bikes) a proportion of the bicycle parking (typically 5%) should be provided for these bike types across each parking type.

Example of bicycle parking sheds and lockers are shown in Figure E.1.

Top left: Bike shed, Emu Plains Station; Top right: Bike shed, Parramatta Station; Bottom left: Bike shed, Sydney Metro North-west; Bottom right: Bicycle lockers, MacArthur Station

Figure E.1: Bicycle sheds and lockers – examples

Security levels

The range of security levels for bicycle parking facilities reflect the needs for different types of parking in consideration of trip purpose, location and typical duration of stay. Security levels of bicycle parking facilities (based on Austroads AP-R527-16 for Bicycle Parking Facilities) are described in Table E.4.

Table E.4: Security levels for bicycle parking facilities

Class – Security Level	Facility Type / Description	Suitability
1 – High	Bicycle locker with high security door lock	Regular and long-term storage, such as for: ▪ Public transport hubs and stations ▪ Commercial buildings ▪ Remote (unsupervised) public locations
2 – High to medium	Bicycle shed	Regular and medium to long-term storage, such as for: ▪ Public transport hubs and stations ▪ Regular storage for company employees ▪ Users provided with key to the enclosure ▪ Users expected to secure their bikes to racks with their own locks
3 – High to low	High quality bicycle rack in public area	Short-term parking such as for staff, customers and the general public

Design principles

The provision of bicycle parking should align with the design principles in Table E.5.

Table E.5: Design principles for bicycle parking facilities

Design principle	Description
Accessibility	▪ Provide accessible and convenient connectivity to cycleway facility or route ▪ Have a convenient kerb ramp near the provided bicycle parking facility for road to footpath transitions ▪ Minimum 5% of parking allocated for forms of micro mobility other than conventional bicycles ▪ Provide spare capacity to account for growth in demand and turnover ▪ More than one type of bike parking facility at each destination to cater for different user needs and preferences in terms of security, convenience, and ease of use
Location	▪ Maximum distance of 50m or 1-minute walk to users' ultimate destination, and within sightlines of destination entrance where appropriate ▪ Located at all station entrances accessed by road and cycleway to minimise need to travel through or around the destination to access bike parking ▪ Signage towards location of bicycle parking
Security	▪ Be placed in view of passers-by or overlooked by the public as a means of passive surveillance ▪ Covered by existing or additional CCTV cameras where practical as a means of active surveillance ▪ Be well lit by new or existing lighting
Integration	▪ Does not obstruct or hinder pedestrian access, loading zones and parking ▪ Be attractive and designed to blend in with the surrounding environment, providing shelter for bicycles and riders where possible ▪ Bicycle stands which can be combined with matching street furniture reinforces the positive image of the bicycle parking facility
Maintenance	▪ Introduce regular tidying up, cleaning and maintenance routines ▪ Ensure any damaged stands, wayfinding/signage, structures, electronic access, etc are repaired immediately

Water bottle filling stations

Water bottle refilling stations and drinking fountains provide the community a convenient and safe source of drinking water and the option to refill water bottles. The opportunity for refreshment and hydration plays a key role in improving the comfort of all pedestrians and bicycle riders and encourages the use of active transport.

Water refill stations and drinking fountains can be located along or at the end of bicycle routes, particularly:

- Major park and recreation reserves
- Recreational routes
- Town centres or CBDs
- Public transport stations and interchanges.

In the context of Penrith City, these stations would be important to bicycle riders and other path users, given the heat experienced during the warmer periods of the year and the need for access to drinking water when out and about.

Existing water refill stations are provided across Penrith City, including (but not limited to) Jamison Park, Werrington Lakes and Victoria Park St Marys. The provision of water refill stations can be expanded with the implementation of the active transport network, and include other locations such as along recreational routes, civic spaces and town centres.

Left: Victoria Park, St Marys NSW (Penrith City Council); Centre: Western Sydney University Campus NSW; Right: Parramatta River Cycleway NSW (Parramatta City Council)

Figure E.2: Water refill stations

Public bicycle tool stations and pumps

Public bicycle tool stations and pumps provide accessible and convenient facilities for bicycle riders to freely and efficiently repair minor issues with their bicycles, such as:

- Adjusting seat height
- Tightening loose nuts and bolts
- Adjusting brakes
- Adding or filling air in tyres.

These stations provide a level of assurance to riders that issues arising during a ride can be addressed and repaired along the way or at destinations, assisting in encouraging cycling as a feasible and preferred method of transport.

Repair stations may include a suite of tools, such as:

- Stand or rack to hold bicycle at workable height and reduce the need to bend over or crouch
- Commonly sized spanners and ‘allen’ keys to fit a range of bicycles and parts
- Air pump with pressure gauge
- QR code linking users to instructions for simple repairs.

Examples of a public bicycle tool stations are provided in Figure E.3, featuring bike stand, tools and air pump.

Stations should be typically located along or at the end of bicycle routes, particularly at key destinations such as:

- Public transport stations and interchanges
- Major park and recreation reserves
- Recreational routes
- Town centres or CBDs.

Left: Australian National University Campus, ACT; Centre: North Sydney LGA (Milsons Point) NSW, Right: Maribyrnong Council LGA VIC

Figure E.3: Community bicycle repair stands

Development of specific facilities

Other end-of-trip facilities can be implemented as part of developments across Penrith City to support bicycle riders and bicycle riding. This is particularly applicable to employment developments such as commercial, retail and industrial land uses.

The provision of end of trip facilities as part of workplaces has many benefits, including:

- A healthier workforce
- Increased staff wellbeing
- Higher productivity
- Improved corporate image
- Reduced demand for car parking.

Development specific end-of-trip facilities may include:

- Changerooms and showers
- Storage lockers
- Bicycle parking.

Development Control Plans should be reviewed and updated with this vision in mind, such as making the following changes:

- Increasing bicycle parking provision rates for all developments
- Include the requirement to design and install end-of-trip facilities for major developments

- Include the requirement to design and install end-of-trip facilities for development additions such that they would be considered a major development
- Expand the definition of ‘major developments’ to include a broader range of buildings such as smaller commercial office buildings.

As end-of-trip facilities become an expected feature in new-build offices, owners of existing buildings can also improve their competitiveness in the leasing market by retro-fitting end-of-trip facilities. Business owners that own their facilities can also increase the desirability of their workplaces for their current and future employees by investing in end-of-trip facilities.

Appendix F: Plan evaluation and monitoring

Impacts and data to be collected to support the evaluation and monitoring of the Implementation Plan are detailed below.

Increase in pedestrian and cyclist activity

The increased investment in a safe, attractive and connected active transport network aims to encourage a greater level of foot and cyclist traffic, particularly along routes between major origin-destinations pairs. Active transport activity should be measured via updated count data and compared to pre-implementation baseline data. The types of data that can be collected include:

- Dedicated counters or surveys at targeted locations
- Automatic infrared pedestrian and bicycle counters
- Travel pattern surveys from the general community
- National surveys, including large-scale strategies like Super Tuesday and Super Sunday active transport data collection events

Due to the scale of the proposed network, count locations should be carefully selected to capture the anticipated change in pedestrian and cyclist activity. Understanding that there will be capacity constraints in collecting data across the entire network, there should be a focus at key locations like near train stations, schools, along major recreational routes or on the new major primary routes.

An example of an automatic counting station from Melbourne is shown in Figure F.1. These types of stations have dual benefits in data collection as well as community engagement, by having publicly visible counts and statistics on the station to drive passer-by interest, potentially leading to a further increase in cycling uptake.

Figure F.1: Cycling automatic counting station – Melbourne

Due to the Plan targeting improved connections to and from schools, cooperative school sites can be a valuable data source by surveying students and staff on their travel patterns and arranging for dedicated 'Ride2School' days.

Additionally, other data collection initiatives can include opt-in surveys at major destinations like train stations via QR codes or similar. Incentives, especially those integrated with the Opal system, can be offered to increase response rates.

It is noted that due to projected increases in population across the Western Sydney region, any change in pedestrian and cyclist activity levels should be measured proportional to background population growth values.

Reduction in traffic growth rates

With a greater uptake of active modes of transport, including subsequent growth of long-distance public transport as first and last mile travel needs are met, there should be a commensurate decrease in traffic growth rates. Due to aforementioned Western Sydney population increases and background traffic growth across Metropolitan Sydney, it is anticipated that traffic will continue to increase in the future even if the Plan is successfully implemented by the metrics of this evaluation.

The key output will be the slowing down of traffic growth as drivers opt for active/public modes of travel, based on historical growth patterns that can be calculated from previously

collected traffic data across the region. This includes the permanent traffic counters as a part of Transport for NSW's Traffic Volume Viewer source.

The new data to be collected and analysed will include:

- Post-implementation traffic survey data
- Permanent traffic count data.

Shifts in travel modes

Census data is collected every five (5) years, forming the basis for Journey to Work analyses. The existing travel patterns based on 2016 Census data, as well as recently released 2021 Census data, summarises the existing travel modes for both residents and employees of the Penrith LGA.

A successful implementation of the Plan will see a shift in travel modes, moving away from private vehicles to greater uptake of cycling, walking and public transport. While it is acknowledged that the active transport strategies primarily target a connected and cohesive network within the LGA, and that commuters can have long-distance destinations outside of the region (e.g. within Sydney CBD) that will be more suited for cars, the target is to satisfy the demand for first and last mile infrastructure in connections to major public transport hubs like Penrith Station and future Metro stations. This aims to provide convenient multi-modal journeys through the LGA, reducing the reliance on private vehicles for both short and long-distance trips.

Post-implementation travel mode data (collected from 2026 Census or other sources like community surveys and the Household Travel Survey) should be compared with pre-implementation data to evaluate the successfulness in producing tangible shifts in travel modes, including:

- Decreases in private vehicle usage
- Increases in active transport (cycling and walking)
- Increases in public transport.

Crash frequency rates and severity

One of the key objectives of the Plan was to produce a safer environment for active transport. This is achieved through the separation of cyclists from general traffic via shared user paths, with the proposed widening of off-road facilities to allow for a high-amenity environment for both pedestrians and cyclists.

- Improvements to safety for vulnerable road users has a wide range of benefits, including:

- Reductions in road-related incidents
- Reductions in speed (and therefore severity) of crashes, minimising harm to life
- Perceived sense of safety and security for vulnerable road users
- Subsequent greater attractiveness of active transport as a mode of travel.

Crash data is collected through police reports and through Transport for NSW's Centre for Road Safety. As the implementation of the strategy is phased based on prioritisation, it is expected that reflections on crash statistics will be localised around and along the routes incorporating the upgraded facilities. Rather than raw volume of crashes (as there is expected to be a general increase commensurate to population increases), the evaluation should compare crash frequency rates and crash severity distributions pre and post implementation of the Plan to determine successfulness based on the following:

- Decreases in average crash rates along upgraded routes
- Reductions in crash severity, targeting no fatality crashes and minimal incidents resulting in severe injuries.

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