

Wagga Wagga Active Travel Plan Evaluation

Executive summary produced with
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Executive Summary

This executive summary provides an overview of findings from the research project *Wagga Wagga Active Travel Plan Evaluation*. The research was delivered in partnership with the University of Sydney, Prevention Research Collaboration within the Sydney School of Public Health, iMOVE CRC (project 3-019), Transport for NSW, the Wagga Wagga City Council, the Health Promotion Unit of the Murrumbidgee Local Health District and supported by the Cooperative Research Centres program, an Australian Government initiative. This executive summary was produced with permission of the original authors of the project final report.

Introduction

In 2019, the Wagga Wagga City Council secured funding from the NSW Cycling Infrastructure Fund for the Wagga Wagga Active Travel Plan (WWATP). The WWATP proposed to build an interconnected network of shared cycling and walking pathways across Wagga Wagga. The plan included building 57 kms of new (65%) or resurfaced (35%) shared pathways in two stages (Figure 1), to service the community's personal mobility needs, with more than 80% of these pathways being separated from the road.

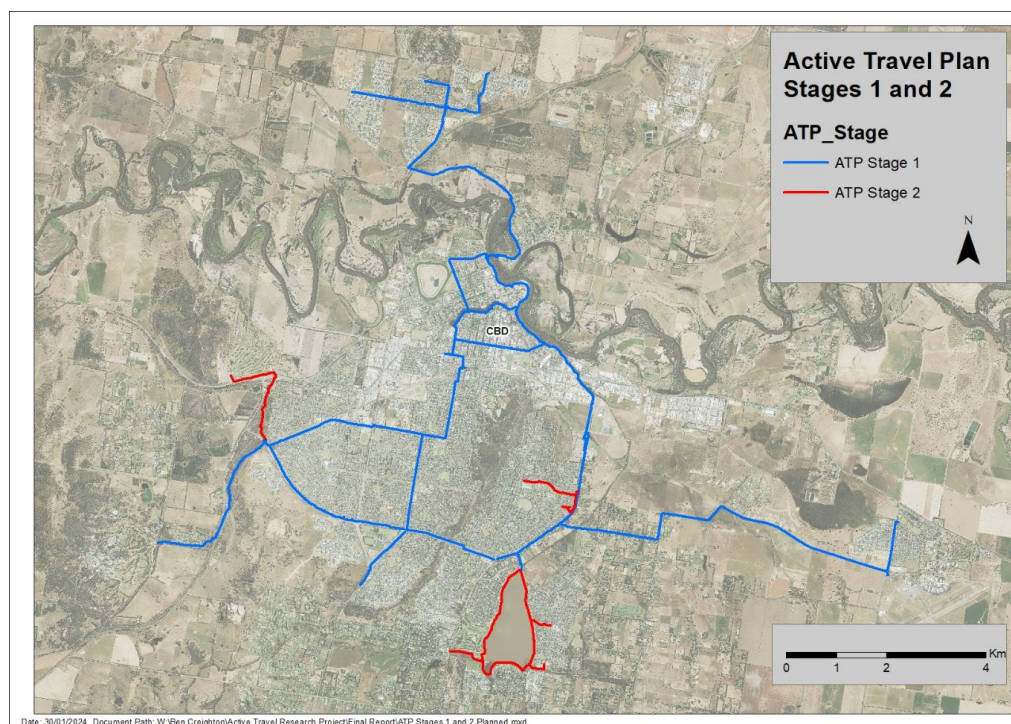


Figure 1. Wagga Wagga Active Travel Plan (WWATP) network map - Stage1 and Stage 2

This infrastructure development represents the largest active travel network ever constructed in a regional NSW city to be completed within a short timeframe, and a large investment by the NSW Government using the best technological solutions for pathway construction and interchange management.

Construction of the network

The construction of the WWATP network commenced in September 2019 and was still ongoing as at the end of February 2024 (Figure 2). The new infrastructure comprised high quality concrete or hot-mix asphalt surfaces for walking and cycling, separated from road traffic, that meet all of Council's

Engineering Guidelines for shared pathways. The upgrades of existing pathways mainly comprised widening and resurfacing. As at December 2023, 52.5 kms of the planned 57 kms of pathways have been completed and are in use. For more information on construction and expected completion of the network see the Full Report, Section 3.

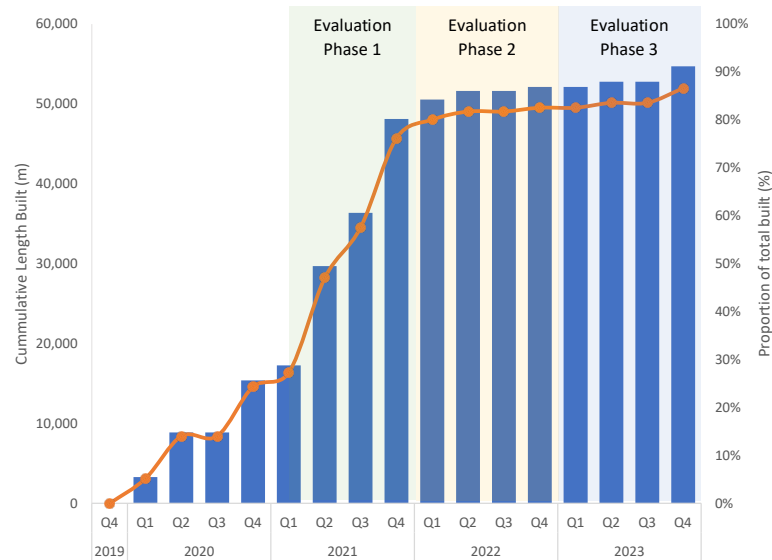


Figure 2. Network infrastructure build progress from 2019 to 2023

The WWATP network is comprised of 13 interconnected links from North Wagga Wagga to Lake Albert in South Wagga Wagga. Figure 3 below shows a detailed overview of the WWATP network, including the names of individual network links.

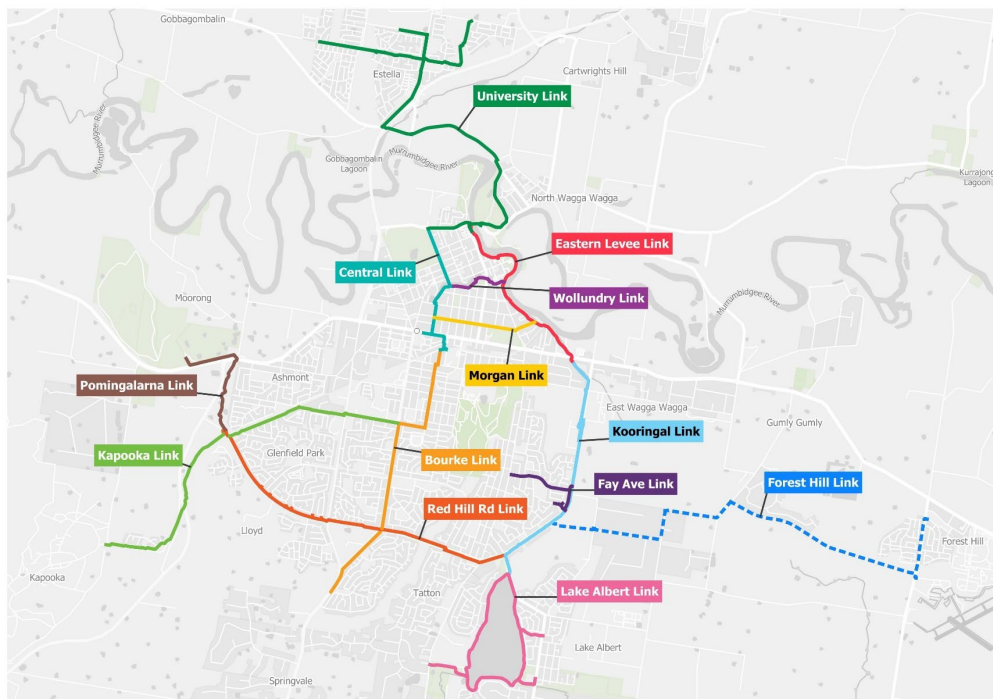


Figure 3. Wagga Wagga Active Travel Plan (WWATP) network map

Project overview

This research project aimed to evaluate the response of the Wagga Wagga community to the WWATP network and to measure the uptake of personal mobility opportunities provided by the new infrastructure. It also aimed to understand barriers to use of the network and to capture community perspectives on wider individual and community benefits.

As the project progressed the research questions were refined to the following:

1. Was the infrastructure completed as planned?
2. To what extent is the network being used? How has use of the network changed over time?
3. Who uses the network? How, when and for what purpose?
4. In what ways have use and users changed over time?
5. Is there a relationship between network use and physical activity behaviours?
6. How has the Wagga Wagga community benefited from the Active Travel Plan network to date?
7. What are the barriers to network use and how might barriers be overcome in the future?
8. What are the potential benefits of the network for the Wagga Wagga community and how can these be realised?

Research methods

The evaluation project used a mixed-methods time series design. Data was collected from multiple sources and at multiple time points over a two-year period. The intention of the design was to:

- Gather evidence on knowledge of the network, community attitudes, and behaviours in relation to network use, active travel, and active recreation.
- Measure change over time.
- Canvas a broad range of community perspectives about the impact of the network on the Wagga Wagga community.

Data collection methods are summarised in Table 1. Detailed information about each data collection method can be found in the Full Report, Section 2.

Table 1: Overview of data collection activities

Data Collection Activity	Phase 1 Jan-Dec 2021	Phase 2 Jan-Dec 2022	Phase 3 Jan-Dec 2023
Community survey	✓	✓	✓
Automated observations via counters - Eco-counters and TRAKER counters	✓	✓	✓
Visual observations	✓	✓	✓
Intercept user survey		✓	✓
Workplace survey		✓	
Workplace manager interviews		✓	✓
Workplace focus groups		✓	✓
Principal/senior teacher interviews		✓	
Principal/senior teacher follow-up questionnaire			✓
Observations of end of trip facilities - schools		✓	✓
Observations of end of trip facilities – workplaces		✓	✓
Key informant interviews			✓

Research findings

Network use

Data shows that the completed or partially completed links of the network are being used to varied extents. Over the three waves of the community survey (Figure 4), over 50% of respondents used network links, with more respondents using links in Wave 2 (81%¹) compared to Wave 1 (51%²) and Wave 3 (69%³). Wave 3 respondents were 3.5 times⁴ more likely to report that they were already using the network links compared to Wave 1 respondents.

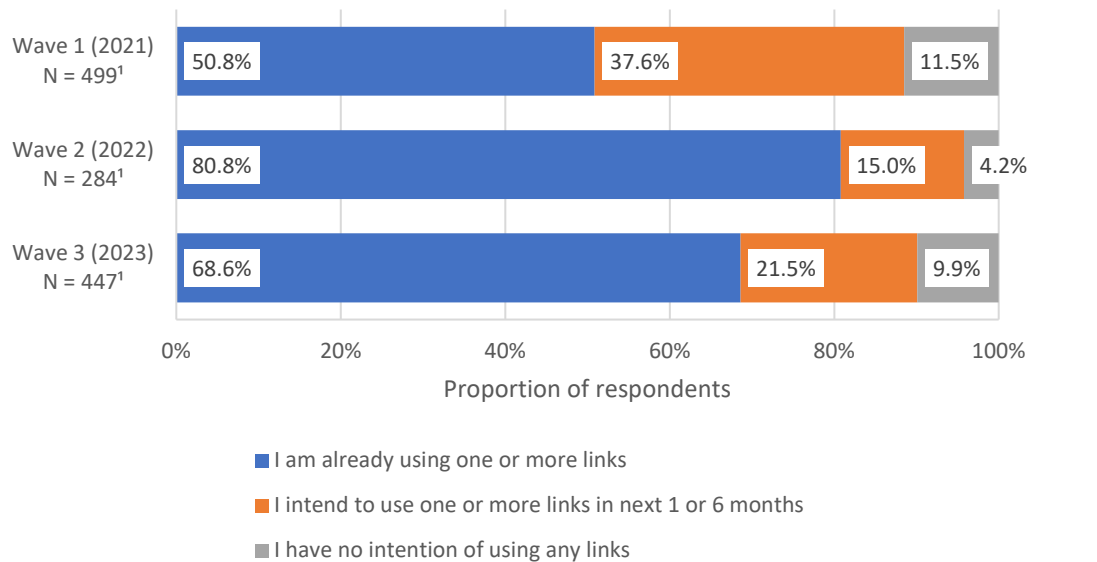


Figure 4. Network use and intention by wave

Eco-counters and TRAKER counters provided continuous traffic data on use of the network from the day they were installed, which occurred as each link was completed. This data shows use of the network varies considerably by network link and by time of year. Trip attractor links had higher quarterly average daily traffic than standard links. Trip attractor links are those with trip attractions such as the river, lake, parks, barbeque areas, playgrounds, and shopping areas. The number of users tends to be higher during the warmer months (September – March) and decrease during the colder months (May – August). The average number of passes daily varied from a minimum of around 50 on the Kapooka and University links to a maximum of around 500 on the Eastern Levee-Wagga Beach and Lake Albert-Apex Park sites.

¹ ±5.8%
² ±4.4%
³ ±4.6%
⁴ 95% CI [1.83, 6.56]

Traffic data from automated counters show change in the yearly daily rolling average across years and differences between years. Results show that traffic increased on nine links and decreased on four links between 2022 and 2023 (Figure 5). In 2023, total yearly traffic ranged from 22,517 on the incomplete University link to 154,813 at the Lake Albert-Apex Park site which is a meeting point for parkrun and other walking and running groups and where there is parking, toilets, water fountains and lighting.

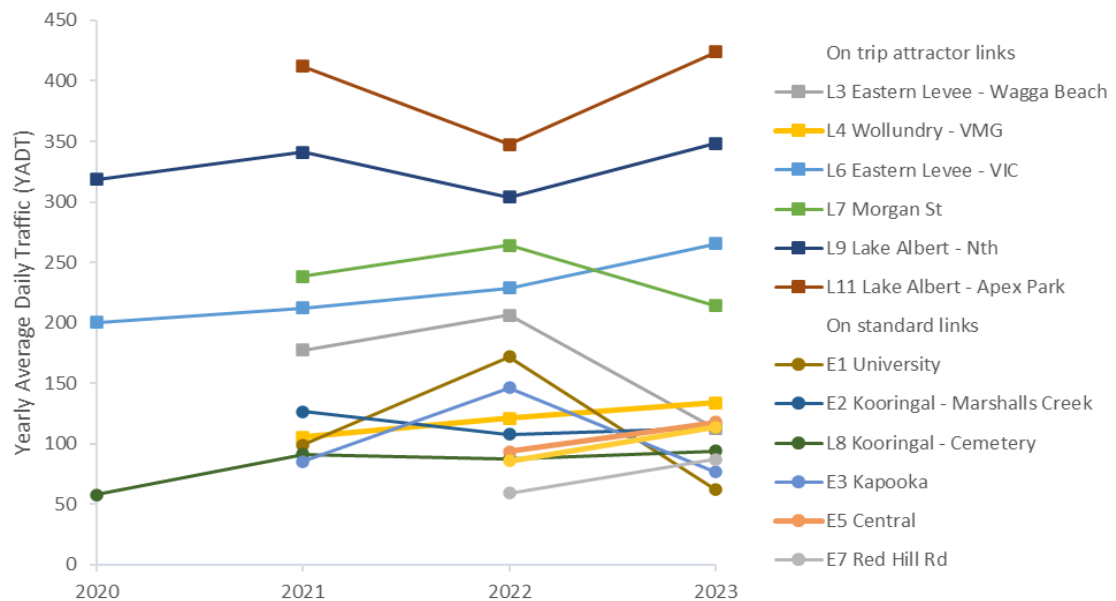


Figure 5. Yearly average daily traffic

The trip attractor links also yielded the highest counts during manual visual observations conducted in 2021, 2022, and 2023, with the Eastern Levee-Visitor Information Centre (VIC) site and the Lake Albert site recording the highest counts across both observation days (2022: 1,315 and 886; 2023: 1,164 and 885 respectively).

The total count of observed users was similar between 2022 and 2023, although there were slightly fewer observation periods conducted in 2022 due to heavy rain and flooding at the time of data collection. Network use varied across the day for Tuesdays and Saturdays in 2023. Hourly counts across the day on Tuesday in 2023 indicate peaks in the early morning, mid-morning, and evening on trip attractor links (Eastern Levee (VIC); Lake Albert; Morgan St; Eastern Levee (Fitzmaurice St)) and lower, but consistent use across the day on other links. Hourly counts across the day on Saturday in 2023 shows greater variability with peaks at mid-morning, lunch and mid-afternoon at the trip attractor links (Eastern Levee (VIC); Lake Albert; Morgan St; Eastern Levee (Fitzmaurice St)) and lower, but consistent use across the day on other links. The observational data showed the number of users on Tuesdays and Saturdays was similar.

Network users

Generally, findings from data confirm that most network users are **pedestrians**, and most of these pedestrians are walkers. Overall, the proportion of pedestrians has increased since 2021 and the proportion of **cyclists** has decreased, but results varied by link. For example, traffic data from Eco-Counters revealed that links with trip attractors, such as the Eastern Levee, Lake Albert and Morgan St had a higher proportion of pedestrians compared to cyclists. Some other links further away from the CBD had a higher proportion of cyclists compared to pedestrians (Figure 6).

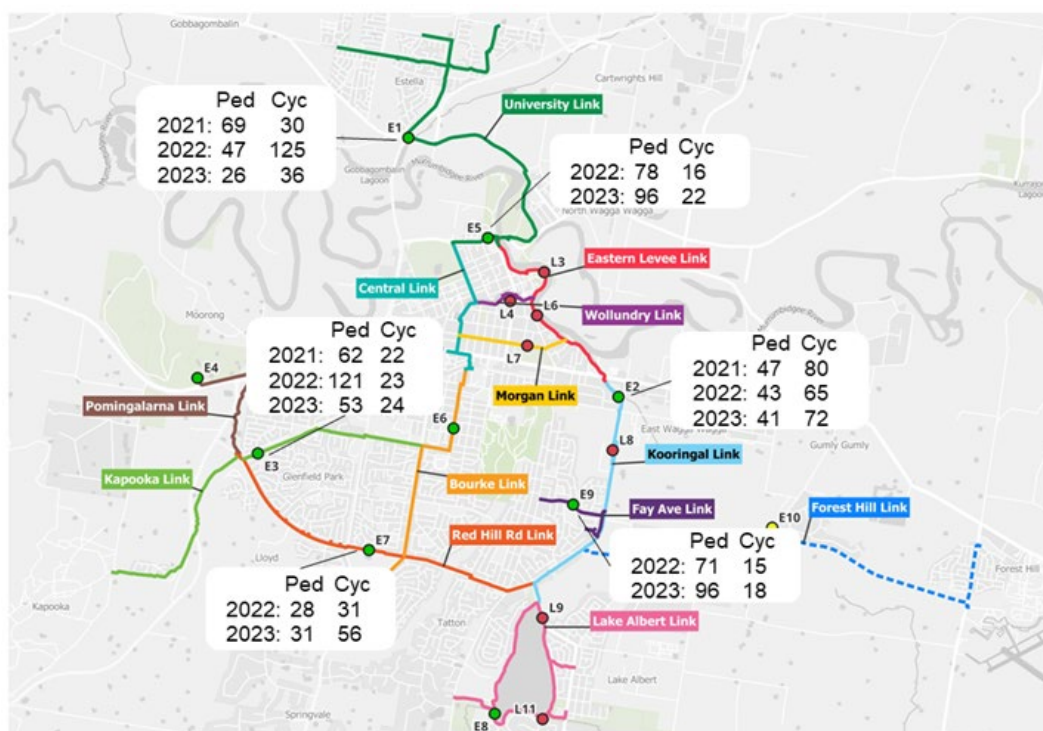


Figure 6. Yearly average daily pedestrian and cyclist traffic from Eco-counters.

The gender split of users varied between data sources. Manual observation data showed **males** made up a greater proportion of network users than **females** (2023: males 54%⁵; females 46%⁶), however these results were reversed in the community survey. Most intercept survey respondents in Wave 1 and 2 were **aged 45-64 years** compared to other categories. Most users observed across the three years were adults with only a small proportion of children using the network (87% adults, 13% children in 2023).

Findings from the community survey and manual observations show that pedestrians (predominantly walkers) were more likely to be female and cyclists more likely to be male. The observed increase in pedestrians and decrease in cyclists between 2021 and 2023 showed a similar trend across males and females.

Community survey respondents who reported cycling were more likely to report using the network compared to those who did not cycle⁷. Additionally, respondents who reported being **confident** riding a bicycle on an on-road marked cycleway were more likely to report using network links compared to those not reporting confidence in that situation⁸. Conversely, cyclists who agreed that they were confident riding on a road without marked cycleways were less likely to report using network links⁹ compared to those who disagreed.

Frequency of use of the network was variable across data collection methods. Manual observation data suggested overall use of the network could be increased with use still relatively low on links that were not trip attractors, including Koorimal and Red Hill Rd links. For community survey respondents who were generally very physically active, reported frequency of network use did not vary significantly by mode or survey year, with a median of 4-8 days per month across all modes and years. Use was lower for workplace survey respondents at a median of 1 day per month on the weekdays and 1 day per month on weekends.

Intercepted network users overwhelmingly and consistently reported using the network for the **purpose** of being physically active. This was similar for males and females, and cyclists and pedestrians (65% in Wave 1, 63% in Wave 2). In comparison, around 1 in 7 users reported that their current trip was for commuting. Commuters were more likely to be cyclists and male. Commuting was more common on certain links, for example Koorimal (2022: 29%, 2023: 28%) and Morgan St (2022: 31%, 2023: 46%).

⁵ 95%CI [53%, 56%]

⁶ 95%CI [44%, 47%]

⁷ mOR = 42.70, 95% CI [22.11, 82.47]

⁸ mOR = 18.45, 95% CI [2.80, 121.56]

⁹ mOR = 0.08, 95% CI [0.01, 0.45]

More than half of workplace survey respondents reported riding a bicycle and 33% were cycling on the network. Overall, 21% of workplace survey respondents reported using active travel to get to work or study with 17% saying they cycle to or from their work or place of study.

Heat maps created using data from the intercept survey show that a higher concentration of users are accessing the network from four key areas. The greatest concentration of user access to the network is on the Eastern Levee and Lake Albert trip attractor links, consistent with the higher use of these links. Data on network entry and exit points mirror the increased variation in trip origin and destination points and appear to confirm that there has been increased spread in network access points across Wagga Wagga over time – see Figure 7 & 8 of change in cyclist access points from 2022 to 2023.

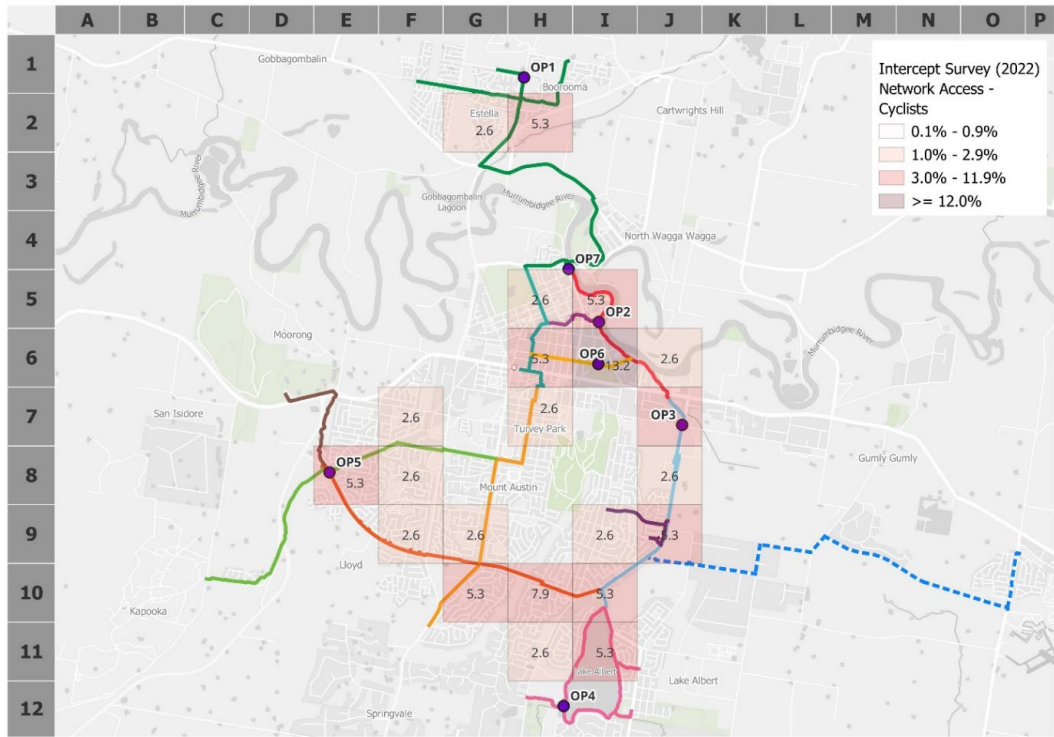


Figure 7. Wave 2 (2022) Cyclist network access points

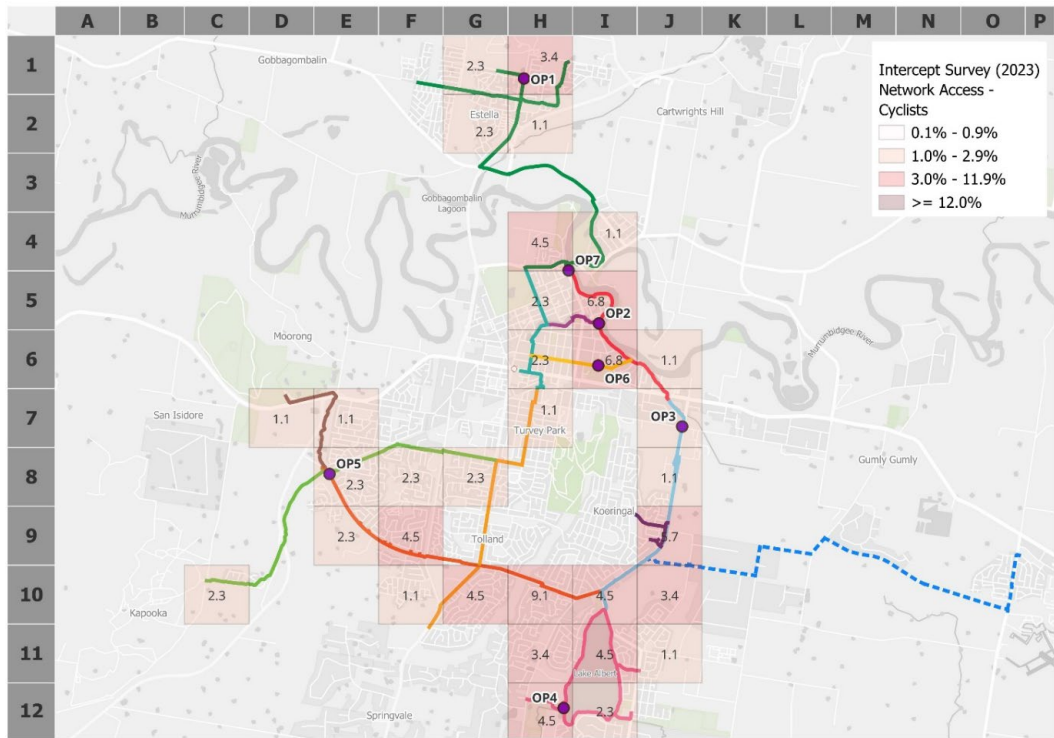


Figure 8. Wave 3 (2023) Cyclist network access points

Physical activity and network use

A high proportion of respondents across all three waves of the community survey (84%) met the Australian physical activity guidelines of engaging in 150 mins or more of moderate or vigorous physical activity per week. This proportion is high compared to the 52% of the general population of the Murrumbidgee Local Health District (which Wagga Wagga is situated within) classified as sufficiently physically active¹⁰. The amount of time per week spent on moderate to vigorous physical activity was also high with medians of 480 mins, 540 mins, and 540 mins across the three waves.

Of community survey respondents who met physical activity guidelines, 68% reported they were already using one or more network links. Respondents who said they use one or more network links had 3.7 times¹¹ the odds of meeting physical activity guidelines, compared to respondents who did not use any network links, indicating a positive relationship between using the network and achieving sufficient physical activity. Just over half of intercept survey participants in Wave 1 (52%¹²) reported being physically active for 30 mins or more on 5 or more days per week, and this increased to 62%¹³ in Wave 2. Accounting for differences in demographics and survey waves, regression analysis showed there was an association between using the network 'more often than before' and an increase in physical activity.

Accounting for differences in demographics and survey waves, regression analysis showed there was an association between using the network 'more often than before' and an increase in physical activity. Respondents who said they increased their use of the network had 4.1 times¹⁴ the odds of reporting an increase in physical activity, compared to respondents who reported using the network 'less' or 'about the same' as 12 months previously.

In 2022 compared to 2023, more respondents who had increased their network use reported that the provision of the network was a reason for their increased use. This was largely due to increased accessibility to new and upgraded recreation infrastructure, aligning with the completion of most of the network between 2021 and 2022.

Benefits of the network for the community

Most community survey respondents (84%) were aware of one or more of the network links and 64% were already using one or more of the links. All workplace, school and key informant interviewees indicated they were aware of the network.

All research participants across the quantitative and qualitative data collections were asked about benefits of the network. Responses were **overwhelmingly positive** with residents, network users, organisational, workplace and school representatives and community key informants citing a range of personal, family, organisational and community benefits. These included:

- safe and pleasant places to walk and cycle,
- community amenity and connectedness,
- recreational and commuting opportunities,
- positive community culture,
- community activation, and
- encouraging tourism.

Community survey respondents particularly noted that the new pathways provided increased safety for both walking and cycling. These comments were echoed in key informant interviews and workplace surveys. In intercept surveys, respondents identified the individual and family benefits of walking more, cycling more and having pleasant places to walk and cycle.

Many respondents across the different data sources highlighted their perceptions around the role that the WWATP network plays in enhancing community culture and activation. Various respondents commented on their observations of increased use of the shared pathways and how this increased use cultivates a positive culture around active recreation across the community. It was also highlighted by respondents that

¹⁰ Murrumbidgee Local Health District. Population and Health Indicator Data 2023 [Internet]. Available from: <https://www.mlhd.health.nsw.gov.au/getmedia/c4480ae5-8e5c-4545-b6d1-e442025da0dc/Report-Murrumbidgee-Population-and-Health-Summary-Revised-October-2023>.

¹¹ 95% CI [2.3, 6.0]

¹² 95% CI [46%, 57%]

¹³ 95% CI [57%, 67%]

¹⁴ 95% CI [2.9, 5.9]

the network was a drawcard for Wagga Wagga that promoted the city as an attractive regional destination, not only for those considering relocating but for cycling tourists and tourism generally.

There were a small number of negative comments about the benefits of the network from a minority of community survey respondents. A few respondents highlighted that upgrading pre-existing gravel/dirt pathways to concrete or bitumen surfaces had reduced their enjoyment of and/or ability to walk or run in certain areas. For some respondents, the natural beauty and peacefulness of these areas had been impacted by the network. Lastly, there were several respondents who perceived that Government funding should be prioritised on fixing damaged roads, and others who believed that the network pathways were not well used and were not required.

Barriers to network use

While over 90% of the network infrastructure has been completed as of February 2024, there is still one major link, a critical road and rail crossing, and other connections in the CBD that are not yet completed. In addition, line marking and wayfinding signage are incomplete meaning that the connectivity of the whole network has not yet been achieved. Missing connections were frequently noted by the research participants as a barrier to use.

Conditions on the network, particularly debris such as mud, weeds, glass, rocks, and prickles on the pathways, and water pooling after rain were raised as barriers to use, particularly if funding was not available for regular maintenance. Some intercepted network users raised concerns about the safety of both pedestrians and cyclists on the pathways due to inappropriate or perceived dangerous behaviour of both types of users.

Lack of awareness of the network or how to use the network to travel from home to work, for example, was identified as a barrier to use. A lower proportion of respondents in community surveys had noticed network promotions in Wave 3 2023¹⁵ compared to Wave 1 2021¹⁶ and Wave 2 2022¹⁷. Awareness of network promotions among workplace respondents was also low.

Like other NSW regional towns and cities¹⁸, Wagga Wagga experiences a culture of car dominance and dependence. A culture of car use was reported across the data collections, with respondents indicating that expectations of little traffic, availability of parking spaces when and where required, and free parking at workplaces all contributed to a reliance on car use and acted as a barrier to use of alternative forms of transportation.

Specific workplace and school barriers identified included:

- poor or no end of trip facilities
- a lack of commitment from workplaces to prioritise/promote active travel
- perceived safety risk for children traveling independently plus specific policies preventing it in some schools.

Potential future benefits

There is evidence that the opportunities provided by the network itself seems to be supporting increases in physical activity behaviour, particularly walking. There is considerable potential to support further increases in physical activity and commuting through education and promoting awareness and use of the network across the community. The research data reveal that the use of the network is largely equitable across the community, with all sociodemographic and socio-economic groups using the infrastructure. However, targeted promotion focused on women and less confident cyclists could encourage further equity in use of the network, specifically for cycling.

Despite efforts, there is still a lack of knowledge among residents about the network as a whole, and how they can use it. The absence of wayfinding signage across the network links also limits exposure to the possibilities provided by the network for active travel and active recreation. Delays in completing the network have contributed to a delay in fully promoting the network but data reveal some stabilisation in network use so that education and promotion is now imperative to engage more residents in using the network.

¹⁵ 26% ±4.6%

¹⁶ 56% ±4.4%

¹⁷ 51% ±5.8%

¹⁸ Nutley S. Indicators of transport and accessibility problems in rural Australia. J Transp Geogr. 2003 Mar 1;11(1):55–71.

The findings indicate that a regional city network of pathways for walking and cycling accommodates the needs of the community for active travel and active recreation in different ways and not every link will meet the needs of every potential user. More broadly, it raises the question of whether shared pathways can meet the needs of both cyclists and pedestrians as the volume of traffic increases, particularly where active recreational pedestrian use increases.

Opportunities to increase the impact of the network through strengthening relationships between the Wagga Wagga City Council and the business community and encouraging local services and businesses to become ambassadors or advocates for the network and actively support network use were identified. This included better promotion within workplaces to reinforce the health, well-being, environmental and sustainability benefits.

Conclusion

This research project found that the construction of the WWATP network of shared pathways has had numerous positive benefits for the community including providing pleasant and safe places for active recreation and active travel that are being increasingly used by a wide range of residents, enhancing community attractiveness and amenity of the city which also supports tourism, and encouraging equitable participation in physical activity. There is considerable potential to increase use of the network and achieve even greater impacts and benefits for the community in the future through education, promotion, community collaboration and activation.

Attention to monitoring use of the WWATP network, including investment in automated counters and undertaking validity checks of the generated count data is an important part of understanding the impact of these large infrastructure investments into the future. There should be ongoing resources applied to evaluation activities such as visual counts (manual observations) and intercept surveys to monitor changes in use and users over time.

