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MID-WESTERN REGIONAL COUNCIL

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Mid-Western Regional Council

Mid-Western Region Walking & Cycling Strategy V3

A prosperous and progressive community we proudly call home



Walking and Cycling Strategic Plan

Mid-Western Regional Council

Version 3 Friday 10th May 2024

Volume 1: Strategic Plan





Quality Assurance

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Mayor's Message

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Glossary

Term	Description
Action Plan	Refers to the Walking and Cycling Action and Implementation Plan. This is the second volume of this strategic document. It presents a detailed roadmap outlining the steps, tasks, responsibilities, timelines, and resources required
Catchment	The geographical area from which a particular service, facility or resource attracts its users, customers or participants. This strategic plan focuses on the practical walking and cycling catchment of the four Mid-Western Region town centres.
Cycling facility	An asset specifically designed and provided to enable cyclists to travel safely and efficiently. This strategic plan addresses both on-road and offroad cycling facilities.
Cycling network	The system of interconnected cycling facilities and routes that is designated to facilitate safe and convenient cycling between destinations within each of the four Mid-Western Region town centres.
On-road cycleway	A designated lane or section of a road marked for cyclists' use, including facilities where cyclists are required to share road space with motor vehicles.
Off-road cycleway	A dedicated path or trail provided exclusively for cyclists (or, in the case of a shared path, joint use with people walking), separated from motor vehicle traffic .
Footpath network	The system of footpaths, shared paths and trails in a community, enabling safe and convenient walking between destinations.

Term	Description
Low-volume laneway	A relatively narrow town centre street, carrying low volumes of motor vehicles travelling at relatively slow speeds, that can provide appealing cycling conditions. This facility can be designated as an onroad cycleway using pavement cycling symbols.
Main street	Main streets characterise lively centres where people come together to socialise, shop and access services. Main streets are the heart of local neighbourhoods, supporting lots of people movement and business activity. Mid-Western Region main streets that this strategy focuses on include: • Church Street and Market Street (Mudgee) • Mayne Street (Gulgong) • Angus Avenue (Kandos) • Louee Street (Rylstone)
Town centre	Town centres are the locations in Mid-Western Region where commercial, cultural and social activities are concentrated. The town centres addressed by this strategic plan are in Mudgee, Gulgong, Kandos and Rylstone.
User- envelope (or design envelope)	The user envelope refers to the physical space occupied by a person, with or without any aids (like a walking stick or a wheelchair), while using a footpath or similar pedestrian area. It's a way of measuring and designing spaces to ensure they accommodate the needs of pedestrians of varying abilities and equipment.
Walking Level of Service	The Walking Space Guide (TfNSW) offers a method to quantify how easy and comfortable it is for different types of people to walk on a selected route, based on factors such as footpath width, surface quality and proximity to busy traffic. The resulting Level of Service (LoS) is categorised from A (best) to F (worst).





Executive summary

The Mid-Western Region is a friendly and welcoming community with a diverse local economy, a growing population and a thriving tourism industry. As these sectors continue to expand, it is crucial that our transport system adapts and evolves to meet the needs of our future.

By 2031, our population is expected to exceed 30,000 $^{[1]}$, an increase of 17 per cent over today. Our region continues to welcome growing visitor numbers, with more than 600,000 $^{[2]}$ coming each year for leisure, to visit friends and family, or for business. This represents a 20 per cent increase since 2017.

Today, nearly 70 per cent of Mid-Western Region commuters travel to work by car [3]. As our community expands, this level of car reliance will affect the quality of life and livability of our region. The threatened increase in traffic in our towns will create more noise, impact air quality and result in more cars parked on our streets.

Although cars will continue to be an important means of transport for our region, we need to plan and provide a more balanced and sustainable system into the future. This will protect the qualities that attract people to live in and visit our places, offering them other travel options than just driving.

Most of our residents are fortunate in living close to work and community facilities and services. Around 15 per cent live within a 10-minute walking distance from their workplace, and 60 per cent live within a distance able to be covered in a 20-minute leisurely bicycle ride [3]. This underscores the considerable potential for residents to choose walking or cycling for many of their routine daily journeys.

Enhancing accessibility for our elderly people, and those with mobility or vision impairments, is particularly important. Our infrastructure should accommodate wheelchairs, walking aids and mobility scooters to ensure inclusivity and ease of navigation for all.

Perceived safety risks, and gaps in footpaths and cycling networks, discourage people from choosing to walk or ride a bike for short journeys. Surveys have revealed that safety is the primary barrier to choosing to walk or ride for 33 per cent of Mid-Western Region respondents, while 25 per cent have told us that the lack of walking and cycling facilities prevents them from reaching their desired destinations ^[4]. A lack of space for comfortable walking, and accessibility constraints encountered by less able people, present further barriers.

Mid-Western Regional Council is committed to overcoming these challenges by providing a well-designed and easily accessible network of footpaths and cycleways in Mudgee, Gulgong, Kandos and Rylstone. The purpose of these networks is to offer a safe and comfortable experience for users of all ages and abilities who want to undertake short everyday journeys without having to rely on a car. Networks will include places to stop and rest, with the provision of these being focused on public spaces that are close to town centre destinations.

Encouraging and enabling higher levels of participation in walking and cycling requires a coordinated effort across Council and government agencies. This will involve investing in infrastructure, coordinating works, integrating this strategic plan within planned urban growth and committed new developments, and influencing people's travel behaviour choices.

This strategic plan outlines Mid-Western Region's priority actions to deliver a safe and connected walking and cycling network for the community.



Purpose

The Mid-Western Region Walking and Cycling Strategic Plan aims to create more walkable and bicyclefriendly towns that are welcoming for residents, visitors, and businesses.

The strategic plan acknowledges the significant role that walking and cycling play in enhancing the friendly and welcoming ambience of our towns, now and into the future.

It highlights the region's toppriority actions to encourage more people to walk or cycle for their daily errands such as shopping, school, leisure, work and, even, dog-walking.

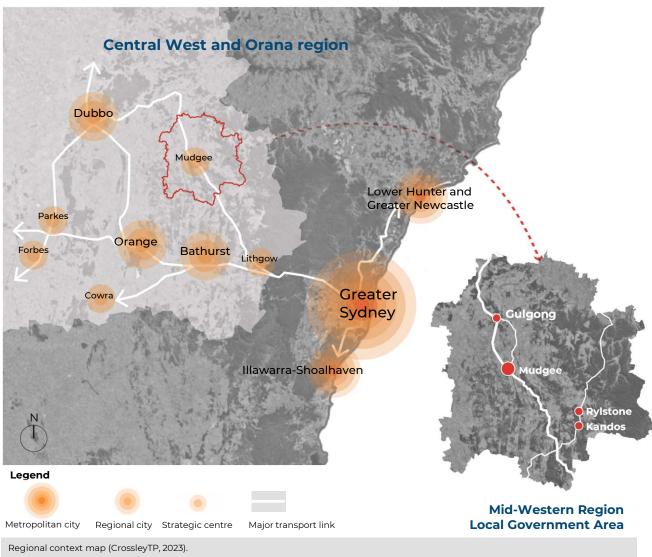
Over the next 10 years, Mid-Western Regional Council intends to enable residents and visitors to overcome the key barriers to accessing local facilities, services and tourist destinations on foot or by bike.



Children riding from Church Street to Denison Street, Mudgee (CrossleyTP, 2023).



Overview of the strategic plan



This strategic plan is dedicated to the active transport future of four principal towns: Gulgong, Kandos, Mudgee and Rylstone. It is informed by research, community consultation and current government policies, plans and design guidelines as referenced in the citations section.

The strategic plan explains the reasons why investing in better footpaths and cycleways is important, what we hope to achieve, and the main priorities for action. This volume specifically discusses:

- The challenge. Our community is facing several challenges as it expands and diversifies its economy. We discuss the five community priorities for the Mid-Western Region and explore how investing in walking and cycling infrastructure can help us overcome these challenges and realise our goals.
- Who is walking and cycling? This section identifies the groups of people choosing to walk and cycle and where this is happening.
- The barriers. Findings from community engagement activities identify the key barriers that make walking and cycling an unattractive or unviable travel choice. Consultation also reveals people's experiences and perceptions of walking or cycling in our towns and identifies the places they want to reach.
- Our approach delves into how we could overcome these barriers and contribute towards delivering the community's aspired outcomes. This concludes with key directions and a set of specific priorities.
- The Walk and Cycle Action and Implementation Plan (volume 2) discusses the details of footpath and cycleway improvements, including what will be done, when it will happen, where the improvements will occur, and prioritising potential investments.



Our challenge

A population that is growing quickly and thriving industries with varied transport requirements.

The Mid-Western Region is a warm and welcoming community that is home to over 25,000 residents ^[1]. It includes four historic towns, each offering unique experiences and streetscapes. Mudgee boasts tree-lined streets, Gulgong features narrow lanes, Rylstone has heritage street frontages, and Kandos offers an eclectic array of shops. Each town is surrounded by picturesque landscapes that provide opportunities to explore local food, wine producers and parklands.

Since the settlements are compact, each town has much to offer within a short distance from the main street. This makes our region an attractive place to live and visit. Indeed, we are one of the fastest-growing regions in New South Wales and attract almost 700,000 visitors each year [2].

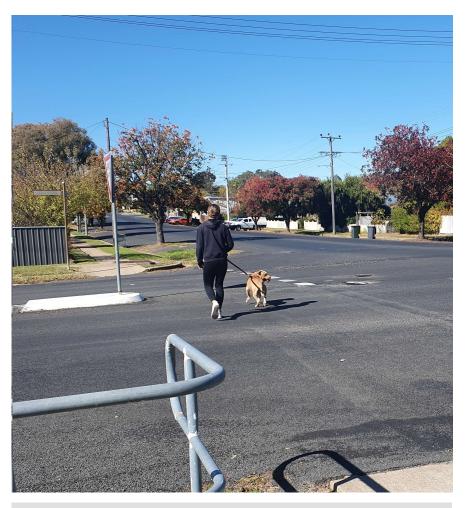
By 2031, our population is expected to exceed 30,000 $^{[1]}$, an increase of 17 per cent over 10 years. As the population grows, the demand to access our local amenities, services and attractions will increase, placing more pressure on our local street networks to move people and goods.

Despite the short distance to reach amenities, nearly 70 per cent of commuters travel to work by car ^[3]. As our community continues to expand, it is important to keep in mind that our reliance on driving may have an impact on the overall quality of life and liveability of our region.

There is significant potential for some of our car trips to be replaced by a walk or bicycle ride. Today, around 15 per cent of residents live within a 10-minute walking distance from their workplace, and 60 per cent live within a distance able to be covered by a 20-minute leisurely bicycle ride [3].

Your voice matters. Community surveys have identified the primary barriers to walking or cycling. These include concerns for safety, which will only increase with more traffic; the absence of footpaths or cycleways connecting people to key destinations; and a lack of physical space to comfortably support people walking in groups, with prams and mobility devices. These insights formed a crucial part in shaping this strategy and identifying priorities.

Removing barriers to an active lifestyle is vital to preserve the unique qualities of our towns and villages and manage future growth.



Walking the dog in Mudgee, this represents 20% of walking trips across the towns [4]. (Image: CrossleyTP, 2023).



Community priorities

Attracting more people to adopt active lifestyles will help us realise our vision for a prosperous and progressive community.

Streets serve both as infrastructure enabling movement and as places for socialising, conducting business and engaging in exercise. The nature of our streets can affect our emotional state and impact our sense of safety and comfort while using them. This experience influences our decisions and ability to participate in public life.

This strategic plan aims to protect and enhance the distinctive character of the streets in each of our towns. It also aims to deliver positive visitor experiences, encouraging people to return repeatedly for holidays and business. Additionally, it seeks to enhance the quality of life for our residents, especially as our population grows.

Achieving the community vision

Investing in better walking and cycling infrastructure leads to more people adopting active lifestyles, which aligns directly with and supports the five goals identified in our Community Plan.

A prosperous and progressive community we proudly call home."

Towards 2040 Mid-Western Region Community Plan. 2022



Connecting Our Region

This strategic plan aims to connect people to desired day-to-day destinations within a short walk or bicycle ride from their homes and from the main streets in Mudgee, Gulgong, Kandos and Rylstone.



Looking after Our Communities

This strategic plan identifies the type of walking and cycling facilities required to cater to our entire community's needs regardless of age or mobility.

It outlines the desired spaces that are sufficiently comfortable and safe for everyone to use.



Building a Strong Local Economy



Protecting Our Natural Environment



Good Government

Our strategic plan aims to create safe and comfortable transport connections to key destinations, enabling more people to participate in public life and engage in our local economy. Moreover, this initiative will facilitate people travelling within our towns to tourist attractions, helping to boost our future growth and prosperity.

As our community expands, the plan we have in place will assist us in growing sustainably, by mitigating the impact of rising car reliance throughout our region. Additionally, the creation of new walking and cycling routes will be carried out with consideration for the distinct features of our towns' streets.

This strategic plan aims to deliver comfortable spaces that can accommodate the diverse mobility needs of our community. It will help build community resilience by incorporating existing and emerging technologies, such as mobility scooters and e-bikes, and the space required to accommodate them on networks. By taking such actions, we can contribute towards advancing our community and promoting good governance.

Community goals from the Mid-Western Region Community Plan (MWRC, 2022)



Community benefits

Safety

Taking care of each other is a top priority for our community. To prevent slip, trip and fall injuries, this strategic plan directs investment to improve our footpaths and cycleways. This includes providing better pedestrian crossings, footpaths and cycling facilities to make our streets safer. Unfortunately, over the past five years, 15 people have been injured while walking or cycling in our towns [6]. To address this, the plan aims to reduce the risk of crashes and provide dedicated space for people walking and cycling, helping to separate them from vehicles.

Health and well-being

Active travel is one of the easiest ways to incorporate physical activity into daily life. By providing comfortable facilities for walking and cycling that connect people to key destinations, we can encourage our community to lead a more active lifestyle.

An increase in physical activity could help our community combat some of our top 10 health conditions, such as musculoskeletal issues like arthritis, mental health conditions and heart disease.



10.3%

of residents are affected by arthritis and related muscular-skeletal issues



of residents have a mental health condition such as depression or anxiety



4.7%

of residents are affected by heart disease. including angina or heart attack history

Top health conditions we could overcome by becoming more active [7].

Protecting our natural environment

By 2031, our towns are projected to welcome an additional 5,000 residents alongside more than 700,000 annual visitors. Planning and managing this growth sustainably is essential to preserve our local environment and heritage.

Transport is responsible for around 19 per cent of Australia's greenhouse gas emissions, with cars and heavy freight contributing 60 per cent of this [8]. Currently, 70 per cent of our working people drive to their place of employment. If this trend continues, our towns' general amenity, noise and air quality will likely deteriorate as they grow.

Walking and cycling are great alternatives to driving, offering a reliable, lowcost, low-carbon travel option. The smart design of infrastructure to support these choices can enhance our resilience in the face of a changing climate. For example, constructing footpaths with water-permeable surfaces and rain gardens can help prevent flooding, while providing shade can help us cope with heat, making walking and cycling more comfortable.

Boost business

Our future growth offers a significant opportunity for our towns to prosper and businesses to thrive.

This strategic plan provides guidance on designing streets for people. By doing this, we can enjoy benefits across community, leisure, connection. recreation, commerce and celebration. This will be good for business. Studies have shown that people who walk or ride to their local main street end up visiting and spending more, on average over a typical month, than people who only drive. Furthermore, increased footfall due to more people choosing active travel leads to increased retail rental values and less vacant shops [9] [21].

Inclusive streets and communities

This strategic plan aims to make it easier for people to walk or ride to our main streets, improving the level of access to our towns. This means more of our community will benefit and enjoy the opportunities on offer.

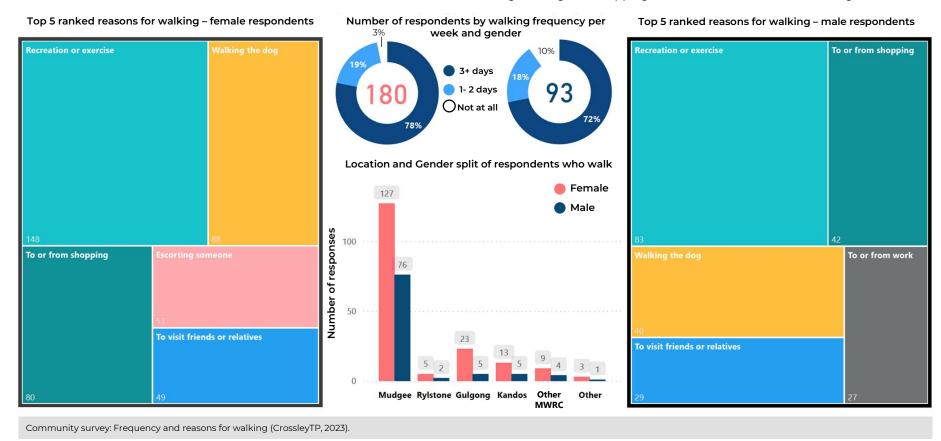
Walking or cycling are the most affordable travel options, offering practical choices for members of our community who do not have access to a car or have an age or health constraint to gaining a driving licence.



Who is walking today?

Around 11 per cent of households in our towns live within a 15-minute walk of their nearest main street.

The existing walking networks for each town are illustrated on page 16 and onwards. Our community survey revealed a notable difference in the walking habits of men and women. A significantly higher proportion of women engage in walking activities on more than three days a week. On the other hand, men are more likely to walk to work. Walking for recreation or exercise, dog-walking, and shopping are common motivations for both genders.



















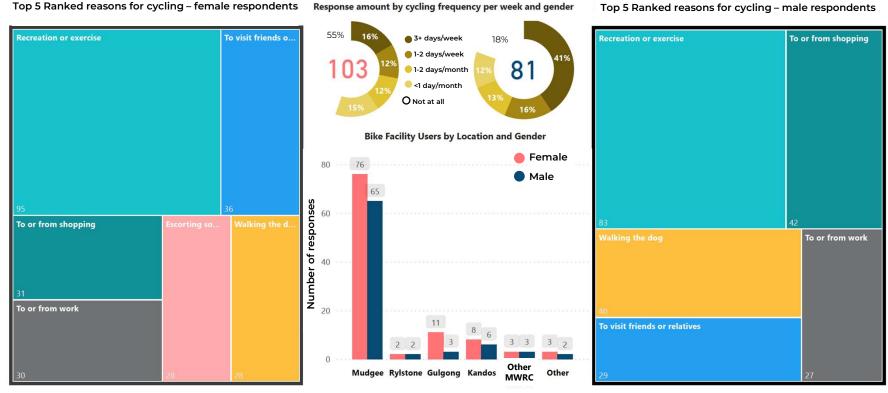
Images: Who is walking today? (CrossleyTP, 2023)



Who is cycling today?

Around 57 per cent of households in our towns live within a leisurely 20-minute bicycle ride to their nearest main street.

Community surveys indicate that in our townships, there is a gender disparity in cycling participation, with females cycling less often than males. However, research suggests that creating more cycling-friendly environments can lead to an increase in female participation. The primary reasons for cycling are for recreation, exercise, shopping, and visiting friends and family. Where people can currently cycle is illustrated in the cycling network maps from page 17.



Community survey: Frequency and reasons for cycling (CrossleyTP, 2023).

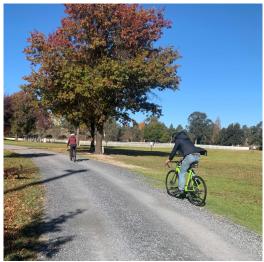
















Images: Who is cycling today? (CrossleyTP, 2023)

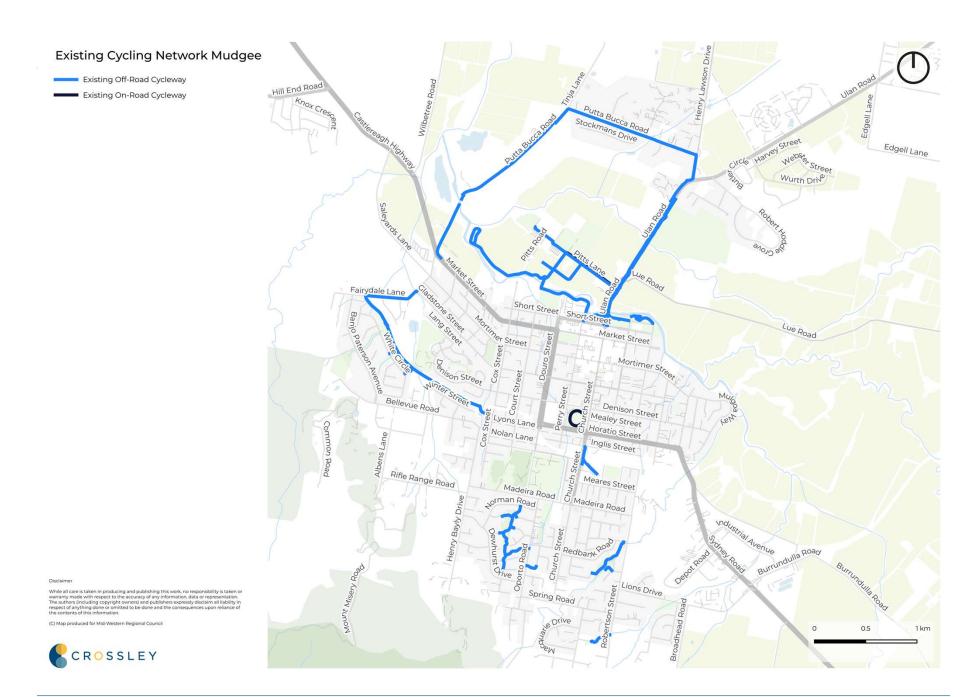
Existing footpaths and cycling networks

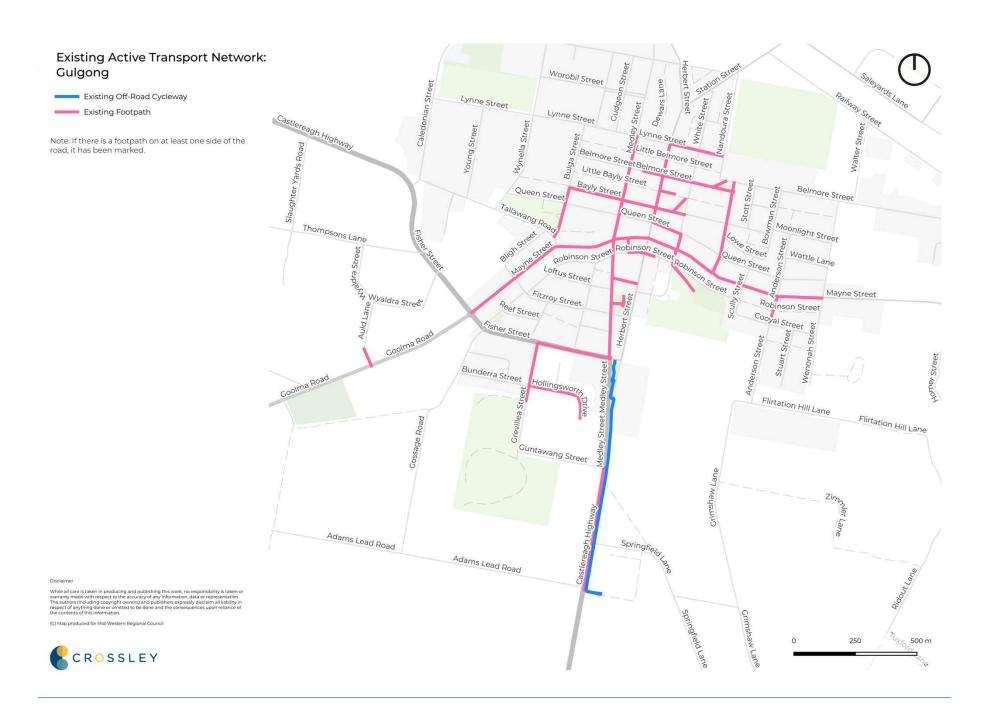
Existing Footpath Network Mudgee Hill End Road Existing Footpath Note: If there is a footpath on at least one side of the road, it has been marked. Edgell Lane Wurth Drive Lue Road Denison Street Mealey Street Horatio Street Inglis Street Rifle Range Road

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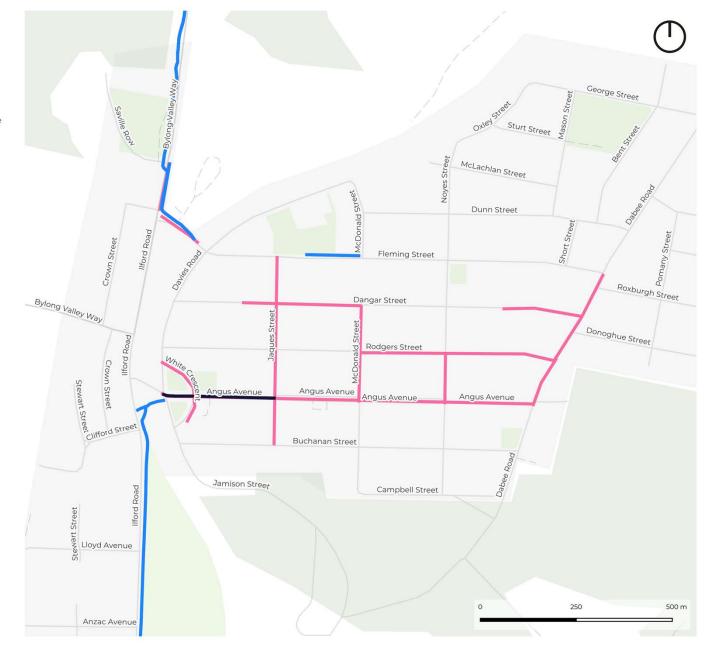


Existing Active Transport Network: Kandos

Existing Off-Road Cycleway

Existing On-Road Cycleway Existing Footpath

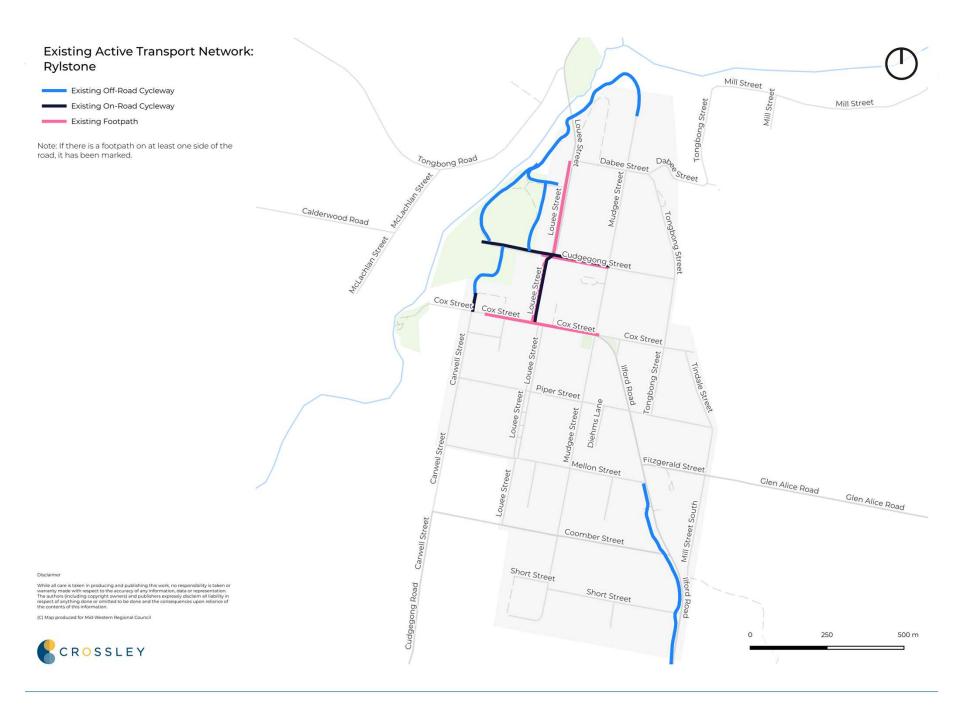
Note: If there is a footpath on at least one side of the road, it has been marked.



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Barriers

People across our community say they would walk and cycle more if there were safer facilities, especially on routes to school. [4]

Over 300 residents responded to the Walk and Cycle Community Survey and identified locations of concern. Safety was the primary concern across the four towns.

In Mudgee, the community has highlighted concerns about crossing wide streets where faster-moving traffic makes it more difficult and unsafe. This safety theme continued into the next key concern relating to the volume of heavy vehicles and the general traffic speed. Thirdly, missing footpaths and cycleways in the town's outer suburbs make walking or cycling difficult and unsafe.

The residents of Gulgong are also worried about accessibility issues in the area. They have emphasised the need for even and wide footpaths to accommodate people who use mobility aids. Additionally, they would like to be connected to parks and recreational grounds.

In contrast, the residents of Kandos have made specific requests to upgrade the Bylong Valley Trail that connects to Rylstone and for support in activating the main street at Angus Avenue. This sentiment was echoed by Rylstone residents with a desire for an improved Bylong Valley Trail, better connections to the river and railway, and place activation along Louee Street.

Council conducted a further survey to gather feedback from school communities regarding concerns around travelling to school. The survey received responses from staff, parents and carers at various educational institutions, including Squeakers Childcare Centre, Mudgee High School, Mudgee Public School, Mudgee Preschool South Campus, Cudgegong Valley Public School, St Matthews High School, St Matthews Catholic School and All Hallows Catholic School.

The findings identified the key barriers to walking and cycling are a lack of space on footpaths to walk comfortably with prams and young children, missing footpaths and missing cycleways on key routes and streets that are difficult to cross [10].

Why are people not choosing to walk or cycle?

1. We don't feel safe



Lots of trucks travelling through town. Traffic is travelling at speed.



Wide streets encourage higher traffic speed and make it more difficult to cross.

2. Footpaths are not accessible



Footpaths are too narrow for people walking with prams, mobility aids, wheelchairs and mobility scooters.



Walking on uneven footpaths is uncomfortable and poses a risk of trips, slips and falls.

3. We can't reach the places we want to go



Missing footpaths and cycleways mean we can't reach schools, parks and our local main street on foot or by bike.



Key barriers to walking and cycling



Open stormwater channel leaves no space to walk away from traffic.



A truck turning a corner in Mudgee with school children waiting to cross the road.



Uneven, narrow, unshaded and unsigned bike track between Kandos and Rylstone.



Missing connection from the gravel shared path to a footpath near the Cudgegong River.



Wide streets such as Lewis Street encourage faster vehicle speeds and make it hard to cross.



The footpath outside the museum in Gulgong is narrow and has high steps, limiting accessibility.



Our approach

We strive to create a safe and comfortable environment for our community by providing a network of pathways that lead to desired destinations.

Our region offers people who live, work or visit here a choice of vibrant town centres, and places of cultural and historic interest, set amongst the scenic surrounds of the Central West.

Achieving our vision means our streets will reflect the needs of our diverse community, with a walking and cycling network that everyone can use regardless of age or ability.

Walking and cycling networks will service the needs of residents, businesses and visitors. This will drive a cultural shift, attracting more people to walk and ride. This will help us grow sustainably and improve our quality of living and physical and mental well-being.

How we will achieve this outcome is structured by the following themes for directing action:

- Safe streets
- Welcoming streets
- Extend the walking and cycling catchment of our schools, parks, shops and workplaces
- 4. A step ahead: Building a resilient and sustainable local movement network



Footpaths provide a space to walk, socialise and do business (CrossleyTP. 2023).



Theme 1 - Safe streets

Safety concerns are why many people in the Mid-Western Region do not consider walking or cycling to get around our towns. The issues that make people feel less safe and insecure include:

- Fast-moving traffic
- Lots of trucks
- At crossing points, facilities for pedestrians are often lacking, resulting in low priority for people
- Risk of injury caused by slipping, tripping or falling on uneven footpaths

To overcome the safety issues, Council proposes two strategies to deliver a safe walking and cycling network: (a) to calm streets and (b) to make streets feel safe.

Streets are calm

Speeding vehicles contribute to about 40 per cent of road fatalities and 24 per cent of serious injuries annually [11]. Most of our local streets have a 50 km/h speed limit, which can be easily exceeded on wide, straight streets such as Lewis Street in Mudgee (see page 17).

When a person walking gets hit by a vehicle travelling at 50 km/h, there is only a 10% chance of survival. However, when the vehicle speed is reduced to 40 km/h, the survival rate increases to 60%, while at 30 km/h this goes up to 90%. Therefore, to create a safer environment for pedestrians and cyclists, vehicles should not exceed 40 km/h when passing them. The following strategies have been identified to achieve this goal:

- 1. Along extra wide streets, repurposing the additional space for pedestrians, cycling, or green infrastructure will help lower vehicle speeds. This approach is most relevant to Mudgee, which could see the rolling out of its current tree-lined character across more streets.
- Wide intersections with side streets are places where drivers often maintain their speed, making it difficult and unsafe for pedestrians to cross. In such locations, we will explore options to slow down vehicles turning into a side street and, where pedestrians will likely cross midblock, implement build-outs. Where appropriate, facilities such as a zebra or wombat crossing will prioritise people over vehicles, making it easier to cross the street.



Use extra space to expand footpaths, plant trees, add cycleways



Reclaim the corner of intersections to slow turning vehicles



Plant more street trees which, when mature, support calmer traffic speeds



Create gateways into our towns and entry points into busy pedestrian streets



Reduce crossing distance and approach speeds by building out the footpath

Strategies to calm traffic where people walk and spend time [12].



How we could make it safer to cross streets

Here are examples of how streets can become easier to cross and include zebra crossings, build outs and raised platforms. The benefits are described below:

A zebra crossing

- Drivers must give way to people crossing the street.
- Improves the visibility of people crossing the street.
- The kerbs gently slope down to the road level, providing an easier way for people to step down, or roll down to the road level.
- ✓ Extending the footpath at the crossing point (build-out) shortens the crossing distance and creates a localised pinch-point for approaching vehicles, effectively slowing down their approach speeds.
- The island in the middle lets people stop and safely cross the street in two stages.

A wombat crossing

- ✓ The wombat crossing incorporates a raised platform that lifts people, especially children, above vehicle blind spots, improving their visibility to approaching drivers.
- ✓ Its level platform with the kerb eliminates the need for people to step down to road level, ensuring full inclusivity.
- ✓ Drivers must slow down when traversing the raised platform, reducing conflicts between pedestrians and vehicles at the crossing.
- Like a zebra crossing, a wombat crossing can be made more efficient by extending a footpath into the street (build-out). This build-out area can also feature low-level planting, enhancing the street's greenery while adding physical separation between pedestrians and passing vehicles.



Example zebra crossing in Mudgee.

(CrossleyTP. 2023)



Example wombat crossing in Mudgee

(CrossleyTP. 2023)



People feel safe

Feeling unsafe on the street can discourage people from walking or cycling. It is important for the community to feel secure from crime, intimidation or injury, both during the day and at night.

The perception of safety is not universal and may vary from one person to another. Generally, people who walk or cycle tend to feel safer and more comfortable when there is a significant physical separation between them and motor vehicles or other road users. Factors like traffic volumes, the number of trucks present and vehicular speed also affect how secure someone feels when sharing the road. These factors are likely to influence their decision to either walk or cycle.

We will further explore the perception of safety for different treatment types as part of our action plan, helping us select the most appropriate types of facility for our community.

Creating a sense of safety is crucial for everyone's well-being. To achieve this, we will dedicate space for pedestrians and cyclists. Wherever possible, we will separate these spaces completely from passing traffic. Where historic town centre layouts (such as in Gulgong) have resulted in streets being too narrow for this approach, we will consider low-volume and low-speed laneway treatments. For detail on the treatment types, please refer to chapter 3 of the Action Plan.

We also understand the importance of keeping existing footpaths and cycleways in good condition and free from slip, trip and fall hazards. As part of this strategic plan, Council has identified lengths of existing walking and cycling facilities to be upgraded. These are also identified in the Action Plan (Volume 2).



Physically separated cycleway





Shared path



50%



Sharing the road with traffic



Perception of safety by facility type [13] (CrossleyTP, 2023 [Images])



Calm environments for walking and cycling

A street with low traffic volumes and narrow width, unsuitable for high-speed driving, offers the potential to be transformed into a low-volume laneway. Many 'old' town areas feature narrow lanes where vehicle speeds are naturally limited to 10-30 km/h due to the enclosed environment. These locations are ideal candidates to integrate into a walking and/or cycling network, requiring minimal investment to reap significant benefits.

As the network becomes more established over time, these laneways could be upgraded to strengthen their function and purpose. These upgrades would also enhance the overall amenity for nearby residences.

A low-volume laneway could be upgraded to include:

- ✓ Bicycle symbols on the road to raise awareness of the street's function among pedestrians, cyclists and motorists.
- Installing gateway or threshold treatments that slow vehicles entering the laneway and at pedestrian crossing points.
- ✓ Level footpaths and flush crossings to eliminate trip hazards and enhance universal accessibility.
- Retaining existing vegetation and planting more trees will reinforce the laneway's importance in its town centre setting.

By implementing this approach, we will raise awareness among all road users and promote respect for pedestrians and cyclists. This will improve accessibility to essential services and amenities for our community.





Our towns boast numerous quiet and picturesque lanes and narrow streets, offering pedestrians and cyclists a serene and appealing environment. (Google Streetview, 2024)



Theme 1 Priorities

The following are unranked key priorities to frame the Walking and Cycling Action and Implementation Plan, supporting the delivery of safer streets for pedestrians and cyclists.

ID	Description	Agency
P1.1	Investigate and define heavy vehicle access routes through our towns and lower the volume of trucks travelling along local streets.	Council & Transport for NSW
P1.2	Where possible, future cycleways should be fully separated from traffic.	Council
P1.3	Investigate opportunities to calm traffic on our widest local streets.	Council
P1.4	Integrate pedestrian priority on desire lines for future footpath installations.	Council
P1.5	Review posted speed limits in high pedestrian areas and consider shared zone treatments on our narrowest streets and laneways.	Council
P1.6	Seek to reduce wide crossing points on primary walking routes to destinations.	Council
P.1.7	Review existing walking and cycling infrastructure for any major defects that may pose physical hazards to people walking or cycling.	Council
P.1.8	Review sightlines for turning vehicles at intersections to reduce risk of collisions with people walking or cycling.	Council & Transport for NSW

Theme 1 Targets

To track progress towards safer streets, we have identified the following measures and targets.

What we will measure	Baseline	Target
Number of pedestrian-related crashes in a 5-year period.	8 (from 2017 to 2022)	O [12]
Number of bicycle-related crashes in a 5-year period.	7 (from 2017 to 2022)	O [15]
Proportion of cycleways fully separated from motorist traffic in Mudgee.	29%	100%
Proportion of cycleways fully separated from motorist traffic in Gulgong.	0%	100%
Proportion of cycleways fully separated from motorist traffic in Kandos.	0%	100%
Proportion of cycleways fully separated from motorist traffic in Rylstone.	5%	100%



Theme 2 – Welcoming streets

One of our main goals is to take care of our community and ensure that people have equal access to community services and facilities [5]. Today, we know that caring responsibilities are a significant reason for walking and cycling trips (escorting people), and women mainly undertake these responsibilities [4]. By making footpaths universally accessible, we can enable more people to achieve travel independence. This could include teenagers being able to travel to school with friends, and the mobility-impaired being able to reach shops or medical appointments independently.

Inclusive and welcoming streets are essential to keep us all healthy through physical activity and social interaction. This is also what makes places vibrant and keeps communities strong.

The key challenges our community has identified in achieving this outcome are:

- Inadequate space on footpaths to accommodate people
- Missing lengths of footpath
- High kerbs at crossing points
- Long crossing distances
- Uneven footpath surfaces
- Steep slopes including ramps at crossing points
- No public seats to stop and rest
- Lack of shade

To overcome these barriers, Council proposes two strategies: (a) to provide space for people and (b) to make this space comfortable for people to walk.



"I would like the footpaths to be fixed to provide better access for people with disabilities" [4].



Our community has a diverse range of mobility need (CrossleyTP, 2023).



Space for people

As a friendly and diverse community, we must work towards making our streets more inclusive. This means providing enough space to comfortably walk together while accommodating personal shopping trolleys, walking frames, children on bikes (and accompanying adults) and prams. We must ensure that our streets are accessible to those using wheelchairs, mobility scooters and bikes.

Key actions we will be pursuing include:

- Where possible, widen footpaths to a minimum 1.5 metres wide
- Complete missing footpath lengths
- Correct pram ramps that are too steep
- Install missing pram ramps at crossing points
- Upgrade and replace broken footpaths

Comfortable facilities

Universal access is about more than physical space. It considers the broader physical needs of people and the impact of the environment, such as weather, topography, and distance.

In sunny weather, we all need protection from the sun. In hot weather like we experience in the Mid-Western Region, certain groups of people struggle to maintain a healthy body temperature. Walking or cycling for even short distances could be a struggle. This includes pregnant women, babies, the elderly, and people undergoing certain medical treatments like chemotherapy. Planting trees and providing shaded areas can reduce heat stress, allowing more people to enjoy the outdoors in any weather condition.

Regular opportunities to stop and rest are essential for some people to be able to use streets on foot or by bicycle because they find travelling actively for longer distances a challenge. Seating is therefore essential for creating environments that are inclusive for everyone as well as being important for making streets welcoming places to dwell.

For people who have weaker muscle strength, are pushing a pram, are sitting in a wheelchair, or have trouble balancing; high kerbs and steep ramps can be challenging at crossings. Providing even-surfaced facilities invites all our population to participate in active transport and enjoy our beautiful towns.



One person walking 1.0 metre [12]



One person cycling

.0 metre ^[12]





Walking with a frame 1.0 metre [14]



1.5 metres



Walking with a pram



1.5 metres



One wheelchair user

1.2 metres [14]





Mobility scooter user

1.2 metres ^[14]



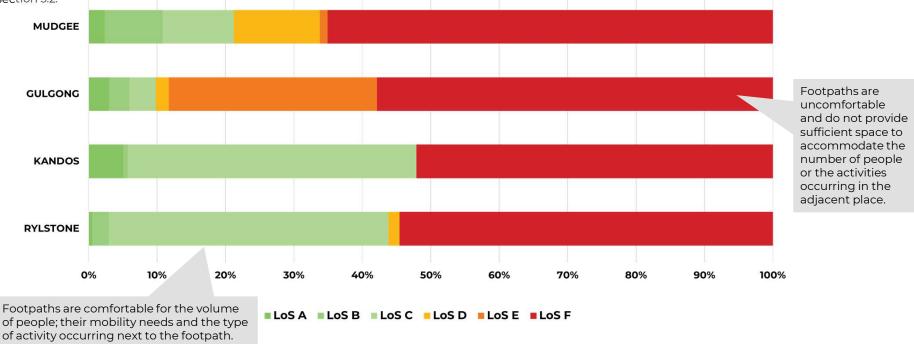
The dimensions defining the user envelope represent the space a person with or without an aid. occupy on a footpath.



According to research conducted by Transport for NSW, the perception of comfort and safety of footpaths depends on several factors [16]. These include the width of the footpath, the speed of motorised traffic passing by and the type of activities taking place along the footpath, such as outdoor dining, houses, schools or shops. The research provides a classification system for walking comfort termed Level of service (LoS) and comprising six categories from A to F. The minimum benchmark is identified at a Level of Service C by Transport for NSW. Due to the constrained spaces between roads and lots, our goal is to achieve a minimum of Level of Service D to enhance universal access and social engagement. This constraint is discussed in the Action Plan, Section 3.2.

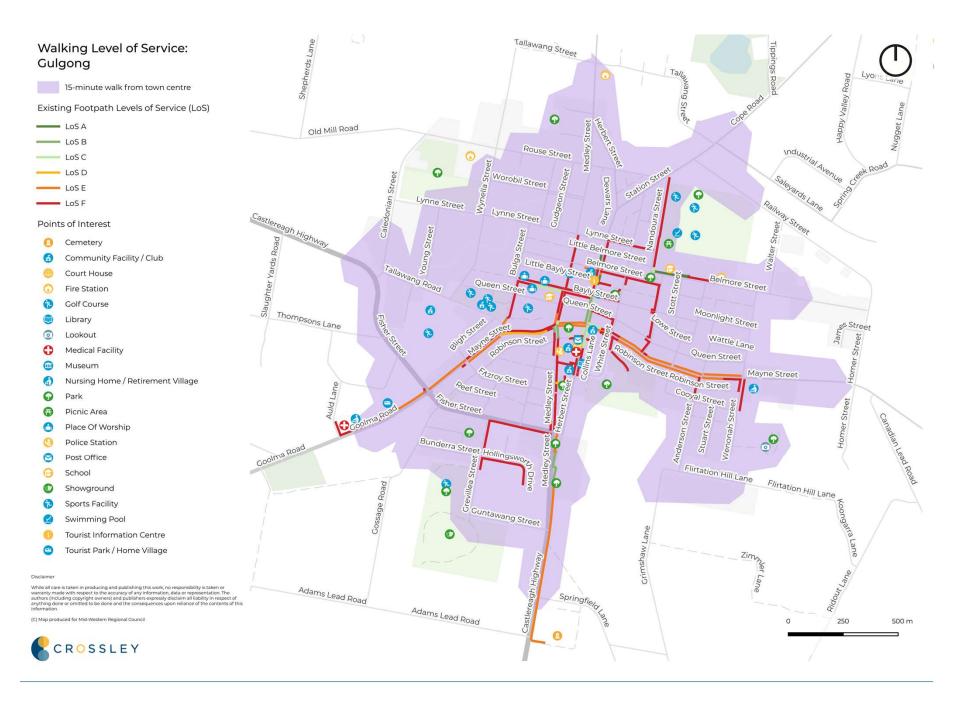
After applying the classification system to the network of footpaths in each town, it has been revealed that a lot of existing footpaths do not meet the comfort and accessibility standards that our community aspires to. The town of Gulgong, in particular, has many narrow footpaths that reflect its historic context.

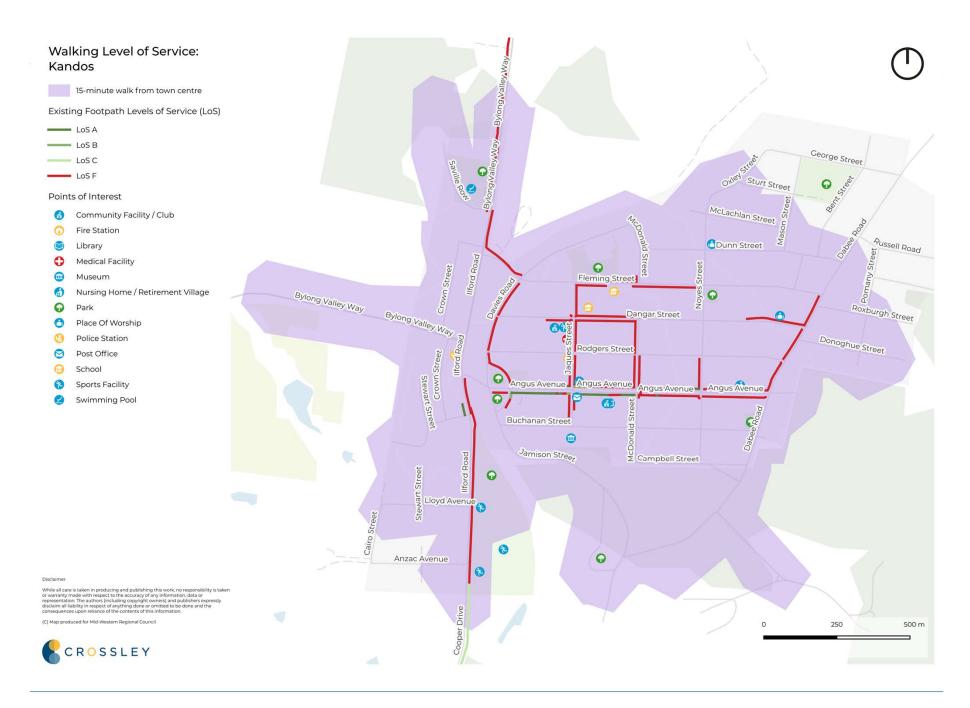
The levels of comfort for our existing footpaths are illustrated for each town overleaf. The maps demonstrate that many amenities and services are not comfortable or universally accessible to reach on foot.

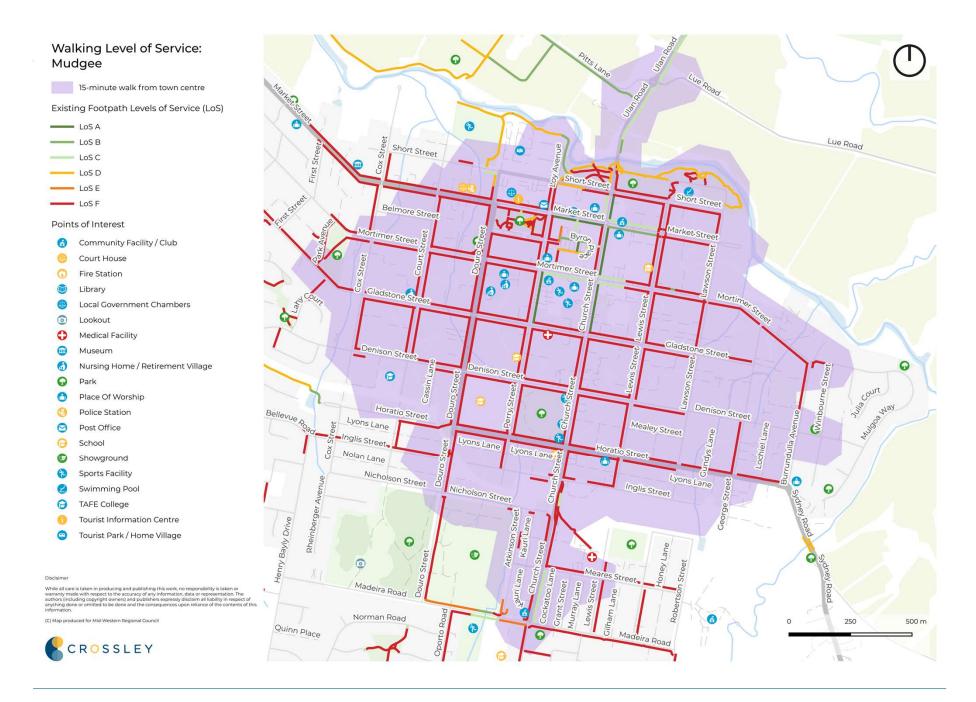


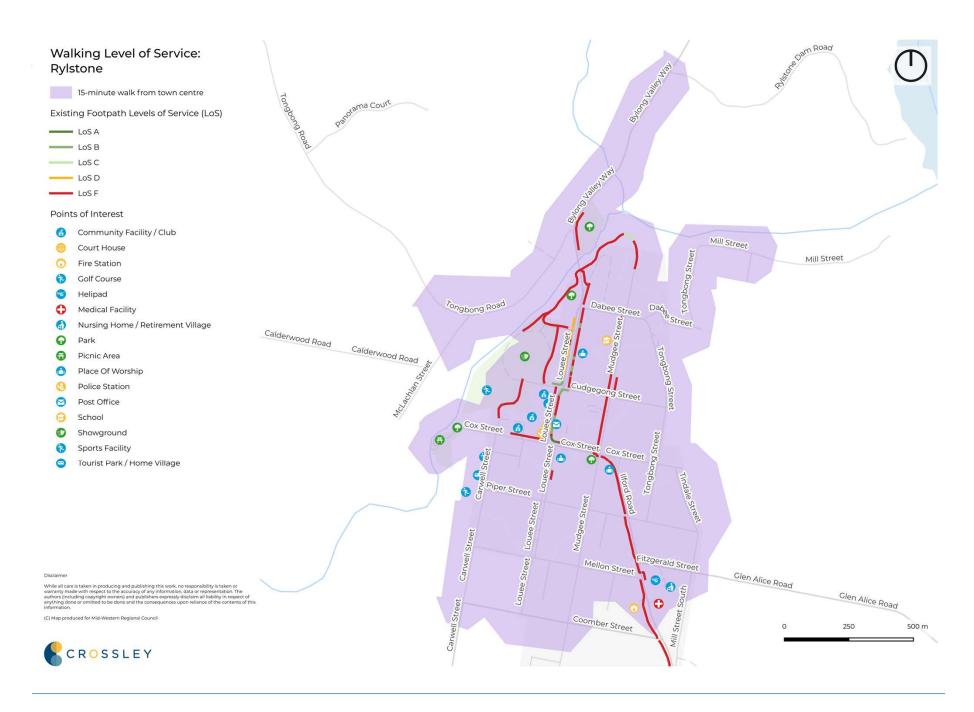
Level of walking comfort of footpaths within a 15-minute walk from the town centre (CrossleyTP, 2023).

Technical note: The Walking Space Guide (TfNSW) offers a method to quantify walking comfort. Here, comfort is categorised into six 'Levels of Service' (LoS). LoS A is the highest level of comfort and inclusivity for a footpath and fully accommodates the volume of people passing and activities such as outdoor dining. LoS F represents a footpath that is failing and does not meet the basic needs for people to walk. LoS C is the desirable benchmark defined by Transport for NSW. Our aim is to achieve minimum at LoS D.









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Theme 2 Priorities

The following unranked key priorities will guide the Walking and Cycling Action and Implementation Plan, supporting the creation of welcoming streets for pedestrians and cyclists.

ID	Description	Agency
P2.1	Deliver missing links in footpath networks.	Council
P2.2	Incorporate street trees into footpath and cycleway design and renewal projects.	Council
P2.3	Deliver missing kerb ramps at crossing points.	Council
P2.4	Where appropriate, replace steep kerb ramps with raised crossings or continuous footpath treatments.	Council
P2.5	Investigate opportunities to install seating options along key walking routes and at destinations.	Council
P2.6	Improve the amenity and universal accessibility of our main streets.	Council
P2.7	Integrate street planting, low-level planting and / or water-sensitive urban design as part of footpath and cycling facility designs.	Council
P2.8	Implement pedestrian-specific street lighting within high-activity areas to increase both actual and perceived personal security and safety levels at night.	Council
P2.9	Survey community attitudes towards different types of cycling facility design, to support the selection of appropriate infrastructure treatments.	Council

Theme 2 Targets

To track progress towards safer streets, we have identified the following measures and targets.

What we will measure	Baseline	Target
Percentage of cycleways perceived safe in Mudgee*.	29%	100%
Percentage of cycleways perceived safe in Gulgong*.	0%	100%
Percentage of cycleways perceived safe in Kandos*.	0%	100%
Percentage of cycleways perceived safe in Rylstone*.	5%	100%
Proportion of residents walking to work.	4.5%	8%
Proportion of residents cycling to work.	0.2%	5%
Proportion of children walking and cycling to schools located in towns*.	12%	51%
Length of new footpaths installed deemed comfortable (LoS D or better).	N/A	N/A
Percentage of street tree canopy cover in our towns.	11-20% ^[20]	40% [19]



of residents **require assistance** with day-to-day tasks due to a disability [3].

^{*} Calculation based on existing bicycle stress levels, assuming Level 1 and Level 2 are perceived safe as per TfNSW guideline [17].

[#]Based on mode share for Mudgee Public School.



Theme 3 – Extend the walking and cycling catchment of our schools, parks, shops and workplaces

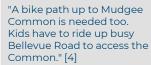
A key objective for our community is to establish greater connectivity across the region. This means connecting people to community services, amenities and workplaces within our towns.

The community has identified important destinations that should be accessible on foot and by bike within our towns, including schools, parks, shopping areas and workplaces. The community and key stakeholders have also raised the importance of promoting local tourism and business by providing active travel access to points of interest such as museums, lookouts, wineries, and aspirations for leisure bicycle rides and walks that guide people to explore the region more sustainably [4].

Connectivity to key destinations has been discussed with key stakeholders representing seniors, people with disability, local businesses, the health sector and the cycling community. We have taken the key locations identified from community surveys and collaboratively defined opportunities to connect neighbourhoods to facilities potentially falling within a comfortable 15-minute walk or bicycle ride of each town' main street.

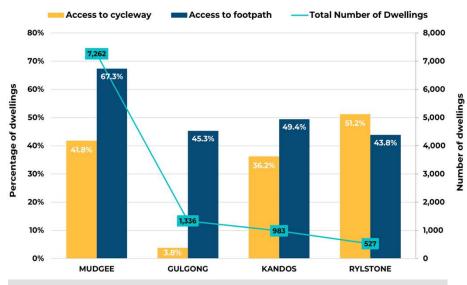
This initiative has the potential to transform our towns. By establishing multiple routes for each town, we can create comprehensive walking and cycling networks. These networks would significantly increase the level of immediate access to a footpath, benefiting 61 per cent of households, compared to the current 48 per cent. Moreover, these new footpaths would enhance active travel connectivity, opening up access to a multitude of destinations that are currently out of reach.

"Footpaths wide enough for young children and disability equipment to move freely, and a continuous track that children and families can ride on that can take them all over Mudgee to school sporting fields and shops would be great!" [4]





On average, 48% of homes within a 15minute walk from town have a footpath, and 25% are within 200 metres of a bike facility.



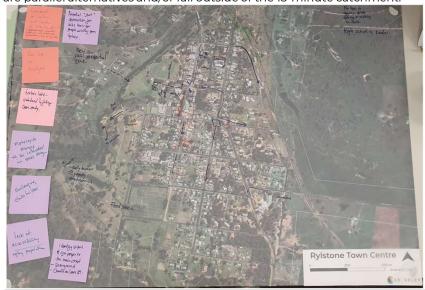
Number of dwellings within a 15-minute journey to town with access to a footpath or bicycle facility (CrossleyTP, 2023).



Route development

The diagram below shows how we created routes connecting the destinations identified through community surveys and stakeholder workshops. The process follows best practices [17] and aims to connect people to destinations via the shortest route, offering the safest and most comfortable option.

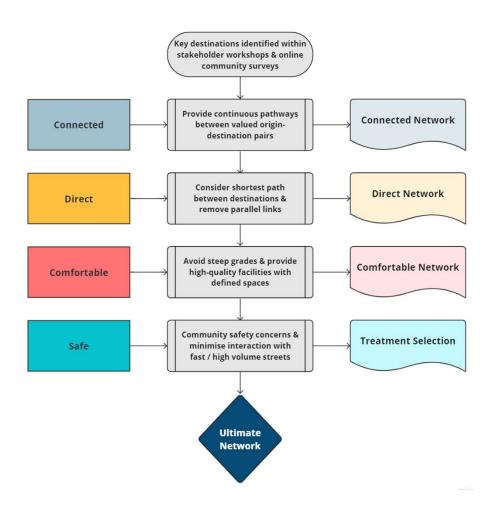
The resulting walking and cycling networks represent the culmination of the route planning for each town. The proposed networks are illustrated on pages 39 - 54. These include the primary links contained within the 15-minute walking and cycling catchment. These form the key routes to multiple destinations. Secondary (named 'other') links are also identified; these links are parallel alternatives and/or fall outside of the 15-minute catchment.



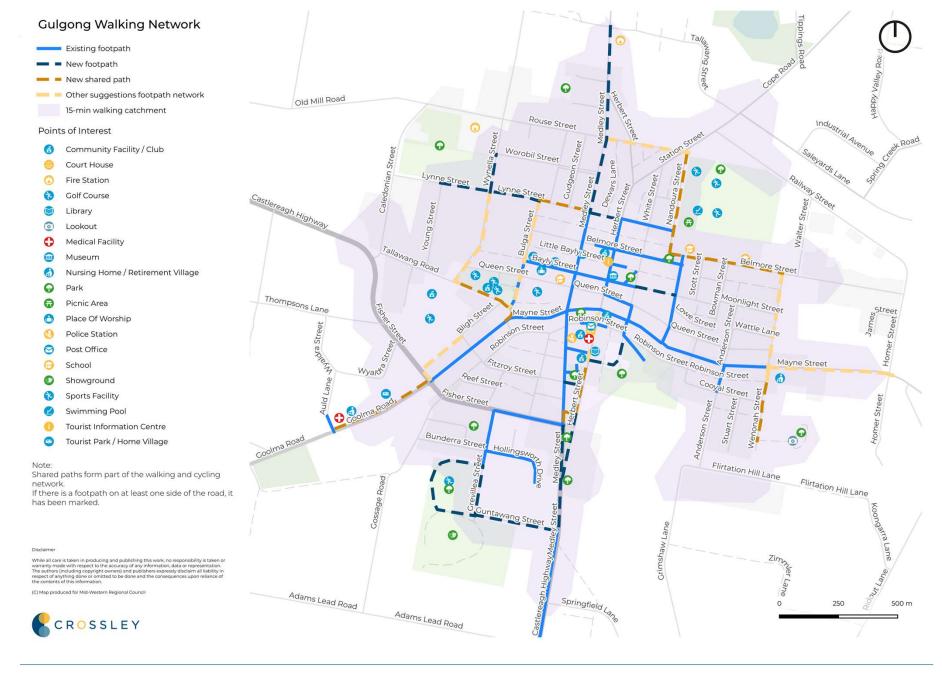
Drawing routes to key destinations with stakeholders (CrossleyTP, 2023).

The ultimate network can potentially increase connectivity to 60 per cent more of our local destinations by bike.





Route development process (CrossleyTP, 2023).



Gulgong Cycling Network

Existing cycleway

New cycleway

New shared path

15-min cycling catchment

Points of Interest

Cemetery

Community Facility / Club

Court House

0 Fire Station

Golf Course

Library

0 Lookout

0 Medical Facility

Museum

Nursing Home / Retirement Village **(1)**

•

(3) Picnic Area

0 Place Of Worship

9 Police Station

0 Post Office

0 School

Showground

Sports Facility

Swimming Pool

Tourist Information Centre

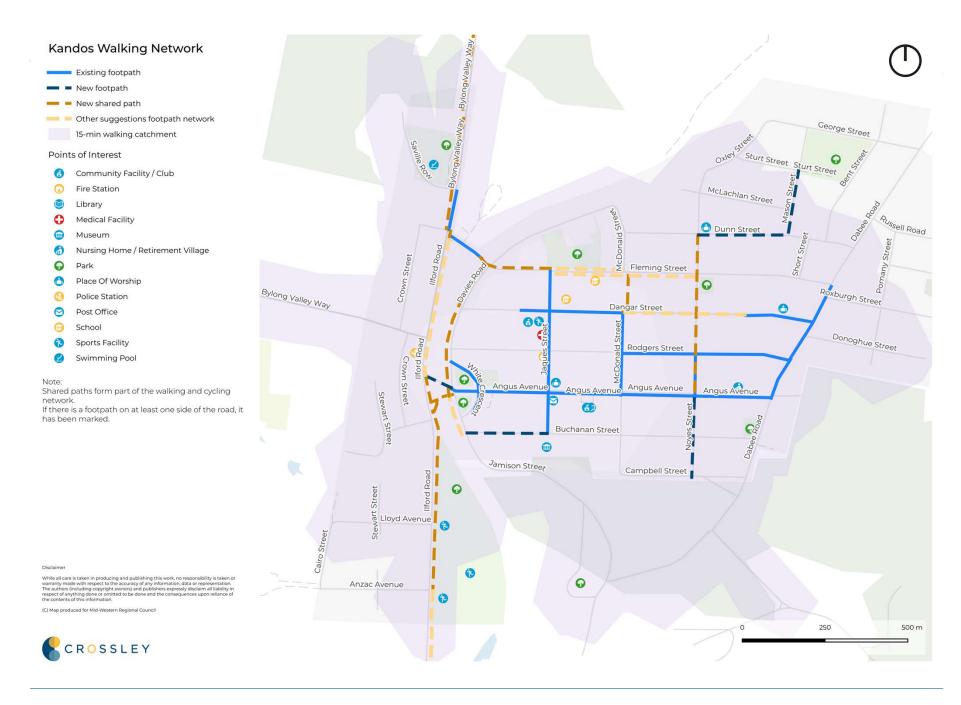
0 Tourist Park / Home Village

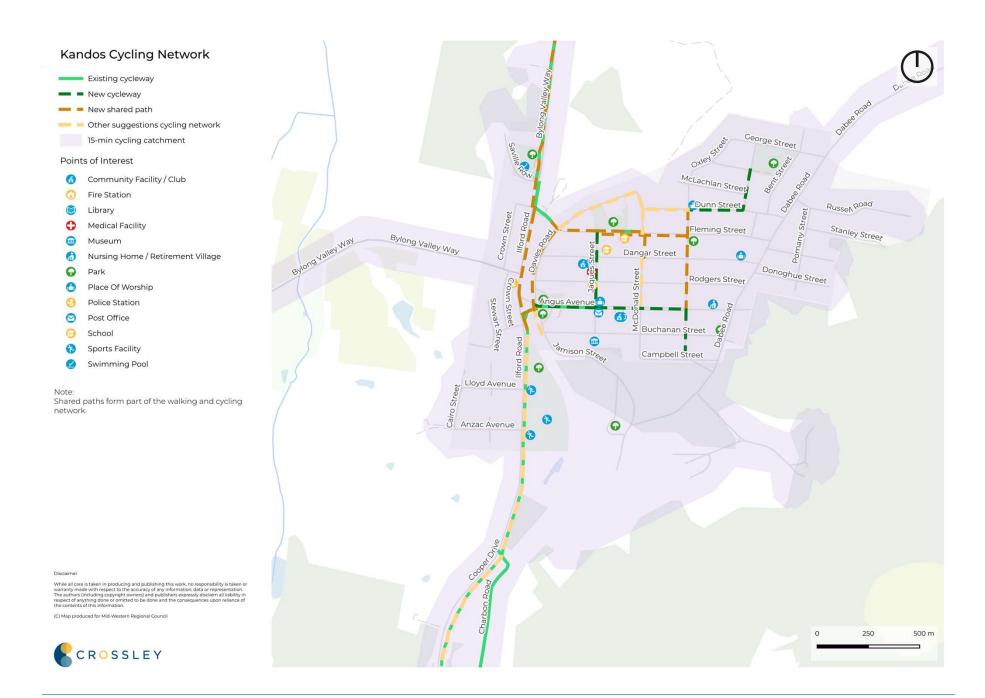
Shared paths form part of the walking and cycling network.

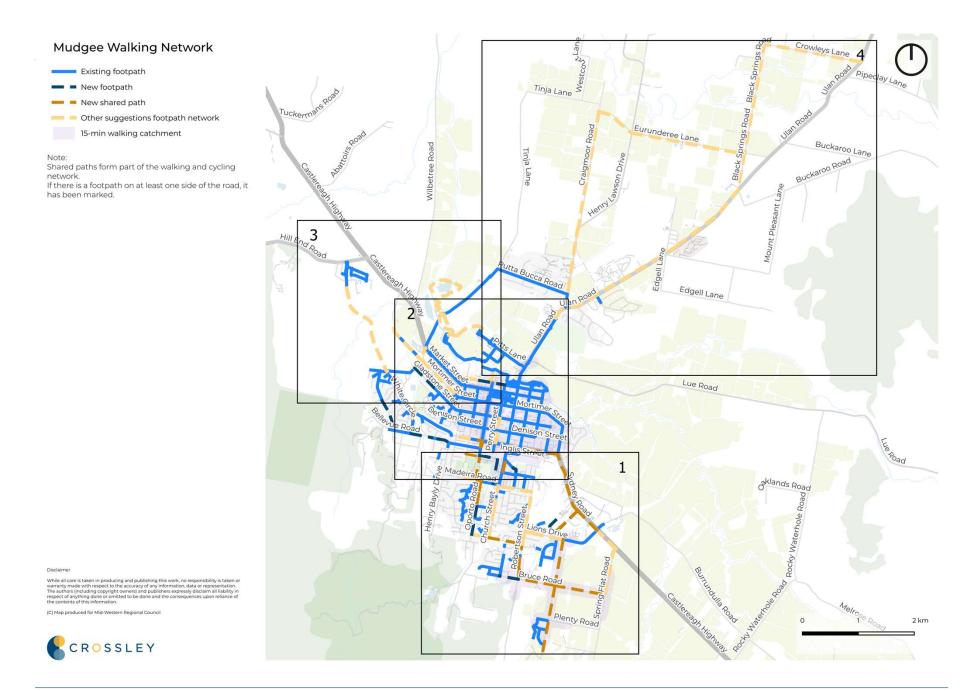
(C) Map produced for Mid-Western Regional Council

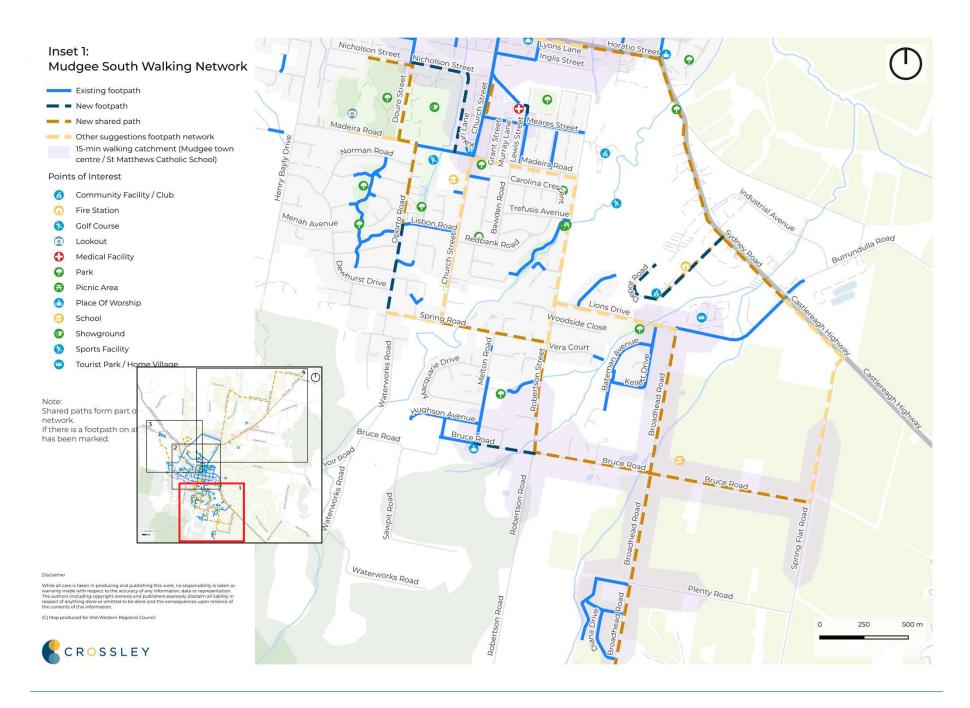


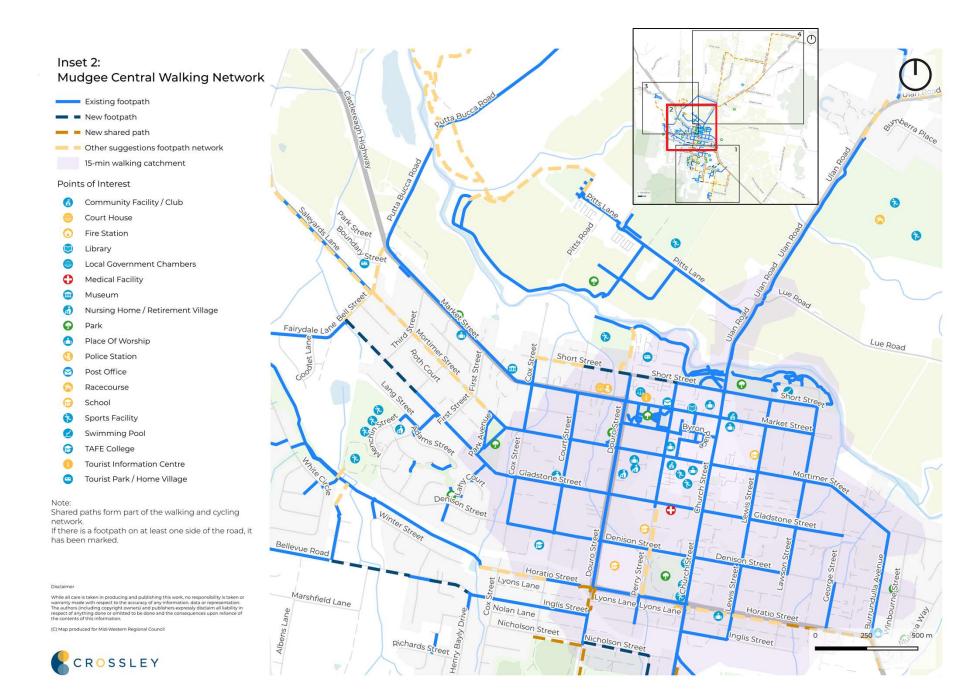


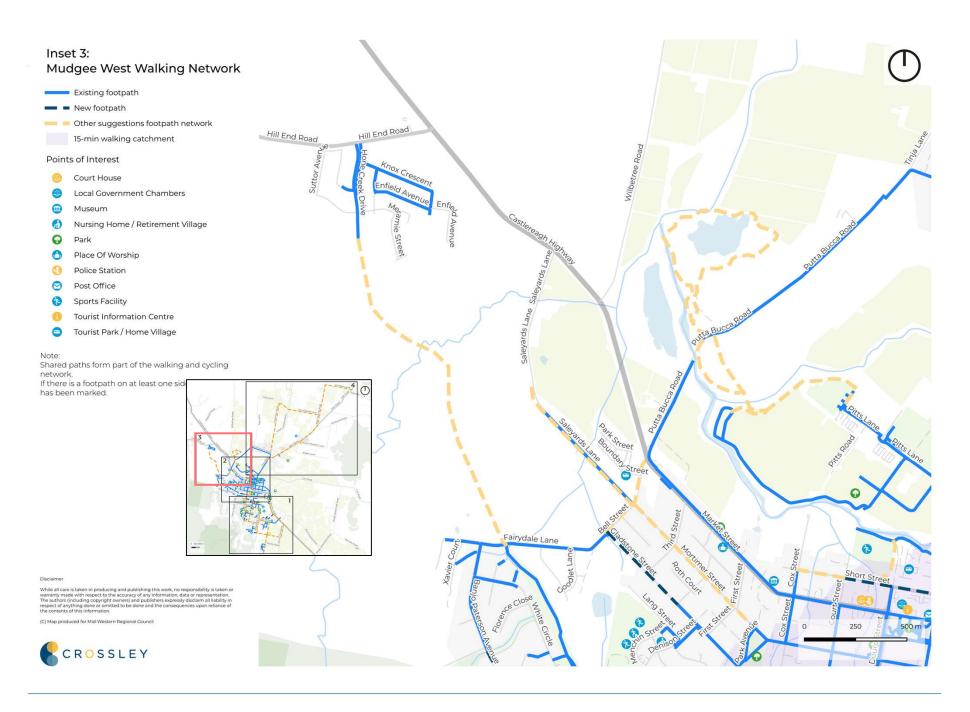


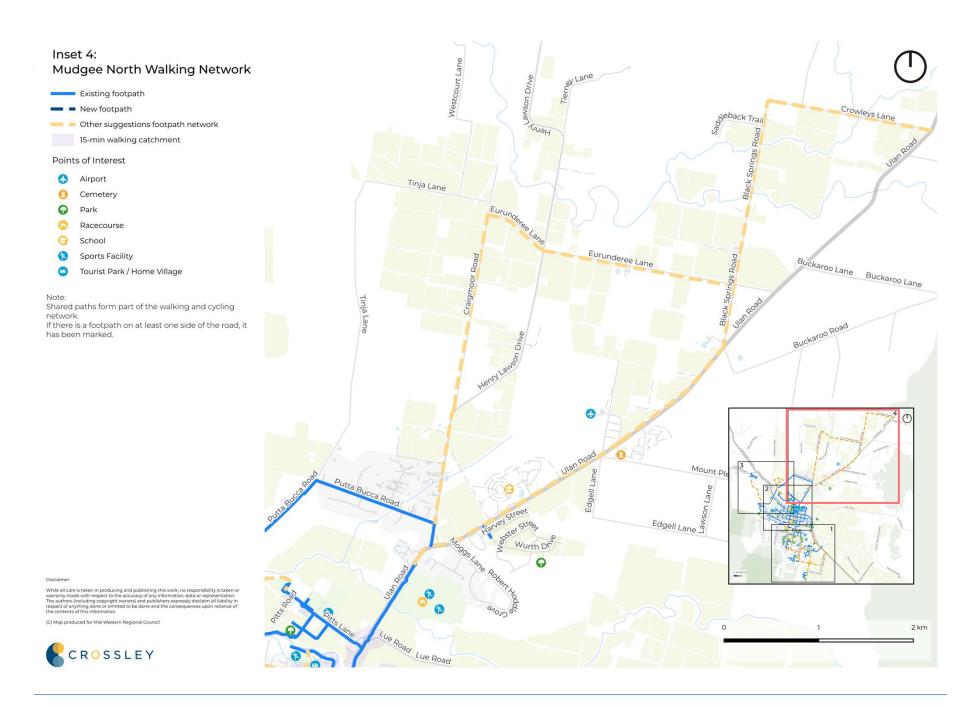


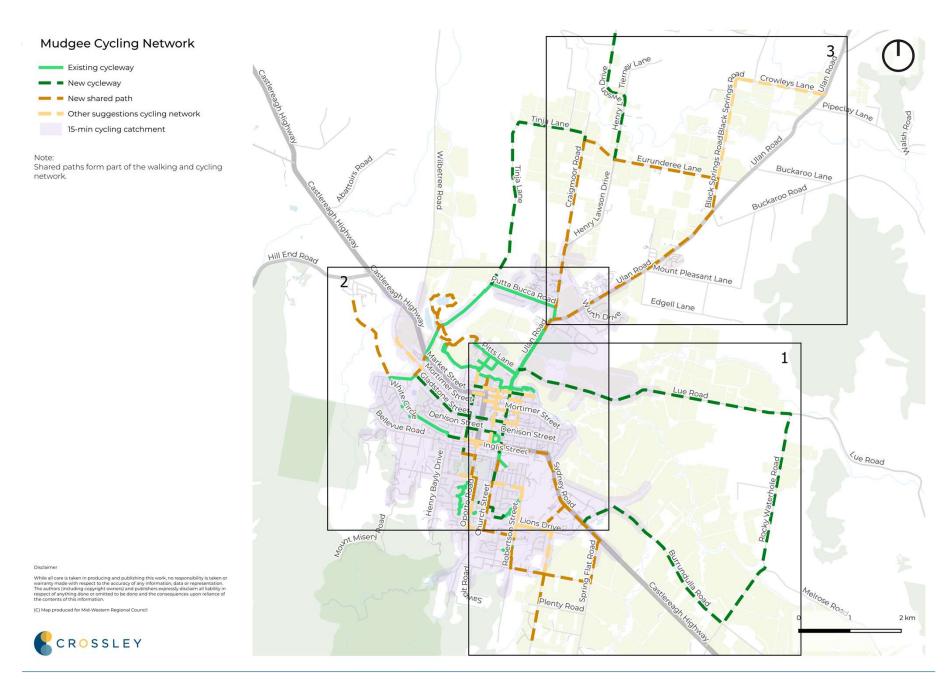


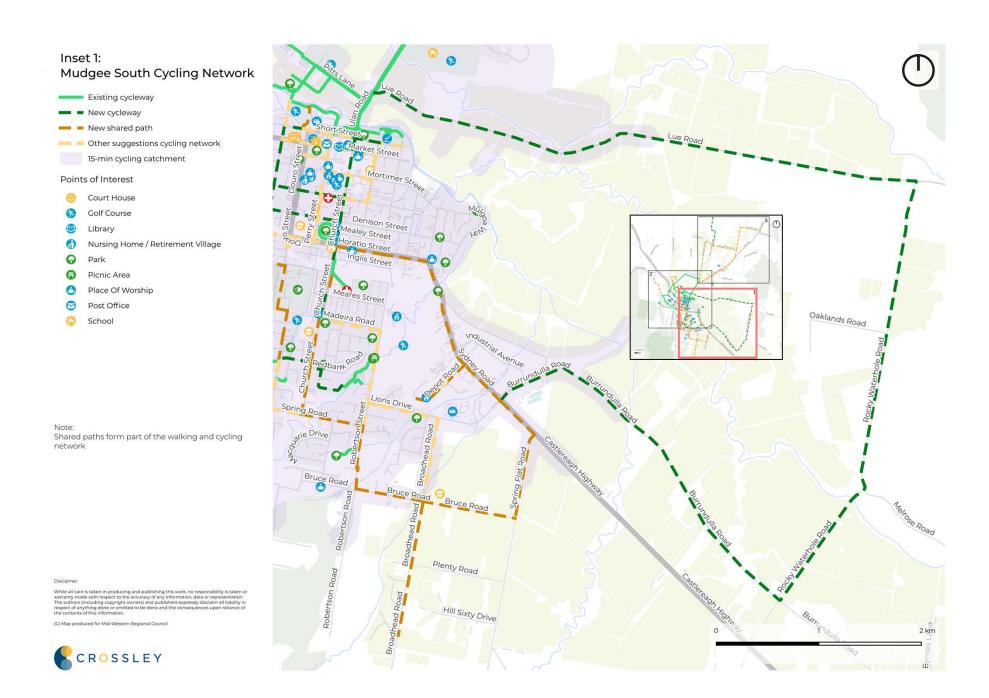


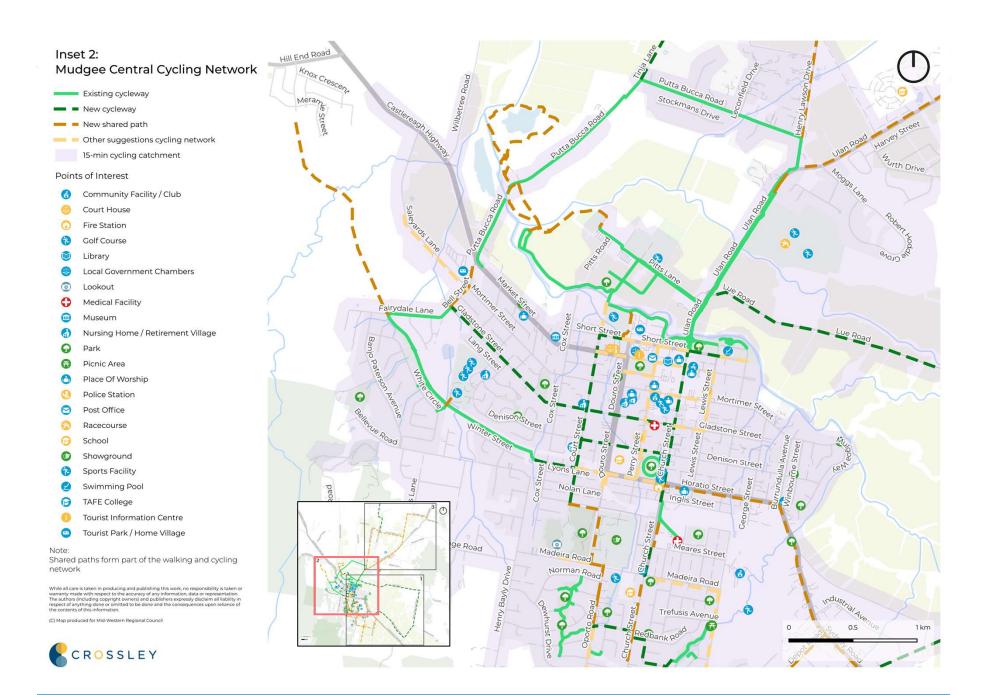


















Proposed Cycling Network -Intertown Cycleways

Township

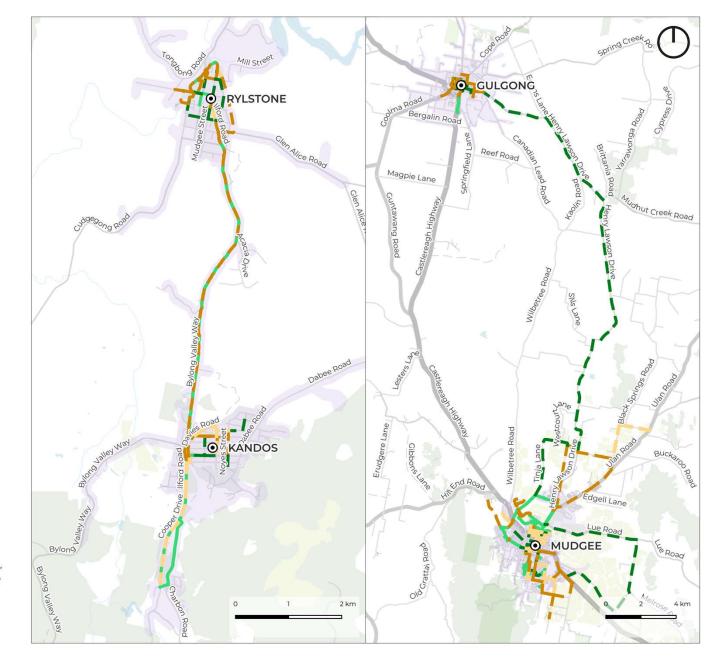
Existing cycleway

New cycleway New shared path

Other suggestions cycling network

15-min cycling catchment

Shared paths form part of the walking and cycling network



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(C) Map produced for Mid-Western Regional Council





Theme 3 Priorities

The following key unranked priorities will guide the Walking and Cycling Action and Implementation Plan, aiming to improve accessibility to community amenities, services, jobs, and visitor attractions.

ID	Description	Agency
P3.1	Deliver continuous footpath connections to schools by prioritising gaps between existing connections.	Council
P3.2	Connect schools to recreational facilities and sporting fields within a 15-minute walk or bicycle ride.	Council
P3.3	Connect our main streets to key points of interest located within a 15-minute walk or bike ride.	Council
P3.4	Implement a wayfinding strategy to promote and guide residents and visitors to key destinations accessed via our walking and cycling networks.	Council
P3.5	Promote our walking and cycling networks through events and marketing activities.	Council & community groups
P3.6	Protect access to creek lines from future development to support opportunities to deliver active travel corridors through our landscape.	Council

Theme 3 Targets

To track progress towards better-connected communities, we have identified the following measures and targets.

What we will measure	Baseline	Target
Length of new footpaths installed per annum in towns.	To be determined	N/A
Length of new cycleways installed per annum in towns.	To be determined	N/A

"More trees planted along nature strips to shade footpaths. This is a very hot climate, and it is unbelievable the lack of shaded paths and trees" [4].





Theme 4 – A step ahead: Building a resilient and sustainable local movement network.

This theme aligns with aspirations for progress, prosperity and leadership to achieve safe, accessible and connected towns.

Sustainable growth

By 2031, our population is expected to exceed 30,000 [1], an increase of 17 per cent over today. Our region also continues to welcome visitors, with more than 600,000 coming yearly for leisure, visiting friends and family, or business [2]. This is a 20 per cent increase since 2017, with the majority arriving in and travelling around the area by car. Furthermore, almost seven out of every 10 trips to work are made by car.

As we plan and build new homes for our future communities, it's crucial to offer diverse travel options to reduce reliance on private motor vehicles. Achieving this will enhance the livability of our towns. The Walking and Cycling Action and Implementation Plan delineates steps and priorities to bolster sustainable development growth. This strategic plan underscores the necessity of integrating emerging suburbs into our established walking and cycling networks. Such integration will establish vital links to schools, shops, and parks for new residents, forming a proactive approach to sustainable development aimed at reducing car dependence alongside growth.

Resilience for future needs

The use of electric power-assisted 'micromobility' options like e-bikes, escooters, and e-cargo bikes is on the rise due to technological advancements and reduced costs for purchase or leasing. Additionally, an ageing population is leading to increased use of mobility scooters on our town streets. Local businesses are already promoting e-bike hire, as seen on page 15, catering to visitors who wish to explore wineries and other attractions in an enjoyable and sustainable way.

Embracing micromobility can help address significant challenges in promoting active travel. These devices offer a cost-effective, physically manageable, and environmentally friendly solution for short local trips. They are particularly appealing to less mobile or physically confident users who may struggle with hills, hot weather, or carrying heavy loads on a traditional bike.

To ensure welcoming streets and future-proof accessibility for everyone, we must develop robust footpath and cycling networks that can adapt to evolving travel needs and technologies. This includes designing facilities with sufficient width to accommodate new micromobility devices and ensuring safe separation between pedestrians and higher-speed electric powerassisted devices.



Mobility scooter user in Mudgee. Technology advancements are transforming how we travel and the amount of space required. (CrossleyTP, 2023).



Prosperity

The community has expressed a desire to revitalise the main streets of Rylstone and Kandos. Research has shown that investing in better walking and cycling infrastructure can help to activate these areas, creating "sticky streets" that encourage people to pause, socialise, and shop [9].

Ultimately, increasing the frequency at which people visit our main streets, the amount they spend and, therefore, the strength of our local economy, will create new jobs and investment opportunities for the Mid-Western Region.





(Source: Google Street View)

Case study

Smith Street is the main shopping strip for Kempsey in northern NSW. In 2016, the street underwent amenity improvement works, including widening footpaths, providing mid-block crossing facilities, installing more places to sit and lowering speed limits - all treatments similar to actions prioritised in this strategic plan.

A study conducted 12 months after construction revealed the main street benefited from significant economic growth, with increased business tenancies, jobs and turnover [18].

Economic benefits for Kempsey



+ 21 (1 20%) new businesses



+ 249 (1 22%) new jobs



+ \$49.7 million (1 45%) gross annual turnover



Theme 4 Priorities

The following unranked key priorities will guide the framing of the Walking and Cycling Action and Implementation Plan, focusing on leadership, collaboration, and good governance. The action plan also consolidates available funding streams.

ID	Description	Agency
P4.1	Seek funding from Open Streets Program to trial placemaking and walking and cycling initiatives.	Council & Transport for NSW
P4.2	Seek opportunities to form business-led place- based partnerships to support and grow local economies and main streets. Apply for funding sources such as the Community Improvement District Pilot Program.	Council, Businesses, & Transport for NSW.
P4.3	Investigate opportunities to introduce and trial a public shared e-bike scheme.	Council
P4.4	Seek funding from Get NSW Active Program to implement proposed walking and cycling network.	Council & Transport for NSW
P4.5	Seek funding from the School Zone Sub-Program and Active Transport to Schools Program to prioritise delivery of safer routes to schools.	Council & Transport for NSW
P4.6	Review Council's footpath width policy to improve inclusivity outcomes.	Council
P4.7	Review Council's development setback policy to accommodate space for people to walk, including trees to provide shade for future footpaths.	Council
P4.8	Review DCP controls relating to footpaths and cycleways and the level of connectivity within and external to growth precincts.	Council
P4.9	Review DCP controls relating to requirements for street tree canopy cover within growth precincts.	Council

Theme 4 Targets

To track progress towards this outcome we have identified the following measures and targets.

What we will measure	Baseline	Target
Value of funding secured to implement walking and cycling infrastructure.	N/A	N/A
The proportion of vacant shop fronts on main streets.	To be determined	Nil
Proportion of Council employees walking or cycling to walk.	To be determined	To be determined
Resident car ownership (average per dwelling).	2.1 ^[7]	1.5
Number of visitors per year.	691,000	To be determined
Average daily footfall on Church Street, Mudgee.	To be determined	To be determined
Average daily footfall on Mayne Street, Gulgong.	To be determined	To be determined
Average daily footfall on Angus Street, Kandos.	To be determined	To be determined
Average daily footfall on Louee Street, Rylstone.	To be determined	To be determined

















Images of places people can shop and visit (CrossleyTP, 2023).



Citations

- Ratio Consultants Pty Ltd (2005) Mid Western Regional Council -Population Projections Review (2005-2031) Report to Council.
- 2. Australian Trade and Investment Commission (2019) Local Government Area profiles. Available at: https://www.tra.gov.au/en/regional/localgovernment-area-profiles (Accessed: 1 September 2023).
- 3. Australian Bureau of Statistics (2021a) Method of travel to work (MTWP). Available at: https://www.abs.gov.au/census/quide-census-data/censusdictionary/2021/variables-topic/transport/method-travel-work-mtwp (Accessed: 1 September 2023).
- 4. CrossleyTP (2023b) 'Walk and Cycle Plan Community Survey' (Closed: 11 May 2023).
- 5. Mid-Western Regional Council (2022) Mid-Western Region Community Plan. Towards 2040.
- 6. Open Data (2022) NSW Crash Data, NSW Road Crash Data 2017-2021. Available at: https://opendata.transport.nsw.gov.au/dataset/nsw-crashdata (Accessed: 1 June 2023).
- 7. Australian Bureau of Statistics (2021b) Mid-western Regional, Available at: https://abs.gov.au/census/find-census-data/quickstats/2021/LGA15270 (Accessed: 10 January 2024).
- Department of Climate Change, Energy the Environment and Water (2023) Reducing transport emissions. Available at: https://www.dcceew.gov.au/energy/transport (Accessed: 8 January 2024).
- 9. Transport for London (no date) Walking and cycling economic benefits summary pack. Available at: https://content.tfl.gov.uk/walking-cyclingeconomic-benefits-summary-pack.pdf (Accessed: 1 September 2023).
- 10. CrossleyTP (2023a) 'School community travel survey' (Closed: 11 May 2023).

- 11. Transport for NSW (2022) Speed. Available at: https://www.transport.nsw.gov.au/system/files/media/documents/2023/sp eed-fact-sheet.pdf (Accessed: 23 January 2024).
- 12. National Association of City Transportation Officials and Global Designing Cities Initiative (2016) Global Street Design Guide. New York: Island Press.
- 13. NSW Government (2013) Sydney's Cycling Future, Cycling for everyday transport. Sydnev.
- 14. Standards Australia (1992) Design for access and mobility, Part 2: Enhanced and additional requirements - Buildings and facilities. Available at: https://www.standards.org.au/standards-catalogue/standarddetails?designation=as-1428-2-1992 (Accessed: 5 July 2023).
- 15. Transport for NSW (2018) Regional NSW Services and Infrastructure Plan. Svdnev.
- 16. Transport for NSW (2020b) Walking Space Guide.
- 17. Transport for NSW (2020a) Cycleway Design Toolbox, Designing for cycling and micromobility.
- 18. Parolin, B. (2017) Kempsey Post Bypass Impacts Monitoring Study. Kempsey Shire Council.
- 19. Department of Planning, Industry and Environment (2021) Greener neighbourhoods guide.
- 20. NSW Movement and Place (no date) Built environment indicators web map. Available at: https://www.movementandplace.nsw.gov.au/placeand-network/built-environment-indicators (Accessed: 8 September 2023)
- 21. Heart Foundation (22 November 2011). Good for busine\$\$: The benefits of making streets more walking and cycling friendly (Discission Paper).





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