



2019



LITHGOW ACTIVE TRANSPORT PLAN



2019

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EXECUTIVE SUMMARY

Lithgow Local Government Area (LGA) is located in the Central West Region of NSW and is home to approximately 21,636 people. Lithgow LGA covers approximately 4,551km², extending from Capertee in the north, Little Hartley in the east, Hampton-Tarana in the south and Meadow Flat in the west. The LGA includes the towns and villages of Ben Bullen, Capertee, Clarence, Cullen Bullen, Dargan, Glen Alice, Glen Davis, Hampton, Hartley, Hartley Vale, Lithgow, Little Hartley, Marrangaroo, Meadow Flat, Newnes, Portland, Rydal, Sodwalls, Tarana, and Wallerawang.

Lithgow's prosperity is built around mining, manufacturing, power generation, retail, trade and tourism services, agriculture and tertiary services. Lithgow's close proximity to Sydney and its strategic location next to east-west road and rail corridors linking the Greater Sydney Metropolitan Area to Central NSW presents many challenges and opportunities for residents and businesses in the area.

Travel patterns are dispersed across the LGA and the road network can become quite busy, particularly along major highways, peak shopping times, school zones times and around weekend sporting and community events. Many people in Lithgow and surrounds choose to walk and to a lesser extent ride to work or school and to other local destinations such as their local shops, cafes, club, post office, town swimming pool or to public transport. Using human power is a cheap and easy form of transport and brings other benefits such as improved fitness and personal health, positive environmental and road safety outcomes as well as social and economic benefits.

The Lithgow LGA has a large network of constructed footpaths (particularly in Lithgow) as well as a smaller cycling network. This active transport network is supported by public amenities, directional signage, water points, seating, bicycle racks, street trees and other facilities.

Council is ideally positioned to enhance the pedestrian and cycling network throughout the LGA, particularly around the areas of highest pedestrian and cycling activity. The Lithgow Active Transport Plan identifies a range of infrastructure improvements and social initiatives, aimed at enhancing pedestrian and cycling opportunities. Given there are limited funds available to undertake this work, the plan proposes targeted improvements that are assessed to have the greatest benefits and user support.

Stakeholder engagement has already commenced through surveys, workshops and meetings with various agencies, interest groups and residents. Feedback received so far provides valuable insight on pedestrian and cycling behaviour, attitudes and aspirations. It suggests the community is supportive of a more comprehensive and safer active transport network throughout the Lithgow Local Government Area. Public exhibition of the draft Lithgow Active Transport Plan aims to highlight the issues and projects being recommended for action by Council to improve opportunities for pedestrians and bike riders throughout the area.



“THE LITHGOW ACTIVE TRANSPORT PLAN SETS A NEW
STRATEGY FOR IMPROVEMENTS TO THE PEDESTRIAN AND CYCLING NETWORK”

01

INTRODUCTION

The Lithgow Active Transport Plan is the first strategy aimed at catering to the needs of both pedestrians and cyclists so that more people can use the footpath and bike path network that Council is providing.

Planning for pedestrians and cyclists does not follow the same logic as motor traffic planning, which normally involves a ‘car’ - ‘trips’ - ‘routes’ - ‘traffic network’. It places more emphasis on the environment and the conditions along routes and at attractors. Unlike faster moving motorists, pedestrians and cyclists are far more attuned to the environment in which they are moving.

There is international recognition that in order to significantly boost walking and cycling levels, a much higher standard of active transport facilities is required, particularly paths that provide greater separation from motor vehicle traffic.

An important aspect of active transport planning is to enhance our understanding of the elements that will make a good active transport network in the Lithgow LGA context. These include an understanding of the following:

- The types of existing / potential pedestrians and cyclists and their needs.
- The condition of the existing active transport network (including paths, gaps and barriers).
- Where pedestrians and bike riders are going and why.
- The motor traffic environment (speed and volume) that pedestrians and cyclists must deal with.
- The key planning and engineering principles that underpin the design of a usable and safe active transport network.
- The most appropriate design options that meet active transport needs.
- The views and aspirations of stakeholders.
- Mechanisms to program / fund improvements to the active transport network.

While it is critical for transport planners and engineers to continue to focus on providing for the needs of cars, heavier vehicle transport and trains, it is important that the road network and built environment also caters to the needs of pedestrians and cyclists.

The Lithgow Active Transport Plan presents the findings of Council's review of the latest trends and initiatives for pedestrians and cyclists as well as the findings of community engagement and audits of local conditions.



“THE FOCUS OF THE LITHGOW ACTIVE TRANSPORT PLAN IS ON CAPERTEE, CULLEN BULLEN, LITHGOW, PORTLAND, RYDAL, TARANA AND WALLERAWANG – THE AREAS WHERE THERE IS THE HIGHEST INCIDENCES OF PEDESTRIAN AND CYCLING ACTIVITY.”

02

VISION + OPPORTUNITY

Lithgow is well known as a strong mining, agricultural and tourism region. From the integrated planning and reporting framework commenced in 2011, the Lithgow City Council and community members have worked together to tackle the key issues and challenges being faced by the various communities, employers, service authorities and families in the LGA as well as visitors to the area.

The Lithgow City Council Community Strategic Plan 2030 is the latest strategy that documents the shared understanding of community values, key issues and aspirations to secure the preferred future for the LGA. Council’s aspirations are for Lithgow to be a centre of regional excellence that:

- Encourages community growth and development.
- Contributes to the efficient and effective management of the environment, community and economy for present and future generations.

The community strategic plan continues to inform Council’s Delivery Program and Operational Plans and should go a long way to addressing social, environmental, economic and civic leadership in an integrated manner.

In Lithgow there has been strong investment in the provision of footpath and shared paths in urban areas. As the centre with the highest population and observed incidences of pedestrian and cycling activity, there is a need to continue to develop the active transport network in Lithgow to create a more connected and safe network. This should include completing footpath connections between attractors, building more shared paths that can be used by a wider range of pedestrians and bike riders, installing wayfinding signage for key attractions, installing end-of-trip facilities as well as creating more community interest in the benefits of leading a more active lifestyle.

There is also a need to cater to the active transport needs of communities in the smaller urban settlements, particularly where such facilities support more vulnerable road users (school children and aged residents) or where new investments in infrastructure supports economic development, public transport, tourism and inclusive access objectives.

03

WHY A NEW PLAN?

Lithgow City Council already has a Bike Plan (1998), Pedestrian Access Mobility Plan (2014) and a Disability Inclusion Access Plan (2017). These plans are focused on specific aspects of active movement and do not cater to the needs of all pedestrians and bike riders. They are generally focused on Lithgow and not the other towns and villages that make up the balance of the LGA. They also don't program improvements on a needs / priority basis or suggest programs to encourage residents to become more physically active in the community.

There is a need to widen the focus of active transport planning in the Lithgow LGA. Greater focus on strategies and projects that increase usage of footpaths and shared paths in all major settlements - Capertee, Cullen Bullen, Lithgow, Portland, Rydal, Tarana and Wallerawang - will bring new benefits and opportunities for residents and visitors to the Lithgow area.

3.1 CREATING A COMPREHENSIVE MOVEMENT NETWORK IN HIGH DEMAND AREAS

Council and State government transport planners are focussing efforts towards achieving comprehensive movement networks that allow people to navigate between land-uses or destinations via roads, pedestrian footpaths, cycle paths and shared paths routes, as well as using public transport routes where available. Comprehensive road environments – networks that incorporate efficient transport options (roads, public transport, footpaths and bike paths) as well as aesthetic presentation and general walkability – are particularly influential in encouraging people across all ages to lead more active lifestyles. The movement network in the Lithgow LGA is largely based around motor vehicles on roads. There are reasonable levels of public transport options in Lithgow (e.g. school bus network, limited public rail and bus runs, taxis and uber), but the overall network is patchy, often inconvenient and doesn't serve the needs of all residents and visitors.

Continued limitations on responsive / convenient public transport in Lithgow City are key reasons for improving the active transport network. As the centre of the most activity and growth, Lithgow needs a comprehensive movement strategy in order to plan for the growing needs of residents and visitors. The other major towns of Capertee, Cullen Bullen, Portland, Rydal, Tarana and Wallerawang also need closer study to ensure safe and connected communities.

3.2 MAXIMISE HEALTH AND LIFESTYLE BENEFITS

Leading an active lifestyle can bring many benefits for general health and wellbeing. Using footpaths, bike lanes and shared paths provide a cheap means of incorporating exercise into our daily routine, as regular walking, running and bike riding can aid the prevention of:

- Heart disease.
- Stroke.
- Type 2 diabetes.
- Falls, fractures and injuries (through improved strength and coordination).
- Hypertension.

Pedestrian and cycling activity can also improve psychological wellbeing, metabolism, muscle strength and flexibility, endurance, respiratory function, energy levels and weight management. In the event of illness or recovery from trauma / surgery, all this aids in a speedy return to good health.

Children's health should include regular physical activity. Health professionals recommend at least 60 minutes per day of moderate to vigorous physical activity for children 5 to 18 years of age to keep healthy. Outdoor activity, such as walking, running, skating and bike riding can contribute to children's health, as well as their development of physical, practical, emotional and social skills.

There is consistent evidence that the presence of footpaths, shared paths and bike paths are associated with active travel across all age groups. There is strong evidence of an association with the presence of footpaths and shared paths and adults undertaking more exercise.

LITHGOW IS BLESSED WITH MANY BEAUTIFUL AND WELL LOCATED NATURAL ASSETS AND IS ALSO WELL SERVICED WITH SPORTING FIELDS. IN ADDITION TO THESE OPPORTUNITIES, IT WOULD APPEAR THERE IS A STRONG DESIRE ON THE PART OF THE COMMUNITY TO UTILISE THESE ENVIRONMENTAL ASSETS AND TO EMBRACE HEALTHY LIFESTYLES

3.3 ACHIEVING SAFER CONDITIONS

Pedestrians and cyclists are considered 'at risk road users' due to their lack of protection against motor vehicles in the event of a crash. It is important for road safety reasons that facilities are available for pedestrians and cyclists that minimise their exposure to potential conflict with motor vehicles.

Evidence indicates that connected street networks that are perceived as safe by users facilitate active walking for transport for all age groups. Real and perceived traffic-related safety has been associated with walking for transport in children and older adults. Connected active transport networks have been shown to be associated with more walking in older adults and children, but only when traffic-related issues are managed and the local streets are perceived to be safe.

Increasing the visibility of pedestrian and cycling paths throughout the Lithgow LGA will help to encourage the use of these facilities and improve the quality of life of local community members. Older adults, particularly women, are more fearful and more vulnerable to crime, thus the design and location of active transport facilities to achieve good levels of perceived / actual safety is important to avoid people constraining their behaviour.

Evidence indicates that Crime Prevention Through Environmental Design (CPTED) elements such as good street lighting, neighbourhood upkeep, and less physical incivilities (e.g. litter, graffiti and vandalism) and street features that promote safety from crime (e.g. front verandas and neighbourhood maintenance) can encourage walking. The design of commercial buildings and their relation to the street also has the potential to increase natural surveillance which improves safety and feelings of safety. Providing safe, well-lit building entrances that face the street and are directly accessible from the street, footpath, car parks and public transport stops has been shown to encourage active modes of transport to and from the building.

3.4 SOCIAL BENEFITS

Active transport, particularly walking, is one of the most socially inclusive modes of transport. It provides opportunities to socialise with friends and neighbours and creates a safer, friendlier and more connected community. Benefits include:



- Encouraging family and community connectedness.
- Improving social skills and networks.
- Reducing isolation and loneliness.
- Enhancing self-esteem and confidence.
- Prolonging independent living for older people in the community.

Evidence suggests that active transport infrastructure, particularly footpaths around local shops and community facilities, are important for encouraging social interaction and social capital. Such facilities provide casual and chance interactions with other members of the community as well as providing places for people to meet friends and family and engage in social activities.

3.5 ECONOMIC BENEFITS

Walking and cycling provides a convenient and cost-effective form of transport, physical activity and entertainment. Local businesses can experience economic improvement when people use local shops as part of their active travel routine. Good pedestrian and cycling facilities that create safe, attractive and interesting experiences have been shown to attract visitors, lengthen visitor stays and therefore support the tourism and retail sector.

Businesses or workplaces that encourage staff to walk or cycle to work can benefit from a workforce that is less stressed and more productive as a result of improved fitness and mental resilience.

Town centres are important in creating local community focal points that helps build social interaction and social capital. Main-streets that are attractive and active places have been shown to have increased retail rental values, increased sale prices of nearby homes, increased business generation and stimulation of the local economy. Walkability of town centres is a key ingredient for 'place makers' and businesses seeking to increase visitations, revenue and market share.

3.6 LAND-USE PLANNING

A growing body of evidence suggests the way we design and build our neighbourhoods and communities, affects resident's social connections, sense of community and social capital and thus their use of active transport facilities.

A connected street network that is legible and permeable enables more movement choices around town. This encourages more pedestrian activity and bike riding, allowing for more interactions between residents, which in turn increases ones sense of community in the place.

Neighbourhood 'walkability' (a combination of residential density, mixed-use planning and street connectivity) is consistently associated with walking for transport and general walking.

Shorter travel distances between land-uses can enable easy access to facilities and services for all people, including the very young, older persons and people with a disability, which can reduce social isolation for these groups. For example, living within close proximity (400-800m) of a mix of destinations is associated with higher levels of active travel across all age groups.

In terms of active transport behaviours, increased connectivity reduces the distances between origins and destinations and provides a range of routes to choose from, increasing the likelihood of walking and cycling between locations.

Traditionally designed neighbourhoods tend to have a grid-style layout with few barriers to direct travel, resulting in high levels of connectivity and a choice of routes. In contrast, more modern / conventional neighbourhoods are developed around a network of hierarchical roads, which often result in creating low levels of connectivity. Residents have little or no choice of route, as often there is only one road in and out of the development, and the indirect curvilinear streets increase walking distances between destinations thereby discouraging active movement.

Finding the right balance between the planning of new roads, lot layouts, open spaces and active transport routes is a key challenge for Council land-use planners. A review of the walking and cycling conditions in existing urban areas is also important and may provide opportunities for the review of other land-use / transport policies, particularly the over use of cul-de-sacs that can result in a disconnected street system and general lack of active travel facilities in new residential estates.



“COMMUNITY FEEDBACK ON THE DRAFT ACTIVE TRANSPORT PLAN WILL INFORM THE FINAL STRATEGY AND HELP DEVELOP AN ACTION PLAN FOR FUTURE COUNCIL PROJECTS”

04

APPROACH + METHODOLOGY

The focus of the Lithgow Active Transport Plan is on the use of active transport to access jobs, education, recreational areas, services and social opportunities in the Lithgow Local Government Area. The approach is to develop new Active Transport Plans for Capertee, Cullen Bullen, Lithgow, Portland, Rydal, Tarana and Wallerawang that builds upon existing infrastructure and addresses the key issues and aspirations identified by the community consultation and audits. To achieve this approach, the Lithgow Active Transport Plan is being undertaken in the following stages.

STAGE 1 - PRELIMINARY STAKEHOLDER ENGAGEMENT

Throughout April 2019, preliminary consultation was undertaken to gain insight on walking and cycling conditions and opportunities in Lithgow LGA. The preliminary engagement phase included visits to Capertee, Cullen Bullen, Lithgow, Portland, Rydal, Tarana and Wallerawang to speak with locals and learn more about the conditions, issues and aspirations in each community. An Active Transport Plan Survey was also circulated in the community to obtain information on the behaviours and attitudes of locals towards walking and cycling.

STAGE 2 - PUBLIC EXHIBITION

A draft Lithgow Active Transport Plan has been prepared to explain the approach to improving the active transport network, review best practice, and analyse the existing pedestrian and cycling network. It showcases new active transport plans for Capertee, Cullen Bullen, Lithgow, Portland, Rydal, Tarana and Wallerawang. These plans visualise the additional facilities required to achieve a more connected movement network.

STAGE 3 – FINALISATION

Upon completion of the public exhibition and engagement phase, the finalised draft Transport Plan will be reported to Council for adoption. The finalised plans will include a programme of the infrastructure projects to be undertaken by Council and a matrix table of projects to provide full visibility on how priorities and actions were decided. Concept designs and cost estimates for each priority project will be included in the final plan to facilitate more detailed engineering designs and funding applications.

05

REGIONAL + LOCAL PROFILE

This section examines the Lithgow LGA and wider regional context, which is important in achieving realistic, achievable and well-supported active transport improvements in the area.

5.1 CENTRAL WEST NSW REGION

Lithgow is situated in the Central West Region of NSW, which is located directly west of the Blue Mountains and only two hours drive from Sydney CBD. Located at the eastern boundary of the region, Lithgow is the gateway linking the Sydney Metropolitan Area to Central NSW.

The Central West Region covers an area of 63,000 square kilometres and is home to more than 177,000 people within the 11 LGAs of Bathurst, Blayney, Cabonne, Cowra, Forbes, Lachlan, Lithgow, Oberon, Orange, Parkes and Weddin.

Much of the region's economic activity is from mining, power generation, agriculture, tourism, forestry and services.

5.2 LITHGOW LOCAL GOVERNMENT AREA

The Lithgow LGA covers approximately 4,551 square kilometres. It is located on the western side of the Blue Mountains and is bordered by six LGAs - Bathurst Regional Council to the west, Mid-Western Regional Council to the north-west, Singleton Council to the north-east, City of Hawkesbury in the east, City of Blue Mountains to the south-east and Oberon Shire in the south-west. Lithgow LGA extends from Dargan and Little Hartley in the east, to Hampton and the Kanimbla Valley in the south, Tarana and Meadow Flat in the west and Capertee in the north.

Lithgow LGA is best known for its rich industrial and mining heritage, its spectacular natural environment (national parks, forests and rolling rural landscapes) and the Zig Zag Railway.

Lithgow LGA has a population over 21,000 people. Most residents (approximately 13,000 people) live in Lithgow, while around 2,000 people live in both Wallerawang and Portland, and a further 4,000 in numerous villages, hamlets and rural areas.

Major industries include coal mining, power generation, farming, forestry and tourism. Lithgow LGA's Gross Regional Product was \$1,267M, as of the 30th June 2018.

Lithgow is located at the crossroads of four major roads - the Great Western Highway, Castlereagh Highway, Bells Line of Road and Jenolan Caves Road. The towns of Wallerawang and Portland are located 14 kilometres and 25 kilometres respectively, north-west of Lithgow, and lie in the area between the Castlereagh and Great Western Highways. The upgrading of the Great Western Highway and Bells Line of Road is reducing travel times between Sydney and Lithgow LGA.

Lithgow forms the western edge of the CityRail network and is a terminal for Countrylink train and coach services. CityRail trains regularly connect Lithgow to Sydney's Central Railway Station, with a standard trip taking just under three hours. The daily "Bathurst Bullet" express train service and XPT provide quicker links to Sydney.



Photo: sourced from Lithgow Shire Council Website



5.3 CAPERTEE

Capertee (population 145) is located 45 kilometres north of Lithgow and is the northern gateway to the Capertee and Turon Valleys. Capertee serves as a rest stop on the Castlereagh Highway for travellers, and visitors to stock-up on fuel, food and other supplies.

Capertee has a public school, police station, historic hotel, a general store-café-petrol station, craft outlet as well as a highway rest area / park.

Clarence Pirie Park acts the focal highway rest-point, with ample parking, picnic and playground facilities, toilets and wayfinding signage / directory.

Residential settlement is divided east and west of the Castlereagh Highway, with a slightly higher density of housing observed along the elevated eastern areas, and larger residential housing in the lower forested areas to the south-west.

Bus services connect Capertee to Lithgow.



5.4 CULLEN BULLEN

Cullen Bullen (population 279) is located 28 kilometres north of Lithgow.

The village is sustained by local mines and the Mount Piper Power Station as well as tourist traffic. Modern Cullen Bullen no longer supports any higher order commercial uses, with closure of the hotel and shops in recent years. The town acts as a residential satellite settlement, with residents either retired or working in the wider region. As a result Cullen Bullen has a quiet tranquil atmosphere, set against a beautiful bushland landscape (Ben Bullen and White Walls Caves) to the east.

The Cullen Bullen Raceway brings visitors from Lithgow and the wider region when events are held. The Raceway is operated by the Portland District Motor Sports Club, with the club generally holding eight open events per year. These events are held Saturday nights and attract 40-50 competitors and hundreds of spectators, with competitors coming from throughout NSW and the ACT. The Raceway also hosts one or more State title events each year.

Bus services connect Cullen Bullen to Lithgow.



5.5 LITHGOW

With a population of over 13,000 residents, Lithgow is the administrative, retail and commercial heart of the LGA and provides sub-regional services to an even wider region that includes residents from Blackheath, Mt Victoria and Katoomba, as well as Bathurst, Oberon and Mudgee.

Lithgow is an important highway service centre, providing travellers along the Great Western Highway, Bells Line of Road and the Castlereagh Highway with fuel, food and a rest break.

Lithgow has a rich rail, mining and industrial heritage. The area was first settled in the 1820's, with strong growth occurring as a result of the gold rushes of the 1850's. The opening of the Zig Zag Railway in 1869 resulted in the rapid expansion of the coal industry and the beginnings of a manufacturing base in Lithgow. A blast furnace, for smelting copper and iron was established in 1874, followed by the Lithgow Pottery Works in 1878. In 1912 the Small Arms Factory was established, with the factory substantially expanded in 1939 which, at its peak during World War 2, employed around 6,000 people.

Lithgow's rail, mining and industrial heritage provides the town with a significant point of difference to other localities in the Blue Mountains and Central NSW regions. This heritage has been captured in part through a number of the town's main attractions, such as the Visitor Centre and the Zig Zag Railway.

Sport continues to be a strong part of community life in Lithgow. The City has a range of quality sporting venues some of which have the capacity to accommodate regional, State and / or National events. The Lithgow Showground – Tony Luchetti Sports Ground is one of the premier venues in the outer Sydney Region and Central NSW, with the Showground being able to accommodate a range of large indoor and outdoor events.

The ability to access Lithgow via the CityRail network is a significant advantage and increases the capability of the city to host major events, festivals, employment generating industries and population growth.

Lithgow is a hub for local and regional bus services (Countrylink and school buses) that connects to numerous towns, villages and settlements in the area.



5.6 PORTLAND

Portland (population 2,464) is located 27 kilometres north-west of Lithgow. There are a number of roads that feed into Portland, with the town easily accessible from the Great Western Highway and Castlereagh Highway via local roads. Portland is located within close proximity to three State Forests – Sunny Corner, Ben Bullen and Falnash. There is a network of local / forest roads extending west and north-west from Portland, into the Turon Valley.

Portland developed initially as a lime producing area, with the first lime kilns established in 1863. The railway line came to Portland in 1883 which resulted in the expansion of the lime industry. Cement production began in 1889, with the Portland Cement Works established in 1902. The town developed around the cement works, with the owner of the works providing a range of services and infrastructure for the growing town. The industry continued to operate until 1991 and earned Portland the reputation of being the ‘Town that Built Sydney’.

Today, the buildings and the quarry lakes of the old Cement Works are an icon for the town and an intrinsic part of the heritage and fabric of the area. The Portland Cement Works are listed on the NSW Heritage Register as an item of State Significance. A Masterplan for the redevelopment of the cement works site has been lodged with Council, which proposes a mixed-use development that retains and reuses a number of the historic buildings in conjunction with new roads and paths linking to key attractors in town.

Portland remains a strong and vibrant community that accommodates a range of businesses, attractions and interests for residents and visitors. Portland has a distinct central business district, largely focused around Williwa Street, with residential, community facilities and recreational open spaces located predominantly to the south and east.

Community based facilities in the town include Kremer Park (Showground), Portland Golf Club (18 hole course), Olympic Swimming Pool, skate park, tennis courts, playing fields and recreation reserves. Saville Park is located adjacent to the shopping centre, providing opportunities for markets and other events. The Portland Common (approximately 300 hectares) along the western edge of the town is popular for bushwalking. It provides an off-road link between town and Sunny Corner State Forest.

The area around Portland is popular with 4WD clubs for driver training, meetings and recreation. The Motor Sports Complex in Portland provides opportunities for meetings and driver training that appeals to a wide regional market.

Bus services connect Portland to Lithgow and Bathurst.



5.7 RYDAL

Rydal is a small historic village located 22 kilometres west of Lithgow. Rydal was a boom town in the 1870's when it was the last stop on the Main Western Railway line, with passengers having to transfer to Cobb & Co coach to travel further west. The town was first proclaimed in 1843 and named after the home town of the Poet William Wordsworth, famous for his poem, the Daffodils. Today the village has around 40 dwellings, with higher order land-uses limited to the Alexander Hotel (accommodation, bar, cafe, dining room), Rydal Showground, Rydal Mount Conference Centre and the Greg Featherstone and Pioneer Parks. The Showground is a significant asset, with the venue used for small exhibitions, swap meets, event staging, rallies and camping for groups. The Showground is also a designated camp-site on the Bicentennial Trail.

Rydal is known for its annual 'Daffodils at Rydal' event and regular Mountain Bike events. The Central Tableland Mountain Bike Club is developing a network of trails in the Lidsdale State Forest, with facilities at Rydal considered ideal for hosting a range of MTB events. Bus services connect Rydal to Lithgow and Bathurst.



5.8 TARANA

Tarana is a small village on the western edge of Lithgow LGA, approximately 30 kilometres west of Lithgow, 40 kilometres east of Bathurst and 25 kilometres north of Oberon. Tarana is located at the junction of the Main Western Railway line and the Oberon Branch line. The Oberon Branch line was closed in 1979 and has since been leased to the Oberon Tarana Heritage Railway Inc group.

Tarana is known for its Hotel, with the hotel being popular with the drive and motorcycle touring markets. Evans Crown Nature Reserve also attracts bushwalkers and birdwatchers, with the reserve being a bird 'hot spot' and known for its wedge tail eagles.

The Oberon Tarana Heritage Railway Inc group is restoring the line and proposing to operate a 'tourist' train between Oberon and Tarana. The Pioneer Rail Trail is also being developed within the rail corridor, with the first six kilometres of trail completed from Oberon to Hazelgrove. When completed, these projects will increase visitation to Tarana, and strengthen walking and cycling activity and tourism in the area. Bus services connect Tarana to Lithgow, Oberon and Bathurst.



5.9 WALLERAWANG

Wallerawang is located 15 kilometres north-west of Lithgow and is accessed from both the Great Western Highway and Castlereagh Highway.

Wallerawang dates from 1870 when the western rail-line terminated at Wallerawang. The development of the Wallerawang Power Station in the 1950s stimulated growth, with the town having become a desirable place to live since the construction of Lake Wallace in the late 1970s.

Wallerawang has a small town centre, with a single strip of shops along Main Street opposite the railway line. Wallerawang serves as a local centre, with an additional role serving nearby employment generating industries. Businesses include pubs, a newsagent / small supermarket, hair dresser, Chinese restaurant, antique store, doctor's surgery, post office, butchers and bakery. There is a branch library in the centre of Wallerawang. The old Wallerawang railway station has been redeveloped to include a café, lolly shop, florist and giftware / arts and crafts store.

Accommodation includes quality motel and cabin accommodation and two historic hotels. The Black Gold complex is a quality adaptive re-use of the historic primary school. It provides a mix of motel and self-contained cabins, restaurant and conference centre.

The town's sporting facilities include a two court indoor stadium, lawn bowls and the Wallerawang Oval (playing field and grandstand), plus a sailing club, boat club and baseball diamond at Lake Wallace.

Federation Park runs along the railway-line from the Station through to the southern end of Main Street. The park is a narrow strip of land, with picnic tables and playground facilities. There is a 12-panel information directory in the Park, with three of the panels providing information on the history of the town, and three with information provided by Delta Electricity on power generation, the Energy Expo and Lake Wallace.

A bus service connects Wallerawang with Lithgow and Bathurst.



5.10 REGIONAL ATTRACTIONS

There are a number of iconic / high profile attractions in the Lithgow LGA, with some of the biggest attractors in the area listed below:

5.10.1 BLUE MOUNTAINS / NEWNES PLATEAU

The Blue Mountains is one of the three most visited locations in NSW. While visitations are concentrated in the Upper Mountains, the Lithgow area provides access to the northern extension of the Blue Mountains Range, known as the Newnes Plateau.

The Newnes Plateau covers an area of approximately 22,000 hectares. The area is characterised by the flat to gently undulating sandstone plateau surface dissected by steep narrow valleys. The Newnes State Forest occupies the south western area of the Plateau and adjoins the Wollemi National Park to the east and north and the Garden of Stone National Park to the north-west. Access to the Plateau is via the Old Bells Line of Road off the Bells Line of Road at Clarence and State Mine Gully Road from Lithgow. The majority of visitors enter and exit the area via Clarence. The Newnes Plateau (Glow Worm Tunnel drive) is one of the Discovery Trails included in the Greater Blue Mountains Drive.

The small hamlets of Clarence and Dargan are located off the Bells Line of Road on the southern edge of the Plateau. Clarence and Dargan are small acre subdivisions, with no facilities or services. The top points and main infrastructure for the Zig Zag Railway is located at Clarence adjacent to the Old Bells Line of Road access point. Toilets and a kiosk are available to Zig Zag patrons when the Railway is operating.

The Lower Blue Mountains Motorcycle Club has a moto-cross complex (Happy Valley Springs) on the Plateau, with the complex accessed via Old Bells Line of Road. The complex has senior and junior tracks, toilets, showers and a canteen. The tracks are open to Club members on official riding days (generally 1-2 weekends per month).

5.10.2 JENOLAN CAVES / HAMPTON CORRIDOR

Jenolan Caves are located just south of Lithgow LGA in Oberon Shire, which attracts in the order of 200,000 – 250,000 visitors per year. The majority of visitors access the caves via Jenolan Caves Road, which intersects with the Great Western Highway at Hartley. Hampton is located on the Jenolan

Caves Road, approximately half-way between Hartley and Jenolan Caves. The Hampton Hotel provides food and accommodation services.

5.10.3 THE TABLELANDS

The Tablelands area forms the south-western corner of Lithgow LGA. The Tablelands scenery is very different to that of the valleys within Lithgow LGA, and is very popular for drive and motor-cycle based touring.

5.10.4 THE KANIMBLA VALLEY

The Kanimbla Valley lies along the lower reaches of the Coxs River and forms the south-eastern corner of Lithgow LGA. The valley can be accessed through the Hartley Valley via Coxs Road then Blackheath Creek Road or from Blackheath via Shipley Road. The valley is a mix of rural holdings and native bushland, and is renowned for its rural accommodation services (B&B and rural cottages). Activities undertaken in the area include bushwalking, bird-watching, horse-riding, 4WD, MTB, camping and fishing in the Cox's River. The Six Foot Track is located along the southern end of the valley.

5.10.5 HARTLEY VALLEY

The Hartley Valley lies between Hassans Walls and the Mount Victoria area, and is the northern-most valley within the larger Kanimbla Valley. Settlement in the area dates back to early colonial times, with the area opened up by the development of Cox's Road in 1814. Today there are three settlements in the valley – Hartley, Little Hartley and Hartley Vale. Hartley and Little Hartley are located on the Great Western Highway and are popular with Highway travellers. Hartley Vale is located approximately four kilometres north of the highway via local roads.

The Hartley Historic Site (managed by the NPWS) is open daily and receives between 30,000 and 100,000 visitors each year. The site is popular with coach tour groups and school excursions.

5.10.6 LAKE LYELL

Lake Lyell is located on the Cox's River, approximately 10 kilometres south-west of Lithgow.

The Lake Lyell Precinct incorporates the visual catchment of the Lake, as defined by the ridgelines that surround the valley and the view-shed as seen from the Sodwalls and Sir Thomas Mitchell Roads.



Lake Lyell is owned by Energy Australia, with Council leasing and operating the area along the western shore as a Recreation Reserve. The Reserve has a small caravan park – camping area plus day-use picnic facilities, boat ramps and a small jetty. The remainder of the land around the Lake is privately owned. Three upmarket retreats (Eagle View, Seclusions and SpaRadise) have been established on the ridge lines overlooking the Lake.

The Sodwalls Road is a very popular touring route for car and motor-cycle touring.

5.10.7 THE TURON

Turon National Park is accessed via the Lochaber Road from Capertee Village, with the road being 2WD to the edge of the Park and then 4WD within the Park. From the south, the Park can be accessed via fire trails through the Sunny Corner State Forest, with these trails linking back to Sunny Corner and the Portland area. Directional signage to the Park is not provided on Lochaber Road or on the Sunny Corner Forest roads and 4WD trails. Facilities within the Park are basic and include two small camping areas that have picnic, wood BBQ and pit toilets, and a number of small picnic areas. There are a number of commercial tour operators licensed to operate in the Park.

5.10.8 CAPERTEE VALLEY

The Capertee Valley is located to the north of the Wolgan Valley, approximately 45 kilometres north of Lithgow.

The Capertee Valley is the ‘widest enclosed valley’ in the world and rivals the Grand Canyon in the USA in size. The valley is included on lists of the Top 50 bird sites in the world and Top 10 bird sites in Australia. The scenery is superb with features of the Valley including the sheer cliffs and sandstone escarpments, mesas and buttes resulting from volcanic intrusions and the rich fertile river plains which is used for a range of agricultural activities. The Valley is surrounded by three National Parks (Wollemi, Gardens of Stone, Capertee) and the Muggi Murum-ban State Conservation Area.

5.10.9 WOLGAN VALLEY

The Wolgan Valley is the next valley north of Lithgow. The Valley is home to two high profile tourist destinations, the Wolgan Valley Resort and Spa and the historic Newnes area. The ‘six star’ Wolgan Valley Resort is one of Australia’s top luxury resorts and the first resort in the world to achieve carbonZero™ accreditation.



“PROVIDING PHYSICAL ACCESS TO BUSINESSES BENEFITS NOT ONLY PEOPLE WITH DISABILITY, BUT OLDER PEOPLE, PARENTS WITH PRAMS AND BUSINESS OWNERS BY EXPANDING THEIR BUSINESS REACH”

LITHGOW DIAP”

06

IMPLEMENTING THE ACTIVE TRANSPORT NETWORK

This section provides background on the various strategies, guidelines, policies and terms that are considered relevant to the preparation of the Lithgow Active Transport Plan. The review of supportive documents serves the following purposes:

- To ensure the strategy aligns with regional, state and national policy directions, and the wider context of transport and land-use planning policy directions.
- To help understand the correct methodology and approach when preparing the strategy.
- To understand the projects, links and network connections being planned in adjoining local government areas that might benefit the strategy.
- To help identify any deficiencies within the current network and existing policies that may hinder ongoing success.

6.1 INTERNATIONAL POLICIES

Interest in active movement is World-wide and a review of mainstream reports, strategies and policies has been undertaken to support the development of the Lithgow Active Transport Plan.

The World Health Organisation (WHO) is a leader in road safety, particular relating to pedestrians. The WHO advise that globally, pedestrians constitute 22% of all road traffic fatalities, and in some countries this proportion is as high as two thirds of all road traffic deaths. Millions of pedestrians are non-fatally injured – some of whom are left with permanent disabilities. In response to this global problem, the WHO have published two major policies:

- Pedestrian safety: a road safety manual for decision-makers and practitioners 2013
- Make Walking Safe: a brief overview of pedestrian safety around the world 2015

WHO also publishes a regular Global Status Report on road safety, with the latest version published in 2018.

The Union Cyclist Internationale (UCI) is the world governing body for the sport of cycling. The UCI is committed to leading the development of cycling as a competitive sport and activity in all its forms across the world. There are many other international organisations and events that promote

pedestrian and cycling throughout the world. Across these organisations and governments, there is consistent understanding that the lack of safety in traffic is the main reason given by most people in developed countries for not wanting to participate in pedestrian and cycling activity.

6.2 National and State policies

The Australian Federal government continues to work with stakeholders to develop / refine policy relating to road safety and efficiency, pedestrian and cycling safety awareness and road design standards. The following policies are particularly important:

- Australian Pedestrian Charter 1999
- National Cycling Strategy 2011-2016
- National Road Safety Strategy 2011-2020
- National Road Safety Strategy 2011-2020 Implementation status report

The NSW Government has a State Plan 2021 and the following policies influence State and local government policy on active travel:

- NSW Road Safety Strategy 2012-21
- Central West Regional Transport Plan 2013 and 2014-15 update
- It's a two-way street campaign

State and Federal governments have also helped produce a number of technical guidelines:

- Austroads, Cycling Aspects of Austroads Guides 2014
- Austroads, The Guide to Traffic Engineering Practice Part 13: Pedestrians, Part 14: Bicycles
- Australian Standards 1428 – Design for Access and Mobility
- Planning Guidelines for Walking and Cycling 2004
- Planning and design guidelines on designing places for active living
- Healthy Spaces and Places: A National Guide
- Planning for Healthy Urban Environments

- Promoting Active Transport: An Intervention Portfolio to Increase Physical Activity as a means of Transport
- Bicycle Guidelines - How to Prepare A Bikeplan
- How to Prepare a Pedestrian Access & Mobility Plan
- Producing and Using Transport and Access Guides

6.3 Local Level policies

Lithgow City Council has developed the following documents to guide its planning, development and maintenance of the active transport network:

- Lithgow Bike Plan 1998
- Lithgow Pedestrian Access Mobility Plan 2014
- Lithgow Disability Inclusion Access Plan 2017

The draft Lithgow Active Transport Plan represents Council's new strategy approach for improvements to the pedestrian and cycling network.

The Lithgow Community Strategic Plan 2030 is also an important guiding document for the community, setting out the vision for the strategic direction of the Lithgow Local Government Area.



07

IDENTIFYING PEDESTRIAN AND CYCLIST NEEDS

The needs of pedestrians and cyclists are not all the same. The following provides some insights into the different needs of pedestrians and cyclists, which must be considered when preparing a new Active Transport Plan for the Lithgow Local Government Area.

7.1 PEDESTRIAN NEEDS

Everyone is a pedestrian, be it walking 30 metres from the car to a place of work, walking to school or the shops, using wheeled devices on footpaths or walking and running for fitness. In the Lithgow LGA context the main pedestrian groups are as follows:

- **Commuters** – this group comprises adults and secondary age students who use the footpath network mainly as a mode of transport for journeys to and from a workplace, school or TAFE. They prefer the fastest safe route between their origin and destination and are generally more skilled and experienced. On-road lanes and footpaths are suitable for commuters.
- **Utility / shopping** – trips are generated for specific purposes, such as running errands, shopping, visiting friends, local destinations and points of interest. Local trips are often short length trips and can be unpredictable. Users may be constrained by time and vary widely in skill and experience. They prefer footpaths, shared paths, low volume roads, minimal gradients and a high degree of safety and personal security.
- **Secondary / tertiary school students** – older students have similar characteristics as commuters and utility / shopping users. Footpaths, on-road lanes and shared paths are suitable for older students.
- **Infants / primary school students** – infant and primary school aged pedestrians have undeveloped cognitive skills, lack good peripheral vision and have little knowledge of road traffic rules. They require adult supervision and / or off-road paths and facilities. Road crossing points must be carefully designed to give greater visibility / priority to children.
- **Fitness** – sports people use the road environment for fitness and training purposes and to access sporting events. They often travel alone or in small groups - seeking long distances for training purposes which can take them onto shared paths and busier roads. Fitness pedestrians prefer footpaths and shared paths but will use any path or the road / road shoulder if necessary.

7.2 CYCLIST NEEDS

There are a range of cyclists who need to access different parts of Lithgow LGA on their bicycles for recreational, educational, shopping, commuting and other purposes.

Cyclists are considered ‘at risk road users’ due to the severe outcomes that can occur when a rider crashes their bike or when they come into conflict with motor vehicles. Most cyclists are very aware of their vulnerability on the road network and use safety lights, helmets and high visibility gear when riding.

In the Lithgow LGA context there are different cyclist groups as follows:

- **Commuters** – this group comprises predominantly adults who use the road to cycle to work. They prefer the fastest safe route between their origin and destination and are generally more skilled and experienced. On-road lanes and shared paths are suitable for commuter cyclists.
- **Utility / shopping** – a small percentage of residents use a bicycle to run errands, shopping, visiting friends, local destinations and points of interest. Local trips may be ‘spare-of-the-moment’ decisions, where a bicycle is used to visit the shops for last minute supplies. Users may be constrained by time and vary widely in skill and experience. They may use footpaths, shared paths and roads to access their destination.
- **Secondary / tertiary school students** – older students in the local context are tending to avoid using bicycles, other than to access sports, recreational facilities such as parks and pools, and to visit friends.
- **Infants / primary school students** – infant and primary school aged pedestrians have undeveloped cognitive skills, lack good peripheral vision, and have little knowledge of road traffic rules. They require adult supervision and / or off-road paths and facilities.
- **Fitness** – A number of adults use road bikes, touring bikes and MTB bikes for fitness and recreation. Road and touring cyclists often travel in small groups or larger bunch rides seeking long distances for training / exploring purposes, which can take them onto busier roads. MTB and other off-road riders travel individually or in small groups and seek quieter roads and off-road trails.



7.3 ACCESS IMPAIRED NEEDS

Disability is an issue that affects a significant proportion of the population. The ABS Survey of Disability, Ageing and Carers (conducted since 1981, with latest survey results reported 2018) shows that a large proportion of Australians (approximately 19%) have a long-term disability that restricts their everyday activities.

Planning for the transport needs of disabled persons presents its own unique challenges, with a person in a wheelchair requiring different assistance to negotiate the movement network than a person who is sight impaired. Motorised scooter usage is a growth industry and there is a need to review current and future innovations in these mobility devices to ensure infrastructure improvements are aligned with technology. Access impaired persons also appreciate end of trip facilities, such as parking facilities, water points and toilets.

A key focus of the Lithgow Active Transport Plan should be to provide mobility and access facilities for disabled and older persons in our community, particularly in high activity areas such as the central business districts of main towns.



7.4 NEEDS OF YOUTH

Young people aged 12-24 years form one of the seven mandatory target groups for social planning under the Department of Local Government Social and Community Planning and Reporting Guidelines. According to the Lithgow City Council Community Profile 2018 there are around 3,500 youth in the Lithgow LGA, which represents approximately 18% of the total population.

The Lithgow Youth Strategy and Action Plan 2015-2020 provided a comprehensive investigation of the concerns, needs and aspirations of young people in Lithgow LGA, based on surveys and discussions held around 2014-15. It showed young people were interested in Council providing adequate passive recreation infrastructure (e.g. paths, skate parks) as well as identifying funding opportunities for recreational infrastructure relevant to young people.



7.5 NEEDS OF YOUNG CHILDREN

Children are highly vulnerable road users. Infant and primary school aged children need their parents or other adult supervision when they travel on the road network, but they also need our confidence to explore their environment and learn how to do things independently.

Children can use the same facilities as adults however they are at risk when they are brought close to traffic for many reasons. Infant and primary school aged pedestrians and cyclists have undeveloped cognitive skills, lack good peripheral vision, and have little knowledge of road traffic rules. Although children may think they can handle the road network, Kidsafe NSW advises they are:

- Easily distracted and focus only on one aspect of what is happening.
- They are smaller and harder for drivers to see, and less predictable than other pedestrians.
- Cannot accurately judge the speed and distance of moving vehicles.
- Cannot accurately predict the direction that sounds are coming from.
- Unable to cope with sudden changes in traffic conditions.
- Do not understand abstract ideas, such as road safety.
- They may lack the ability to distinguish between safe and unsafe crossing gaps and sites, putting them at risk as they cross the road.
- They may lack understanding of the dangers presented under different conditions, such as wet weather or darkness.

An extensive network of structured sporting activities is available to children in the Lithgow LGA that helps to keep them active and engaged. There are also a number of areas where children can go 'off-road' and explore the environment and practice skills on their own or with friends. Some of these areas have become obscured and there are inadequate cues to invite children and their parents / guardians to use these spaces as part of the active movement network.

Key objectives of the Active Transport Plan should be to highlight areas that provide opportunities for off-road play and to link these areas to residential neighbourhoods and the wider network.

“FOR CHILDREN IT IS PARTICULARLY IMPORTANT TO BE ABLE TO ACCESS RECREATIONAL ACTIVITIES (BOTH PASSIVE AND ACTIVE) WITHIN RELATIVELY CLOSE DISTANCE IN THEIR COMMUNITY” - LITHGOW SOCIAL PLAN



7.6 AGED ACCESS NEEDS

With the incidence of disability increasing with age, the rate of disability is expected to increase substantially in the Lithgow City Local Government Area over the next two decades. An aging demographic means that many people in our community will require greater assistance to move about in the future. Age is related to a variety of characteristics and skills that influence the risk of traffic injury. These age-related characteristics can also affect the way in which people of different ages interact with the movement network.

The Lithgow City Council Community Profile 2018 shows that over 7,700 people living in the LGA are aged 55 and over. Population projections included in the Lithgow Disability Inclusion Access Plan 2017, indicates the percentage of the aged 55+ in the year 2031 will be close to 45% of Lithgow's total population. The Lithgow Ageing Strategy also shows the population of Lithgow is rapidly ageing at a rate above a number of surrounding areas and the NSW average, and confirms these trends pose significant challenges for Council.

Older people are over represented in pedestrian crashes. People aged 70 years and older represent around 10% of residents in NSW, however they account for around one third of pedestrian fatalities.

Older people raised a number of concerns in the Ageing Strategy consultations and survey around pedestrian safety, including safety on footpaths and pedestrian crossings and poor access to some buildings and shops. The Ageing Strategy Action Plan makes recommendations in relation to:

- improved transport planning and provision
- improve access to public buildings and places
- enhanced pedestrian safety and amenity
- enhanced road safety of older people
- new public toilets in the Lithgow CBD

In the 2010 NSW Health Falls Prevention Baseline Survey, 26.7% of people aged 65 and older, reported limiting their walking because of fear of falling whilst walking over rough or uneven surfaces, steps or stairs. The main needs of aged persons are for level walking surfaces that are free of hazards. Aged persons also appreciate end of trip facilities, such as seating, water points and toilets.

The Publication advises Pedestrians at Traffic Light Controlled Intersections: Crossing Behaviour in the Elderly and Non-elderly advises several factors work together to increase the risk of older people at road intersections:

- Deterioration in visual acuity may have a negative impact on an older person's ability to cross the road safely.
- Reduced mobility can render older people unable to react quickly in imminent danger to avoid a crash.
- Underlying health conditions or frailty can result in greater injury severity when a crash occurs.
- Reduced speed when crossing the road can be an issue at automated signals that do not allow sufficient time for slower pedestrians to cross safely.

A key focus of the Active Transport Plan should be to provide mobility and access facilities for disabled and older persons in our community, particularly in high activity areas such as central business districts. The following measures have been adapted from the *WHO Pedestrian Safety Manual 2013* and can be implemented to improve the safety, comfort and amenity of elderly pedestrians:

- Increase the time allocated to pedestrians at signalized pedestrian crossings.
- Install high-visibility crossings and advance stop bars.
- Repair broken kerbs and pedestrian ramps.
- Replace missing and / or upgrade existing signs.
- Install pedestrian refuge islands or, preferably, raised medians.
- Narrow roadways with traffic-calming techniques.
- Raise public awareness about the safety needs of elderly pedestrians.
- Reduce legal speed limits to where necessary.
- Strengthen enforcement of laws on speed limits, and drink-driving.



08

PLANNING THE NEW ACTIVE TRANSPORT NETWORK

The planning focus of the new active transport network is to make pedestrian and cycling activities a safe, healthy and attractive travel option throughout the Lithgow LGA. To achieve this over such a vast area requires a targeted and systematic approach, based on the following principles:

- **Focusing efforts in areas of highest importance** - effective and useful planning relies on focusing effort and resources in areas that it is most needed. Lithgow City Council has limited funds for improvements and these funds need to be carefully directed towards achieving optimal outcomes. The Active Transport Plan should focus efforts on areas with high levels of pedestrian and cyclist activity as well as the desire lines of high potential and demand. Consideration should also be given to locations which may merit a review of road conditions based on a poor safety record.
- **Focusing on Potential Pedestrian and Cyclists** - it is important to consider existing pedestrians and cyclists, however, the biggest advantage in terms of increasing patronage is to target people who currently are not active pedestrians or cyclists, but who are likely to become so if conditions improve. The Active Transport Plan needs to consider ways to promote behaviour-changes that encourages new users.
- **Developing Effective Infrastructure to Improve Conditions** - the Active Transport Plan aims to develop innovative infrastructure interventions, based on the NSW guidelines and other applicable guidelines and standards. Capital delivery and ongoing maintenance needs to be undertaken to the best possible standards to ensure sound financial asset management is achieved.
- **Setting achievable targets** - funds are limited and there is a need to focus on specific actions that are achievable by Council. There is no sense in developing an action plan that proposes excessive expenditure beyond the means of the community. It is better to set targets that can be realistically achieved over the intended 10 year implementation period. Should extra funding become available and targets are met earlier, it is a relatively simple task of reviewing the action plan to set more goals and targets.

The following section explains the main principles that were considered in planning the new active transport network in the Lithgow LGA.

8.1 ADOPTING NETWORK PROVISION PRINCIPLES

There are key elements underpinning an efficient and useable active transport network, which can be best summed up in the following principles:

8.1.1 COHERENCE

Coherence refers to the extent of coverage and completeness of the facilities. Coherence can be characterised by the completeness of the network or the completeness of connecting routes. A cohesive network should be continuous and it should be clear to the user where the path leads. Clear, well-placed sign-posting and line-marking should indicate major destinations as well as the ‘serious transport intent’ of sections of road routes. The quality of network facilities should be consistent throughout the length of the route regardless of whether the facility uses a separate or shared road profile. End-of-trip facilities, such as seating, watering stations, toilets, change room facilities, bicycle racks and storage facilities should also be integrated into the cohesive network.

8.1.2 SAFETY

Perceived and actual safety is very important to pedestrians and cyclists. Pedestrians of all ages and genders need to feel that it is safe to walk, whenever they choose to do so. Route safety and security is important to pedestrians, who desire well-lit pathways and open-to-viewer routes. Road crossings present the greatest danger to pedestrians. Therefore, safe crossing locations need to be provided at regular intervals along major streets or at the location where key desire lines cross major streets. Pedestrians will rarely walk along an indirect route to access safe crossing points, so frequent crossing points must be provided.

Cyclists travel faster than pedestrians and therefore are less concerned about personal security. However, cyclists are slower and smaller than cars and trucks, making them less likely to be seen. When they do come into conflict, cyclists have little protection in a collision. On-road paths and off-road paths reduce the risk of collision with motor vehicles, but still endanger cyclists at squeeze points and intersections with roads. They can also involve potential conflict with pedestrians where

the off-road facility is a shared path. The general principles of predictability and clear priority remain important for off-road paths, including directional segregation and high visibility for all users.

8.1.3 DIRECTNESS

Pedestrians and cyclists do not like to travel out of their way to reach a destination. This is a natural response to avoid the extra effort involved in walking or riding extra distances. Paths serving desire lines between activity areas need to be direct and legible in order to provide for and encourage walking and riding trips. Wherever possible, barriers should be overcome, with slight deviations or additional safe crossing points. A careful balance must be found between providing a direct route and also one free of delays, excessive energy expenditure, or safety concerns.

8.1.4 AMENITY

People are more likely to walk or cycle in an attractive environment because it is enjoyable. Areas with high volumes of vehicular traffic, excessive noise and poor pavements may discourage walking and cycling. Urban areas should be maintained at a human scale that provides an attractive and safe environment. Pedestrian and cycling facilities should be designed to fit into the surrounding environment so that the enjoyment of the experience is enhanced. The route should be scenic, quiet, and free of heavy traffic and traffic travelling at high speeds. The best walking and cycling environments are often found along quiet rural roads, in urban parklands or residential areas that have been traffic calmed.

8.1.5 SUITABILITY FOR ALL USERS

Quality environments must be available to all who choose to use them. Paths and facilities must have appropriate gradients (including ramps) and be continuous and free of obstructions such as signage, street furniture and overhanging tree branches. The needs of hearing and vision-impaired users must be considered and provided for, especially in busy road environments where user safety can be an issue.



8.2 IDENTIFYING ACTIVITY GENERATORS

There are certain areas of the Lithgow LGA that generate significantly more pedestrian and cycling activity than other areas. Identifying activity generators is particularly important to consider in the preparation of new active transport plans. The different activity generators have been divided into four main groups and are presented in this section.

8.2.1 PRIMARY ACTIVITY AREA

The primary activity areas are the central business districts of the main towns. Due to the high levels of activity occurring within these areas, safety, amenity and suitability for all users are important design goals. End-of-trip facilities, particularly toilets, water points, seating and bicycle parking facilities should also be provided in primary activity areas.

8.2.2 SECONDARY ACTIVITY GENERATORS

These include neighbourhood shops, schools, popular sporting and recreational facilities, clubs, hospitals and community facilities such as the larger congregation churches that are not centrally located within primary activity areas. These land-uses are busy places at certain times of the day or week. Safety, connected footpath networks and end-of-trip facilities are important design goals for secondary activity generators.

8.2.3 PRIMARY ROUTES

These are routes from residential areas to the primary activity areas and secondary activity generators. They are collector level routes, which do not reach every property but instead form a network of routes that are accessible to a significant catchment of population.

8.2.4 HAZARD AREAS

Through the analysis of crash data and consultation undertaken, there are a number of areas / routes that have been noted as being potentially dangerous or particularly stressful places for pedestrian and cyclists.

8.3 ACHIEVING A CONNECTED NETWORK

New strategies and projects that connect primary and secondary attractors and residential areas through general enhancement of primary routes are key ingredients for the new Active Transport Plan.

Key elements of a connected network in the Lithgow context are:

- The network builds upon existing infrastructure, and where practical, utilises the existing road and footpath network.
- Primary activity areas and secondary activity generators will be serviced by footpaths and potentially shared paths.
- Active movement routes will follow primary routes wherever practical.
- Targeted interventions to address hazard areas will be considered.
- Links to primary routes are considered to provide an indirect means of travelling to the key attractors and generators.

In the smaller towns and villages the aim is to address hazard areas and any safety concerns and to support tourism and economic development objectives.

8.4 PROVIDING END OF TRIP FACILITIES

Public amenities can be important mid-way or end-of-trip resources for pedestrians and cyclists. They include a range of supporting infrastructure such as bicycle parking, seating / rest stops, water points, toilets, shade and signage.



8.5 IDENTIFYING APPROPRIATE PATHS

The selection of the appropriate path type treatment depends on a combination of factors, including the level of demand for the path, the conditions present in the surrounding environment (traffic speed and volume), the availability of space in which to provide the path, and whether path usage is for exclusive pedestrian or cycle use or shared use. The overall goal is to install facilities that are safe, practical and that respond to local conditions. A number of different path treatments can be applied, including:

8.5.1 FOOTPATHS

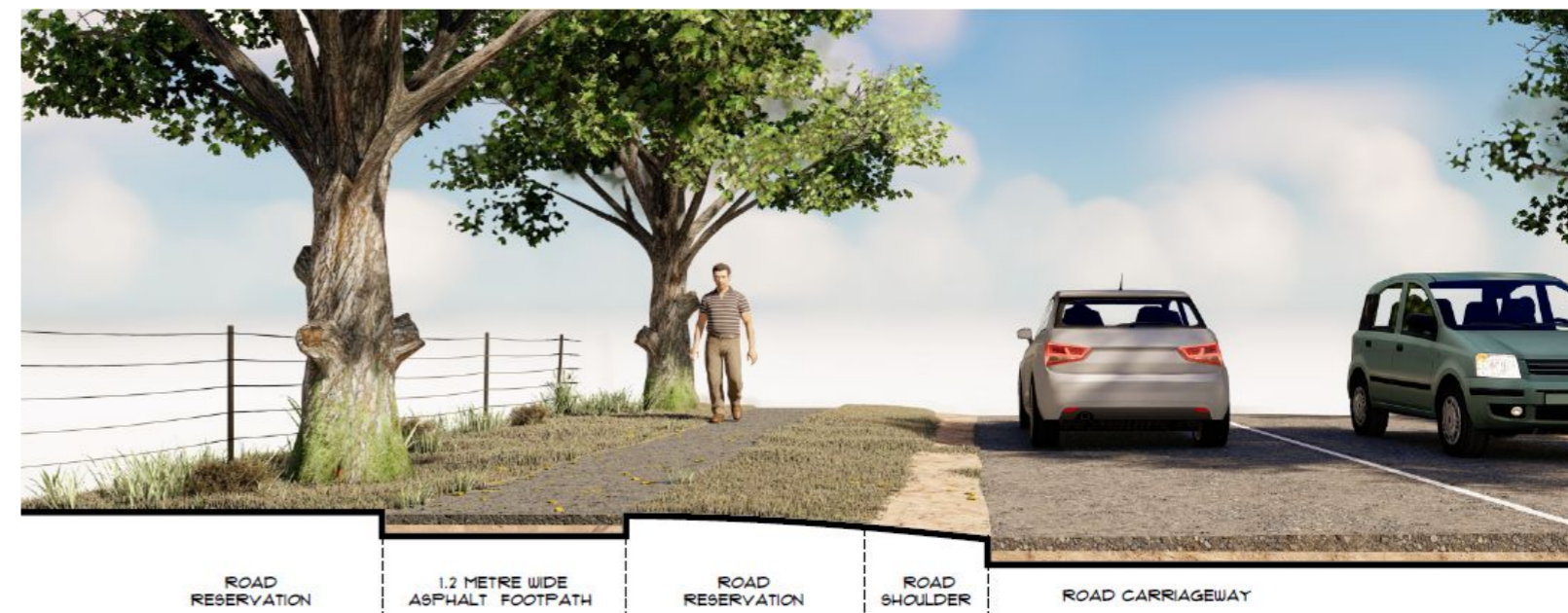
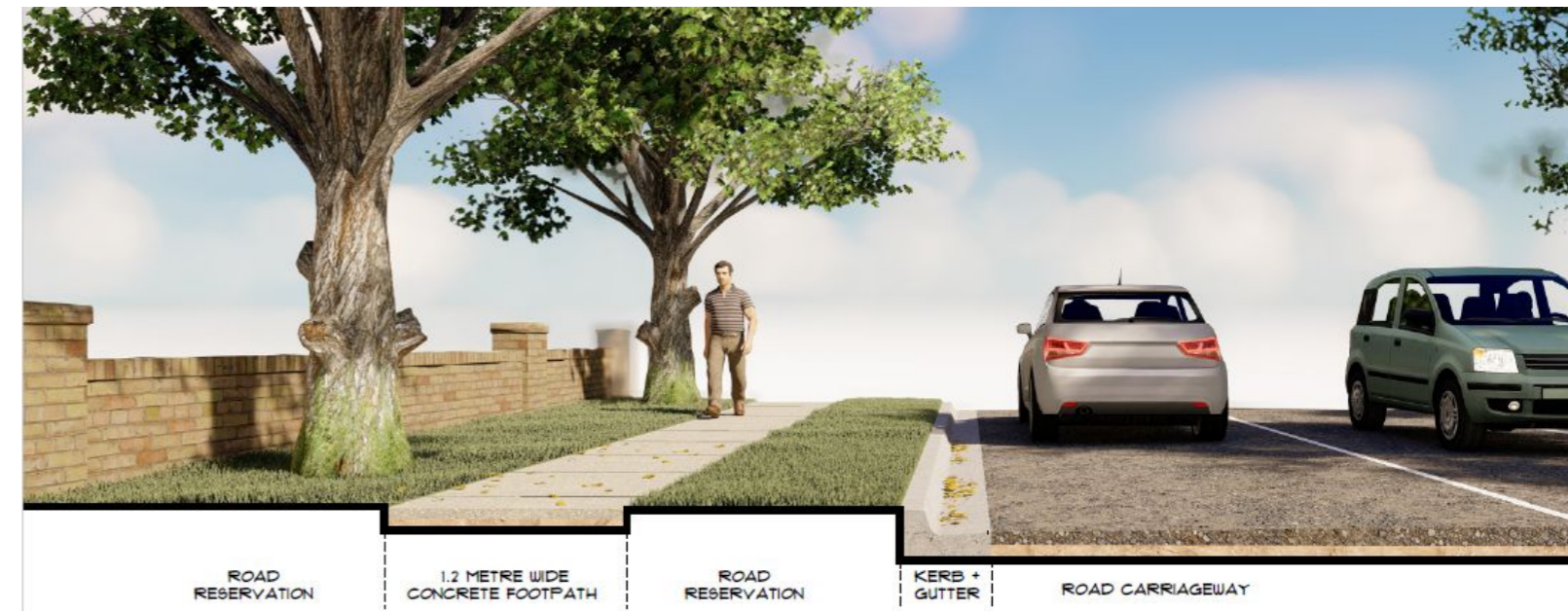
Footpaths are suitable for a wide range of pedestrian situations. Footpaths are required to be designed and built to meet minimum dimension requirements. Design elements of footpaths include width, gradient, pavement materials that are slip resistant, type of kerb and adequate setback distance of the footpath from the roadway. The Austroads Guide to Traffic Engineering Practice Part 13 – Pedestrians states that:

'The general minimum footpath width of 1.2m is adequate for most road and street situations except in commercial and shopping environments. A footpath wider than the minimum may also be necessary at locations where pedestrians gather such as at the entrance to schools and associated crossings, at recreation facilities and at important bus stops etc. In these cases a width of up to 5m may be appropriate.'

Ideally, footpaths should be free of obstructions and therefore should not include steps, stairways or obstacles that affect the safety of pedestrians. Grades of footpaths are important as they affect the usability and safety of pedestrian facilities. For example, long sections of high grade footpath can be extremely difficult for mobility impaired users to negotiate.

Pavement materials commonly used include:

- **Concrete and Asphalt** - This provides a hard surface and is generally functionally appropriate. This material is ideal where footpaths are on a gradient and exposed to water, as the texture of these surface materials are slip resistant. Most footpaths in Lithgow LGA are of these construction types. Some main street beautification works use a combination of asphalt, concrete and brick paver to provide variety and interest. Some typical examples of concrete and asphalt footpaths are shown to the right.



→ **Pavers and Bricks** - For aesthetic reasons and to add interest and variety, pavers and brick paving are often used. Pavers have been used extensively in main streets and at some other commercial and tourism destinations. When used for pedestrian paths, glazed surfaces should be avoided as they are slippery when wet. Stone path surfaces should also be avoided as they can fail flatness tests. Pavers are ideal for sight impaired pedestrians as a guidance using different pavement colours, however overuse of colours can also be confusing. A typical example of a paver / brick footpath is shown to the right.



→ **Loose surface material** - These materials such as exposed aggregate, gravel, soil, sand, grass and tanbark should be avoided along heavily used routes. They can be very difficult to walk on and make it difficult for people in wheelchairs. However, gravel surfaces may be suitable for fitness walkers and runners and MTB cyclists. A typical example of a loose surface material footpath is shown to the right.



8.5.2 SHARED PATHS

Shared use paths are a type of off-road facility that allows common use of the facility by both cyclists and pedestrians. According to the *AUSTROADS Guide*, a shared use path may be appropriate where demand exists for both a pedestrian path and a bicycle path but where the intensity of use is not expected to be sufficiently great to provide separate facilities. Shared paths are a popular response to connecting attractors and as paths in large parklands. In some situations shared paths may cause friction between pedestrians and cyclists. Displaying highly visible signs and rules applying to the proper use of share paths are important considerations when planning these paths. A typical example of a shared path is shown to the right.

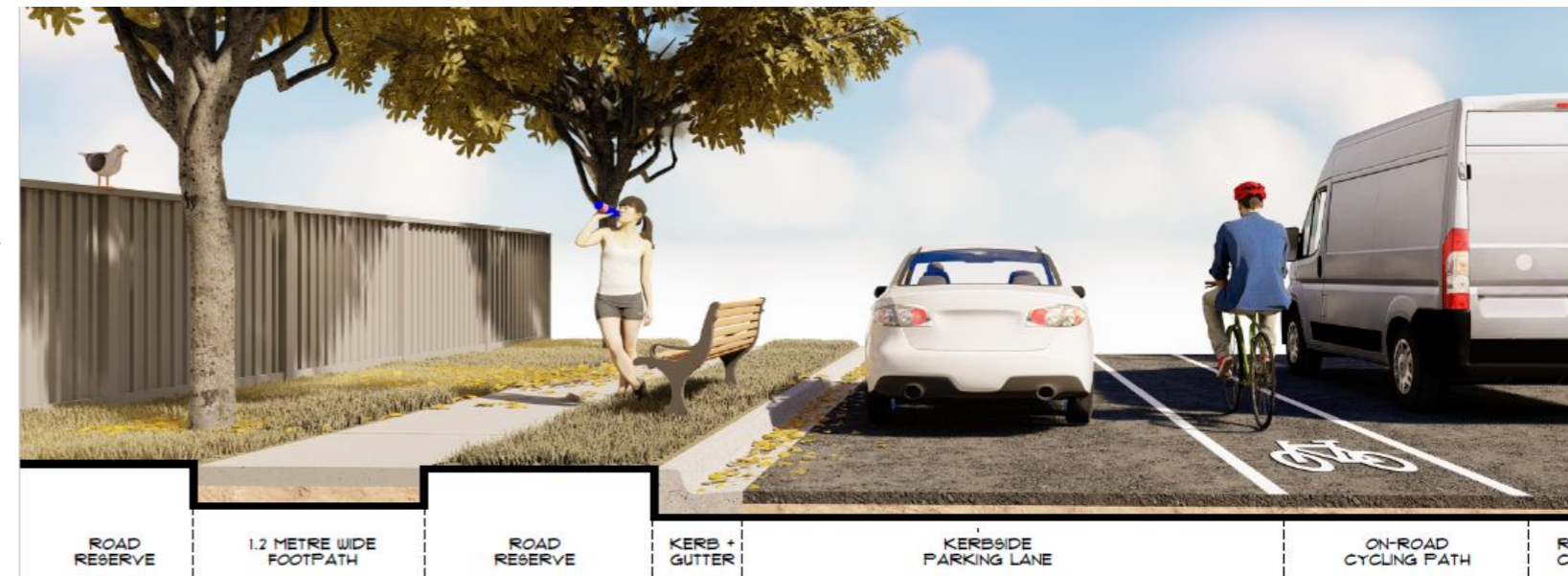


8.5.3 EXCLUSIVE OFF-ROAD CYCLE PATHS

According to the *AUSTROADS Guide*, exclusive bicycle paths are most appropriate when there is a significant cycling demand and very few pedestrians desire to use the path or a separate footpath is provided, and there is very limited motor vehicle access across the path. There are currently no conditions in the Lithgow City Local Government Area that warrant these paths.

8.5.4 ON-ROAD CYCLE PATHS

Paths can either be on-road, which are essentially “bicycle lanes” alongside motor vehicle traffic on a roadway within the road corridor, or off-road paths, which are separated from the road corridor. They include physically separated bicycle lanes, visually separated footpaths and bicycle lanes and wide sealed road shoulder paths. Where feasible, facilities should comply with current standards and also taking into account local conditions. A typical example of an on-road cycle path is shown to the right.



8.6 IDENTIFYING EFFECTIVE SAFETY INTERVENTIONS

Improvement to pedestrian and cyclist safety requires a balanced approach that includes both engineering measures and behaviour-change measures.

A summary of the key safety measures is presented in the following Table, with each broad category of measures being associated with a number of specific interventions. The Table has been developed from a number of sources, including the *WHO Pedestrian Safety Manual 2013*, *Cycling Aspects of Austroads Guidelines 2014* and the *Handbook of Road Safety Measures 2009*.

8.6.1 REDUCING PEDESTRIAN AND CYCLIST EXPOSURE TO VEHICULAR TRAFFIC

There are a number of ways to reduce pedestrian and cyclist exposure to vehicular traffic. These are identified as follows:

Intervention	Merits of Intervention	Relevance in Lithgow Context
Provide footpaths	Dedicated footpaths separate pedestrians from motorised vehicles as well as bicycles. They provide space for different types of pedestrians to walk, run, play, meet and talk. Walking increases where tracks for walking are constructed.	Lithgow has a comprehensive network of footpaths, with relatively few gaps in the centre of the urban network. The other towns and villages have less complete footpath networks.
Provide on-road bicycle lanes	<p>Bicycle lanes aim to improve cyclist safety by providing separation from other motor vehicles whilst maintaining directness of travel and priority at intersections. The provision of a painted line between the motor vehicle lane and bicycle lane together with bicycle pavement symbols at frequent intervals has a number of advantages, including:</p> <ul style="list-style-type: none"> → Clearly defining the road space provided for use by each mode. → Motor vehicles not blocking the progress of cyclists where traffic queues exist. → Providing lateral separation and improved safety when motor vehicles in the adjacent lane are moving. → Greater awareness in the minds of motorists that a cyclist may be present. <p>On-road bicycle lanes also improve accessibility and connectivity of the bicycle network and promote the use of alternative modes of transport.</p>	<p>Many urban roads in Lithgow LGA are relatively wide, providing adequate width for bicycle lanes in addition to the motor vehicle carriageway and footpaths. In local streets it is usually not necessary to make special provision for cyclists as the lower speed of motor traffic should enable cyclists to safely share the road with other users. However, along highways, main roads and collector roads, the volume and speed of traffic makes it necessary to ensure that adequate space exists for cyclists to share the road safely.</p> <p>The delineation of on-road bicycle lanes by line-marking and signage would help to address road safety issues on highways, main roads and collector roads, and may encourage more people to ride bicycles in Lithgow LGA.</p> <p>At this stage, it is not suggested that Lithgow City Council invest heavily in the development of on-road bicycle lanes. It is considered more appropriate / beneficial for Council to focus on developing a more complete footpath and shared path network that links across existing barriers (highways and railways).</p>



Intervention	Merits of Intervention	Relevance in Lithgow Context
Provide shared paths	Share paths are appropriate where demand exists for both a pedestrian path and a bicycle path, but where the intensity of use is not expected to be sufficiently great to provide separate facilities.	Many urban footpaths have sufficient width and have relatively low pedestrian use to allow their modification to also provide for cyclists. Conversion of footpaths to shared paths has merit nearer to central business districts. New shared paths should be used for important links where footpaths don't exist and there is adequate width on the footpath and no major amenity impacts on adjoining residential premises. The focus should be on developing a more complete shared path network that links across existing barriers (highways and railways).
Provide sealed shoulders	Where a road is un-kerbed and provision for cyclists is required a smooth sealed shoulder is the preferred treatment. There are many instances in semi-urban and rural roads where the sealing of shoulders is justified specifically to make roads safer for cycling.	The consultation undertaken showed strong support from road cyclists for road safety improvements on roads regularly ridden by cyclists. However, the number of and frequency of cyclists does not justify road widenings for training cyclist needs only.
Provide bus / bicycle lane	Examples exist in larger cities where bicycles have successfully shared in the use of bus lanes.	The number of and frequency of buses in Lithgow LGA does not justify separate bus lanes that could be used by commuting cyclists. There are bus stop facilities that need review in terms of relevance and condition. Improvements at bus stop locations are generally well supported by residents that were consulted with.
Install marked crossings (zebra crossing)	<p>The purpose of a marked crossing is to indicate the optimal or preferred location for pedestrians to cross and indicate pedestrian right-of-way at these points. There are several important issues to consider when installing crossings:</p> <ul style="list-style-type: none"> → Crossing markings are unlikely to increase pedestrian safety, without related enhancements such as raised crossing islands and traffic signals. → Marked crossings are not appropriate where traffic speed is high. Marked crossings on roads with more than two lanes may increase the risk of pedestrian / vehicle crashes. 	Consideration should be given to replacement of the zebra crossings with alternative initiatives.



Intervention	Merits of Intervention	Relevance in Lithgow Context
	<p>→ Crossing locations should be convenient for pedestrians and accessible for pedestrians in wheelchairs.</p> <p>Zebra crossings should only be used in very limited applications, such as high activity areas and routes, subject to site specific assessment. Where a safe point for pedestrians to cross wide / busy roads is required it is preferred to use road narrowing initiatives. Where the crossing is located in a school zone, it may be more appropriate to provide a schools safety supervisor.</p>	
Provide pedestrian refuge islands	<p>Pedestrian islands allow a safe point for pedestrians to negotiate wide or busy roads. Refuges are of benefit to pedestrians as they allow for a staged crossing of a road. They also provide a visual cue for motorists that pedestrians can be expected in the vicinity of a refuge. Provision for the standing of pedestrians, prams, wheelchairs, mobility scooters and bicycles at the crossing mid-point is important.</p> <p>Pedestrian islands should only be used in limited applications, such as high activity areas and routes, subject to site specific assessment. Where a safe point for pedestrians to cross wide/busy roads is required it is preferred to use road narrowing initiatives.</p>	There are opportunities for new pedestrian refuges in Lithgow and other townships.
Construct raised pedestrian crossings	Raised pedestrian crossings force vehicles to slow to speeds low enough that a pedestrian would survive a collision. Reductions in pedestrian crashes of around 40% could be expected from the installation of a raised crossing.	For inclusion in Main Street Master Plans.
Install signalised crossing	Signalised crossings separate pedestrians from vehicular traffic for a brief time period while they cross the street. It is important to ensure that the time allowed for crossings is adequate to cater for all users.	For inclusion in Main Street Master Plans.
Provide road narrowing (kerb extensions etc)	Road narrowing has a double benefit of reducing vehicular traffic speeds and allowing a safe point for pedestrians to negotiate wide or busy roads. Treatments that include widening footpaths have the additional benefit of providing higher quality facilities for pedestrians. Provision for the standing of bicycles at crossings is important. Where road narrowing is proposed to cross roads that form part of an on-road bicycle lane,	The consultation undertaken showed strong support for road narrowing initiatives as a means to cross busy roads in Lithgow and other townships. For inclusion in Main Street Master Plans and around high activity areas and busy road routes.



Intervention	Merits of Intervention	Relevance in Lithgow Context
	consideration should be given to potential squeeze points which can be addressed by providing cycle bypass through the road narrowing device.	
Provide vehicle restriction / diversion	Road diversions are in order where high volumes of traffic including heavy vehicle traffic, comes into conflict with primary activity areas.	While there is widespread community and government stakeholder support for separated pedestrian and cycling facilities away from busy roads, the projects are expensive and may take some years to progress. At this stage it is suggested that Lithgow City Council focus on developing a more complete footpath and shared path network.
Install overpasses / underpasses	Pedestrian overpasses and underpasses are bridges and tunnels that allow for uninterrupted flow that is separate from vehicular traffic. This measure is used primarily in areas with high pedestrian volumes. Installation is expensive and they can be obtrusive and not suitable for all users.	There is merit in improving pedestrian facilities at existing some rail overpasses / underpasses.
Reduce traffic volumes	A reduction in traffic volumes generally involves their replacement with other transport modes such as public transport, walking or cycling.	Public transport and current pedestrian / cycling behaviour allows for reductions in vehicular traffic in the short to medium term. However, the volume of regional traffic through some centres in the LGA is expected to increase into the future.

8.6.2 REDUCING VEHICLE SPEED

There are a number of ways to reduce vehicle speed. These are identified as follows:

Intervention	Merits of Intervention	Relevance in Lithgow Context
Reduce speed limit	One of the most effective ways to improve pedestrian and cyclist safety is to reduce the speed of motor vehicles. Speed management is much more than setting and enforcing appropriate speed limits. It employs a range of measures in engineering, enforcement and education with the aim of balancing safety and efficient vehicle speeds on the road network.	There are opportunities to address vehicle speed in main towns by introducing traffic calming and pedestrian management interventions in these areas.



Intervention	Merits of Intervention	Relevance in Lithgow Context
Implement road narrowing measures	Road narrowing initiatives such as kerb extensions and half road closures assist in reducing vehicular traffic speeds. They also provide a visual cue for motorists that pedestrians can be expected in the vicinity of a road narrowing initiative.	Introduce narrower road standards in Council subdivision standards.
Speed management at road sections	Traffic calming measures such as speed bumps, pedestrian humps, road narrowing, blisters and tree plantings assist in reducing vehicle traffic speeds. They also provide a visual cue for motorists that they are travelling through more urbanised environments where pedestrians and cyclists can be expected.	For inclusion in Main Street Master Plans.
Speed management at intersections	Traffic calming at intersections can reduce the speed of motor vehicles travelling through and exiting from intersections. This measure is used primarily in areas with high pedestrian volumes. Installation of additional traffic management initiatives can be expensive and they can be obtrusive.	For inclusion in Main Street Master Plans.
School route improvements	<p>Reduced speed limits in school zones and dedicated school crossings provide effective measures to control vehicle speed and increase pedestrian and cyclist safety if properly enforced. Additional initiatives may be required at school crossings.</p> <p>Zebra crossings should only be used in very limited applications, subject to site specific assessment. Where a safe point for student pedestrians to cross is required it is preferred to use road narrowing initiatives, raised pedestrian crossings or provide a school safety supervisor. Where road narrowing is proposed to cross roads that form part of a bicycle route, consideration should be given to potential squeeze points which can be addressed by providing cycle bypass through the road narrowing device.</p>	Additional footpaths are required to service some schools.

8.6.3 IMPROVING PEDESTRIAN AND CYCLIST VISIBILITY

There are a number of ways to improve pedestrian and cyclist visibility. These are identified as follows:

Intervention	Merits of Intervention	Relevance in Lithgow Context
Provide crossing enhancements	Road crossing enhancements such as raised pedestrian crossings, pedestrian humps, blisters and kerb extensions reduce vehicular traffic speeds and provide a visual cue	Introduce traffic calming standards in Council subdivision standards.



Intervention	Merits of Intervention	Relevance in Lithgow Context
	for motorists that pedestrians can be expected in the vicinity of a road narrowing initiative. Pedestrian and cyclists at these points are therefore more visible to motorists.	
Reduce / eliminate physical obstruction	Action to remove physical obstructions on pedestrian and cycling routes can help to reduce accidental falls as well as collisions with other users of the road environment. Parked vehicles can be a hazard for cyclists travelling along on-road cycling lanes, particularly people opening car doors.	In Lithgow the encroachment of earth / turf onto existing concrete footpaths and shared paths was observed as an issue. The existing network in Lithgow should be reviewed to ensure that obstructions are minimised. Council subdivision standards and footpath maintenance repair and problem reporting systems should also be reviewed to eliminate obstructions and hazards as quickly as possible.
Improving lighting / crossing illumination	Lighting at crossings is used primarily in areas with high pedestrian and cyclist volumes at night. Installation is expensive and they can be obtrusive and should be limited to high activity areas that are used at night.	For inclusion in Main Street Master Plans.
Install signals to alert motorists of crossings	Signals to alert motorists of crossings are used primarily in school zone situations or areas with high pedestrian and motor vehicle traffic. Installation is expensive and they can be obtrusive.	There are no new signals considered necessary at school zones.
Alert motorists of pedestrian and cycling routes	Signage can be used to alert motorists of high activity pedestrians and cyclist routes. It provides a visual cue for motorists that pedestrians and/or cyclists can be expected along the route.	School zone signs are currently provided at all school zones. It is not considered necessary to provide additional signage at schools at this stage. All on-road bicycle lanes and shared paths should be provided with signage in accordance with relevant Australian Standards.
Encourage high visibility clothing for cyclists	One of the most effective ways to improve cyclist safety is to make them more visible to motor vehicles. If riding at night, a bicycle must also have: <ul style="list-style-type: none"> ➔ A steady or flashing white light that is clearly visible for at least 200 metres. ➔ A flashing or steady red light that is clearly visible for at least 200 metres from the rear of the bike. 	Consultation and observations confirm that most road cyclists travelling in the dark are using effective lighting and high visibility gear to illuminate their way and make them more visible to other road users. Programs should be developed at encouraging greater use of lights and high visibility gear.



Intervention	Merits of Intervention	Relevance in Lithgow Context
	A red rear reflector that is clearly visible for 50 metres when light is projected onto it by a vehicle's headlight on low beam.	
Encourage high visibility clothing for pedestrians	<p>Increased visibility of pedestrians at night can significantly improve road safety outcomes.</p> <p>The use of higher visibility clothing is recommended for all pedestrians travelling at night.</p> <p>The use of higher visibility gear, reflective clothing and flashing lights is recommended for people walking or running at night for fitness.</p>	The use of lights, reflectors and high visibility by pedestrians is patchy. Programs should be developed at encouraging greater use of lights and high visibility gear.

8.6.4 IMPROVING SAFETY AWARENESS BEHAVIOUR

There are a number of ways to improve safety awareness behaviour. These are identified as follows:

Intervention	Merits of Intervention	Relevance in Lithgow Context
Education in local media and schools	A number of programs are available to support road safety education and awareness in schools and local media, including funding for road safety officers and for Bike Week. A great deal of road safety information is available to assist with road safety education and awareness, including the RMS website.	Programs should be developed to increase greater participation at Bike Week.
Training facilities for pedestrians and cyclists	<p>There are a number of purpose built pedestrian and cyclist training facilities operating in Australia that provide important skills for new users and are a great family activity.</p> <p>For example, Campbelltown's Bicycle Education and Road Safety Centre provides education for cycling and pedestrian safety in a fun and safe environment. With real working traffic lights, round-a-bouts, stop signs and pedestrian crossings, it really is a purpose-built circuit that simulates real road conditions. There is a junior track for toddlers, under cover climbing equipment, a picnic area and lots of trees to put the picnic blanket down and make a great day of it.</p>	No training facilities were observed in Lithgow LGA.



Intervention	Merits of Intervention	Relevance in Lithgow Context
Enforce traffic laws	<p>Rules have been established for the safety of all road users. Unfortunately not everyone follows the rules, or some people choose to follow only some of the rules. Common problems include:</p> <ul style="list-style-type: none"> → Motorists speeding, drink driving, not wearing seatbelts and using mobile phones. → Motorists not obeying school zone, parking, school bus zones and drop-off rules. → Cyclists riding without helmets, lighting and a bell. → Cyclists riding through red traffic lights and on footpaths. → Erratic and dangerous behaviour of younger cyclists, skate boarders and kick scooter users seeking fun / challenges over road safety considerations. → Random ad hoc pedestrian movements and jay walking. 	<p>Adhering to the Australian Road Rules is important for road safety reasons. Consultation and extended research reveals that not all road users are aware of the rules, especially relating to pedestrians and cyclists. Education and awareness of the rules can assist in developing better understanding and tolerance between different road users.</p> <p>A strong policing presence is required to enforce the Australian Road Rules. Educational information in local media, at work sites and in schools could assist more people in understanding the rules as well as the different characteristics and behaviours of different road users.</p>



09

DESIGNING THE NEW ACTIVE TRANSPORT NETWORK

This section examines the main design elements that are particularly important to master to ensure a robust active transport network in the Lithgow Local Government Area.

9.1 KERB RAMPS

With all pedestrian facilities, access must be provided to the road providing a continuous accessible path of travel allowing access to wheelchairs, prams and trolleys, and pedestrians with impaired mobility.

Constructed properly, kerb ramps provide a smooth change in the level between the footpath and the roadway. The difference in the level between the footpath and the roadway is a common situation that poses difficulties for disabled and older pedestrians, particularly with mobility and vision impairments. The Austroads Guide to Traffic Engineering Practice Part 13 – Pedestrians states that:

“A minimum footway width of 1200mm should be provided beyond the top of the ramp, to ensure that users of the footway along the street are not inconvenienced by the ramp.”

The general configuration of a kerb ramp is illustrated in the diagram overleaf.

High grade drop kerbs can cause safety issues for mobility impaired users. Users can become vulnerable to general traffic as they attempt to enter / leave the carriageway and proceed up / down steep ramps. When crossing a road, people who have impaired vision often use the kerb ramp to align themselves and then walk in a straight line to the other side. If the ramp does not align squarely with the kerb, it can lead people on an angle into the roadway, rather than directly across the street.

A blended kerb is one in which there is no significant drop from the footpath to street level; the path simply flows onto the road. While blended kerbs provide easy transition for sighted people with mobility difficulties, they can be an issue for people who are blind or have impaired vision, as these people rely on traditional kerbs and kerb ramps to indicate where the footpath ends and the road begins. With a blended kerb, they can find themselves in the middle of the road without knowing that they have left the footpath. One way to improve safety in this scenario is to install tactile ground surface indicators (TGSIs) between where the footpath ends and the road begins. This will alert people who have impaired vision that they are about to step onto a road.

It is important that kerb ramps:

- Comply with standard grades.
- Incorporate tactile surfaces for all primary activity areas.
- Align squarely with the direction of road traffic.
- Directly align with the kerb ramp on the other side of the road.
- Align with pedestrian refuge islands.

9.2 SIGNALISED PEDESTRIAN CROSSINGS

Audio-tactile push-button signals (ATS) are located at signalised crossings and are used to indicate when traffic lights have changed to a walk phase. These signals are particularly useful for people who are blind or have impaired vision.

The tactile signal is detected through the plate immediately above the push button. When the pedestrian walk signal is red or in the "Don't Walk" phase, it emits slow beeps and the tactile plate pulses slowly. When the pedestrian walk signal is green or in the "Walk" phase, the control emits faster beeps and the tactile plate pulses rapidly. The tactile information is useful when ambient noise levels are high, or when the person using the signal does not have good hearing.

When installing the push button control on a pole, the pole should be placed within easy reach of the kerb ramp or crossing point wherever possible. The directional arrow on the push plate provides information to the person who is unable to see the direction of the crossing and therefore should be positioned within easy reach. If the push button is located away from the crossing, the audio signal may not be able to be heard.

When installing the push button control on a pole, the pole should be placed within easy reach of the kerb ramp or crossing point wherever possible. The directional arrow on the push plate provides information to the person who is unable to see the direction of the crossing and therefore should be positioned within easy reach. If the push button is located away from the crossing, the audio signal may not be able to be heard.



9.3 STAIRS

Unexpected ‘drop-offs’ are among the biggest fears of older people and people who have impaired vision. The drop can be a step, stair or platform edge at a railway station. Effective design and construction will assist people to negotiate stairs and other drop-offs safely and independently. When designing and maintaining stairs, important considerations include:

- Regularity of stair construction.
- All steps and stairs should have their nosing (the front edge of the tread) marked with an appropriate contrasting strip, as per Australian Standard 1428.1.
- Correct placement of TGSi to indicate the beginning of stairs.
- Sufficient lighting or illumination.
- Appropriately positioned handrails, as per Australian Standard 1428.2. It should also extend horizontally beyond the end of the stairs and curve under on the ends to avoid collision.
- Stairs should not be positioned immediately inside or outside doorways, as people who have vision impairment may not have enough time to detect them when walking through the doorway.
- Stairs should not be open. Australian Standard 1428.1 says that stairs require an opaque riser.
- The underneath of stair cases should be enclosed to prevent a head-height hazard for people who have impaired vision.

For more detailed information on stair and step construction, refer to *Australian Standard 1428.1*.

9.4 PEDESTRIAN REFUGES

A pedestrian refuge island is a small concrete or paved island in the middle of a road that allows people to cross in stages. They allow a safe point for pedestrians to ‘store’ mid-way across a wide or busy road.

If the pedestrian island is the same level and surface as the road, people who have impaired vision may be unable to identify where the refuge ends and the road starts. Tactile ground surface indicators (TGSi) provide information that enables people who have impaired vision to locate a refuge island either tactually or using their residual vision.

9.5 PEDESTRIAN CROSSINGS

A pedestrian crossing is a designated point on a road at which some means are employed to assist pedestrians wishing to cross. They are designed to keep pedestrians together where they can be seen by motorists, and where they can cross under the most optimal traffic conditions. Zebra crossings should be applied sparingly and only where other alternate crossing facilities are not acceptable.



9.6 BICYCLE FACILITIES

In some cases a bike lane located on the road may be the most feasible option to provide a cycling facility. Where this is the case, an assessment needs to be undertaken and all practicable measures taken to ensure safety of users. The Tables over page provide guidance on the criteria to assess the suitability of on-road bicycle lanes.

The safe passage of cyclists on the approach and through road intersections is essential in delivering a usable on-road bicycle network, which can be achieved by line marking. Bicycle lanes should not abruptly end prior to an intersection. A clear path which is identifiable to both motorists and cyclists is required. The use of line-marking and green surface treatments is recommended to mark the preferred path through complicated intersections. Advanced bicycle waiting areas which allow cyclists to position themselves ahead of traffic vehicles at signalised intersections is recommended.

Technical advice and design solutions are provided in:

- NSW RTA Bicycle Guidelines 2005 (Section 7 - Bicycle facilities at intersections and Section 8: Intersection of paths with roads).
- Vic Roads Cycle notes – Head start storage areas at intersections, 2000.
- Vic Roads Cycle notes No. 8 – Providing for cyclists at signalised intersections, 2001.
- Vic Roads Cycle notes No. 16 – Safe road crossings for off-road paths, 2005.
- Austroads Guide to Traffic Engineering Practice Part 6: Intersections, Interchanges and Crossings; and.
- Austroads Guide to Traffic Engineering Practice Part 14: Bicycles, 1999 (Section 5 – Road intersections and Section 6.7 Intersections of paths with roads).

Kerb side car parking should be line-marked to defined this operating space and reduce potential conflict with opening of car doors. The *NSW RTA Bicycle Guidelines 2005* provides line marking guidance for both on-road and off- road pathways. Additional guidance on the locations for the application of green surface paint can also be found in Section 7 and Section 8 of the *NSW RTA Bicycle Guidelines* and *Vic Roads Cycle notes No. 14 – Coloured surface treatments for bicycle lanes, 2005*.

Road Speed	60km / h	80km / h	100km / h
Lane Width (Desirable)	1.5m	2.0m	2.5m
Lane Width (Accepted Range)	1.2m – 2.5m	1.8m – 2.7m	2.0 – 3.0m

On-road bicycle surfaces should be the same or even smoother than those acceptable for motor vehicles, due to road bikes having narrow tyres inflated to high pressure, having no suspension systems and being able to travel at speeds over 35km/h. Hard surfaces such as asphalt and concrete are the most functionally appropriate materials to meet the different needs of the various users of formed bicycle lane. Technical advice on surface tolerances is provided in:

- Austroads 1999, Guide to Traffic Engineering Practice Part 14: Bicycles.
- Austroads Guide to Road Design Part 6A: Pedestrians and Cyclists Paths, 2009.
- NSW RTA Bicycle Guidelines, 2005.

Identifying on-road and off-road operational space in a manner which is clear to motorists, cyclists and pedestrians is essential to providing a safe network. A key technique in achieving this is via line marking.

No.	Method	Comment
1	Removal or remarking traffic and/or parking lanes	Resizing road lanes to provide visually separated bicycle lanes.
2	Upgrading service roads	Marking service roads to include visually separated bicycle lanes/operating space.



No.	Method	Comment
3	Bicycle lanes on one side of road only	On uphill roads with limited width a bicycle lane is provided on the uphill side only. Bicycle riders especially need separated operating space when climbing.
4	Sealing shoulders	On rural and un-kerbed roads. Bicycle shoulder lanes can also be fitted to kerbed urban roads with parking provisions.
5	Converting footpaths to shared paths	For off – road bicycle/pedestrian route within the road corridor.
6	Indenting car parking	Where footpath space is available. Preserve parking and permits straight through kerbside bicycle lanes at intersections.
7	Car parking on one side of the road only	By removing a parking lane from one side of road only to create bicycle operating space.
8	Road – widening at medium	Move other lanes into median space to create bicycle space.
9	Road – widening at the kerb	Increased width provides for new bicycle lane or widening of existing bicycle lanes.
10	Creating an off-road bicycle path	Two-way on one side of the road or one way both sides of the road. Beneficial where traffic speeds and volumes are high.

9.7 SUPPORTING INFRASTRUCTURE

For footpaths, on-road bicycle and shared pathways to be usable, a range of supporting infrastructure needs to be considered, including signage, lighting, seating / rest stops, water points, shade and facilities for people with a disability. Technical advice on the provision of supporting infrastructure is provided in:

- ➔ NSW RTA Bicycle Guidelines, 2005 (Section 10: Maintenance and provision at worksites);
- ➔ Austroads Guide to Traffic Engineering Practice Part 14: Bicycles, 1999 (Section 10: End of trip facilities); Cycling aspects of Austroads Guide Section 11.
- ➔ Bicycle Victoria The Bicycle Parking Handbook, 2004.

9.8 SIGNAGE AND LINE MARKING

Signage and or markings should be provided throughout the entire network to guide pedestrians and cyclists use of the bicycle and shared path network.

Signage and / or markings should include both directional and informative information and be designed to be easily identifiable and consistent across both on-road and off-road networks. They will inform users of the direction and distance to key destinations, provide warning of changing conditions (e.g. intersection) and of approaching hazards and provide clear travel pattern advice, which is particularly important at intersections.

Signage and / or markings should be provided at all new on-road bicycle and shared pathways. They should also be progressively retro-fitted across the existing network.

The use of a green surface for bicycle lanes which draws motorists' attention to the presence of bicycles is recommended at busy or higher-speed locations and areas where the road layout is complex. Technical advice on signage and marking treatments is provided in:

- ➔ Austroads Guide to Road Design Part 6A: Pedestrians and Cyclists Paths, 2009.
- ➔ NSW RTA bicycle Guideline (Section 9 – Signage and network information).
- ➔ Vic Roads Cycle notes No. 10 – Shared path behavioural signs, 2005.



Many people who have impaired vision have some residual vision and some are able to read print signage. It is necessary, therefore, to provide alternatives to ensure effective communication. These may include tactile symbols, verbal announcements or one-on-one assistance for locating a specific location.

Tactile and Braille Signage - Tactile signs consist of raised shapes, for example the raised shape of a woman on a toilet door. As not all people with vision impairment read Braille, it is important to provide both Braille and tactile signage. Braille uses raised writing in the form of a cell of dots which is read by touch. Different combinations of raised dots within a cell signify different letters, abbreviations and words. Key design elements include:

Font / Writing Style – The readability of a sign is highly affected by its font and print case. Though there are currently no standards for print type, Blind Citizens Australia currently recommends the use of Sans Serif font types.

Symbols - Simple lettering, distinctive logos and symbols can help convey information effectively where print may be difficult to use e.g. male and female symbols for toilets are instantly recognisable. Many symbols are internationally recognised, such as the wheelchair sign to indicate facilities for people with a disability.

Colour - Low contrast signage can be difficult to locate and read clearly. Printed information should contrast with the sign's background surface.

Positioning Signs - Signs should be positioned so that they are clearly visible from both seated and standing positions. When positioning signage, important considerations include:

- Distance at which a person with vision impairment must stand to see the sign.
- Length of time required to read the sign by a person with vision impairment.
- Consistent placement of signs.

Placement of overhead signs should be at least 2000mm above the ground level but preferably 2400mm above the ground level. Signage is best placed on the wall beside the door in a position where a person with vision impairment can read it without blocking the path of other pedestrians. Within a building, all signs should be placed in the same position and at the same height beside each door where information is required.

Lighting of signs may also be important. Key design elements include:

- Direct and indirect lighting levels throughout the day e.g. afternoon sun may cause glare, making signage unreadable.
- Readability in both natural and artificial light.

Use of non-reflective materials for signage and viewing background.

9.9 LIGHTING

Nighttime outdoor lighting has most often been designed for the vehicle driver, rather than for pedestrians and cyclists.

Where footpaths, bicycle lanes and shared pathways carry a substantial number of pedestrians and cyclists during periods of darkness, consideration should be given to the provision of path lighting. Lighting will increase both actual and perceived safety along the network and should be targeted along key pedestrian routes and activity zones (*Austrroads, 2009*).

The main objectives of pedestrian lighting are to ensure adequate lighting is provided to identify pedestrian routes and signage, illuminate pedestrians to other road users and to achieve facial recognition of another pedestrian at a reasonable distance.

The main objective of cycleways lighting is to ensure adequate lighting is provided so that cyclists, travelling at reasonable speed are able to avoid potholes and any other traffic hazards (*AUSTROADS "Bicycles" part 14 p.104*). Generally provision for public lighting for bicycles may occur where:

- Paths for cycling associated with promenades or a centre for night-time activity.
- Paths for cycling used for commuting by workers or students.

Lighting should be placed along key routes, key crossing points, intersections and places where people congregate. Direction and height of illumination, background land illumination levels are key considerations that should be addressed within the design.



9.10 LANDSCAPE DESIGN

Landscape works which are poorly planned and designed can have negative impact on pathway use.

It is important that landscaping is designed, constructed and managed to:

- Provide clear sightlines.
- Promote good visibility.
- Provide safe side clearances.
- Prevents intrusion into pedestrian / cycling operating space.
- Manages tree root damage to pathways.
- Provide passive surveillance and promotes an open easy – supervised environment.
- Manage weeds, especially catheads.

Austrroads Guide to Road Design Part 6A: Pedestrians and Cyclists Paths, 2009 and the NSW RTA Bicycle Guidelines, 2005 provides guidance on the key considerations for landscape design.

Austrroads Guide to Road Design Part 6A: Pedestrians and Cyclists Paths, 2009 (Section 6.5 and 7) provides further guidance on the key considerations for the lighting of pathways. All path lighting should be designed in accordance with AS/NZS 1158.3.1:2005, Pedestrian area (category P) lighting – performance and design requirements and the design principles identified in *Crime Prevention through Environmental Design Safer by Design* (CPTED).



10

COMMUNITY ENGAGEMENT + AUDIT FINDINGS

10.1 COMMUNITY ENGAGEMENT

During April 2019, Lithgow City Council conducted preliminary community engagement in the form of workshops, questionnaires and media promotion. This section summarises the main findings of consultation and is supported by a detailed consultation report in Appendix 1.

10.1.1 STAKEHOLDER WORKSHOPS

Community workshops were held in Cullen Bullen, Lithgow, Portland and Wallerawang in April 2019, to which over 50 participants attended. A pop-up workshop was also conducted on Main Street Lithgow to ask visitors to Lithgow CBD their views on walking and cycling conditions / issues.

The workshops were structured around a series of local area maps. Questions were then asked about the pedestrian and cycling network and local conditions that led the conversation to allow for problems, solutions, suggested routes and feedback to be covered within the allocated workshop. Throughout the workshops, the responses given had common themes which reiterated the desire for additional paths to popular destinations and routes within the community.

10.1.2 ONLINE SURVEYS

Council conducted an online survey which was distributed via Council's website, at Council and through workshop participants. Over 50 surveys were completed.

10.1.3 PROMOTION

A number of promotional activities were undertaken to encourage participation in the preliminary consultation phase for the Lithgow Active Transport Plan. Media releases were made available to local newspapers and radio about the launch of the project, surveys and workshops. Council's website featured details about the project, surveys and workshops.

10.2 GENERAL CONSULTATION FINDINGS

A large number of respondents indicated that they would prefer more dedicated footpaths and shared paths.

There were few frequent cyclist responses, suggesting cycling conditions (climate, road traffic volumes / speed, dedicated cycling paths, end-of-trip facilities) are not ideal for regular bike riders in Lithgow LGA. For the few cyclists that did provide comments, the general finding was that off-road shared path routes would help to improve current safety conditions. Similarly, the installation of more signs that warn of cyclists in the area would also improve conditions.

10.3 GENERAL AUDIT FINDINGS

An audit of existing pedestrian and cycling conditions across the Lithgow LGA was undertaken by means of a desktop review of local data and discussions with government stakeholders, including Council and RMS staff. Drive-through and walk-through surveys of the study area were also undertaken, with particular focus on settlement areas, primary routes and attractors.

Structured and unstructured on-site meetings were held with numerous community members where specific sites / issues needed to be observed / discussed.

The audits were not meant to gather an exact inventory of the condition of pedestrian and cycling assets in Lithgow LGA. The emphasis of the audits was on identifying gaps in the network as well as the barriers to people using the network.

The audits revealed a variety of pedestrian and cycling facilities provided in Lithgow LGA, and in varying conditions. Expectedly, the audits identified a number of deficiencies and barriers in the network, which are shown on the community consultation and audit maps.

Where minor deficiencies were observed, such as concrete footpath surface cracking or overhanging branches creating obstacles, they were reported to Council for rectification.

10.4 SPECIFIC CONSULTATION AND AUDIT FINDINGS

Specific consultation / audit findings from the workshops and site visits are presented in the following sections.



10.5 LITHGOW

Map 1.A, 1.B and 1.C illustrate the findings of community consultation and an audit of the Lithgow City, with a summary of key issues included as follows:

→ Footpaths

The audit work in Lithgow revealed an extensive footpath network, particularly around the centre of Lithgow, and in good condition. There are a number of kerb ramps that need to be provided or need replacing due to poor alignment, grade or condition. Many of these ramps would present as barriers / challenges to elderly pedestrians and parents pushing strollers.

Consultation revealed a large number of people who choose to walk along footpaths and shared paths to access shops, school, medical services, playing fields and public transport.

→ Sharedpaths

The shared path network (northern side of town) is well used and valued by the community. Some sections of the shared paths lack clear line-marking and signage. A number of opportunities and constraints (deficiencies, gaps and barriers) were identified in the network. Growth of grass onto shared paths over time has also reduced the available width of shared pathways, which likely restricts two way movements, particularly for bike riders.

While there are sections of shared pathways along the western side of the Great Western Highway, the absence of a connected shared pathway along the Great Western Highway route through to the city is a pronounced gap in the network.

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Lithgow, other than faded markings on Coerwull Road. Regular cyclists advise they tend to ignore the on-road cycling lanes (preferring to ride along the edge of the bitumen carriageway, road shoulder or where conditions warrant). Cyclists ride along the Great Western Highway to access quieter roads / trails south of Lithgow.

→ Barriers

The Great Western Highway and the railway line running through Lithgow act as significant barriers to a connected active transport network. Actions to improve shared pathway links between Lithgow CBD, Lithgow Hospital and the playing fields along Farmers Creek would provide the most benefits to

the existing active transport network. Improvements at rail overpasses / underpasses would also improve linkages, particularly the rail underpass on George Coates Street.

→ Obstacles

No street furniture, signs or other structures were observed to present major obstacles or hazards to pedestrians on constructed footpaths.

→ Trip hazards

Minor footpath cracking and sections of broken paving were observed on some footpaths in the Lithgow. The recent telecommunications trenching along Main Street is programmed for rehabilitation. Some residential streets show signs of footpath deterioration or damage, such as cracks and raised concrete edges. Overall, there were few observed trip hazards, which suggests a fast reaction / repair program is being administered.

→ Road crossings

There is minimal use of kerb extensions and blisters to reduce effective road carriageway width and provide more effective road crossing points.

→ Traffic Lights

The absence of traffic lights at the intersection of Great Western Highway and Col Drewe Drive is a pronounced gap in the active transport network.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

Not all intersections and grade changes in the Lithgow CBD are provided with tactile ground surface indicators (TGSIs). For the areas provided with TGSIs, there were no alignment or colour / luminance contrast issues observed.

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces in Lithgow. The absence of bicycle lockers at or near Lithgow Railway Station is a pronounced gap in the network.

→ School zones



Schools in Lithgow are generally provided with constructed footpaths. Additional constructed footpaths or shared paths would be beneficial at Lithgow High School.

→ **Parklands**

Shared path routes are required to connect some parklands.

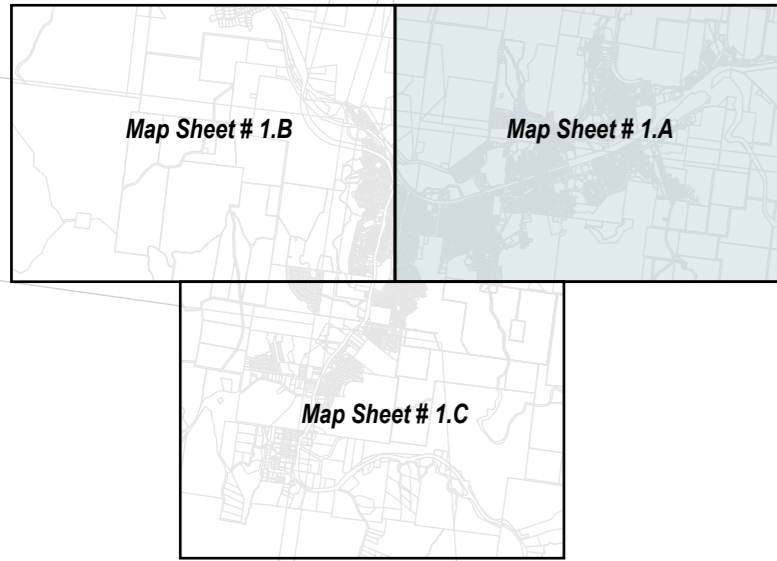
→ **New sub-division**

There are not many new footpaths / shared paths linking recent residential estates to the existing active transport network. The pedestrian and cycling facilities Master-planned for new estates such are excellent.

→ **Lithgow CBD**

Limited designated crossings are available in the Lithgow CBD.





SHEET DESCRIPTION
Community Consultation & Audit Map

LOCATION
Lithgow City

PROJECT
Lithgow Shire Active Transport Plan

CLIENT
Lithgow City Council

ISSUE
20 Aug 2019

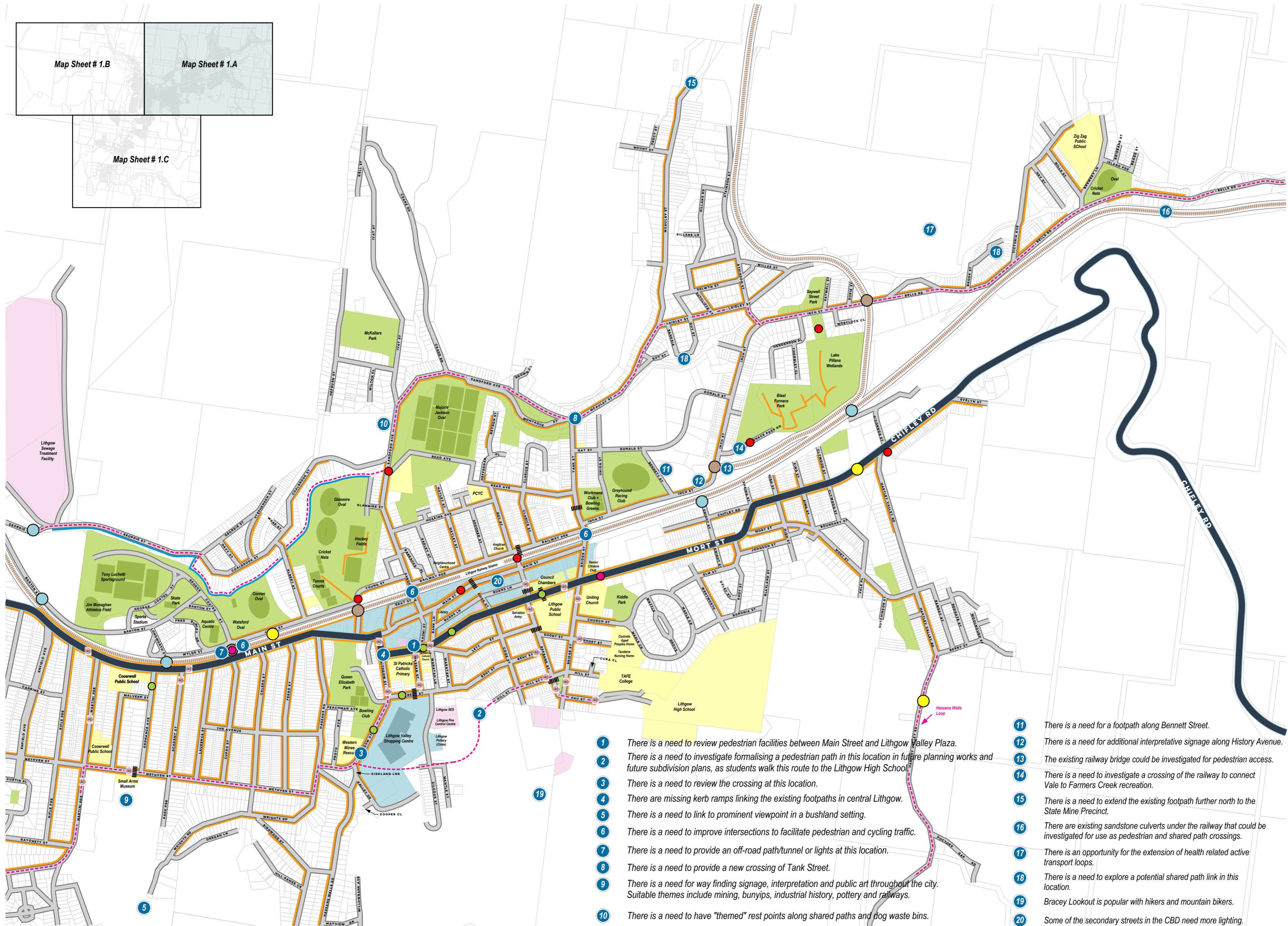
SCALE
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LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

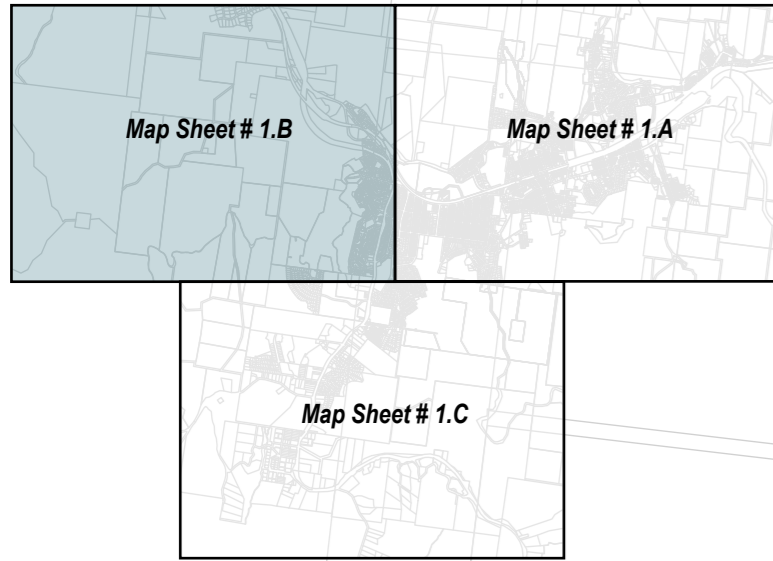
LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use



- 1 There is a need to review pedestrian facilities between Main Street and Lithgow Valley Plaza.
- 2 There is a need to investigate formalising a pedestrian path in this location in future planning works and future subdivision plans, as students walk this route to the Lithgow High School.
- 3 There is a need to review the crossing at this location.
- 4 There are missing kerb ramps linking the existing footpaths in central Lithgow.
- 5 There is a need to link to prominent viewpoint in a bushland setting.
- 6 There is a need to improve intersections to facilitate pedestrian and cycling traffic.
- 7 There is a need to provide an off-road path/tunnel or lights at this location.
- 8 There is a need to provide a new crossing of Tank Street.
- 9 There is a need for way finding signage, interpretation and public art throughout the city. Suitable themes include mining, bunyips, industrial history, pottery and railways.
- 10 There is a need to have "themed" rest points along shared paths and dog waste bins.

- 11 There is a need for a footpath along Bennett Street.
- 12 There is a need for additional interpretative signage along History Avenue.
- 13 The existing railway bridge could be investigated for pedestrian access.
- 14 There is a need to investigate a crossing of the railway to connect Vale to Farmers Creek recreation.
- 15 There is a need to extend the existing footpath further north to the State Mine Precinct.
- 16 There are existing sandstone culverts under the railway that could be investigated for use as pedestrian and shared path crossings.
- 17 There is an opportunity for the extension of health related active transport loops.
- 18 There is a need to explore a potential shared path link in this location.
- 19 Bracey Lookout is popular with hikers and mountain bikers.
- 20 Some of the secondary streets in the CBD need more lighting.



- 1 There is a concern in this general location about Highway traffic conflicting with active transport movement.
- 2 This route through Endeavour Park is a popular amongst pedestrians.



Map Overlap
See Map 1.A

SHEET DESCRIPTION
Community Consultation & Audit Map

LOCATION
Lithgow City

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Lithgow Shire Active Transport Plan

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1:10,000 @ A3

LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones (40, 50)
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use

SHEET DESCRIPTION
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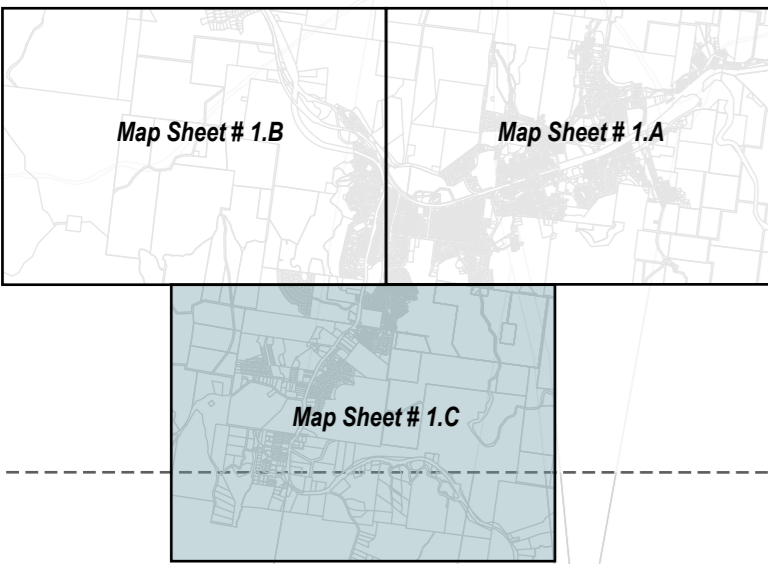
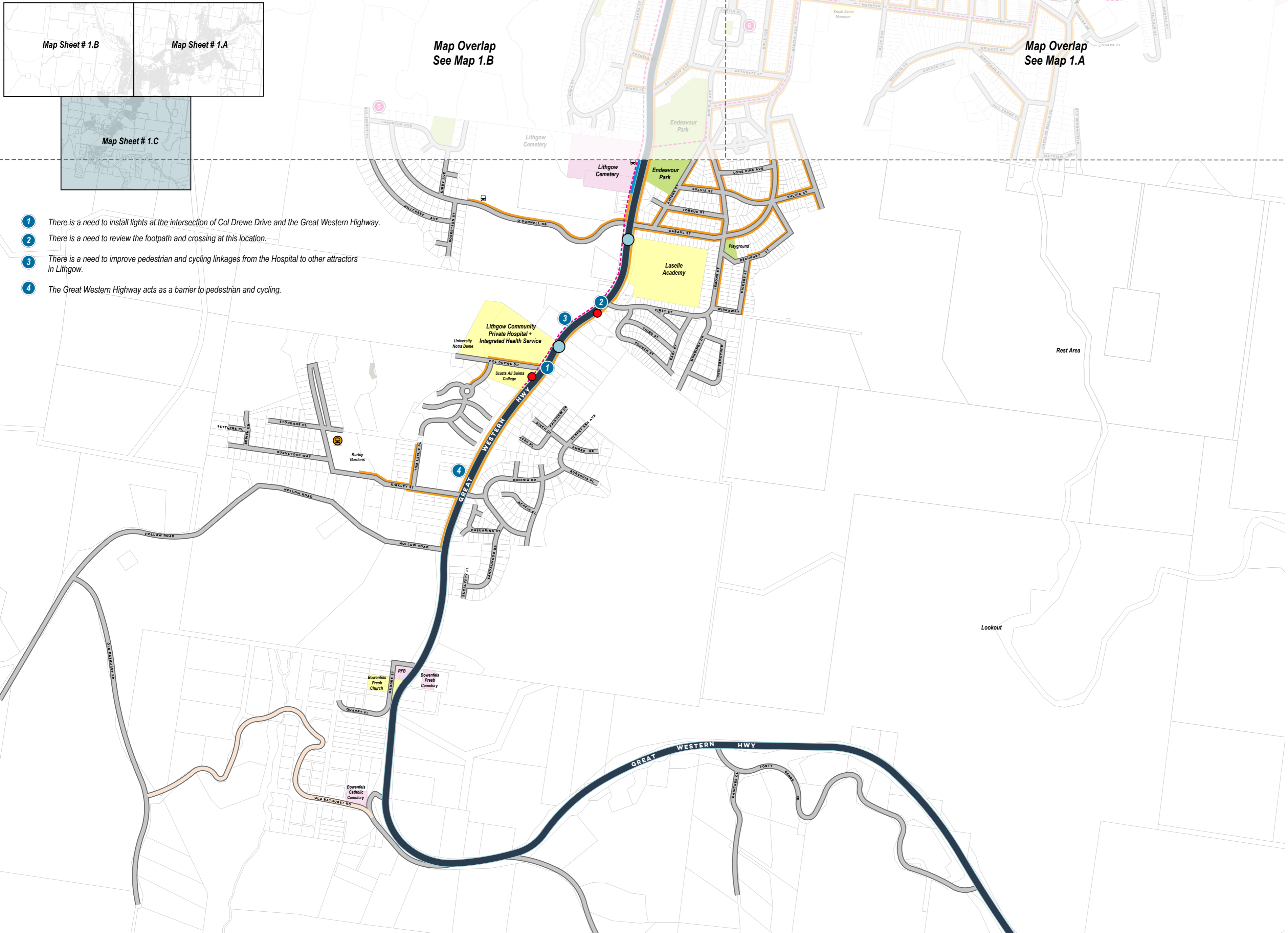
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LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use



Map Overlap
See Map 1.B

Map Overlap
See Map 1.A

- 1 There is a need to install lights at the intersection of Col Drewe Drive and the Great Western Highway.
- 2 There is a need to review the footpath and crossing at this location.
- 3 There is a need to improve pedestrian and cycling linkages from the Hospital to other attractors in Lithgow.
- 4 The Great Western Highway acts as a barrier to pedestrian and cycling.

10.6 PORTLAND

Map 2 illustrates the findings of community consultation and an audit of Portland, with a summary of key issues included as follows:

→ Footpaths

Consultation revealed a relatively active community that particularly values walking for exercise and to access shops, schools and other attractions.

The audit work in Portland revealed a relatively extensive footpath network, particularly around the centre of town, and in good condition. There are a number of kerb ramps that need to be provided or need replacing due to poor alignment, grade or condition. There are also some sections of footpath that finish before the sealed road carriageway, that function as gaps in the network. There is a need to extend the footpath network south to connect to Portland Medical Practice.

→ Sharedpaths

The shared path network (eastern side of town) is well used, however sections of the shared path along Willwa Street have deteriorated and in need of replacement. There are opportunities to extend the shared path network north of Portland CBD as part of any redevelopment plans in this area.

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Portland, nor are they warranted at this stage. Regular cyclists advise they tend to ride along the edge of the bitumen road carriageway / road shoulder or where conditions warrant.

→ Barriers

The lake area north of Portland CBD is closed to public access, making it difficult to negotiate residential areas of town to the north.

→ Obstacles

No street furniture, signs or other structures were observed to present major obstacles or hazards to pedestrians on constructed footpaths. There is no formal crossing of the railway from the Willwa Street shared path.

→ Trip hazards

Minor footpath cracking and sections of broken paving were observed on some footpaths in Portland. Some residential streets show signs of footpath deterioration or damage, such as cracks and raised concrete edges. Overall, there were few observed trip hazards.

→ Road crossings

There is minimal use of kerb extensions and blisters to reduce effective road carriageway width and provide more effective road crossing points.

→ Traffic Lights

No traffic lighting issues were observed, nor warranted in the existing network.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

Not all intersections and grade changes in Portland CBD are provided with tactile ground surface indicators (TGSIs).

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces in Portland.

→ School zones

Portland Central School and St Josephs School are generally provided with constructed footpaths. There is a need to provide additional footpaths at St Josephs School to facilitate crossing of Willwa Street.

→ Parklands

Most parks were connected via footpaths.

→ New sub-division

There are no new subdivision estates requiring active transport facilities.

→ Portland CBD

There are minor gaps in the footpath network around the western edge of Portland CBD.



- 1 Both schools walk to the swimming pool during summer.
- 2 Any redevelopment plans of the reservoir site needs to incorporate active transport connections to primary attractors.
- 3 There is a need to improve crossing conditions in front of school and at Portland Road.
- 4 A crossing point of Portland Cullen Bullen Road needs to be installed with any new upgrades to paths.
- 5 There is a need to install a new shared path along Railway Avenue.
- 6 There is a need to improve the pedestrian crossing over the railway line.
- 7 The existing sealed shared path is in poor condition and is in need of upgrading.
- 8 There is a need to improve pedestrian conditions between Bell Street, Wolgan Street and Wallerawang Road.
- 9 There is a need to improve pedestrian and cycling conditions along Portland Sunny Corner Road to Wolgan Street.
- 10 There is a need to construct footpaths to link existing paths in Tramway Avenue, Lett Street and Vale Street.
- 11 There is a need to install a new shared path along High Street.



SHEET DESCRIPTION
Community Consultation & Audit Map

LOCATION
Portland Township

PROJECT
Lithgow Shire Active Transport Plan

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1:8,000 @ A3

LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use

10.7 WALLERAWANG

Map 3 illustrates the findings of community consultation and an audit of Wallerawang, with a summary of key issues included as follows:

→ Footpaths

The audit and consultation work in Wallerawang revealed a relatively extensive footpath network, particularly around the centre of town, and in good condition. There are a number of kerb ramps that need to be provided or need replacing due to poor alignment, grade or condition. Many of these ramps would present as barriers / challenges to elderly pedestrians and parents pushing strollers.

→ Shared paths

The shared path network (eastern side of town) is well used and valued by the community. Some sections of the shared paths lack clear line-marking and signage. A number of opportunities and constraints (deficiencies, gaps and barriers) were identified in the network. There is a need to connect shared pathways to the centre of town.

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Wallerawang, nor are they warranted at this stage..

→ Barriers

The railway line running through Wallerawang acts as a significant barrier to a connected active transport network, particularly where Pipers Flat Road meets with Barton Avenue at the rail overbridge. There is a need to improve road crossing facilities adjacent to the rail overbridge to improve access throughout the township.

→ Obstacles

No street furniture, signs or other structures were observed to present major obstacles or hazards to pedestrians on constructed footpaths.

→ Trip hazards

Minor footpath cracking and sections of broken paving were observed on some footpaths in the Wallerawang. Overall, there were few observed trip hazards.

→ Road crossings

There is minimal use of kerb extensions and blisters to reduce effective road carriageway width and provide more effective road crossing points. There is a need for improved road crossing facilities along Pipers Flat Road and Barton Avenue, adjacent to the rail overbridge to improve access throughout the township.

→ Traffic Lights

There are no traffic lights in Wallerawang. There were no issues warranting traffic light solutions.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

Not all intersections and grade changes in Wallerawang CBD are provided with tactile ground surface indicators (TGSIs).

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces.

→ School zones

Schools in Wallerawang are generally provided with constructed footpaths.

→ Parklands

No issues raised.

→ New sub-division

There are no new subdivision estates requiring active transport facilities.

→ Wallerawang CBD

There is a need to provide improved linkages at the rail overbridge near Wallerawang CBD.



SHEET DESCRIPTION
Community Consultation & Audit Map

LOCATION
Wallerawang Township

PROJECT
Lithgow Shire Active Transport Plan

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SCALE
1:6,000 @ A3

LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use



- 1 There is a need to investigate Daintree Lane as a 20Kmh shared zone, including any necessary traffic calming measures.
- 2 There is a need to investigate pedestrian access needs at rail overpass intersection.
- 3 There is a need to improve pedestrian conditions in front of the railway station.
- 4 There is a need to install a concrete shared path to link the pedestrian path overpass to Cripps Avenue
- 5 There is a need to investigate pedestrian pathway along James Parade.
- 6 There is a need to investigate accessibility options for long vehicles accessing parkland.
- 7 There is a need to investigate options to control speed along tracks.
- 8 Parents utilise internal roads in parkland to access school for pick-ups and drop-offs.
- 9 There is a need to review widths of tracks to ensure adequate space for pedestrians.
- 10 There is a need to investigate options to connect residential areas through this area in any redevelopment scenario.
- 11 There is a need to provide paths in this area.
- 12 There is a need to investigate the provision of a pedestrian / shared pathway along Commens Street linking to Lyon Parade.
- 13 There is a need to investigate pedestrian / shared paths to link this area to Pipers Flat Road
- 14 There is a need to extend the footpath in this location to meet with St John The Evangelist Church.

10.8 RYDAL

Map 4 illustrates the findings of community consultation and an audit of Rydal, with a summary of key issues included as follows:

→ Footpaths

The audit and consultation work in Rydal revealed a limited / patchy footpath network, including the network around the centre of town. There is a need to connect existing footpaths, particularly along Bathurst Street.

→ Shared paths

The shared path network (eastern side of town at Pioneers Park) is quite extensive and well used and valued by the community. There is a need to connect Pioneers Park to the centre of Rydal (Bathurst Street) with a new shared path alongside Market Street. There is also a need to provide a new shared path linking the Quarry Street foot-bridge to the centre of town and the bus stop at Bathurst Street (north of the rail crossing).

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Rydal, nor are they warranted at this stage. Regular cyclists (mostly mountain bike riders) advise they tend to ride along the edge of the bitumen carriageway, road shoulder or where conditions warrant. The off-road cycling trails north-east of town are highly valued in the region.

→ Barriers

The rail crossing at Bathurst Street has no formal pedestrian crossing facilities and acts as a barrier.

→ Obstacles

No street furniture, signs or other structures were observed to present major obstacles or hazards to pedestrians on constructed footpaths. Any pathway linkage from Bathurst Street to Quarry Street would need to negotiate a steep section of the railway corridor, which might best be delivered by steps / appropriate signage.

→ Trip hazards

Overall, there were few observed trip hazards.

→ Road crossings

There is a need to provide road crossing facilities of Bathurst Street (around the intersection of Bathurst and Market Street) to connect attractors / facilities in Rydal.

→ Traffic Lights

No traffic lighting issues were observed, nor warranted.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

No tactile ground surface indicators (TGSIs) were observed, nor warranted.

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces in Rydal.

→ School zones

There are no schools operating in Rydal. There is a reliance on the school bus system to transport students to other towns for education. There is a need to improve pedestrian facilities to the bus stop at Bathurst Street (north of the rail crossing).

→ Parklands

Footpath extensions are required in the Park to provide a connected footpath to the west of Bathurst Street.

→ New sub-division

There are no new subdivision estates requiring active transport facilities.

→ Rydal CBD

Footpath extensions are required in the Park to provide a connected footpath to the west of Bathurst Street.



- 1 There is a need to improve pedestrian facilities across railway from the existing pedestrian bridge in Quarry St to the Railway Station and to Pioneers Park.
- 2 There is a need to review street lighting along Bathurst Street.
- 3 There is a need to upgrade the pedestrian pathway in Greg Featherstone Park to provide continuous pedestrian path along Bathurst Street.

SHEET DESCRIPTION
Community Consultation & Audit Map

LOCATION
Rydal Village

PROJECT
Lithgow Shire Active Transport Plan

CLIENT
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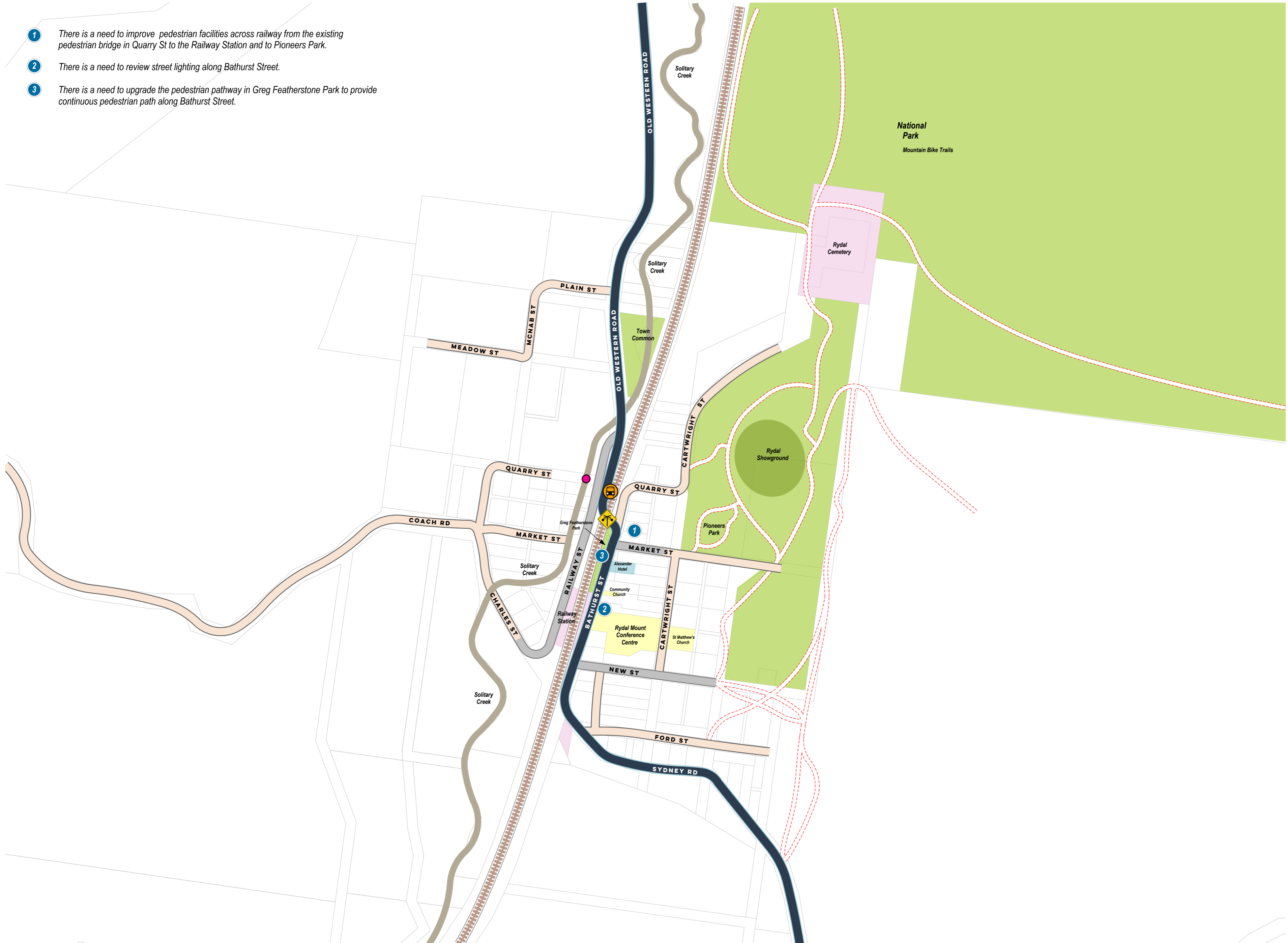
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LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use



10.9 CULLEN BULLEN

Map 5 illustrates the findings of community consultation and an audit of Cullen Bullen, with a summary of key issues included as follows:

→ Footpaths

The audit and consultation work in Cullen Bullen revealed a relatively good footpath network along Castlereagh Highway, with some pronounced gaps and barriers in some sections of the network. There is a less extensive / patchy footpath network on local roads in town. There are several gaps that could be improved that would create a more comprehensive network.

→ Shared paths

There are no shared paths in Cullen Bullen. There are some sections of widened footpaths in the centre of town.

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Cullen Bullen, nor are they warranted at this stage.

→ Barriers

Castlereagh Highway acts as a barrier to a connected active transport network in Cullen Bullen. Actions to improve footpath links / crossings between main attractors in town would provide the most benefits to the existing active transport network.

→ Obstacles

No street furniture, signs or other structures were observed to present major obstacles or hazards to pedestrians on constructed footpaths.

→ Trip hazards

Minor footpath cracking and sections of broken paving were observed on some footpaths in the Cullen Bullen.

→ Road crossings

The existing crossing of Castlereagh Highway, directly east of Cullen Bullen Public School was raised as a concern.

→ Traffic Lights

No traffic lighting issues were observed, nor are they warranted.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

No tactile ground surface indicators (TGSIs) were observed. There were no areas identified specifically for TGSIs.

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces in Cullen Bullen. There were no areas identified specifically for bicycle parking.

→ School zones

Cullen Bullen Public School identified the need to extend footpath facilities in front of the school to the north and east.

→ Parklands

There is no pedestrian links to the playground and public toilet facilities provided at Merv Crane Park. Large Wayfinding signage directing motorists to the park would be beneficial.

→ New sub-division

There are no new subdivision estates requiring active transport facilities.

→ Cullen Bullen CBD

There is a need to improve the existing footpath ramp to Castlereagh Highway from centre of town.



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Cullen Bullen Village

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SCALE
1:5,000 @ A3

LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

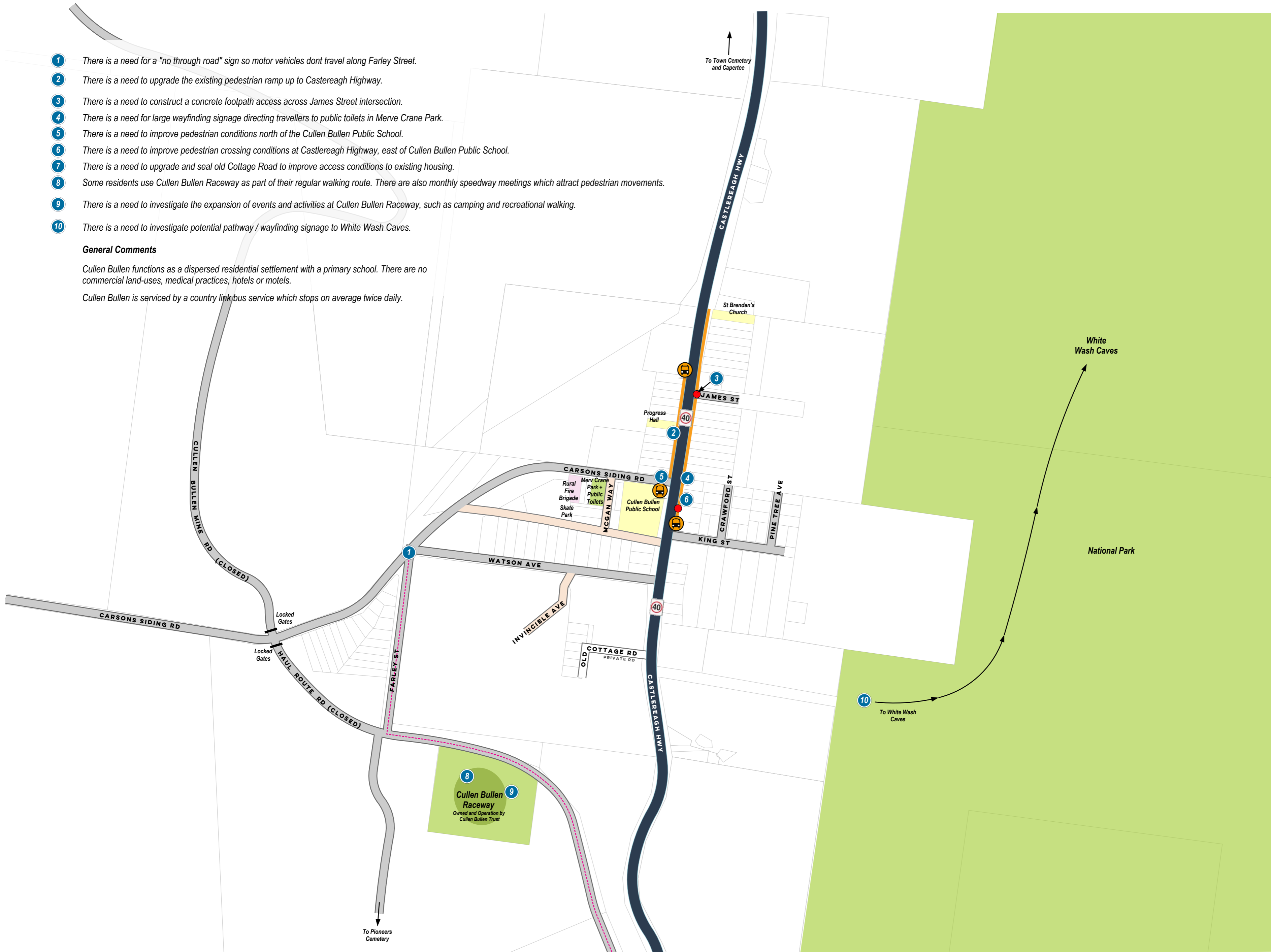
- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use

- 1 There is a need for a "no through road" sign so motor vehicles don't travel along Farley Street.
- 2 There is a need to upgrade the existing pedestrian ramp up to Castlereagh Highway.
- 3 There is a need to construct a concrete footpath access across James Street intersection.
- 4 There is a need for large wayfinding signage directing travellers to public toilets in Merv Crane Park.
- 5 There is a need to improve pedestrian conditions north of the Cullen Bullen Public School.
- 6 There is a need to improve pedestrian crossing conditions at Castlereagh Highway, east of Cullen Bullen Public School.
- 7 There is a need to upgrade and seal old Cottage Road to improve access conditions to existing housing.
- 8 Some residents use Cullen Bullen Raceway as part of their regular walking route. There are also monthly speedway meetings which attract pedestrian movements.
- 9 There is a need to investigate the expansion of events and activities at Cullen Bullen Raceway, such as camping and recreational walking.
- 10 There is a need to investigate potential pathway / wayfinding signage to White Wash Caves.

General Comments

Cullen Bullen functions as a dispersed residential settlement with a primary school. There are no commercial land-uses, medical practices, hotels or motels.

Cullen Bullen is serviced by a country link bus service which stops on average twice daily.



10.10 CAPERTEE

Map 6 illustrates the findings of community consultation and an audit of Capertee, with a summary of key issues included as follows:

→ Footpaths

The audit and consultation work in Capertee revealed a limited footpath network that does not link all attractors (e.g. public school, police station, historic hotel, general store-café-petrol station and Clarence Pirie Park). There is a need to extend footpath facilities west of Capertee Public School, both sides of Castlereagh Highway.

→ Shared paths

There are no shared paths in Capertee. There is a need to investigate shared path facilities along Bandamora Street, once the footpath network is extended along the Castlereagh Highway.

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Capertee, nor are they required to create an active transport network in town.

→ Barriers

Castlereagh Highway acts as a barrier to a connected active transport network in Capertee. Actions to improve footpath links between main attractors in town would provide the most benefits to the existing active transport network.

→ Obstacles

No street furniture, signs or other structures were observed to present major obstacles or hazards to pedestrians on constructed footpaths. Pruning / removal of trees would likely be required to extend the footpath network along the southern side of Castlereagh Highway.

→ Trip hazards

There were trip hazards observed on southern side of Castlereagh Highway near the Royal Hotel, largely due to the lack of concrete paths and problems negotiating drainage facilities in the footpath.

→ Road crossings

The existing flagged school crossing was raised as a concern due to the speed of some traffic on Castlereagh Highway.

→ Traffic Lights

No traffic lighting issues were observed, nor are they warranted.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

No tactile ground surface indicators (TGSIs) were observed. There were no areas identified specifically for TGSIs.

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces in Capertee. There were no areas identified specifically for bicycle parking.

→ School zones

Capertee Public School identified the need to extend footpath facilities in front of the school to link to bus stopping facilities and the flagged school crossing in front of the school.

→ Parklands

A footpath is required to connect Clarence Pirie Park to the general store-café-petrol station and the Royal Hotel.

→ New sub-division

There is a need to investigate shared path facilities along Bandamora Street, once the footpath network is extended along the Castlereagh Highway.

→ Capertee CBD

There is a need to extend footpath facilities west of Capertee Public School, both sides of Castlereagh Highway to provide improved footpath connections to general store-café-petrol station and the Royal Hotel.



- 1 There is a need to extend footpath on southern side of Castlereagh Highway to link Capertee Public School to open space facilities and other attractors.
- 2 There is a need to extend footpath from Castlereagh Highway to Goulburn Street.
- 3 There is a need to extend footpath facilities from school gate to the flagged crossing.



SHEET DESCRIPTION
Community Consultation & Audit Map

LOCATION
Capertee Village

PROJECT
Lithgow Shire Active Transport Plan

CLIENT
Lithgow City Council

ISSUE
20 Aug 2019

SCALE
1:5,000 @ A3

LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use

10.11 TARANA

Map 7 illustrates the findings of community consultation and an audit of Tarana, with a summary of key issues included as follows:

→ Footpaths

The audit and consultation work in Tarana revealed an absence of footpaths. There is a need to provide a footpath along Mutton Falls Road between the Hotel and Railway Station and at the main school bus stop.

→ Shared paths

There are no shared path facilities in Tarana, nor are they warranted at this stage.

→ Bicycle lanes

There were no dedicated bicycle lanes observed in Tarana, nor are they warranted at this stage.

→ Barriers

There were no significant barriers observed in town.

→ Obstacles

The uneven footpath surface along Mutton Falls Road (caused by stormwater drainage / slope in the table drain) is an obstacle to pedestrian movement in front of the hotel and heading east towards the railway station.

→ Trip hazards

The uneven footpath along Mutton Falls Road potentially presents as a trip hazard to pedestrians wishing to access the hotel.

→ Road crossings

There is no need for any formalised road crossings.

→ Traffic Lights

There are no traffic lights, nor are they warranted.

→ Street Lighting

No lighting issues were observed.

→ Tactile indicators

No tactile ground surface indicators (TGSi) were observed, nor are they warranted.

→ Bicycle parking facilities

No bicycle parking facilities were observed / readily visible at public spaces in Tarana. There is no area that warrants bicycle parking facilities at this stage. Future connection of the Pioneer Rail Trail to Tarana will likely require investment in end-of-trip facilities at the hotel and railway station.

→ School zones

There are no schools operating in Tarana. There is a reliance on the school bus system to transport students to other towns for education. There is a need to improve parent drop-off and pedestrian facilities at the bus stop at Muttons Falls Road, southern end of town. An all-weather bus stop facility should also be provided.

→ Parklands

No issues raised.

→ New sub-division

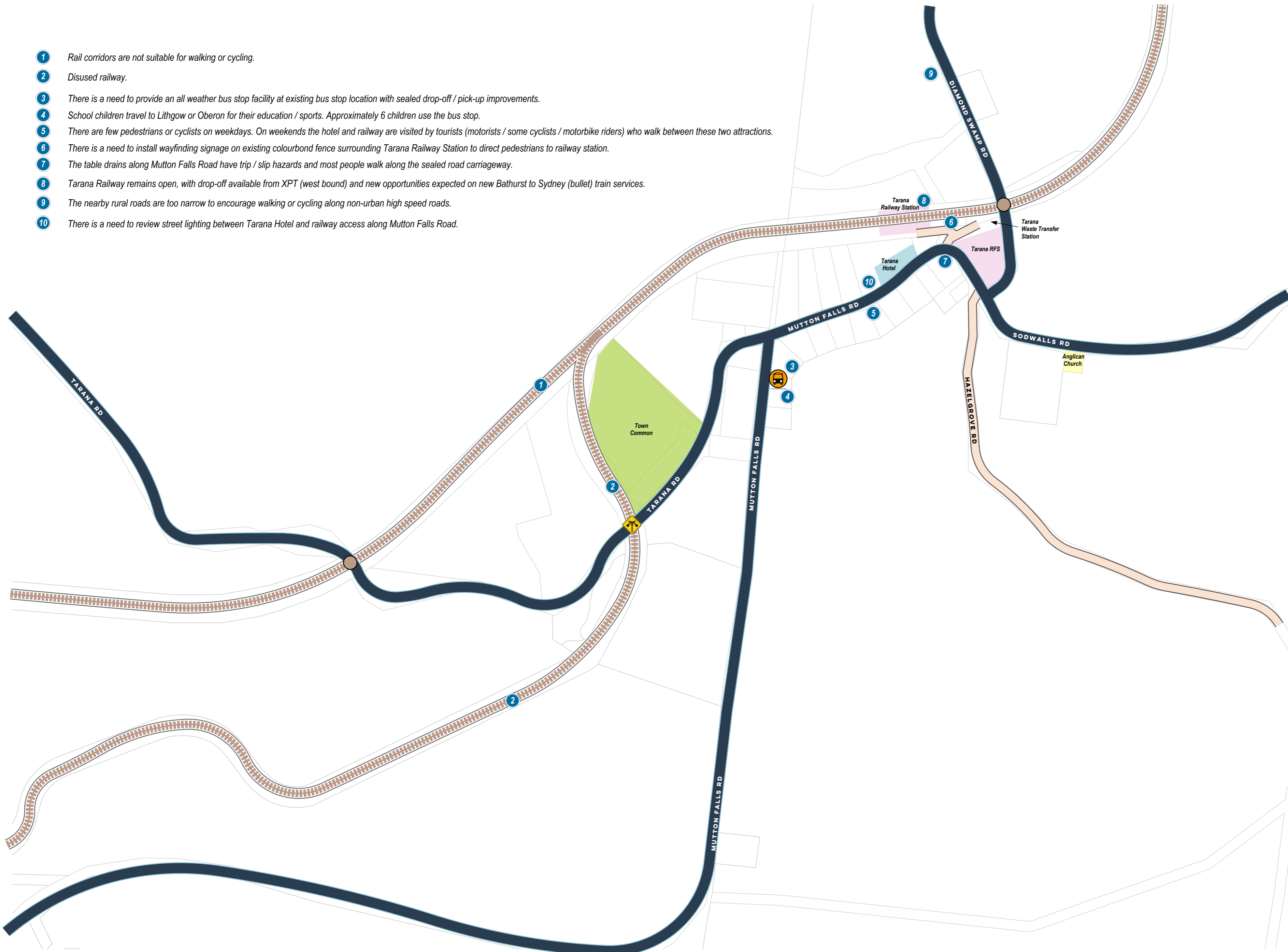
There are no new subdivision estates requiring active transport facilities.

→ Tarana CBD

There is a need to provide a footpath along Mutton Falls Road between the hotel and railway station.



- 1 Rail corridors are not suitable for walking or cycling.
- 2 Disused railway.
- 3 There is a need to provide an all weather bus stop facility at existing bus stop location with sealed drop-off / pick-up improvements.
- 4 School children travel to Lithgow or Oberon for their education / sports. Approximately 6 children use the bus stop.
- 5 There are few pedestrians or cyclists on weekdays. On weekends the hotel and railway are visited by tourists (motorists / some cyclists / motorbike riders) who walk between these two attractions.
- 6 There is a need to install wayfinding signage on existing colourbond fence surrounding Tarana Railway Station to direct pedestrians to railway station.
- 7 The table drains along Mutton Falls Road have trip / slip hazards and most people walk along the sealed road carriageway.
- 8 Tarana Railway remains open, with drop-off available from XPT (west bound) and new opportunities expected on new Bathurst to Sydney (bullet) train services.
- 9 The nearby rural roads are too narrow to encourage walking or cycling along non-urban high speed roads.
- 10 There is a need to review street lighting between Tarana Hotel and railway access along Mutton Falls Road.



SHEET DESCRIPTION

Community Consultation & Audit Map

LOCATION

Tarana Village

PROJECT

Lithgow Shire Active Transport Plan

CLIENT

Lithgow City Council

ISSUE

20 Aug 2019

SCALE

1:5,000 @ A3

LEGEND - INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Path Network Gap
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge
- Barrier / Hazard
- Regular Walking Route

LEGEND - LAND-USE

- Community Use
- Open Space / Recreation
- CBD / Major Commercial
- Water Body
- Infrastructure Use

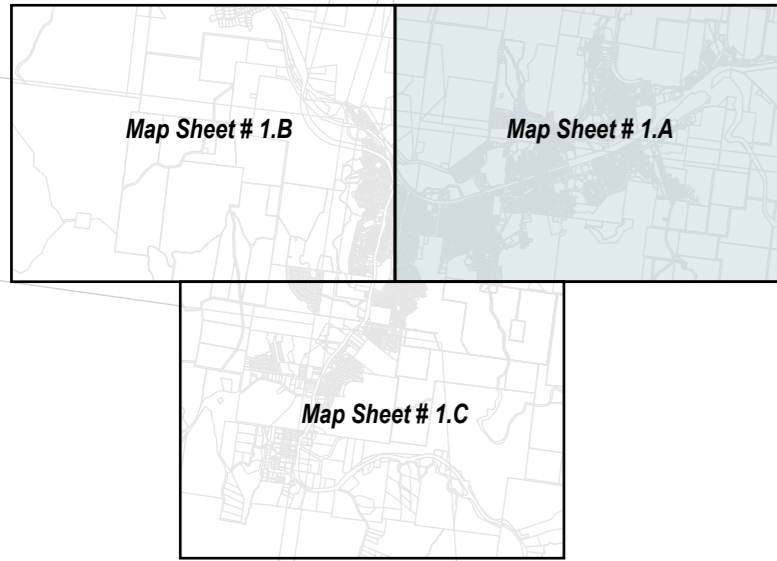


11

PROPOSED ACTIVE TRANSPORT PLANS

The draft Active Transport Plans are the result of the consideration of a number of variables that have been examined in previous sections. A series of questions were asked and given a ranking score to reflect their importance in pedestrian and bicycle planning outcomes. These questions include:

- Does it fill a gap in the network?
- Was it identified in consultation, surveys, audits or inspections?
- Will it benefit more than one user type? (recreation, commuter, fitness, shopping / short trips, student)
- Will it be suitable for all users? (safe, direct, comfortable, coherent)
- Is it located in a high activity area? (primary activity area, secondary activity generator, primary routes)
- Is it located in a hazard area? (In a black spot, or near miss area, arterial or collector road, school zone, a place visited at night, or place where alcohol is available)
- Will it lead to an appropriate reduction in vehicle speed?
- Does it improve pedestrian / cyclist visibility?
- Does it improve motorist, pedestrian, cyclist safety awareness behaviour?
- Is it the right type of facility / path?
- Would it be supported by experts / professionals in other areas of the country considering similar issues, problems, ideas and innovations?
- Is it practical in the Lithgow LGA context?
- Is it cost effective?



SHEET DESCRIPTION	Active Transport Map
LOCATION	Lithgow City
PROJECT	Lithgow Shire Active Transport Plan
CLIENT	Lithgow City Council
ISSUE	20 Aug 2019
SCALE	1:10,000 @ A3

LEGEND - EXISTING INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

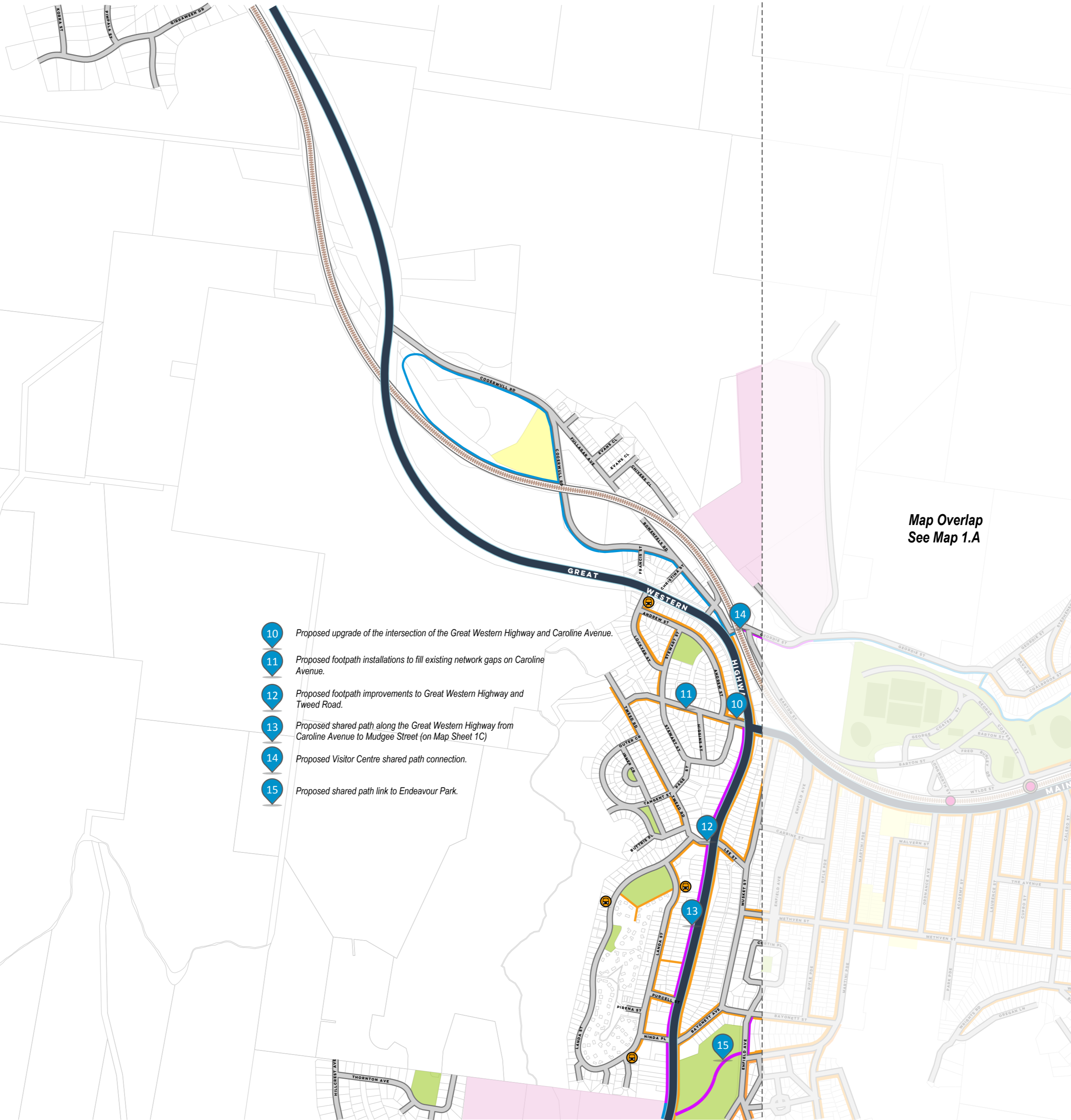
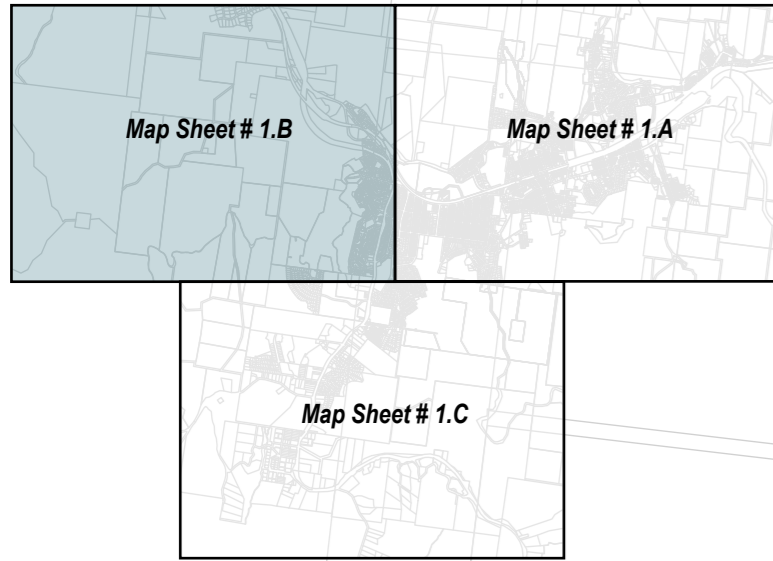
- Proposed Gravel Path
- Proposed Footpath
- Proposed Shared Path
- Proposed Project

LEGEND - LAND-USE

- Community Facility
- Open Space
- Commercial Centre
- Water Body
- Infrastructure Use

- 01 Proposed upgrades to the kerb ramps located on the intersection of Methven Street and Hassans Walls Road.
- 02 Proposed footpath installation along Hartley Valley Road. Link to existing industrial development.
- 03 Proposed footpath installation on Johnson Street. Link to existing footpath network on Mort Street.
- 04 Proposed footpath installation. Fill existing network gap on Maple Cr between Church St and Elm St.
- 05 Proposed footpath installation. Fill existing network gap on Short Street.
- 06 Proposed footpath installation. Fill existing network gap between Bells Road and Brewery Lane. Improve crossing of Brewery Lane.
- 07 Proposed low level shared path crossing.
- 08 Proposed George Coates Avenue Street pedestrian underpass improvements.
- 09 Proposed shared path connection at Tennis Courts.





- 10 Proposed upgrade of the intersection of the Great Western Highway and Caroline Avenue.
- 11 Proposed footpath installations to fill existing network gaps on Caroline Avenue.
- 12 Proposed footpath improvements to Great Western Highway and Tweed Road.
- 13 Proposed shared path along the Great Western Highway from Caroline Avenue to Mudgee Street (on Map Sheet 1C)
- 14 Proposed Visitor Centre shared path connection.
- 15 Proposed shared path link to Endeavour Park.

Map Overlap
See Map 1.A

SHEET DESCRIPTION

Active Transport Map

LOCATION

Lithgow City

PROJECT

Lithgow Shire Active Transport Plan

CLIENT

Lithgow City Council

ISSUE

20 Aug 2019

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LEGEND - EXISTING INFRASTRUCTURE

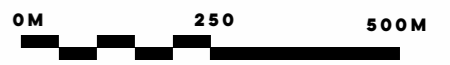
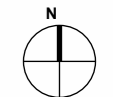
- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge

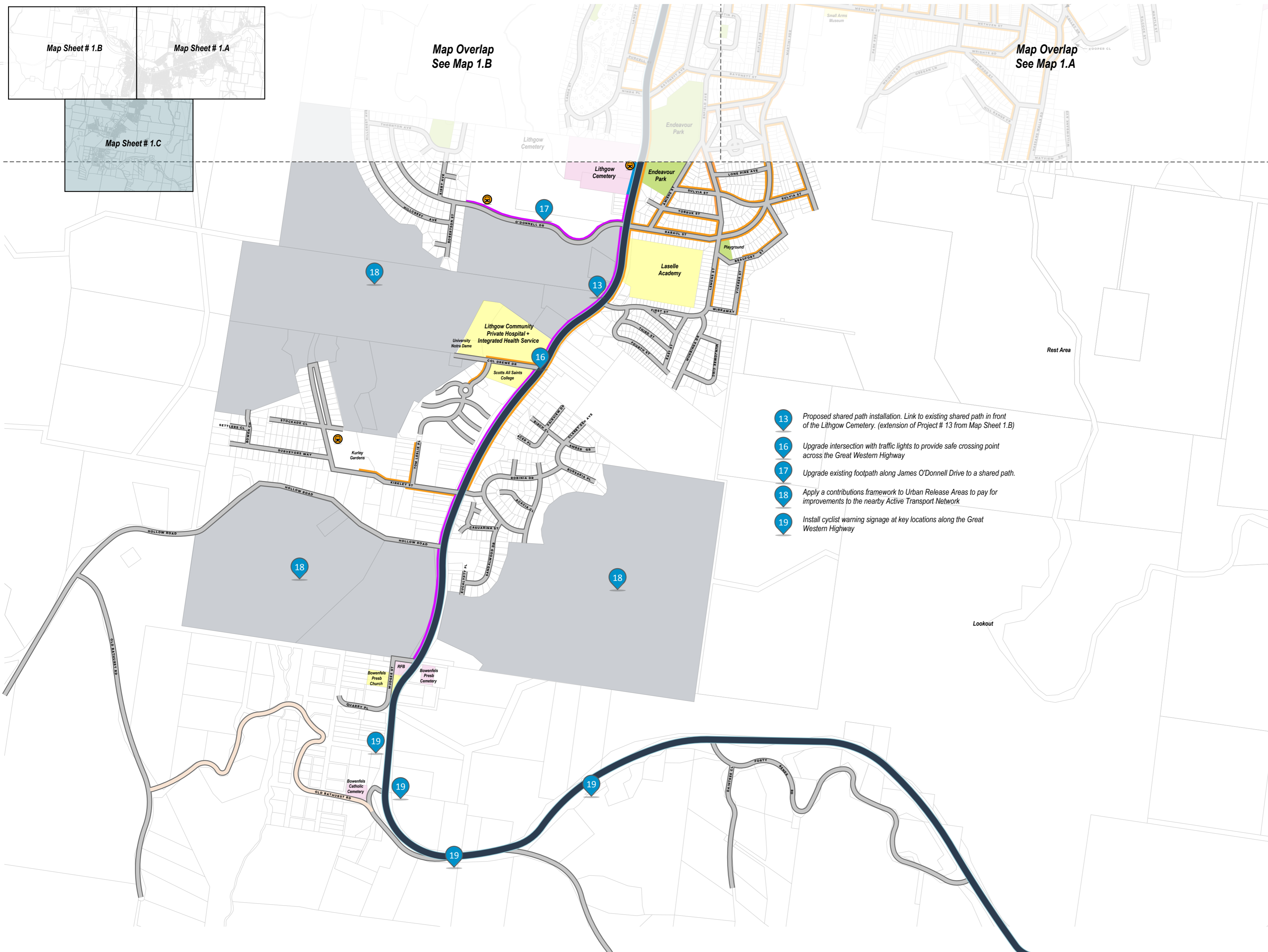
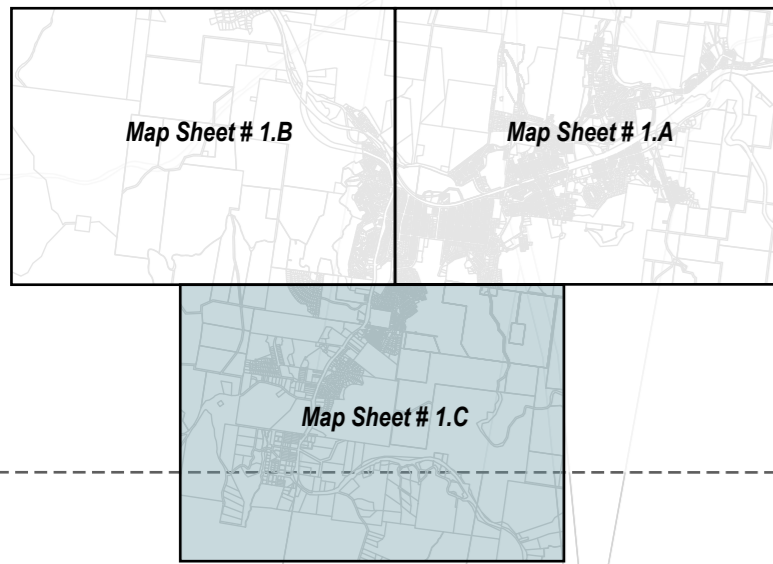
LEGEND - PROPOSED INFRASTRUCTURE

- Proposed Gravel Path
- Proposed Footpath
- Proposed Shared Path
- Proposed Project

LEGEND - LAND-USE

- Community Facility
- Open Space
- Commercial Centre
- Water Body
- Infrastructure Use





Map Overlap
See Map 1.B

Map Overlap
See Map 1.A

- 13 Proposed shared path installation. Link to existing shared path in front of the Lithgow Cemetery. (extension of Project # 13 from Map Sheet 1.B)
- 16 Upgrade intersection with traffic lights to provide safe crossing point across the Great Western Highway
- 17 Upgrade existing footpath along James O'Donnell Drive to a shared path.
- 18 Apply a contributions framework to Urban Release Areas to pay for improvements to the nearby Active Transport Network
- 19 Install cyclist warning signage at key locations along the Great Western Highway

SHEET DESCRIPTION

Active Transport Map

LOCATION
Lithgow City

PROJECT
Lithgow Shire Active Transport Plan

CLIENT
Lithgow City Council

ISSUE
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LEGEND - EXISTING INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones (40, 50)
- Pedestrian over/underpass
- Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

- Proposed Gravel Path
- Proposed Footpath
- Proposed Shared Path
- Proposed Project (01)

LEGEND - LAND-USE

- Community Facility
- Open Space
- Commercial Centre
- Water Body
- Infrastructure Use

SHEET DESCRIPTION
Active Transport Map

LOCATION
Portland Township

PROJECT
Lithgow Shire Active Transport Plan

CLIENT
Lithgow City Council

ISSUE
20 Aug 2019

SCALE
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LEGEND - EXISTING INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

- Proposed Gravel Path
- Proposed Footpath
- Proposed Shared Path
- Proposed Project

LEGEND - LAND-USE

- Community Facility
- Open Space
- Commercial Centre
- Water Body
- Infrastructure Use

- 01** Proposed upgrades to the existing crossing on Williwa Street outside of the St Joseph's Primary School
- 02** Proposed upgrades to the crossing at the intersection of High Street and Roxburgh Street.
- 03** Proposed upgrade of the existing shared path on Williwa Street linking from High Street to Railway Avenue.
- 04** Proposed shared path installation linking from the existing footpath on High Street to the intersection of High Street and Roxburgh Street.
- 05** Proposed shared path installation, linking from the existing footpath on Wallerawang Rd, along Bell Street and then to the existing footpath network at the intersection of William St and Wolgan Street.
- 06** Proposed shared path installation along Portland Sunny Corner Road to Wolgan Street.
- 07** Proposed footpath installations in the area surrounding the Portland Central School to fill existing gaps in the existing path network.
- 08** Proposed shared path installation along Railway Avenue.
- 09** Proposed railway crossing improvements.



SHEET DESCRIPTION

Active Transport Map

LOCATION

Wallerawang Township

PROJECT

Lithgow Shire Active Transport Plan

CLIENT

Lithgow City Council

ISSUE

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SCALE

1:6,000 @ A3

LEGEND - EXISTING INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

- Proposed Gravel Path
- Proposed Footpath
- Proposed Shared Path
- Proposed Project

LEGEND - LAND-USE

- Community Facility
- Open Space
- Commercial Centre
- Water Body
- Infrastructure Use

- Proposed crossing installation on Pipers Flat Road linking the existing footpath network on either side of the road.
- Proposed crossing installation to service the existing bus stop location on Main Street.
- Proposed crossing installation to link the existing footpath network on Main Street to the Railway Station.
- Proposed footpath installation linking the existing network between Pindari Place and Barton Avenue
- Proposed shared path installation from Barton Avenue, looping south along Lyon Parade, Lidsdale Street and back to the existing path network at the intersection of Commens Street and Simpkins Street.
- Proposed footpath installation linking from the existing path network on Pipers Flat Road to the open space precinct at the eastern end of Henrietta Street.
- Proposed crossing installation to link the proposed shared path installation along Commens Street.
- Proposed footpath link to Railway overbridge.

SHEET DESCRIPTION
Active Transport Map

LOCATION
Rydal Village


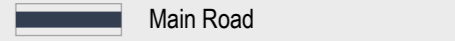
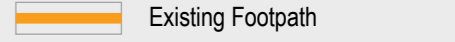
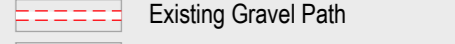
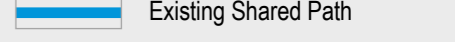
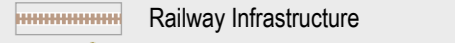



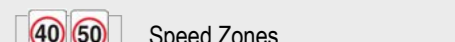
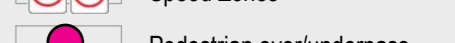
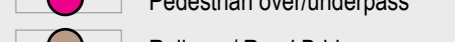
PROJECT
Lithgow Shire Active Transport Plan

CLIENT
Lithgow City Council

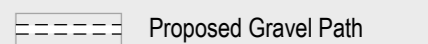
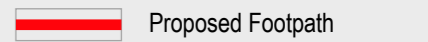
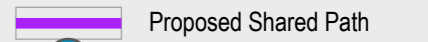
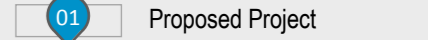
ISSUE
20 Aug 2019

SCALE
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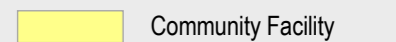
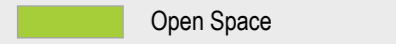

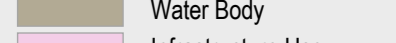
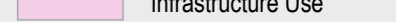
LEGEND - EXISTING INFRASTRUCTURE



-  Sealed / Unsealed Road
-  Main Road
-  Existing Footpath
-  Existing Gravel Path
-  Existing Shared Path
-  Railway Infrastructure
-  Pedestrian / Rail Crossing
-  Bus Stop / Shelter
-  Pedestrian Refuge
-  Speed Zones
-  Pedestrian over/underpass
-  Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

-  Proposed Gravel Path
-  Proposed Footpath
-  Proposed Shared Path
-  Proposed Project

LEGEND - LAND-USE

-  Community Facility
-  Open Space
-  Commercial Centre
-  Water Body
-  Infrastructure Use

-  Proposed footpath linking Quarry Street pedestrian bridge to Railway Station via Greg Featherstone Park.
-  Proposed shared path along Market Street linking Bathurst Street to Pioneers Park.



SHEET DESCRIPTION
Active Transport Map

LOCATION
Cullen Bullen Village

PROJECT
Lithgow Shire Active Transport Plan

CLIENT
Lithgow City Council

ISSUE
20 Aug 2019

SCALE
1:5,000 @ A3

LEGEND - EXISTING INFRASTRUCTURE

- Sealed / Unsealed Road
- Main Road
- Existing Footpath
- Existing Gravel Path
- Existing Shared Path
- Railway Infrastructure
- Pedestrian / Rail Crossing
- Bus Stop / Shelter
- Pedestrian Refuge
- Speed Zones
- Pedestrian over/underpass
- Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

- Proposed Gravel Path
- Proposed Footpath
- Proposed Shared Path
- Proposed Project

LEGEND - LAND-USE

- Community Facility
- Open Space
- Commercial Centre
- Water Body
- Infrastructure Use

- 01 Cullen Bullen Public School footpath improvements (north)
- 02 Cullen Bullen Public School footpath improvements (east)
- 03 Wayfinding signage to Merv Crane Park and toilets.
- 04 Footpath link - Castlereagh Highway to Merv Crane Park.
- 05 Proposed footpath ramp linking Progress Hall to the Castlereagh Highway.
- 06 White Wash Caves Track through National Parks.
- 07 James Street footpath crossing.
- 08 Footpath link to Country Link Bus Stop.



SHEET DESCRIPTION

Active Transport Map

LOCATION

Capertee Village

PROJECT

Lithgow Shire Active Transport Plan

CLIENT

Lithgow City Council













ISSUE

20 Aug 2019





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




LEGEND - EXISTING INFRASTRUCTURE



-  Sealed / Unsealed Road
-  Main Road
-  Existing Footpath
-  Existing Gravel Path
-  Existing Shared Path
-  Railway Infrastructure
-  Pedestrian / Rail Crossing
-  Bus Stop / Shelter
-  Pedestrian Refuge
-  Speed Zones
-  Pedestrian over/underpass
-  Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

-  Proposed Gravel Path
-  Proposed Footpath
-  Proposed Shared Path
-  Proposed Project

LEGEND - LAND-USE

-  Community Facility
-  Open Space
-  Commercial Centre
-  Water Body
-  Infrastructure Use

-  Proposed footpath on Castlereagh Highway (south)
-  Proposed footpath linking Capertee South.



SHEET DESCRIPTION

Active Transport Map

LOCATION

Tarana Village

PROJECT

Lithgow Shire Active Transport Plan

CLIENT

Lithgow City Council













ISSUE

20 Aug 2019





SCALE

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LEGEND - EXISTING INFRASTRUCTURE

-  Sealed / Unsealed Road
-  Main Road
-  Existing Footpath
-  Existing Gravel Path
-  Existing Shared Path
-  Railway Infrastructure
-  Pedestrian / Rail Crossing
-  Bus Stop / Shelter
-  Pedestrian Refuge
-  Speed Zones
-  Pedestrian over/underpass
-  Railway / Road Bridge

LEGEND - PROPOSED INFRASTRUCTURE

-  Proposed Gravel Path
-  Proposed Footpath
-  Proposed Shared Path
-  Proposed Project

LEGEND - LAND-USE

-  Community Facility
-  Open Space
-  Commercial Centre
-  Water Body
-  Infrastructure Use



01 Proposed bus stop facilities / parking improvements.

12

MAINTAINING THE ACTIVE TRANSPORT NETWORK

The development of a comprehensive maintenance program which identifies key tasks and frequency of works is an important part of a quality network.

Technical advice on a hazard reporting system template and pathway safety checklists is provided in:

- The Austroads Guide to Road Design Part 6A: Pedestrians and Cyclists Paths, 2009.
- The NSW RTA Bicycle Guidelines, 2005.

13

SUPPORTING A CULTURE OF ACTIVE TRANSPORT

Even a locally tailored evidence-based plan of action is not a guarantee of lasting results, once completed and implemented. According to the WHO Pedestrian Safety Manual, safe road-user behaviour and increasing user support depends on a number of factors, including:

- Knowledge and skills
- Leaders
- Community support
- Perception of vulnerability and risk
- Social acceptance to norms and change models
- Engineering measures
- Law enforcement

As this is a strategic document, detailed behaviour-change interventions and road safety programs have not been considered comprehensively. These issues need to be addressed over a longer period and with greater community input.

The following community awareness, education and activation strategies are suggested for further consideration by Lithgow City Council and the wider local community over the life of the Active Transport Plan.

13.1 ROAD SAFETY, EDUCATION AND TRAINING

Road safety education is an adjunct to other measures, rather than a stand-alone intervention. For example, road safety educational programmes may include raising awareness, including informing drivers about care, prudence, kindness, consideration, speed, pedestrian and cycling right-of-the way and traffic rules.

13.2 SCHOOL-BASED EDUCATION

School-based education programmes help children acquire knowledge and skills for pedestrian safety. While these are important life skills and all children should be taught the rules of the road, school-based traffic education will only result in reduced pedestrian collisions when combined with other interventions (*WHO Pedestrian Safety Manual, 2013*).

The RMS Road Safety Officer Program is one of the chief instruments of pedestrian policy and programs at a local level. Staff in these positions provide important links between local governments, RMS, local businesses and members of the public.

13.3 MEDIA CAMPAIGNS

Media is used to inform the public about pedestrian and cyclist safety legislation, risk factors, impact of collisions and solutions available.

Targeted and planned media and social marketing campaigns that inform the public about pedestrian and bike safety laws and risk factors are necessary to improve driver, pedestrian and cyclist behaviour and enhance understanding of traffic issues such as traffic signs, road rules and right-of-way for all road users.

Information alone is rarely sufficient to bring about changes in road user behavior. Raising the profile of issues by an RSO and community leaders is also suggested to ensure regular / consistent messaging.

13.4 TRAFFIC LAW ENFORCEMENT

Traffic laws affecting pedestrian and cyclist safety are largely aimed at controlling behaviour at intersections, crossings and other locations. Driver, pedestrian and cyclist compliance with other laws relating to speed, drink driving, jay walking, adult riding on footpaths, illegal parking in disabled parking spaces and bus zones, and aggressive behaviour are also important.

The Amy Gillett Foundation advocates a one metre clearance between motor vehicles and cyclists. This program is supported by the NSW Government under the *'it's a two way street'* safety awareness program. The traffic rules are to ensure passing motorists give adequate distance to cyclists.

In addition to enforcement of speed limits by the police, there are also physical measures, such as traffic calming that can be implemented to assist with law enforcement.



14

PROPOSED IMPROVEMENTS ANALYSIS

The facilities and treatments required to create a cohesive, safe, direct and attractive network forms the basis of the proposed infrastructure improvements.

The identified locations for pedestrian and cycle improvements are presented in this section. These projects have been developed through an interactive process between Lithgow City Council and other stakeholders.

The recommended improvements are the result of the consideration of a number of variables that have been examined in previous sections of this strategy.

The table below shows the list of projects identified for Capertee, Cullen Bullen, Lithgow, Portland, Rydal, Tarana and Wallerawang, and scores each project based on the ranking questions listed overleaf. Given the limited resources available to Council to undertake improvements during the life of the Lithgow Active Transport Plan, higher scored projects are a higher priority that should be included in Council budgets pending available funds and grant opportunities.



Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total
Lithgow																		
Lithgow 1	Proposed upgrades to the kerb ramps located on the intersection of Methven Street and Wrights Road	9	7	8	7	9	5	6	6	6	4	5	5	8	8	8	9	110
Lithgow 2	Proposed footpath installation along Hartley Valley Road Link to existing industrial development	6	8	7	7	7	5	7	6	6	4	7	6	7	7	8	7	105
Lithgow 3	Proposed footpath installation on Johnson Street. Link to existing footpath network on Mort Street	7	6	4	7	7	5	5	5	5	4	8	7	7	7	8	7	99
Lithgow 4	Proposed footpath installation. Fill existing network gap on Maple Cr between Church St and Elm St	8	6	7	7	8	5	5	6	5	4	8	7	7	7	7	7	104
Lithgow 5	Proposed footpath installation. Fill existing network gap on Short Street	8	7	8	8	8	8	7	8	8	4	8	7	7	8	8	8	120
Lithgow 6	Proposed footpath installation. Fill existing network gap between Bells Road and Brewery Lane. Improve crossing of Brewery Lane	7	6	8	7	7	7	6	6	7	7	8	7	7	7	7	7	108
Lithgow 7	Proposed low level shared path crossing	6	7	7	7	9	7	6	7	8	4	9	8	8	8	6	7	114
Lithgow 8	Proposed Coates Street pedestrian underpass improvements	9	8	9	8	8	7	8	8	8	6	8	8	8	6	7	7	123





Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total
Lithgow 9	Proposed shared path connection at Tennis Courts	8	8	8	8	9	7	7	8	6	4	8	8	7	8	8	7	119
Lithgow 10	Proposed upgrade of the intersection of the Great Western Highway and Caroline Avenue	9	8	9	8	9	7	8	8	8	7	8	8	7	8	8	8	128
Lithgow 11	Proposed pram ramps installations to fill existing network gaps on Caroline Avenue	8	6	8	7	8	6	6	6	6	4	7	6	7	8	8	7	108
Lithgow 12	Proposed footpath improvements to Great Western Highway and Tweed Road	8	6	7	7	7	6	6	6	7	6	8	7	7	7	8	7	110
Lithgow 13	Proposed shared path along the Great Western Highway from Caroline Avenue to Mudgee Street (on Map Sheet 1C)	9	9	9	9	9	7	8	9	9	4	9	8	8	8	7	5	127
Lithgow 14	Proposed Visitor Centre shared path connection	8	8	9	8	9	7	8	8	9	5	8	8	8	8	7	6	124
Lithgow 15	Proposed shared path link to Endeavour Oval	7	8	8	8	8	7	8	7	7	5	5	6	7	8	8	8	115
Lithgow 16	Upgrade intersection with traffic lights to provide safe crossing point across the Great Western Highway	8	8	8	8	9	8	8	8	8	8	8	7	8	8	7	7	125





Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total
Lithgow 17	Upgrade existing footpath along O'Donnell Drive to a shared path	8	8	8	8	8	6	7	7	6	5	8	8	7	8	8	7	117
Lithgow 18	Apply a contributions framework to Urban Release Areas to pay for improvements to the nearby Active Transport Network																	
Portland 1	Proposed upgrades to the existing crossing on Williwa Street outside of the St Joseph's Primary School	7	8	8	8	9	8	8	8	8	7	8	7	8	8	8	8	126
Portland 2	Proposed upgrades to the crossing at the intersection of High Street and Roxburgh Street.	7	7	7	7	8	6	6	6	6	7	7	7	8	7	8	7	111
Portland 3	Proposed upgrade of the existing shared path on Williwa Street linking from High Street to Railway Avenue.	8	7	8	8	8	6	7	7	7	5	7	7	8	7	7	7	114
Portland 4	Proposed shared path installation linking from the existing footpath on High Street to the intersection of High Street and Roxburgh Street.	7	7	7	7	7	5	5	6	5	6	7	7	7	7	7	7	104
Portland 5	Proposed shared path installation, linking from the existing footpath on Wallerwarang Rd, along Bell Street and then to the existing footpath network at the intersection of William St and Wolgan Street.	6	7	7	6	8	6	6	6	5	5	8	8	7	7	7	7	106
Portland 6	Proposed shared path installation along Portland Sunny Corner Road to Wolgan Street.	7	6	8	7	8	7	7	6	7	6	8	7	7	7	7	7	112





Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total	
Portland 7	Proposed footpath installations in the area surrounding the Portland Central School to fill existing gaps in the existing path network.	8	7	8	7	7	8	8	7	8	6	8	8	8	8	8	7	8	121
Portland 8	Proposed shared path installation along Railway Avenue.	8	6	8	7	8	6	6	7	7	7	8	6	6	6	7	7	7	110
Portland 9	Proposed railway crossing improvements.	9	8	8	7	8	5	5	7	8	7	9	7	8	8	7	8	8	119
Wallerawang 1	Proposed crossing installation on Pipers Flat Road linking the existing footpath network on either side of the road.	8	7	8	8	7	6	6	7	8	8	8	8	8	8	8	8	8	121
Wallerawang 2	Proposed crossing installation to service the existing bus stop location on Main Street.	8	8	8	8	8	8	8	8	7	8	8	8	8	8	8	8	8	127
Wallerawang 3	Proposed crossing installation to link the existing footpath network on Main Street to the Railway Station.	8	7	8	7	8	8	8	7	7	5	7	7	7	7	7	7	7	115
Wallerawang 4	Proposed footpath installation linking the existing network between Pindari Place and Barton Avenue	7	7	8	8	7	6	6	7	7	6	8	8	8	8	8	8	8	117





Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total
Wallerawang 5	Proposed shared path installation from Barton Avenue, looping south along Lyon Parade, Lidsdale Street and back to the existing path network at the intersection of Commens Street and Simpkins Street.	6	8	8	8	8	6	6	7	7	7	8	8	8	7	7	6	115
Wallerawang 6	Proposed footpath installation linking from the existing path network on Pipers Flat Road to the open space precinct at the eastern end of Henrietta Street.	6	6	7	7	6	6	6	6	6	5	8	7	7	7	7	7	104
Wallerawang 7	Proposed crossing installation to link the proposed shared path installation along Commen Street.	7	7	8	8	8	6	6	6	6	8	7	7	7	7	7	7	112
Wallerawang 8	Proposed footpath link to Railway overbridge.	9	9	9	8	8	8	7	9	8	7	7	8	7	9	9	9	131
Rydal 1	Proposed shared path linking Quarry Street pedestrian bridge to Railway Station via Greg Featherstone Park.	8	8	8	8	8	7	6	6	7	5	8	8	8	7	8	7	117
Rydal 2	Proposed foot path along Market Street linking Bathurst Street to Pioneers Park.	8	7	8	8	8	7	6	6	6	5	8	7	7	7	7	7	112
Cullen Bullen 1	Cullen Bullen Public School footpath improvements (north)	8	8	9	8	8	8	8	8	9	6	8	8	8	9	8	9	130





Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total
Cullen Bullen 2	Cullen Bullen Public School footpath improvements (east)	8	8	8	8	6	8	8	7	8	8	8	7	7	8	8	8	123
Cullen Bullen 3	Wayfinding signage to Merv Crane Park and toilets.	5	8	8	6	7	8	6	7	6	6	7	7	7	8	7	7	110
Cullen Bullen 4	Footpath link Castlereagh Highway to Merv Crane park	7	8	7	7	6	8	5	6	5	6	7	7	6	8	7	7	107
Cullen Bullen 5	Proposed footpath ramp linking Progress Hall to the Castlereagh Highway.	6	7	8	8	7	5	5	6	6	5	6	7	5	6	6	6	99
Cullen Bullen 6	White Wash Caves Track.	4	6	5	5	5	5	5	4	4	4	6	5	5	5	4	3	75
Cullen Bullen 7	James Street footpath crossing.	8	8	8	6	7	5	5	5	5	5	5	5	5	6	6	7	96
Cullen Bullen 8	Footpath link to Country Link Bus Stop.	8	7	8	7	8	7	6	6	6	5	5	4	4	6	7	7	101
Capertee 1	Proposed footpath on Castlereagh Highway (south)	8	8	8	8	7	8	6	8	8	6	8	7	7	8	8	7	120



Project No.	Project Description	Does it fill a Network Gap?	Has it been identified in Consultation?	Has it been identified in Audits?	Are there User Type Benefits?	Is it suitable for all users?	Is it in A Primary Activity Zone?	Is it in a Secondary Activity Zone?	Is it on a Primary Pedestrian or cyclists Route?	Is it in or near a Hazard Area?	Will it reduce Speed?	Will it separate pedestrian and cyclists from vehicles?	Will it increase pedestrian and cyclist Visibility?	Will it increase Safety Awareness?	Would it be peer supported?	Is it practical?	Is it cost effective?	Total
Capertee 2	Proposed footpath linking Capertee South.	7	7	7	6	6	5	5	6	6	6	8	7	7	6	6	6	101
Tarana 1	Proposed bus stop facilities / parking improvements.	7	7	7	7	7	6	6	6	7	5	7	7	7	7	6	6	105





15

PROJECT PLANS

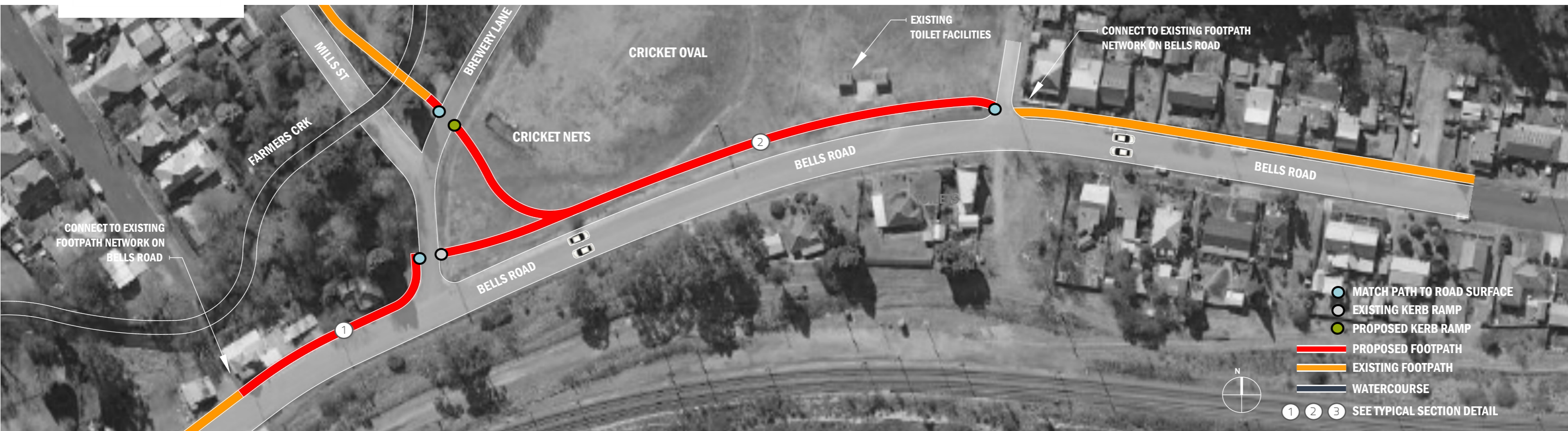
This section includes project plans for the top priority improvements to the Active Transport Network in Capertee, Cullen Bullen, Lithgow, Portland, Rydal, Tarana and Wallerawang.

The project plans include the following details:

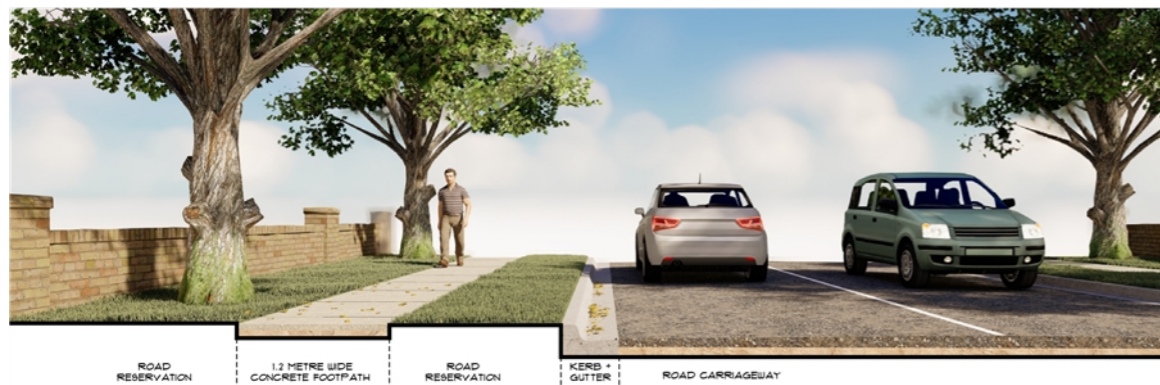
- Project description
- Specifications for each improvement.
- Estimated costs for each project.
- 3D concept illustration.

LITHGOW PROJECT #06

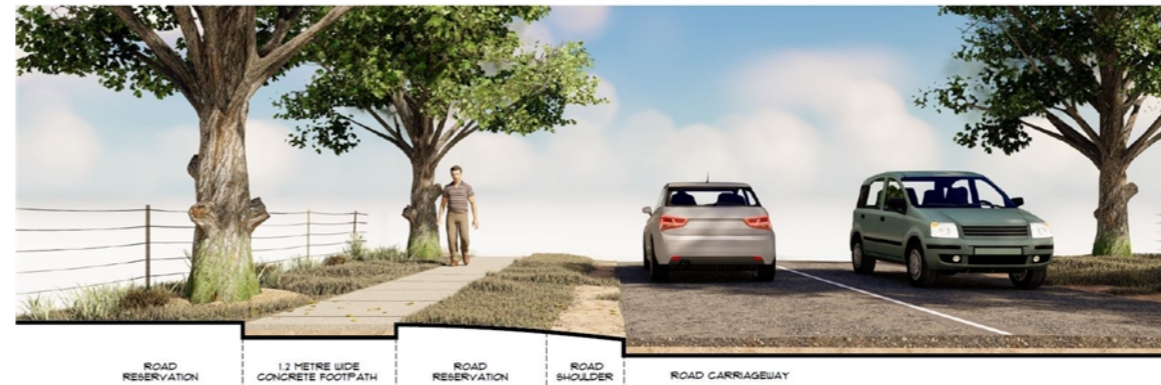
BELLS ROAD / BREWERY LANE FOOTPATH PROJECT



1 TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



2 TYPICAL SECTION DETAIL - FOOTPATH INSTALLATION - NO KERB AND GUTTER



PROJECT DESCRIPTION

Proposed footpath installation to fill the existing network gaps between Bells Road, Brewery Lane and Mills Street, in the vicinity of the existing cricket oval.

PROJECT SPECIFICATIONS



Footpath
X 320m



Kerb ramp
X 1



Estimated Cost
\$59,750

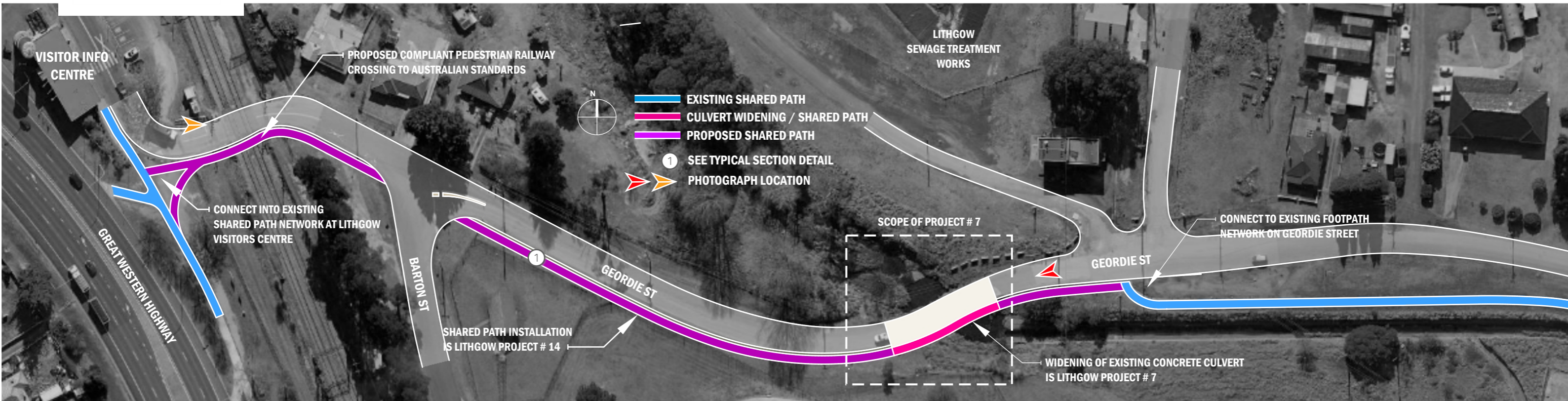


LOCATION PHOTOGRAPH

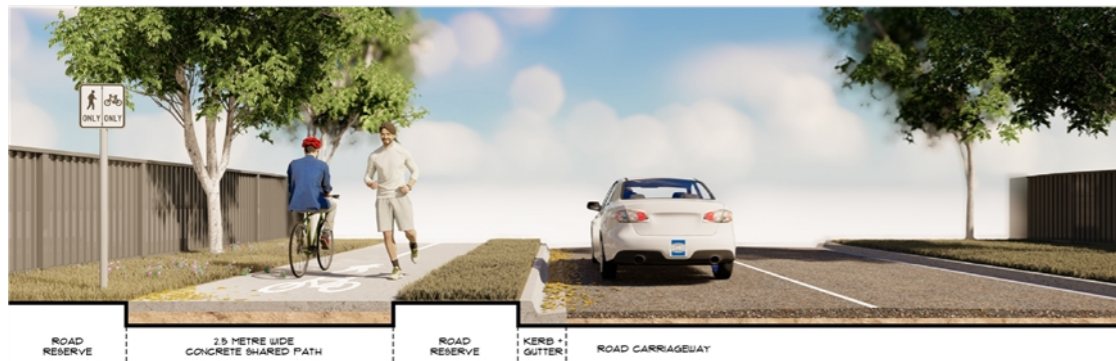
Intersection of Bells Road with Brewery Lane, looking North West towards Mills Street, with the existing cricket nets at the right of view.

LITHGOW PROJECTS #07 AND #14

GEORDIE STREET CULVERT UPGRADE AND SHARED PATH PROJECT



1 TYPICAL SECTION DETAIL - SHARED PATH INSTALLATION



LOCATION PHOTOGRAPH

The existing railway crossing on Geordie Street, looking westward.

PROJECT DESCRIPTION

Proposed upgrade to the existing concrete culvert on Geordie Street and installation of new shared path to fill the network gap between the Geordie Street and Great Western Highway

PROJECT SPECIFICATIONS

Project # 7		Project # 14		
Causeway Widening X 1	Detailed Costing Required	Shared Path X 280m	Railway Crossing Upgrade	Estimated Cost \$70,000 (TBC)

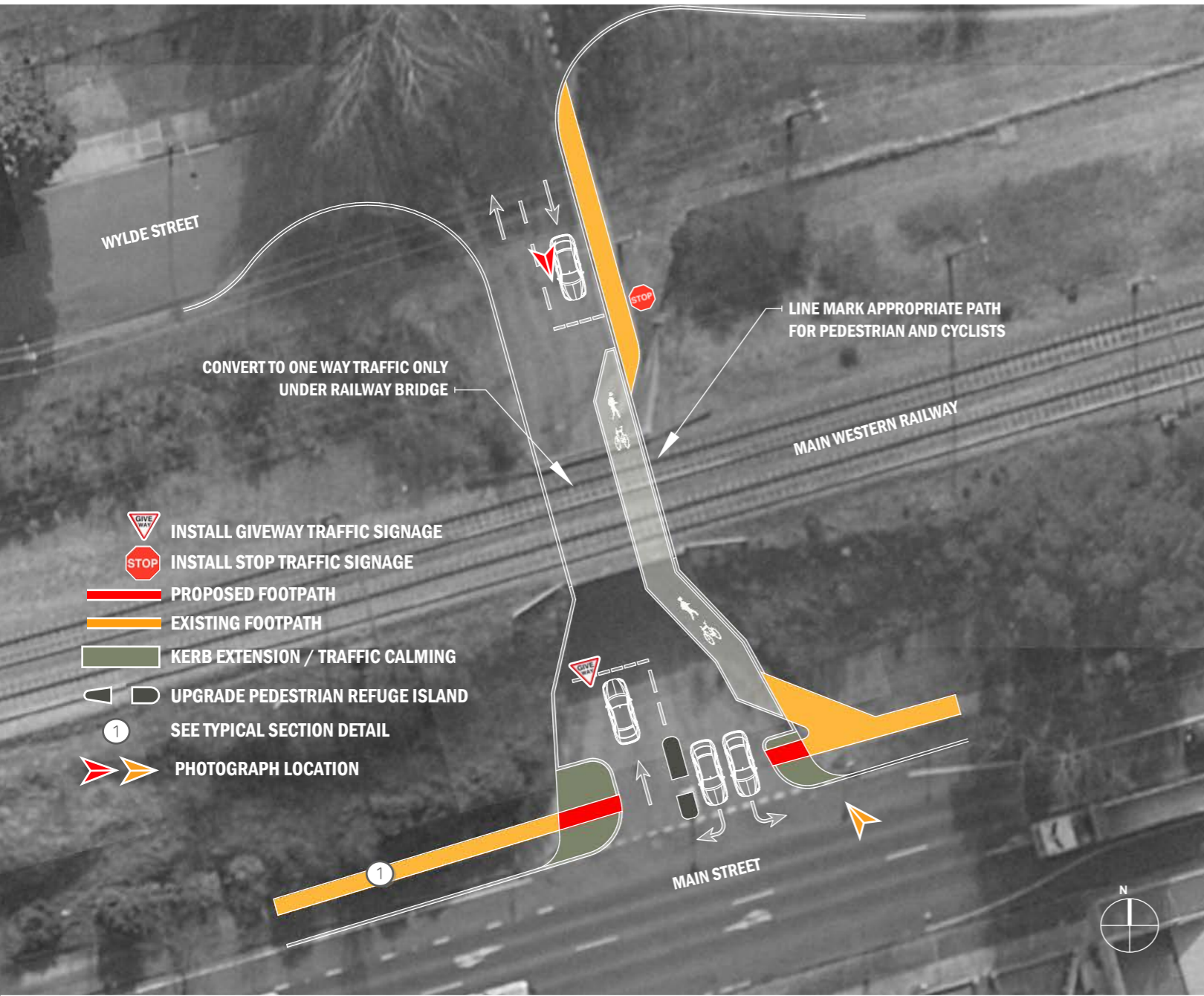


LOCATION PHOTOGRAPH

The existing low level concrete causeway crossing on Geordie Street, looking due East.

LITHGOW PROJECT #08 (OPTION 1)

MAIN STREET / WYLDE STREET RAILWAY UNDERPASS UPGRADE PROJECT



1 TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



PROJECT DESCRIPTION

Proposed safety improvements to the existing railway underpass connecting Main Street and Wylde Street. The project involves kerb extensions to slow traffic speed, and narrowing of the vehicle passing lane to enabled a shared path zone linking the existing footpath network. This project is subject to detailed consultation, design and road safety considerations.

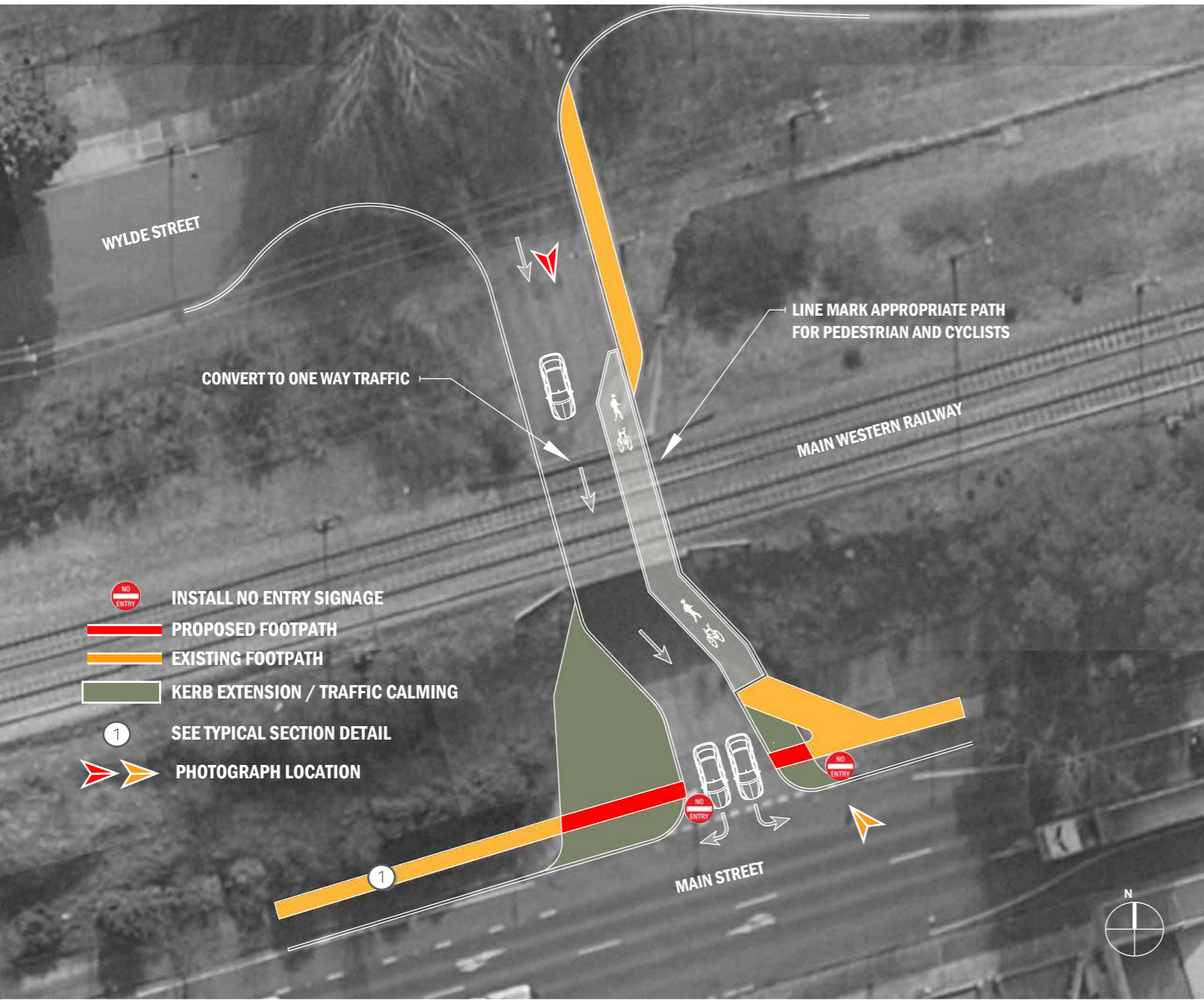
PROJECT SPECIFICATIONS

Footpath X 10m	Kerb ramp X 2	kerb blister X 2	Pedestrian Refuge X 1m	Line Marking + Signs x 50m	Estimated Cost \$42,000

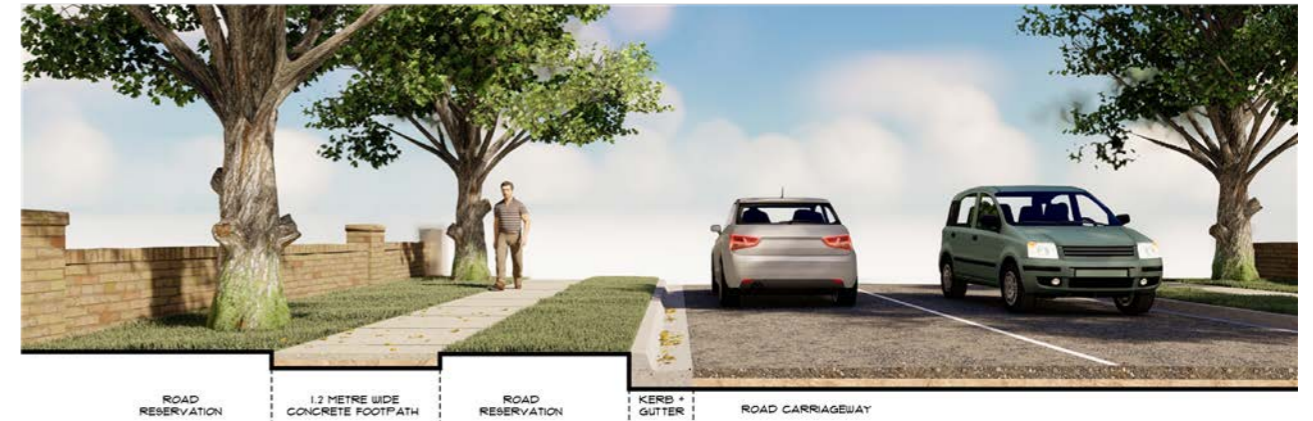


LITHGOW PROJECT #08 (OPTION 2)

MAIN STREET / WYLDE STREET RAILWAY UNDERPASS UPGRADE PROJECT








1 TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



PROJECT DESCRIPTION

Proposed safety improvements to the existing railway underpass connecting Main Street and Wylde Street. The project involves kerb extensions to slow traffic speed, and narrowing of the vehicle passing lane to enabled a shared path zone linking the existing footpath network. This project is subject to detailed consultation, design and road safety considerations.

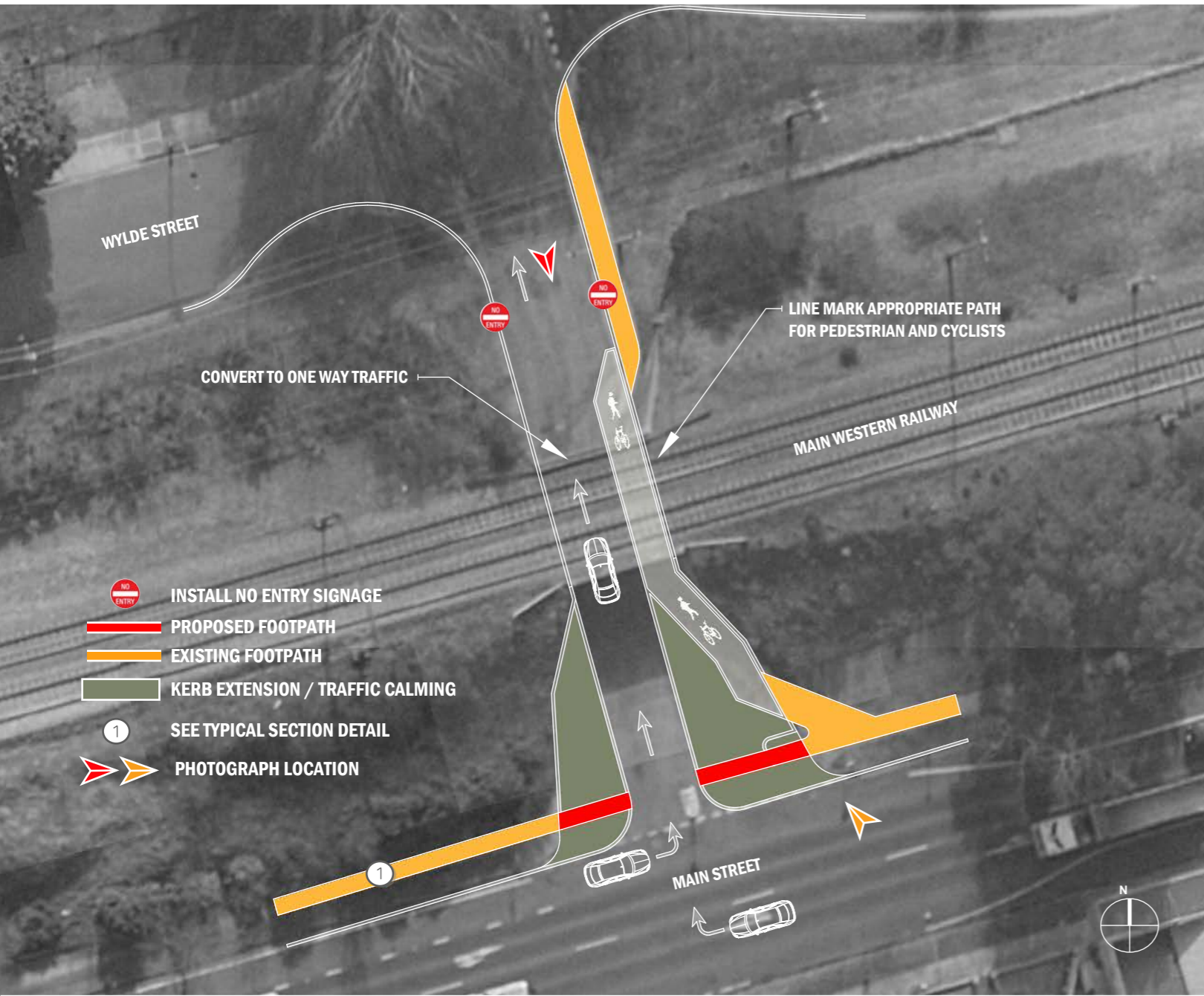
PROJECT SPECIFICATIONS

				
Footpath X 14m	Kerb ramp X 2	kerb blister X 2	Line Marking + Signs x 50m	Estimated Cost \$42,000



LITHGOW PROJECT #08 (OPTION 3)

MAIN STREET / WYLDE STREET RAILWAY UNDERPASS UPGRADE PROJECT



1 TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



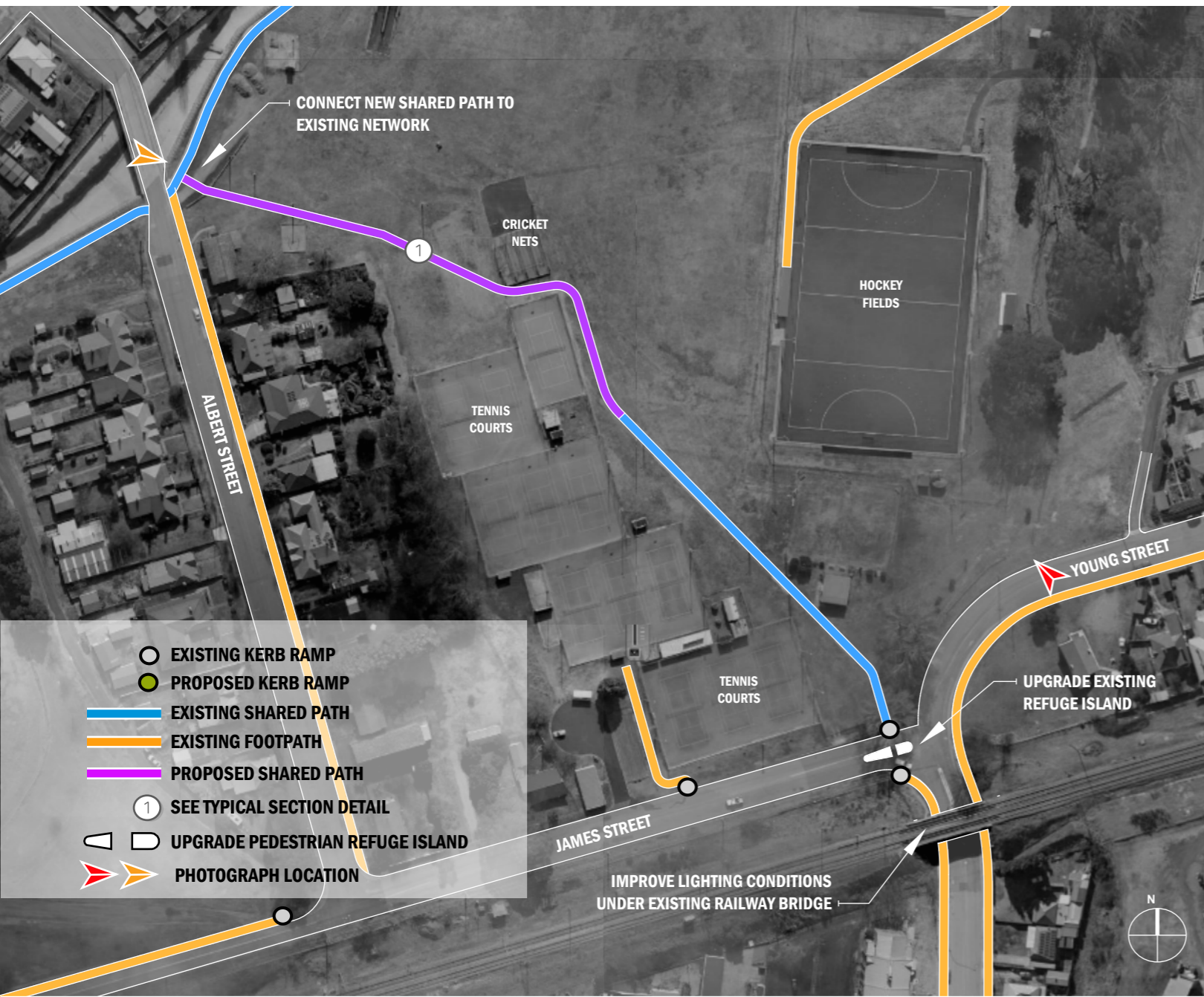
PROJECT DESCRIPTION

Proposed safety improvements to the existing railway underpass connecting Main Street and Wylde Street. The project involves kerb extensions to slow traffic speed, and narrowing of the vehicle passing lane to enabled a shared path zone linking the existing footpath network. This project is subject to detailed consultation, design and road safety considerations.

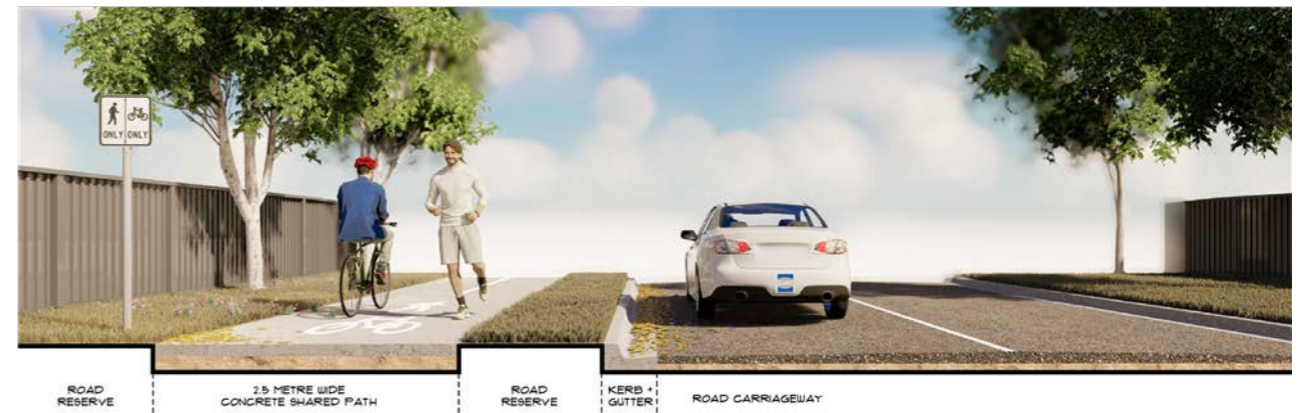
PROJECT SPECIFICATIONS

- Footpath X 14m
- Kerb ramp X 2
- kerb blister X 2
- Line Marking + Signs x 50m
- Estimated Cost \$42,000





① TYPICAL SECTION DETAIL - SHARED PATH INSTALLATION



LOCATION PHOTOGRAPH ➤

View south east towards Glanmire Oval from the existing shared path location on Albert Street,



PROJECT DESCRIPTION

Proposed shared path installation at Glanmire Oval to fill an existing gap in the path network between James Street and Albert Street. The shared path will provide links between existing sporting facilities at the Oval.

PROJECT SPECIFICATIONS



Shared path
X 150m



Pedestrian Refuge
X 1m

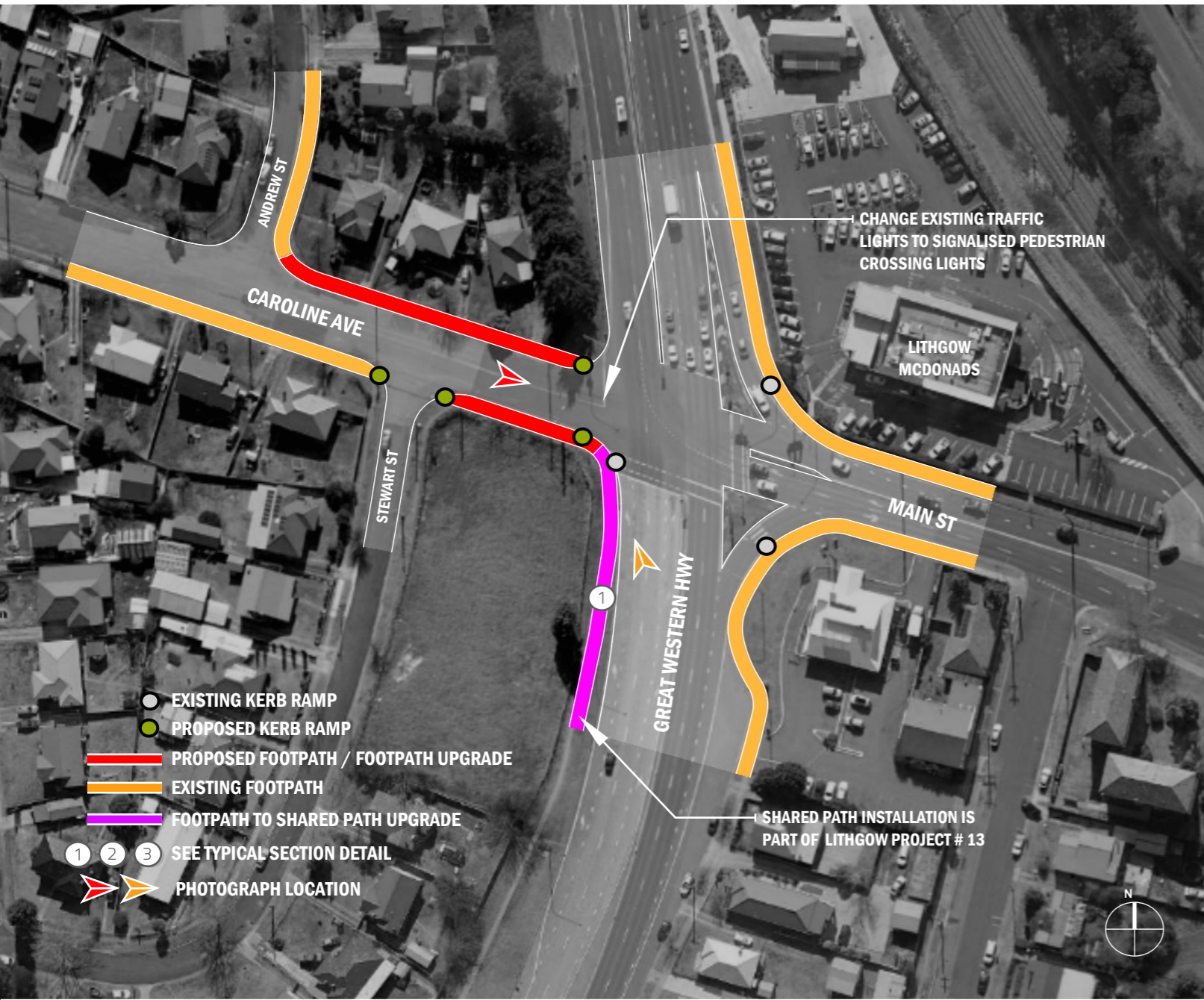


Estimated Cost
\$225,000

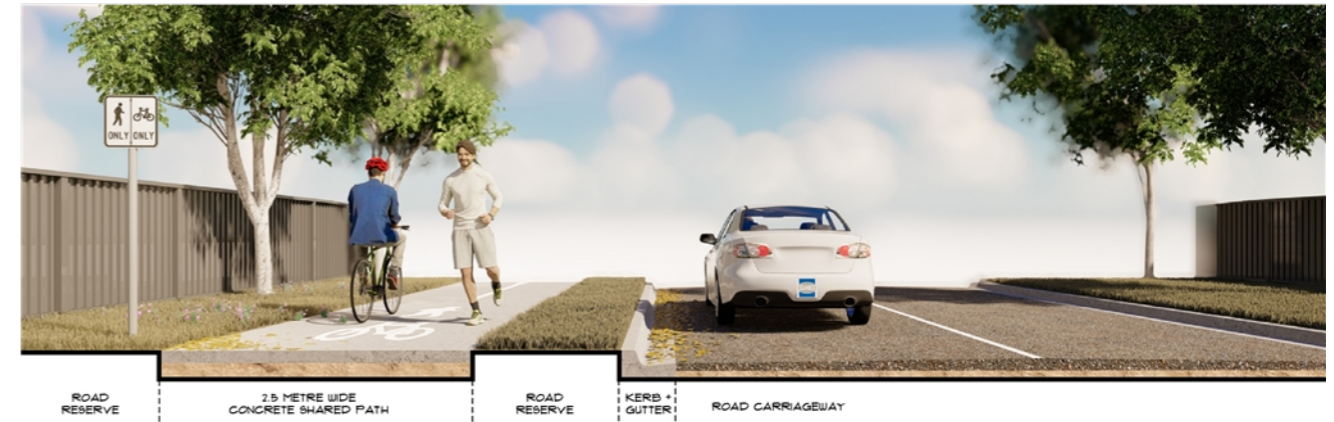


➤ LOCATION PHOTOGRAPH

View north west towards the hockey fields at Glanmire Oval.
Photo taken from a vantage point on Young Street.



1 TYPICAL SECTION DETAIL - SHARED PATH INSTALLATION



LOCATION PHOTOGRAPH ➤





Intersection of the Great Western Highway and Caroline Avenue, looking eastwards towards McDonalds on the opposite side of the road.



PROJECT DESCRIPTION

Proposed upgrades to the connectivity of the existing path network at the intersections of Caroline Avenue with the Great Western Highway.

PROJECT SPECIFICATIONS

			
Footpath X 110m	Kerb ramp X 4	Traffic Light Upgrade - Cost TBC	Estimated Cost \$64,250

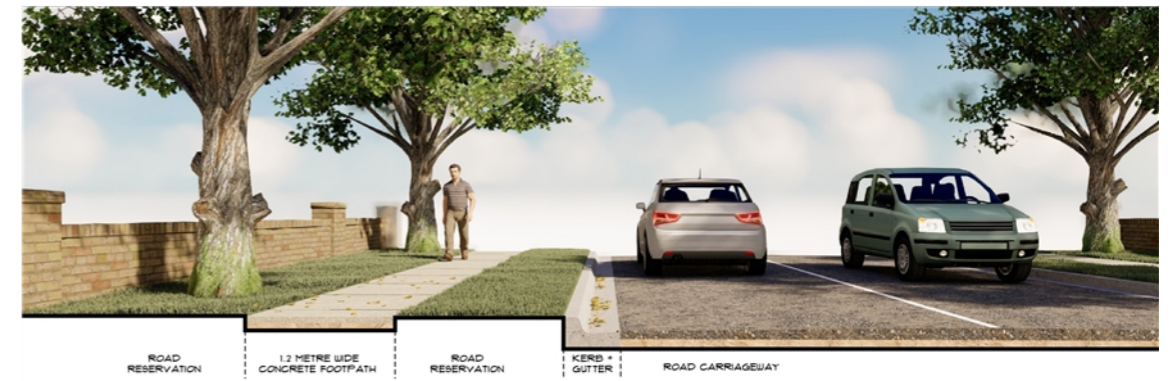
LOCATION PHOTOGRAPH ➤

Intersection of the Great Western Highway and Caroline Avenue, looking Northwards.

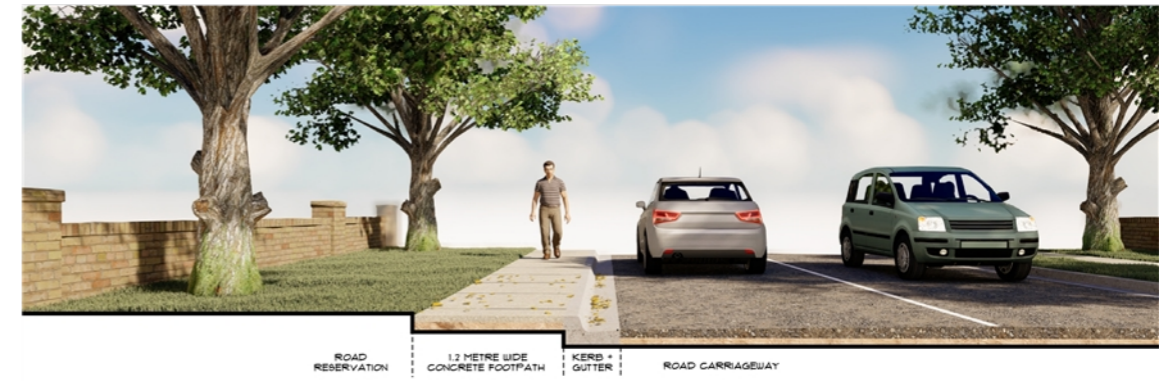




1 TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



2 TYPICAL SECTION DETAIL - FOOTPATH ADJACENT TO KERB








3 TYPICAL SECTION DETAIL - SHARED PATH INSTALLATION



PROJECT DESCRIPTION

Proposed upgrades to the connectivity of the existing path network at the intersections of Tweed Road with the Great Western Highway, Landa Street and Outer Crescent.

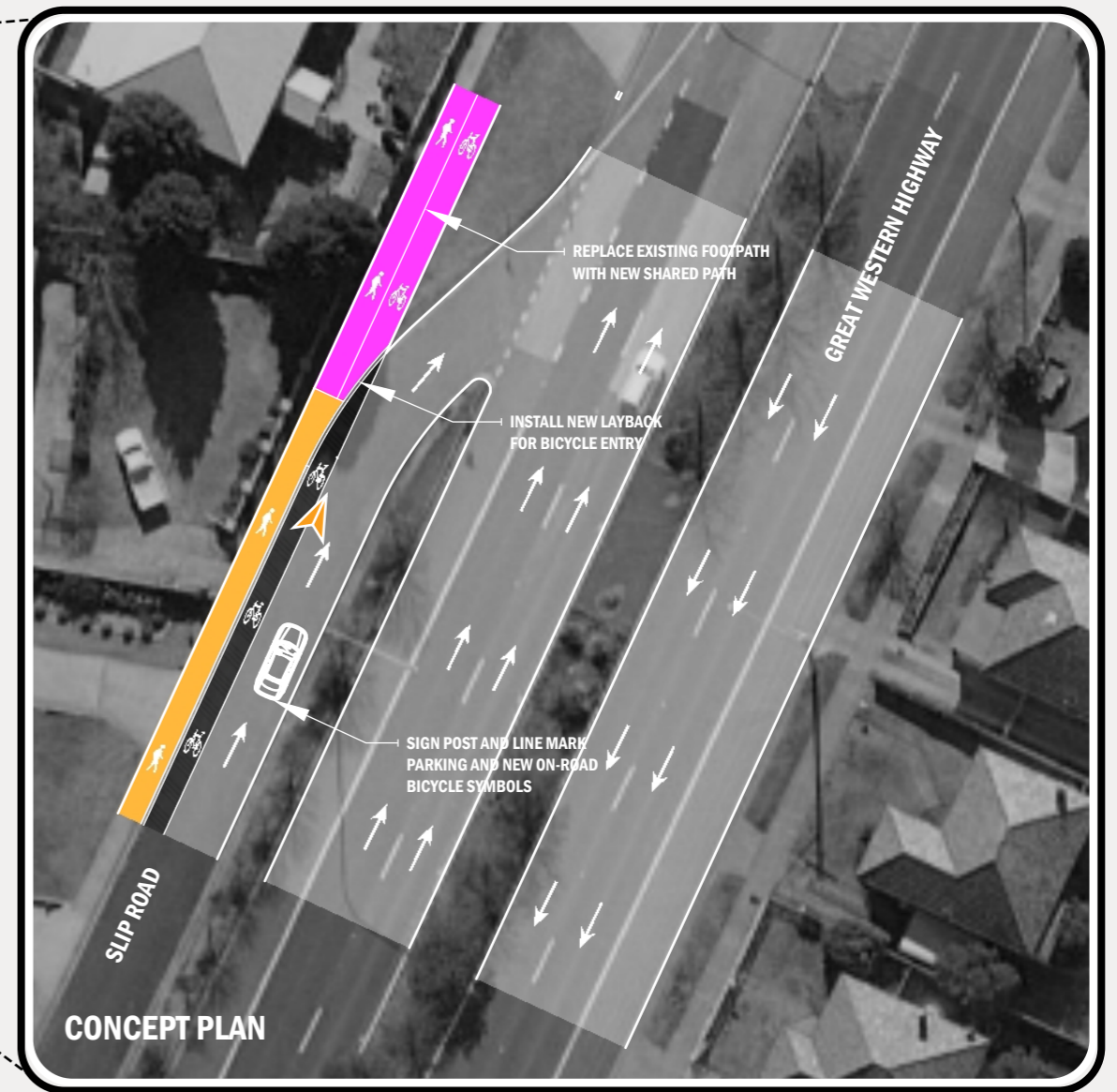
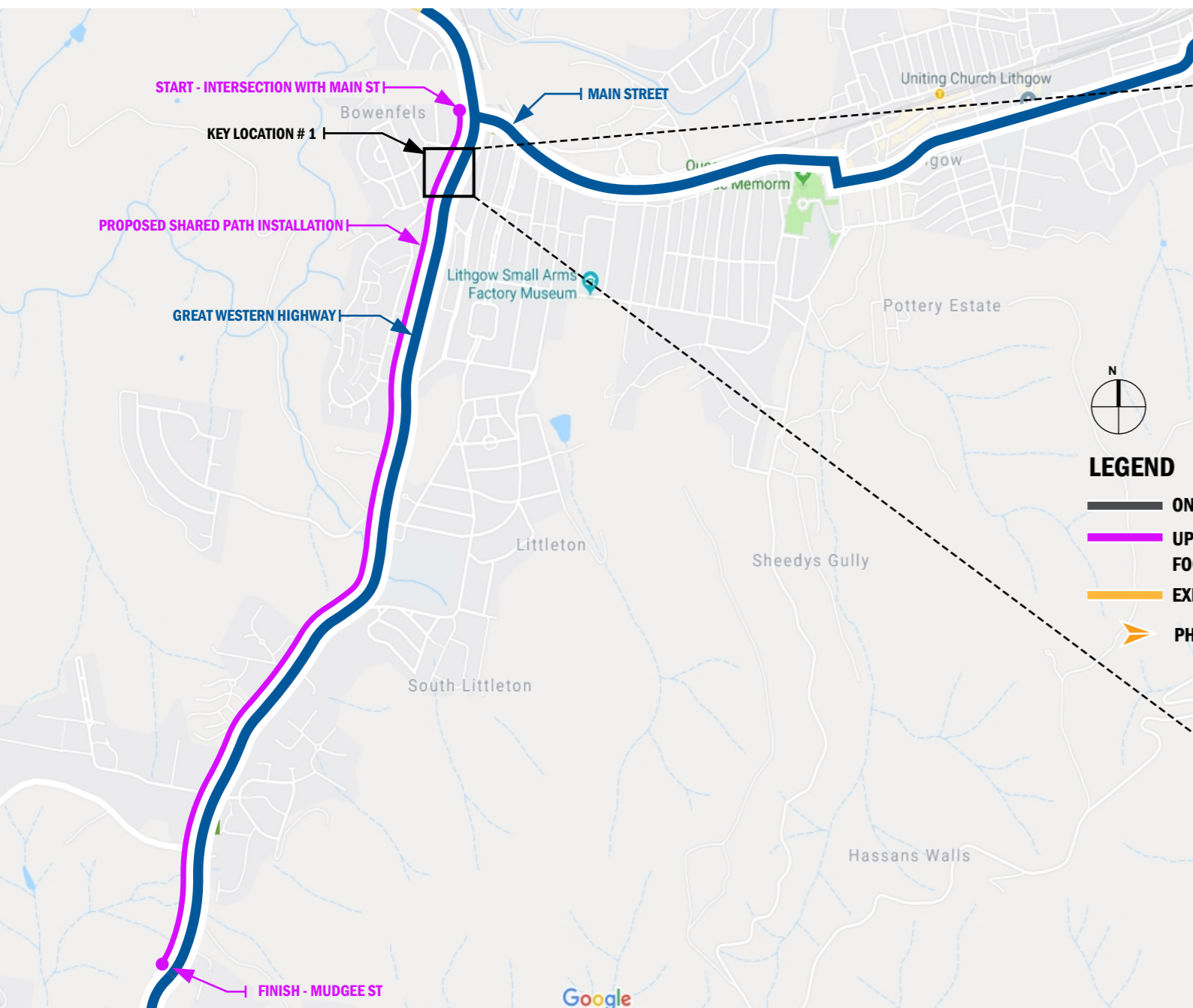
PROJECT SPECIFICATIONS

- 
 Footpath
X 45m
- 
 Pedestrian Refuge
X 3
- 
 Kerb ramp
X 4
- 
 kerb blister
X 1
- 
 Estimated Cost
\$76,625

LOCATION PHOTOGRAPH

BP Service Station on NW corner of Tween Road and the Great Western Highway





PROJECT DESCRIPTION

Proposed shared path installation / shared path upgrade along the Great Western Highway from the intersection of Main Street to the intersection of Mudgee Street.

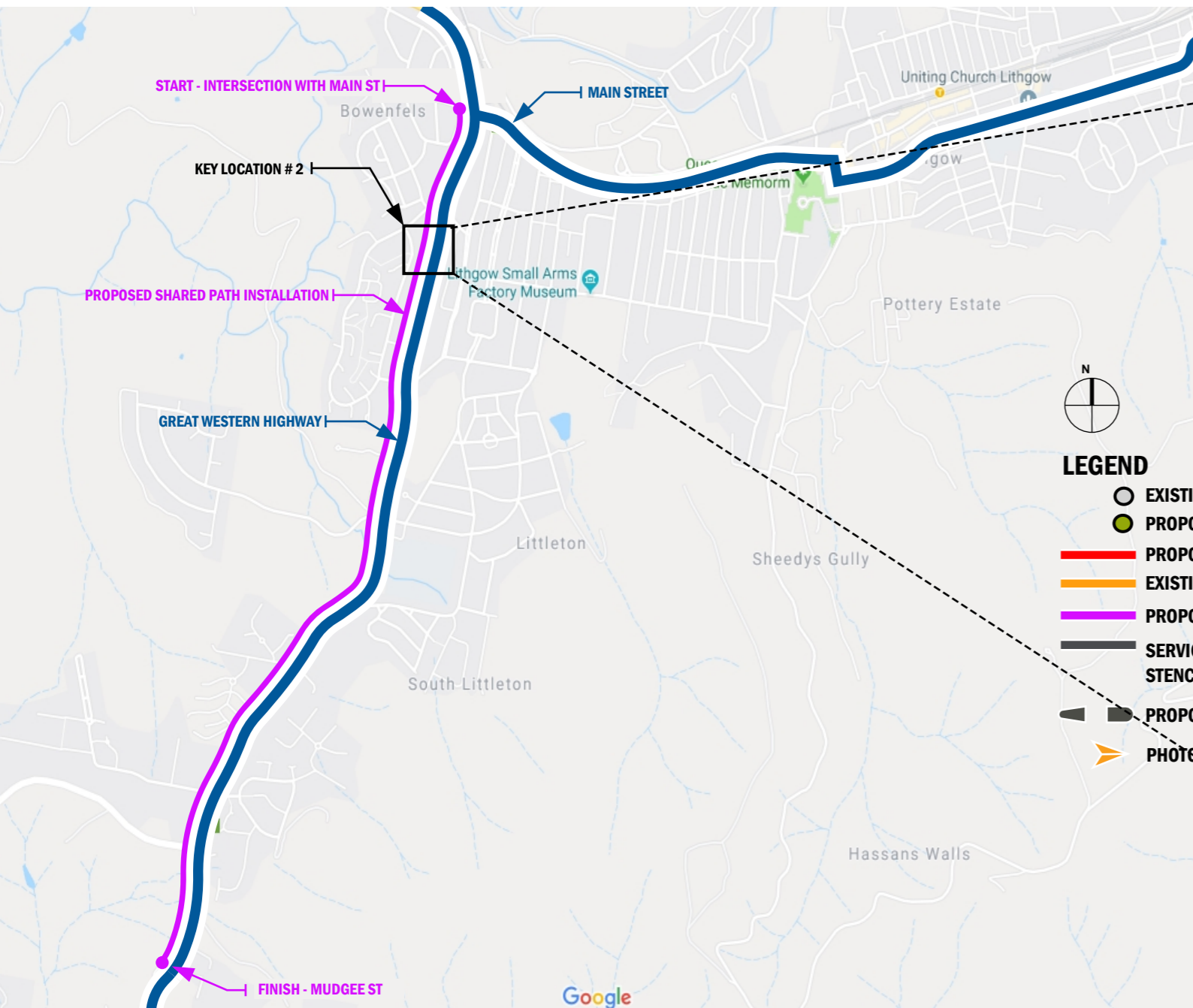
PROJECT SPECIFICATIONS

- Footpath X 40m
- Shared path X 3500m
- Pedestrian Refuge X 4
- Kerb ramp X 10
- Subject to detailed cost estimate

LOCATION PHOTOGRAPH

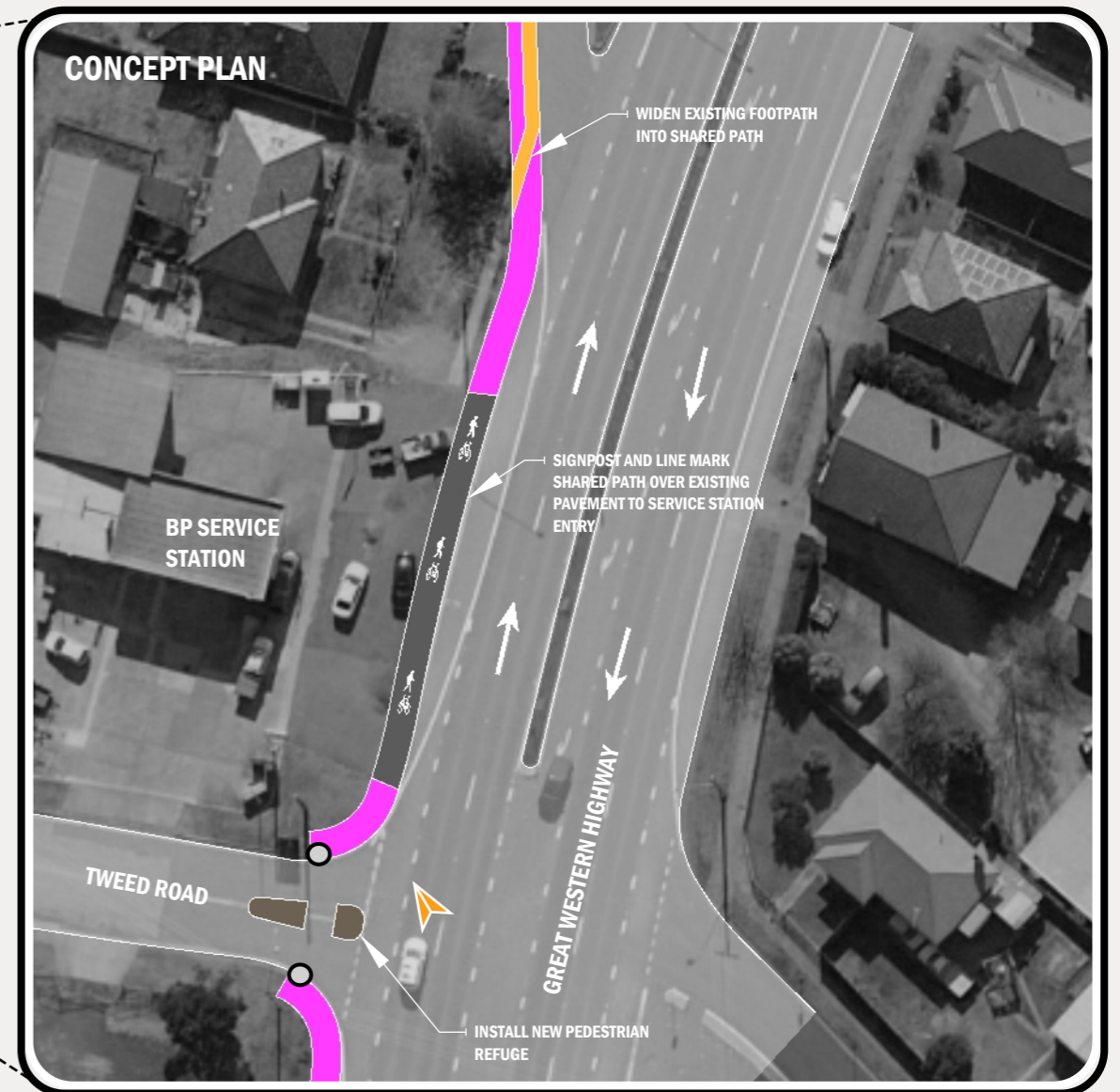
Photograph of the existing slip lane adjoining the Great Western Highway. View north east.





LEGEND

- EXISTING KERB RAMP
- PROPOSED KERB RAMP
- PROPOSED FOOTPATH
- EXISTING FOOTPATH
- PROPOSED SHARED PATH
- SERVICE STATION ACCESS DRIVE STENCIL PAVEMENT
- PROPOSED REFUGE ISLAND
- PHOTOGRAPH LOCATION



PROJECT DESCRIPTION

Proposed shared path installation / shared path upgrade along the Great Western Highway from the intersection of Main Street to the intersection of Mudgee Street.

PROJECT SPECIFICATIONS



Footpath
X 40m



Shared path
X 3500m



Pedestrian Refuge
X 4



Kerb ramp
X 10

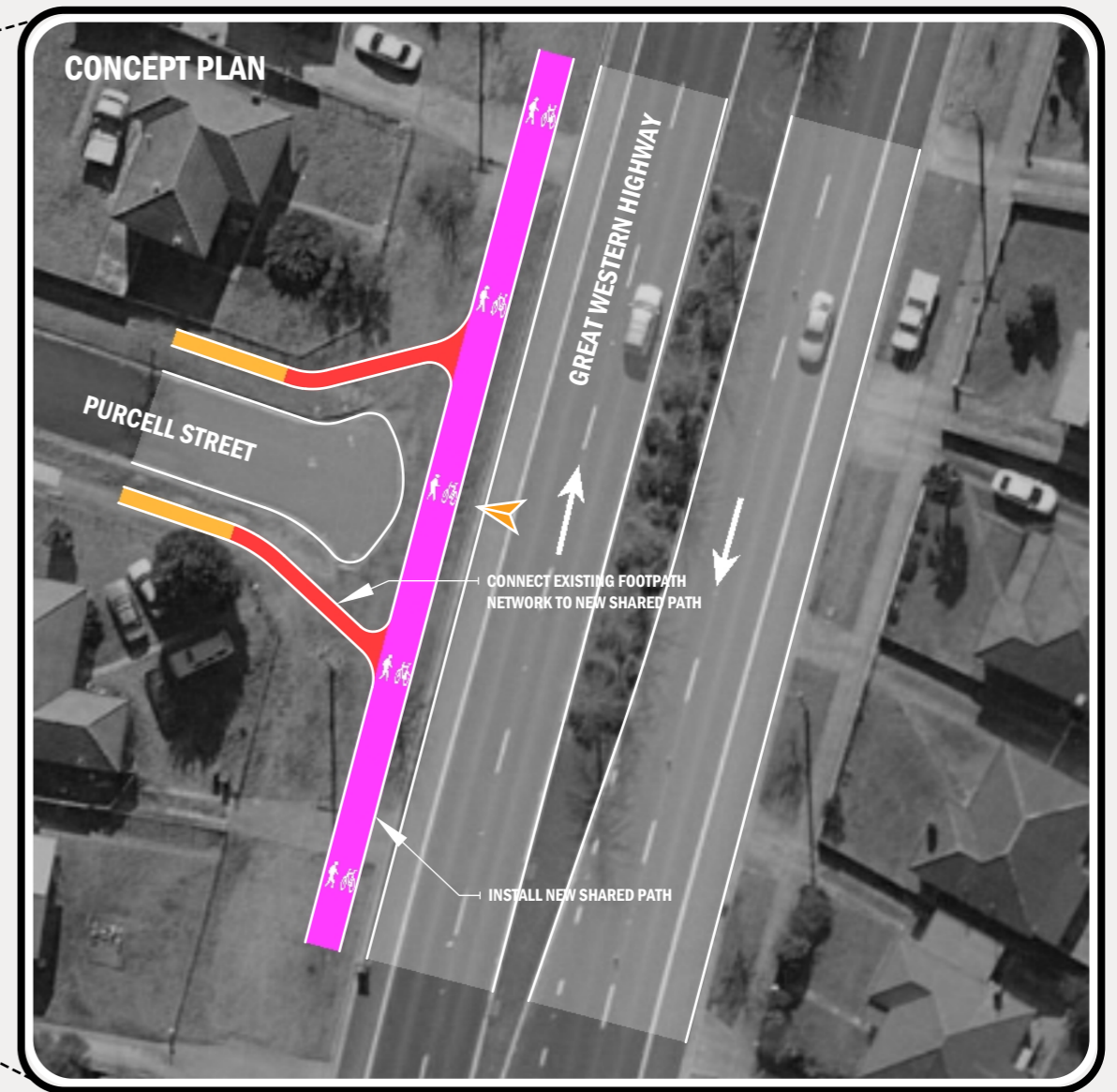
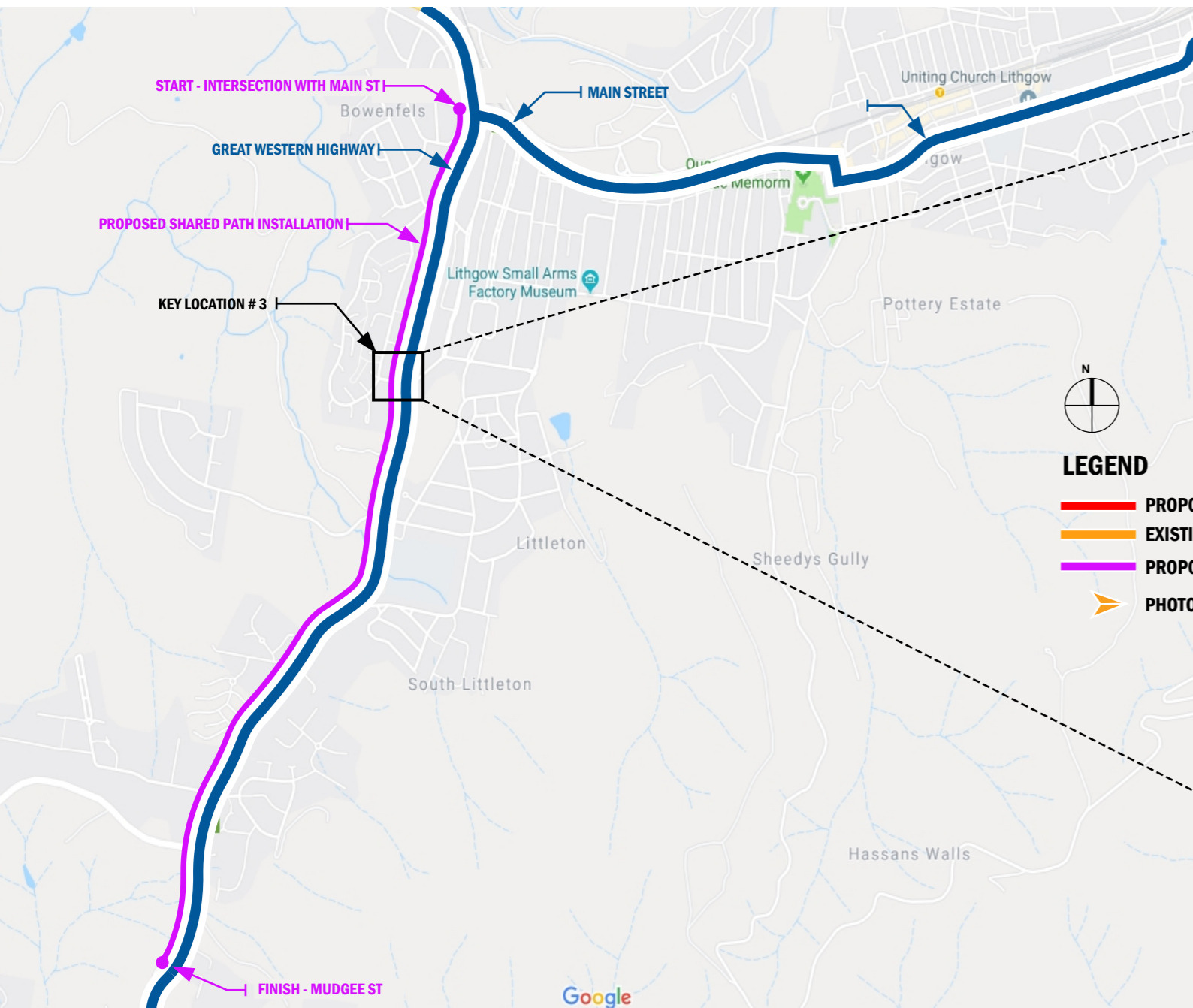


Subject to detailed
cost estimate

LOCATION PHOTOGRAPH

Photograph of the intersection of Great Western Highway and Tweed Road. View north west towards the BP Service Station.





PROJECT DESCRIPTION

Proposed shared path installation / shared path upgrade along the Great Western Highway from the intersection of Main Street to the intersection of Mudgee Street.

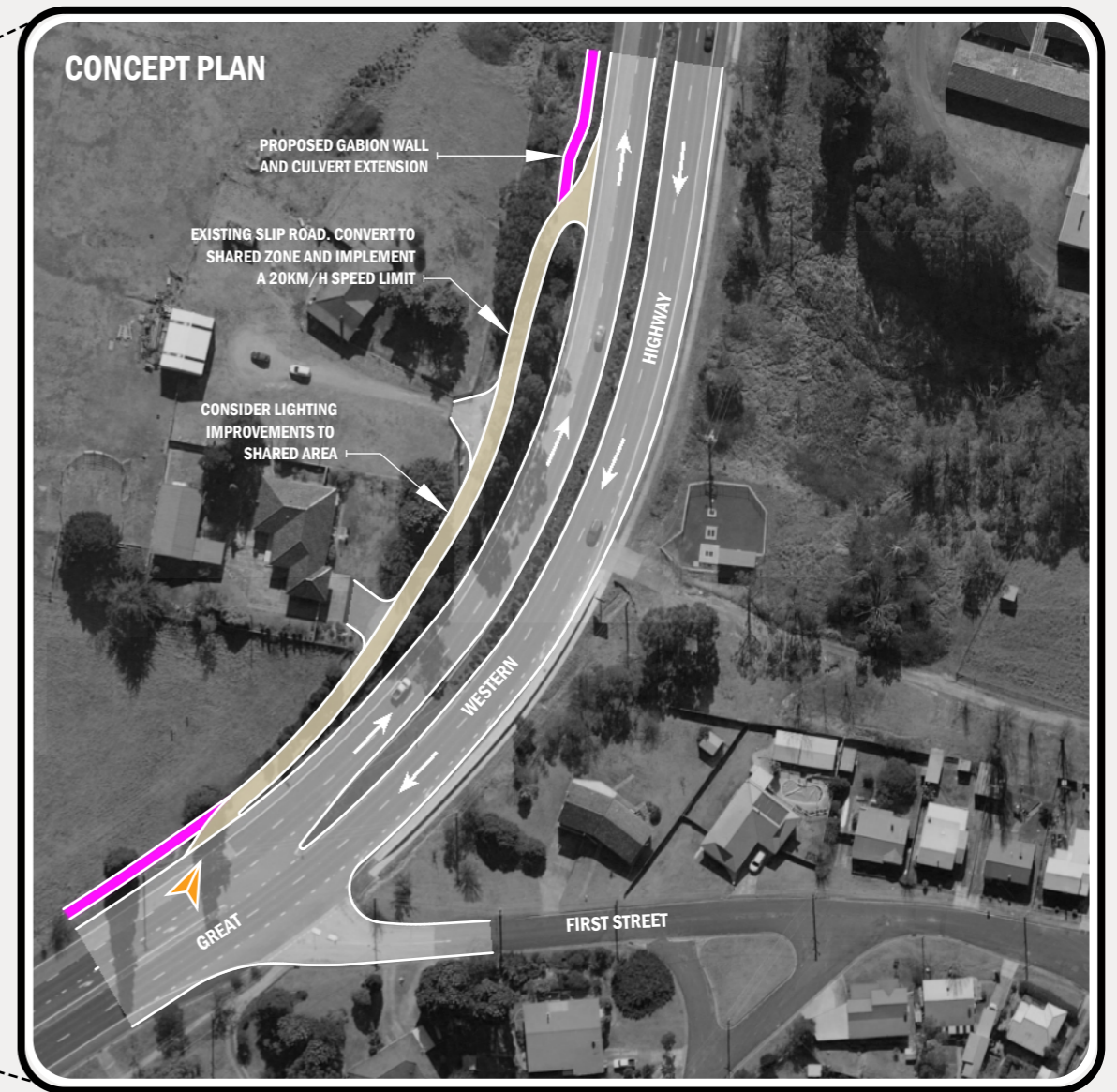
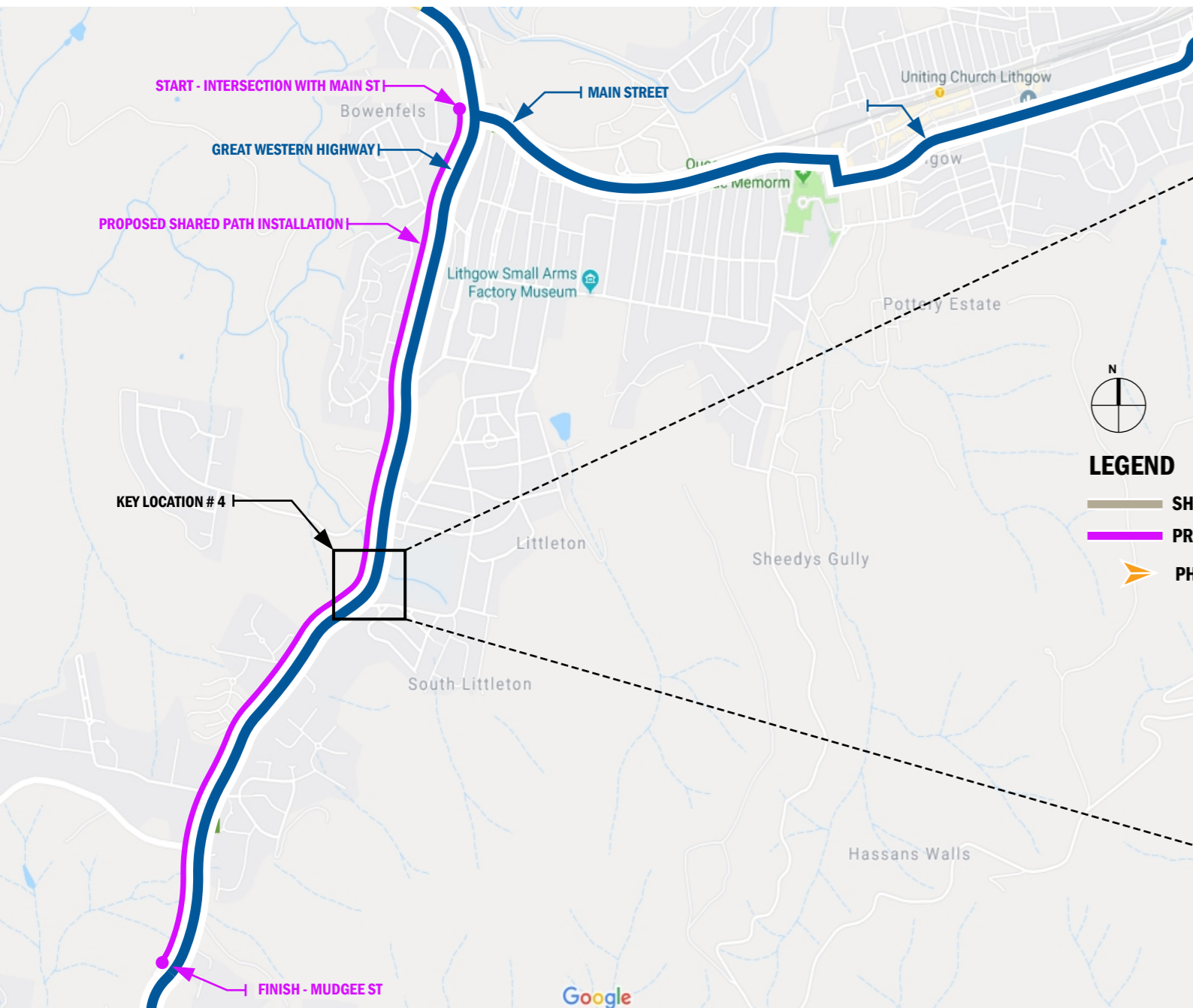
PROJECT SPECIFICATIONS

- Footpath X 40m
- Shared path X 3500m
- Pedestrian Refuge X 4
- Kerb ramp X 10
- Subject to detailed cost estimate

LOCATION PHOTOGRAPH

Photograph on Great Western Highway looking west at the existing cul-de-sac of Purcell Drive.





PROJECT DESCRIPTION

Proposed shared path installation / shared path upgrade along the Great Western Highway from the intersection of Main Street to the intersection of Mudgee Street.

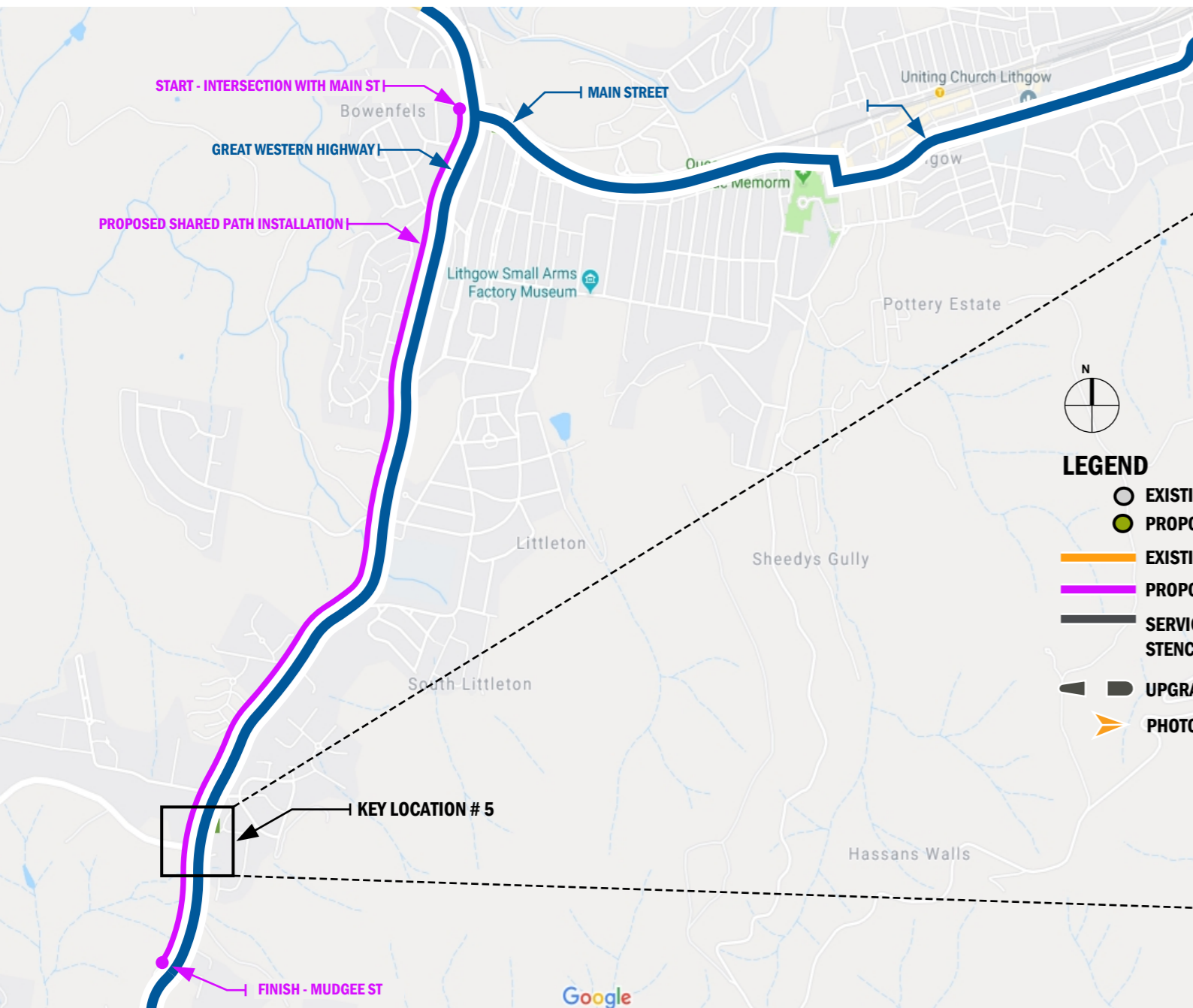
PROJECT SPECIFICATIONS

- Footpath X 40m
- Shared path X 3500m
- Pedestrian Refuge X 4
- Kerb ramp X 10
- Subject to detailed cost estimate

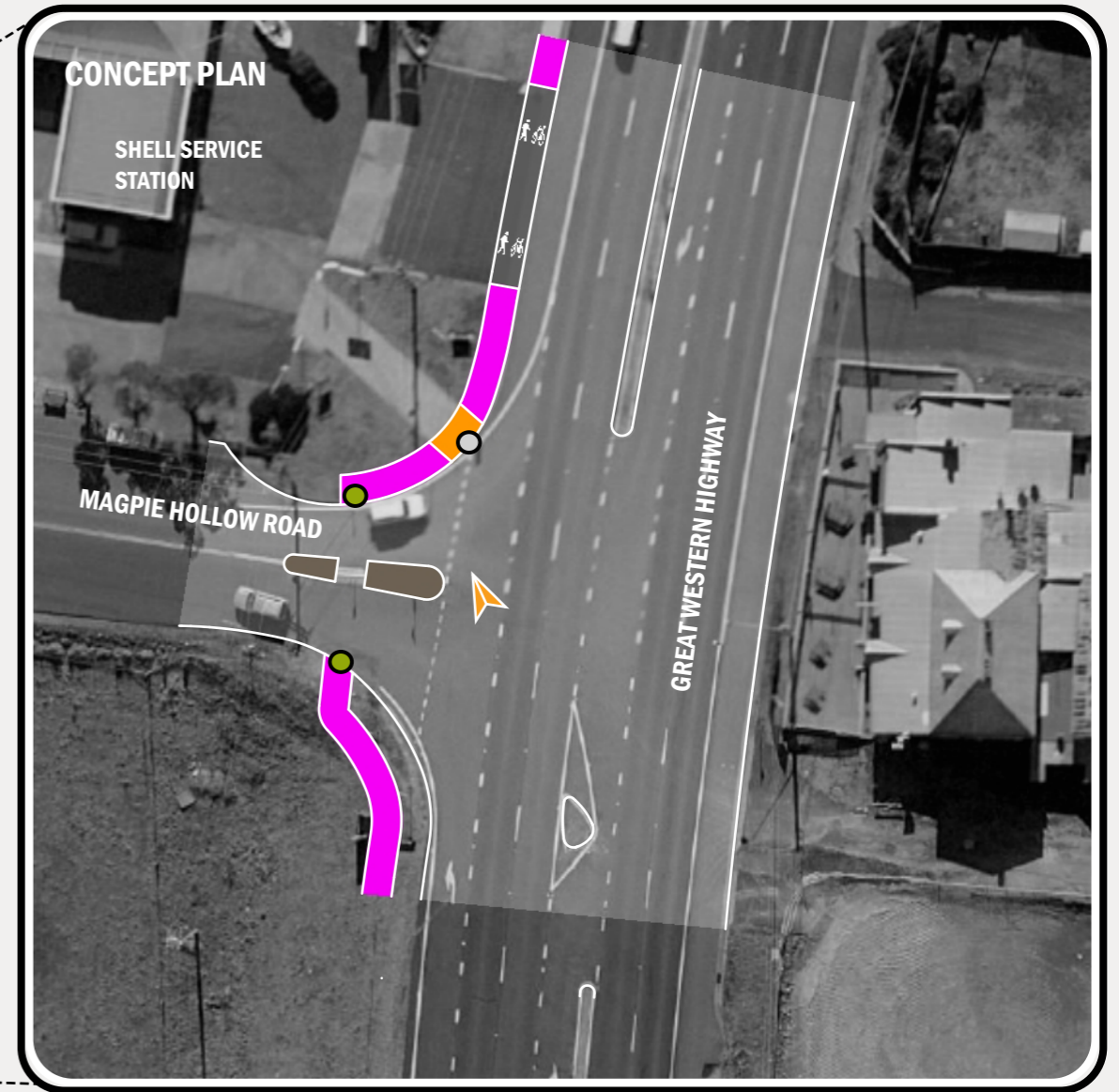
LOCATION PHOTOGRAPH

BP Service Station on NW corner of Tween Road and the Great Western Highway





- LEGEND**
- EXISTING KERB RAMP
 - PROPOSED KERB RAMP
 - EXISTING FOOTPATH
 - PROPOSED SHARED PATH
 - SERVICE STATION ACCESS DRIVE STENCIL PAVEMENT
 - UPGRADED REFUGE ISLAND
 - PHOTOGRAPH LOCATION



PROJECT DESCRIPTION

Proposed shared path installation / shared path upgrade along the Great Western Highway from the intersection of Main Street to the intersection of Mudgee Street.

PROJECT SPECIFICATIONS

- Footpath
X 40m
- Shared path
X 3500m
- Pedestrian Refuge
X 4
- Kerb ramp
X 10
- Subject to detailed
cost estimate

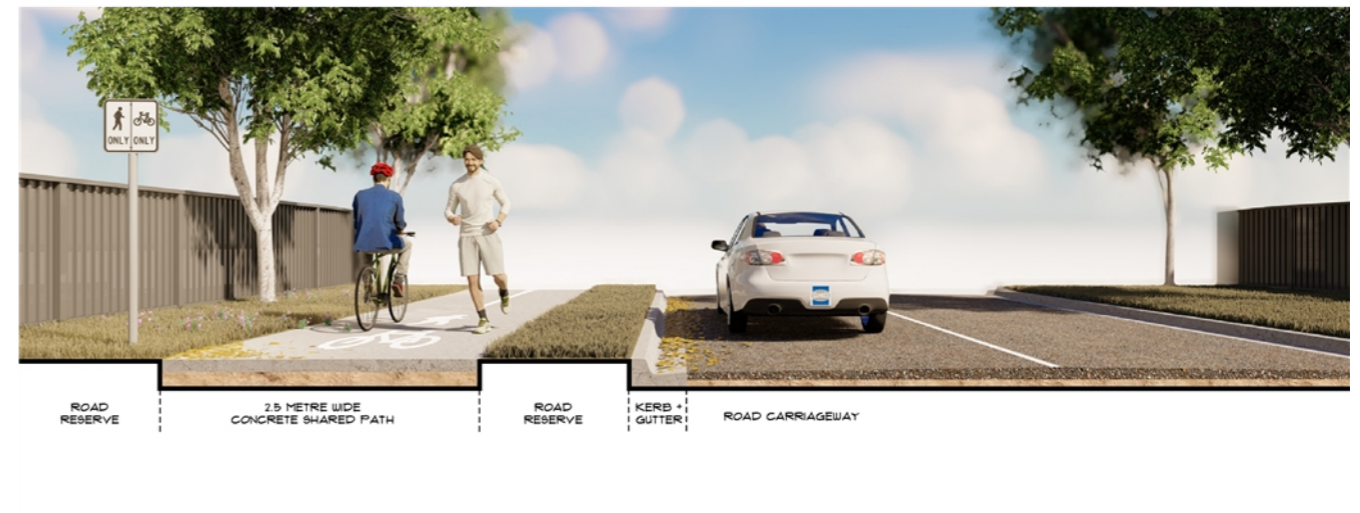
LOCATION PHOTOGRAPH

Photograph of the intersection of the Great Western Highway and Magpie Hollow Road. View north west towards the Shell Service Station.





3 TYPICAL SECTION DETAIL - SHARED PATH INSTALLATION



PROJECT DESCRIPTION

Proposed shared path installation to fill a network gap between the Great Western Highway, Amiens Street and Enfield Avenue. The shared path provides a link to the existing Adventure playground location.

PROJECT SPECIFICATIONS



Shared path
X 440m



Kerb ramp
X 3



Estimated Cost
\$148,750

LOCATION PHOTOGRAPH ➤

Photograph taken from the intersection of Amiens Street and Enfield Avenue, looking southwest towards Endeavour Park.

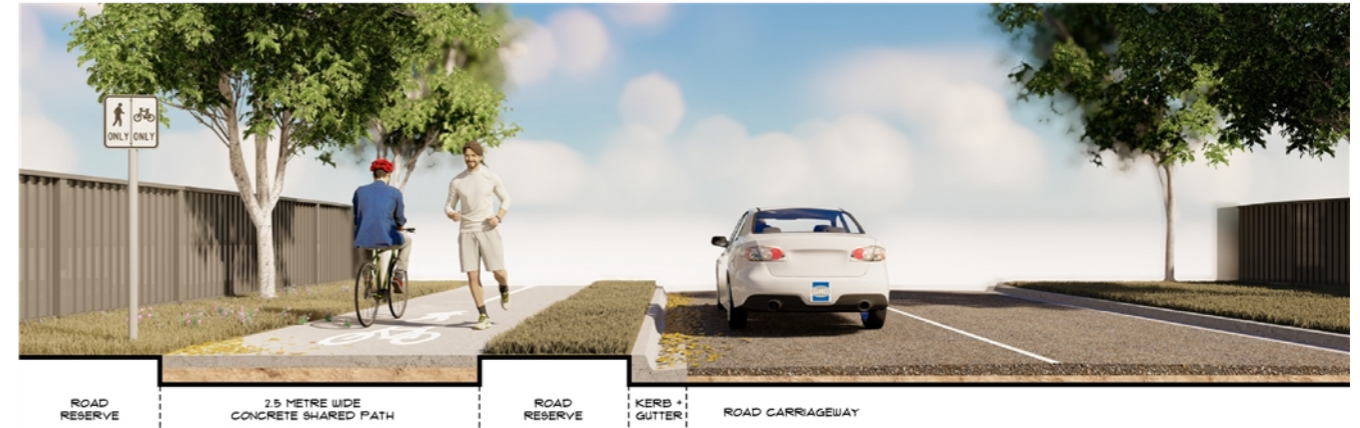


PORTLAND PROJECTS #03 AND #09

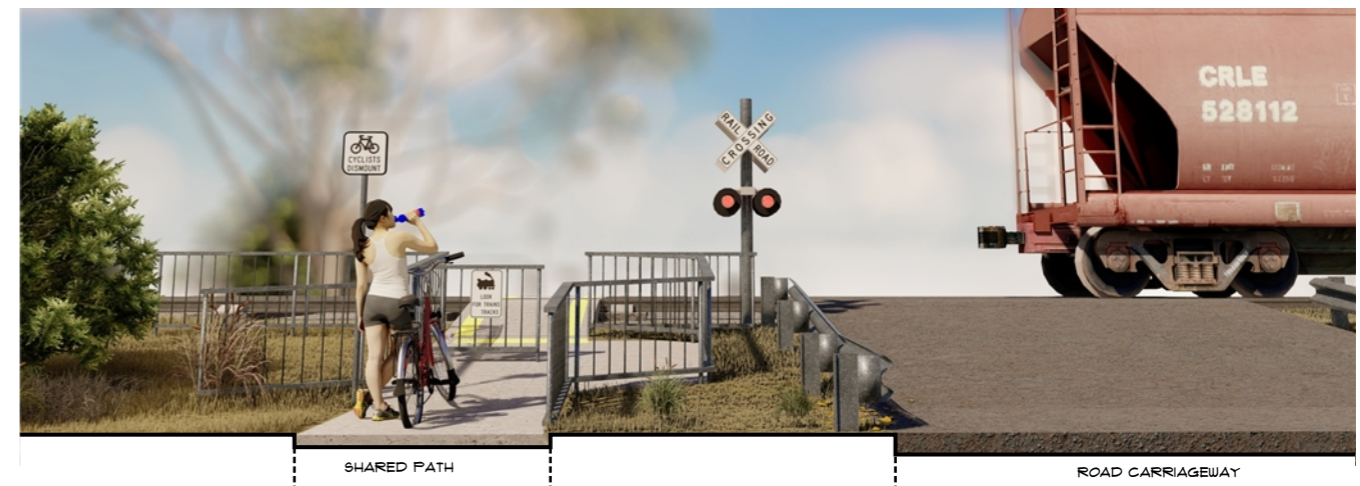
WILLIWA STREET SHARED PATH UPGRADE AND RAILWAY CROSSING IMPROVEMENTS



1 TYPICAL SECTION DETAIL - SHARED PATH INSTALLATION



2 TYPICAL SECTION DETAIL - RAILWAY CROSSING DETAIL



PROJECT DESCRIPTION

Proposed upgrade of the existing shared path along Williwa Street between Railway Avenue and High Street, including an upgrade to crossing of the existing railway line.

PROJECT SPECIFICATIONS

Project # 03



Shared Path
X 800m



Pedestrian Refuge
X 1m



Estimated Cost
\$265,000

Project # 09



Railway Crossing
Upgrade



Subject to
detailed costing.



LOCATION PHOTOGRAPH

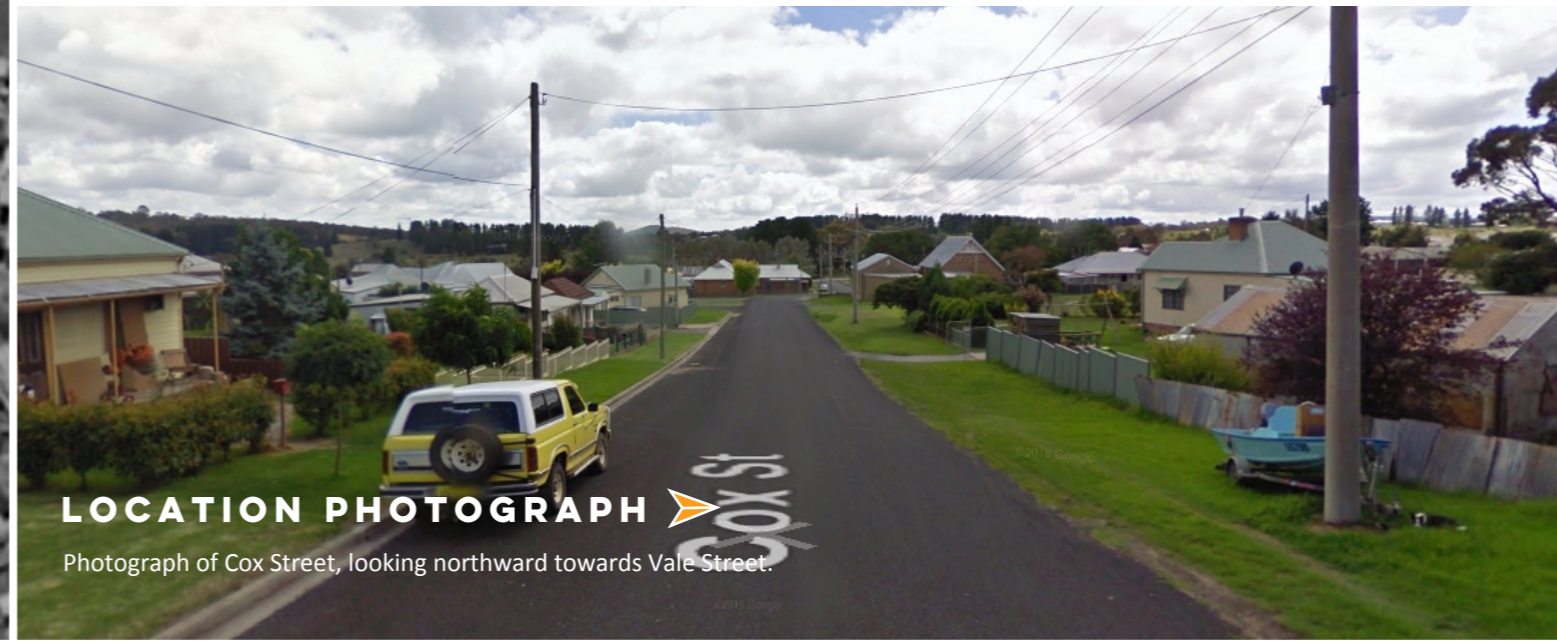
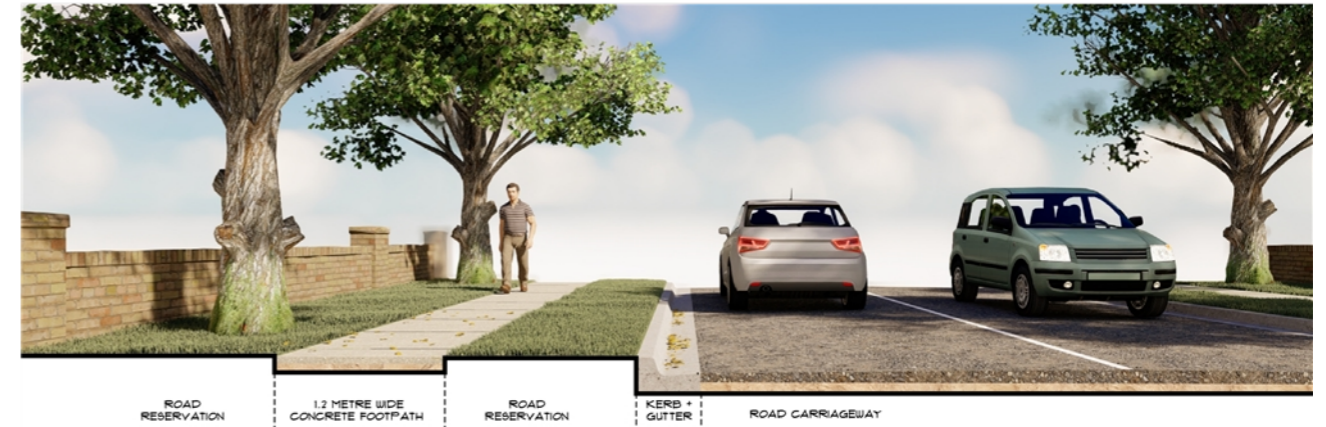
The existing railway crossing at the intersection of Railway Avenue and Williwa Street.


PORTLAND PROJECTS #07

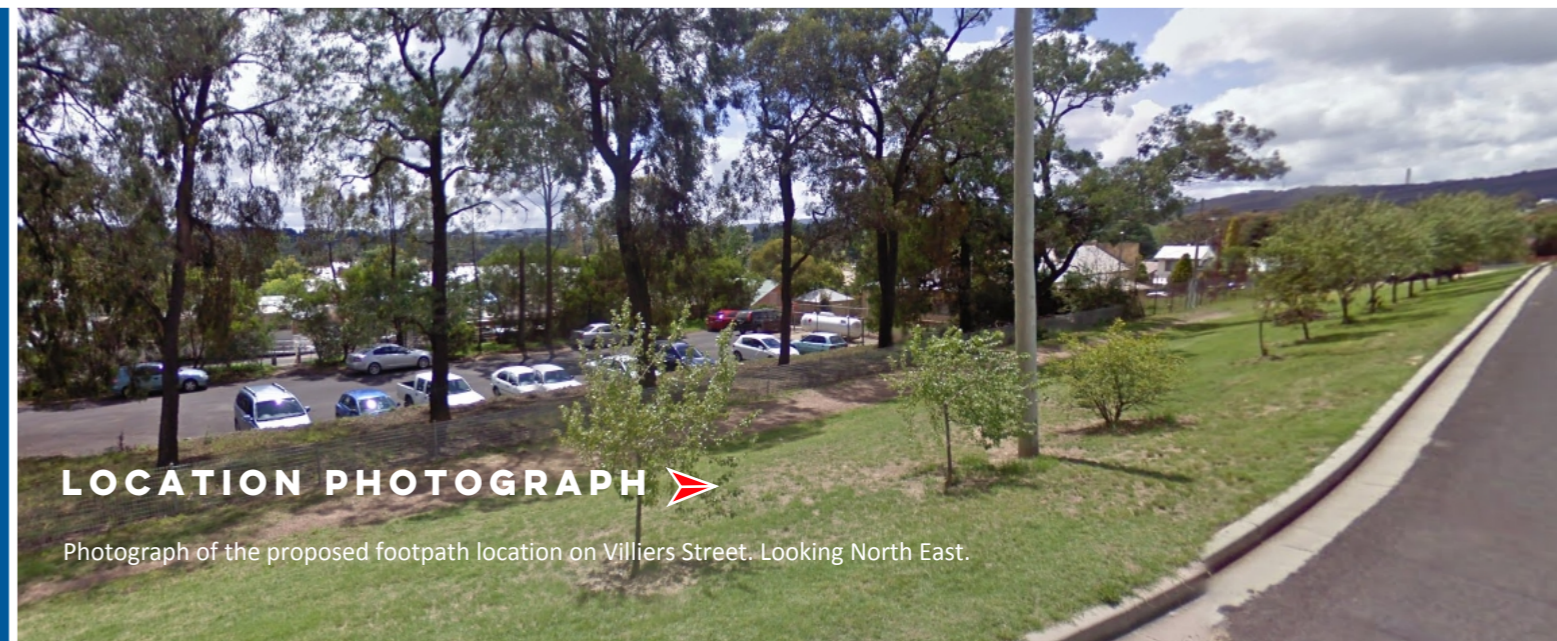
PROPOSED FOOTPATH INSTALLATIONS - PORTLAND SCHOOL PRECINCT




① TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



LOCATION PHOTOGRAPH 
 Photograph of Cox Street, looking northward towards Vale Street.





LOCATION PHOTOGRAPH 
 Photograph of the proposed footpath location on Villiers Street..Looking North East.


PROJECT DESCRIPTION

Proposed upgrade of the existing shared path along Williwa Street between Railway Avenue and High Street, including an upgrade to crossing of the existing railway line.

PROJECT SPECIFICATIONS

- 

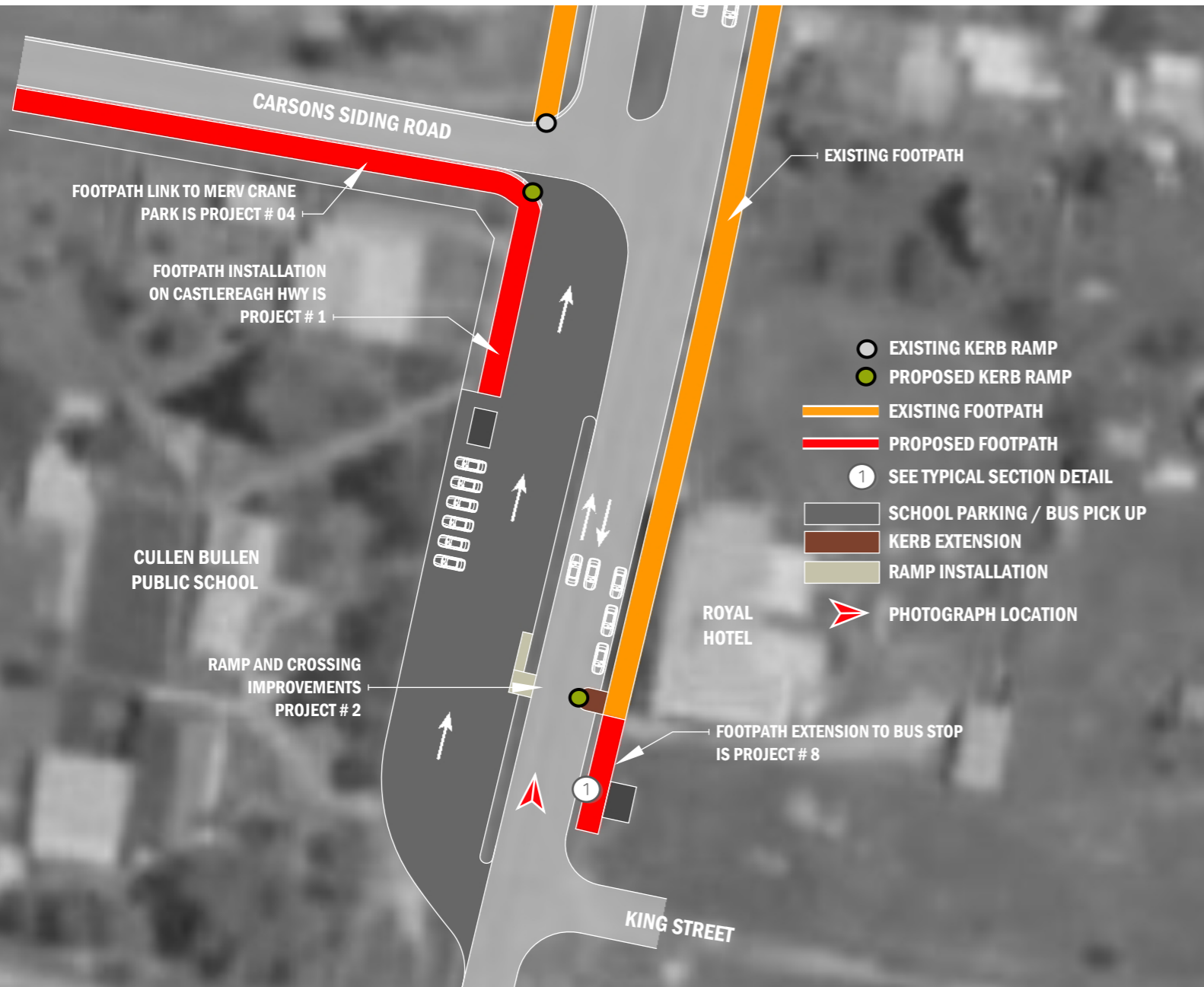
Shared Path
X 740m
- 

Kerb ramp
X 8
- 

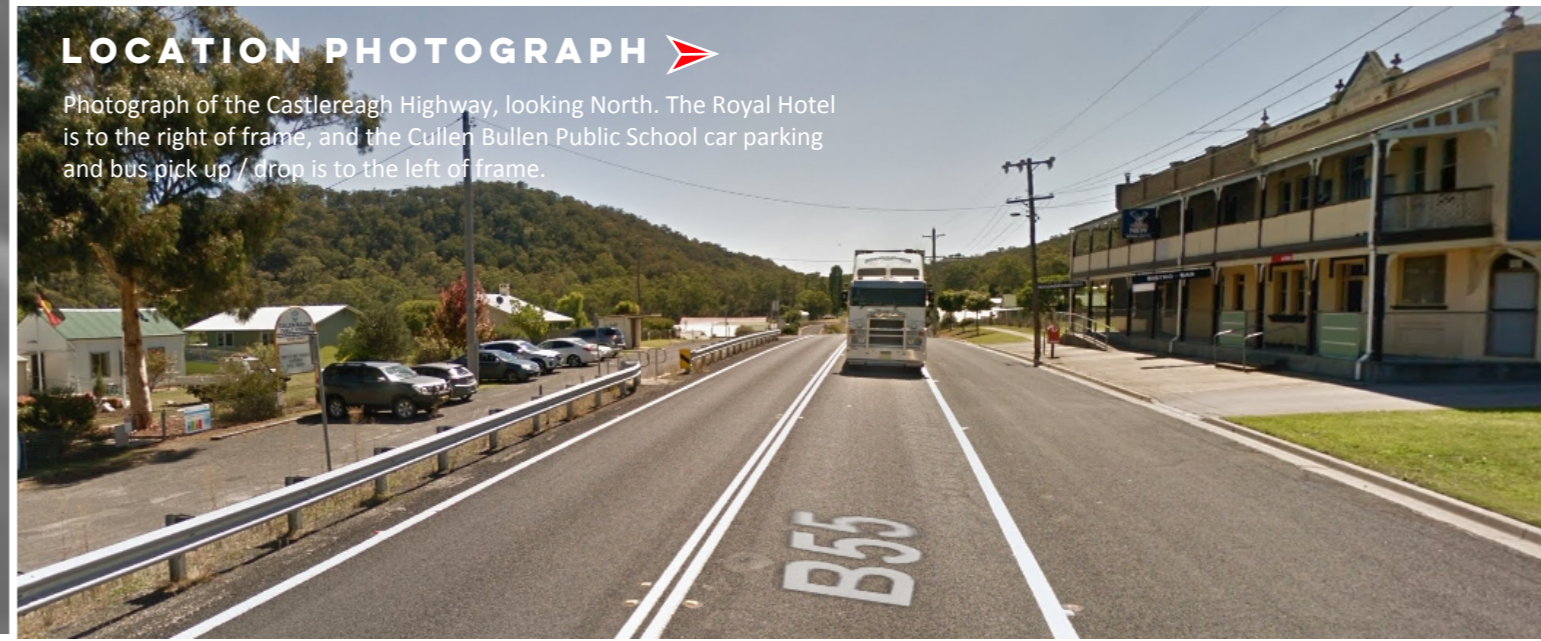
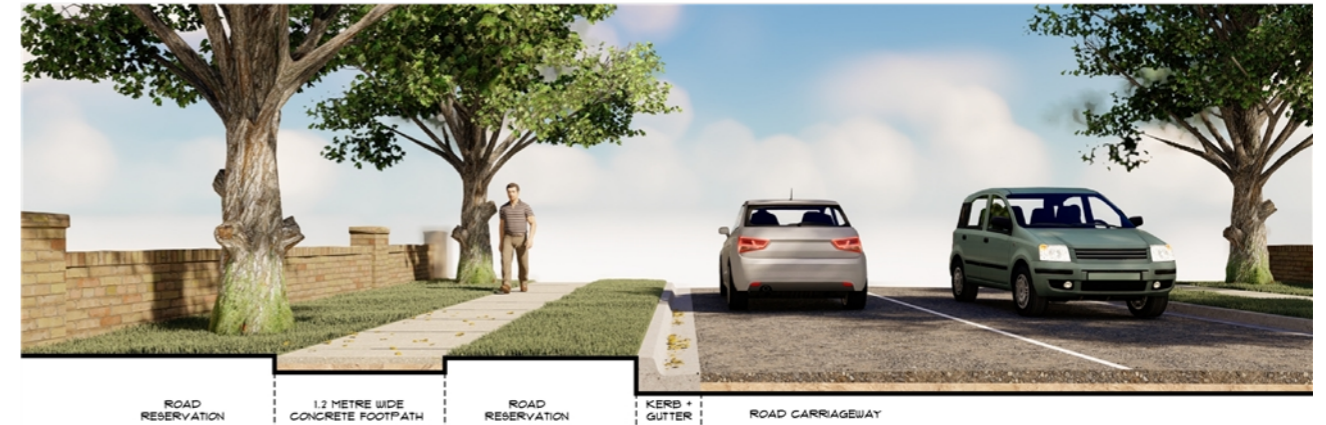
Estimated Cost
\$159,500

CULLEN BULLEN PROJECTS #01 #02 #04 AND #08

PROPOSED FOOTPATH INSTALLATIONS AND CROSSING IMPROVEMENTS - CASTLEREAGH HIGHWAY



① TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



PROJECT DESCRIPTION

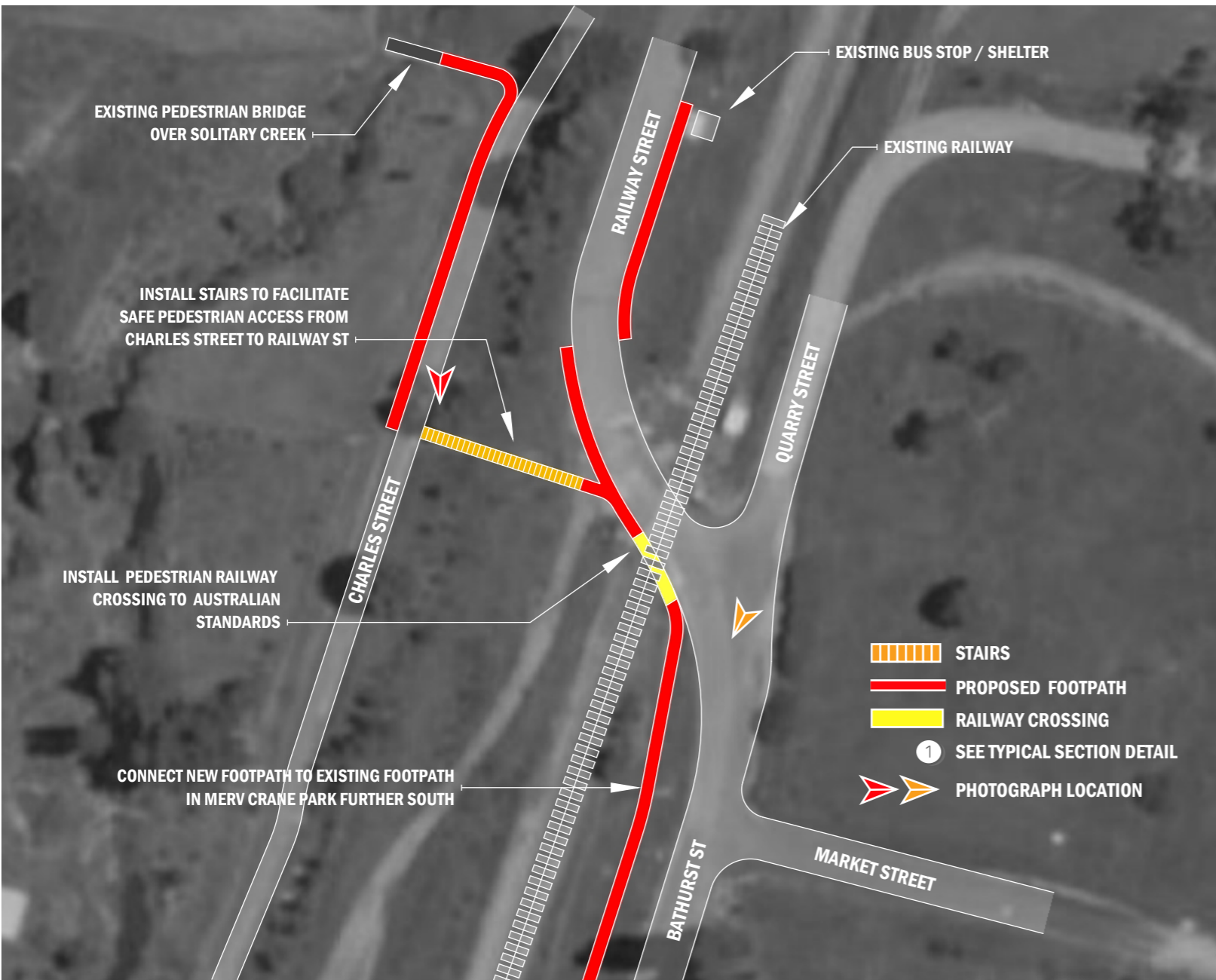
Proposed footpath installation to fill existing network gaps, and improvements to the crossing of the Highway from the School to the Royal Hotel including the installation of new ramp within the road divider.

PROJECT SPECIFICATIONS

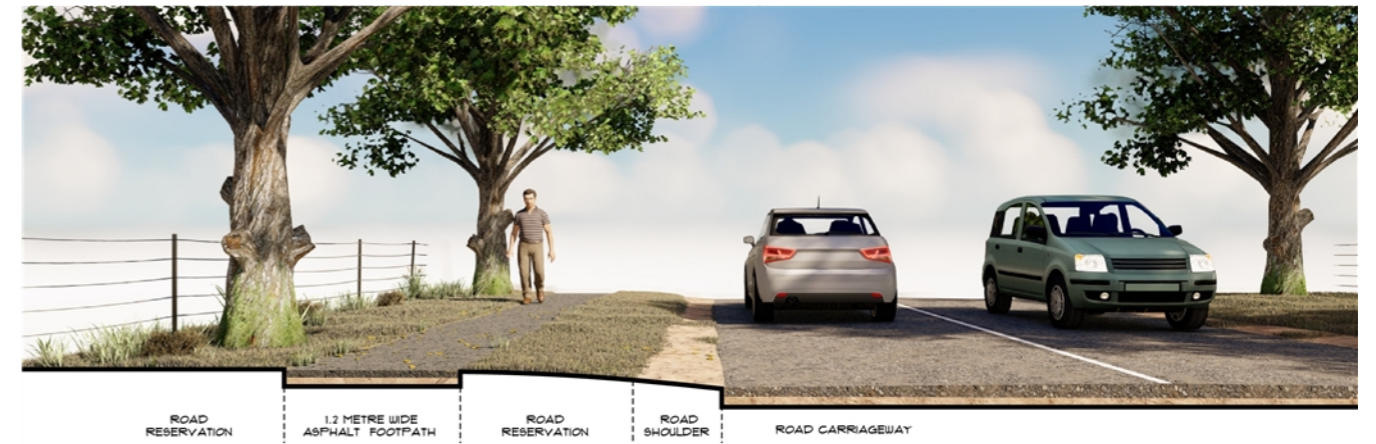
Project # 01			Project # 02			Project # 04		Project # 08		
Footpath X 25m	Kerb ramp X 1	Estimated Cost \$8,125	Kerb extensions X 1	Kerb ramp X 1	Access Ramp X 2	Estimated Cost \$27,500	Footpath X 110m	Estimated Cost \$19,250	Footpath X 25m	Estimated Cost \$4,375

RYDAL PROJECT # 1

FOOTPATH, STAIRS AND RAILWAY CROSSING INSTALLATION



① TYPICAL SECTION DETAIL - BITUMEN / CONCRETE FOOTPATH - NO KERB AND GUTTER



PROJECT DESCRIPTION

Proposed footpath installations to fill existing network gaps between Charles Street, Railway Street and Bathurst Street. The project also involves the upgrade of the rail crossing to accommodate the new path network, and installation of stairs to link Charles Street to the new footpath on Railway Street.

PROJECT SPECIFICATIONS



Footpath
X 300m



Railway Crossing
Upgrade



Stairs
X 25m

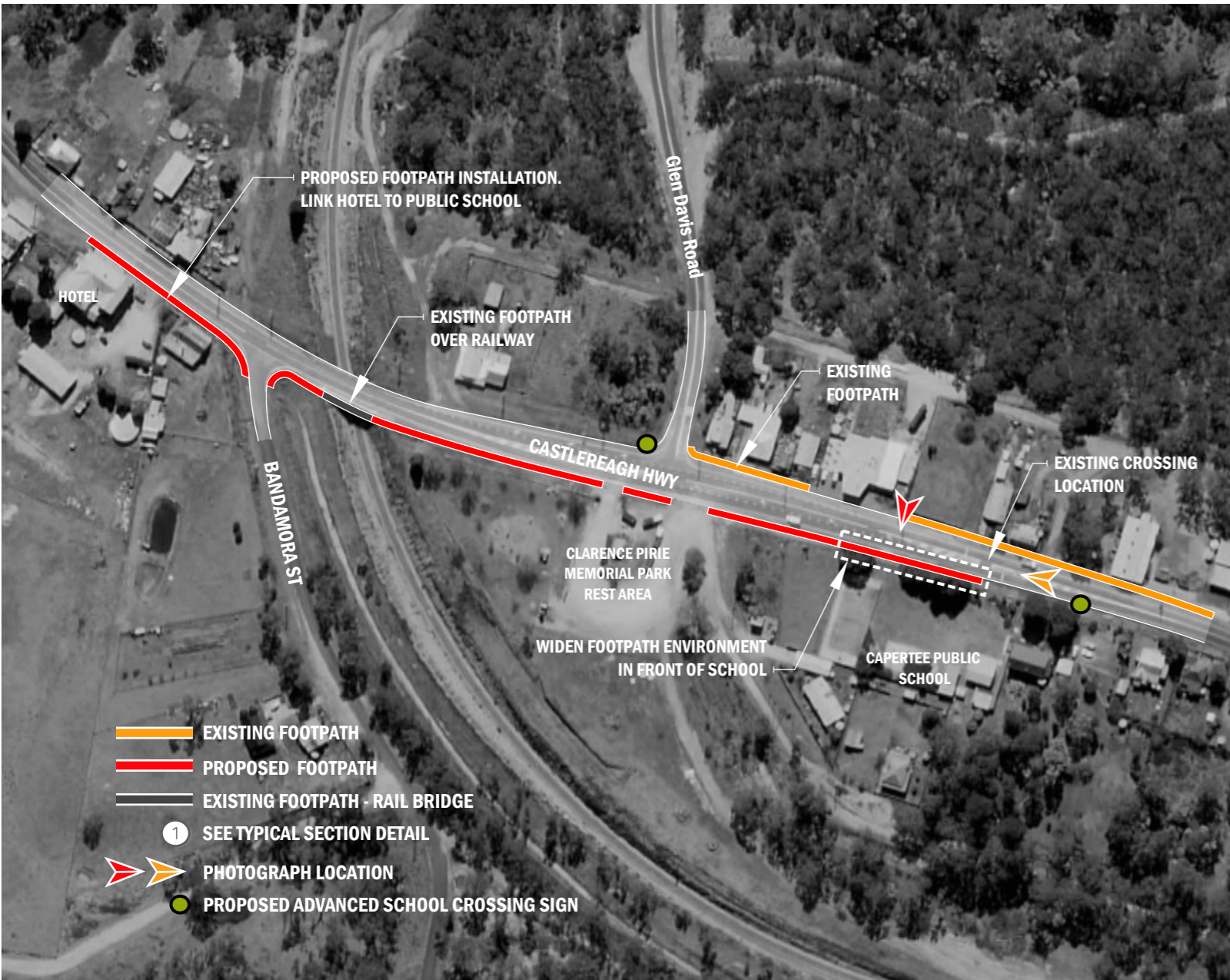


Estimated Cost
\$52,500 + Railway Works TBC

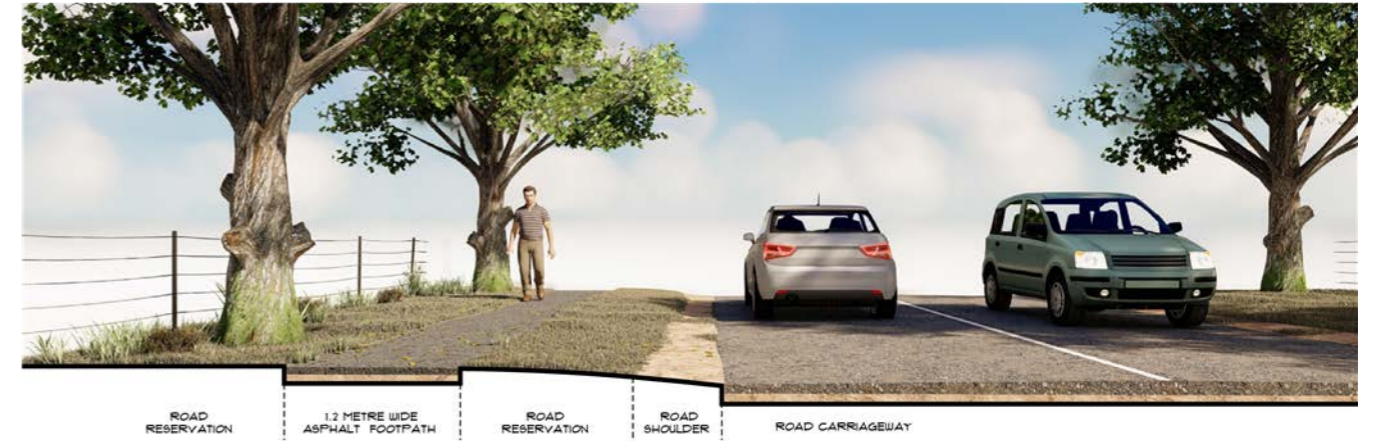


CAPERTEE PROJECT # 1

FOOTPATH AND CROSSING SIGNAGE INSTALLATION PROJECT



① TYPICAL SECTION DETAIL - ASPHALT / CONCRETE FOOTPATH - NO KERB AND GUTTER



LOCATION PHOTOGRAPH

Photograph on Castlereagh Highway of the existing crossing location at the Capertee Public School.



LOCATION PHOTOGRAPH

Photograph on the Castlereagh Highway of the existing narrow footpath environment in front of the Capertee Public School.



PROJECT DESCRIPTION

Proposed footpath installation to fill an existing network gap between the Capertee Public School and the Hotel on Castlereagh Highway. The project also involves the installation of advanced school crossing signs.

PROJECT SPECIFICATIONS



Footpath
X 100m



Estimated Cost
\$225,000

TARANA PROJECT # 1

BUS STOP SHELTER INSTALLATION AND ROAD PAVEMENT WIDENING



① TYPICAL SECTION DETAIL - BUS STOP SHELTER AND ROAD PAVEMENT WIDENING



PROJECT DESCRIPTION

Proposed shelter installation at the existing bus stop on Mutton Falls Road and widening of the existing road pavement to accommodate safe bus pick-up and drop-off and parent parking on the opposite side of the road.

PROJECT SPECIFICATIONS



Bus Shelter
x 1



Road Pavement
Widening

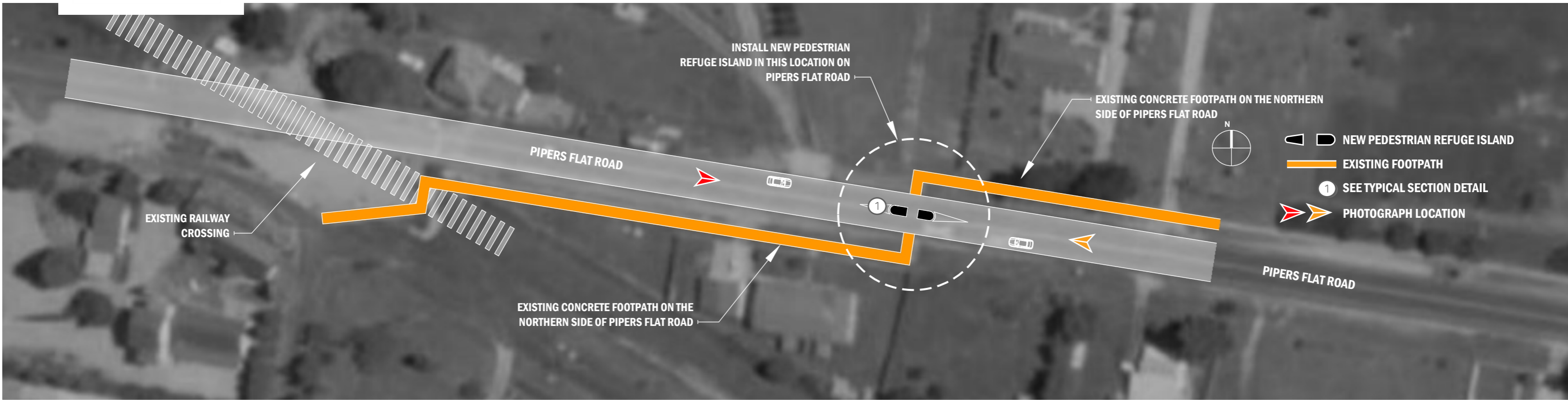


\$36,000

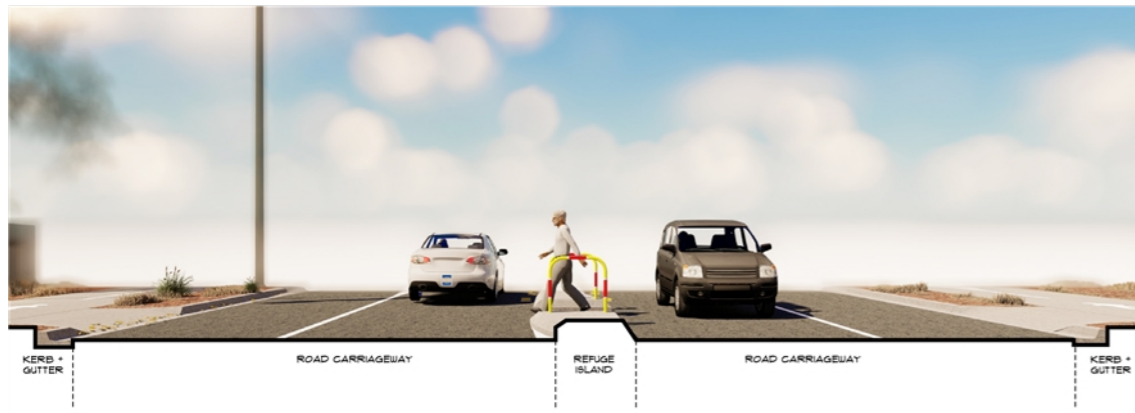


WALLERAWANG PROJECT # 1

PROPOSED CROSSING INSTALLATION ON PIPERS FLAT ROAD



1 TYPICAL SECTION DETAIL - CENTRE REFUGE ISLAND INSTALLATION



PROJECT DESCRIPTION

Proposed improvements to the crossing of Pipers Flat Road at the location where the two existing footpaths on either side of the road link.

PROJECT SPECIFICATIONS



Pedestrian Refuge
X 1m

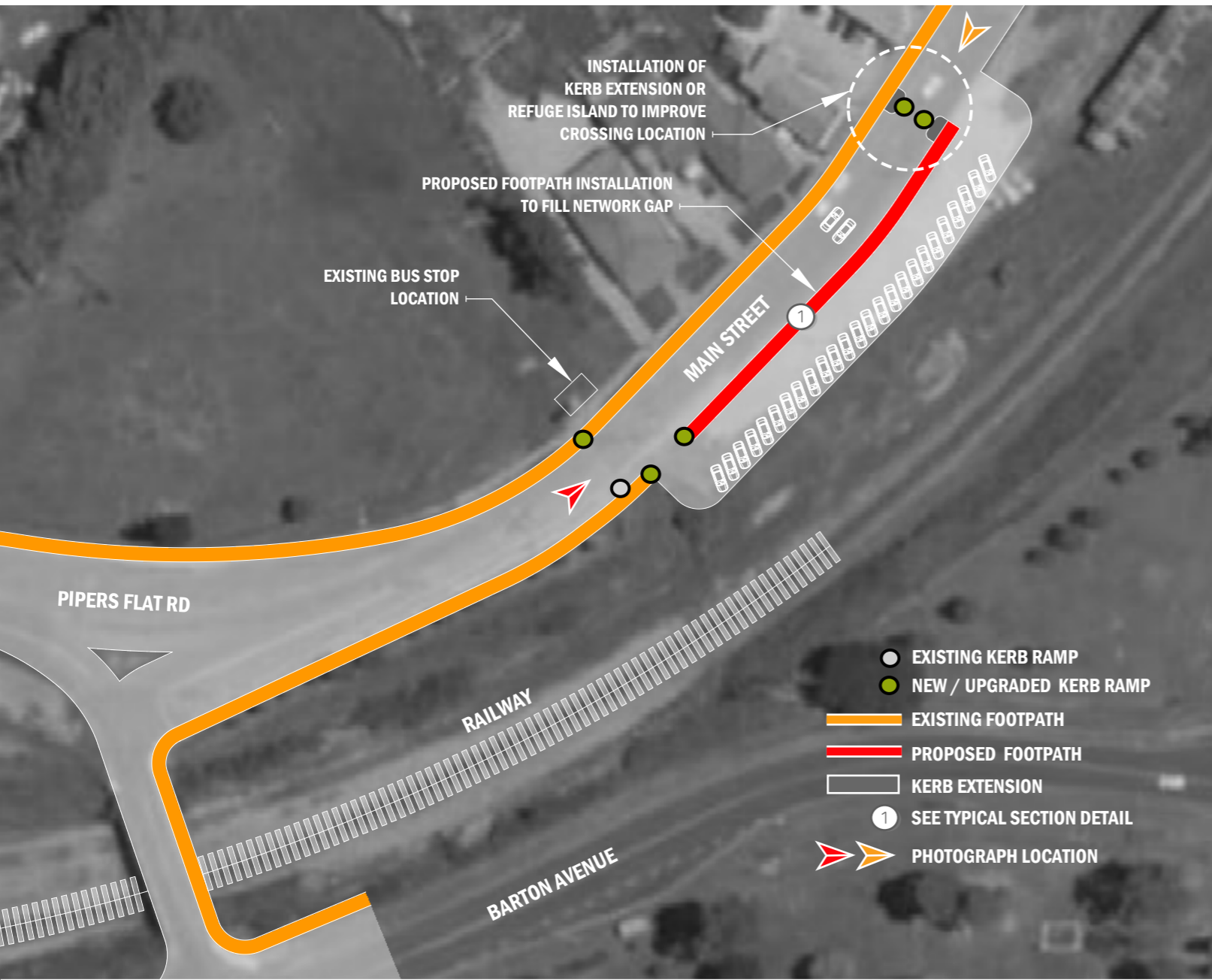


Estimated Cost
\$15,000

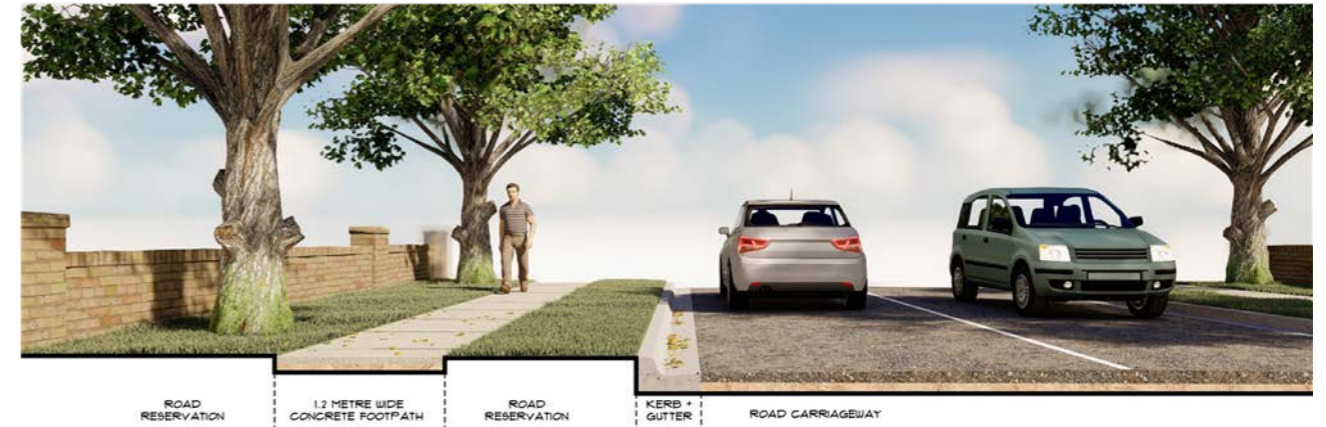


WALLERAWANG PROJECT # 2

PROPOSED FOOTPATH INSTALLATION AND KERB EXTENSIONS - MAIN STREET



① TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB

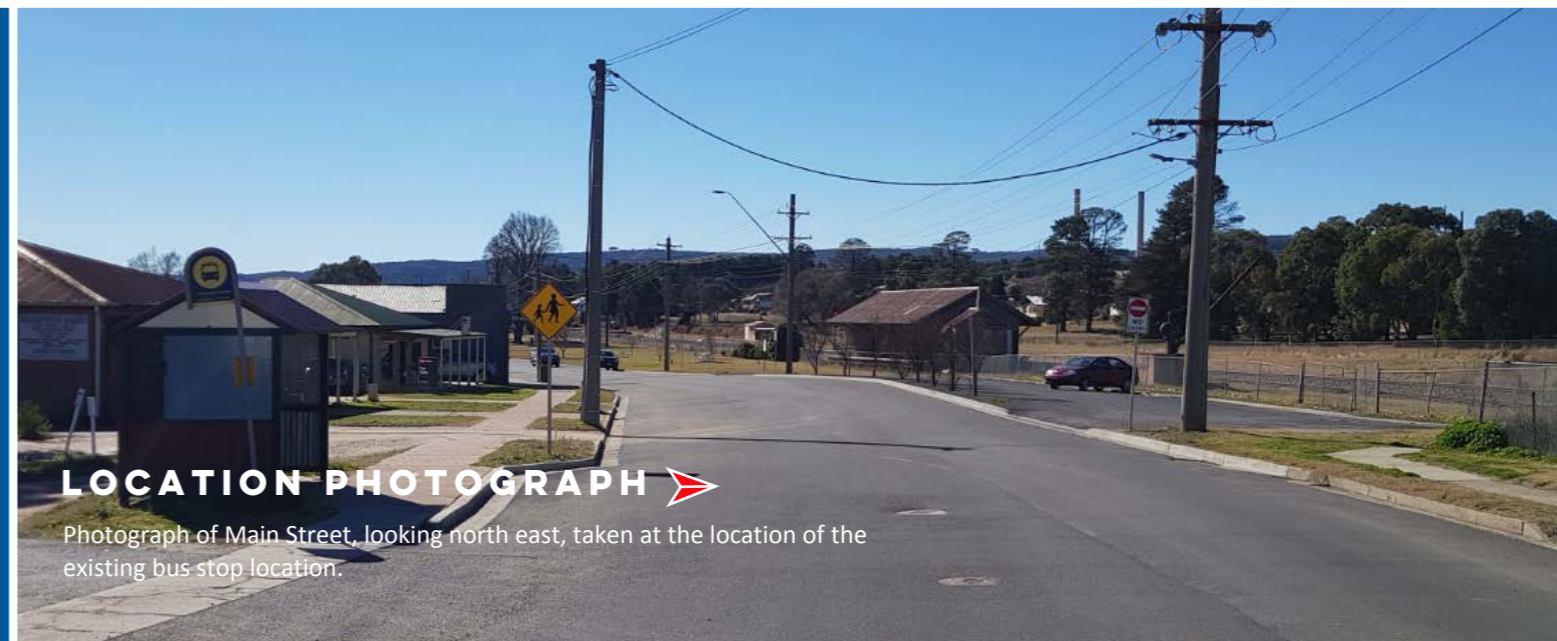


PROJECT DESCRIPTION

Proposed footpath installation to fill an existing network gap on Main Street, installation of kerb extensions on Main Street to improve crossing safety, and formalisation of existing car parking arrangements.

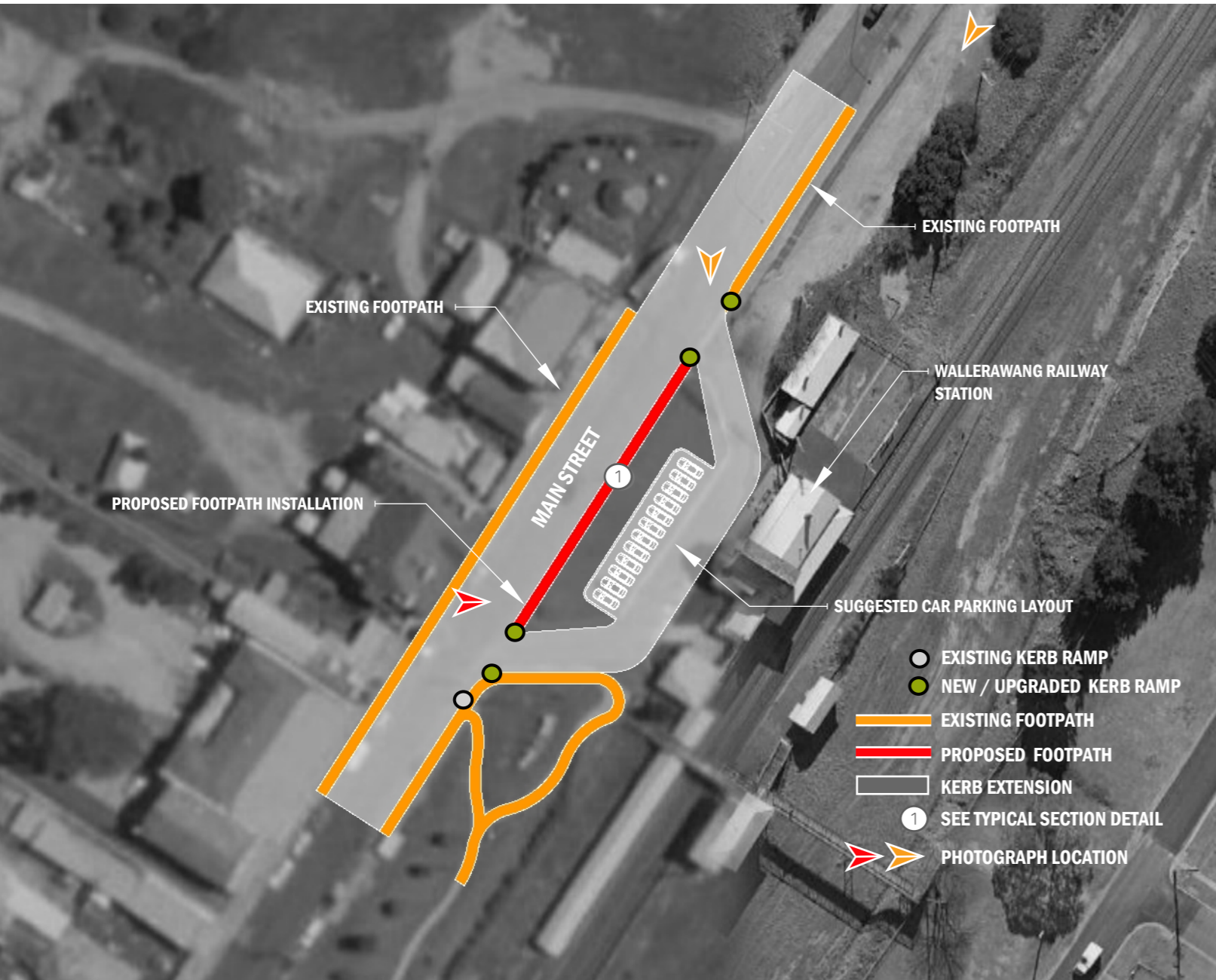
PROJECT SPECIFICATIONS

Footpath X 100m	Kerb ramp X 3	Kerb extensions X 4	Estimated Cost \$225,000

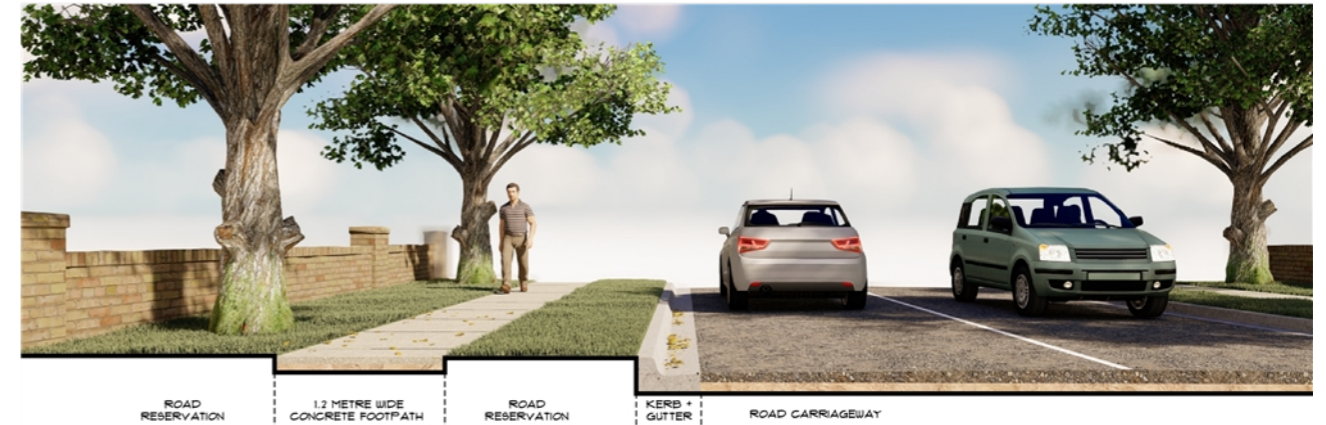


WALLERAWANG PROJECT # 3

PROPOSED FOOTPATH INSTALLATION AND KERB EXTENSIONS - MAIN STREET



① TYPICAL SECTION DETAIL - FOOTPATH SEPARATED FROM KERB



PROJECT DESCRIPTION

Proposed footpath installation to fill an existing network gap on Main Street. The project also involves changes to the current layout of the car park in front of the Wallerawang Railway Station, necessary to facilitate the footpath installation project.

PROJECT SPECIFICATIONS



Footpath
X 58m



Kerb ramp
X 4



Car parking improvements
including Kerb + gutter



Estimated Cost
\$33,025



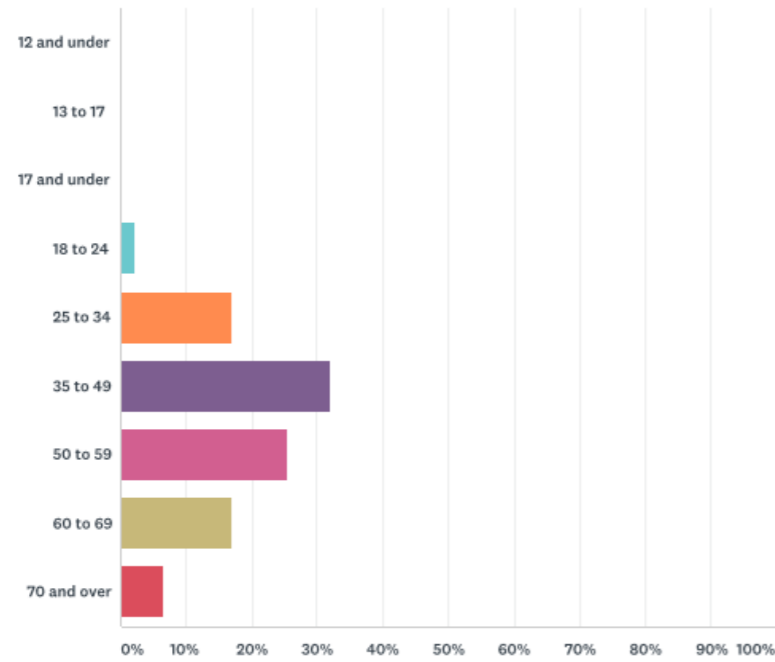


APPENDIX 1

CONSULTATION REPORT

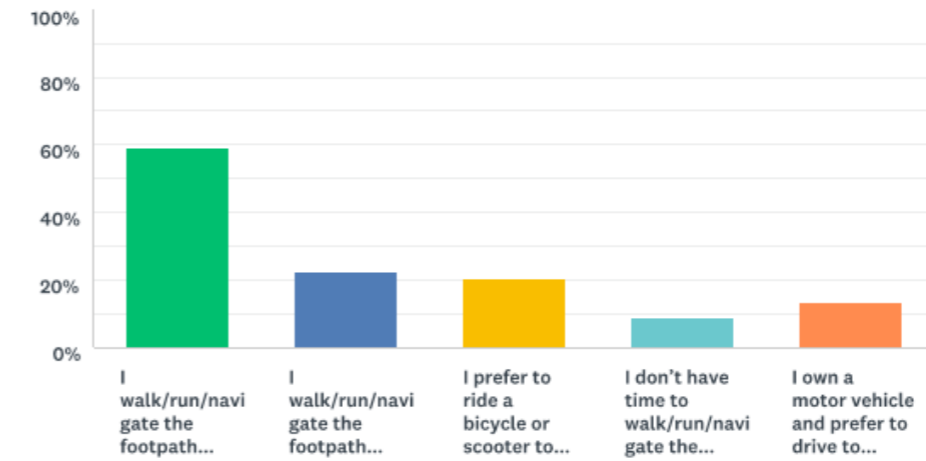
Q2 Age:

Answered: 47 Skipped: 0



Q4 Which of the following statements best describes you?

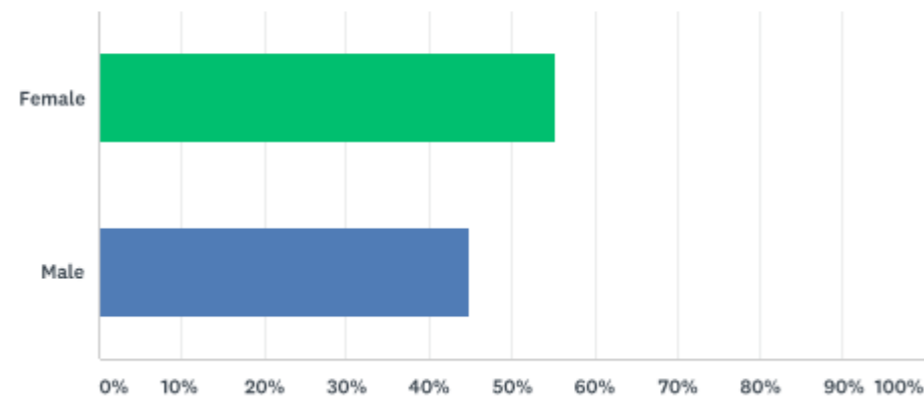
Answered: 44 Skipped: 3



ANSWER CHOICES	RESPONSES
I walk/run/navigate the footpath network at least two times per week as part of my daily exercise	59.09% 26
I walk/run/navigate the footpath network to get to work, school, sport, social events, shops	22.73% 10
I prefer to ride a bicycle or scooter to get to work, school, sport, social events, shops	20.45% 9
I don't have time to walk/run/navigate the footpath network to get to work, school, sport, social events, shops	9.09% 4
I own a motor vehicle and prefer to drive to work, school, sport, social events, shops	13.64% 6
Total Respondents: 44	

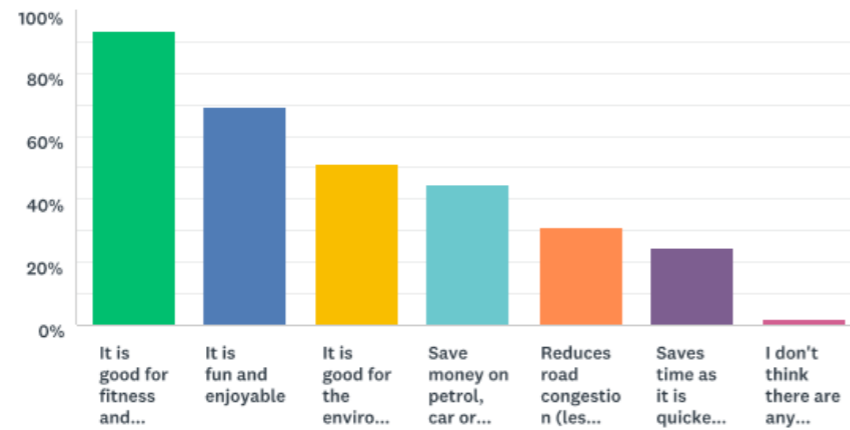
Q3 Gender:

Answered: 47 Skipped: 0



Q5 What do you think are the benefits of walking/navigating the pedestrian/footpath network on a regular basis?

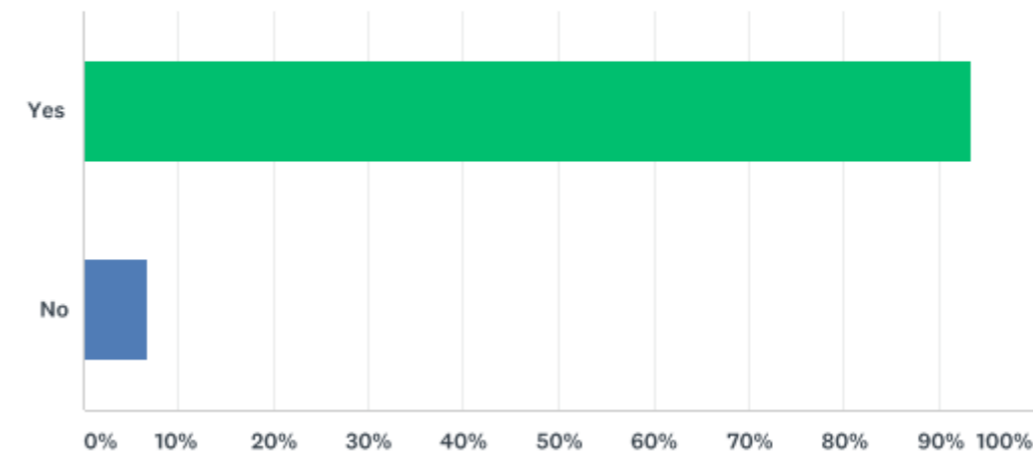
Answered: 45 Skipped: 2



ANSWER CHOICES	RESPONSES
It is good for fitness and health	93.33% 42
It is fun and enjoyable	68.89% 31
It is good for the environment	51.11% 23
Save money on petrol, car or transport costs	44.44% 20
Reduces road congestion (less motorised traffic)	31.11% 14
Saves time as it is quicker to walk / navigate to some destinations than to use other modes of transport	24.44% 11
I don't think there are any benefits	2.22% 1
Total Respondents: 45	

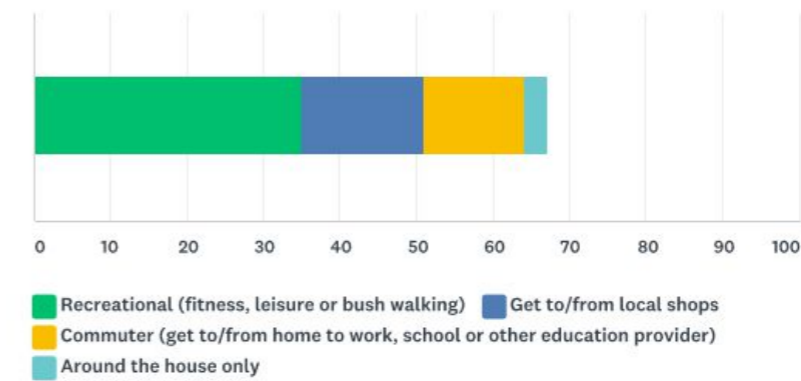
Q6 Do you have access to a motor vehicle?

Answered: 45 Skipped: 2



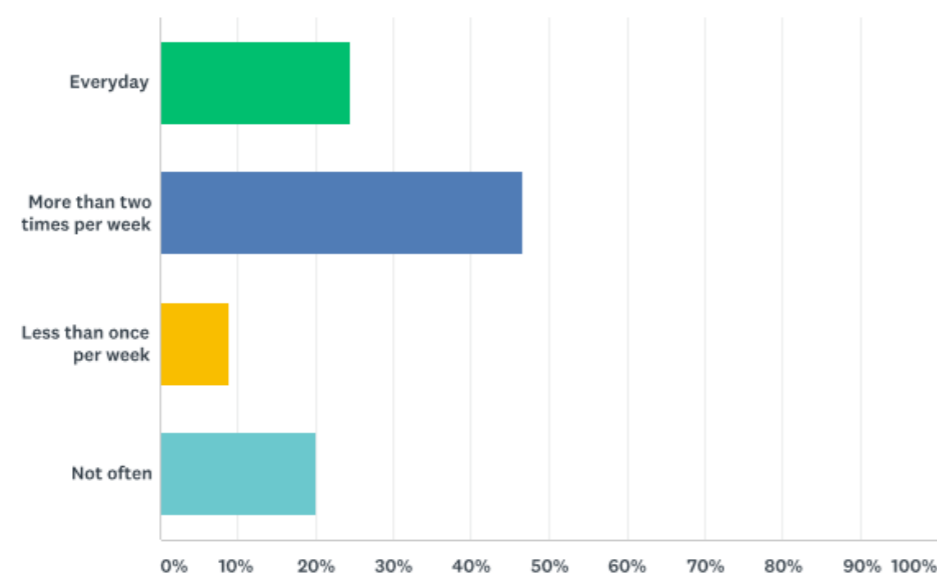
Q7 What type of pedestrian/walking movements do you typically do?

Answered: 44 Skipped: 3



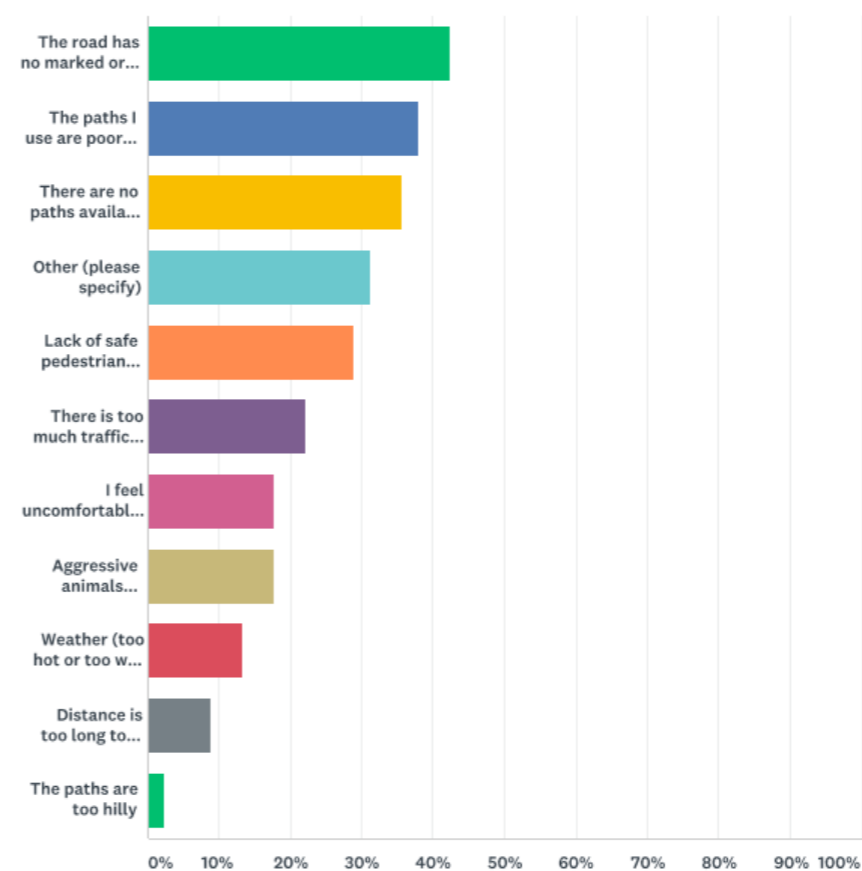
Q8 How often would you walk over one kilometre to access work, school, sport, social events, shops etc?

Answered: 45 Skipped: 2



Q9 Please select the reasons that discourage you from walking the footpaths and pedestrian networks more often. (Please select all that apply)

Answered: 45 Skipped: 2



ANSWER CHOICES	RESPONSES	
The road has no marked or dedicated footpath	42.22%	19
The paths I use are poorly maintained	37.78%	17
There are no paths available for walking	35.56%	16
Other (please specify)	31.11%	14
Lack of safe pedestrian crossings at busy roads	28.89%	13
There is too much traffic along the roads	22.22%	10
I feel uncomfortable / unsafe walking along the route	17.78%	8
Aggressive animals (magpies, dogs)	17.78%	8
Weather (too hot or too wet)	13.33%	6
Distance is too long to walk	8.89%	4
The paths are too hilly	2.22%	1
Total Respondents: 45		

#	OTHER (PLEASE SPECIFY)	DATE
1	Time constraints (work hours)	4/14/2019 4:45 PM
2	Whilst I feel safe, I know there many ageing people in Lithgow who do not walk given either feeling unsafe, unstable by themselves as with uneven or no footpath. This is restricting a large prtion of our community and see as not inclusive of this sector in our community. Equally the same for people with a physical or sight impairment.	4/12/2019 7:11 AM
3	speeding traffic which is close to the footpath and on bends	4/11/2019 3:53 PM
4	don't get out much	4/10/2019 3:33 PM
5	There is a need for a pedestrian footpath from Capertee Railway station up to the highway, and to the Capertee School for events that bring rail passengers into Capertee, as the road is in a dreadful condition and we are concerned of injury to the public. We have held 5 major events in the past 3 years that have brought hundreds of people into Capertee.	4/9/2019 6:41 PM
6	Time poor	4/9/2019 5:16 PM
7	I cross Railway Parade almost daily to access the railway tunnel to Main St - it is very unsafe for pedestrians, and I have nearly been hit several times.	4/9/2019 11:26 AM
8	Paths not suitable for prams	4/8/2019 6:41 AM
9	There are not enough footpaths	4/5/2019 8:39 PM
10	no footpaths, crossing or bridge paths or guttering at all in some streets.	4/5/2019 1:40 PM
11	Off leash dogs @ Watsford Oval	4/5/2019 11:51 AM
12	In some places there is not even a shoulder to cycle along, so I am on the road all the time with cars flying past at over 100kmh. When I run there are so many potholes that I find it difficult to keep a good pace without rolling an ankle	4/1/2019 8:19 PM
13	Lack of bicycle lanes	3/31/2019 12:39 PM
14	I live in a village that is 27km from Lithgow. The closest town is Portland and there is no walking/cycling path to Portland. Portland is a 10minute drive. Walking around my village requires mostly walking on the road.	3/29/2019 8:52 AM

Q10 Which areas in the Lithgow City Council area do you typically move to / from or within as a pedestrian? (Please select all that apply)

ANSWER CHOICES	RESPONSES	
Lithgow CBD	47.83%	22
Other (please specify)	41.30%	19
Blast Furnace Park and Wetlands	36.96%	17
Lithgow Queen Elizabeth Park / Anzac Memorial	32.61%	15
Lithgow Railway Station	28.26%	13
Lithgow Post Office	23.91%	11
Lithgow Library	21.74%	10
Lithgow JM Robson Aquatic Centre	21.74%	10
Glanmire Oval	15.22%	7
Marjorie Jackson Oval	15.22%	7
Lithgow City Bowling	13.04%	6
Tony Luchetti Sportsground	13.04%	6
Lithgow Hospital	10.87%	5
Jim Monaghan Athletics Oval	10.87%	5
Lithgow & District Workmen's Club / Greyhound Racing Track	10.87%	5
Coerwull Public School	10.87%	5
Watsford Oval	8.70%	4
Lithgow Uniting Church	8.70%	4
Lithgow PCYC	8.70%	4
Wallerawang Lake Wallace (Recreation Areas)	6.52%	3
Lithgow Police Station	6.52%	3



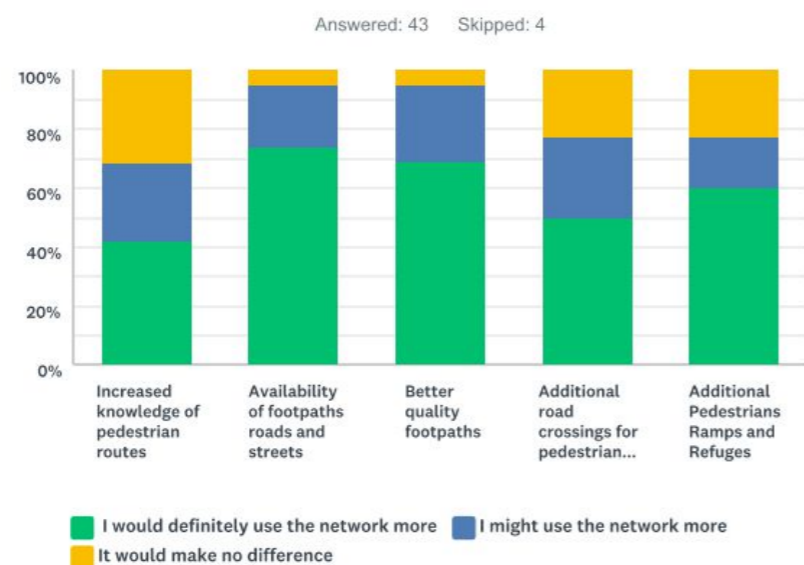
Lithgow Primary School	6.52%	3
Wallerawang CBD	6.52%	3
Conran Oval	4.35%	2
Saville Park, Portland	4.35%	2
Portland Cemetery	4.35%	2
Portland Showground	4.35%	2
Lithgow High School	4.35%	2
Portland Golf Club	4.35%	2
Portland St Joseph's School	4.35%	2
Portland Central School	4.35%	2
Portland St Stephen's Anglican Church	4.35%	2
Wallerawang Public School	4.35%	2
Lithgow Saint Paul's Anglican Church	4.35%	2
Wallerawang Bowling Club	4.35%	2
Tarana Hotel	4.35%	2
Portland District Olympic Pool	4.35%	2
Portland Health Centre	4.35%	2
Lithgow Tourist & Van Park	2.17%	1
Kremer Park, Portland	2.17%	1
Zig Zag Oval / Zig Zag Public School	2.17%	1
Lithgow College - TAFE Western	2.17%	1
Lithgow Cemetery	2.17%	1
Wallerawang St John the Evangelist Church	2.17%	1
Portland Presbyterian Church	2.17%	1
Lithgow Golf Club	2.17%	1
Lithgow The University of Notre Dame	2.17%	1
Tarana Saint Stephen's Church	2.17%	1
Rydal Showground	2.17%	1
Rydal Pioneers Park	2.17%	1
Rydal National Park	2.17%	1

Wallerawang Oval (Playing fields)	0.00%	0
Lithgow Rural Fire Brigade / Lithgow SES	0.00%	0
Wallerawang Church of the Sacred Heart	0.00%	0
Lithgow Baptist Church	0.00%	0
Lithgow Assemblies of God	0.00%	0
Wallerawang Chanteclair park	0.00%	0
Cullen Bullen Public School	0.00%	0
Capertee Public School	0.00%	0
Laselle Academy	0.00%	0
Scotts All Saints College	0.00%	0
Total Respondents: 46		

#	OTHER (PLEASE SPECIFY)	DATE
1	Hassans Walls Reserve	4/15/2019 9:03 AM
2	Strathlone Estate along HWY, Cemetery, Endeavour Park	4/14/2019 4:45 PM
3	Walks to immediate natural areas in the CBD i.e. Eskbank Walk, Hassans Walls Reserve all entrances/exits. Oakey Park - Inch/Bells Line of Rd. I would also walk to many other areas if their was an entry to any of the natural areas. As with walk and cycle ways to our neighbouring state Forests i.e. The drift, Crane Road, Great Western Highway, Castlereagh Highway..	4/12/2019 7:11 AM
4	Vale of Clwydd and Doctors Gap	4/11/2019 3:53 PM
5	Main street, shopping centres	4/10/2019 3:33 PM
6	Lithgow Hospital	4/10/2019 5:27 AM
7	Portland CBD and general roads around district	4/9/2019 7:10 PM
8	Capertee Railway station to Capertee School.	4/9/2019 6:41 PM
9	Up Hassans Walls Road	4/9/2019 6:15 PM
10	I do a lot of cycling/walking through Lithgow but mainly stick to the main roads due to animals being out in quieter streets	4/9/2019 3:33 PM
11	Lithgow pool	4/8/2019 6:41 AM
12	Highway area from BP Tweed to Visitors Centre	4/7/2019 7:03 PM
13	Glen Alice area. Its a very beautiful spot and should be utilised and promoted to attract international visitors and put Capertree on international map. Canyons are the best, dont know why not many people know about it in Australia, let alone in NSW.	4/6/2019 10:52 AM
14	Barton Avenue to Forest Ridge Drive	4/5/2019 8:39 PM
15	Portland CBD	4/5/2019 6:32 PM
16	Ivatt Street, Crane Road, Gell Street	4/5/2019 1:40 PM
17	Hassan's walls reserve	3/31/2019 9:10 PM



Q11 Please indicate whether the following changes would make you more likely to walk on a more regular basis for everyday local trips or to commute to work/study: (Please provide an answer for each option)



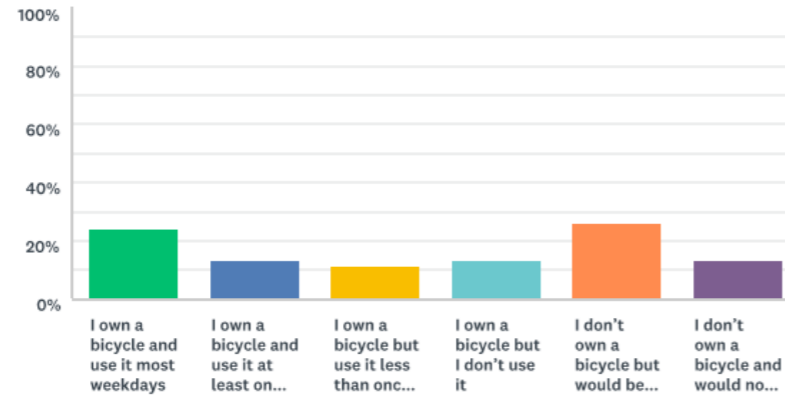
	I WOULD DEFINITELY USE THE NETWORK MORE	I MIGHT USE THE NETWORK MORE	IT WOULD MAKE NO DIFFERENCE	TOTAL
Increased knowledge of pedestrian routes	42.11% 16	26.32% 10	31.58% 12	38
Availability of footpaths roads and streets	73.81% 31	21.43% 9	4.76% 2	42
Better quality footpaths	69.05% 29	26.19% 11	4.76% 2	42
Additional road crossings for pedestrians (signals, footbridge etc.)	50.00% 20	27.50% 11	22.50% 9	40
Additional Pedestrians Ramps and Refuges	60.00% 24	17.50% 7	22.50% 9	40

#	IS THERE ANYTHING THAT WOULD ENCOURAGE YOU TO WALK MORE OR WALK ON A MORE REGULAR BASIS?	DATE
1	Improved road surfaces for bicycle commuting, often shoulders of road have massive potholes and bumps that make commuting more difficult	4/19/2019 1:35 PM
2	Dedicated walking/bicycle tracks	4/15/2019 9:03 AM
3	A nice visual area that is not interacted with traffic.	4/14/2019 4:45 PM
4	Extending the concrete barrier along the highway that ends at The turn off to first street. When walking along the highway the gap where the barrier stops is very unsafe and only takes one motorist who is not concentrating to veer off onto the footpath.	4/13/2019 7:37 AM
5	Traffic along Mort Street and Hartley Valley Road in The Vale often speed and this is scary. Speed bumps?	4/11/2019 3:53 PM
6	The footpaths in Portland are atrocious. They are a hazard.	4/10/2019 4:50 PM
7	Good footpaths	4/10/2019 5:27 AM
8	More wheelchair friendly ramps and smoother footpaths for my spouse.	4/9/2019 5:16 PM
9	A designated cycle path located near footpaths and more crossing areas for pedestrians	4/9/2019 3:33 PM
10	I would like to have bushwalk tracks/trails established in the hills surrounding Lithgow township, and walking distance from the CBD.	4/9/2019 11:26 AM
11	A long continuous path in a loop that is also suitable for prams	4/8/2019 6:41 AM
12	Designated pathways	4/6/2019 7:13 PM
13	nice walking strips	4/6/2019 10:52 AM
14	Footpaths in the areas I walk as there are none	4/5/2019 8:39 PM
15	Better lighting along paths at night. In winter it gets dark early and it's unsafe to walk so I have to drive instead. If there was more lighting along Wallerawang Road from Wolgan Street to Bell Street intersections it would be much improved. And completing the footpath all the way to Bell Street would also be great.	4/5/2019 6:32 PM
16	Mandatory rule that ALL DOGS must wear a muzzle outside of home yard. This means Any and All public areas (even public dog runs)	4/5/2019 1:40 PM
17	Dedicated walking path in the South Bowenfels area - away from the highway	4/3/2019 8:26 AM
18	Managed trail network on Hassan's walls reserve	3/31/2019 9:10 PM
19	No dogs allowed in front yards.	3/31/2019 1:52 PM
20	More well marked pedestrian crossings with zig zag lines, lights, raised, with those triangular gardens on each side.	3/29/2019 4:40 PM
21	Interesting walking paths that link the villages or along Farmers Creek with interpretation, seating and interactive areas.	3/29/2019 8:52 AM
22	Safe footpaths	3/28/2019 6:01 PM



Q12 Which of the following statements best describes you?

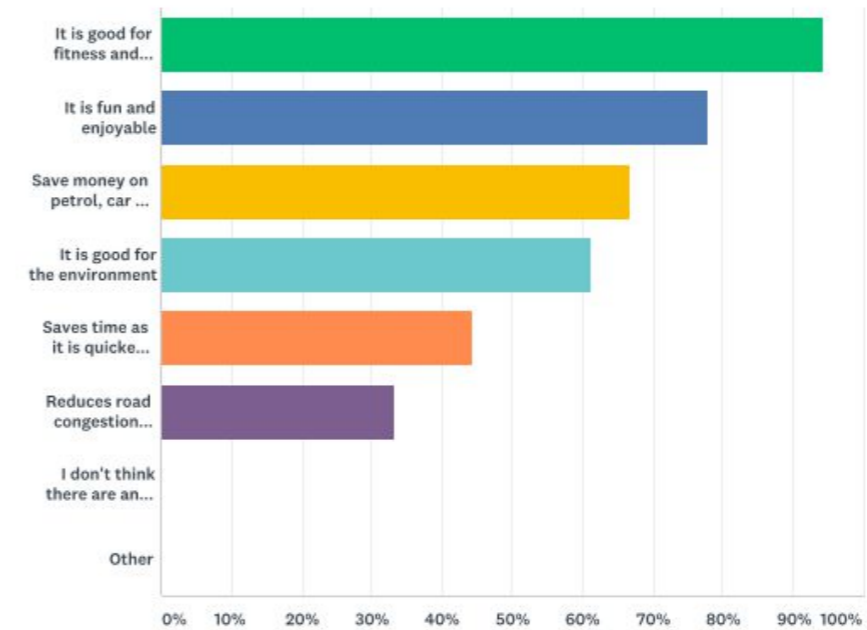
Answered: 46 Skipped: 1



ANSWER CHOICES	RESPONSES
I own a bicycle and use it most weekdays	23.91% 11
I own a bicycle and use it at least once a month	13.04% 6
I own a bicycle but use it less than once a month	10.87% 5
I own a bicycle but I don't use it	13.04% 6
I don't own a bicycle but would be interested in cycling if conditions for cycling improved	26.09% 12
I don't own a bicycle and would not be interested in cycling even if conditions for cycling improved	13.04% 6
TOTAL	46

Q13 What do you think are the benefits of bicycle riding on a regular basis? (Please select all that apply)

Answered: 18 Skipped: 29



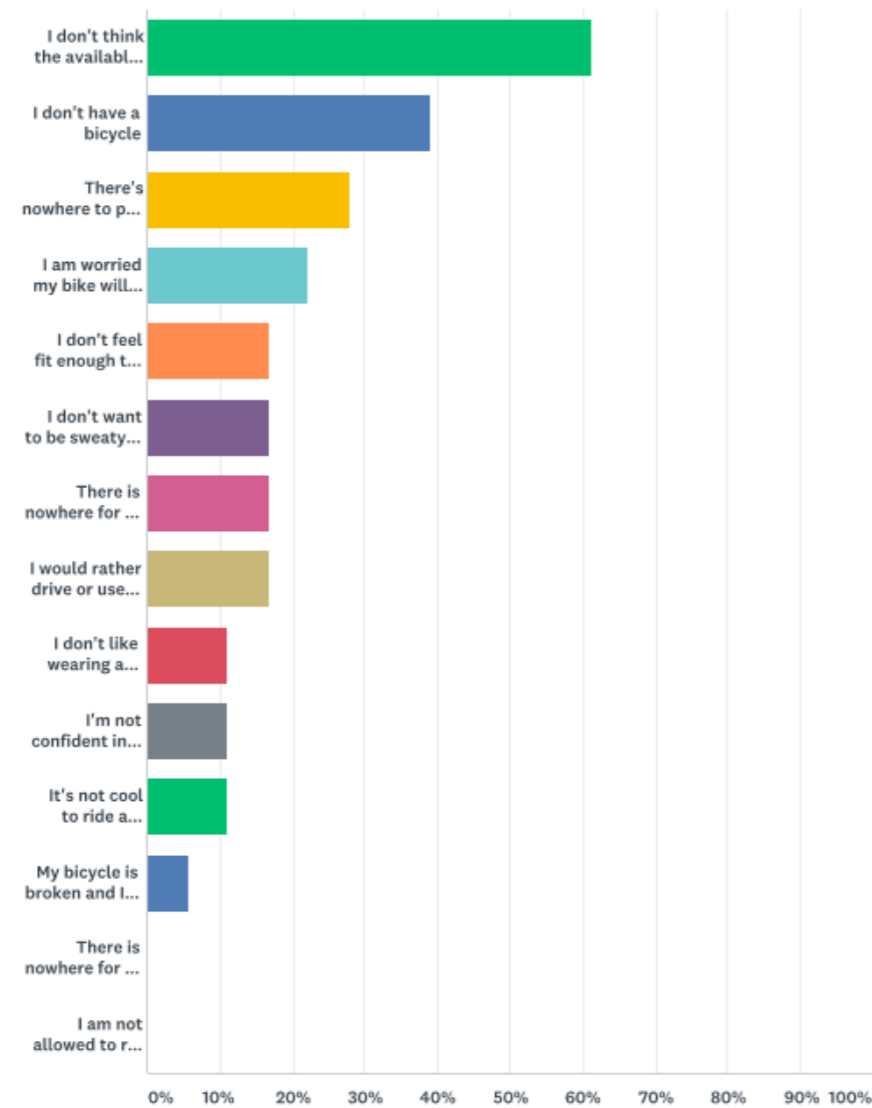
ANSWER CHOICES	RESPONSES
It is good for fitness and health	94.44% 17
It is fun and enjoyable	77.78% 14
Save money on petrol, car or transport costs	66.67% 12
It is good for the environment	61.11% 11
Saves time as it is quicker to ride to some destinations than to use other modes of transport	44.44% 8
Reduces road congestion (less motorised traffic)	33.33% 6
I don't think there are any benefits	0.00% 0
Other	0.00% 0
Total Respondents: 18	

#	OTHER (PLEASE SPECIFY)	DATE
1	If there is a cycle path then it will be used, especially for families with young children and our aging sector and PWD.	4/12/2019 7:14 AM
2	Important for children to be safe. Would encourage more use when riding to school	4/10/2019 5:28 AM



Q14 Please indicate why you don't ride a bicycle. (Please select all that apply)

Answered: 18 Skipped: 29

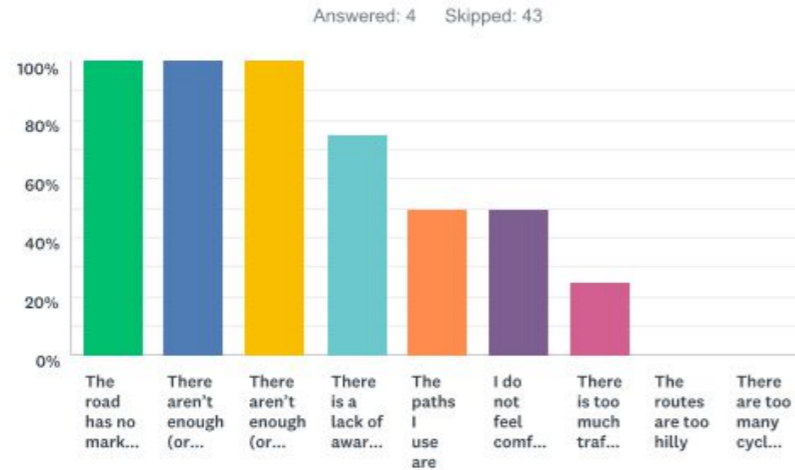


ANSWER CHOICES	RESPONSES
I don't think the available routes are safe or comfortable enough to ride on	61.11% 11
I don't have a bicycle	38.89% 7
There's nowhere to park my bicycle when I get to my destination	27.78% 5
I am worried my bike will get stolen or damaged	22.22% 4
I don't feel fit enough to ride a bicycle	16.67% 3
I don't want to be sweaty when I get to my destination	16.67% 3
There is nowhere for me to take a shower or change at the end of my trip	16.67% 3
I would rather drive or use another form of transport	16.67% 3
I don't like wearing a helmet	11.11% 2
I'm not confident in my bicycle riding skills	11.11% 2
It's not cool to ride a bicycle	11.11% 2
My bicycle is broken and I don't know how to fix it	5.56% 1
There is nowhere for me to take a shower or change at the end of my trip	0.00% 0
I am not allowed to ride a bicycle	0.00% 0
Total Respondents: 18	

#	OTHER (PLEASE SPECIFY)	DATE



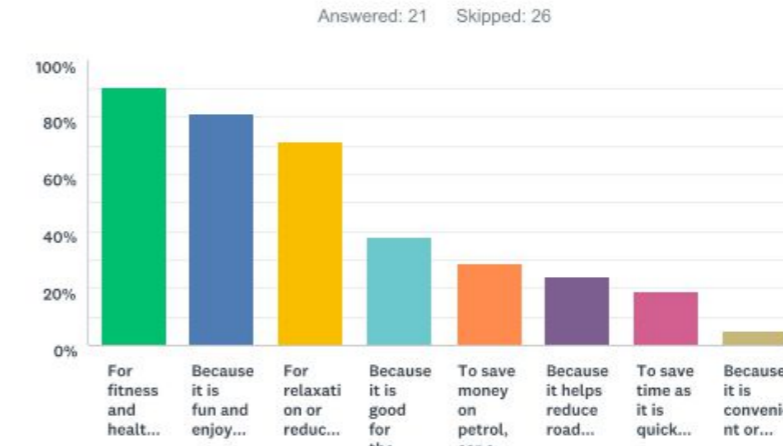
Q15 If you think that the available routes are unsafe or are uncomfortable to ride on, please select the reasons why from the list below. (Please select all that apply)



ANSWER CHOICES	RESPONSES
The road has no marked bicycle lane	100.00% 4
There aren't enough (or any) physically separated bicycle paths	100.00% 4
There aren't enough (or any) dedicated bicycle lanes on roads and streets	100.00% 4
There is a lack of awareness of bicycle safety and road sharing amongst other road users	75.00% 3
The paths I use are not comfortable to ride on (e.g. poorly maintained)	50.00% 2
I do not feel comfortable sharing the available off road paths with pedestrians	50.00% 2
There is too much traffic to ride on the road	25.00% 1
The routes are too hilly	0.00% 0
There are too many cyclists on the bicycle paths	0.00% 0
Total Respondents: 4	

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q16 Why do you ride your bicycle? (Please select all that apply)

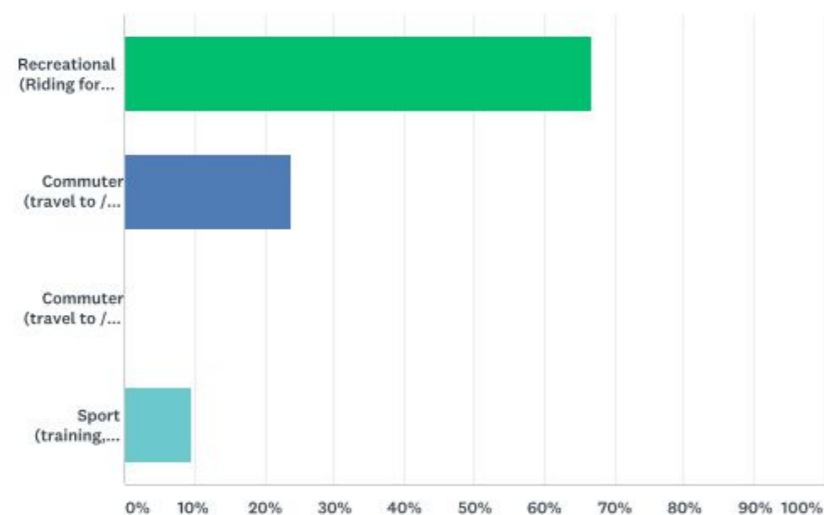


ANSWER CHOICES	RESPONSES
For fitness and health reasons	90.48% 19
Because it is fun and enjoyable	80.95% 17
For relaxation or reducing stress	71.43% 15
Because it is good for the environment	38.10% 8
To save money on petrol, car or transport costs	28.57% 6
Because it helps reduce road congestion (less motorised traffic)	23.81% 5
To save time as it is quicker to ride my bicycle than to use other modes of transport	19.05% 4
Because it is convenient or practical (e.g. all my trips are to places where there are bicycle parking facilities)	4.76% 1
Total Respondents: 21	



Q17 What type of cycling do you take part in most often?

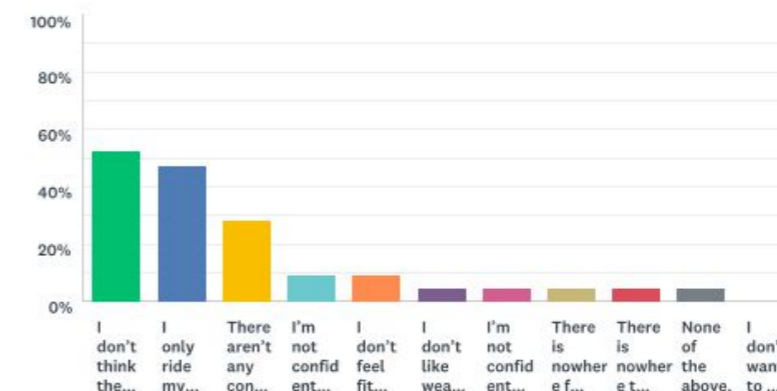
Answered: 21 Skipped: 26



ANSWER CHOICES	RESPONSES
Recreational (Riding for fun, fitness or leisure)	66.67% 14
Commuter (travel to / from work)	23.81% 5
Commuter (travel to / from school, TAFE or other education provider)	0.00% 0
Sport (training, racing or serious mountain bike riding)	9.52% 2
TOTAL	21

Q18 Which of the following are reasons why you don't ride your bicycle more regularly for everyday local trips or for commuting to work or study? (Please select all that apply)

Answered: 21 Skipped: 26



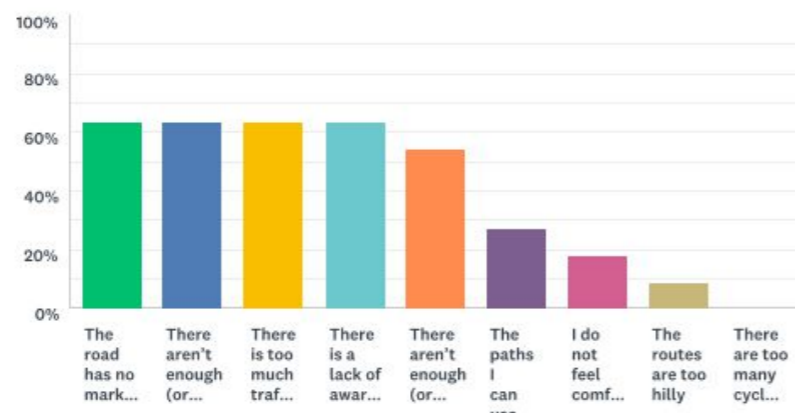
ANSWER CHOICES	RESPONSES
I don't think the available routes are safe or comfortable enough to ride on	52.38% 11
I only ride my bicycle for leisure or recreational purposes or as a sporting activity	47.62% 10
There aren't any convenient routes for me to get to my destination	28.57% 6
I'm not confident in my bicycle riding skills	9.52% 2
I don't feel fit enough to ride more often	9.52% 2
I don't like wearing a helmet	4.76% 1
I'm not confident I know how to look after my bicycle	4.76% 1
There is nowhere for me to take a shower or change at the end of my trip	4.76% 1
There is nowhere to park my bicycle at my destination	4.76% 1
None of the above.	4.76% 1
I don't want to be sweaty when I get to my destination	0.00% 0
Total Respondents: 21	

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	



Q19 If you think that the available routes are unsafe or are uncomfortable to ride on, please select the reasons why from the list below. (Please select all that apply)

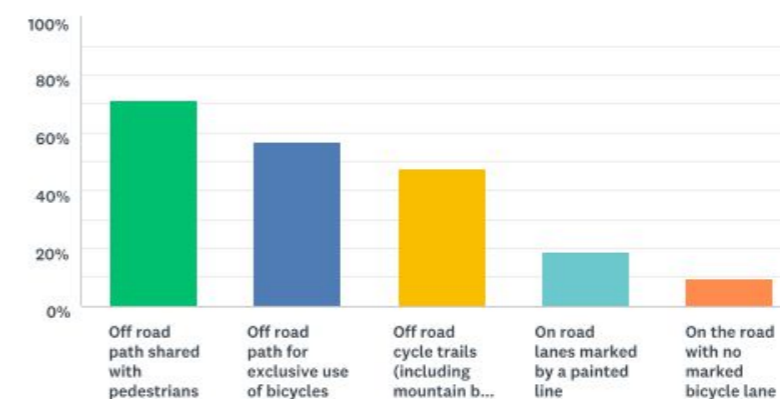
Answered: 11 Skipped: 36



ANSWER CHOICES	RESPONSES
The road has no marked bicycle lane	63.64% 7
There aren't enough (or any) physically separated bicycle paths	63.64% 7
There is too much traffic to ride on the road	63.64% 7
There is a lack of awareness of bicycle safety and road sharing amongst other road users	63.64% 7
There aren't enough (or any) dedicated bicycle lanes on roads and streets	54.55% 6
The paths I can use are not comfortable to ride on (e.g. poorly maintained)	27.27% 3
I do not feel comfortable sharing the available offroad paths with pedestrians	18.18% 2
The routes are too hilly	9.09% 1
There are too many cyclists on the bicycle paths	0.00% 0
Total Respondents: 11	

Q20 When you are riding your bike (inside or outside of Lithgow) what path/s do you prefer to ride on? (Please select all that apply)

Answered: 21 Skipped: 26



ANSWER CHOICES	RESPONSES
Off road path shared with pedestrians	71.43% 15
Off road path for exclusive use of bicycles	57.14% 12
Off road cycle trails (including mountain bike and recreational routes eg. National Park)	47.62% 10
On road lanes marked by a painted line	19.05% 4
On the road with no marked bicycle lane	9.52% 2
Total Respondents: 21	

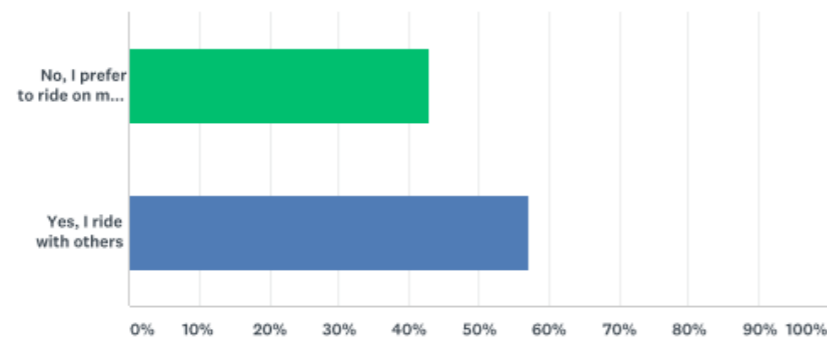
#	PLEASE DESCRIBE WHY THIS IS YOUR PREFERRED TYPE OF PATH TO RIDE ON.	DATE
1	It is illegal and much slower to ride on footpath, and I ride for commuting, meaning I need to take roads. I am comfortable sharing the road with vehicle traffic, however the poor condition of shoulders (even withing town and CBD) makes commuting more difficult - ie very uneven surface on shoulders, large potholes or bumps for utility cover force me into the main road lane frequently - more dangerous for me and slower for traffic.	4/19/2019 1:41 PM
2	I feel safer if there is a dedicated path rather than a shared road.	4/11/2019 11:25 AM
3	Having a cycle path that pedestrians also use should work well at Lithgow. It would be great if Oberon & Lithgow could join together in forming a cycleway route between the town of Oberon & villages of Rydal & Tarana.	4/11/2019 7:20 AM
4	With regard to road cycling, off road separated paths are the only way to really be safe from the enormous number of appalling motor vehicle drivers who drive in a very unsafe manner and drive by far too close to bicycle riders. I view mountain biking as a totally separate sport to road cycling and it is very enjoyable.	4/9/2019 7:20 PM
5	I don't feel safe riding on the roads, as I have had cars swerve at me to try to scare me. It's too dangerous on the roads	4/9/2019 3:36 PM
6	It is safer for cyclists to have their own dedicated bike path (either on road or off road). Also, it is safer for pedestrians to have their own paths, as bikes can come up behind you quickly and silently without warning - can be dangerous for people like me who walk their dog.	4/9/2019 11:36 AM



7	It is safer for people of our age to be on separated cycle paths.	4/7/2019 7:08 PM
8	more lively and sharing lovely earth with other souls	4/7/2019 9:31 AM
9	I only ride for my fitness	4/5/2019 8:40 PM
10	I ride to work, I ride on the weekends for enjoyment, it would be a lot safer if I didn't have to ride on the road on the highway with trucks trying to kill me	4/1/2019 8:22 PM
11	I don't like sharing the road with motor vehicles. It's not safe.	3/31/2019 1:56 PM
12	Bicycle lane on the main road. I'm going conventional places but don't want to be too isolated for safety reasons	3/31/2019 12:42 PM
13	Man made trails are great, but Lithgow doesn't really have any	3/29/2019 5:58 PM

Q21 Do you ever ride with other people?

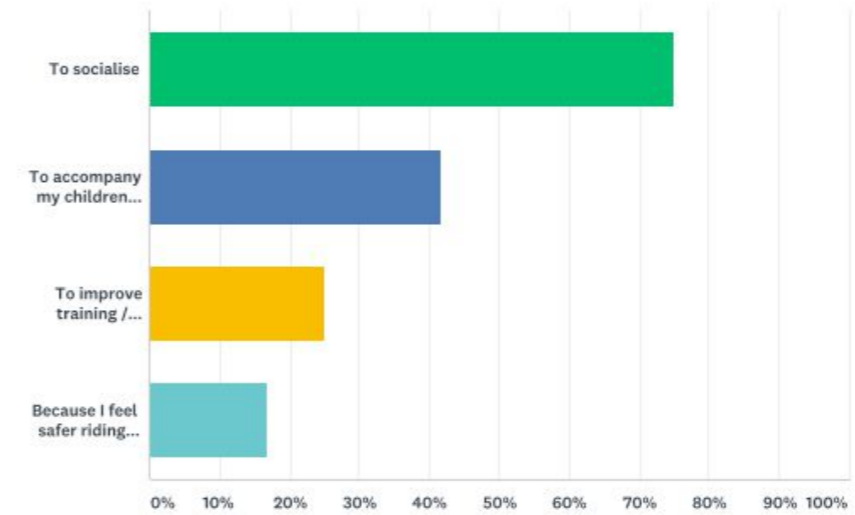
Answered: 21 Skipped: 26



ANSWER CHOICES	RESPONSES
No, I prefer to ride on my own	42.86% 9
Yes, I ride with others	57.14% 12
Total Respondents: 21	

Q22 Why do you ride with others?

Answered: 12 Skipped: 35



ANSWER CHOICES	RESPONSES
To socialise	75.00% 9
To accompany my children because they are not able to ride unsupervised	41.67% 5
To improve training / performance	25.00% 3
Because I feel safer riding in a group	16.67% 2
Total Respondents: 12	



Q23 What are your top three most common journeys by bicycle (Please provide start and end point)?

Answered: 17 Skipped: 30

ANSWER CHOICES	RESPONSES	
1. Start Point	100.00%	17
End Point (via what streets/paths)	94.12%	16
2. Start Point	76.47%	13
End Point (via what streets/paths)	70.59%	12
3. Start Point	58.82%	10
End Point (via what streets/paths)	52.94%	9

#	1. START POINT	DATE
1	blaxland st	4/19/2019 1:50 PM
2	mort st - hassans walls lookout/reserve	4/15/2019 9:08 AM
3	Home	4/13/2019 5:00 AM
4	Macauley St	4/11/2019 11:26 AM
5	Rail station on Main Street	4/11/2019 7:30 AM
6	Hill Range Crescent	4/9/2019 7:27 PM
7	Hassans walls road	4/9/2019 6:18 PM
8	Surveyors Way South Bowenfels	4/9/2019 3:39 PM
9	Hoskins Ave, Lithgow	4/9/2019 11:42 AM
10	Outer crescent	4/7/2019 7:12 PM
11	Blaxland Street	4/5/2019 8:41 PM
12	Martini Parade	4/2/2019 2:37 PM
13	Portland	4/1/2019 8:26 PM
14	Oakey park	3/31/2019 9:14 PM
15	Chifley road	3/31/2019 12:45 PM
16	Rodalink Showgrounds	3/29/2019 6:09 PM
17	Home	3/28/2019 6:05 PM

#	END POINT (VIA WHAT STREETS/PATHS)	DATE
1	Rifle Parade via Main st, Laurence and methvern	4/19/2019 1:50 PM
2	via hassans walls rd	4/15/2019 9:08 AM
3	Home via GWH	4/13/2019 5:00 AM
4	Library	4/11/2019 11:26 AM
5	Tarana via various lanes, streets & off road options, Magpie Hollow Road & Sodwalls Road	4/11/2019 7:30 AM
6	Bowenfels Medical Practice via methven st, martini pde, Rabaul st and great western highway. And the return trip of this.	4/9/2019 7:27 PM
7	Ordinance Street	4/9/2019 6:18 PM
8	GWH, Amiens St, Main St, Sandford Av, PCYC, Reid Avenue, Clarice Street, Geordie Street, GWH, Surveyors Way	4/9/2019 3:39 PM
9	Lithgow Swimming Pool, via Glanmire Oval / hockey fields.	4/9/2019 11:42 AM
10	Inch street via cycle paths and streets	4/7/2019 7:12 PM
11	Cripps Avenue, Barton Avenue, Main Street, Black Gold Motel path stops	4/5/2019 8:41 PM
12	Endeavour Park (via Martini Pde, Lemnos St and Amiens St)	4/2/2019 2:37 PM
13	Lidsdale via Castlereagh highway	4/1/2019 8:26 PM
14	Hassan's walls	3/31/2019 9:14 PM
15	LITHGOW hospital via Main Street past the mall then Amiens	3/31/2019 12:45 PM
16	Hyde park.	3/28/2019 6:05 PM

#	2. START POINT	DATE
1	Blaxland St	4/19/2019 1:50 PM
2	Macauley St	4/11/2019 11:26 AM
3	Rail station on Main Street	4/11/2019 7:30 AM
4	Hill Range Crescent	4/9/2019 7:27 PM
5	H W Road	4/9/2019 6:18 PM
6	Surveyors Way South Bowenfels	4/9/2019 3:39 PM
7	Outer cresc	4/7/2019 7:12 PM
8	Martini Parade	4/2/2019 2:37 PM
9	Lidsdale	4/1/2019 8:26 PM
10	Oakey park	3/31/2019 9:14 PM
11	Chifley road	3/31/2019 12:45 PM
12	Black fellows hand trail	3/29/2019 6:09 PM
13	Home	3/28/2019 6:05 PM

#	END POINT (VIA WHAT STREETS/PATHS)	DATE
1	Coles/Hassans walls via main st, then Methvern	4/19/2019 1:50 PM
2	Blast Furnace	4/11/2019 11:26 AM
3	Aldi via various lanes, road & off road options	4/11/2019 7:30 AM
4	Inch st end	4/9/2019 7:27 PM
5	Luchetti Oval	4/9/2019 6:18 PM



6	GWH, Amiens Street, Academy Street, Methven Street, Mort Street, Sandford Ave, Geordie Street, GWH, Surveyors Way	4/9/2019 3:39 PM
7	As above	4/7/2019 7:12 PM
8	Ferro Street (via Martini Pde, Methven St, Ferro St, and Main St)	4/2/2019 2:37 PM
9	Portland via Cullen Bullen	4/1/2019 8:26 PM
10	Newnes plateau	3/31/2019 9:14 PM
11	Supermarket via main st	3/31/2019 12:45 PM
12	Londonderry reserve	3/28/2019 6:05 PM
#	3. START POINT	DATE
1	Macauley St	4/11/2019 11:26 AM
2	Hill Range crescent	4/9/2019 7:27 PM
3	H W Road	4/9/2019 6:18 PM
4	Wang Lake	4/7/2019 7:12 PM
5	Martini Parade	4/2/2019 2:37 PM
6	Portland	4/1/2019 8:26 PM
7	Oakey park	3/31/2019 9:14 PM
8	LITHGOW hospital	3/31/2019 12:45 PM
9	Any national park	3/29/2019 6:09 PM
10	Home	3/28/2019 6:05 PM
#	END POINT (VIA WHAT STREETS/PATHS)	DATE
1	Hay St	4/11/2019 11:26 AM
2	Hill Range Crescent via Chifley road, Hartley valley road, Browns gap road, great western highway, coxs river road, ganbenag road, lowther siding road, Jenolan canes road, mccanes falls road, great western highway, methven st	4/9/2019 7:27 PM
3	Coalbrook street	4/9/2019 6:18 PM
4	Via pathways	4/7/2019 7:12 PM
5	Martini Pde (via Methven St, Rifle Pde, Bayonet St and Martini Pde)	4/2/2019 2:37 PM
6	Lithgow	4/1/2019 8:26 PM
7	Rydal Showgrounds	3/31/2019 9:14 PM
8	Down the highway to Chifley rd	3/31/2019 12:45 PM
9	Old Hartley village	3/28/2019 6:05 PM

Q24 Please identify the top three bike destinations that you would like to see developed or improved in the future. Consider Lithgow, Wallerawang, Portland, Rydal, Cullen Bullen, Capertree, Tarana (include street names, cross roads), hospital, schools, recreational facilities (parks, swimming pool, picnic areas, showground etc.) and any other regional links in the Lithgow City Council area.

Answered: 18 Skipped: 29

#	RESPONSES	DATE
1	We're surrounded by world class mt biking, and 2hrs from largest city in Australia. We should be encouraging this great source of income and tourism for the area. Publish maps of mtb trails, identify roads that connect trails, include points of interest - blast furnace, pubs (mtb works up a thirst), and shopping/food/accommodation. encourage families to cycle the streets between the attractions of the town. improving shoulder of roads and publicity would be great start. email for more info cml.churchill@gmail.com	4/19/2019 1:50 PM
2	Lithgow/Hassans Walls Reserve	4/15/2019 9:08 AM
3	This should be so kids and families can be out being active and having fun in a beautiful setting without having to worry about speeding cars and crossing roads.	4/13/2019 7:23 AM
4	Lithgow to Wallerawang & Portland Tarana to Oberon - old train route Access to Tarana recreational ground - currently hidden from public access & use	4/11/2019 7:30 AM
5	Lithgow, Hassan's walls reserve for mountain biking, rydal for mountain biking,	4/9/2019 7:27 PM
6	I would like more routes from Queen Elizabeth Park as it is such a magnet for locals. A bike rack there would be good too	4/9/2019 6:18 PM
7	A bike track through endeavour park Lithgow to Queen Elizabeth Park and just more tracks over the greater Lithgow area.	4/9/2019 3:39 PM
8	The new bike path at Glanmire Oval is great - for walking and cycling. I would like to see it extended further.	4/9/2019 11:42 AM
9	An uninterrupted dedicated cycle path from near Outer Crescent to the other end of Lithgow. Without having to use roads.	4/7/2019 7:12 PM
10	Glen Alice, Glen Davis and around Lithgow	4/7/2019 9:31 AM
11	Lake Wallace Recreation Area	4/5/2019 8:41 PM
12	Extend shared path along Farmers Creek from Glanmire Oval to Marjorie Jackson Oval	4/2/2019 2:37 PM
13	Portland to Wallerawang on pipers flat road, A bike path or at least a shoulder would be so beneficial not only cyclists but runners/ walkers as well.	4/1/2019 8:26 PM
14	Hassan's walls reserve	3/31/2019 9:14 PM
15	Lithgow	3/31/2019 1:58 PM
16	Libraries, shops , and pools. Maybe hiking trails?	3/31/2019 12:45 PM
17	All have huge potential to be mountain bike tourist attractions and more importantly great for locals.	3/29/2019 6:09 PM
18	Mt Victoria to old hartley village. Hartley to the vale of Clwyd via the gap.	3/28/2019 6:05 PM

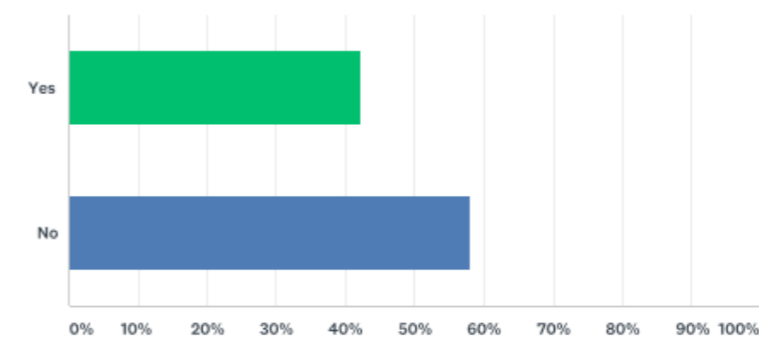


Q25 Please indicate whether the following changes would make you more likely to cycle on a regular basis for everyday local trips or to commute to work/ study (Please provide an answer for each option):

	I WOULD DEFINITELY CYCLE MORE	I MIGHT CYCLE MORE	IT WOULD MAKE NO DIFFERENCE	TOTAL
Increased knowledge of bicycles and bicycle maintenance	27.27% 9	21.21% 7	51.52% 17	33
Improved bicycle riding skills	32.35% 11	23.53% 8	44.12% 15	34
Availability of physically separated bicycle paths	70.27% 26	27.03% 10	2.70% 1	37
Availability of dedicated bicycle lanes on roads and streets	52.63% 20	34.21% 13	13.16% 5	38
Better connections between bicycle paths and public transport	0.00% 0	0.00% 0	0.00% 0	0
Availability of shower and changing facilities at my destination	8.82% 3	29.41% 10	61.76% 21	34
Availability of bicycle parking at my destination	26.47% 9	44.12% 15	29.41% 10	34
If there were more bicycle riders on the road	30.30% 10	33.33% 11	36.36% 12	33
Increased driver awareness of bicycle safety and road sharing	51.43% 18	34.29% 12	14.29% 5	35

Q26 Do you have any children under the age of 15?

Answered: 38 Skipped: 9

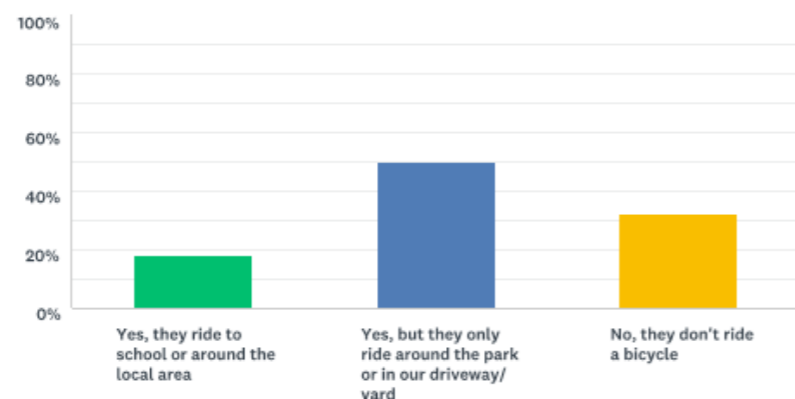


ANSWER CHOICES	RESPONSES	
Yes	42.11%	16
No	57.89%	22
TOTAL		38



Q27 Do your children ride a bicycle?

Answered: 22 Skipped: 25



ANSWER CHOICES	RESPONSES
Yes, they ride to school or around the local area	18.18% 4
Yes, but they only ride around the park or in our driveway/ yard	50.00% 11
No, they don't ride a bicycle	31.82% 7
TOTAL	22

#	PLEASE PROVIDE DETAILS AS TO WHY (E.G. THEY DON'T KNOW HOW TO RIDE A BICYCLE YET, IT IS TOO FAR FOR THEM TO RIDE TO SCHOOL SO THEY ONLY RIDE IN THE PARK):	DATE
1	too young	4/19/2019 1:54 PM
2	Not safe enough by themselves	4/13/2019 7:26 AM
3	school too far but they ride around town	4/11/2019 11:26 AM
4	Too young	4/10/2019 4:52 PM
5	They're too young to ride on the road.	4/10/2019 3:26 PM
6	We live in Little Hartley and there is really nowhere safe, that we know of, for her to ride her bike.	4/10/2019 4:19 AM
7	Eldest is 3 so fairly contained at the moment	4/9/2019 3:48 PM
8	They are only young children and can not ride on their own yet	4/8/2019 6:43 AM
9	they are grown up and don't live in Lithgow anymore	4/5/2019 1:40 PM
10	Only 6 and need supervision	4/2/2019 2:39 PM
11	I don't feel they are safe on the road with motor vehicles.	3/31/2019 1:59 PM
12	Too young. It's too unsafe for them on the road and I can't get their bikes to parks etc without it	3/31/2019 12:47 PM
13	Too far from school and range rd and Pipers Flat road are to dangerous	3/29/2019 6:13 PM
14	Haven't shown much interest in cycling.	3/29/2019 4:49 PM
15	There are no safe places for kids to ride and not a lot of kids to ride with.	3/29/2019 8:54 AM

Q28 Is there anything that would help you to encourage your children to ride their bicycles more often to get to school or around the local area?

Answered: 16 Skipped: 31

#	RESPONSES	DATE
1	Improved (and more importantly publicized) bicycle paths would be good for family rides, at the moment there is an ok path along farmers creek, this is smooth, wide and family friendly but extremely short, can this be extended to attraction of town? link up to the visitor center and blast furnace? link to cafe's of main street, encourage people to park at information center and cycle to blast furnace, stop by main st to shop/eat/drink?	4/19/2019 1:54 PM
2	Dedicated bike paths where you don't worry about traffic	4/13/2019 7:26 AM
3	Dedicated paths to increase safety	4/13/2019 5:02 AM
4	more cycle/walking paths	4/10/2019 11:27 PM
5	Safer roads	4/10/2019 4:52 PM
6	In our local area, I am not sure what is possible. Maybe making some maps to show walking paths / bike routes in the area might go some way to encouraging these activities. Like I said, I don't know anywhere that I can safely take my 4-year-old daughter to ride her bike in Little Hartley.	4/10/2019 4:19 AM
7	Availability of safe paths for riding.	4/9/2019 3:48 PM
8	When they're older I'd be happy for them to ride to school if there were safe paths and crossings	4/8/2019 6:43 AM
9	Mandatory rule that ALL DOGS must wear a muzzle outside of home yard. This means Any and All public areas (even public dog runs)	4/5/2019 1:40 PM
10	Safer crossings over major roads around Adventure Park / Skate Park	4/2/2019 2:39 PM
11	Better/safer paths to get to school so they aren't on the road	4/1/2019 8:28 PM
12	More bicycle paths	3/31/2019 9:16 PM
13	Dedicated bicycle paths.	3/31/2019 1:59 PM
14	Bike lanes and feeling they would be safe	3/31/2019 12:47 PM
15	Mountain bike park for specific use, with things like like single trails and skills areas	3/29/2019 6:13 PM
16	No... too dangerous. Too many idiot drivers!	3/29/2019 4:49 PM



Q29 Do you have any further comments about walking or cycling in the Lithgow City Council area or about the new Active Transport Plan?

Answered: 33 Skipped: 14

#	RESPONSES	DATE
1	See other comments for other ideas, 4 types of cycling - - Mt biking --- advertise to sydney, add food and drink locations, recommend streets to link different mt biking areas - Family - Improve and extend farmers creek trail to visitor information center and attractions such as blast furnace, Lake Pillans wetlands, and main street shops, secret creek cafe etc. - Touring - Bathurst has extensive cycling clubs - tap into that market with route maps - tarana to lithgow, Lithgow to Hartley, Tarana to bathurst etc. - Commuting - Improve condition of roads and shoulders - roads are full of potholes and large dips/bumps from utility covers. Interested in getting involved - cml.churchill@gmail.com	4/19/2019 2:05 PM
2	Pedestrians should not interact with traffic or at least it should be kept to a minimum. If cycle ways are introduced it must be stressed who has right of way. There had been a lot of conflict between cyclists and motorists over the years.	4/14/2019 4:49 PM
3	Increase lighting along footpaths. It is very dark if you go for a run/Walk after work in most areas of the town. Footpaths are very uneven and are a trip hazard in most parts. Installation of water fountains in more areas for hydration on runs.	4/13/2019 7:43 AM
4	Please make dedicated bike/walking paths to parks/sporting ovals that are safe to use by all kids!	4/13/2019 7:30 AM
5	Better access - signage and establish walking tracks to the natural areas that surround Lithgow CBD and outer areas, Lidsdale, Cullen Bullen etc. i.e. cycle/shared walkway from Lithgow to Hartley same for Lithgow to all the valleys in fact, Hartley, Kanimbla, Wolgan, Capertee.	4/12/2019 7:25 AM
6	Allow for ebike & scooter options. For an ebike a hill is nothing.	4/11/2019 7:33 AM
7	Great to see - please can the paths be constructed as wide as possible and where appropriate in a colour to enable a better look & feel to the area	4/10/2019 11:28 PM
8	wherever possible, reduce exposure of cyclists to traffic. it is stressful for all involved.	4/10/2019 3:35 PM
9	no	4/10/2019 3:21 PM
10	I think the cycling paths are a great idea and would increase the number of people taking up this option. I believe for our children it would be great for them to be able to ride to school safely, be able to engage in bike safety and maintenance, be part of a cycling group, encourage cycling competitions and most importantly help to get kids active and reduce the obesity epidemic we have because kids are no longer as active.	4/10/2019 5:36 AM
11	I think the accessibility of footpaths for prams etc outside of the CBD is a must. I know Council can't fix them all but some are dreadful and I know people who would rather drive than push prams on the footpath.	4/10/2019 4:24 AM
12	Lithgow needs a huge investment into quality improvement of roads and footpaths. Notwithstanding the ideal of separated bicycle paths, the roads as they are at present are in such poor condition and so rough that it makes cycling on them very unpleasant.	4/9/2019 7:29 PM
13	Excellent idea	4/9/2019 7:17 PM

14	Please consider the pedestrian footpath from the Capertee Railway station to the school, as a matter of importance for the future success of tourism events.	4/9/2019 6:43 PM
15	Yes, I would like to see a walking path at the end of Silcock Street linking to the Mall. This is a very pretty street and of historical interest to tourists	4/9/2019 6:20 PM
16	Excellent initiative from the Lithgow Council, keep up the great work :)	4/9/2019 3:51 PM
17	I think it's a great idea, a safer area for parents with children and cyclists in general.	4/9/2019 3:42 PM
18	It is a good initiative.	4/9/2019 11:49 AM
19	When paths are established they need to be maintained eg the path near Sanford ave that is overgrown	4/7/2019 7:15 PM
20	It would be wonderful to see this infrastructure put in place to promote health and fitness for the people of this area	4/6/2019 7:19 PM
21	A footpath is needed along James Parade for children walking to school as they walk in the road in place as the sidewalk is too steep. This street is used a lot by parents and small children going to the preschool. We all walk along the road every day to go for our daily exercise. It is a high traffic street with the entrance to the Transgrid Electricity substation.	4/5/2019 9:03 PM
22	The new active transport plan is exciting. I would love if walking paths were improved, and if there were separate bike lanes where I normally commute I would get a bike. I have been too scared to cycle with the current conditions / people's attitudes. I'm not sure if I would feel safe cycling in a lane beside the road unless there was plenty of room and visibility, perhaps some sort of barrier.	4/5/2019 6:40 PM
23	Sandford Av bike path is becoming over grown with edge grass. I have notice this as several public pathways. Also if there is a bike pathway like Sandford Ave or Geordie St cyclists MUST use them and NOT the main road as they are putting themselves and drivers in danger.	4/5/2019 1:49 PM
24	As stated earlier, too many off leash dogs on Watsford Oval of an afternoon after work.	4/5/2019 11:54 AM
25	Could council also look at some bridle tracks for horse riders as well	4/3/2019 8:34 AM
26	Anything would be better than what is available now, please don't forget about Portland and Wallerawang, I think if there was a path between the 2 towns it would be used by both cyclists and runners and people from out of town would travel to the area to use it	4/1/2019 8:31 PM
27	Derby Tasmania - and many other MTB destinations have transformed local economies. Submissions have been being made to Lithgow council for at least 20 years with zero interest other than lip service shown.	3/31/2019 9:22 PM
28	Dedicated cycling and walking paths that do not share roads with motor vehicles are necessary for health, fitness, recreation and safety. More families would get out if these facilities were available.	3/31/2019 2:05 PM
29	Lithgow is a wonderful place for walking/ riding as there's so much close by. This is a great initiative. It would also hopefully encourage people to do it more meaning more people about and so much safer and less fearful	3/31/2019 12:49 PM
30	Lithgow has something nowhere else in the central west has. Huge amount of bush land along with spectacular cliffs and rock formations. Man made trails for mountain bikes and hikers would transform the economy.	3/29/2019 6:26 PM
31	I would love there to be more separate paths for cyclists and walkers. Much safer than the roads.	3/29/2019 4:58 PM
32	The linkages along Farmers Creek need to be completed with walking, cycling, outdoor gym equipment stations etc, to encourage people to use this area between the Great Western Highway and Lake Pillans Wetlands.	3/29/2019 8:56 AM
33	Dont forget hartley	3/28/2019 6:07 PM



Q30 Are there any specific projects that you would like to see proposed in the Lithgow City Council area that would encourage pedestrians and cyclists to walk or ride regularly?

Answered: 29 Skipped: 18

#	RESPONSES	DATE
1	see Q.25	4/19/2019 2:05 PM
2	walk/bike trails from town through Hassnas Walls Reserve	4/15/2019 9:10 AM
3	Endeavour Park is a vast area that could be turned into a great walking track for parents and children. The activity adventure playground is now finished and is attracting a lot of visitors with the car park near full every afternoon. The whole area is the perfect canvas for a winding walk (maybe cycle) way. Rhododendrons and azaleas could be highlighted in Spring along with flowering natives and trees. A pathway could be designed to wind slowly down from one end to the other and a car park for angle parking along Amien street and an extension of the current play equipment along this frontage. Another public toilet block could be constructed at this end with change facilities for the parents and young children. No need to reinvent the wheel on this when there is ample space at an already Council owned park that should get the attention it deserves. (Take the pedestrians away from the roads)	4/14/2019 4:49 PM
4	A walking track to the top of the drift. One of the most spectacular walks close to CBD with signage. A loop would be even better.	4/12/2019 7:25 AM
5	I want to see a dedicated path for cyclists and pedestrians on Hartley Valley Rd Vale of Clwydd and Drs Gap. From Berry Street to the beginning of Hassans Walls Road. MAny people I know want this stretch to be safer. Traffic speeds and verges are neglected by LCC maintenance.	4/11/2019 4:04 PM
6	A Cycling Around Lithgow promotional brochure. Tap into the Sydneysiders desire for an enjoyable out of town adventure	4/11/2019 7:33 AM
7	An extension to the bike path along Farmers Creek would be a good addition.	4/10/2019 3:30 PM
8	no	4/10/2019 3:21 PM
9	Develop bike tracks at our beautiful surrounding locations such as Lake Wallace, the Bladt Furnce, State mine, have some form of water station at Hasabs Walls Lookout, the Showground. Create a BMX track ner the skatepar or near the pony club. . Promote fitness and bike clubs on the radio.	4/10/2019 5:36 AM
10	One thing I would suggest is signage in Cook St Plaza that indicates how far you can walk / cycle within a timeframe: "Walk to here, here and here in 20 minutes..." And the same for cycling. Get it right there where the passengers get off the train. Another one would be a bike-hiring system that is popular in North America and Europe. A few drop-off points around the LGA so people can cycle to Portland or Wang if they wish. Might encourage more cycling if people could hire one for the day for a minimal fee.	4/10/2019 4:24 AM
11	Separated bicycle paths, many more footpaths	4/9/2019 7:29 PM
12	cycle/walkways between villages were practical	4/9/2019 7:17 PM
13	Yes, I would like to see a walking path at the end of Silcock Street linking to the Mall. This is a very pretty street and of historical interest to tourists	4/9/2019 6:20 PM
14	Look at excellent walks such as by the Parramatta River, Botany Bay or even the River Run at Penrith and see how the concepts could be applied to our areas (lakes/bush/creeks)	4/9/2019 3:51 PM

15	Upgrade of footpaths in the region particularly for pedestrians	4/9/2019 3:42 PM
16	1. Make it safer for pedestrians to cross Railway Pde, Lithgow to/from train station. 2. Establish bushwalking tracks in Lithgow hills, that are walking distance from CBD - this would encourage bushwalking tourists, and also be good for the locals.	4/9/2019 11:49 AM
17	A better walking/riding path up Hassan's walls or around lake Lyall	4/8/2019 6:44 AM
18	Establishment of dedicated cycle paths.	4/7/2019 7:15 PM
19	A walking/cycle path between Portland and Wallerawang	4/6/2019 7:19 PM
20	Pedestrian/cycleway at Lake Wallace, more footpaths in every town and maintenance of the ones that are already in place.	4/5/2019 9:03 PM
21	Keep on with the path that ends at the Gianmire	4/5/2019 11:54 AM
22	Safe path between Portland and Wallerawang	4/1/2019 8:31 PM
23	Maintaining paths and roads which are currently in a ridiculous state of disrepair	3/31/2019 9:22 PM
24	Dedicated cycling and walking paths that do not share roads with motor vehicles are necessary for health, fitness, recreation and safety. More families would get out if these facilities were available.	3/31/2019 2:05 PM
25	Bike lanes. It would be wonderful. Thank you	3/31/2019 12:49 PM
26	Hassan's walls mountain bike park would be a huge asset. A cycle/walking trail the whole way around lake Wallace. Turn Portland common into a mountain bike park similar to the common at Mudgee.... mountain biking has come along way in the last 5yrs Lithgow should explore the tourism benefits.	3/29/2019 6:26 PM
27	Make it easier and attractive for people to walk or cycle. Build a network of paths and cycleways that make it easier for people to access. In Lthgow, the emphasis seems to be on the car as a foremost means of transport. I've got nothing against cars, I've had many of my own.But, everything seems to be built around the car as if that is the primary and most important form of transport.	3/29/2019 4:58 PM
28	Proper pedestrian cycleway linkages between Wallerawang, Portland and Cullen Bullen.	3/29/2019 8:56 AM
29	Bike track from mt victoria to lithgow	3/28/2019 6:07 PM



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