

DUBBO AND
WELLINGTON
PEDESTRIAN
ACCESS AND
MOBILITY PLAN





Acknowledgement of Country

We acknowledge the Wiradjuri people who are the traditional custodians of the land on which we live, work and play. We pay our respects to Elders past and present of the Wiradjuri Nation and thank them for their care of the land, water and sky and extend that respect to other Indigenous Australians.

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Introduction

Stantec has been engaged by Dubbo Regional Council (DRC) to review the status of and update the 2016 Dubbo Pedestrian Access and Mobility Plan (PAMP) and Bike Plan, and the 2014 Wellington PAMP.

These projects aim to enhance pedestrian accessibility, mobility, and cycling infrastructure in the Local Government Area (LGA). By updating these plans, DRC seeks to improve active transportation options and create safer, more efficient networks for pedestrians and cyclists. This initiative aligns with the council's broader goals of promoting sustainable transport solutions and enhancing community connectivity.



Study purpose

A PAMP is a comprehensive strategic action plan to develop pedestrian policies and build pedestrian facilities. It provides a framework for prioritising active transport infrastructure and investment schedule for future works. The overall aim of a PAMP is to promote health, liveability and sustainability for the community.

The Dubbo and Wellington PAMP projects also include a Bike Plan element, in which cycling facilities and policies are also to be considered.

The study aims to build upon the findings and recommendations of the existing projects, rather than recreating it entirely. It will address any gaps in context and developments that have occurred since the previous plan's implementation, producing a summary of changes, new recommendations, and emerging opportunities.

Given that the previous studies were completed 8-10 years ago, it is necessary to reassess the adequacy of the recommendations. This includes ensuring that the walking and cycling networks encompass all major desire lines and effectively connect various land uses. The updated plans will detail:

- Infrastructure improvement items
- Cost estimates
- Policy and behavioural change programs
- Prioritisation of infrastructure improvements.

The study area for Dubbo is shown in Figure 11, and the study area for Wellington is shown in Figure 1-2.

Study Area - Dubbo

Dubbo PAMP and Bike Plan
Wellington, NSW

Legend

-  Train Station
-  Railway
-  CBD
-  Retail/ Commercial Centre
-  Primary / Secondary School
-  Tertiary Education
-  Special School
-  Hospital
-  Other Medical Facility
-  Aged Care Facilities
-  Recreation
-  Other Tourist Attraction

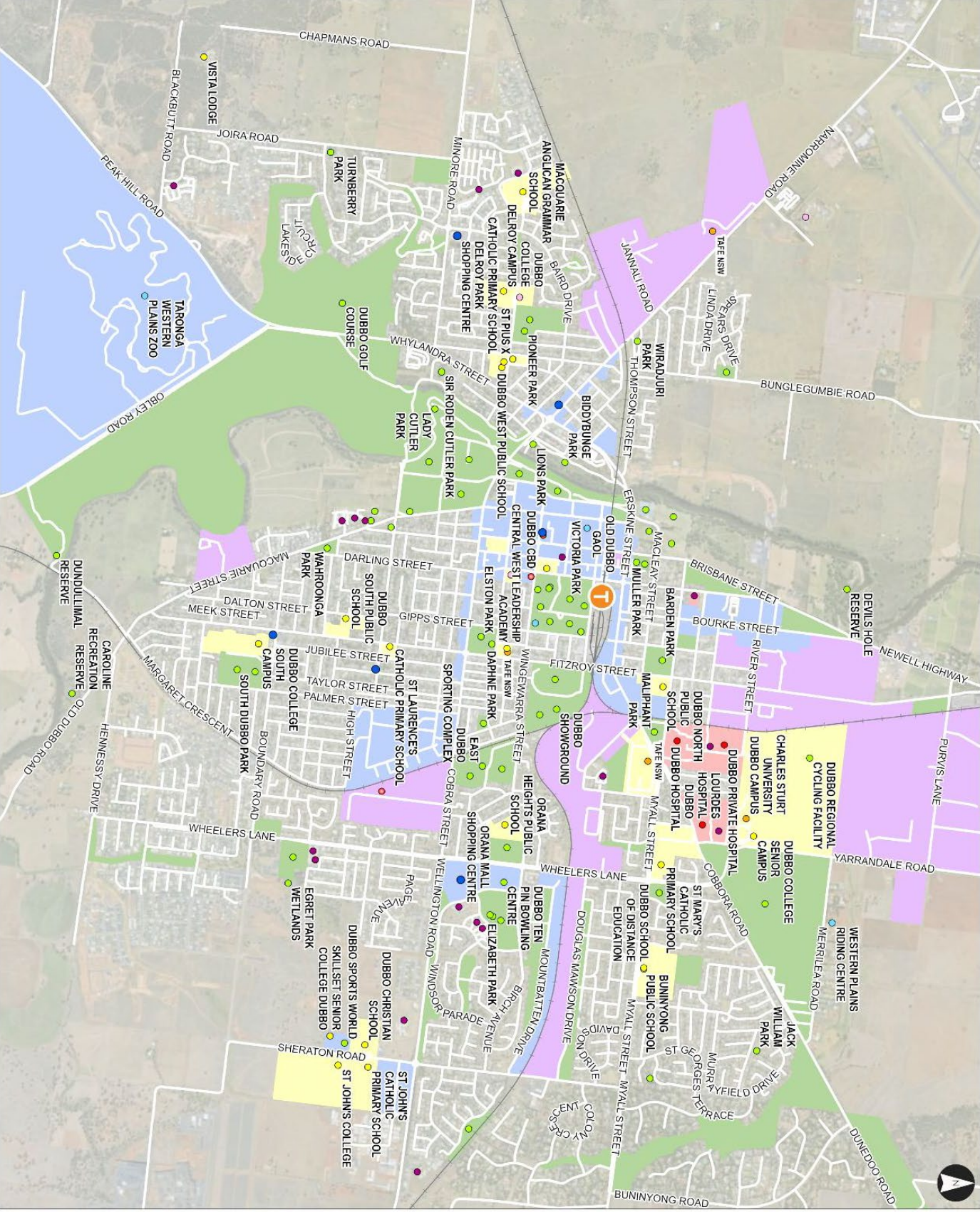
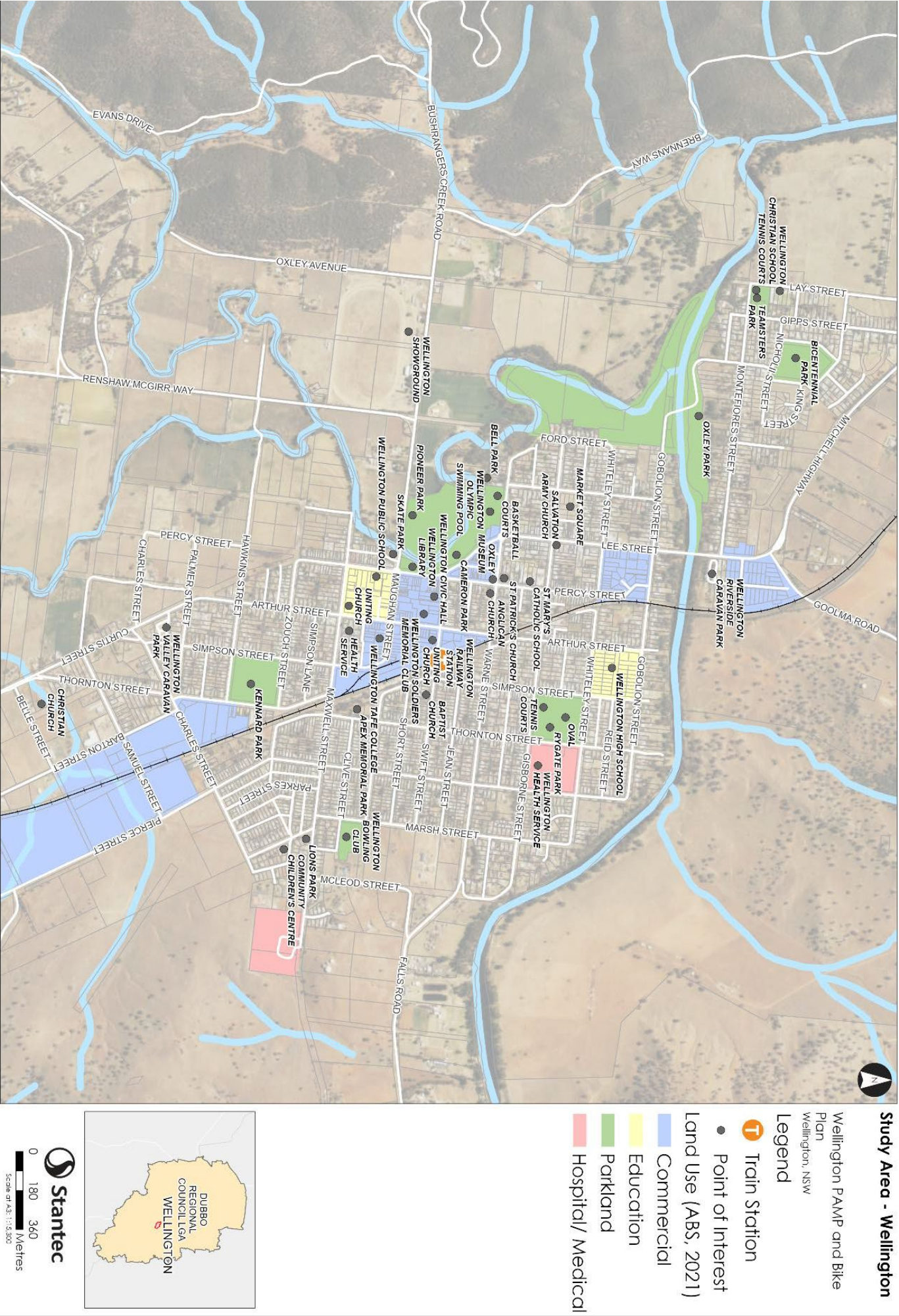


Figure 1 - 1: Dubbo study area



2016 Dubbo PAMP and Bike Plan review

The previous PAMP and Bike Plan was completed by Cardno in 2016 and was not formally adopted by Council. It aimed to address the existing and future transport needs of Dubbo and access to the surrounding localities of Wongarbron and Brocklehurst. The vision of the Plan is to promote the use of walking and cycling, driven by several identified needs:

- To increase capacity and reduce congestion in the overall transport network
- To reduce environmental impacts
- To improve public health and reduce healthcare costs
- To improve community wellbeing and social cohesion.

The Plan was developed through a comprehensive process that involved assessing the existing walking and bicycle networks, understanding community preferences, and recommending infrastructure improvements to deliver safe and accessible walking and cycling networks for the residents of Dubbo.

Community and stakeholder consultation

The consultation activities included:

- Letters to key stakeholders. Key stakeholders were contacted by letter to receive their comments on the issues, constraints, planned development etc. to be taken into account for the studies
- Community survey (available February 2016). The online survey aimed to gather information on the community's demographics and their travel behaviours, general issues related to walking and cycling in Dubbo and locations which need attention and improvements
- Online mapping tool (available February 2016). An online map was prepared for the community to provide commentary about conditions at specific locations throughout Dubbo, Brocklehurst and Wongarbron

Key consultation outcomes included:

- A lack of safe crossing infrastructure was the most frequently raised issue from the community
- Roundabouts were raised as an issue by several respondents, with concerns about pedestrian and bicycle safety when crossing
- Major roads such as Whylandra Street, Fitzroy Street, Erskine Street and Mitchell Highway lack adequate or any pedestrian crossing facilities.
- The safety of pedestrians navigating traffic around schools, such as the Sheraton Road/ Mitchell Highway roundabout
- A lack of continuity in the pedestrian and cycling network around Dubbo and Brocklehurst, including lack of active transport connectivity to paths around Macquarie River, Tracker Riley and Dubbo Information Centre.

Network development

The pedestrian and bicycle networks in Dubbo were developed with consideration to the following principles:

- Build on existing networks
- Identify missing links
- Connect to key land uses including residential/ retirement villages, education, retail and business, parks and recreation, and health services
- Link to recreational routes
- Consideration of community comments
- Separation from traffic and heavy vehicle routes, with footpaths along key roads and separation of cycling routes from heavy vehicles and high volumes of traffic wherever possible
- Address current and future demand including connections to new land release areas.

The development of pedestrian and bike network within the updated Plan will build on these principles, with additional factors considered as needed.

Recommended improvements

Infrastructure improvements were recommended to eliminate or mitigate the issues identified across the pedestrian and cycle network, supplemented by behavioural change and educational initiatives.

A list of key projects for delivery over the next few years were presented, whereby these projects were classified as high priority and categorised as 'new footpaths', 'new cycleways' and 'repairs to existing infrastructure'. The prioritisation criteria adopted in the 2016 PAMP is shown in Table 1-1.

Table 1-1 Prioritisation Criteria of 2016 Dubbo PAMP

Priority criteria	Detail	Weighting
New works	Consideration of whether the improvement would provide a completely new facility, such as installation of a new kerb ramp in a location where there was none beforehand, or if the improvement was an upgrade to an existing facility such as provision of TGSi at an existing kerb ramp.	25%
Proximity to crash clusters	Improvement works in proximity to pedestrian and bicycle crash clusters (locations where two or more crashes are within 50 metres of each other) will contribute to a safer road environment for active transport.	15%
CBD locations	The Dubbo CBD is a busy pedestrian environment with lots of destinations that can be reached on foot or bike. Addressing issues located in the CBD will achieve value for money because of the higher volumes of people who will benefit from the improvement. It could also support people's choice to walk between destinations within the CBD instead of driving.	20%
Proximity to local centres	The local retail centres throughout Dubbo present good opportunities to encourage people to switch from driving to walking or cycling. Improvement works that are located within walking distance of the local centres will support this behaviour change through improved footpath and cycling facilities and safer crossings.	5%
Proximity to schools, TAFE or university	The choice to travel to school or tertiary education should be supported by good quality walking and cycling infrastructure. Improvements made to the pedestrian and bicycle networks surrounding education institutions will support this behaviour change.	15%
Proximity to health institutions, retirement and nursing homes	Senior citizens who are no longer able to drive may be reliant on walking as their primary mode of transport for short trips. They may also have a mobility impairment which affects their accessibility. Improving the pedestrian network in the vicinity of retirement and nursing homes will improve their accessibility to public transport and local shops.	20%
Total		100%

2014 Wellington Pedestrian Access and Mobility Plan Review, Accessible Public Domain

The Wellington PAMP was developed in 2014 for the former Wellington LGA, encompassing the Wellington Township, Montefiores, and key villages of Geurie, Mumbil, and Stuart Town. This comprehensive plan has since guided the construction of pedestrian facilities in these areas. The primary objective of the PAMP was to establish a pedestrian network that is safe, equitable, dignified, and interconnected, catering to individuals of all ages and abilities. The plan's main focus was to identify areas within the existing pedestrian infrastructure that required enhancement, with the ultimate goal of benefiting all pedestrians.

A key output of the PAMP was the development of the Works Program, which outlines a strategic approach to implementing these improvements over a five to ten year period. The program provided a structured framework for the systematic implementation of pedestrian improvement initiatives and infrastructure.

The Works Program is set up to be prioritised by Council based on the findings of the infrastructure audit and compliance to Australian Standards.

A list of key projects for delivery over the next few years were presented, whereby these projects were classified as high priority and categorised as 'new footpaths', 'new cycleways' and 'repairs to existing infrastructure'. The prioritisation criteria adopted in the 2016 PAMP is shown in Table 1-1.



Policy and planning framework

A number of local and state government policies, plans and strategies have been developed since the previous Dubbo PAMP and Bike Plan was completed in 2016. This section of the report examines the updated context that should be applied within the Update, and how they are applicable to each infrastructure/ policy/ program recommendation.

State government

Document	Relevant outcomes
Future Transport Strategy, Transport for NSW, 2022	Dubbo is listed as one of the 12 regional centres as part of case studies conducted by Transport for NSW to understand how cycleway networks can be developed for different scales and areas. The intention of the case studies are to communicate the costs, benefits, and delivery implications of cycleway networks in various contexts.
Road User Space Allocation Policy, Transport for NSW	 Figure 2: Order of road user space considerations in the Policy
Active Transport Strategy, Transport for NSW	Priority actions relevant to the study encompass: • Enable 15-minute neighbourhoods • Deliver connected and continuous cycling network • Provide safer and better precincts and main streets • Promote walking and cycling and encourage behaviour change.
2026 Road Safety Action Plan – Towards Zero, Transport for NSW	The priority area “ensuring the safety of vulnerable and other at-risk road users” is directly applicable to the study. Additionally, the following actions are of relevance to the study: • Treat urban places and local streets with safety measures such as pedestrian crossing facilities, raised safety platforms, and safer speed settings particularly 30km/h and 40km/h zones. • Further strengthen road safety information and campaigns to educate all road user groups, including pedestrians and bicycle riders, about their road safety responsibilities, safe passing distance rules, and how to better manage risks that can lead to casualty crashes in NSW.
Disability Action Plan 2023–2027, Transport for NSW	The key actions of the Disability Action Plan which are relevant for the development of the study are: • Action 1.01: Progressively improve accessibility of train stations • Action 1.03: Progressively improve the accessibility of bus stops • Action 1.10 Improve the walking and cycling environment for all users

Draft Central West and Orana Regional Transport Plan, Transport for NSW

Goals of the vision relevant to the study include:

- About one in every five trips will be made by walking, cycling or public transport across the region
- Crash rates are reduced in-line with the 'Towards Zero' goal of zero fatalities and serious injuries on our roads by 2056
- Initiatives relevant to the study include:
- Transport Access Program (TAP) upgrades – Dubbo Railway Station
- Place-based Transport Plans for Dubbo
- Work with local government to expand cycling networks for Dubbo



Central West and Orana Regional Plan 2041, NSW Department of Planning and Environment

The Central West and Orana Regional Plan 2041 by NSW Department of Planning and Environment provides a strategic policy, planning and decision making framework which strives for sustainable growth over the next 20 years. The plan includes social, economic and environmental considerations.

Actions relevant to the Dubbo region and the Study include:

- Improving public open space, pedestrian and cycle networks and links to and along the Macquarie River Corridor.

Local Government

Document	Relevant outcomes
2022 – 2025 Dubbo Regional Council Disability Inclusion Action Plan	Councils have a responsibility to provide safe, convenient and connected pedestrian routes, which encourage people to walk rather than use their cars. Many councils prepare Mobility Maps which identify safe walking routes in their area. Transport for NSW offers several funding programs for NSW Councils to assist them.
Towards 2040 – Community Strategic Plan, 2020	The CSP 2040 outlines the long-term vision and aspiration for the LGA, including strategic directions, outcomes, strategies and indicators. The plan is the product of extensive community consultation and stakeholder engagement and incorporates community's aspirations and priorities into the Council's strategic planning and service delivery.
Local Strategic Planning Statement, 2020	Planning priorities relevant to the study include: • Priority 1: Plan for the delivery of infrastructure to support growth • Priority 4: Reinforce the town centres of Wellington and Dubbo • Priority 9: Provide diversity and housing choice to cater for the needs of the community • Priority 12: Create sustainable and well-designed neighbourhoods • Priority 14: Create high quality open space 14.2 Expand the Green Web by: • Design network loops to incorporate schools and education facilities. • Emphasise connectivity through a strengthening of the 'Park Streets' concept to create an active transport network that is a comprehensive network of pedestrian/ cycle connections between residential areas, town centres and recreation facilities. • Review unallocated or surplus council and Transport NSW land useful to support destinations and open space linkages. • Develop a master plan for all new district and regional parks and sport parks before any development take place. • Prioritise missing links and future urban release.
Dubbo Regional Council Recreation Strategy 2030	The 2020-2030 Dubbo Regional Council Recreation Strategy guides future planning and delivery of recreation to ensure that our community has access healthy and vibrant lifestyles in the LGA, over a ten-year timeframe. Actions relevant to the study include: • 4.6: Review and plan opportunities to increase provision for leisure and passive recreation-based sports, including, walking, running, bush walking, trail riding, cycling, mountain biking, skating, outdoor table tennis, volleyball, kayaking. • 5.3: Develop networks and safe connections for cycling, walking, dog-off leash areas, walking to school, shade and resting stops to improve ease of access to maintain a healthy lifestyle. Improve integration of work with cycling and walking networks. • 11.3: Develop a marketing and communication strategy to promote passive and unstructured recreation. This may include web links for walking, cycling, kayaking and camping.

Dubbo Regional Council Open Space Masterplan

The Open Space Masterplan 2018 sets a framework for incorporating anticipated growth into public networks. The Masterplan framework gives a set of strategic directions and actions for Council in delivery of current and future needs of the community. Relevant actions:

Strategic direction 1: Destination parks

- Highlight Dubbo Regional Destination Park Areas by continuing to deliver the open space for parks and recreation to support Dubbo Region.
- Strengthen and widen the open space network to support connections to non-Council recreation facilities including key destinations e.g. Taronga Western Plains Zoo, Wellington Caves, and riverside activities.
- Improve linkages between tourist attractions.
- Undertake detail design of Church Street with the connection to the river from Macquarie Street and its crossroad connection, and connection to the tourist information centre
- Dubbo Region Destinations and Major Parks, Dubbo Destination Links,

Strategic direction 2: The Green Web

- Design network loops to incorporate schools and education facilities.
- Emphasise connectivity through a strengthening of the 'Park Streets' concept to create an active transport network that is a comprehensive network of pedestrian/cycle connections between residential areas, town centres and recreation facilities.
- Review unallocated or surplus council land useful to support destinations and open space linkages.
- Prioritise missing links and future urban release.
- Deliver accessible and adaptable recreation and open space.
- Ensure principles of Crime Prevention Through Environmental Design (CPTED) are applied in the planning and design of the footpath and trails networks. Define Future Supply and Demand Needs
- Council updates its footpaths and Cycleway Plan with the recommendations from the report and adjusts forward capital works accordingly.
- This includes the identification and purchasing of land to improve connectivity and accessibility to the existing network
- Greater Dubbo Cycle Network (Cycle Circuits), Dubbo Cycle and Water Network, Cycle Network Gaps, Education Land to Open Space Networks, Pedestrian Network (Current), Street Trees for Open Space Networks, Recreation Trail Network (includes pedestrian and cycle network), Recreation Trail Network Gaps, Dubbo Open Space Supply, Southeast Dubbo Urban Release Open Space Planning

Infrastructure typology for cycle infrastructure

- Designing character: a typical park street, off road cycle tracks, on-road cycle tracks, drainage corridors
- Type A: Dedicated Cycleway; Type B: Shared Path; Typical Street: On road cycle and pedestrian footpath neighbourhood light traffic.
- Framework for Delivery: pedestrian network, cycle network, bicycle hire and storage facilities within commercial centres, bicycle locker network in Dubbo Regional Council.

Dubbo specific context

2020 Dubbo Transportation Strategic Plan, DRC

The Dubbo Transportation Strategy sets out strategies and actions to meet the transport needs of Dubbo CBD and the surrounding areas, aiming to address traffic congestion in the region and accommodate for future residential and commercial developments.

The strategy identified the need for local active transport connectivity as shown in Figure 2-1. As part of a 10-year investment program for the period 2020 to 2030, the strategy identified greenways as an extension to the Green Ring, forming a continuous active transport ring corridor around Dubbo.

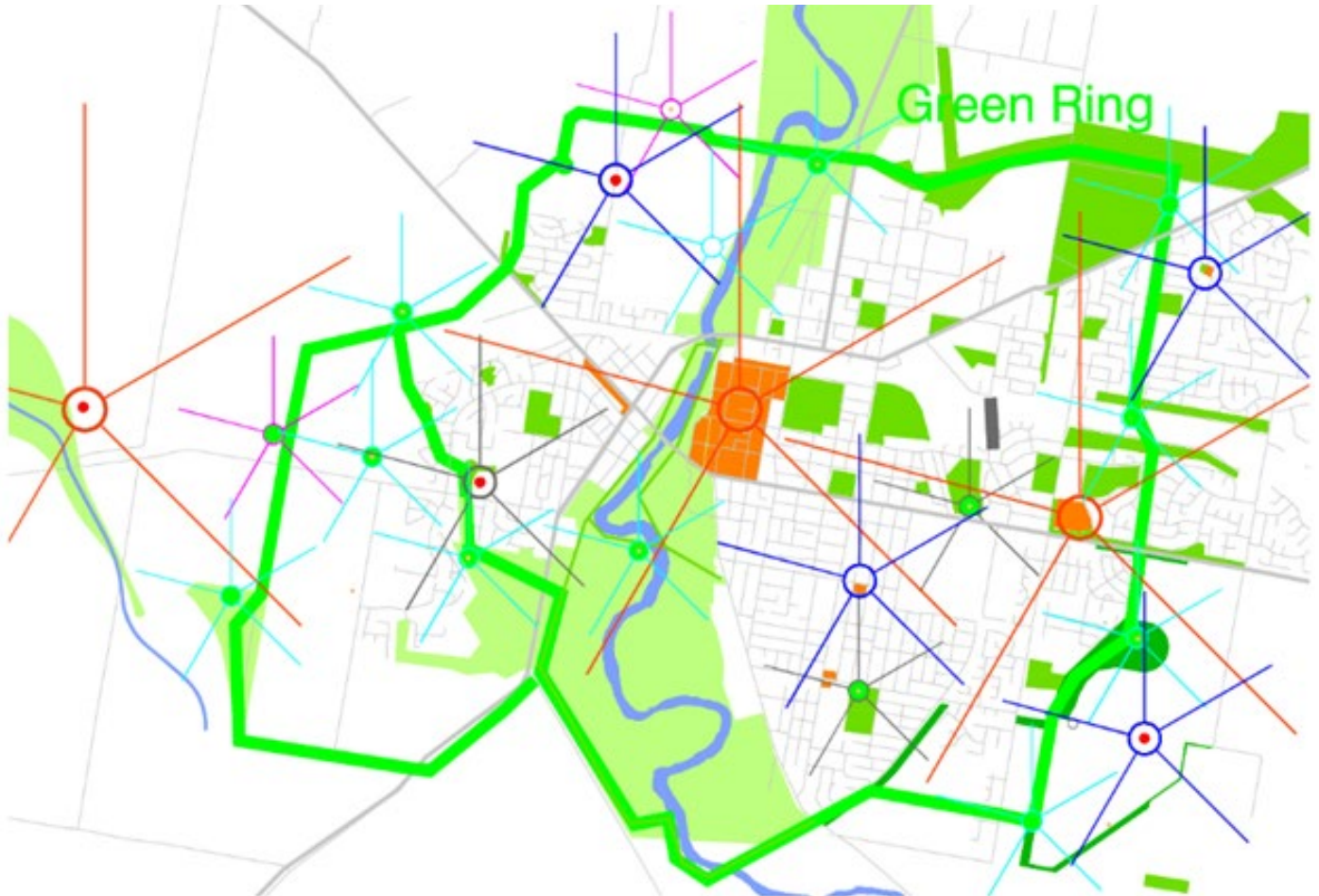


Figure 2-1: Active transport connectivity and Green Ring corridor in Dubbo

Dubbo CBD Precincts Plan, DRC

The Dubbo CBD Precincts Plan sets out the community priorities and provides an overarching strategy to inform implementation programs and foster development opportunities for Dubbo CBD. The plan considers the CBD as six distinct precincts, as depicted in Figure 2-2.



Figure 2-2: Dubbo CBD precincts

Key issues and opportunities identified for each precinct relevant to the project are summarised in Table 2-1.

Table 2-1: Dubbo CBD precincts issues/ opportunities

Precinct	Issues/ Opportunities
Macquarie Central	• Opportunities for connections to the Macquarie River corridor • Poor use of the river front
Talbragar Boutique	• Relationship with the main western rail line
Centre Gateways	• Strong connections to the Macquarie River corridor
Darling Civic	• Walkways and office lanes connecting into Macquarie Street • Connections to Victoria Park
Brisbane Business	• Large car parking areas • Dominated by Brisbane Street which was designed as a main traffic road and has limited access to laneways or walking connections but is well-connected via vehicle transport.
Growth Precincts	• Proximity to the main western rail line • Limited pedestrian access across the railway line

Community priorities identified in the plan and relevant to the project are summarised in Table 2-2.

Table 2-2: Dubbo CBD precincts community priorities

Precinct	Issues/ Opportunities
5.2 City Centre Activation	• Investigate the provision of seating and shade between Macquarie Street and the river to connect the CBD to the river and make it more pleasant and easy to access • Encourage laneway activation through better use of walkways for connectivity, facilities, shops and arcades, etc.
5.3 Access and Movement	• Bike parking - investigate current allocation and utilisation of bike parks in the CBD • Investigate options to link the Tracker Riley Cycleway to the CBD eg: trail of LED-lit sculptures to the CBD, designed through a business-sponsored competition. • Plan for footpath extensions or removal of some car parking spaces to provide for alternatives such as street dining or parklets. • Investigate options for street closures or shared zones in the CBD. • Enforcement of requirements for light/heavy vehicle loading at certain times.
5.4 Living and Working	• Consider further extension of existing bike paths along Bligh Street and make bike paths safer for children to ride in the CBD.
5.4 Growth and Development	• Consider access to/from the CBD for all road users, including active participation in lobbying for an upgrade of the L.H. Ford Bridge.

Macquarie River CBD Master Plan

Macquarie River CBD Master Plan presents a vision to activate the bank of Macquarie River between the LH Ford Bridge and Newell Highway. Figure 2-3 presents the master plan which includes a riverside stage with cafes and amenities, pedestrian plazas, public open spaces, boardwalk, kids' playground and pedestrian connections between the Dubbo CBD and the river precinct.



Figure 2-3: Macquarie River CBD Master Plan

Figure 2-4 depicts the transport access opportunities identified for the river precinct. Key opportunities relevant to the project include:

- Linkages between CBD and the river precinct
- Linkages to existing Tracker Riley Cycleway
- Activation of the green open spaces including provision of shaded rest stops
- Provision of Sir John Taylor Bridge providing active transport connections to west Dubbo.



Figure 2-4: Macquarie River CBD access opportunities

Macquarie River North and South Precincts Master Plan

Macquarie River North and South Precincts Master Plan provides a vision for the north and south river precincts, with the aim of identifying opportunities for enhanced recreation, connectivity and biodiversity.

Key outcomes identified in the plan and relevant to the project include:

- Ensure connectivity of the eastern bank is integrated with the adopted Macquarie River CBD Master Plan, Events Precinct on Ollie Robbins Oval and the Legacy Shared Pathway Project.
- Strengthen the connections to the future North-West Sub-division and look for value-add opportunities.
- Increase accessibility to the river through the development of pedestrian, cycle and vehicular networks that cater to a diverse range of demographics and abilities.
- Harness key connections back through to the CBD (Macquarie Street) and along the river.
- Identify wayfinding and interpretive signage opportunities.

Opportunities for the North and South Precincts are depicted in Figure 2-5 and Figure 2-6 respectively.

North Precinct - Opportunities

- Site boundary
- Future development boundary
- Major road
- Train line
- Bridge crossing
- Proposed highway
- Potential passive recreation & parkland
- Potential sporting fields out of flood zone & near future development
- Existing sporting precinct to be retained / enhanced
- Key open space connections
- Potential riverfront connections
- Connection to existing cycle path
- Existing/future water sensitive areas
- Existing signalised intersection
- Popular fishing spots - Improve access / amenity
- Enhance existing river access
- Key activity zones - Improve access / amenity
- Potential bridge crossing

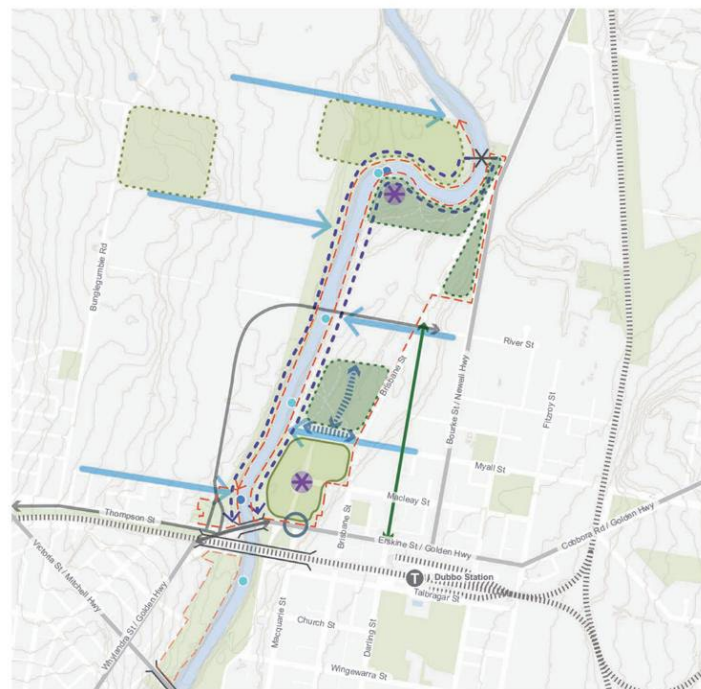


Figure 2-5: Macquarie River North Precinct opportunities

South Precinct - Opportunities

- Site boundary
- Future development boundary
- Major road
- Train line
- Bridge crossing
- Potential passive recreation & parkland
- Potential activity zones
- Existing sporting precinct to be retained / enhanced
- Key open space connections
- Connection to existing cycle path
- Existing/future water sensitive areas
- Potential wetland environment
- Existing signalised intersection
- Popular fishing spots - Improve access / amenity
- Enhance existing river access
- Key activity zones - Improve access / amenity
- Potential parking areas
- Improve bridge crossings
- Improve connectivity to adjacent residential area
- Environmental expansion zone - riverfront walkway from Regard Park to Shible's Bridge and environmental habitat restoration in flood prone areas

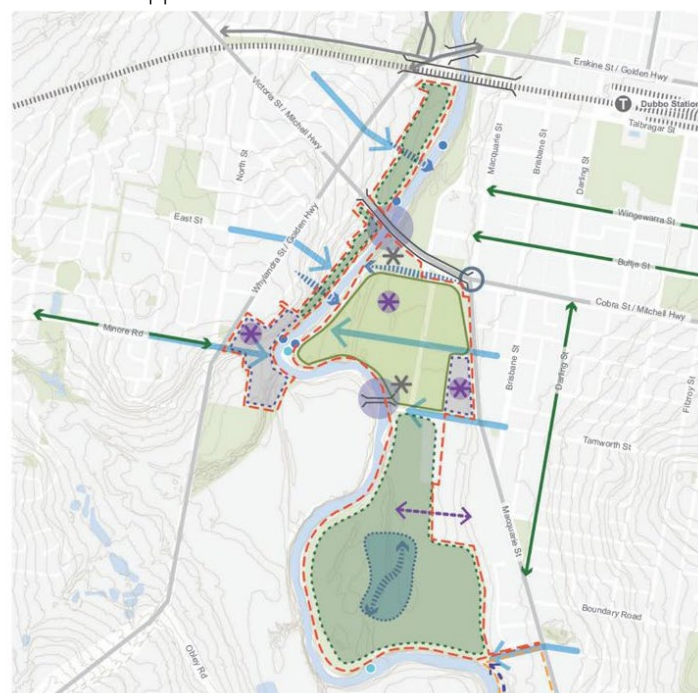


Figure 2-6: Macquarie River South Precinct opportunities

Housing Roadmap Dubbo Region, 2022

The Housing Roadmap Dubbo Region identifies Council's actions and initiatives over the immediate and longer term to address the housing requirements for Dubbo, encompassing the three urban release areas in West Dubbo as shown in Figure 2-7. The roadmap noted the key planning activities for these urban release areas which included preparation of Structure Plans and specific Development Control Plans for each area.

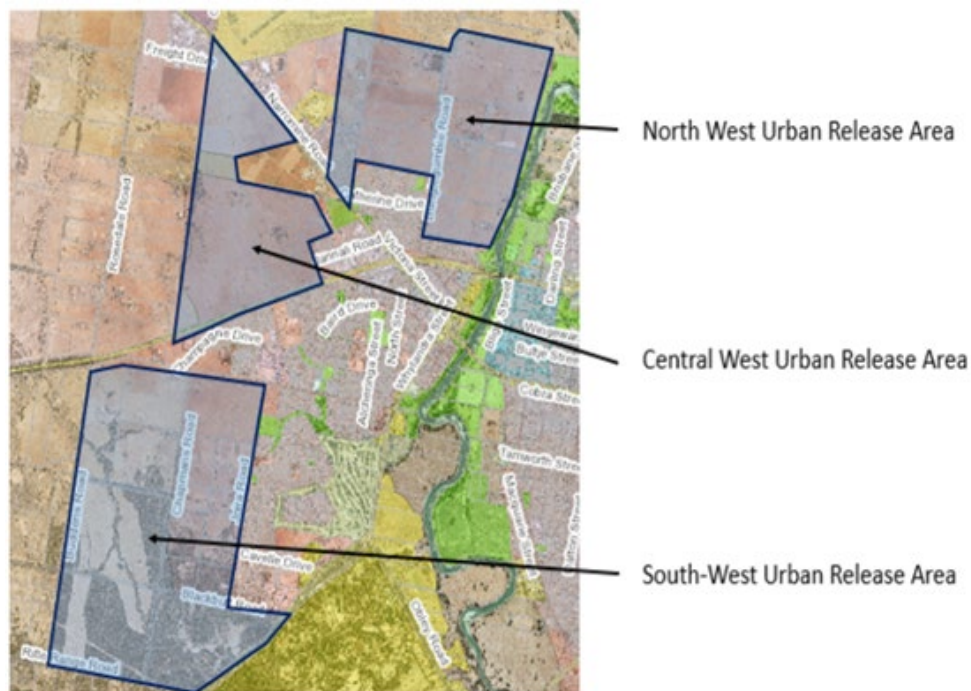


Figure 2-7: West Dubbo urban release areas

North-West Dubbo Urban Release Area Development Control Plan Masterplan

The masterplan presents a hierarchy of roads, bus network and active transport connections throughout the area. Figure 2-8 depicts the future pedestrian and cycle network, highlighting key north-south and east-west corridors through the area and potential pedestrian and cyclist bridge connections over the river to the Macquarie River Northern Precinct and CBD.

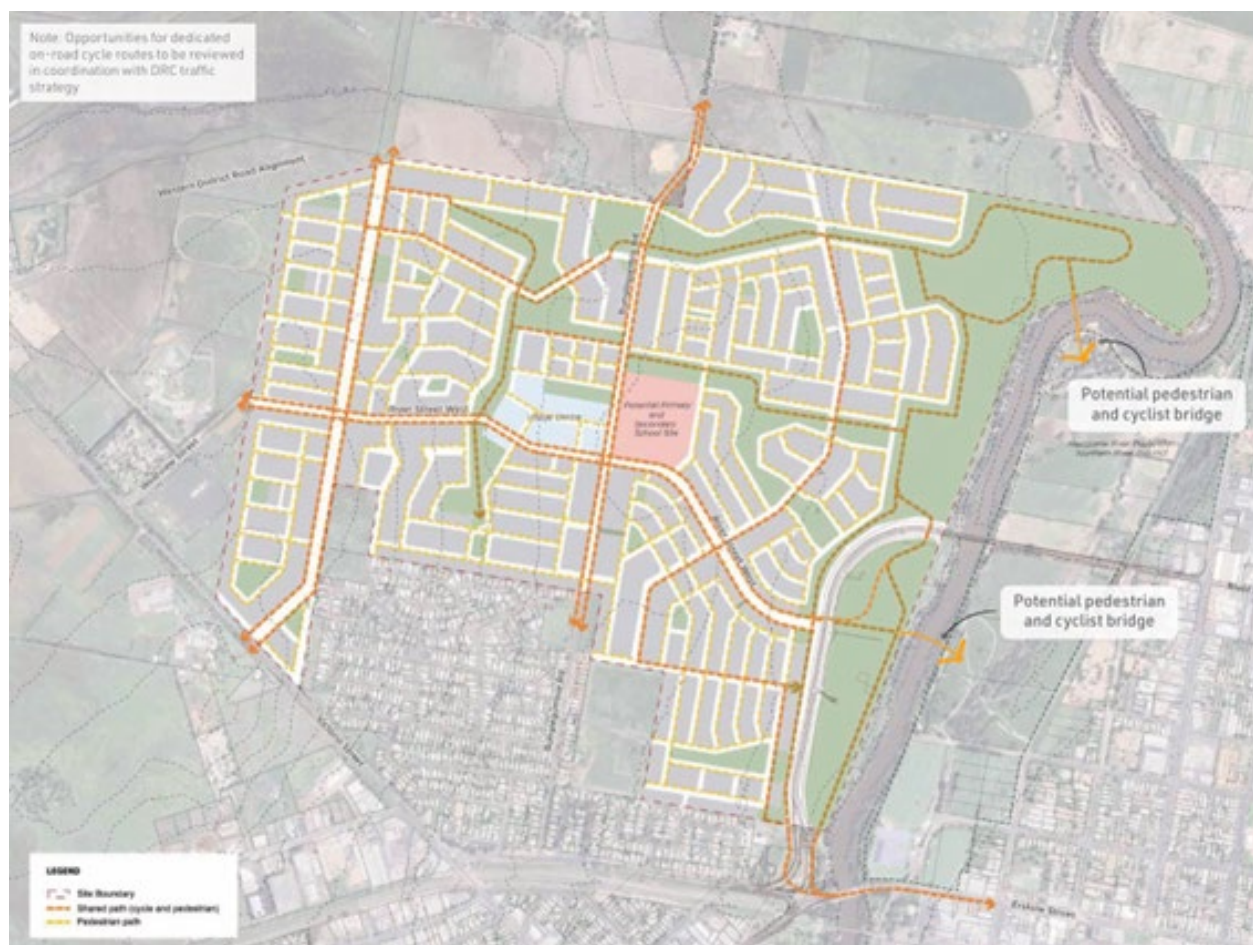


Figure 2-8: North-west Precinct pedestrian and cycle network

Wellington specific context

Final Wellington Town Centre Plan, Dubbo Regional Council, 2020

Relevant outcomes:

- The Wellington Town Centre is around 1,100m in length (B2 Local Centre Zone), this length is around 40% over the 800m benchmark for walkability (HillPDA, 2020) which reduces the opportunity to capture the retail trade of customers walking from one end to another. Council may investigate the potential retraction of the B2 Local Centre Zone with the aim of increasing walkability and permeability on purchasing properties to capitalise on existing pedestrian activity.
- Improved pedestrian gateway treatments are proposed at the intersections of Mitchell Highway with Gisborne Street and Maughan Street.

Wellington Settlement Strategy, former Wellington Council, 2012

Key land use principles include:

- Connection of open spaces to urban areas with linkages between key open spaces, settlement centres & activities, pedestrian and cycle routes, and key transport routes.
- Facilitate walking and cycling as effective means of short to medium distance travel.
- Walking and cycling routes should be direct, safe, and off-road as far as possible.
- Parks provide ideal spaces in which to provide these links, and development of a park and open space network should be viewed as an opportunity to provide for a local movement network;
- Proposed land uses for Wellington are shown in Figure 2-9.

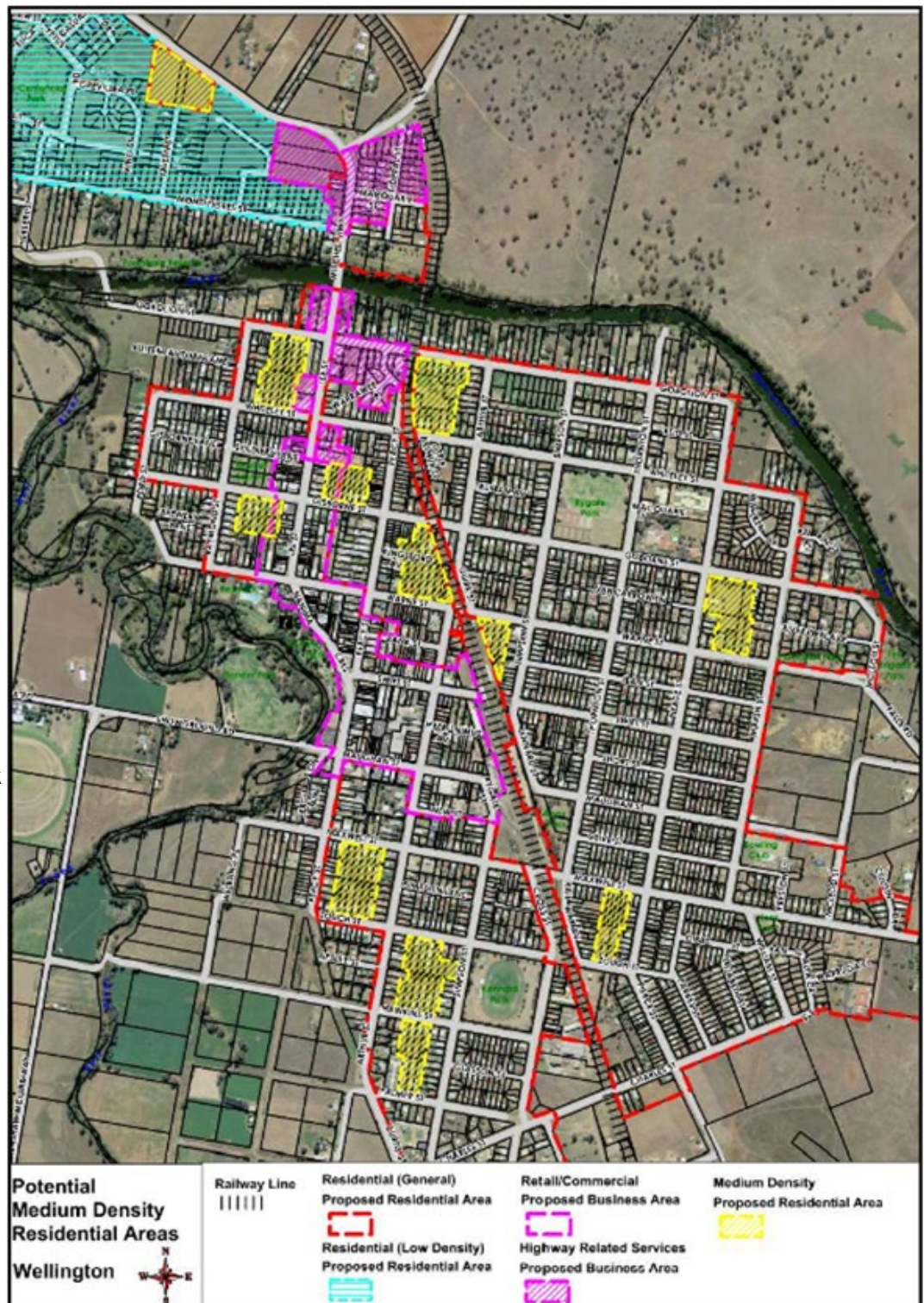


Figure 2-9: Wellington Settlement Strategy, 2012



Infrastructure recommendations review

Previous infrastructure recommendations

The 2016 Dubbo PAMP and Bike Plan refers to the following guiding documentation:

- AS 1742.10-2009 Pedestrian Traffic Control Devices
- AS 1742.9-2009 Manual of Uniform Traffic Control Devices
- AS 1428.1-2009 Design for Access and Mobility
- Austroads Guide To Road Design Part 6a
- RMS NSW bicycle guidelines.

These documents are still highly relevant, providing industry best practice for pedestrian and cycling infrastructure typologies. Recent guidance from the NSW state government however improves upon the previous standards by providing a layer of user comfort and amenity. In particular, Transport for NSW's Walking Space Guide and the Cycleway Design Toolbox are key transport planning resources for maximising comfort, safety and connectivity within communities.

Specific differences between previous and current guiding recommendations include:

- Consideration for desired Movement and Place functions within the environment at the forefront of design and planning. Active transport infrastructure must be appropriate to the function of the road, and consider other users such as vehicles, trucks and buses.
- Shared path width – the Cycleway Design Toolbox recommends a shared path width of 4 metres, with a minimum width of 3 metres. The improvement criteria in the 2016 PAMP and Bike Plan was for a shared path width of 2.5m.
- Footpath width – the Walking Space Guide recommends a minimum footpath width of 2 metres, plus a traffic buffer spaces of at least 1.3 metres. The improvement criteria in the 2016 PAMP and Bike Plan was for a footpath width of 1.5 metres.
- Considerations for shared zones where there is high pedestrian volumes and low vehicle numbers or service vehicles only.
- Emergence of E-bikes, which increases user ability across the community.

The 2014 Wellington PAMP similarly refers to the following guiding documentation:

- NSW Roads and Maritime Services PAMP Guidelines
- Wellington Council Community Strategic Plan 2030
- Disability Discrimination Act, 1992
- Disability (Access to Premises- Buildings) Standards, 2010
- Disability Standards for Accessible Public Transport
- United Nations Decade of Action on Road Safety, 2011-2020, report
- Australian Road Research Board Safe Systems Approach Report.

Movement and place

Classifying street environments within the Movement and Place framework involves characterising road segments to better understand gap between the current and future desired state and design of a street. Each street environment has a specific combination of movement and place function and fits within the four street environments, as shown in the figure.

The Transport for NSW Design of Roads and Streets Guide is a practical 'how to' manual explaining ways in which planners can improve the design of roads and streets throughout NSW by better understanding their role and context. Key active transport design recommendations include:

- The TfNSW Walking Space Guide recommends footpath types for built-up areas across NSW to enable safe and comfortable walking for people of all abilities. Austroads minimums should not be applied to new streets and should only be applied in existing low density built-up areas with caution, as the NSW Walking Space Guide indicates these widths do not encourage safe or comfortable walking.
- The TfNSW Cycleway Design Toolbox recommends dedicated cycling space on cycle routes in built-up areas on streets with design speeds above 30km/h. Dedicated space for cycling requires physical separation from vehicles; painted shoulder lanes do not constitute dedicated space.
- Shared paths are not recommended where there is high bicycle or pedestrian activity, relatively high cycling speeds, narrow sections along a route, or on routes which comprise interactions with numerous driveways, side streets or other functions crossing the cycleway.
- The number and frequency of crossing points should vary in proportion to the speed of the road or street and be aligned to desire lines. For example, lower speed streets through town centres will have more regular, closely spaced crossing points than higher speed roads.



Walking Space Guide, Transport for NSW

The Walking Space Guide developed by TfNSW describes the following principles for improved pedestrian comfort and safety:

- The importance of shade and trees to improve pedestrian comfort
- Kerbside traffic and active building buffers depending on speed limits and pedestrian volumes
- Lack of obstructions on footpaths and adequate pedestrian circulation space.

The Guide details recommended widths for different street activity levels which should be adopted in future development and implementation of the strategic pedestrian network, shown in Table 3-1.

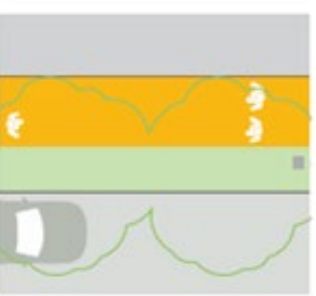
Table 3-1: Walking Space Guide recommendations

Road type	Description	Recommended Minimum Walking Space
Local footpath – Low activity	Appropriate where people walking are unlikely to pass people coming the other way.	2.0m with 1.3m kerbside traffic buffer
Local footpath – Medium activity	Appropriate where people walking are unlikely to pass people coming the other way.	2.3m with 1.3m kerbside traffic buffer
Main street footpath – Medium activity Local footpath – High activity	Appropriate where people walking are virtually certain to pass people coming the other way.	3.2m with 1.3m kerbside traffic buffer (3.0m not adjacent to active shopfronts)
Main street footpath – High activity	Appropriate where people walking are virtually certain to meet multiple groups of people coming the other way.	3.9m with 1.5m kerbside traffic buffer (3.7m not adjacent to active shopfronts)
Main street footpath – Very high activity	Appropriate where it is very busy most of the time e.g., direct connections to Sydney Metro station entrances.	4.5m with 1.5m kerbside traffic buffer

Walking Space Guide – Footpath Types

Type 1

Local footpath –
Low activity

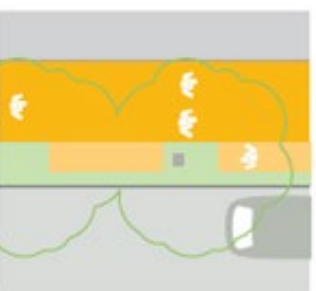
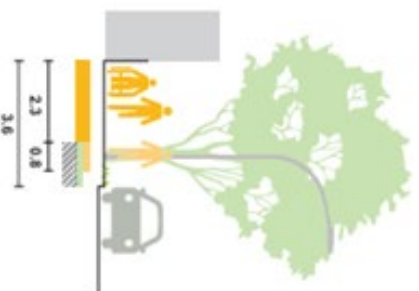


Low activity local footpaths are appropriate where people walking are unlikely to pass people coming the other way.

These footpaths support 2 friends walking together and passing if they walking in single file.

Type 2

Local footpath –
Medium activity

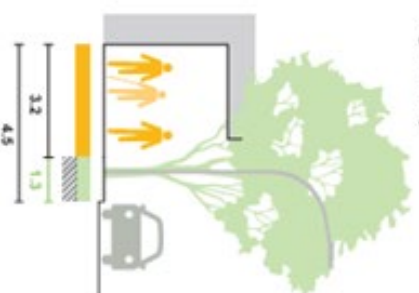


Medium activity local footpaths are appropriate where people walking are more than likely to pass people coming the other way.

These footpaths support 2 people passing abreast or 2 friends walking together passing another person using the Passing Zone.

Type 3

Main street footpath –
Medium activity / Local footpath –
High activity

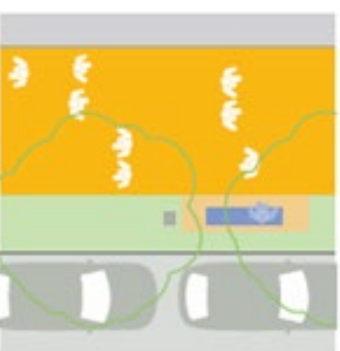
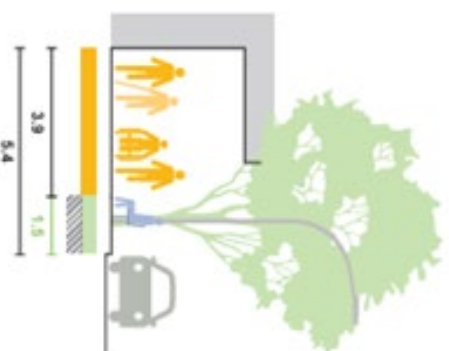


Medium activity main street footpaths are appropriate where people walking are virtually certain to pass people coming the other way.

These footpaths support 2 friends walking together and passing another person without having to walk in single file.

Type 4

Main street footpath –
High activity

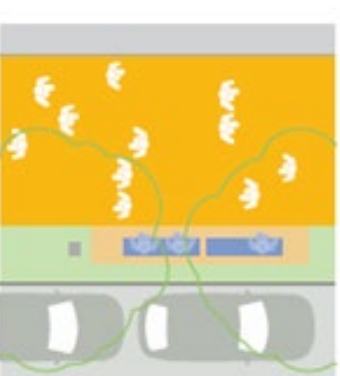
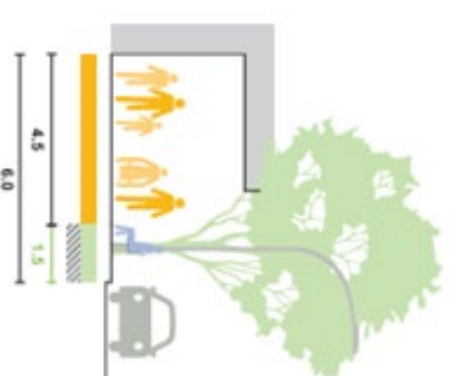


High activity main street footpaths are appropriate where people walking are virtually certain to meet multiple groups of people coming the other way.

These footpaths support 2 friends passing 2 friends coming the other way without either group having to walk in single file.

Type 5

Main street footpath –
Very high activity



Very high activity main street footpaths are appropriate where it is very busy most of the time.

These footpaths provide enough space for large numbers of people to walk comfortably.

Cycleway Design Toolkit, Transport for NSW

The Cycleway Design Toolbox was developed by TfNSW to guide practitioners on cycling and micro-mobility design across NSW. The toolbox guides practitioners with a range of design tools and best practices for the design and delivery of high-quality cycling infrastructure. The four key typologies identified within the document include bicycle paths (one-way and two-way), quietways, shared paths, and shared zones. The toolbox includes a cycleway facility selection tool for priority routes and local routes, as shown in Figure 3.1.

Priority routes					
Street typology (Movement and Place)	Civic space	Local street	Main street	Main road	
Motor vehicle speed	≤10 km/h	≤30 km/h	≤50 km/h	>50 km/h	
Motor vehicles / day	n/a	≤2,000	>2,000	n/a	
Bicycle path (One and two-way)					
Quietway					
Shared path (Low pedestrian activity and low cross-cycleway movement)					
Shared path (High pedestrian activity or high cross-cycleway movement)					
Shared zone					
Required for priority routes Suitable, but not preferred for priority routes					
Local routes					
Street typology (Movement and Place)	Civic space	Local street	Main street	Main road	
Motor vehicle speed	≤10 km/h	≤30 km/h	≤50 km/h	>50 km/h	
Motor vehicles / day	n/a	≤2,000	>2,000	n/a	
Bicycle path (One and two-way)					
Quietway					
Shared path (Low pedestrian activity and low cross-cycleway movement)					
Shared path (High pedestrian activity or high cross-cycleway movement)					
Shared zone					
Required for priority routes Suitable, but not preferred for priority routes					

Figure 3-1 Cycleway facility selection tool

The toolbox is centred around five internationally recognised design principles: Safe, Connected, Direct, Attractive and Comfortable. The additional principle of Adaptable is added to this list, referring to infrastructure being able to accommodate a range of future active transport user needs. The principles are defined to integrate cycling into urban and suburban environments, whilst balancing customer needs and achieving movement and place outcomes. Practitioners are encouraged to design and provide the infrastructure that meets all six of the principles, which are shown in Table 3-2

Table 3-2 Cycleway Design Toolbox principles

Road type	Description
Safe	Cycling infrastructure must not only be safe but should also be perceived to be safe so that people of all ages and abilities feel comfortable using the facilities.
Connected	Cycling infrastructure should be designed and planned to enable people to reach their day-to-day destinations easily, along routes that are connected, simple to navigate, and of a consistent quality that is appropriate for the expected use of that route.
Direct	Measured in both time (effort) and distance, direct routes should provide bicycle riders with the shortest and fastest way of travelling from place to place and make cycling an attractive alternative to driving or even public transport, particularly for local journeys.
Attractive	Cycling is a pleasurable activity, in part because it involves such close contact with the surroundings. Cycling infrastructure should connect to and help deliver public spaces that are well-designed and be places that people want to spend time.
Comfortable	Comfortable conditions for cycling require routes that are clearly demarcated from motor vehicles and pedestrians with high-quality, well-maintained and smooth surfaces.
Adaptable	Delivering a piece of infrastructure is only a part of a project's overall lifecycle. Adaptability should be embedded in the design of cycling infrastructure to ensure that it can evolve to accommodate changes in the needs and demands of its users over time.



Existing conditions

Demographics

Population

Based on 2021 Australian Bureau of Statistics (ABS). Dubbo, as an Urban Centre and Locality, holds a significant portion of the LGA by accounting for 71 percent of the total population. Table 4-1 provides a comparison with the 2016 population, with a 13% population increase (4,444 persons) from 2016 for Dubbo, as an Urban Centre and Locality.

Table 4-1: Dubbo, as an Urban Centre and Locality and LGA population (ABS, 2016 and 2021)

Year	Population Dubbo - Urban Centre and Locality	Population Dubbo - LGA	Proportion of total LGA population
2016	34,339	50,070	69%
2021	38,783	54,927	71%
Difference	4,444	4,857	-

The population of Wellington including Montefiores and Mount Arthur suburbs, numbered 4,835 persons and accounted for 9 percent of the LGA's total population. Table 4-2 provides a comparison with the 2016 population, showing minimal change in Wellington's population since 2016.

Table 4-2: Wellington, including Montefiores and Mount Arthur suburbs and LGA population

Year	Population Wellington- Suburb	Population Wellington- LGA	Proportion of total LGA population
2016	4,838	50,070	10%
2021	4,835	54,927	9%
Difference	-3	+4,857	-

Age Profile

The age profile of the study area plays a crucial role in identifying pedestrian amenity and infrastructure requirements for the Study. The two most vulnerable pedestrian groups are the elderly and children. For these users, facilities are required to provide a safe walking environment that encourages walking and cycling as viable transport options.

The age profile of Dubbo and Wellington suburbs in 2016 and 2021 as per the ABS Census is shown in Table 4-3, and compared with all of NSW. The results indicate minor variations in the age distribution between the two census years for Dubbo. Overall, the age distribution in Dubbo is relatively consistent with that of New South Wales.

For Wellington, the results indicate minor variations in the age distribution between the two census years. While Wellington exhibits a slightly higher proportion of population in the 60-89 age range, the overall age distribution is relatively consistent with that of New South Wales.

Table 4-4: Vehicle ownership per household (ABS, 2016 and 2021)

Region	Year	0-9 years	10-19 years	20-29 years	30-39 years	40-49 years	50-59 years	60-69 years	70-79 years	80-89 years	90-99 years	100 years and over
Dubbo – Suburb	2016	15%	13%	14%	13%	12%	13%	10%	7%	3%	1%	0%
Dubbo – Suburb	2021	14%	13%	14%	14%	11%	11%	10%	7%	4%	1%	0%
Wellington – Suburb	2016	14%	12%	11%	8%	10%	13%	14%	9%	6%	1%	0%
Wellington – Suburb	2021	14%	12%	13%	10%	9%	12%	13%	10%	5%	1%	0%
NSW	2016	13%	12%	14%	14%	13%	13%	11%	7%	4%	1%	0%
NSW	2021	12%	12%	13%	14%	13%	12%	11%	8%	4%	1%	0%

Motor vehicle ownership

Understanding the levels of car ownership is important in determining the extent to which pedestrian and bicycle facilities are required. High car ownership could mean a lack of good pedestrian amenity and alternative options. It could also suggest that private vehicles are used for most trips, and that walking or cycling is a recreational activity, which requires different types of facilities.

Table 4-4 depicts household motor vehicle ownership levels in Dubbo and Wellington, compared with all of NSW. The Dubbo – East, Dubbo – South and Dubbo – West SA2s have been selected and analysed for the Dubbo study area as data at the suburb level is not available. The data shows that in Dubbo, the percentage of households owning zero and one vehicles is lower than for NSW, and the percentage of owning two and three vehicles was higher.

The data shows a notably higher percentage of households in Wellington owning one motor vehicle compared to NSW, while the percentage owning two vehicles is notably lower.

Table 4-4: Vehicle ownership per household (ABS, 2016 and 2021)

	Dubbo – selected SA2s		Wellington – Suburb		NSW	
	2016	2021	2016	2021	2016	2021
No motor vehicles	6%	6%	15%	11%	10%	9%
One motor vehicle	36%	36%	44%	47%	38%	39%
Two motor vehicles	38%	39%	28%	29%	35%	34%
Three motor vehicles	13%	13%	9%	8%	11%	11%
Four or more motor vehicles	6%	7%	3%	4%	6%	7%

Method of travel to work

Method of travel to work for the census year 2016 and 2021 for Dubbo and the broader LGA is shown in Table 4-5. Across the Dubbo locality and the wider LGA, the majority of commute trips were undertaken by private vehicles. The private vehicle mode share in 2021 was lower compared to 2016, reflecting a shift towards alternative arrangements, as shown by a higher percentage of people either worked at home or did not go to work.

Across the Wellington locality and the wider LGA, the majority of commuter trips were undertaken by private vehicles. The private vehicle mode share in 2021 was lower compared to 2016, reflecting a shift towards alternative arrangements, as shown by a higher percentage of people either worked at home or did not go to work. Compared to the broader LGA, active and public transport mode shares were found to be higher for Wellington.

Table 4-5: Method of travel to work (ABS, 2016 and 2021)

	Dubbo - Suburb		Wellington - Suburb		Dubbo - LGA	
	2016	2021	2016	2021	2016	2021
Private vehicle	83%	79%	78%	74%	81%	78%
Active Transport	3%	2%	7%	7%	4%	3%
Public Transport	1%	1%	1%	3%	1%	1%
Worked at home or Did not go to work	12%	17%	13%	16%	13%	18%
Other mode	0%	0%	1%	0%	1%	0%

Level of disadvantage

The ABS provides information on Socio-Economic Indexes for Areas (SEIFA), which ranks areas according to their relative socio-economic advantage and disadvantage using Census data. Deciles divide a distribution into ten equal groups. In the case of SEIFA, the distribution of scores is divided into ten equal groups. The lowest scoring 10% of areas are given a decile number of 1, the second-lowest 10% of areas are given a decile number of 2 and so on, up to the highest 10% of areas which are given a decile number of 10.

The Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) summarises information about the economic and social conditions of people and households within an area. This index includes both relative advantage and disadvantage measures.

Table 4-6 shows the IRSAD for Dubbo in comparison to the broader LGA, as per 2021 ABS Census. The results indicate that the IRSAD distribution for the Dubbo locality is similar to that of the wider LGA. All residents of the suburb, and the vast majority of residents in the LGA, are categorised within decile 4.

The results indicate that the IRSAD distribution for the Wellington locality differs significantly from the wider LGA. The entirety of residents in Wellington fall within decile 1.

Table 4-6: Index of Relative Socio-economic Advantage and Disadvantage (IRSAD)(ABS, 2016 and 2021)

	Decile1	Decile2	Decile3	Decile4	Decile5	Decile6	Decile7	Decile8	Decile9	Decile10	N/A
Dubbo - Suburb	0	0	0	43,516	0	0	0	0	0	0	0
Wellington - Suburb	4,096	0	0	0	0	0	0	0	0	0	0
Dubbo Regional Council - LGA	4,394	630	506	46,235	762	269	1,674	385	65	0	0



Land use – Dubbo

Retail and Commercial

Dubbo CBD is on the east side of Macquarie River, located along Macquarie Street, Brisbane Street and Darling Street between Erskine Street and Mitchell Highway. Dubbo Regional Council government office is situated on the corner of Church Street and Darling Street.

Beyond the CBD area, small pockets of retail establishments are scattered across Dubbo, including Myall Street shops to the north-east, Orana Mall Shopping Centre to the east on Windsor Parade, Tamworth Street and Boundary Road shops to the south, Victoria Street and Newell Highway shops to the west, and Delroy Park Shopping Centre further west on Minore Road and Baird Drive.

Education

A variety of educational institutions are present within Dubbo, including primary, secondary schools, TAFE and university campuses. There are ten primary schools, two along East Street west of Macquarie River and eight east of the river. There are six high schools; with one and five to the west and east of the river respectively. There are three combined primary-secondary schools, with one and two to the west and east of the river respectively.

Hospital and medical centres

A regional health precinct is located in the north-east portion of Dubbo, comprising public and private hospitals, residential and community aged care services, and the University of Sydney and Charles Sturt University Dubbo campuses. The hospitals within the precinct include Lourdes Hospital on Cobbora Road, Dubbo Base Hospital on Myall Street and Dubbo Private Hospital on Moran Drive.

Other key medical facilities include Dubbo Aboriginal Medical Services and Bila Muuji Aboriginal Corporation Health Service, both located within the Dubbo CBD.

Aged-care facilities

Dubbo is home to 16 aged care facilities, with 13 located east of the Macquarie River and three to the west. Two aged care facilities are located in the Dubbo health precinct – Dubbo Homestead Care Community and Catholic Healthcare Holy Spirit Dubbo.

Open Space and Recreation

Dubbo City has approximately 176 areas of publicly owned open space in the urban area, totalling 626 hectares. This space includes amenity parks, ecological areas, public utility reserves, recreation corridors, parks and sports fields. Along both sides of Macquarie River there is a green buffer zone. On the south-west side of the river is Sir Roden Cutler Park and on the east side adjacent to the river is Sandy Beach Park and Lady Cutler Ovals. Larger parks within the city include:

- Victoria Park, Dubbo's largest park, located in close proximity to Dubbo Station and the CBD. Victoria Park provides multiple ovals, the Dubbo Aquatic and Leisure Centre and other sporting facilities.
- Elston Park, accessed via Cobra Street/ Fitzroy Street/ Bultje Street/ Gipps Street, providing access to tennis courts and a water park.
- Wahroonga Park, accessed via Macquarie Street, provides a playground for children.
- Dubbo's Botanic Gardens are in Elizabeth Park which is on the corner of Windsor Parade and Birch Avenue.

There are a number of sporting facilities across Dubbo. Dubbo Aquatic Centre has a 50-metre lap pool located across from Dubbo Railway Station along Talbragar Street. Apex Oval also known as Caltex Park are part of the East Dubbo Sporting Complex located between Wingewarra Street and Cobra Street in Dubbo and Barden Park is a sporting facility on the corner of Myall Street and Macleay Street. There is a large netball centre with 13 courts and club rooms and cricket grounds located along the right side of Macquarie River. Dubbo Sportsworld is located in south-east Dubbo on Sheraton Road. Dubbo Regional Cycling Facility, located on River Street, houses a 400m flat track velodrome and a 1km sealed criterium track. Other major recreation attractions include Taronga Western Plains Zoo.

Key land uses in Dubbo are highlighted in Figure 1-1.



Land use – Wellington

The Wellington town centre is focused on Mitchell Highway/ Nanima Crescent, interfacing with Cameron Park and the Bell River. Outside of the town centre, community infrastructure includes:

- Wellington Hospital, located east of the town centre on Gisborne Street
- Rygate Park and Kennard Park
- Wellington Aquatic Centre
- Various schools including Wellington High School, St Marys Catholic School, Wellington Public School and Wellington Community Children's Centre.

Montefiores is located north of Wellington across the Macquarie River. Key land uses in Montefiores are the Wellington Christian School, Bicentennial Park and Oxley Reserve.

Key land uses within Wellington are highlighted in Figure 1-2. Mount Arthur is located west of the Wellington township and Wellington Caves are located towards the south.

Dubbo – Historic pedestrian and cyclist crashes

Historical crash statistics were obtained from TfNSW for the most recent five-year period, from 2019 to 2023 inclusive. A total of 27 crashes involving either pedestrians or cyclists were reported in Dubbo, consisting of 13 pedestrian-related and 14 cyclist-related crashes. The locations and severity of these crashes are shown in Figure 4-2

Crash Severity

Crash severity for all 27 pedestrian and cyclist related crashes are shown in Figure 4 1Figure 4 1. A summary of the crashes within the study area (in terms of injury severity and locations) is as follows:

- Ten crashes resulted in serious injuries. Two of these crashes occurred along Fitzroy Street. The rest of the eight crashes occurred along Brisbane Street, Church Street, Myall Street, Golden Highway, Alfred Street, Mitchell Highway, Baird Drive and Braun Avenue.
- 13 crashes resulted in moderate injuries. Two of these crashes occurred along Macquarie Street. The rest of the 11 crashes occurred along Brisbane Street, Church Street, Darling Street, Golden Highway, Fitzroy Street, Boundary Road, Hopetoun Street, Hume Street, Mitchell Highway, Linday Place and Gilbert Street.
- Three crashes resulted in minor/ other injuries. Two crashes occurred along Brisbane Street, and one crash occurred along Newell Highway.
- One crash resulted in no casualties.
- 11 crashes occurred within the Dubbo CBD area, with two crashes resulted in serious injuries, seven crashes resulted in moderate injuries and two crashes resulted in minor/ other injuries.

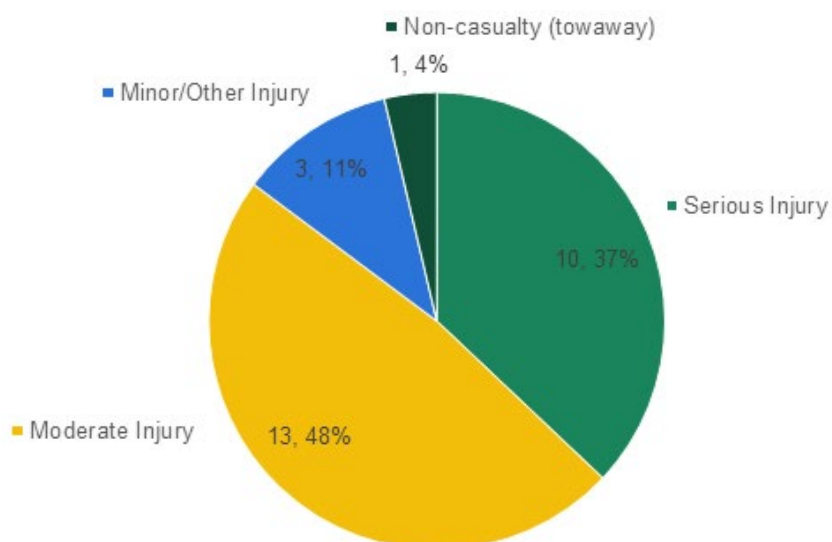


Figure 4-1: Crash severity

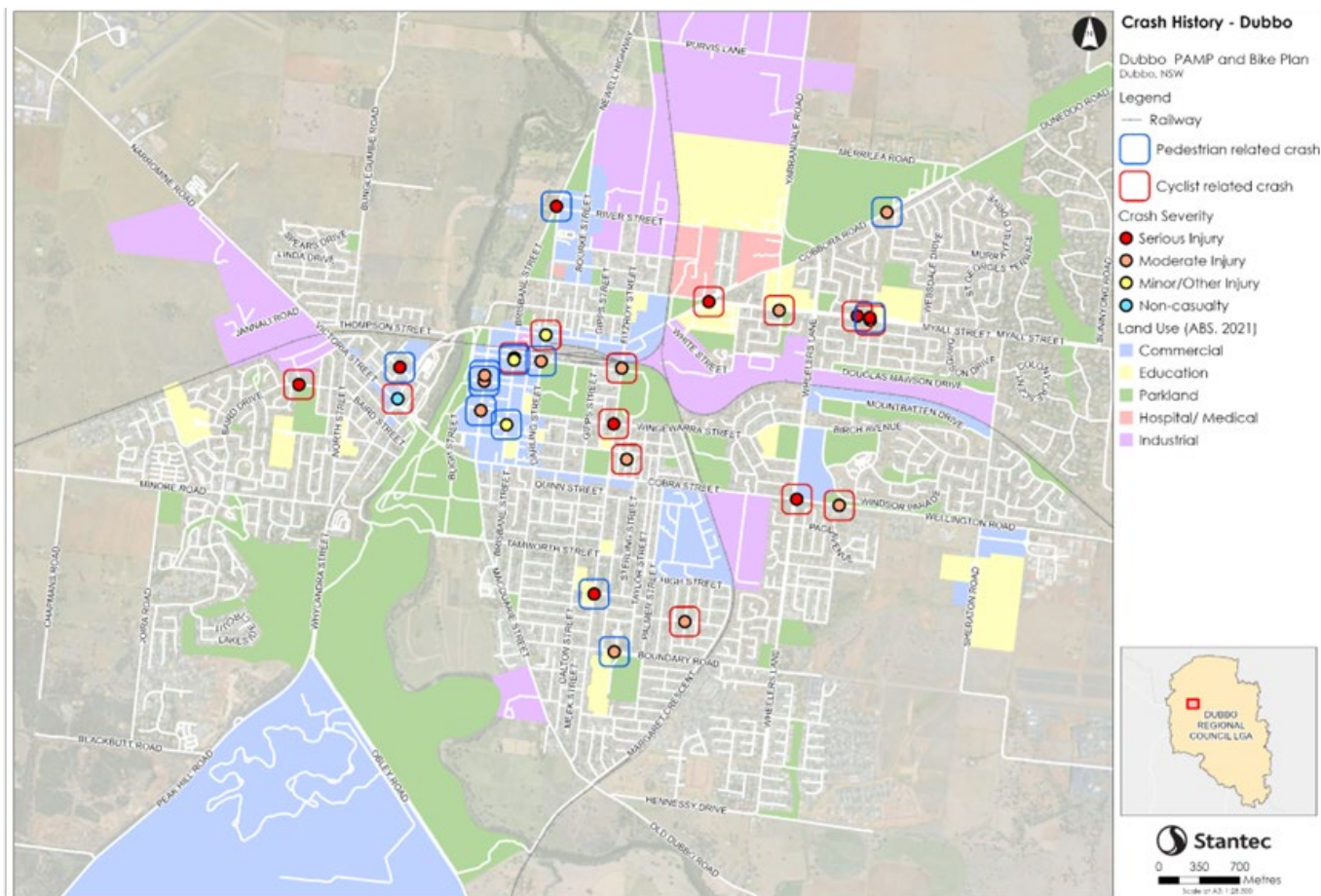


Figure 4-2: Pedestrian and cyclist crashes – Dubbo

Wellington – Historic pedestrian and cyclist crashes

Historical crash statistics were obtained from TfNSW for the most recent five-year period, from 2018 to 2022 inclusive. During this timeframe, a total of six pedestrian and cyclist crashes were documented within Wellington.

One crash, occurring at the intersection of Warne Street in close proximity to the Wellington Swimming Pool, near the intersection of Raymond Street resulted in pedestrian fatalities and serious injuries.

Other pedestrian and cyclist crashes resulted in serious and moderate injuries. The locations of the five crashes are shown in Figure 4-3.

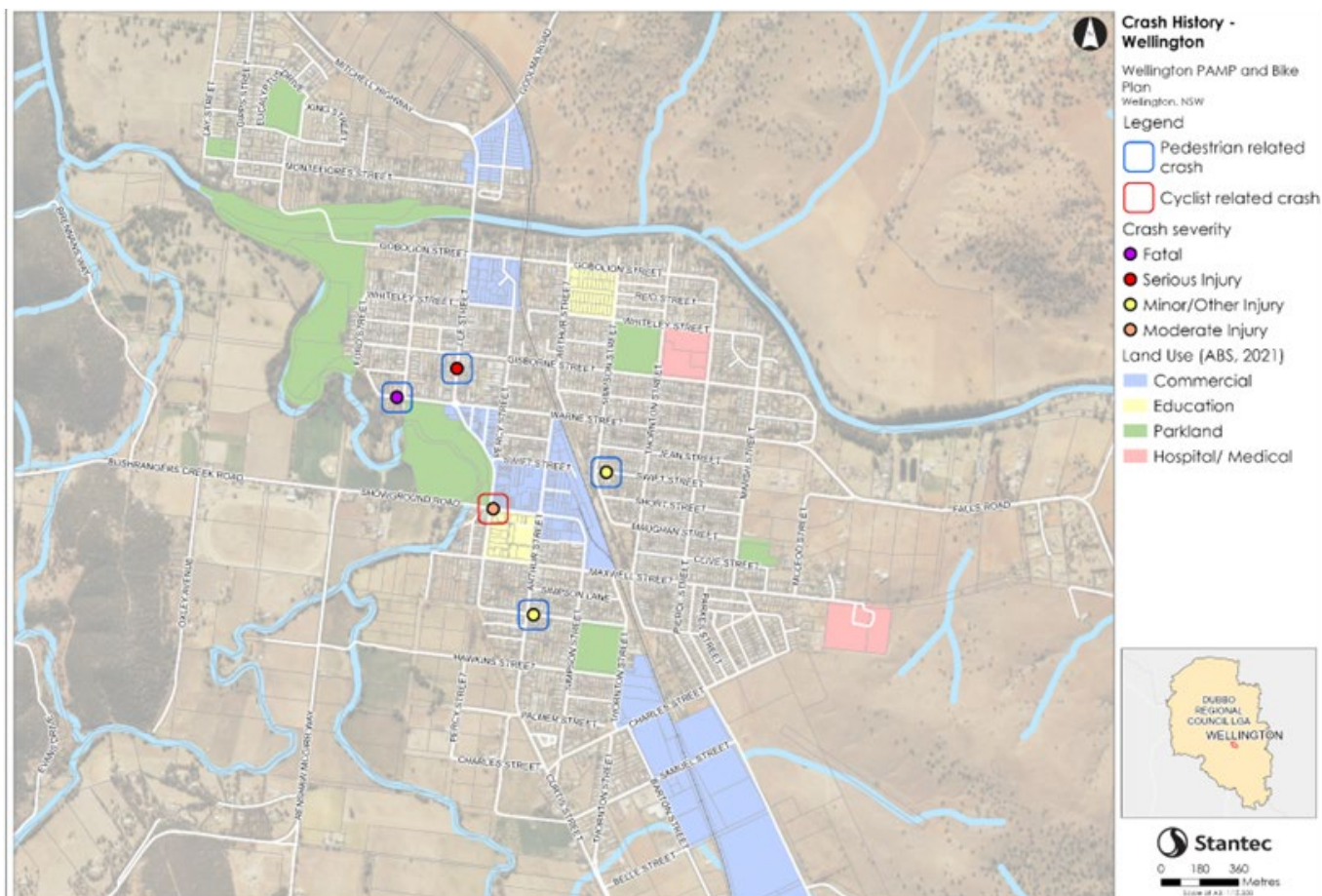


Figure 4-3: Pedestrian and cyclist crashes – Wellington

Gap analysis

Dubbo

The key gaps in the walking and cycling network are assessed under the following:

1. Determining the high priority projects since the 2016 PAMP and Bike Plan that have not yet been addressed. This covers previous consultation outcomes.
2. Analysing the community's current priorities and opportunities for improvements
3. Analysing desire lines between key land uses with consideration for the movement and place function of the road environment
4. Aligning with goals, priorities and initiatives in strategic policies and plans (see Section 2).

Gap analysis is described in the following sections.

Community consultation outcomes

Community consultation was undertaken by Dubbo Regional Council in November to December 2024. An online interactive mapping platform was developed that allows members of the community to input the following:

- What works well to promote walking and cycling in Dubbo and Wellington?
- What types of infrastructure make walking and cycling safer, more efficient, and comfortable?
- Which areas do you want to walk or cycle to?
- Which areas have issues with safety and accessibility for pedestrians and cyclists?

An extract of the consultation mapping platform is shown in Figure 5-1.

A total of 105 comments were received for the city of Dubbo.

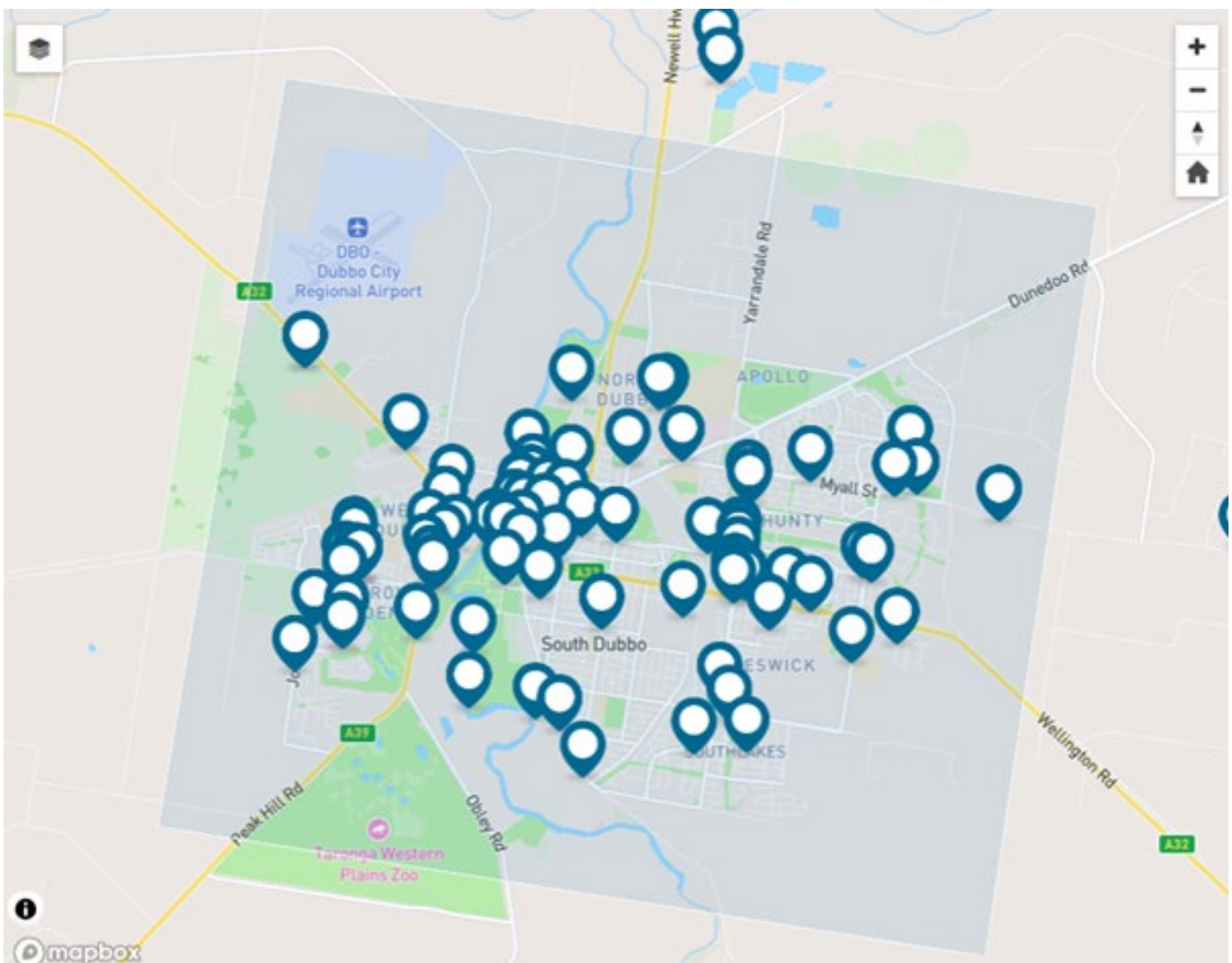


Figure 5-1: Online consultation platform output

Key outcomes relating to walking and cycling in Dubbo, and informing the development of the recommendations included identifying locations with:

- Poor crossing facilities or lack of dedicated pedestrian crossings, particularly at intersections
- Unsafe cycling conditions along existing and proposed pathways
- Pedestrian amenity improvements including shelters and shade
- Traffic calming requirements
- Upgrades to poor path surfaces and vegetation maintenance
- Provision of end of trip facilities.

The outcomes are summarised by location in Figure 5-2 Specific comments related to:

- Provide cycling route along Bligh Street south of Bultje Street
- Cobra Street shared path recommended on north side of street, linking with existing
- Crossings recommended on Wheelers Lane, including investigation for signal and refuge/investigating signals and refuges
- Pathways recommended on River Street between Morgan Street and Dhubu Drive
- Signage proposed at roundabouts on Darling Street.
- Safety courses recommended for schools and the community on road rules and pedestrian priorities
- Signalised ped crossing proposed for investigation on Wheelers Lane
- Safe crossing on Wheelers Lane connecting to Orana Mall required
- Safe crossing required at intersection of Capital Drive and Blueridge Drive.
- Safe crossing required at intersection of Carnegie Avenue and Torvean Avenue.
- Recommended crossings and pathways on Minore Road

- Recommended pathway along Mitchell Highway between Yulong Street and Westview Street.
- Footpath proposed along Yulong Street
- Shared path proposed along eastern side of North Street between Minore Road and East Street
- Shared path proposed on St Andrews Drive and Grangewood Drive
- Recommended shared paths on Wheelers Lane
- Proposed shared path connection through Troy Creek
- Shared paths on Myall Street proposed
- Crossings on Bligh Street proposed
- Footpaths proposed along Newell Highway between Minore Road and Mitchell Highway
- Cycleway connections across Newell Highway to Tracker Riley Cycleway proposed
- Cycleway proposed on Wingewarra Street and Wellington Road
- End of trip facilities for cycling at key locations
- Improved connections to Tracker Riley recommended
- Cycleway proposed along Tamworth Street.
- Recommended maintenance to existing cycleways including maintaining linemarking and vegetation
- Shared path and footpaths proposed on Windsor Parade
- Audio tactile facilities proposed at signalised intersection of Macquarie Street / Cobra Street
- Footpaths proposed along Volta Avenue
- Proposed shoulder widening for cycling on Whitewood Road
- Proposed cycleways around the river corridor
- Shared path proposed on Sheraton Road
- Shared path recommended on Mitchell Highway between Sheraton Road and Hindmarsh Esplanade.



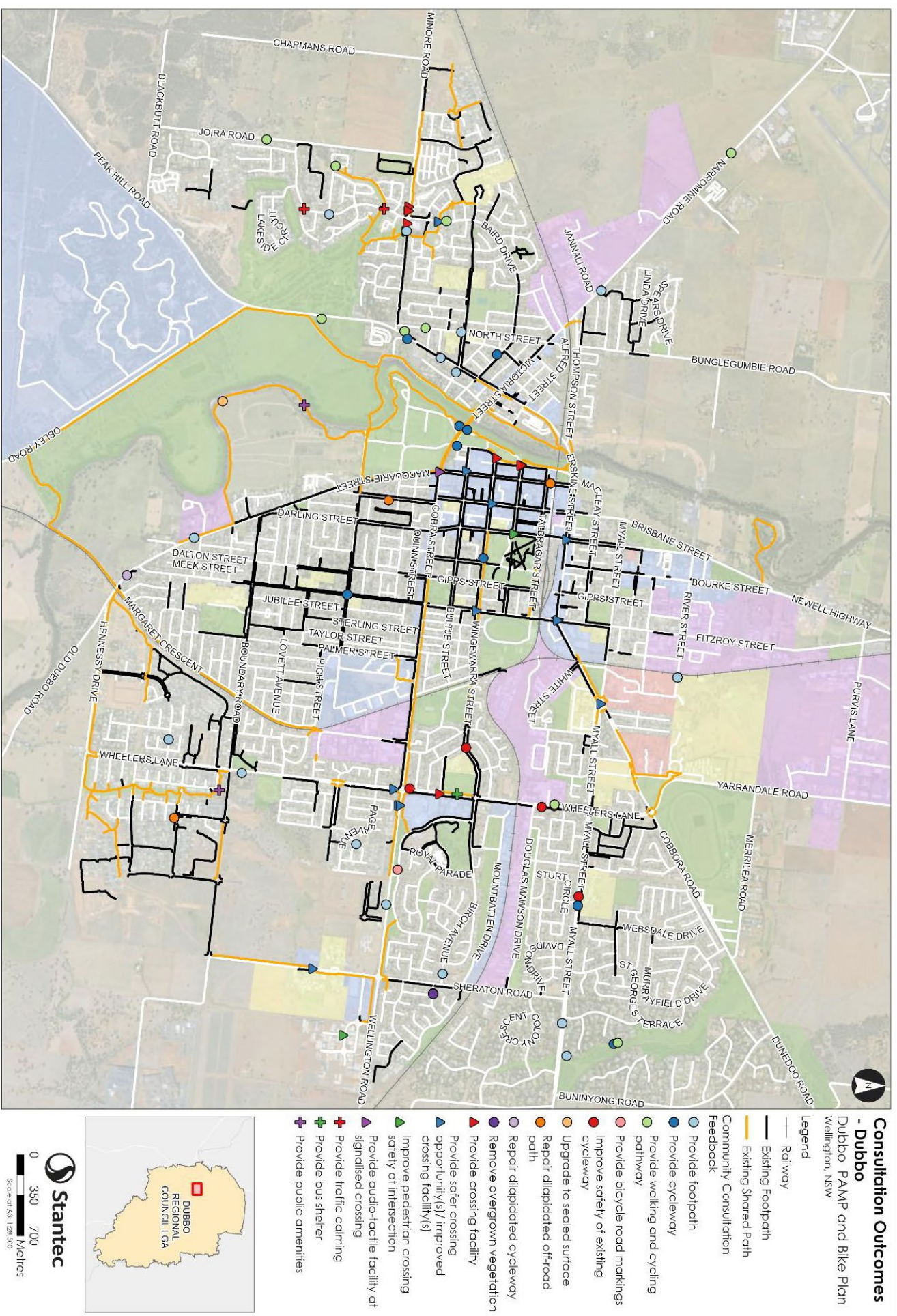


Figure 5-2: Consultation outcomes – Dubbo



Desire line assessment

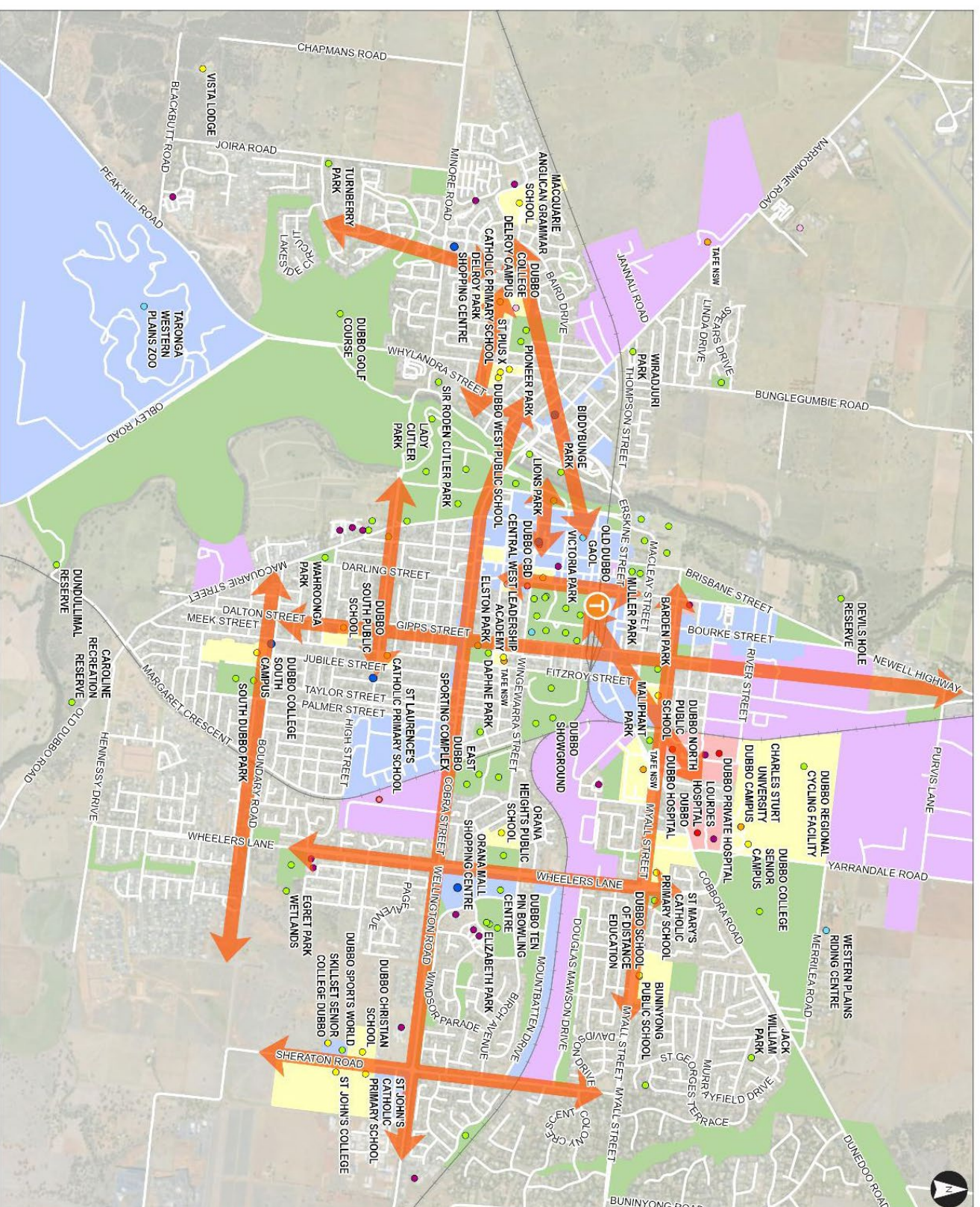
Desire lines represent the most direct and convenient link between two or more trip generators. A key concept in developing the recommendations was to create links between schools, parks, recreational facilities, medical centres and the CBD. This supports 15-minute neighbourhoods within Dubbo, connects the community and influences mode choices.

Specific active transport desire lines that have been considered include:

- East-west across Dubbo city, parallel to the Mitchell Highway.
- Between future housing centres and the Dubbo CBD and other key services
- Between Taronga Zoo and accommodation along Whylandra Street
- North-south links across Minore Road to local retail centre within Delroy Park
- East-west across Macquarie Street connecting to open space and sports fields

Key desire lines are shown on Figure 5-3.

A number of projects have been completed as outcomes of the previous PAMP and Bike Plan. These mostly cover footpath and shared path provisions. Progress since the 2016 PAMP and Bike Plan is summarised in Figure 5-4..



Active Transport Desire Lines - Dubbo

Dubbo PAMP and Bike Plan
Dubbo, NSW

Legend

- Train Station
- Railway
- Active Transport Desire Line
- CBD
- Retail/ Commercial Centre
- Primary / Secondary School
- Tertiary Education
- Special School
- Hospital
- Other Medical Facility
- Aged Care Facilities
- Recreation
- Other Tourist Attraction



Stantec

0 350 700 Metres
Scale at A3 1:28,500

Figure 5-3: Desire line assessment – Dubbo

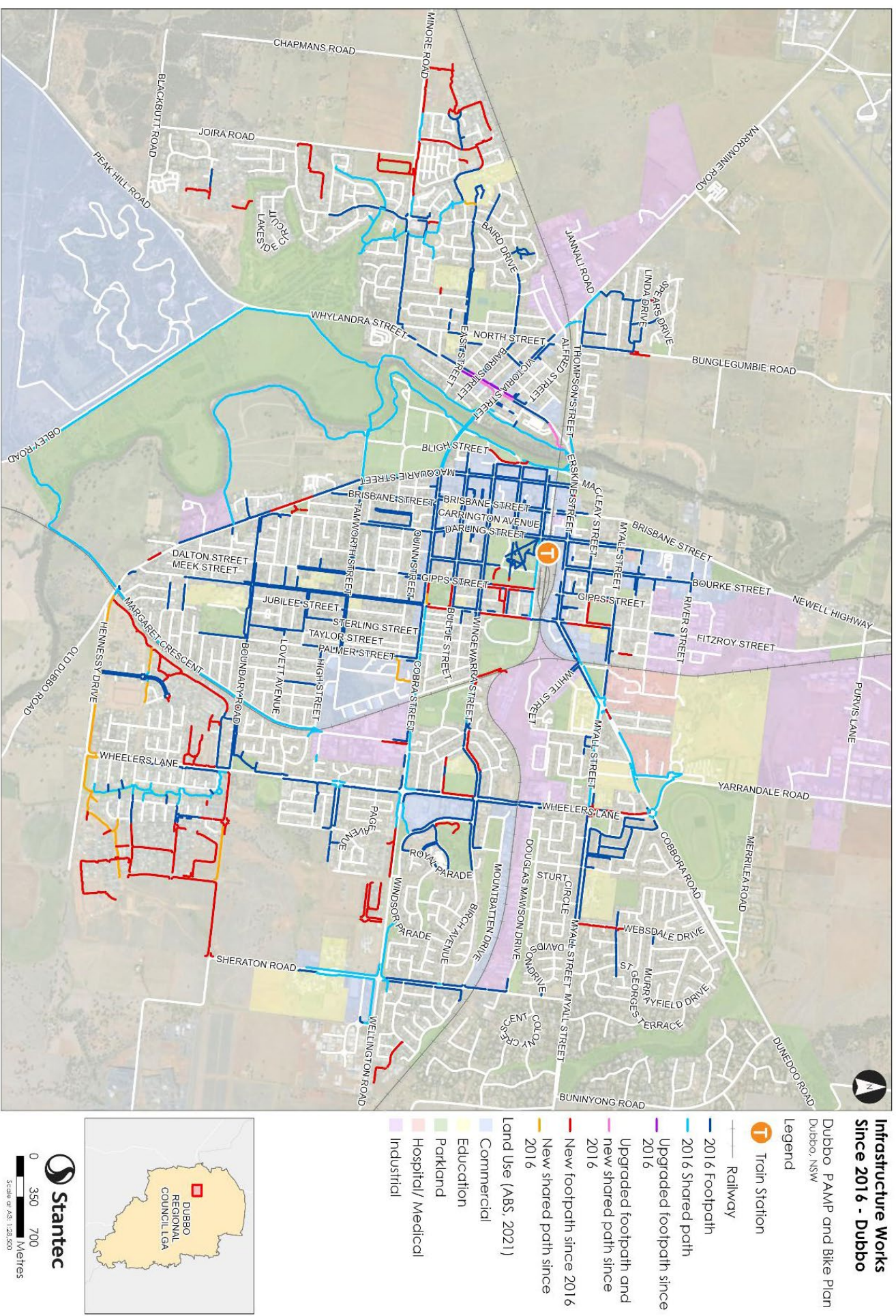


Figure 5-4: Progress since 2016 Dubbo PAMP project

Wellington

The key gaps in the walking and cycling network are assessed under the following:

1. Determining the high priority projects since the 2014 Wellington PAMP that have not yet been addressed. High priority projects from the previous PAMP are shown in Figure 5-5 and Figure 5-6.
2. Analysing the community's current priorities and opportunities for improvements
3. Analysing desire lines between key land uses with consideration for the movement and place function of the road environment
4. Aligning with goals, priorities and initiatives in strategic policies and plans (see Section 2).

Gap analysis is described in the following sections.

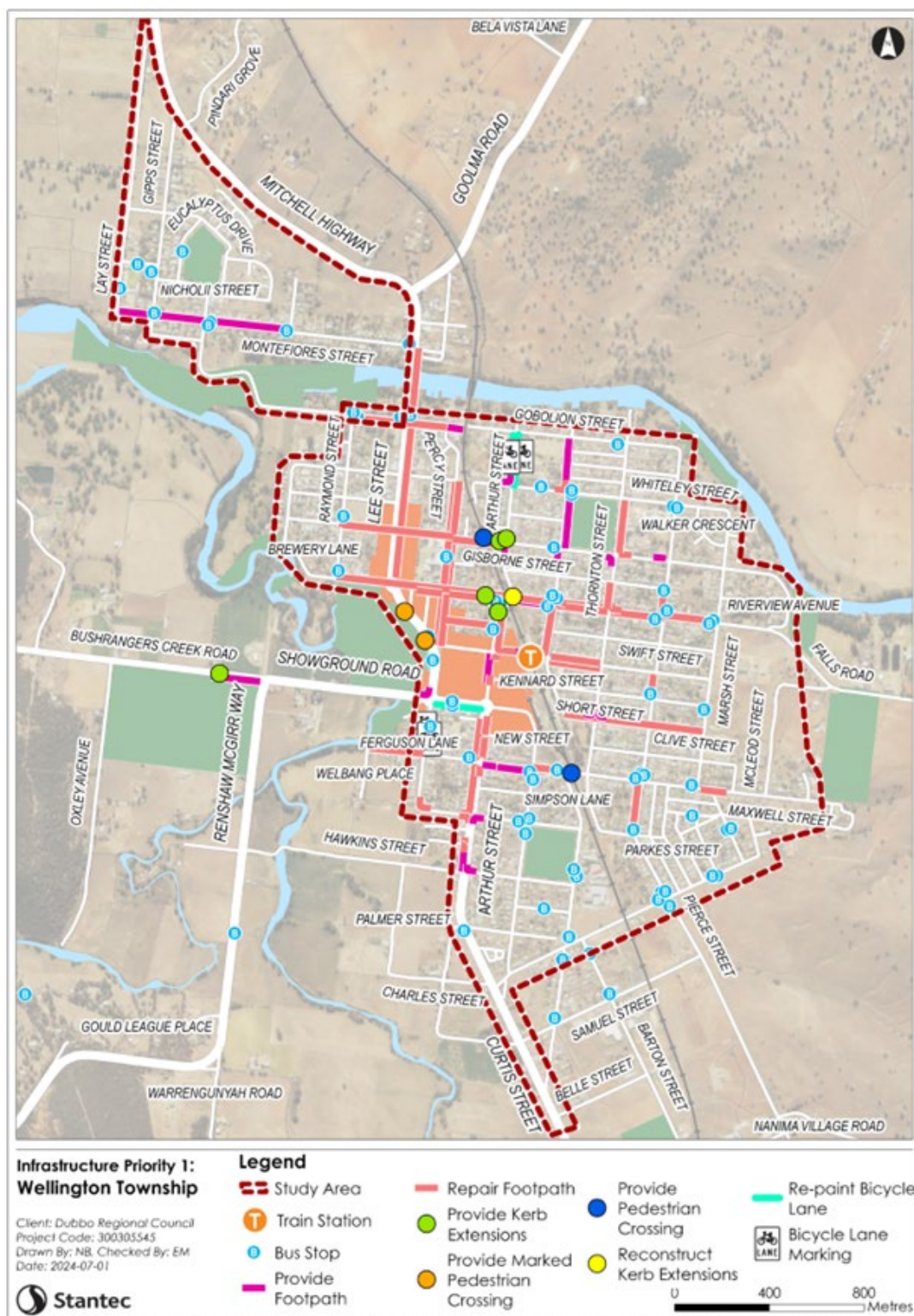


Figure 5-5: Wellington Infrastructure Action Plan – Priority 1(PAMP, 2014)



Infrastructure Priority 2: Wellington Township

Client: Dubbo Regional Council
Project Code: 300305545
Drawn By: NB. Checked By: EM
Date: 2024-07-01



0 400 800 Metres

Legend

- Study Area
- T Train Station
- B Bus Stop
- Provide Footpath
- Repair Footpath
- / Replace No Bicycle Sign

Figure 5-6: Wellington Infrastructure Action Plan – Priority 2 (PAMP, 2014)

Community consultation outcomes

Consultation for Wellington was undertaken at the same time using the same forum as for Dubbo. An extract of the consultation mapping platform is shown in Figure 5-7.

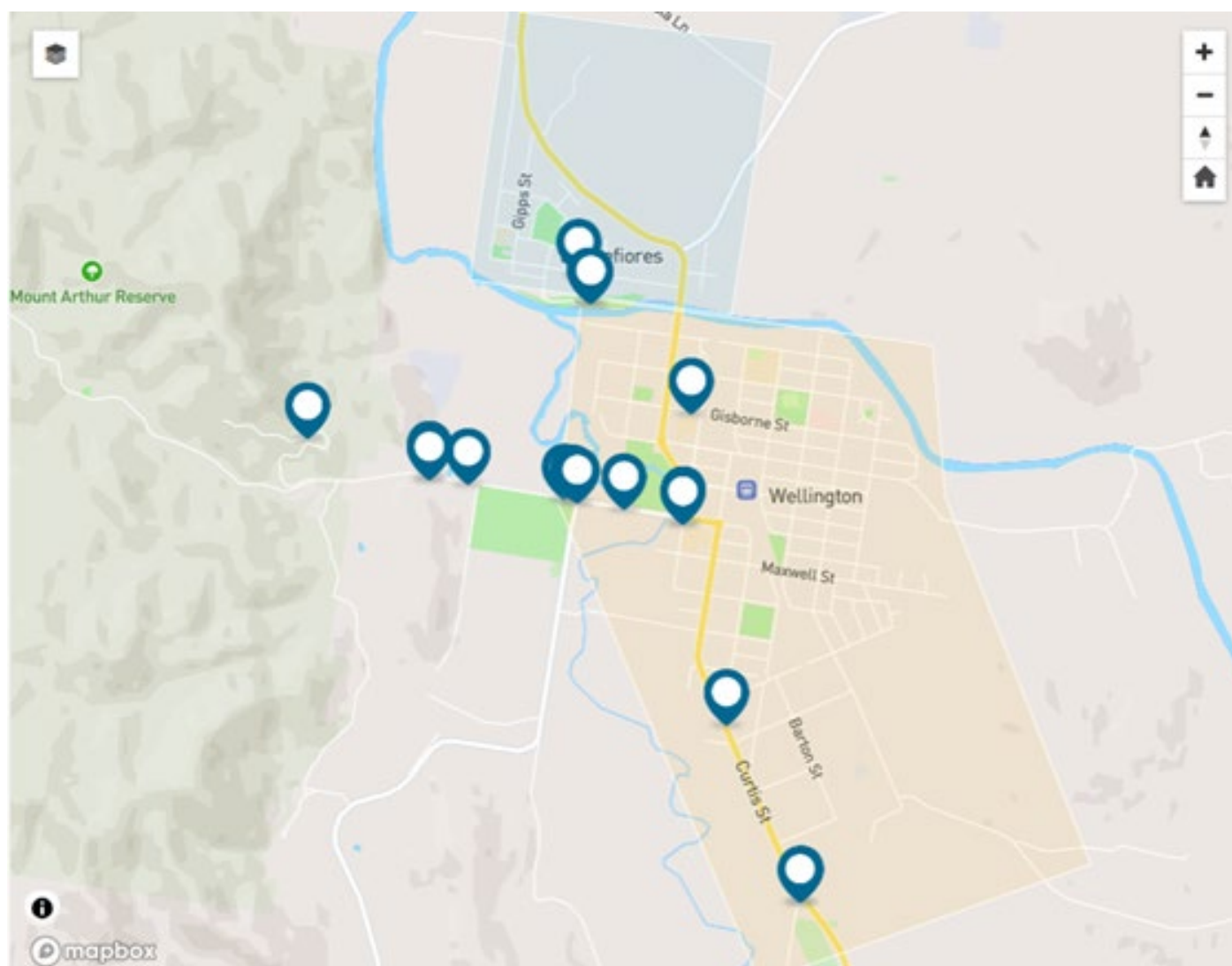


Figure 5-7: Online consultation platform output

22 comments were received for Wellington/ Montefiores. The key themes arising from the consultation for Wellington and Montefiores were:

- Generally poor walking and cycling infrastructure within Wellington and Montefiores.
- Enhanced walking and cycling connections between Mount Arthur recreational trail, along Bushrangers Creek Road / Showground Road to the Wellington CBD. The existing shared path along the northern side of showground road is disconnected, and the remaining gravel path is in poor condition.
- Scenic Drive, leading up to Mount Arthur is hazardous to pedestrians and cyclists who mix with vehicular movement.
- Enhanced walking and cycling connections between the Wellington CBD and Wellington Caves, via Old Sydney Road and Thornton Street
- Enhanced walking and cycling connections within and through Oxley Park, improving amenity of the park and better connecting Montefiores to Wellington.
- Recommendation for road safety sessions to be held within the community regarding safe use of mobility scooters.

A summary of the locations identified in the consultation are shown in Figure 5-8.

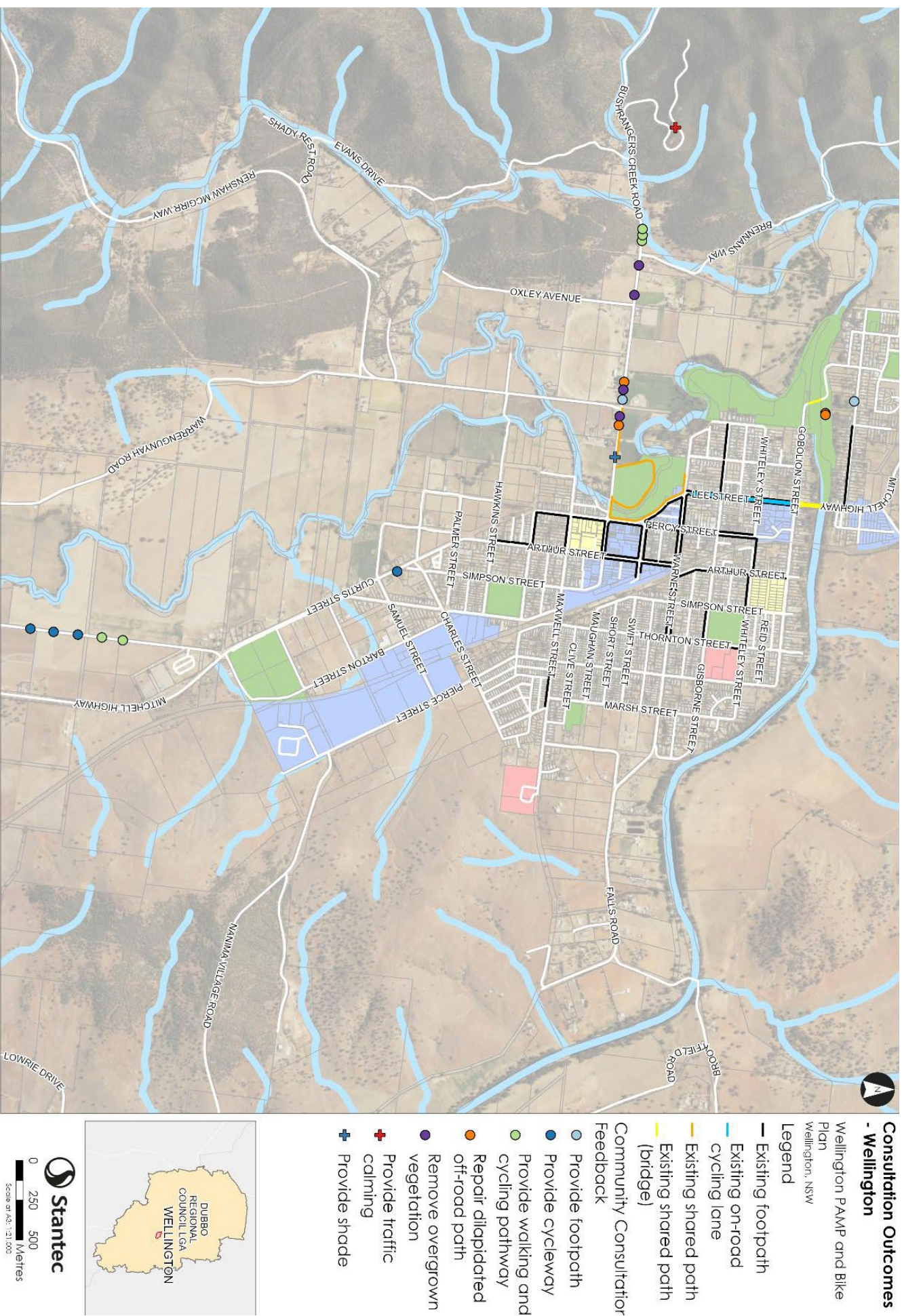


Figure 5-8: Wellington and Montefiores consultation outcomes summary



Desire line assessment

Desire lines represent the most direct and convenient link between two or more trip generators. A key concept in developing the recommendations was to link between schools, parks, recreational facilities, medical centres and the CBD. This supports 15-minute neighbourhoods within Wellington-Montefiores, connects the community and influences mode choices.

Walking and riding desire lines in Wellington are shown on Figure 5-9.

As part of the 2025 PAMP update, key pedestrian infrastructure initiatives for Wellington Township have been proposed. These initiatives encompass the construction of new footpaths, the installation of crossing facilities, and the enhancement of existing infrastructure. The actions designated as 'priority one' are shown in Figure 5-5, and the 'priority two' actions are in Figure 5-6. Key pedestrian infrastructure actions included providing footpath upgrades and new facilities throughout town, constructing new crossings and footpaths.

The following lists key observations made in reference to progress since the 2014 PAMP Study:

-
- Most of the footpaths proposed in the PAMP have not yet been constructed
- Several crossings proposed especially in the north-western side of Wellington have not yet been provided
- Cycling and pedestrian crossing facilities to schools have not been addressed
- Various painted bicycle lanes have not been repainted
- Certain historic crash locations have not been addressed.



Recommendations

Footpaths

The Dubbo and Wellington CBD environments are generally well connected by existing footpath infrastructure and crossings. Footpath recommendations therefore focus on connecting the gaps in the network between key retail, medical and educational land uses across key areas to residential locations.

Footpath upgrades consider the Transport for NSW Walking Space Guide, which recommends a range of widths depending on the footpaths usage and activity (see report Section 3). Pedestrian activity within Dubbo and Wellington is considered to align with the Guide's classifications of:

- Local footpath – low activity (2.0m footpath width)
- Mainstreet footpath – medium activity (3.0m footpath not adjacent to active shopfronts).

Footpath recommendations for Dubbo are shown in Figure 6-1 and for Wellington in Figure 6-2 and Figure 6-3. Recommendations are shown in more detail in mapping in Appendix B.

Shared paths

Shared paths provide benefits for the community for the following reasons:

- Provision for both walking and cycling, which cover both types of desire lines
- Low cycling volumes within Dubbo and Wellington means that pedestrians are not at a high risk of interactions with fast moving cyclists.

Shared paths are recommended along the major walking and cycling desire lines to support greater uptake and safety of active transport infrastructure.

A width of 3 metres is proposed for each shared path project in alignment with the Transport for NSW's Cycleway Design Toolkit (see report Section 3.4 and Appendix A). This aligns with the guidance that a shared path desired width is 4 metres, with an absolute minimum of 3 metres in order to qualify for the Get NSW Active Funding program. Three metres for new shared paths proposed in Dubbo and Wellington are considered appropriate given the relatively low pedestrian and cyclist volumes expected and the high level of service that it provides.

Crossings

Crossing typology reflects the environments in which they are proposed. Wombat crossings provide a traffic calming element as a vertical deflection device, and give full priority to pedestrian movements. Pedestrian refuges are suitable in locations where it may be desirable for a pedestrian or cyclist to give way to an on-coming vehicle whilst partway through an intersection, given that vehicle volumes and speeds are low.

Community consultation outcomes highlighted a key issue around large multi-lane roundabouts across Dubbo, that are deemed to be difficult to cross and hazardous to people riding and walking. The Austroads Guide to Road Design Part 4 recommends that pedestrian refuges are inappropriate at multi-lane roundabouts and that they should only cross one travel lane in each direction. Therefore to mitigate safety concerns at these location, additional warning signage is proposed to alert drivers to pedestrians that may be crossing.

Crossing infrastructure recommendations include:

- Pedestrian refuge crossing, providing a place for a pedestrian or cyclist to stop and wait for passing vehicles. Refuges are typically appropriate on roads with speeds of 50 kilometres per hour or less and in locations with only one travel lane in each direction. Typical pedestrian refuge crossing design is shown in Figure 3-3.
- Wombat crossing (raised zebra crossing). Wombat crossings provide the pedestrian or cyclist with priority over vehicles and are appropriate at locations with high pedestrian volumes such as near schools or CBD environments. The elevation of the crossing to be level with the footpath level provides vertical deflection which is a traffic calming measure. Typical wombat crossing design is shown in Figure 3 2.
- Wombat crossings that connect between two shared paths should consider separation for walking and cycling. An example of this is shown in Figure 6-1.

- Signalised crossing. Signalised crossings are appropriate on high speed and high vehicle volume roads.

Crossing recommendation locations are shown in detail in Appendix B.

Crossing design should include Disability Discrimination Act (DDA) compliant kerb ramps to facilitate safe transition from the kerb to the road where relevant.

Compliance criteria

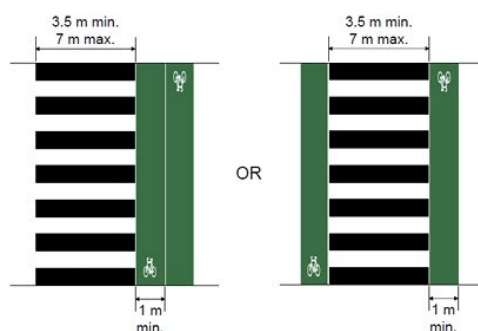
Compliance criteria for the existing crossings audited in Dubbo as part of the 2016 PAMP are outlined in Table 6- 1, Table 6-2 and Table 6- 3. Infrastructure conditions were inspected with reference to the defect and compliance criteria outlined by Australian Standards current at that time. Since 2016, the following changes to AS 1742.10 have occurred in an update from 2024:

- Recommended painted crossing width of zebra and raised zebra crossings reduced from 3.6m minimum to 3.5m minimum
- Recommended delineated crossing width of a signalised pedestrian crossing reduced from a minimum of 3.3m to 2.4m
- Width of pedestrian refuge (perpendicular to the road) recommended between 2.0m and 3.0m
- Recommended length of pedestrian refuge (parallel with road) reduced from 3.0m to 2.4m.

All new or upgraded crossings as part of the recommendations of this study should be provided in alignment with the above updated infrastructure geometries from AS 1742.10: 2024.

Transport practice is to install a pedestrian (zebra) crossing adjacent to bicycle path crossings for connecting shared paths as follows:

(a) Pedestrian (zebra) crossing dimensions as per AS 1742.10



(b) Reduced pedestrian (zebra) crossing width of a minimum of 2 m in a constrained environment where dimensions in option (a) are not able to be achieved. All on raised platform

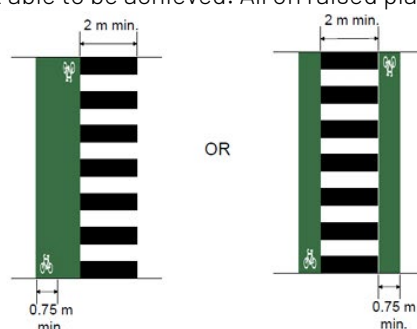


Figure 6-1: Priority path crossings, Transport for NSW, Supplement to AS 1742 Update – Priority path crossings, 2025

Table 6-1 Compliance criteria – zebra and raised zebra crossings (wombat)

Defect	Standard	Requirement for compliance	Recommended improvement
Painted crossing width less than 3.6 metres	AS 1742.10-2009 Pedestrian control and protection with reference to RMS supplement and TDT 2001/04b Traffic calming devices as pedestrian crossings	Crossing should be 3.6 metres wide (minimum)	Repaint crossing to 3.6 meters wide
Poor sight lines for pedestrians		Focus is given to crests and obstructions that may restrict the clear view of approaching vehicles	Regrade or remove obstruction
Faded line markings		Pavement markings should be clearly visible by pedestrians and vehicle drivers.	Repaint line markings
Other		Other factors such as lighting and signage	Situation dependant

Table 6-2 Compliance criteria – signalised pedestrian crossing

Defect	Standard	Requirement for compliance	Recommended improvement
Missing crossing leg	AS 1742.10-2009 Pedestrian control and protection with reference to RMS supplement and TDT 2002/12c Stopping and Parking restrictions at intersections and crossings.	Pedestrian crossing on all intersection legs	Investigate provision of additional crossing leg
Delineated crossing width less than 3.3 metres		Crossing width 3.3 metres	Adjust line marking to provide 3.3 metre wide pedestrian crossing zone
No audio indicator		Audio indicator at crossing	Provide an audio indicator button

Table 6-3 Compliance criteria – pedestrian refuge

Defect	Standard	Requirement for compliance	Recommended improvement
Width too narrow (perpendicular to road)	AS 1742.10-2009 Pedestrian control and protection with reference to RMS supplement and TDT 2011/01a	2.0 metres (minimum)	Replace pedestrian refuge
Length too narrow (parallel with road)		3.0 metres (minimum)	Replace pedestrian refuge

Cycleways

Off-road separated cycling infrastructure (one or two-way separated cycle paths) are not recommended within Dubbo or Wellington for the following reasons:

- Shared paths provide space for pedestrian use
- Low uptake of cycling within the towns, meaning that shared paths offer greater cost-benefit
- Local low-density residential roads within the towns with less than 2,000 vehicles per day can be used as on-road mixed traffic cycling routes by more experienced riders. These are referred to as “Quietways” in the TfNSW Cycleway Design Toolbox.

Quietways provide an environment in which bicycle riders are located within the middle of the traffic lane and integrate with vehicular traffic which ideally has a travel speed of 30 kilometres per hour or less. Visual cues such as differing pavement texture and colour, bicycle symbols painted on the road, traffic calming features, median strip to make it more difficult for overtaking and narrow traffic lanes support rider safety within quietways.

Existing on-road cycling lanes do exist within Dubbo, along Myall Street, Wheelers Lane and Bultje Street. These lanes are proposed to remain; however they are not deemed appropriate in these locations given the following:

- The on-road lane infrastructure without median or separation barrier is unsuitable to less experienced riders and children
- Location adjacent to angled parking, which exposes cyclists to reversing vehicles which may have reduced sight distances
- Potential interactions of cyclists on these roads with heavy vehicles and buses
- Segmented lanes which do not integrate with a greater cycling network.

New on-road cycling lanes are proposed only in locations in which there is enough on-road space to accommodate safe distances from vehicles and low vehicle volumes. For example, on-road cycling lanes are proposed on Wingewarra Street as an alternate east-west route to Wellington Road/ Mitchell Highway for more experienced cyclists.

Cycling recommendations are shown in Figure 6-2 and Figure 6-3.

Kerb ramps

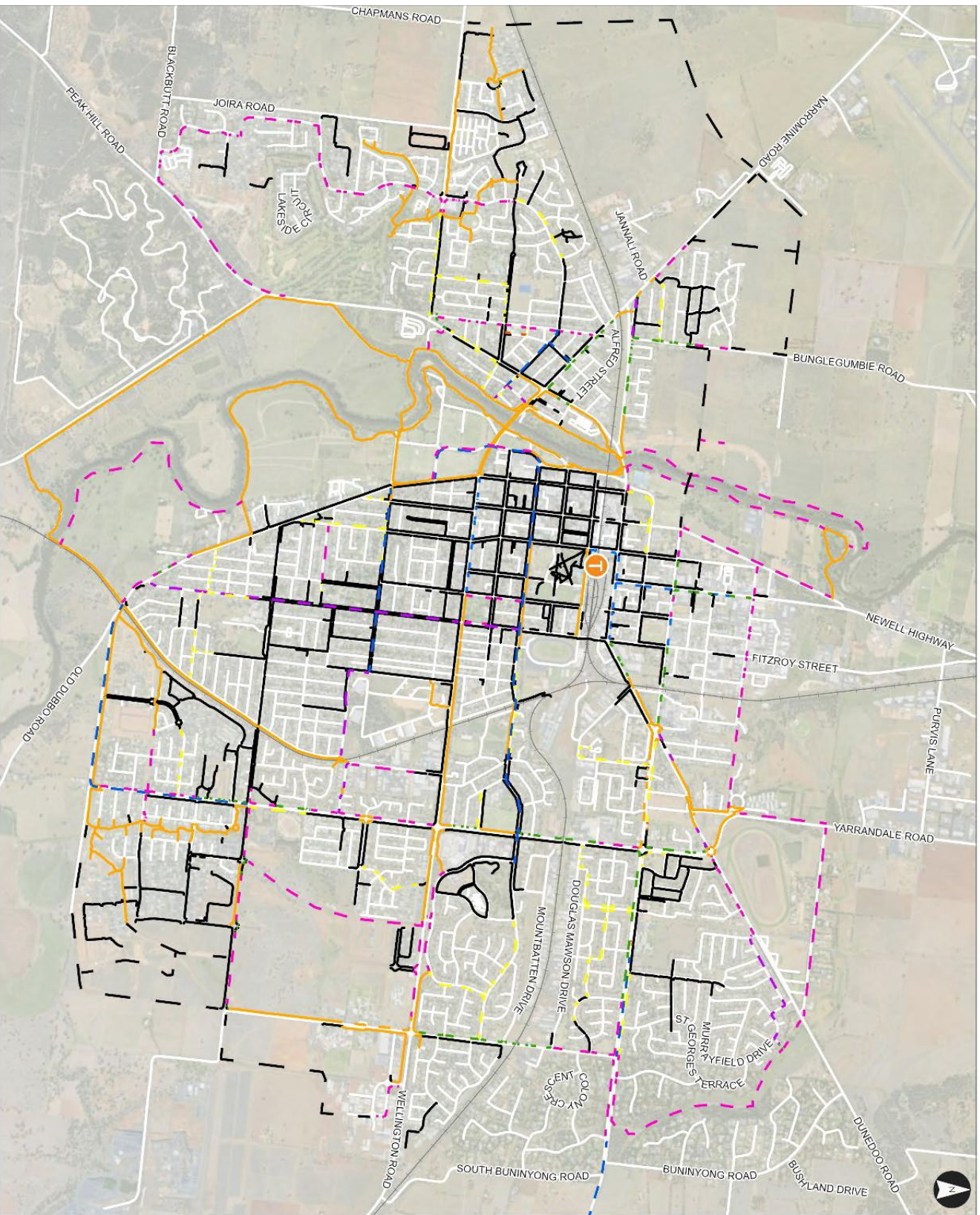
Kerb ramps are used to assist pedestrians, particularly those who are less mobile, to enter and exit the roadway safely to cross the street at a designated point.

Compliance criteria

Compliance criteria for the existing kerb ramps audited in Dubbo as part of the 2016 PAMP are outlined in Table 6-4. Infrastructure conditions were inspected with reference to the defect and compliance items.

Table 6-4 Compliance criteria – kerb ramps

Defect	Standard	Requirement for compliance	Recommended improvement
Missing	RMS Drawing: MD R173B01.A.1	Kerb ramps should be provided where possible.	Provide kerb ramp
None (Path level with road)		Where there is no difference between height in the footpath and roadway TGSi is required.	Provide tactile ground surface indicators (TGSi)
Misaligned with opposite kerb ramp		Kerb ramps must be directly facing each other, and aligned with the adjacent property boundary or wall.	Reconstruct kerb ramp
DDA compliant dimensions and grades		Kerb ramps should be wide enough and have clear space at the top.	Reconstruct kerb ramp
Surface condition	AS 1428.1-2009, Section 7	Kerb ramps should be in a good condition to avoid trip hazards.	Replace kerb ramp



Strategic Walking and Cycling Network - Recommendations Summary (DUBBO) Dubbo PAMP and Bike Plan Wellington, NSW

- Legend**
- Railway
 - Existing Footpath
 - Existing Shared Path
- Recommendations**
- Designate as mixed traffic cycling route
 - Designate footpath as shared path - 3m
 - Provide footpath - 2m
 - Provide footpath - 3m
 - Provide on-road bicycle lane in each direction
 - Provide shared path - 3m
 - Provide transition ramp between on-road bicycle lane and off-road path
 - Replace footpath with 3m wide shared path
 - Widen existing shared path to 3m wide
 - Potential future shared path - 3m



Figure 6-2: Walking and cycling pathways recommendation summary - Dubbo

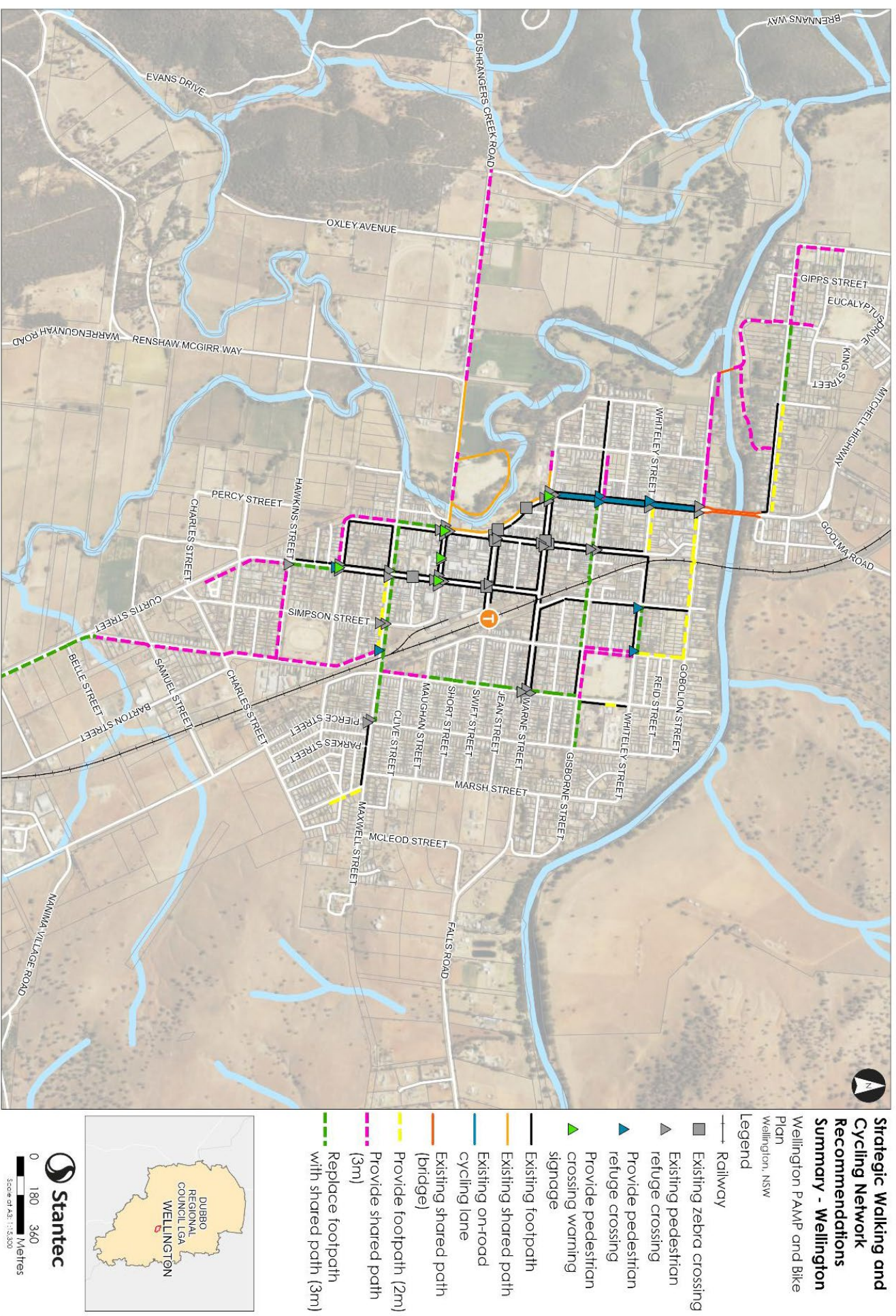
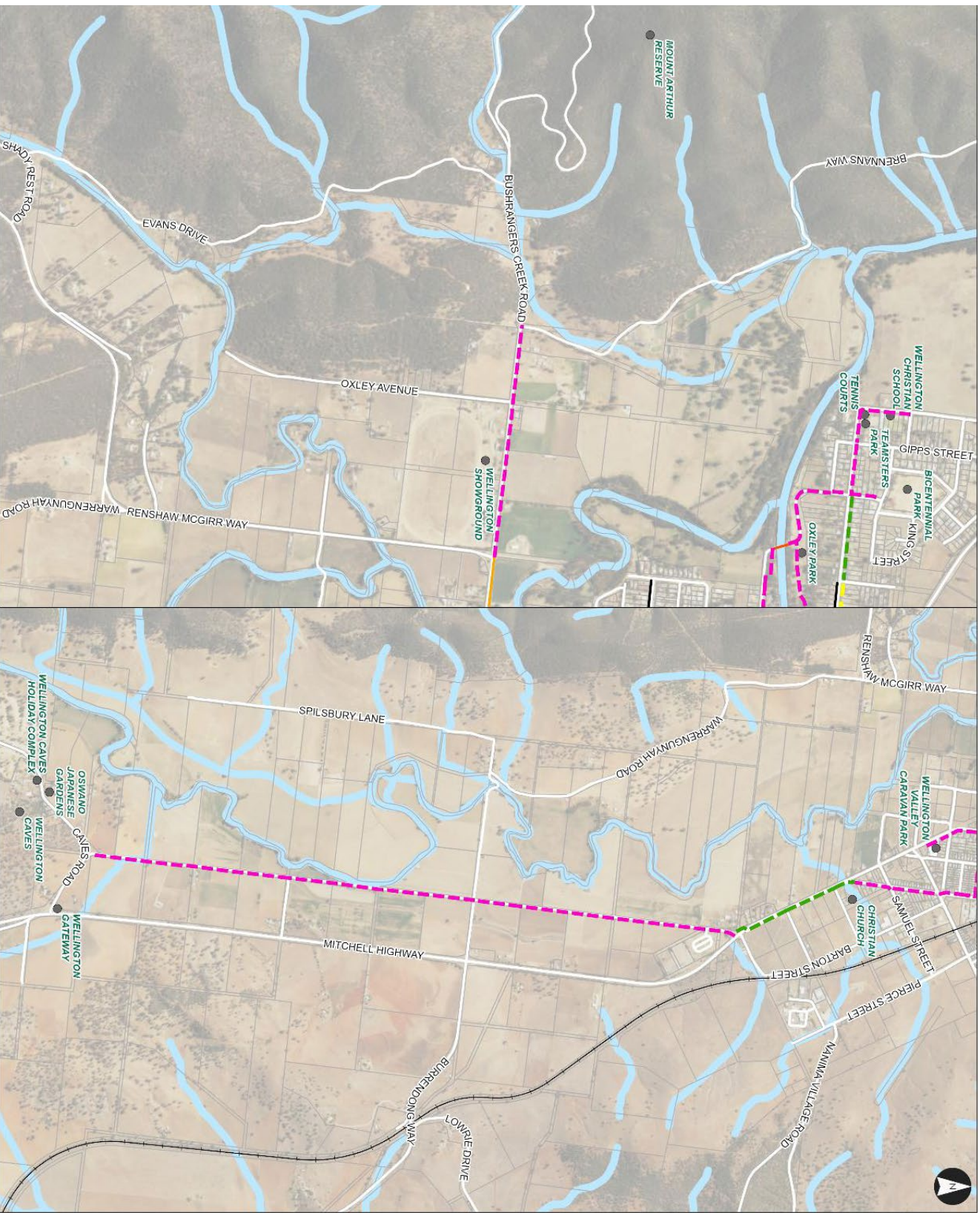


Figure 6-3: Walking and cycling pathways recommendation summary – Wellington



Recommendations Summary (Recreational Routes) - Wellington

Wellington PAMP and Bike
Plan
Wellington, NSW

Legend

- Existing footpath
- Provide footpath
(2m)
- Provide shared
path (3m)
- Replace footpath
with shared path
(3m)



0 300 600
Metres
Scale at A3: 1:25,000

Figure 6-4: Walking and cycling pathways recommendation summary - Wellington (recreational areas)

Behaviour change and policy

Active transport infrastructure needs to be supported by policies and behaviour change programs in order to increase uptake and promote sustainability within the area. The following section outlines a number of policy and behavioural change programs.

Accessibility consultation

Where relevant and on a case-by-case basis, individual projects may consider the need to consult with community members who have accessibility requirements.

Urban release housing areas

Adjust DCP controls to ensure that active transport provisions are included in all new development areas across the LGA. This includes provision for footpaths on at least one side of each road, and shared paths located on the key active transport desire lines. Pathways are to maintain a continuous grade across driveway transitions where possible.

Micromobility

The current and future uptake of micromobility (e-scooters, skateboards etc) can provide certain users with increased comfort on their active transport journeys. It is recommended that DRC plan for and embrace micromobility uptake in the future by aligning infrastructure provisions with state government guidelines such as through the Cycleway Design Toolbox and Walking Space Guide, as these recommend wider footpaths and cycleways.

Low speed environments

Investigate the introduction of slow speed environments ie 30 kilometres per hour as per Transport for NSW guidance. Streets that have high pedestrian activity should be targeted.

Continuous footpaths

Continuous footpaths, as described by NSW Movement and Place, provide pedestrian/ cyclist priority through surface finish and grade changes rather than traffic control and physical devices. Areas which receive high demand from pedestrians and cyclists should be investigated for the provision of continuous footpaths to facilitate improved connectivity.

Street trees

Maintain and encourage tree canopy on residential, recreational and CBD streets to enhance pedestrian amenity including shade from the sun and increased comfort.

Lighting

Conduct a lighting assessment along the strategic walking and shared path network to increase safety and passive surveillance, in line with Crime Prevention Through Environmental Design (CPTED).

Bike parking

Amend DCP bike parking requirements to require higher provisions for key land uses including schools and retail development, as well as public bike parking rings required at key activity locations such as shopping areas, parks and along cycling routes.

Car parking allocation

Parking reallocation may be used to change the movement dynamic in high activity areas, whereby moving parking spaces away, more space can be provided to the public. Space can be reallocated to either mobility or places to stop, rest, eat and enjoy.

Parking restrictions

Continue to monitor vehicles and ensure they are not parked in a manner which impeded pedestrians and cyclists, such as vehicles/ trucks/ trailers left on nature strips/ paths for long periods of time.

Active transport promotion

Utilise social media as an informative tool to address residents on news around active transport. This can include new paths, maintenance works, community consultation activities and active transport etiquette.

Shared path rules

Develop an educational program identifying the correct etiquette to using shared path, i.e., cyclists slowing down for pedestrians, pedestrians not walking with more than two abreast, sticking to the left-hand side etc. Shared path rules can be communicated via signage as well as other educational promotional means.

Wayfinding plan

A wayfinding program helps enhance user experience through easier navigation. By providing accurate route details, it allows users to focus on the journey rather than the navigation itself. It is recommended that DRC develop and provide integrated wayfinding signage for points of interest, public toilets, pedestrian rest areas and access to nature. Include digital and interactive public mapping located in strategic visitor locations that is legible for people with vision impairment. Consider engagement of a local artist to develop and incorporate imagery that embodies Dubbo.

Road safety courses

Collaborate with NSW Department of Education to deliver road safety courses at schools.

Deliver safety information to the public around pedestrian priorities at crossings and the safe usage of mobility scooters within the LGA.

Walking/ cycling events

Engage directly with the community by providing and promoting programs which utilise active transport. This can include a community running/cycling group available to users of all levels or the promotion of existing events such as national walk to school day, where children are encouraged to walk.

Social infrastructure

Social infrastructure is categorised as infrastructure which enhances social activities and interactions within a community. This can include benches, covered seating, open spaces to gather etc. Social infrastructure should be delivered in conjunction with the delivery of the active transport infrastructure to maximise the benefit of both.

Heritage walk/ ride

Heritage walk/ride programs help the community and visitors discover and learn cultural and historical significance associated with their surrounding environment. This initiative encouraging active transport whilst at the same time learning about their environment.

Bike hire/ share

Bike hire/ share services allow individuals to hire bikes for short term use. They offer accessibility and flexibility for shorter distance trips. People who do not own, use regularly, or find themselves needing a bicycle, are afforded the opportunity through such programs. These services and programs should be encouraged within DRC.

Bicycle lanterns

Signalised crossings in areas with high demand should incorporate bicycle lanterns to enhance crossing opportunities for cyclists. By providing dedicated phases for pedestrians and cyclists, safety at intersections is improved, as they are provided their own designated crossing time, which separates them from vehicular traffic.

Maintenance program

Council is responsible for the maintenance of active transport infrastructure works. The core active transport network should be regularly monitored for major cracking, damage, debris and vegetation control.



Prioritisation and cost estimates

Summary of previous prioritisation

Dubbo

The priorities determined through the 2016 PAMP project are based on assigning different weightings to a set of criteria, as outlined in report Section 1. This results in an assigned priority on a continuous scale from 0 to 1, which were categorised into high, medium and low priority improvement works. The criteria used provides an important baseline on which to build a new system for prioritising infrastructure as it contains many important factors that contribute to active transport safety, connectivity and accessibility.

A key outcome of the community consultation activity as part of the PAMP update was that intersections are hazardous for pedestrians and cyclists, particularly at large sized roundabouts. This is an important factor that should be incorporated into updated prioritisation.

The criteria used for prioritisation in the 2016 Dubbo PAMP as well as commentary on how it is or is not applicable to the PAMP update is shown in Table 7-1.

Table 7-1 2016 Dubbo PAMP prioritisation criteria and discussion

Priority criteria	Reason	Detail	Commentary
New works Weighted 25%	Consideration of whether the improvement would provide a completely new facility, such as installation of a new kerb ramp in a location where there was none beforehand, or if the improvement was an upgrade to an existing facility such as provision of TGSi at an existing kerb ramp. New improvement works received a higher score than works that are to replace or improve existing infrastructure for this criteria.	- New works will receive a score of one. - Upgrade works to reduce trip hazards will receive a score of 0.5. - Other upgrade works will receive a score of zero.	The provision of new works is still considered to be more important and beneficial to the community than upgrading existing works. Whilst widened pathways provide higher amenity for people walking and riding, new infrastructure connects communities to essential services and facilities via active transport. The upgrade of existing infrastructure however is important when directly addressing a safety concern or hazard.
Proximity to crash clusters Weighted 15%	Improvement works in proximity to pedestrian and bicycle crash clusters (locations where two or more crashes are within 50 metres of each other) will contribute to a safer road environment for active transport. Improvement works located close to crash clusters received a higher score than other improvement works for this criteria.	- Works within 100 metres of a pedestrian or bicycle crash cluster will receive a score of one. - Works not within 100 metres of a pedestrian or bicycle crash cluster will receive a score of zero.	Addressing concerns at historic crash clusters and areas concerning for safety such as large roundabout should be a number one priority to increase safety and prevent any future incidents.

Priority criteria	Reason	Detail	Commentary
CBD locations Weighted 20%	The Dubbo CBD is a busy pedestrian environment with lots of destinations that can be reached on foot or bike. Addressing issues located in the CBD will achieve value for money because of the higher volumes of people who will benefit from the improvement. It could also support people's choice to walk between destinations within the CBD instead of driving. Improvement works located within the CBD received a higher score than those outside it for this criteria.	- Works within the Dubbo CBD (area bounded by Talbragar Street / Macquarie Street / Mitchell Highway / Darling Street) will receive a score of one. - Works outside of the Dubbo CBD will receive a score of zero.	The Dubbo CBD already provides a high level of walking and riding amenity, and should not receive preference over other areas in the LGA. Specific missing connections within the CBD are to be addressed but not with more importance than connections to other active transport desire lines such as connecting to schools, medical facilities, shopping centres etc.
Proximity to local centres Weighted 5%	The local retail centres throughout Dubbo present good opportunities to encourage people to switch from driving to walking or cycling. Improvement works that are located within walking distance of the local centres will support this behaviour change through improved footpath and cycling facilities and safer crossings. Improvement works located in the catchments for local centres received a higher score than those outside the catchments.	- Works located within 400 metres walking distance of local centres will receive a score of one. - Works located between 400 metres and 800 metres distance of local centres will receive a score of 0.5. - Works located beyond 800 metres distance of local centres will receive a score of zero.	Connections to local centres is important to support mode shift and safety. Active transport routes connecting across major desire lines to local centres should be highly prioritised.
Proximity to schools, TAFE or university Weighted 15%	The choice to travel to school or tertiary education should be supported by good quality walking and cycling infrastructure. Improvements made to the pedestrian and bicycle networks surrounding education institutions will support this behaviour change. Improvement works located in the catchments for education institutions received a higher score than those outside the catchments.	- Works located within 400 metres walking distance of health institutions, retirement and nursing homes will receive a score of one. - Works located between 400 metres and 800 metres distance of health institutions, retirement and nursing homes will receive a score of 0.5. - Works located beyond 800 metres distance of educational institutions will receive a score of zero.	Prioritising active transport infrastructure connecting to education facilities based on distance is important for the community and should be incorporated
Proximity to health facilities, retirement and nursing homes Weighted 20%	Senior citizens who are no longer able to drive may be reliant on walking as their primary mode of transport for short trips. They may also have a mobility impairment which affects their accessibility. Improving the pedestrian network in the vicinity of retirement and nursing homes will improve their accessibility to public transport and local shops.	- Works located within 400 metres walking distance of health institutions, retirement and nursing homes will receive a score of one. - Works located between 400 metres and 800 metres distance of health institutions, retirement and nursing homes will receive a score of 0.5. - Works located beyond 800 metres distance of health institutions, retirement and nursing homes will receive a score of zero.	Prioritising active transport infrastructure connecting to medical facilities based on distance is important for the community and should be incorporated.

Wellington

The Wellington PAMP Study 2014 presents a high level prioritisation method based on the access audit. From the audit, a five to ten year priority works program could be developed by Council that builds on the urgency of attention required for non-compliance with Australian Standards, potential cost and possible future design. Priority 1 items were identified as those that:

- Require urgent attention because they pose a pedestrian hazard
- Do not comply with Australian Standards
- Are located on the Mitchell Highway
- Can be included in a community campaign in the short term eg the removal of gravel and 'cats eyes'
- Require attention by other authorities
- Require the development of a Plan
- Items that might be referred to the Traffic Committee.

Updated prioritisation

- The previous prioritisation methods are still relevant, however the new prioritisation method reflects the need to provide new infrastructure where it is needed most, benefitting the most people and promoting the objectives outlined in best practice guidance such as the Walking Space Guide and the Cycleway Design Toolkit. These key objectives cover infrastructure being Safe, Connected, Direct, Attractive and Comfortable.
- The selected method of prioritisation is shown in Table 7-2. Each priority level directly relates to a key active transport objective. Prioritisation of infrastructure at the same location may differ depending on the objective that is being addressed ie safety vs comfortability.
- The prioritisation does not dictate timeframes for implementation, but rather indicate what projects to prioritise as funding for active transport becomes available. The Get NSW Active funding program is organised by Transport for NSW and provides local councils with funding for projects that create safe, easy and enjoyable walking and bike riding trips.

Table 7-2 Infrastructure recommendation prioritisation

Priority #	Active transport objectives addressed	Priority description
Priority 1	Safe	Provide or upgrade pedestrian crossing at historic crash location or area of concern such as major roundabouts
Priority 2	Connected ,Direct,Safe,Comfortable	Provide new infrastructure to improve access to an education facility or medical centre from within a 5 minute active transport catchment
Priority 3	Connected, Direct, Attractive,Safe	Provide new infrastructure to improve connectivity to a local centre from within a 5 minute active transport catchment
Priority 4	Connected, Direct	Provide new infrastructure to improve connectivity across major active transport desire lines (see Figure 5-3 and Figure 5-9)
Priority 5	Attractive	Provide new infrastructure to improve connectivity to recreational area
Priority 6	Connected, Safe	Provide new infrastructure within the strategic walking and cycling network
Priority 7	Comfortable, Safe	Upgrade existing infrastructure to improve immediate access to an education facility or medical centre
Priority 8	Comfortable, Safe	Upgrade existing infrastructure within the strategic walking and cycling network to improve compliance to standards and guidelines
Priority 9	Connected	Provide infrastructure connecting to future development sites

Priority summary

A summary of the length and number of infrastructure recommendations are summarised for each priority criteria in Table 7-3 and Table 7-4.

Table 7-3 Dubbo recommendations summary

Recommendation	P1	P2	P3	P4	P5	P6	P7	P8	P9	Total
Pathways and cycleways (metres)										
Designate as quietway/ mixed traffic route		408		2,866	347	2,485				6,106
Provide footpath - 2m		5,389		1,633	1,114	6,613			890	15,711
Provide footpath - 3m		263								263
Provide on-road bicycle lane in each direction			3,979	2,239	2,920	2,688				11,826
Provide shared path - 3m		3,484	1,820	2,165	13,370	7,473			7,281	35,593
Provide transition ramp between on-road bicycle lane and off-road path			31	6						37
Upgrade existing footpath to shared path - 3m							2,438	5,198	267	7,903
Upgrade existing shared path to 3m wide							1,349	197		1,546
Provide potential future shared path - 3m									14,010	14,010
Designate footpath as shared path							211	2,202		2,414
Crossings and signage (#)										
Investigate opportunity for signalised pedestrian crossing	1	1			1			2		5
Provide audio-tactile pedestrian facilities at signalised crossing							6			6
Provide pedestrian crossing warning signage	25									25
Provide pedestrian refuge crossing		6	6	3	7	2			1	25
Upgrade existing pedestrian refuge crossing							69	40		109
Investigate opportunity for pedestrian refuge crossing	1		2	1	2					6
Provide wombat crossing					2					2
Repaint zebra/ wombat crossing linemarking							9			9
Provide kerb ramps to facilitate crossing					1					1
Repaint line markings on signalised pedestrian crossing							12	1		13
Kerb ramps (#)										
Construct kerb ramp		114				135	6			255
Reconstruct kerb ramp						3	263	61		327
Provide TGSI							53	8		61

Table 7-4 Wellington recommendations summary

Recommendation	P1	P2	P3	P4	P5	P6	P7	P8	P9	Total
Footpaths and shared paths (metres)										
Provide footpath - 2m		763	395			483				1,640
Provide shared path - 3m		1,400	275	633	8,778	202				11,288
Upgrade existing footpath to shared path - 3m		205			210	340	823	2,464		4,041
Crossings and signage (#)										
Provide pedestrian crossing warning signage	5									5
Provide pedestrian refuge crossing		4		2		1				7

Cost estimates

Unit rates

Unit rates for infrastructure recommendations are outlined in Table 7.5. Unit cost rates are high level only and are subject to change.

Table 7-5 Infrastructure unit cost rates

Recommendation type	Unit	\$
Pathways		
Designate as quietway/ mixed traffic route	each	\$830
Provide footpath - 2m	m	\$420
Provide footpath - 3m	m	\$630
Provide on-road bicycle lane in each direction	m (two sides)	\$4
Provide shared path - 3m	m	\$650
Upgrade existing footpath to shared path - 3m	m	\$700
Upgrade existing shared path to 3m wide	m	\$700
Provide potential future shared path - 3m	m	\$650
Designate footpath as shared path	each	\$500
Crossings		
Investigate opportunity for signalised pedestrian crossing	each	\$15,000
Provide audio-tactile pedestrian facilities at signalised crossing	each	\$1,000
Provide pedestrian crossing warning signage	each	\$500
Provide pedestrian refuge crossing	each	\$12,000
Upgrade existing pedestrian refuge crossing	each	\$15,000
Investigate opportunity for pedestrian refuge crossing	each	\$15,000
Provide wombat crossing	each	\$15,000
Repaint zebra/ wombat crossing linemarking	each	\$10,000
Repaint line markings on signalised pedestrian crossing	each	\$400
Kerb ramps		
Construct kerb ramp	each	\$2,000
Reconstruct kerb ramp	each	\$2,000
Provide TGSI markings on ground	each	\$1,000

Cost summary

A summary of the high level cost estimate for each priority is shown in Table 7-6 and Table 7-7. The cost estimation is **\$49,188,698** for Dubbo and **\$10,941,738** for Wellington. The total cost estimate is **\$60,130,436**.

Table 7-6 Cost estimate summary - Dubbo

Recommendation	P1	P2	P3	P4	P5	P6	P7	P8	P9	Total
Footpaths and shared paths (metres)										
Designate as quietway/ mixed traffic route		\$1,660		\$1,660	\$1,660	\$7,470				\$12,450
Provide footpath - 2m		\$2,263,452		\$686,001	\$468,085	\$2,807,336			\$373,935	\$6,598,809
Provide footpath - 3m		\$165,848								\$165,848
Provide on-road bicycle lane in each direction			\$15,915	\$8,958	\$11,680	\$10,752				\$47,305
Provide shared path - 3m		\$2,264,386	\$1,182,978	\$1,407,261	\$8,690,382	\$4,465,046			\$4,732,497	\$23,135,150
Provide transition ramp between on-road bicycle lane and off-road path			\$20,931	\$6,712						\$27,643
Upgrade existing footpath to shared path - 3m							\$1,706,553	\$3,638,660	\$187,005	\$5,532,218
Upgrade existing shared path to 3m wide							\$944,152	\$138,035		\$1,082,187
Provide potential future shared path - 3m									\$9,106,388	\$9,106,388
Designate footpath as shared path							\$500	\$7,500		\$8,000
Crossings and signage (#)										
Investigate opportunity for signalised pedestrian crossing	\$15,000	\$15,000			\$15,000			\$30,000		\$75,000
Provide audio-tactile pedestrian facilities at signalised crossing							\$6,000			\$6,000
Provide pedestrian crossing warning signage	\$12,500									\$12,500
Provide pedestrian refuge crossing		\$72,000	\$72,000	\$36,000	\$84,000	\$24,000			\$12,000	\$300,000
Upgrade existing pedestrian refuge crossing							\$1,035,000	\$600,000		\$1,635,000
Investigate opportunity for pedestrian refuge crossing	\$15,000		\$30,000	\$15,000	\$30,000					\$90,000

Recommendation	P1	P2	P3	P4	P5	P6	P7	P8	P9	Total
Provide wombat crossing					\$30,000					\$30,000
Repaint zebra/ wombat crossing linemarking							\$90,000			\$90,000
Provide kerb ramps to facilitate crossing					\$4,000					\$4,000
Repaint line markings on signalised pedestrian crossing							\$4,800	\$400		\$5,200
Kerb ramps (#)										
Construct kerb ramp		\$228,000				\$270,000	\$12,000			\$510,000
Reconstruct kerb ramp						\$6,000	\$526,000	\$122,000		\$654,000
Provide TGSi							\$53,000	\$8,000		\$61,000
									Total	\$49,188,698

Table 7-7 Cost estimate summary – Wellington

Recommendation	P1	P2	P3	P4	P5	P6	P7	P8	P9	Total
Footpaths and shared paths (metres)										
Provide footpath – 2m		\$320,331	\$165,931			\$202,715				\$688,977
Provide shared path – 3m		\$910,180	\$178,665	\$411,669	\$5,705,438	\$131,307				\$7,337,259
Upgrade existing footpath to shared path – 3m		\$143,247			\$147,260	\$237,859	\$575,779	\$1,724,858		\$2,829,002
Crossings and signage (#)										
Provide pedestrian crossing warning signage	\$2,500									\$2,500
Provide pedestrian refuge crossing		\$48,000		\$24,000		\$12,000				\$84,000
									Total	\$10,941,738

Appendices



Appendix A

Cycleway Design Toolbox Principles

The following design considerations have been taken from the Cycleway Design Toolbox and should be considered for shared paths in NSW. Further information can be found in the Cycleway Design Toolbox between pg.38 and 40.

Shared Path Design Considerations

Consideration	Recommendations
Widths	- The desired minimum width of a shared path is 4.0m, allowing for safe overtaking and pedestrian interactions. - Minimum widths of 3.0m are recommended in the Get NSW Active program FY2024/25 Funding Guidelines
Separation	- The absence of a clear delineation between space for people walking or cycling is a key feature of a shared path. - A buffer between the shared path and traffic/ parked cars should be incorporated. The amount require is dependent on the surrounding road environment (speeds, volumes, freight etc). - The buffer can take the form of a median, kerb, verge or planting, with a minimum buffer width of 1.0m. - Where a path crosses a property access driveway, the path should have a continuous grade across the driveway and preferably, the same crossfall as the path

The following design considerations have been provided within the Cycleway Design Toolbox and should be considered for one-way and two-way bicycle path design in NSW: Further information can be found in the cycleway design toolbox between pg.19 and 30.

Bicycle Path Considerations

Consideration	Recommendations
Widths	- One-way bicycle path should maintain a preferred width of 3.0m - A suitable width may be 2.0m in locations for up to 150 riders per hour (Austroads minimum 1.5m) - Where higher bicycle traffic volumes are expected and steeper gradients occur, a wider design should be considered. - In highly constrained areas where insufficient usable space is available, a narrower bicycle path can be considered. As a minimum, the bicycle path should be 1.5m wide to align with Austroads, but 2.0m at isolated locations is preferred in constrained conditions.
Separation	- An ideal buffer of 1.0m should be provided between cyclists and parked cars - In the absence of kerbside car parking, or in instances when traffic is travelling in the same direction, a narrower buffer of at least 0.4m could be considered. - A slanted edge (less than 45-degree angle) is preferred, for these types of kerb treatments to protect cyclists - Vertical edges (90-degree standard kerbs) pose a safety risk to people cycling
Continuous bicycle path, bent-out intersection treatments	- Provide a raised intersection and clear road marking to indicate to all road users that the pedestrians and bicycle riders have priority over turning vehicles - Smooth bend out to avoid uncomfortable manoeuvring for people cycling - No high objects(>1.0m) between the bicycle path and the road, to allow for reciprocal visibility - Kerb build outs to narrow intersection to reduce vehicle turning speeds and increase reciprocal visibility
Continuous bicycle path, raised intersections	- Raised intersection and clear road marking to indicate to all road users that pedestrians and bicycle riders have priority over turning vehicles - No high objects(>1.0m) between the bicycle path and the road, to allow for reciprocal visibility - Surface treatments providing texture and visual cues - Kerb build outs to narrow intersection (to reduce vehicles turning speeds and increase reciprocal visibility) and enable waiting motor vehicles to store outside carriageway
Roundabout	- Prioritised and continuous bicycle paths around the roundabout and pedestrian crossings on all legs - Provide raised crossing platforms and clear road markings - Narrow all branches of the roundabout and apply deflection angles for motorised traffic to reduce speeds - Provide a raised island in the centre for use by wide-turning vehicles (i.e. trucks and buses)
Signalised Intersection	- Provide crossing facilities for people walking and cycling on all legs - Provide signal lead phase and dedicated green time for bicycle movements to remove signal conflicts - Install automatic loop detectors for bicycles, to reduce wait times - Ensure there are buffer areas for right turning riders (hook turn waiting area)

The following design considerations have been taken from the Cycleway Design Toolbox and should be considered for quietway design in NSW. Further information can be found within the Cycleway Design Toolbox between pg.31 and 37.

Quietway Design Recommendations

Consideration	Recommendations
Key design elements	• Differing pavement texture and colour designed to increase awareness and adjust behaviour of all road users, with consideration given to green pavement to indicate priority to people cycling • Inclusion of a median strip, where appropriate, making it difficult for motor vehicles to overtake • Narrow traffic lanes designed to reduce speed and discourage overtaking • Modal filters to reduce volume of traffic while • Bicycle insignias painted on the roadway to indicate priority for people cycling, ideally accompanied by sharrows markings (shared lane marking) • Traffic calming features, such as flat top speed humps, raised road platforms with gentle ramp gradients, and kerb blisters / kerb extensions to narrow the roadway • Priority over side streets and driveways, using raised threshold and continuous footpath treatments at entry and exit points to the quietway
Experience	• Minimise or eliminate through-traffic by applying filtered permeability, closing streets to motor vehicles, or incorporating pinch points at the entry and exit • Reduce speed limits to <30km/h • Reduce road width to <3.0m per lane, but preferably less • Apply traffic calming measures such as raised/tactile centre medians • Impede sight lines through carefully located landscape features or street furniture • Parking and loading zones should be provided outside the main carriageway to prevent dooring
Entrance and exit points	• Prominent features such as signs, architectural or landscape features must be provided to indicate a change in the street environment • Continuous footpath treatments should be considered at entry and exit points to assist in traffic calming • Changed surface treatments (colour, texture, materials etc) can be used to provide visual cues to road users that they are entering a quietway • Bicycle insignias painted on the roadway should be incorporated in the design to indicate priority for people cycling, ideally accompanied by sharrows markings
Raised intersection	• Reduces traffic speeds, and raise awareness of potential conflict points • Flat top speed humps (i.e. raised road platforms) with gentle ramp gradients • Narrow roadway designed to reduce speed of motorised traffic • Design features that provide visual cues to road users including changed surface pavement, clearly distinguishable by colour, texture and/or materials
Modal filter	• Reduces motorised traffic volumes and maintains connectivity for people walking and cycling, reducing travel time • Requires a full road closure for motorised traffic with a turning loop • Landscaping elements can be used to help slow traffic speeds
Mid-block treatments	• Provide flat top speed humps with gentle ramp gradients that incorporate either a pedestrian crossing or kerb build-out • Use a narrow roadway designed to reduce speed of motorised traffic

The following design considerations have been taken from the Cycleway Design Toolbox and should be considered for shared zone design in NSW. Further information can be found within the Cycleway Design Toolbox between pg.41.

Shared Zone Design Recommendations

Consideration	Recommendations
Design elements and experience	- Removal of kerbs to facilitate ease of movement and indicate priority for pedestrians - Reduction of speed limits to <10km/h - Traffic calming measures to provide visual and physical cues of appropriate travelling speed - Impeding sight lines for drivers through strategically positioned landscape features or street furniture - Incorporating changed surface treatments at entry and exit points and consistent surface treatments across the entire roadway within the shared zone
Entrance and exit points	- Prominent features such as road signs, architectural or landscape features must be provided to indicate a change in the street environment. - Continuous footpath treatments should be considered at entry and exit points to assist in traffic calming - Changed surface treatments can be used to provide visual cues to road users that they are entering a shared zone. - Consideration must be given at intersections where the shared zone may connect to a different type of cycle facility. If necessary, some on-street parking could be removed on the approach to intersections to enable a formal kerbside bike lane to be established.
Parking	Where parking is provided in a shared zone, it is only allowed in marked bays.

Bicycle Path (one-way)

High-priority cycling routes are best served by bicycle paths, especially where on-road speeds exceed 30 km/h. These paths are off-road, physically separated from motor vehicles and pedestrians, and are provided exclusively for bicycles and other micromobility devices. They minimise conflicts, enhance safety, and improve the cycling experience. One-way bicycle paths, aligned with adjacent traffic, are preferred due to reduced delay, better road safety, and improved operations at intersections. To accommodate growth and ensure safety, paths should be wide and straight.



Typical Bicycle Path (One-Way) Cross Section

Bicycle Path (two-way)

Two-way bicycle paths are similar to one-way bicycle paths but have the cycleway condensed into one multi-directional cycleway. Two-way bicycle paths are typically preferred as they contain cyclists travelling in both directions together. This improves directiveness and connectivity, whilst also protecting the rider. A typical cross section of a two-way bicycle path is shown in the right.



Typical Bicycle Path (Two-Way) Cross Section

The following design considerations have been provided within the Cycleway Design Toolbox and should be considered for one-way and two-way bicycle path design in Dubbo:

Consideration	Recommendations
Width	- One-way bicycle path should maintain a preferred width of 3.0m - A suitable width may be 2.0m in locations for up to 150 riders per hour (Austroads minimum 1.5m) - Where higher bicycle traffic volumes are expected and steeper gradients occur, a wider design should be considered.
Separation	- An ideal buffer of 1.0m should be provided between cyclists and parked cars - In the absence of kerbside car parking, or in instances when traffic is travelling in the same direction, a narrower buffer of at least 0.4m could be considered. - A slanted edge (less than 45-degree angle) is preferred, for these types of kerb treatments to protect cyclists - Vertical edges (90-degree standard kerbs) pose a safety risk to people cycling
Continuous bicycle path, bent-out intersection treatments	- Provide a raised intersection and clear road marking to indicate to all road users that the pedestrians and bicycle riders have priority over turning vehicles - Smooth bend out to avoid uncomfortable manoeuvring for people cycling - No high objects(>1.0m) between the bicycle path and the road, to allow for reciprocal visibility - Kerb build outs to narrow intersection to reduce vehicle turning speeds and increase reciprocal visibility
Continuous bicycle path, raised intersections	- Raised intersection and clear road marking to indicate to all road users that pedestrians and bicycle riders have priority over turning vehicles - No high objects(>1.0m) between the bicycle path and the road, to allow for reciprocal visibility - Surface treatments providing texture and visual cues - Kerb build outs to narrow intersection (to reduce vehicles turning speeds and increase reciprocal visibility) and enable waiting motor vehicles to store outside carriageway
Roundabout	- Raised intersection and clear road marking to indicate to all road users that pedestrians and bicycle riders have priority over turning vehicles - No high objects(>1.0m) between the bicycle path and the road, to allow for reciprocal visibility - Surface treatments providing texture and visual cues - Kerb build outs to narrow intersection (to reduce vehicles turning speeds and increase reciprocal visibility) and enable waiting motor vehicles to store outside carriageway
Signalised Intersection	- Provide crossing facilities for people walking and cycling on all legs - Provide signal lead phase and dedicated green time for bicycle movements to remove signal conflicts - Install automatic loop detectors for bicycles, to reduce wait times - Ensure there are buffer areas for right turning riders (hook turn waiting area)

Quietway

A quietway is a high-quality mixed traffic treatment where cyclists share the road with vehicles, positioned in the centre of the traffic lane. The design emphasises equal road use for cyclists and vehicles, treating motor vehicles as guests. Drivers are encouraged to reduce speeds to 30 km/h or lower, which discourages overtaking through effective cues such as median strips, narrow lanes, modal filters and differing pavement textures and colours.

Quietways are not suitable for roads with trucks or buses. They work best on quiet local streets and laneways with low traffic volumes.



Typical Quietway Cross Section

The following design considerations have been taken from the cycleway design toolbox and should be considered quietway design. Further information can be found in the cycleway design toolbox pg.31 – 37.

Quietway Design Recommendations

Consideration	Recommendations
Key design elements	- Differing pavement texture and colour designed to increase awareness and adjust behaviour of all road users, with consideration given to green pavement to indicate priority to people cycling - Inclusion of a median strip, where appropriate, making it difficult for motor vehicles to overtake - Narrow traffic lanes designed to reduce speed and discourage overtaking - Modal filters to reduce volume of traffic while - Bicycle insignias painted on the roadway to indicate priority for people cycling, ideally accompanied by sharrow markings - Traffic calming features, such as flat top speed humps, raised road platforms with gentle ramp gradients, and kerb blisters / kerb extensions to narrow the roadway - Priority over side streets and driveways, using raised threshold and continuous footpath treatments at entry and exit points to the quietway
Experience	- Minimise or eliminate through-traffic by applying filtered permeability, closing streets to motor vehicles, or incorporating pinch points at the entry and exit - Reduce speed limits to <30km/h - Reduce road width to <3.0m per lane, but preferably less - Apply traffic calming measures such as raised/tactile centre medians - Impede sight lines through carefully located landscape features or street furniture - Parking and loading zones should be provided outside the main carriageway to prevent dooring
Entrance and exit points	- Prominent features such as signs, architectural or landscape features must be provided to indicate a change in the street environment - Continuous footpath treatments should be considered at entry and exit points to assist in traffic calming - Changed surface treatments (colour, texture, materials etc) can be used to provide visual cues to road users that they are entering a quietway - Bicycle insignias painted on the roadway should be incorporated in the design to indicate priority for people cycling, ideally accompanied by sharrow markings
Raised intersection	- Reduces traffic speeds, and raise awareness of potential conflict points - Flat top speed humps (ie. raised road platforms) with gentle ramp gradients - Narrow roadway designed to reduce speed of motorised traffic - Design features that provide visual cues to road users including changed surface pavement, clearly distinguishable by colour, texture and/or materials
Modal filter	- Reduces motorised traffic volumes and maintains connectivity for people walking and cycling, reducing travel time - Requires a full road closure for motorised traffic with a turning loop - Landscaping elements can be used to help slow traffic speeds
Mid-block treatments	- Provide flat top speed humps with gentle ramp gradients that incorporate either a pedestrian crossing or kerb build-out - Use a narrow roadway designed to reduce speed of motorised traffic

Shared Path

A shared path accommodates both two-way bicycle and pedestrian traffic along footpaths or off-road environments. These paths are suitable where demand exists for both pedestrian and bicycle facilities, but predicted walking and cycling volumes are low, making separate facilities unnecessary.

Shared paths offer lower service levels to both walkers and cyclists due to potential conflicts. They are appropriate for local links, connections between separated cycleways, new estates, and parklands. Shared paths are not suitable near schools, rail interchanges, busy pedestrian crossings, or areas with high pedestrian or bicycle activity and should be avoided in sections with high cycling speeds, and routes intersecting driveways or side streets.



Typical Shared Path Cross Section

The following design considerations have been taken from the cycleway design toolbox and should be considered for shared paths. Further information can be found in the cycleway design toolbox pg.38 – 40.

Consideration	Recommendations
Widths	- The desired minimum width of a shared path is 4.0m, allowing for safe overtaking and pedestrian interactions. - Minimum widths of 3.0m are recommended in the Get NSW Active program FY2024/25 Funding Guidelines
Separation	- The absence of a clear delineation between space for people walking or cycling is a key feature of a shared path. - A buffer between the shared path and traffic/ parked cars should be incorporated. The amount require is dependant on the surrounding road environment (speeds, volumes, freight etc). - The buffer can take the form of a median, kerb, verge or planting, with a minimum buffer width of 1.0m. - Where a path crosses a property access driveway, the path should have a continuous grade across the driveway and preferably, the same crossfall as the path

Shared Zones

A shared zone is a segment or network of roads where pedestrians, bicycles, and motorised traffic coexist safely. Pedestrians are given priority, and safety is maintained through close interaction among all road users.

Shared zones are suitable for areas with high place intensity, like civic spaces. However, shared zones should not be part of high-quality, high-priority routes designed primarily for riders. They can be considered in road segments and intersections with high pedestrian activity and low traffic volume and speed, such as school zones, commercial districts, and transport interchanges.

Shared zones are not suitable for busy roads with significant traffic volumes, commercial vehicles, or bus routes. To ensure safety, awareness and behaviour programs should accompany shared zone treatments.



Typical Shared Zone Cross Section

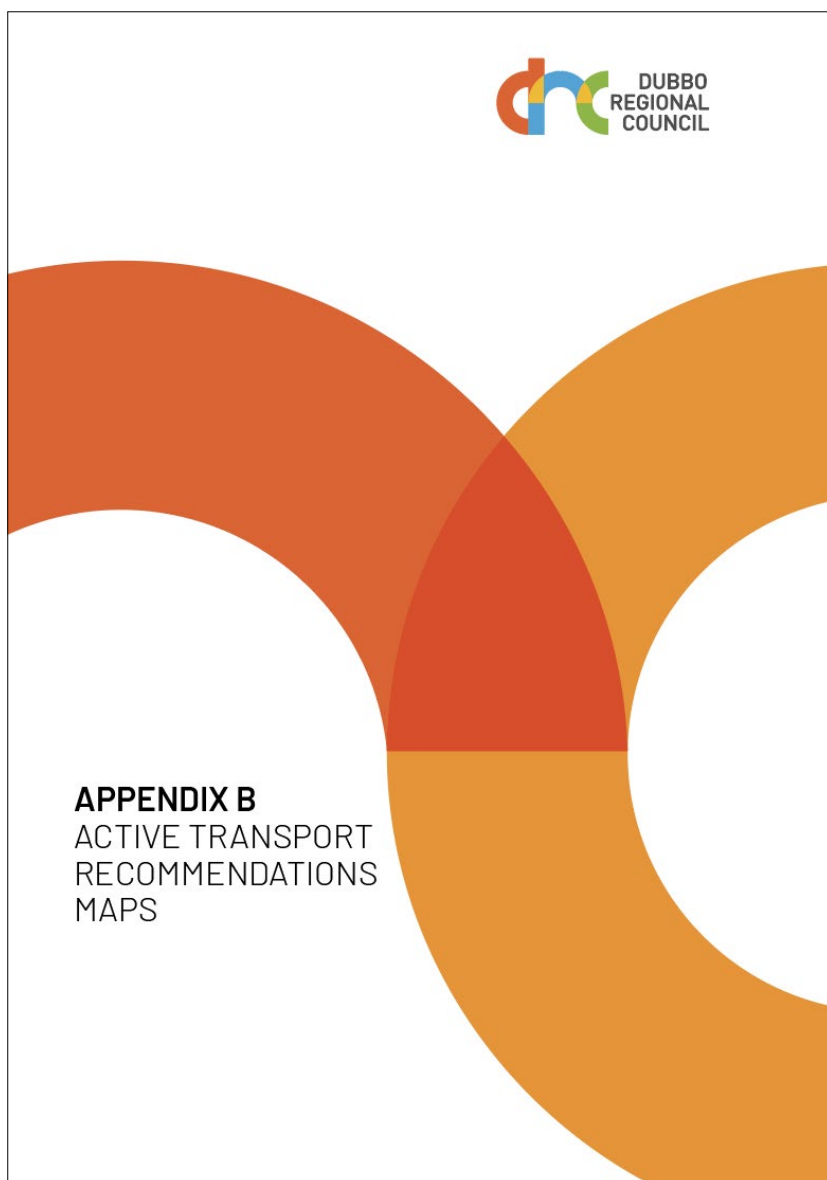
The following design considerations have been taken from the cycleway design toolbox and should be considered for shared zone. Further information can be found in the Cycleway Design Toolbox pg.41.

Consideration	Recommendations
Experience	- Remove kerbs to facilitate ease of movement and indicate priority for pedestrians - Reduce speed limits to <10km/h - Provide traffic calming measures to provide visual and physical cues of appropriate travelling speeds and change in environment - Impede sight lines for drivers through strategically positioned landscape features or street furniture - Incorporate changed surface treatments at entry and exit points and consistent surface treatments across the entire roadway within the shared zone
Entrance and exit points	- Prominent features such as road signs, architectural or landscape features must be provided to indicate a change in the street environment - Continuous footpath treatments should be considered at entry and exit points to assist in traffic calming - Consideration must be given at intersections where the shared zone may connect to a different type of cycle facility

Appendix B

Refer to document

Active transport recommendations maps



Appendix C

Refer to document

Recommendations catalogue



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