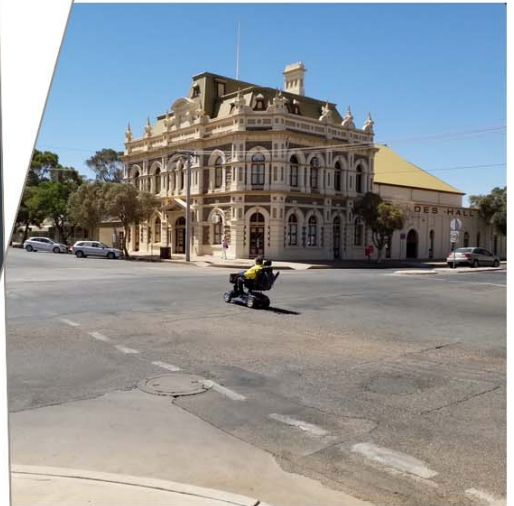


Broken Hill Active Transport Plan

Active Transport Plan



Prepared for
Broken Hill City Council

13 June 2019



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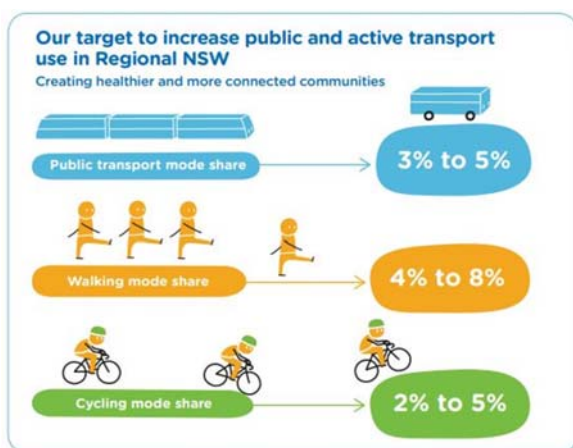
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Executive Summary

The Broken Hill Active Transport Plan (ATP) lays the foundation for the future of walking and cycling in Broken Hill. The ATP uses analysis and community feedback to determine a suite of improvements and initiatives for Broken Hill City Council (Council) to enable safer access to key destinations and encourage more people to walk and cycle for everyday trips.

The ATP provides Council with a strategy to seek full or co-funding opportunities for active transport infrastructure. The benefits of walking and cycling are gaining recognition not only in metropolitan areas, but also in regional areas. The Regional NSW Services and Infrastructure Plan (Transport for NSW, 2018) notes that active transport is a great option for people who cannot drive (temporarily or permanently), particularly in areas with limited public transport such as Broken Hill.



Source: Regional NSW Services and Infrastructure Plan, TfNSW, 2018, (p.49)



Source: Cardno site visit, 5 December 2018

Journey to Work census data from 2016 shows that in Broken Hill, less people cycle and take public transport than the national average, while pedestrian and vehicle driver numbers are notably higher. This points to opportunities to improve cycling infrastructure to encourage more bicycle riding, and demonstrates a high demand for safe, accessible, and connected walking links.

Objectives

The ATP has a number of objectives, with a focus on providing safe and compliant infrastructure, and building an accessible network for pedestrians and bicycle riders which enables them to move to, from, and between key land uses. The key objectives of the ATP include:



Opportunities for improvement

Face-to-face and online community consultation, and analysis of existing conditions in Broken Hill, highlighted a number of important opportunities to be leveraged. These include:

- > More footpaths;
- > Enhanced accessibility;
- > Improved amenity;
- > Animal control;
- > Implementation of bike tracks and/or a continuous walking and cycling loop track around Broken Hill;
- > Community engagement with walking and cycling events; and
- > Increased bicycle parking.

Network development

Council wants to develop a network that is connected and legible, links to key land uses, caters to both walking and cycling, is accessible to different types of people such as mobility scooter users, and makes it safe for kids to walk and cycle to school.

Based on the audit of existing facilities, the feedback from the community, and Council's strategic direction, a walking and cycling network was developed to address the following principles:

- > Connectivity to key destinations;
- > Accessibility;
- > Distribution of the network across all areas of Broken Hill;
- > Catering for future demand;
- > Stakeholder and community comments; and
- > Value for money.

The active transport network considers existing and missing facilities, shown in **Figure 8-5** and **Figure 8-13**, and the best use of Council's resources to deliver a connected and legible network. A shared path network was developed to integrate walking and cycling connectivity and provide a cost effective solution for Council, as shown in **Figure 10-1**.

Improvements and initiatives

The opportunities identified by the community and from the review of existing conditions in Broken Hill were leveraged to develop a suite of improvements and initiatives to improve and promote walking and cycling. The improvements and initiatives cover infrastructure recommendations, suggested changes to operations and policy at Council, and behaviour change initiatives to encourage active transport adoption. Some of the key improvements and initiatives are:



Prioritisation and cost estimates

The proposed active transport network improvements were prioritised based on the following criteria:



Each identified improvement has been categorised as high, medium, and low priority based on its score according to these criteria. **Section 10.2** includes a schedule of works detailing all recommended improvements and their priority.

A focus on improvement works along the identified shared path network will provide the best value for money, as it will deliver greater connectivity and accessibility for both pedestrians and cyclists. The network is divided into 12 separate routes to facilitate co-funding applications, as shown in **Figure 10-1**.



Source: Cardno



Source: Cardno site visit, 5 December 2018

Next steps

Implementation of the ATP is a long term project for Council, it will be delivered based on priority and available funding. Council will complete the following steps as part of this implementation:

- > Finalise infrastructure improvement priorities;
- > Review the schedule of works to integrate these works within Council's asset management and operational planning over the next 10 years;
- > Work with Roads and Maritime Services (Roads and Maritime) to fund delivery of the shared path network in Broken Hill; and
- > Review the list of improvements and initiatives to select those which can be completed by Council in the short, medium, and long term.

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1 Introduction

Broken Hill City Council (Council) identified the need to prepare a Pedestrian Access and Mobility Plan (PAMP) and Bike Plan to improve the community's health, liveability and sustainability. This plan will also help to address the existing and future transport needs of Broken Hill. A PAMP and Bike Plan are regularly combined in regional areas as an integrated Active Transport Plan (ATP).

1.1 Purpose of the Active Transport Plan

The purpose of the ATP is to develop an integrated strategy to support walking and cycling mode share in Broken Hill. This can be facilitated by providing new and upgraded infrastructure, resolving specific safety issues and developing a range of initiatives which support walking and cycling. This plan develops an infrastructure schedule for implementation over a period of 10 years and informs Council's asset management plan.

Having an Active Transport Plan including specific priority projects enables Council to seek funding opportunities, from other agencies such as Roads and Maritime Services (Roads and Maritime). Projects can be co-funded or fully funded, depending on the particular program. Funding opportunities are summarised in **Figure 2-10**.

1.2 Key objectives

The objectives of the PAMP include:

- > To improve the level of pedestrian access and priority, particularly in areas of pedestrian concentration such as the Central Business District (CBD), shopping centres, schools and health care facilities;
- > To reduce pedestrian access severance and enhance safe and convenient crossing opportunities on major roads;
- > To facilitate improvements in the level of personal mobility and safety for pedestrians with a mobility impairment and older persons through the provision of pedestrian infrastructure and facilities which cater to the needs of all pedestrians;
- > To provide links with other transport services to achieve an integrated land use and transport network of facilities that comply with relevant technical standards;
- > To plan pedestrian facilities that are consistent and appropriate throughout New South Wales (NSW);
- > Take into consideration and link existing plans to the PAMP to achieve an integrated pedestrian network;
- > To ensure that pedestrian facilities are appropriate and relevant to the surrounding land use and pedestrian user groups;
- > To plan, develop and provide safe and accessible amenities for the community along the pedestrian network; and
- > To fulfil Council's obligations under the Disability Inclusion Act 2014 in providing DDA compliant infrastructure.

The objectives of the Bike Plan include:

- > To document existing and future key land uses within Broken Hill;
- > To facilitate improvement in cycling mode share, particularly in cycling to work and school;
- > To design a 'bicycle network' as opposed to 'bicycle routes', and plan the network along roads favourable for cycling use, for example, with separation from roads with high proportions of heavy vehicle movements;
- > To provide a safe, coherent and connected cycling network for use by all members of the community;
- > To plan, develop and provide safe and accessible amenities for the community along the cycling network; and,
- > To ensure that cycling facilities comply with relevant technical standards.

1.3 Study area

Broken Hill is located in remote western New South Wales. The Council area covers an area of approximately 170sq.km and there are no other towns or communities within the local government area (LGA). The Broken Hill LGA is home to 17,708 people as of the 2016 census. The population is in a long term decline due to changing industries and centralisation, reducing traditional employment opportunities.

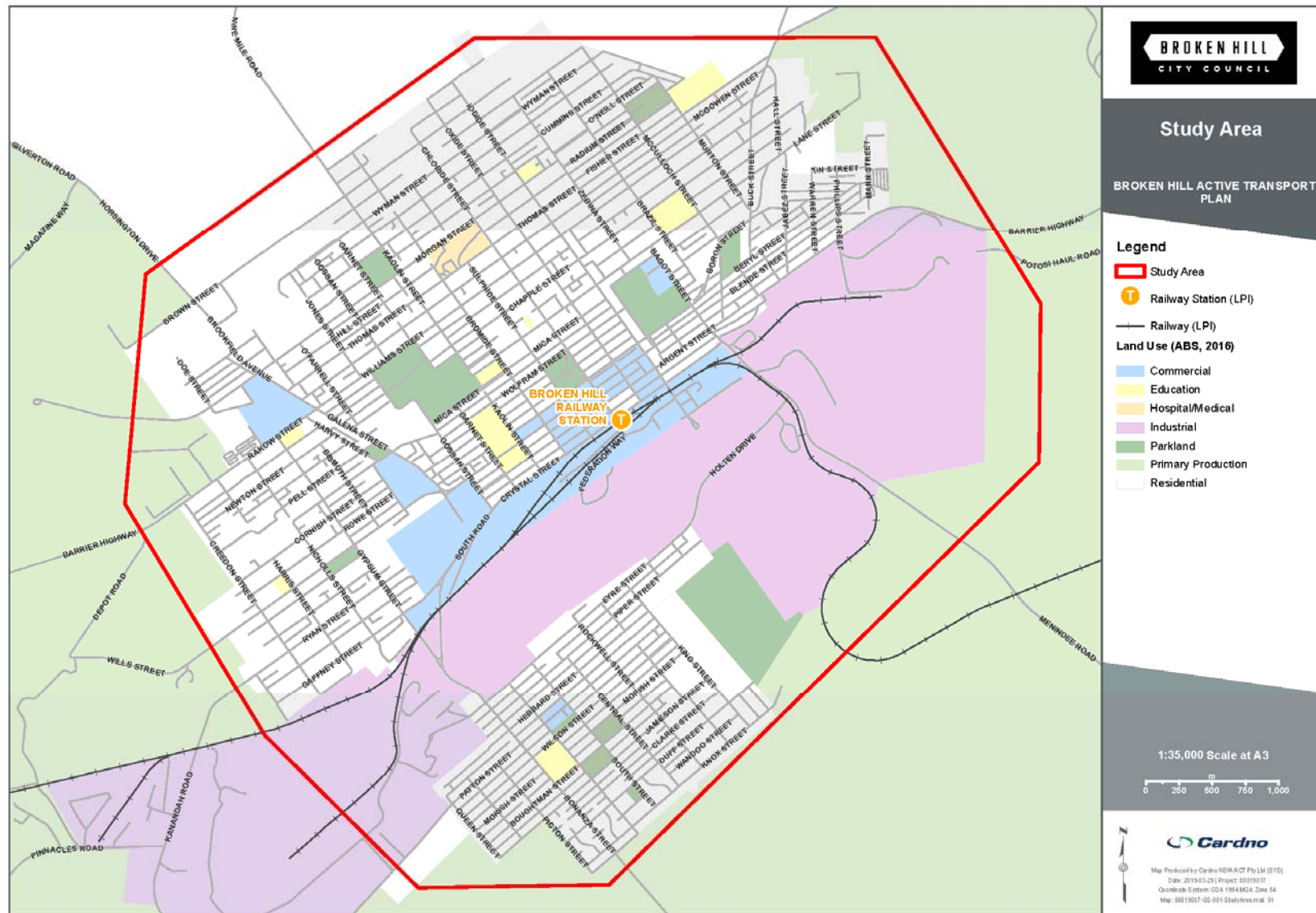
Broken Hill is a large, historic mining town located hundreds of kilometres from most other regional centres and connects the Barrier Highway (A32) with the Silver City Highway (B79) and Menindee Road. Its location at the junction of these cross-regional roads ensures its ongoing function as an essential stop-and-trade centre for tourists and freight operators travelling longer distances. A prominent central mining operation and railway line bi-sects Broken Hill, which are connected by three major road corridors.

Broken Hill is also served by a regional airport, railway station, rail marshalling yard and bus terminal, which provide important passenger connectivity with regional and urban centres across NSW, South Australia and Victoria and provide support to passing freight services. A fleet of local taxis and buses serve locals through Broken Hill's grid street network.

Sydney is located approximately 900 kilometres to the east, and Adelaide is located 400 kilometres to the south west. In closer vicinity, Mildura is located approximately 250 kilometres to the south, Menindee is located 100 kilometres to the south east, Cobar is located 420 kilometres to the east and Bourke is located 475 kilometres to the north east.

A study area map is shown in **Figure 1-1**.

Figure 1-1 Study area



1.4 Report structure

The report is comprised of the following sections:

- > **Section 1** – Introduction: An overview of the study area and the purpose of the study;
- > **Section 2** – Background review: A review of policy documents which guide the study;
- > **Section 3** – Population and travel behaviour: A review of demographic data;
- > **Section 4** – Existing conditions: A review of existing transport networks and land use patterns in Broken Hill;
- > **Section 5** – Consultation: An overview of consultation activities which were completed to support the study;
- > **Section 6** – Network development: An overview of a future active transport network developed for the study;
- > **Section 7** – Site audit: An overview of existing standards for active transport infrastructure;
- > **Section 8** – Identified issues: An overview of auditing activities undertaken on-site;
- > **Section 9** – Improvements and initiatives: Outline of actions developed to support active transport options;
- > **Section 10** – Prioritisation and cost estimates: An overview of costs to implement the improvements; and
- > **Section 11** – Summary: A summary of the findings of the report.

2 Background review

2.1 Federal Government

2.1.1 National Road Safety Action Plan 2018-2020¹ (Department of Infrastructure, Regional Development and Cities)

Road safety implementation has traditionally been the responsibility of state governments, with funding grants from the federal government. This has resulted in inconsistent targets and guidelines across state and territory bodies. Over the past decade, there have been increasing attempts to manage road safety at a federal level to ensure a consistent road safety framework for the respective states and territories to work towards.

This plan was developed collaboratively between the Commonwealth, state and territory transport agencies, and endorsed in May 2018 by the Ministers of the Transport and Infrastructure Council, and supports the broader agenda of the National Road Safety Action Plan 2018-2020 (p.iii).

The plan outlines “pedestrians and cyclists are vulnerable road users, as they have little or no protection in the event of a collision. Certain groups of pedestrians are particularly vulnerable, such as the elderly, the young and those who are impaired (for example by alcohol or drugs)” (p. 19).

The report notes the reduction in the default urban speed limit from 60km/h to 50km/h, and the movement to 40km/h in activity centres and CBDs. There is a growing movement internationally which argues that 40km/h is still too fast and results in adverse safety outcomes for pedestrians and cyclists, and the report recommends investigating 30km/h speed limits in high risk areas.

2.1.2 Walking, Riding and Access to Public Transport² (Department of Infrastructure and Transport)

The Department of Infrastructure and Transport outlines a national approach for collaboration across all levels of government, business, and the community, to support active travel and public transport.

Economic benefits of walking and cycling are well documented in positive health outcomes. Every kilometre walked or cycled by the population has been estimated to deliver net benefits to the economy of up to \$1.43 and \$2.12 respectively, as shown in **Figure 2-1** and **Figure 2-2**.

¹ https://roadsafety.gov.au/action-plan/files/National_Road_Safety_Action_Plan_2018_2020.pdf, accessed 14 November 2018

² https://infrastructure.gov.au/infrastructure/pab/active_transport/files/infra1874_mcu_active_travel_report_final.pdf, accessed 14 November 2018

Figure 2-1 Economic benefits of walking

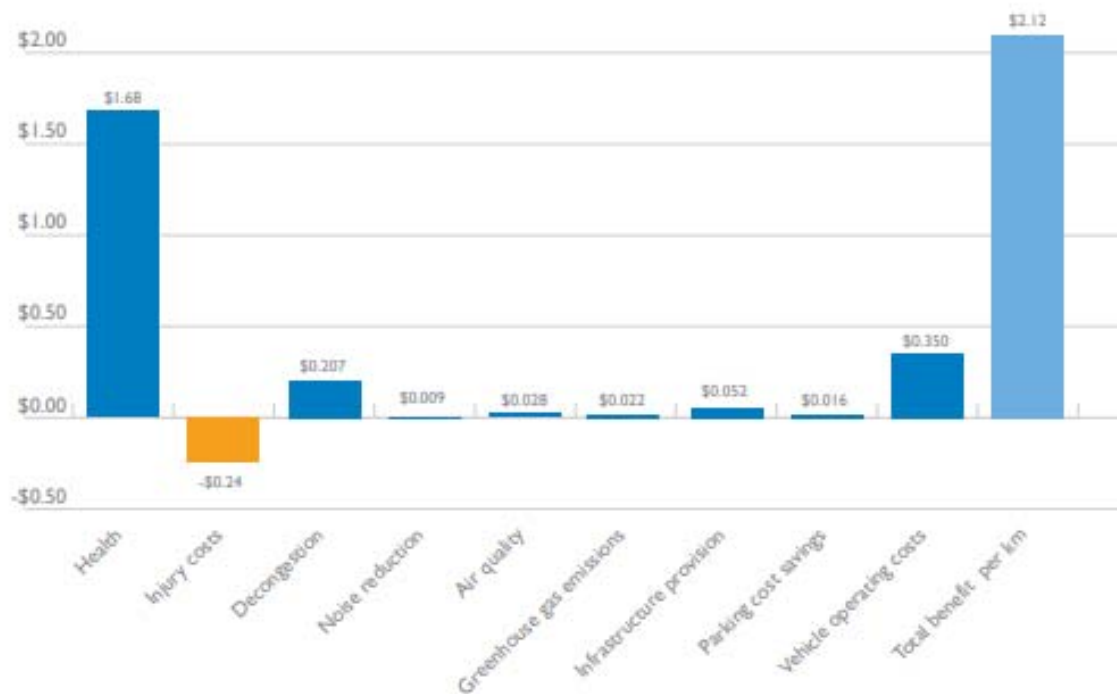
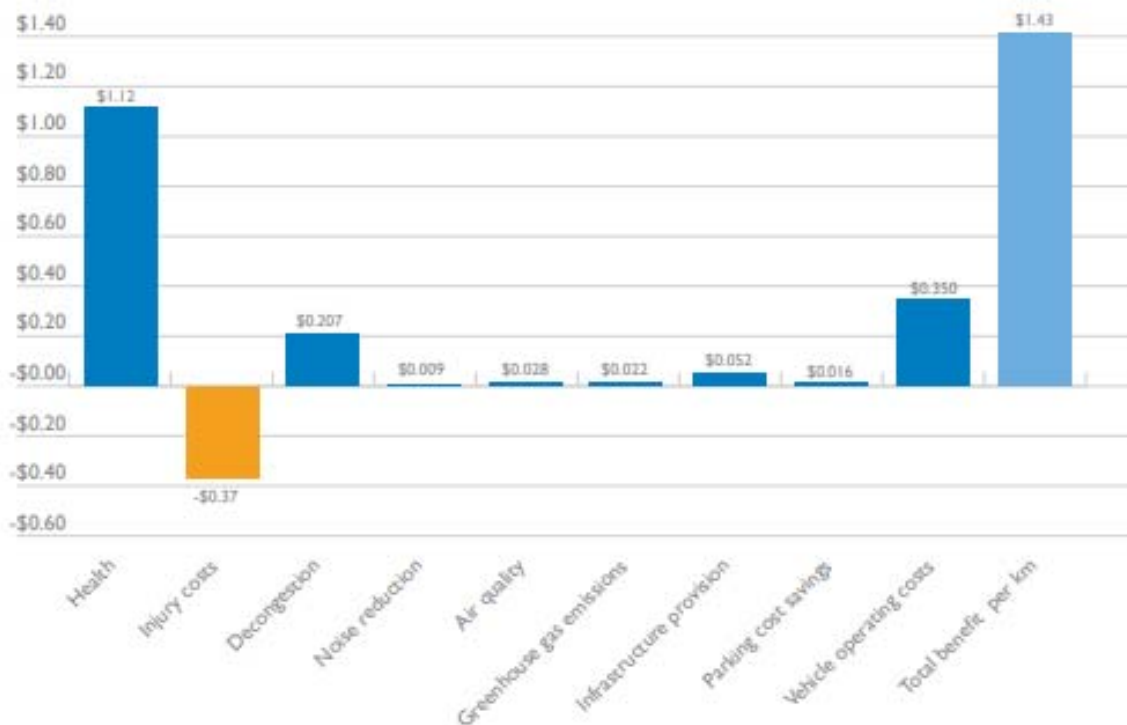








Figure 2-2 Economic benefits of cycling



Source: https://infrastructure.gov.au/infrastructure/pab/active_transport/files/infra1874_mcu_active_travel_report_final.pdf, p. 7

The report also suggests road hierarchies to consider, noting that pedestrians, bicycles and public transport should always be considered first in urban settings. This urban road hierarchy is highlighted in **Figure 2-3**.

Figure 2-3 Urban road hierarchy

					
Street or road type	Shared Zone with mixed traffic considered on a case by case basis	High pedestrian activity areas	Most urban roads	Urban arterial roads	Motorways and national highway network
Vehicle speed	< 20km/h	15–40km/h	40–60km/h	60–90km/h	90–110km/h
				Pedestrians + bicycles fully separated from vehicles	Pedestrians + bicycles fully separated from road environment
Consider first 	Pedestrians	Pedestrians	Pedestrians on footpaths		
	Bicycles	Bicycle lane on road	Wide bicycle lane on road or shared path**		
	Public transport	Public transport	Public transport	Public transport	Freight vehicles
	Service vehicles	Service vehicles	Service vehicles	Freight and goods	Public transport
	Goods delivery	Goods delivery	Goods delivery	Service vehicles	Service vehicles
	Private vehicles	Private vehicles	Private vehicles	Private vehicles	Private vehicles

** Level of separation depends on traffic volume.

Source: https://infrastructure.gov.au/infrastructure/pab/active_transport/files/infra1874_mcu_active_travel_report_final.pdf, p. 50

2.2 State Government

2.2.1 Future Transport 2056³ (Transport for NSW)

In 2018, Transport for NSW (TfNSW) released its Future Transport 2056 Strategy (FT56). This details the 40-year vision, directions and outcomes framework to maintain ongoing customer mobility across NSW, from metropolitan Sydney to regional towns.

The FT56 vision aims to satisfy six outcomes over the next 40 years:

³ https://future.transport.nsw.gov.au/sites/default/files/media/documents/2018/Future_Transport_2056_Strategy.pdf, accessed 14 November 2018

-
- > Customer Focused;
 - > Successful Places;
 - > Strong Economy;
 - > Safety and Performance;
 - > Accessible Services; and
 - > Sustainability.

This outcomes and actions developed as part of this ATP will align with and support the six outcomes nominated in FT56.

Under successful places, a key outcome is for, “walking or cycling [to be] the most convenient option for short trips around centres and local areas, supported by a safe road environment and suitable pathways”.

The walking and cycling networks discussion highlights that Government will “complete walking and cycling networks to and within centres and invest in safe, direct and continuous green corridor connections”.

FT56 discusses assisted mobility devices (AMDs) such as e-bikes or motorised scooters. AMDs could be well-suited to the characteristics of Broken Hill. AMDs may have great potential to move locals out of their single occupant cars, and promote active lifestyles. AMDs may allow users to make longer trips, along more difficult terrain, regardless of personal fitness levels. Other devices such as mobility scooters can enable people with mobility constraints to access public transport and local centres from their homes with far greater ease.

2.2.2 Regional NSW Services and Infrastructure Plan⁴ (Transport for NSW)

“The Regional NSW Services and Infrastructure Plan is the NSW Government’s blueprint for transport in regional NSW from now until 2056. It sets out the Government’s thinking on the big trends, issues, services and infrastructure needs which are now, or will soon shape transport in regional NSW.” (p. 11)

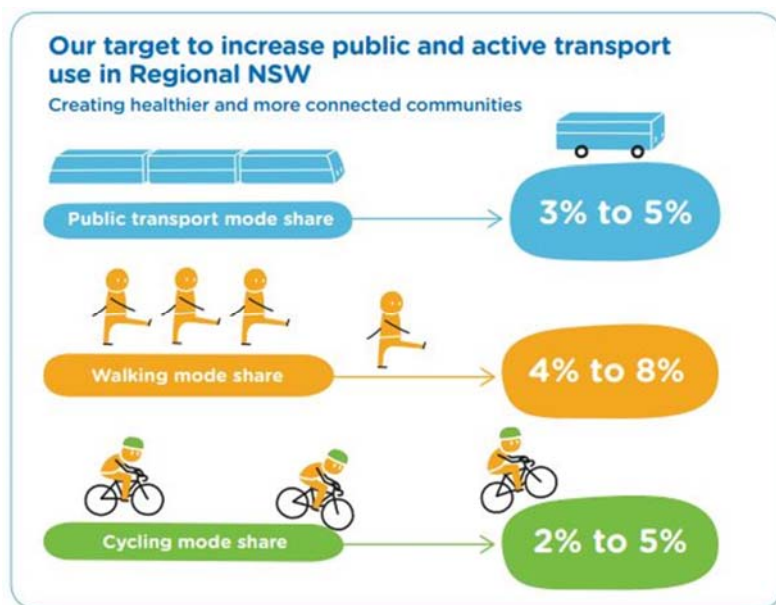
The plan details that across regional NSW that two percent of people currently travel to work by bicycle, three percent travel by bus, four percent walk and 91 per cent use a car. About six per cent walk or cycle to work in regional areas, this is despite 66 per cent of people living within two kilometres of their nearest urban centre or locality.

The report states, “walking and cycling are attractive short trip transport options and future investment could increase the use of active transport as a mode of transport and for recreational use, as well as providing significant health benefits to individuals and the wider community. Active transport also provides greater choices for people without a licence or access to a vehicle - particularly in areas like Broken Hill, where there are limited public transport options (p. 25)”.

Aspirational mode share targets are shown in **Figure 2-4**.

⁴ https://future.transport.nsw.gov.au/sites/default/files/media/documents/2018/Regional_NSW_Services_and_Infrastructure_Plan_1.pdf, accessed 14 November 2018

Figure 2-4 Transport targets in regional NSW



Source: *Regional NSW Services and Infrastructure Plan, TfNSW, 2018, (p.49)*

The plan also outlines a vision for regional NSW is a future with greater choice for regional travellers. It will be achieved through initiatives such as:

- > Hub and spoke model connecting to centres and regional cities; and,
- > Improved walking and cycling infrastructure within towns to accommodate shorter trips.

2.2.3 Western Regional Transport Plan⁵ (Transport for NSW)

The Western Regional Transport Plan (W RTP) was produced in 2013 following the release of the NSW Long-Term Transport Master Plan. It was designed to adapt the Master Plan's principles across the entire Western Region of NSW, where all towns are considered very remote, and Broken Hill is recognised as being the biggest regional centre in a geographic district that covers much of the state.

The W RTP outlines that "many regional towns in NSW are ideal for walking and cycling for transport. Almost 90 per cent of people in regional NSW live within walking or cycling distance of a local centre, with access to shops, schools and workplaces" (p. 26).

Key transport generators across Broken Hill include the airport, the train station, the CBD, Broken Hill Base Hospital, and the Westside Plaza Shopping Centre.

The W RTP identifies that many demographic groups across the Western Region are susceptible to 'transport disadvantage', where poor transport provision means that the disadvantage is stopping them from participating in society. The groups identified were:

- > Elderly people, who have limited mobility or can no longer drive a car;
- > People who have disabilities and their carers;
- > People and families in isolated areas with limited or no access to a car and/or without driver licences;
- > Young people who are too young to hold a driver licence or unable to obtain a licence; and
- > Aboriginal people experiencing social disadvantage.

Some elements of these demographics are well-suited to active transport journeys.

⁵ <https://www.transport.nsw.gov.au/sites/default/files/media/documents/2017/western-regional-transport-plan.pdf>, accessed 14 November 2018

A major aim of the WRTP is to mitigate the impacts of transport disadvantage given those facing such circumstances are less likely to participate actively within the local economy.

In Broken Hill, the entire urban area sits within a four-kilometre radius of the CBD. Broken Hill generally has a very walkable and cyclable catchment, with the WRTP showing that twelve per cent of the local workforce walk to work each day – considerably higher than the state average of five per cent (p. 5).

Wider streets and lower traffic volumes present potential for developing separated active corridors. TfNSW has committed to ensuring that all new developments in regional towns consciously reserve appropriate provisions for walking and cycling infrastructure (p. 26).

A suite of funding programs and initiatives are available to promote regional active transport, including:

- > The Walking Communities Program: Offers dedicated funding to Councils wanting to improve walking infrastructure within a two-kilometre catchment of town centres and transport interchanges.
- > The Cycling Towns Program: Towns that can demonstrate a range of destinations within an easy cycling distance of residential centres can apply. Funding can support new bicycle networks and bike parking facilities. Grants are dependent on demonstrated local support, Council's willingness to maintain the sponsored infrastructure, and a commitment to promote it once delivered.
- > Promotion of active transport benefits: TfNSW encourages better local wayfinding, the development of clear guidelines, and promotional resources for regional Councils. This also involves online resources and other programs to help promote walking and cycling, including sponsorship of events like NSW Bike Week.
- > All Councils and stakeholders are asked by TfNSW to identify the gaps in their existing bike networks and any 'pinch points' of note within a five-kilometre radius of town centres.

An extensive period of consultation (2012-13) involving the community, three tiers of government, and TfNSW, delivered the following 'big ticket' suggestions to help calm traffic in Broken Hill, in order to aid the delivery of local transport improvements:

- > Build a haulage/bypass road around Broken Hill to minimise trucks driving through town – this would likely improve the safety and amenity of walking and cycling; and
- > Invest royalties from the local mining industry back into the Broken Hill transport network.

2.2.4 NSW Road Safety Plan 2021 – Towards Zero⁶

The NSW Road Safety Plan commits the State to the internationally recognised Safe Systems approach and a future where there is a target to have zero fatalities on NSW roads. "Ambitious but achievable", the plan's trauma reduction targets can help to guide future investment, and reflect the NSW Government's commitment to make NSW roads the safest in the country.

Active transport users are not as protected from ongoing traffic as are those who drive vehicles.

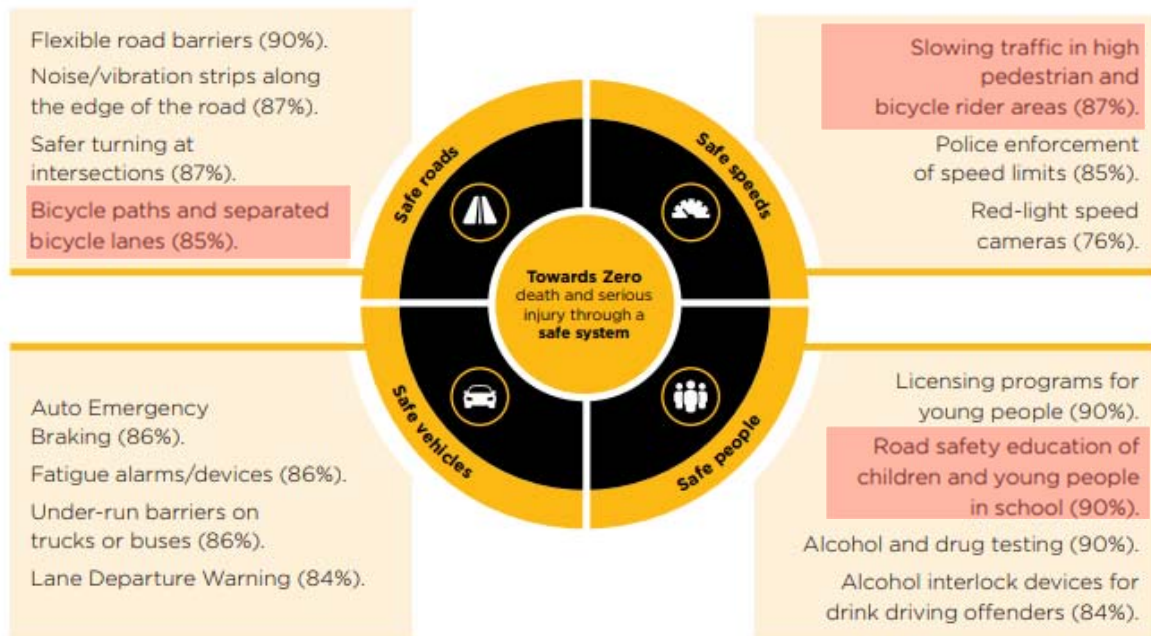
The State's Priority Target is to reduce road fatalities in NSW by at least 30 per cent from 2008–2010 levels by 2021. By 2026 new targets will be set every 10 years, with reviews every five years, to make sure we continue to move Towards Zero fatalities and serious injuries on our roads. By 2056, NSW is to reach an aspirational target of zero fatalities and serious injuries by 2056.

For walkers and cyclists, the 'Towards Zero' plan suggests the potential for fatal accidents or serious injuries is much higher given they are not protected from impacts. Most suggested safety strategies in the report target driver behaviour.

19 per cent and 25 per cent of fatalities and serious injuries respectively on the road are pedestrians and cyclists. Surveys indicate strong support for bicycle paths and the need to slow traffic in high pedestrian/cyclist activity zones is shown in **Figure 2-5**.

⁶ <https://towardszero.nsw.gov.au/sites/default/files/2018-02/road-safety-plan.PDF>, accessed 13 November 2018

Figure 2-5 Safe System – responses to various initiatives



Base image source: Road Safety Plan - Towards Zero, p. 25

2.2.5 Draft Urban Design Guide for Regional NSW⁷ (Government Architect's Office)

The draft urban design guide for regional NSW is a key implementation tool to help Councils create a well-designed built environment. It responds to an identified urban design resource gap in regional NSW, the recognition of the impact of good quality design on regional communities, and the need for targeted practical assistance (p. 6).

High levels of car dependence are noted as a key regional trend, and a design priority is to “improve connectivity, walkability and cycling” (p. 37). Street design and enhanced connectivity are highlighted as two key opportunities to increase cycling and walking mode shift in regional centres.

It outlines the far western region is characterised by the hot, semi-arid climate, and that the heat can limit options for outdoor recreation. There is an opportunity to enhance urban design, but there is a challenge associated with limited population growth (p. 65).

2.3 Local Government

2.3.1 Broken Hill PAMP 2013⁸

Broken Hill's first PAMP was prepared in 2013, issues or recommendations that arose from auditing the network at that time were:

- > Removal of hazards such as loose gravel, three-cornered jack and roundabout markers;
- > Unpaved footways in residential areas;
- > The need for reconstruction / repairs of existing paved footways (cracking, wide joints, disturbed block paving, lifted slabs);
- > Lack of kerb ramps at mid-block laneways;

⁷ <https://www.planning.nsw.gov.au/~/-/media/Files/DPE/Guidelines/draft-urban-design-guide-for-regional-nsw-2018-10-02.ashx>, accessed 14 November 2018

⁸ https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/documents/Plans_and_Strategies/Pedestrian%20Access%20Mobility%20Plan%20PAMP.pdf, accessed 14 November 2018

-
- > Steep kerb ramps that do not meet the requirements of Australian Standard AS1428.1 (2009);
 - > The need to provide kerb extensions to reduce pedestrian travel time across wide roadways;
 - > A lack of public seating;
 - > The need for equitable and dignified access to shops, businesses, facilities and tourist destinations; and
 - > Lack of street name signage.

No works program was developed as part of the PAMP⁹.

Council later developed five and ten-year priority works programs, with a list of improvements prioritised in terms of urgency and non-compliance with Australian Standards, potential cost, and possible future design. The highest priority items required urgent attention given they posed immediate hazards to pedestrians.

2.3.2 Broken Hill Bike Plan 2013¹⁰

This Bike Plan involved an audit of existing local infrastructure, which took place in conjunction with the PAMP.

The trigger for auditing both active transport networks was the NSW Government's *Long-Term Transport Master Plan* (2012), which stated in 2012 that it sought to integrate land use planning with all modes of transport, including walking and cycling.

The objectives of the Broken Hill Bike Plan were to:

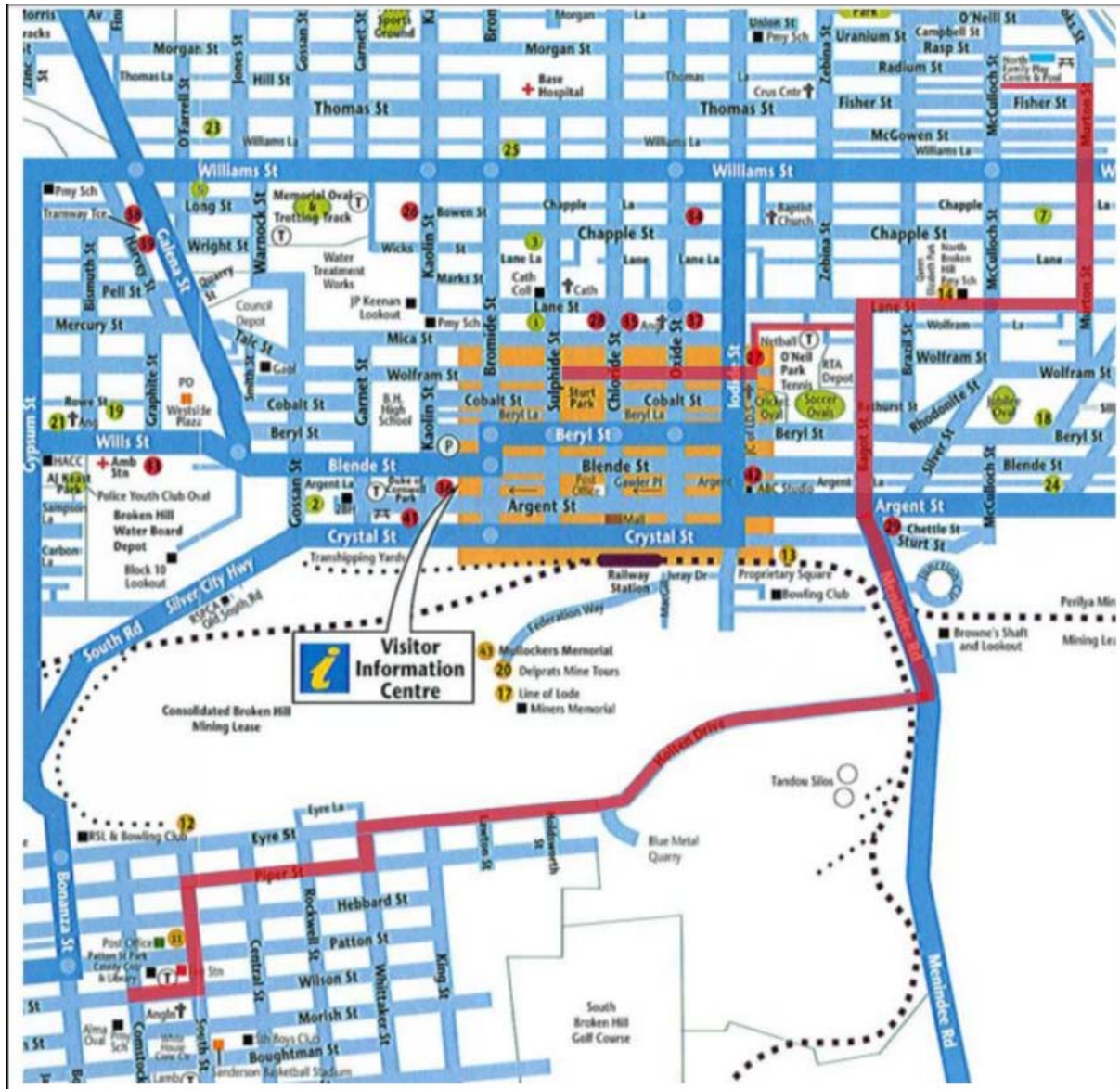
- > Identify areas within existing or proposed routes, and associated infrastructure, where improvements can be made for the safety and convenience of cyclists, and to identify potential new cycleways or extensions to existing routes to connect with significant venues or destinations; and,
- > To encourage increased bicycle use in line with the NSW Government's strategy.

Included in the report is an appendix which shows the cycle network development which is comprised of one route linking the aquatic centre to Alma Public School in South Broken Hill via Menindee Road. This route is shown in **Figure 2-6**.

⁹ Email from Council dated 14 November 2018

¹⁰ https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/documents/Plans_and_Strategies/Internal%20-%20Final%20Broken%20Hill%20Bike%20Plan.pdf, accessed 14 November 2018

Figure 2-6 Proposed Broken Hill cycling network



Source: Broken Hill Bike Plan 2013, p. 35

2.3.3 Broken Hill City Council Community Satisfaction Survey 2018¹¹ (IRIS Research)

Council commissioned a survey to assess resident satisfaction across all facets of the liveability of Broken Hill. Residents indicated that they are dissatisfied with streets/roads/footpaths for numerous reasons including:

- > General appearance of streets and lack of amenity;
- > Lack of lighting;
- > Lack of facilities for disabled individuals;
- > No street signage; and

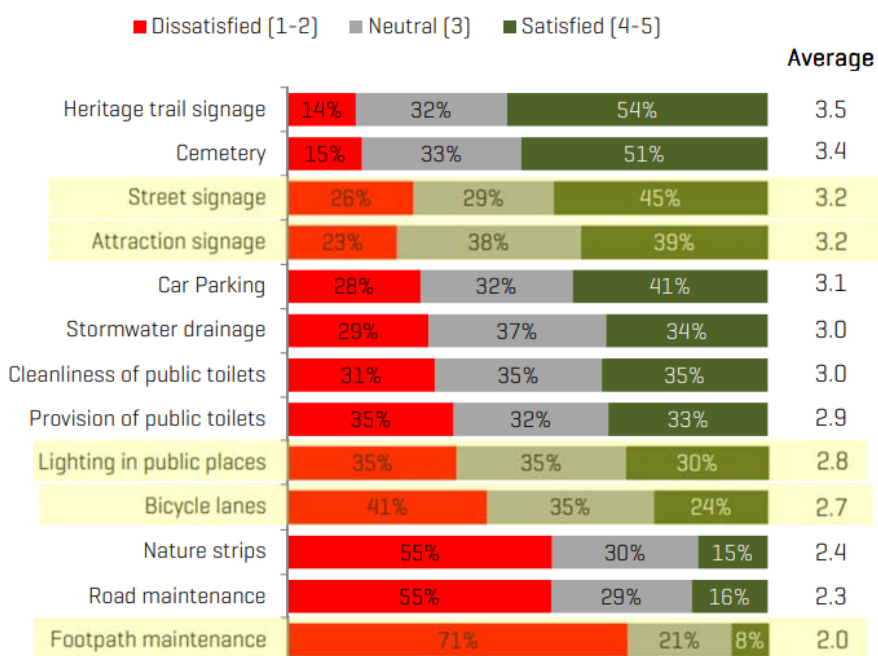
¹¹

[https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/documents/Community%20Satisfaction%20Survey%20Results%202018.p](https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/documents/Community%20Satisfaction%20Survey%20Results%202018.pdf)
df, accessed 13 November 2018

> Poor condition of footpaths.

The importance of managing footpaths and associated infrastructure is highlighted by the community surveys. **Figure 2-7** shows the perception of infrastructure and traffic infrastructure among the community.

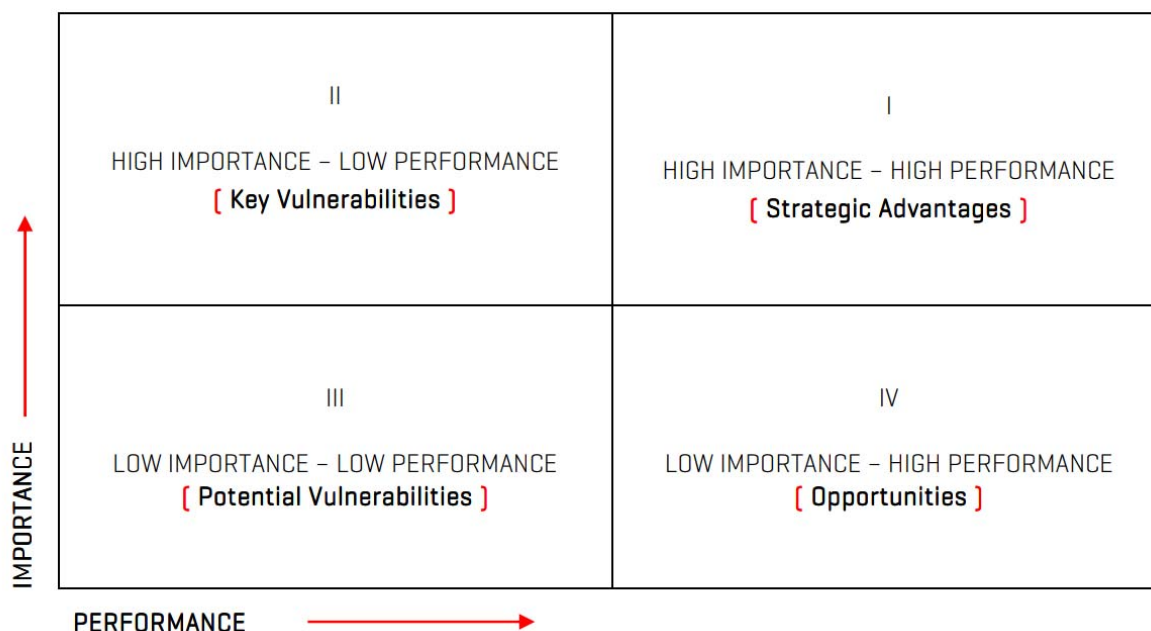
Figure 2-7 Satisfaction with infrastructure and traffic



Base image source: Broken Hill City Council Community Satisfaction Survey, p. 14

One of the assessments investigates the perceived performance and perceived importance of various issues as shown in **Figure 2-8**. Footpath maintenance is a key vulnerability of Broken Hill, as shown in **Figure 2-9**, as is street cleaning. Bicycle lanes are highlighted as a potential vulnerability and street/ attraction signage are noted as opportunities.

Figure 2-8 Interpretation of quadrants



Source: Broken Hill City Council Community Satisfaction Survey, p. 27

Figure 2-9 Service perception

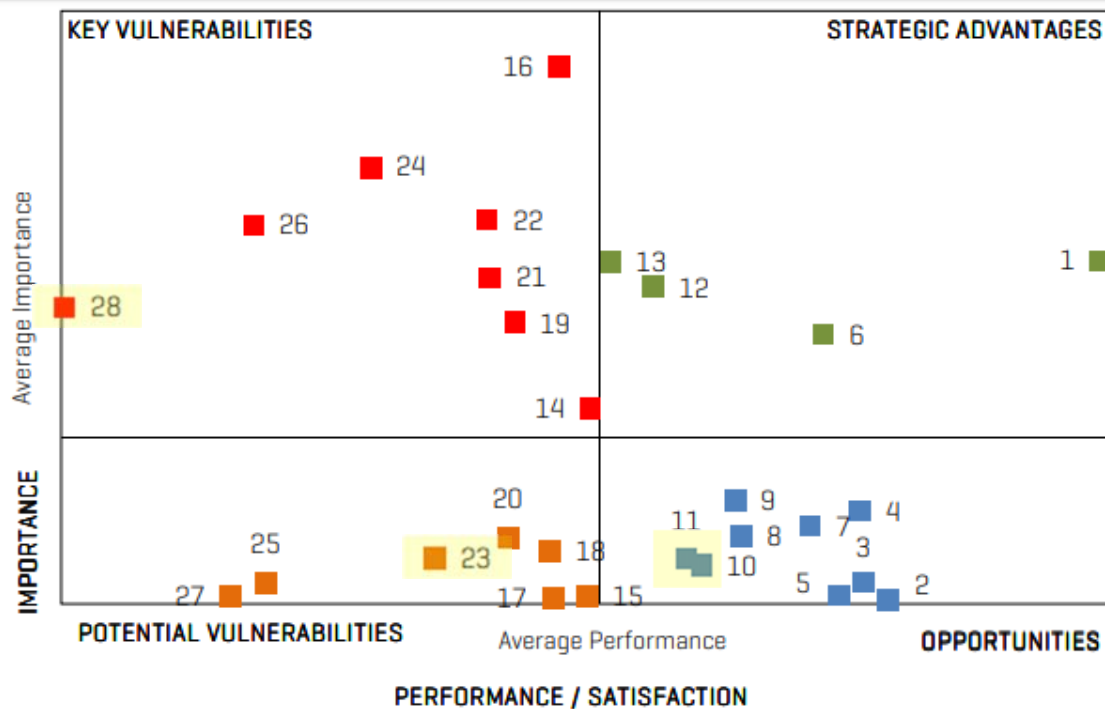


Figure 3.3 Strategic location of services

KEY VULNERABILITIES	STRATEGIC ADVANTAGES
<ul style="list-style-type: none"> [28] Footpath maintenance [26] Road maintenance [24] Street cleaning [21] Regeneration area maintenance [22] Policing for illegal dumping [19] Animal control [16] Supporting business and industry growth [14] Cleanliness of public toilets 	<ul style="list-style-type: none"> [1] Waste collection [6] Management of any natural disasters [12] Car parking [13] Council grants programs
POTENTIAL VULNERABILITIES	OPPORTUNITIES
<ul style="list-style-type: none"> [27] Noxious weed control [25] Stormwater drainage [23] Bicycle lanes [20] Lighting in public places [18] Lodging development applications [17] Provision of public toilets [15] Nature strips 	<ul style="list-style-type: none"> [2] Waste Management Facility (Tip/Depot) [3] Green waste recycling [4] Heritage trail signage [5] Protecting heritage values and buildings [7] Cemetery [8] Parking enforcement [9] Community events (eg New Year's Eve Party) [10] Street signage [11] Attraction signage

Base image source: Broken Hill City Council Community Satisfaction Survey, p. 28

2.3.4 Broken Hill 2033 Community Strategic Plan¹² (2017)

The Broken Hill 2033 Community Strategic Plan (CSP) provides a 15+ years strategic plan for the Broken Hill Local Government Area. It defines the community's vision and draws on extensive feedback gathered from both the community and local stakeholders to best describe all aspects of social living within Broken Hill. Four key focus directions were identified: Community, Economy, Environment and Leadership.

Under 'Our Community', Objective 1.5 states: "Our health and wellbeing ensures that we live life to the full". Listing seven actions, four are applicable to the development of the ATP:

- > Provide equitable and appropriate access to public transport within Broken Hill City and regionally;
- > Provide and maintain efficient and reliable utilities and services to the Broken Hill community;
- > Provide our children with equitable access to a range of opportunities; and
- > Encourage cycling and walking, through use of accessible safe tracks and paths.

2.3.5 Access and Equity Policy¹³

This provides the framework and procedures for Council to meet its obligations under the Anti-Discrimination Act 1977 (NSW) and also the Commonwealth Disability Discrimination Act 1992. It outlines the need for Council to provide facilities which can be used by all residents and visitors.

2.3.6 Disability Inclusion Action Plan¹⁴

Council's Disability Inclusion Action Plan details Broken Hill's approach to improving the lifestyle and level of inclusion for people with disabilities, regardless of age, culture or ability to access the full range of services available to the rest of the local community.

Community consultation identified that, "physical access is getting better in places, but the footpaths kerbs and ramps need a lot more work. Weeds growing on footpaths are a big problem for people who use a wheelchair, walking frame, walking stick or prams." (p. 27)

The plan notes the "Broken Hill LGA has an exceptionally high proportion of people of all ages (7.5 per cent) with a profound or severe disability (1,394 people)" (p. 15).

2.3.7 Delivery Program 2017-2021¹⁵

The Broken Hill Delivery Program commits to two key actions related to active transport.

Action #1.4.1.08 - *"Prioritise and implement actions from the Pedestrian Access Mobility Plan (PAMP)"* [funding allocated between 17/18 and 20/21 financial years], and,

Action #1.5.1.07 - *Maintain bicycle paths to encourage physical activity* [funding allocated between 17/18 and 20/21 financial years].

2.3.8 Operational Plan 2018/19¹⁶

Broken Hill's Operational Plan 2018/19, calls for a review of the 2013 Pedestrian Access and Mobility Plan by mid-2019.

¹²

<https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/Broken%20Hill%202033%20Community%20Strategic%20Plan%202017.pdf>, accessed 14 November 2018

¹³ <https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/documents/Policies/Policy%20-%20Access%20and%20Equity.pdf>, accessed 14 November 2018

¹⁴ https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/documents/Plans_and_Strategies/Disability%20Inclusion%20Action%20Plan%20-%20DIAP%202017-2021.pdf, accessed 14 November 2018

¹⁵ <https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/draft-strategy/Draft%20Delivery%20Program%202017%20-%202021.pdf>, accessed 14 November 2018

¹⁶ <https://www.brokenhill.nsw.gov.au/sites/brokenhill/files/public/Corporate/D18%2013874%20-%20Operational%20Plan%202018%202019.pdf>, accessed 14 November 2018

2.4 Funding opportunities

2.4.1 Walking and Cycling Program Guidelines 2019-2020¹⁷ (Transport for NSW)

“The NSW Government is committed to working with councils to make walking and cycling a more convenient, safe and enjoyable transport option. By targeting investment to improve walking and cycling in the areas where most short trips occur, the NSW Government supports more accessible, liveable and productive towns, cities and centres by:

- > reducing congestion on our roads;
- > freeing up capacity on the public transport system for long distance travellers; and
- > encouraging walking and cycling as the best choice for short local trips.”

In Broken Hill, congestion and public transport capacity are not constraints. By investing in active transport infrastructure, it will encourage walking and cycling as a viable and attractive mode choice.

These guidelines cover the following programs:

1. Walking Communities Council Partnership Program;
2. Walking Communities Capital Program;
3. Connecting Centres Council Partnership Program;
4. Priority Cycleways Program; and
5. Cycling Towns Program.

Under these programs, **Figure 2-10** provides a summary of what would generally meet the eligibility requirements of each program.

¹⁷ <https://www.rms.nsw.gov.au/documents/business-industry/partners-and-suppliers/lgr/walking-cycling-program-guidelines.pdf>, accessed 13 November 2018

Figure 2-10 Funding programs and eligibility

Funding program			Eligibility		Maximum level of State funding		
			Local & regional roads	State roads	Development	Construction/implementation	Evaluation (non-infrastructure only)
Walking	Walking Communities	Council partnership funding	✓		75%	50%	75%
	Walking Communities	NSW Government priority funding					
Cycling	Connecting Centres	Council partnership funding	✓		75%	50%	75%
	Connecting Centres	NSW Government priority funding		✓	100%	100%	
	Priority Cycleways	NSW Government priority funding	✓	✓	100%	100%	
	Cycling Towns	NSW Government priority funding	✓	✓	100%	100%	100%

Source: Walking and Cycling Program Guidelines 2019-2020, p.9

3 Population and travel behaviour

3.1 Census data

In the 2016 census¹⁸, the Broken Hill Local Government Area was reported to have a population of 17,708 people. 1,500 people (8.5 per cent of the population) reported as being of Aboriginal and/or Torres Strait Islander descent.

The Broken Hill LGA has a median age of 45, significantly above the median of 38 reported for New South Wales and Australia. 27.4 per cent of Broken Hill's population is under the age of 25, compared to approximately 31 per cent for New South Wales and Australia more broadly. 43.8 per cent of Broken Hill's population is over the age of 50, compared to approximately 34 per cent of people for New South Wales and Australia.

The top industries for employment in Broken Hill include silver-lead-zinc ore mining (466 people), hospitals (414 people), aged care (263 people), supermarkets and grocery stores (232 people) and primary education (212 people).

In the Broken Hill LGA, 690 households had no motor vehicle. 2,936 households had one vehicle, with an LGA average of 1.5 motor vehicles.

Table 3-1 shows a summary of journey to work data for Broken Hill, New South Wales and Australia. It is noted that the census now always occurs on the second Tuesday of August, and this time of year may not be conducive to active transport in Broken Hill¹⁹.

Table 3-1 Journey to work

Mode	Broken Hill LGA	New South Wales	Australia
Car, as driver	4,836 (70.1%)	1,953,399 (57.8%)	6,574,571 (61.5%)
Car, as passenger	415 (6.0%)	144,820 (4.3%)	489,922 (4.6%)
Walked only	321 (4.7%)	130,957 (3.9%)	370,427 (3.5%)
Worked at home	163 (2.4%)	163,026 (4.8%)	503,582 (4.7%)
Motorbike/scooter	48 (0.7%)	21,159 (0.6%)	64,580 (0.6%)
Cycling	34 (0.5%)	23,332 (0.7%)	107,756 (1.0%)
Use public transport	51 (0.7%)	540,215 (16.0%)	1,225,668 (11.5%)
By private vehicle	5,286 (76.5%)	2,182,854 (64.6%)	7,305,271 (68.4%)

There is a gender disparity in active transport use. For those who walked only, 170 were males and 159 were females. Of the 34 who cycled to work, 32 were male and 5 were female²⁰. This cycling disparity is a pattern observed across Australia, with male cyclists outnumbering females 3 to 1.

¹⁸ http://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/LGA11250?opendocument, accessed 13 November 2018

¹⁹ Comparatively cold temperatures and short daylight hours

²⁰ Where there are small sample sizes, the ABS randomly inserts noise data to maintain anonymity of individuals, hence why the numbers do not add correctly

3.1.2 Population observations and projections

The Department of Planning and Environment maintains projections of populations for each NSW LGA to 2036²¹. The Broken Hill population has decreased in each census since 2001, and the population is forecast to continue to decline from 17,708 in 2016 to 16,150 in 2036. Over the past 15 years, Broken Hill has decreased in population by approximately 15 per cent (i.e. approximately 1 per cent per annum).

The observed and projected/modelled population of the Broken Hill LGA, including three different growth scenarios is shown in **Figure 3-1**.

Figure 3-1 Observed and projected population of LGA



Source: ABS and Department of Planning and Environment

3.2 Climatic records

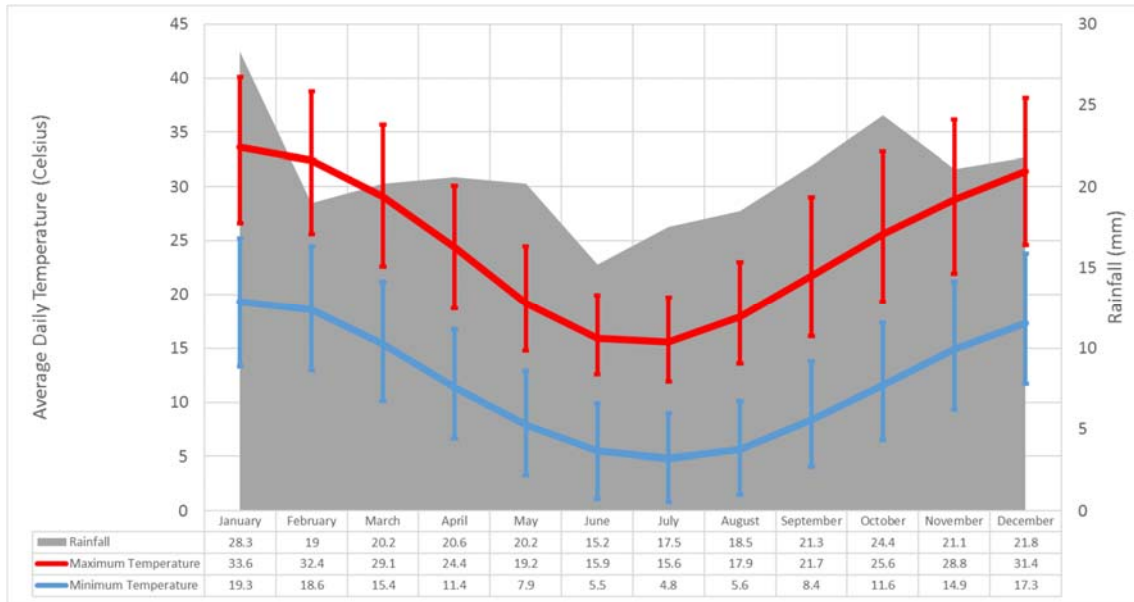
One of the factors reported to inhibit the uptake of active transport in Broken Hill is the climate. Broken Hill has an arid desert climate with hot daytime temperatures in the summer, cool overnight temperatures in the winter, and low rainfall throughout the year.

Bureau of Meteorology historical records²² indicate Broken Hill typically has 40 days a year where the maximum temperature exceeds 35 degrees Celsius, and 17 days a year where the overnight temperature is less than 2 degrees Celsius. Broken Hill typically has 28 days where more than 1 millimetre of rainfall occurs. The average temperature at 9am throughout the year is 17.1 degrees, and the average temperature at 3pm throughout the year is 23.1 degrees. A climatic chart showing monthly minimum and maximum temperatures, as well as average monthly rainfall, is shown in **Figure 3-2**.

²¹ <https://www.planning.nsw.gov.au/Research-and-Demography/Demography/Population-projections>, accessed 14 November 2018

²² All statistics from http://www.bom.gov.au/climate/averages/tables/cw_047048_All.shtml, accessed 9 November 2018

Figure 3-2 Climatic chart



Source: Bureau of Meteorology, data from 1957 to 2018

Error bars show 1st and 9th decile of daily temperatures. For example, for January maximum temperature, the maximum temperature would be expected to be less than 26.6 Celsius 10 per cent of the time (approximately 3 days per January month), between 26.6 and 40.1 Celsius 80 per cent of the time (approximately 24 days per January month), and exceed 40.1 Celsius 10 per cent of the time (approximately 3 days per January month).

4 Existing conditions

4.1 Land use and key destinations

There are a number of points of interest throughout Broken Hill. Some key destinations are listed in **Table 4-1**.

Table 4-1 Key destinations

Type	Destination
Primary/secondary/tertiary education	Willyama High School Morgan Street Public School Broken Hill North Public School Sacred Hearth Parish Primary School Broken Hill Public School Broken Hill High School Burke Ward Public School Alma Public School Railway Public School School of the air Broken Hill Broken Hill TAFE Charles Stuart University Broken Hill
Pre-school	Rainbow Pre-School Busy Kids Child Care Centre Alma Bugdlie Pre-School
Hospital/Medical centre	Broken Hill Base Hospital Far West Area Health Service
Shopping centres	Westside Plaza Coles Shopping Centre
Key recreational facilities	Broken Hill Aquatic Centre Queen Elizabeth Dog Park Picton Oval Sturt Park E.P. O'Neill Memorial Park Bill Renfrew Sportsground Alma Oval
Aged care facilities	Harold Williams Home St Anne's Nursing Home Aruma Lodge
Other	Broken Hill CBD Broken Hill Railway Station Broken Hill Airport

4.2 Pedestrian facilities

4.2.1 Pedestrian network

The pedestrian network is generally well-formed close to the core CBD area, and around key land uses such as schools, parks and hospitals. Towards the outskirts of Broken Hill, footpaths tend to become segmented. A detailed investigation of the pedestrian network has is described in **Section 6**.

Council's footpath asset register updated in late 2018 documents length (with the total exceeding 83km) and condition (ranked 1-5 with 1 being excellent and 5 being very poor/failed). The total length of footpaths and their condition is reported in **Table 4-2**. The vast majority of footpaths (54 kilometres), is reported as a

condition 3. In terms of sealed footpaths, there is approximately 81.5 kilometres of concrete/paver/bitumen footpath. Nearly 5.5 kilometres of footpath has been classified as very poor.

Council's dataset outlines that there are 1,007 kerb ramps in Broken Hill, with 803 of these identified for replacement. A further 1,505 locations have been identified for new kerb ramps.

Table 4-2 Condition assessment by construction material (in metres)

Type		Condition where 1 is excellent and 5 is very poor/failed					Total network (metres)	
Pavement Construction		1	2	3	4	5	Not reported	
Concrete	Sealed	-	752	46,182	21,106	5,090	285	73,415
Concrete/paver		-	18	4,835	731	333	-	5,917
Paver		-	105	1,936	65	-	-	2,106
Bitumen		-	-	582	35	-	-	617
Dirt	Unsealed	-	-	655	-	-	306	961
Grass		-	-	-	-	-	-	-
TOTAL		-	875	54,190	21,937	5,423	591	83,016
% of total		0%	1%	65%	26%	7%	<1%	

Source: Summary from Council's asset dataset, email received 2 November 2018
Some minor data entry corrections (data cleaning) made by Cardno to prepare summary

A strategic assessment of the provision of footpaths was undertaken utilising Nearmap imagery captured in November 2016. This was to undertake a rapid assessment of existing footpath provision to support the audit activities. The outcome of the strategic desktop assessment is shown in **Figure 4-1**. The sealed length shown in **Table 4-2** closely matches the assessment shown in **Table 4-3**.

Table 4-3 Summary of Cardno strategic assessment

Footpath	Metres of centreline reviewed	Implied length of footpaths
0 – No footpath	78,488	0
1 – One footpath	22,480	22,480
2 – Two footpaths	29,958	59,916
Total	130,927	82,396

Figure 4-1 shows that the Broken Hill CBD is mostly connected with footpaths on both sides of the road. North of Broken Hill hospital, footpaths are generally not present. In west and south Broken Hill, there are some core trunks, but the network is limited.

BROKEN HILL CITY COUNCIL

Footpath Assessment

BROKEN HILL ACTIVE TRANSPORT PLAN

Legend

- [Red Outline] Study
- [Orange T Symbol] Railway Station (LPI)
- [Black Line Symbol] Railway (LPI)

Footpath Assessment

- [Brown Line] No Footpaths
- [Yellow Line] One Footpath
- [Green Line] Two Footpaths

Land Use (ABS, 2016)

- [Blue Box] Commercial
- [Yellow Box] Education
- [Orange Box] Hospital/Medical
- [Purple Box] Industrial
- [Light Green Box] Parkland
- [Dark Green Box] Primary Production
- [Grey Box] Residential

1:35,000 Scale at A3

0 250 500 750 1,000

Gardno

Map Produced by Gardno MOBILICITY Pty Ltd (2018)
Date: 2019-03-29 | Project: 00000007
Coordinate System: GDA 1984 MGA Zone 56
Map: 00019007-000-010-Footpath-Assessment.mxd 01

80019037 | 13 June 2019 | Commercial in Confidence

4.2.2 Pedestrian activity

NSW road rules legally identifies users of items such as wheelchairs, mobility scooters, skateboards and scooters as pedestrians²⁴. In part due to the high proportion of elderly residents in Broken Hill, Council understands, there is high use of mobility scooters. Due to incomplete networks and the overall condition of the footpaths, mobility scooter users sometimes opt to travel on the road. A pedestrian using a mobility scooter is shown in **Figure 4-2**.

Figure 4-2 Mobility scooter use



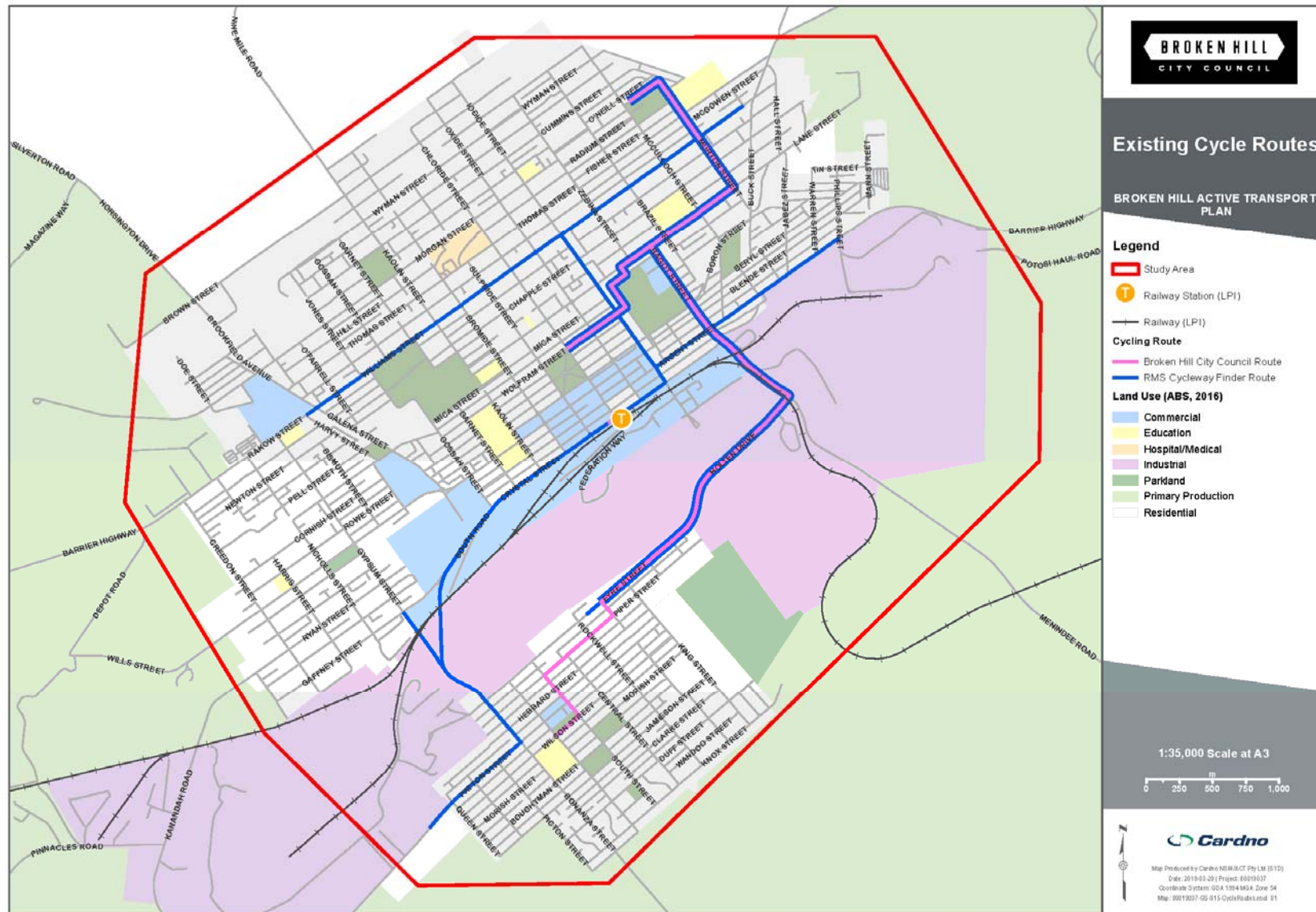
4.3 Cycling facilities

4.3.1 Cycling network

The cycling network is generally recognised as only a couple of on-road routes which cross Broken Hill. Streets are generally sufficiently wide such that cyclists, motor vehicles and parked cars can be easily accommodated. A detailed investigation of the cycling network is described in **Section 6**. The existing cycling network as specified by Roads and Maritime and Council is shown in **Figure 4-3**.

²⁴ <https://www.legislation.nsw.gov.au/#/view/regulation/2014/758/part2/div2/rule18>, accessed 7 December 2018

Figure 4-3 Existing cycling routes

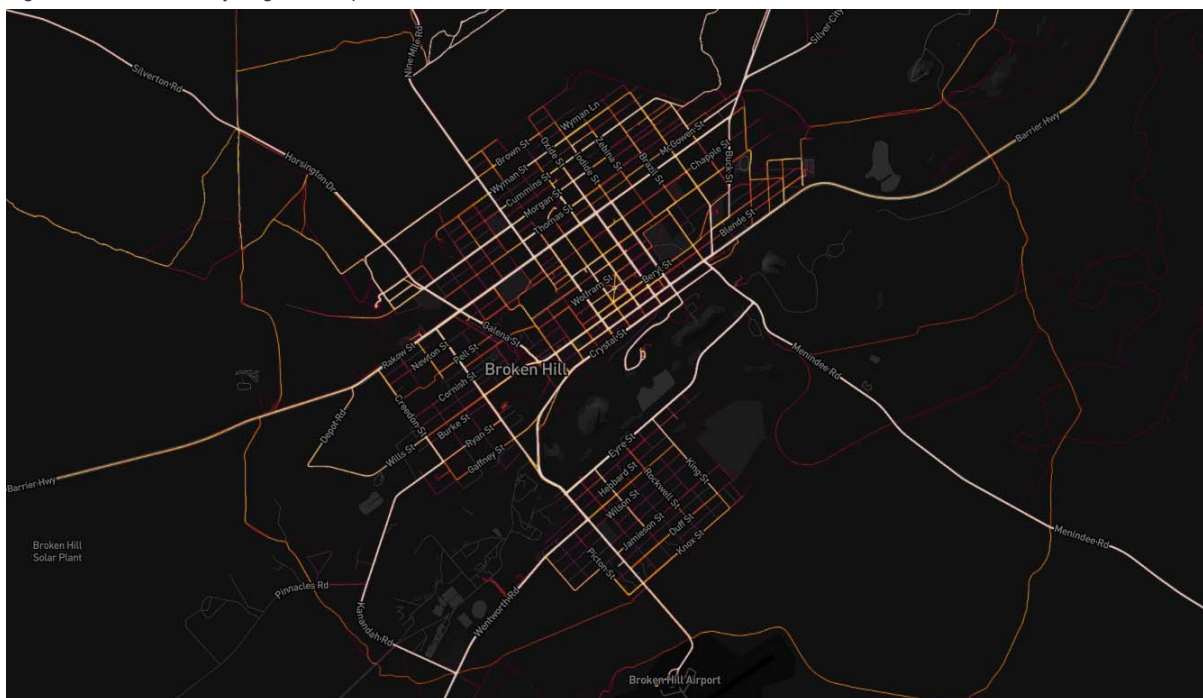


4.3.2 Cycling activity

Strava is a popular activity sharing platform which aggregates data into a 'heat map'. Strava uses GPS location to track movement and activity of specified activities. It is important to note that this heat map only shows data of people who choose to record data, and, choose to publicly share this data.

Figure 4-4 shows the cycling heat map for Broken Hill. The most highly utilised north-south routes include Kaolin Street, Oxide Street and McCullough Street. The most highly utilised east-west routes are Brown Street, Cummins Street, Williams Street, Argent Street and Crystal Street. It shows that there is considerable cycling activity associated with Perilya Limited, Broken Hill Airport, Westside Plaza, the core CBD area, the Aquatic Centre, Broken Hill Base Hospital and Broken Hill Tourist Park. Aside from the CBD area, by far the most popular destination is the airport. There is also a highly utilised mountain bike area immediately west of the Broken Hill Golf and Country Club. It shows that most of the roads heading out of Broken Hill have some cycling activity.

Figure 4-4 Strava cycling heat map



Source: <https://www.strava.com/heatmap#13.57/141.47712/-31.95966/hot/ride>, accessed 21 November 2018

4.4 Public transport

BusLink is the local bus service provider and provides urban, school, special needs (disabled) and charter services. It has a local fleet of twelve vehicles, and a local workforce of 17 people. It reports to provide 8,700 local journeys (services) a year²⁵. The number of passenger trips is not reported for Broken Hill.

BusLink suggests it has 100 per cent disability access for passengers across its urban network but there are some services which are not shown to be accessible on the timetable website.

BusLink outlines that it serves eleven local schools in the Broken Hill area. The bus routes are illustrated in **Figure 4-5** and detailed in **Table 4-4**. Bus routes are loops which are generally effective ways of routing in regional areas, but they are ineffective and inefficient leading to long journeys for some users.

²⁵ <http://buslink.com.au/our-bus-operations/>, accessed 21 December 2018

Table 4-4 Local public bus services for Broken Hill as provided by BusLink

Route	Route Description	Location of stop	Days of Service	Number of services per weekday	Number of weekend services	Peak Frequency (7.30-8.30am)	Off-peak Frequency (12-1pm)	Accessible	Indicative time
590	City Loop via North	City (Argent & Oxide Sts)	Mon-Fri	2	0	2	0	Yes	30 minutes (loop)
591	City Loop via South	City (Argent & Oxide Sts)	Mon-Fri	2	0	2	0	Yes	30 minutes (loop)
591A	City Loop via South & Hillside	City (Argent & Oxide Sts)	Mon-Fri and Sat	8	3	0	1	Yes	50 minutes (loop)
592	City Loop via Thomas	City (Argent & Oxide Sts)	Mon-Fri	2	0	2	0	Yes	30 minutes (loop)
592A	City Loop via North & Thomas	City (Argent & Oxide Sts)	Mon-Fri and Sat	7	4	1	0	Yes	45 minutes (loop)
593	City Loop via Hillside	City (Argent & Oxide Sts)	Mon-Fri	2	0	2	0	Yes	30 minutes (loop)

Figure 4-5 Bus routes

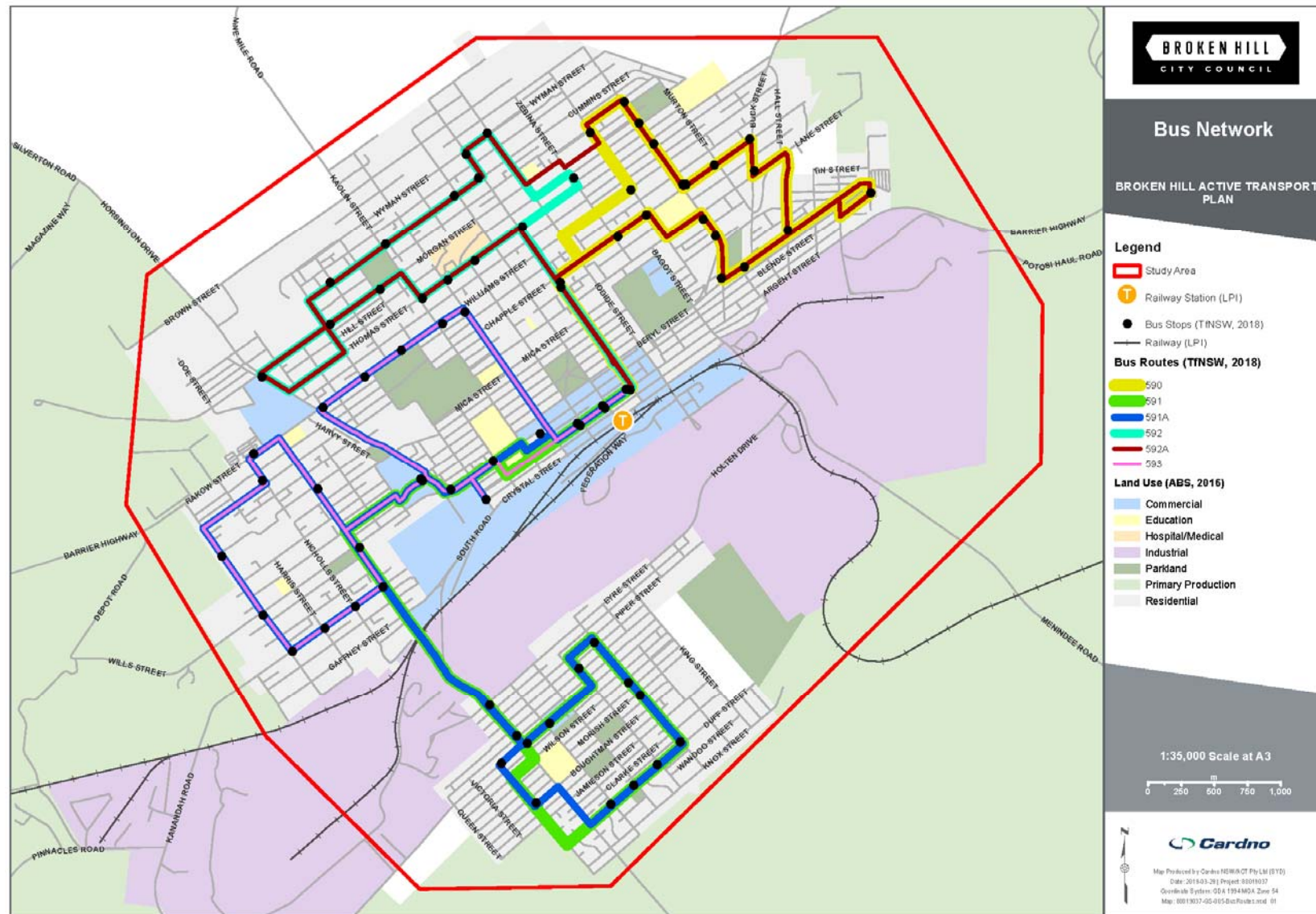


Table 4-5 shows interstate or long-distance bus and train services.

Table 4-5 Intercity rail and coach services to Broken Hill (Including SA and Victorian connections)

Transport service	Journey	Days of operation	Frequency
Indian Pacific	Sydney – Perth	Wed and Sat	2 per week
NSW Trainlink regional Train	Sydney – Broken Hill (13 hours)	Mon	1 per day
NSW Trainlink Bus	Dubbo – Broken Hill	Every day	1 per day
Buses R Us 1101	Adelaide – Broken Hill	Tues and Fri	2 per week
Buses R Us 1104 & 1103	Mildura – Broken Hill	Mon and Fri	4 per week

4.5 Road network

Roads and Maritime is required to maintain a schedule of classified roads under the *Roads Act 1993* s153 (4)²⁶. A classified road is a road which Roads and Maritime is responsible for maintaining and funding. They are classed as either highways or state/ main roads, and are generally recognised as key arterial links within the road transport network. Regional roads provide an intermediate function and are funded by Roads and Maritime, but maintained by Council. Local roads are maintained and funded by Council. The relationship between different road classes, funding and maintenance responsibility and the identification of classified and unclassified regional roads surrounding Broken Hill is shown in **Table 4-6**.

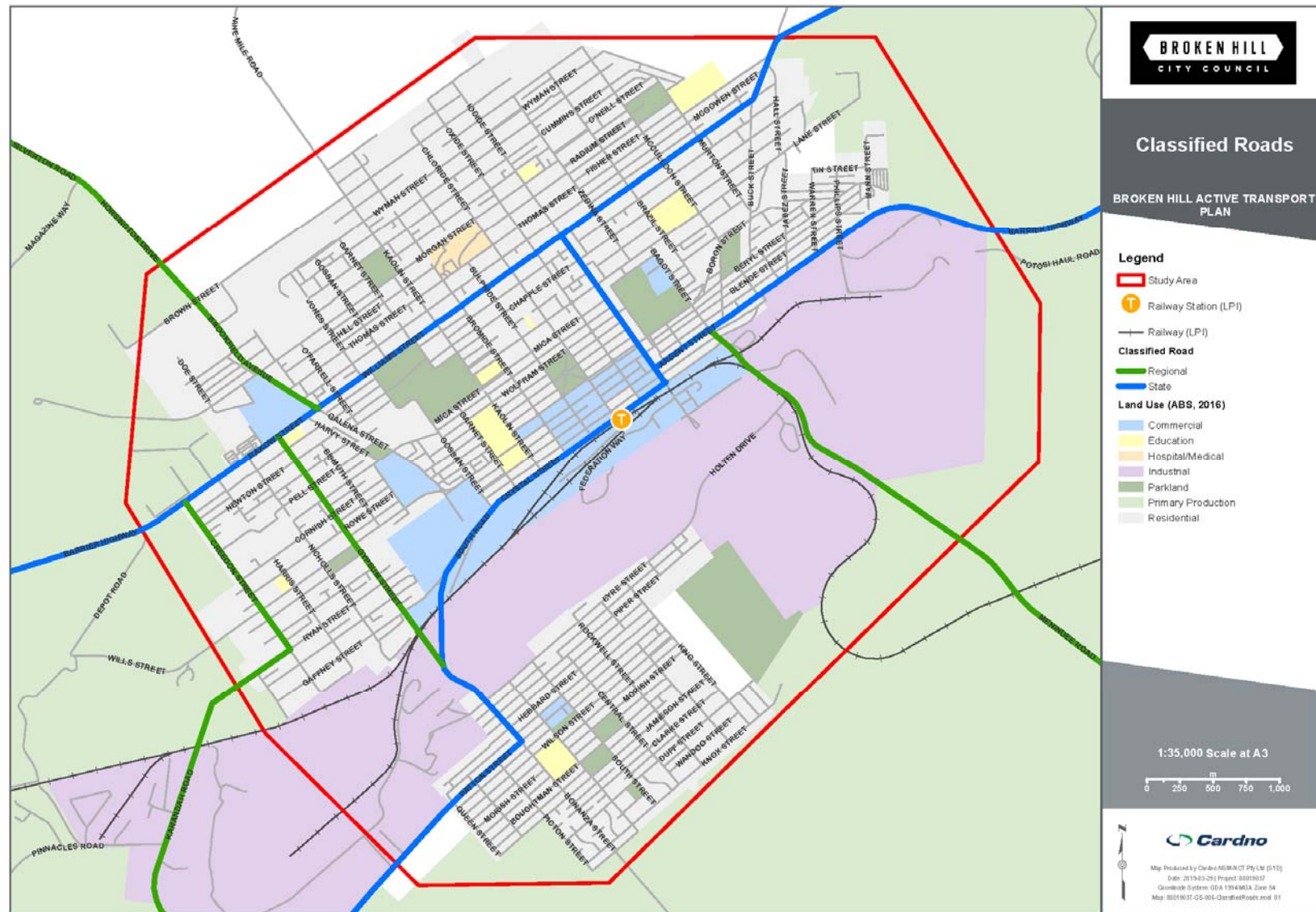
Table 4-6 Road Classification Local Context

Road Classification	Class	Funding of works	Maintenance responsibility	Study Area Roads (Classification Number)
Classified Road	Highway	Roads and Maritime	Roads and Maritime	<ul style="list-style-type: none"> Barrier Highway - From the Mitchell Highway (HW7) at Nyngan, via Hermidale, Cobar, Wilcannia and Broken Hill to the South Australian Border at Cockburn. (8) Silver City Highway - From the Sturt Highway (HW14) at Buronga, via Wentworth, Broken Hill, Euriowie, Cobham Lake and Tibooburra to the Queensland border at Warri Gate. With a branch to Abbotsford Bridge over the Murray River at Curlwaa. (22)
	State Road/ Main Road	Roads and Maritime	Roads and Maritime	<ul style="list-style-type: none"> From South Road South Broken Hill, via Gypsum Street to Rakow Street; then from William Street via Brookfield Avenue, Horsington Drive, Silverton Road and Silverton to Umberumberka Reservoir. (81) From the Broken Hill-Tibooburra Road north of Broken Hill to White Cliffs. (428)
Unclassified	Regional	Roads and Maritime	Council	<ul style="list-style-type: none"> Creedon St and Kanandah Rd, Broken Hill - From Barrier Highway (HW8) via Creedon St and Kanandah Rd to Silver City Highway (HW22) - heavy vehicle by pass in Broken Hill. (7507)
Local	Local	Council	Council	<ul style="list-style-type: none"> All other roads

Roads and Maritime has planning control at all traffic signals, even if these are located on regional or local roads. A map illustrating classified, regional roads and traffic signals within Broken Hill is shown in **Figure 4-6**.

²⁶ <http://www.rms.nsw.gov.au/business-industry/partners-suppliers/lgr/documents/classified-roads-schedule.pdf>, accessed 13 November 2018

Figure 4-6 State and regional roads



4.6 Crash analysis and road safety

Roads and Maritime provided crash data for the six years to the end of 2017. The summary crash report indicates 261 reported crashes. These crashes resulted in 207 casualties, noting there were zero fatalities. The data indicates ten accidents involved cyclists and 12 accidents involved pedestrians. 175 accidents occurred within ten metres of an intersection, and 182 accidents involved multiple vehicles. Speeding and fatigue were attributed to 39 accidents and nine accidents respectively.

In terms of the RUM classification, the following points summarise the most common types of crashes. Cumulatively, these five crash types account for 180 crashes (69 per cent):

- > Intersection, adjacent approaches (T-bone) 81
- > Off road on straight, hit object 45
- > Rear-end 24
- > Opposing vehicles; turning 15
- > Off road on straight 15

Specific pedestrian and cyclist crashes are summarised in **Table 4-7** and **Table 4-8** respectively. With regards to pedestrian accidents, half are pedestrian nearside which may indicate some inattentiveness with some pedestrians with regards to the road environment. With regards to cyclist accidents, three accidents were with children less than twelve years old, and all are the result of a collision between a motor vehicle and a cyclist (as opposed to a single vehicle accident). This may suggest inattentive drivers around cyclists or inexperienced cyclists.

Table 4-7 Pedestrian crashes

Crash #	Date	Time	Location	Gender/ Age of Pedestrian	RUM code	Injury	Speed of Vehicle	Additional Comment (Cardno)	Additional Comment (Police)
E4891 2272	6/9/2012	1515	Argent Ln near Oxide St	Female Unknown	0 Pedestrian nearside	1 Minor	10km/h		
E4826 2475	9/7/2012	0900	Argent St near Sulphide St	Female 19	2 Pedestrian far side	1 Minor	40km/h		
E2238 74497	16/9/2016	1400	Barrier Hwy near Bromide St	Male 44	0 Pedestrian nearside	1 Moderate	20km/h		
E6011 3434	9/1/2016	0900	Blende St near Oxide St	Female 63	0 Pedestrian nearside	1 Serious	10km/h		
E5452 5656	10/4/2014	2015	Chloride St near Cummins Ln	Male 36	9 Pedestrian other (walk with traffic)	2 Moderate	10km/h		
E5196 5672	15/7/2013	2005	Creedon St near Newton St	Female 44	0 Pedestrian nearside	1 Serious	40km/h		
E5759 9665	3/1/2015	0130	Cummins St near McCullough St	Male 17	0 Pedestrian nearside	1 Serious	Unknown	Possible hit and run? Note age of pedestrian	
E4731 6074	16/1/2012	1230	Patton Ln near Central St	Male 33	4 Pedestrian walk with	1 Minor	Unknown		

Crash #	Date	Time	Location	Gender/ Age of Pedestrian	RUM code	Injury	Speed of Vehicle	Additional Comment (Cardno)	Additional Comment (Police)
E5822 2479	17/4/2015	1140	Silver City Hwy near Bromide St	Male 40	0 Pedestrian nearside	1 Serious	Unknown		
E6822 4388	30/9/2017	1700	South St near unnamed lane	Male 48	2 Pedestrian far side	1 Moderate	Unknown		Speed contributing factor
E5118 8481	28/7/2012	1155	Thomas St near Bromide St	Female 85 Female Unknown	73 Vehicle off road right	3 Moderate 1 Serious	30km/h		Fatigue contributing factor
E6460 1183	15/8/2016	1700	Thomas St near house 457	Male 14	3 Pedestrian on carriageway	1 Serious	50km/h	Note age of pedestrian	

Source: Roads and Maritime crash data prepared 2 November 2018

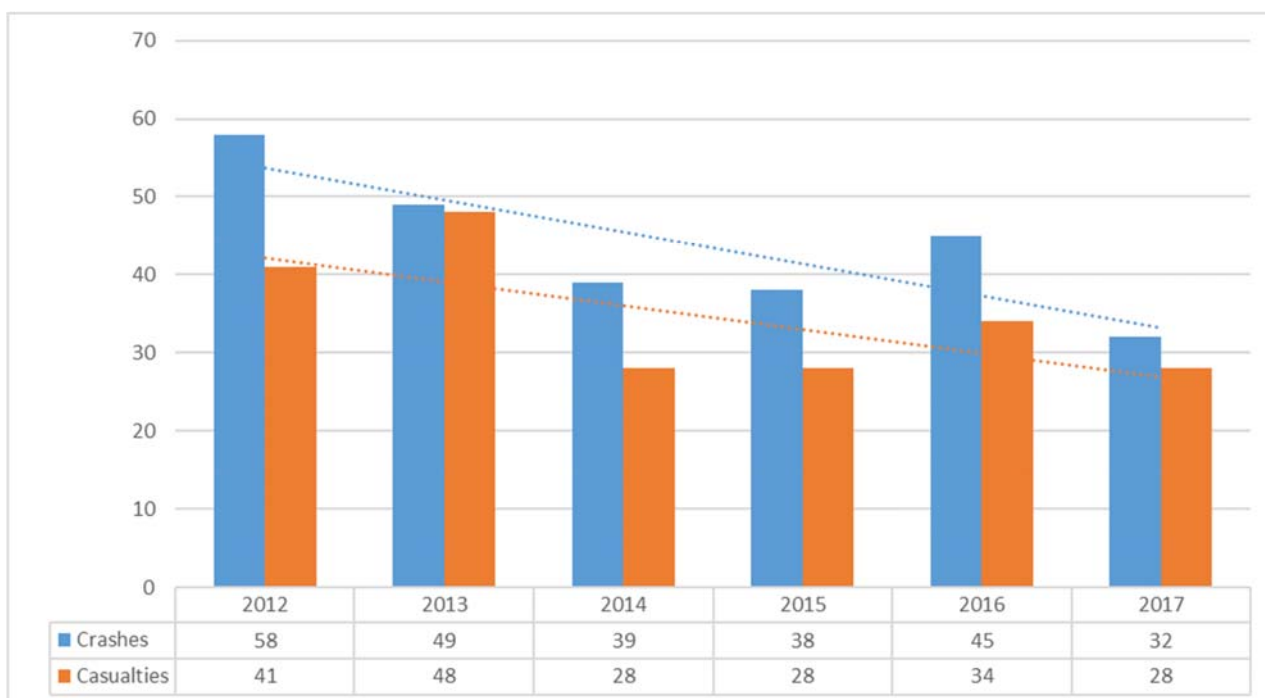
Table 4-8 Cyclist crashes

Crash #	Date	Time	Location	Gender/ Age of Cyclist	RUM code	Injury	Speed of Vehicle	Additional Comment (Cardno)	Additional Comment (Police)
E6156 4935	21/7/2016	0745	Barrier Hwy near Oxide St	Male 58	10 Cross traffic	1 Moderate	Unknown		
E6227 7837	26/10/2016	0750	Beryl St near Sulphide St	Female 36	10 Cross traffic	1 Moderate	15km/h		
E5801 2032	18/6/2015	1610	Beryl St near Zebina St	Male 11	10 Cross traffic	1 Uncategorised	Unknown	Note age of cyclist	
E6290 7019	1/11/2016	0840	Bonanza St near Boughtman St	Male 6	48 From footpath	1 Moderate	10km/h	Note age of cyclist	
E5896 5505	15/10/2015	0830	Brookfield Ave near Morgan St	Male 10	33 Lane sideswipe	1 Serious	30km/h	Note age of cyclist	
E5638 2788	28/1/2014	0900	Duff St near South St	Male 34	10 Cross traffic	1 Moderate	Unknown		
E5118 4106	7/5/2013	1230	Kaolin St near Williams St	Female 51	30 Rear end	1 Moderate	15km/h		
E6411 8982	11/9/2016	2050	Newton St near Gypsum St	Male 27	33 Lane sideswipe	1 Serious	40km/h		
E5809 1258	23/4/2015	1100	Silver City Hwy near McCullough St	Male 18	10 Cross traffic	1 Moderate	15km/h		
E5480 4867	12/3/2014	1830	Wills St near Gypsum St	Female 41	21 Right through	1 Moderate	25km/h		

Source: Roads and Maritime crash data prepared 2 November 2018

Historic data suggests that there is downward trend in the number of accidents and the number of injuries. Over the past six years, on average, there has been a decrease of four crashes per year (from 58 to 32), and decrease of three casualty crashes per year (from 41 to 28)²⁷ as shown in **Figure 4-7**.

Figure 4-7 Crashes and casualties by year



In a vast majority of crashes, it is noted that (where provided), the estimated impact speed is comparatively low. The importance of low speed limits in urban areas is highlighted by comparing injuries sustained with the estimated impact speeds as shown in **Table 4-9**.

Table 4-9 Comparison of estimated impact speeds and injury severity for pedestrian and cyclist crashes

Crash severity	Estimated impact speeds (from crash tables)	Average of estimated impact speeds
Moderate	20, 10, 30, 15, 10, 15, 15, 25	17.5km/h
Severe	10, 40, 30, 50, 30, 40	33.3km/h

These data points indicates that lower impact speeds result in less serious injuries.

²⁷ In October 2014, self-reporting of minor accidents commenced, and therefore part (or all) of the decrease may be attributable to the change in reporting standards

5 Consultation

Consultation is a key aspect in the development of an ATP to ensure ideas are obtained from the community and stakeholders to inform the plan, and the plan aligns with their expectations. A consultation activities and findings paper is included in **Appendix A**.

5.1 Stakeholder identification

Cardno and Council worked collaboratively to identify a list of key stakeholders in Broken Hill. The list included:

- > Schools;
- > Aged care providers;
- > Local Police;
- > Disability organisations;
- > Local businesses;
- > Broken Hill Chamber of Commerce;
- > Transport providers; and
- > Local recreation groups.

Additionally, residents were encouraged to participate in the project consultation activities.

5.2 Consultation activities

Consultation activities for the ATP included a mix of online and face-to-face consultation:

- > Stakeholder workshop and community drop-in session;
- > Community survey (115 responses); and
- > Online map (41 responses).

5.3 Survey summary

The following are some key statistics about the survey respondents:

- > The two most common age brackets for respondents were 25-34 years and 35-54 years;
- > 78 per cent of respondents were female;
- > Over half of all respondents identified themselves to be walkers only, a further 35 per cent also identified as a bicycle rider, approximately 10 per cent of people do not identify as a pedestrian or a cyclist;
- > Respondents tended to like walking and cycling for health benefits and general exercise;
- > Notable issues facing pedestrians and cyclists included stray dogs and a lack of infrastructure; and
- > Opportunities to increase walking and cycling included improved accessibility, infrastructure and amenity.

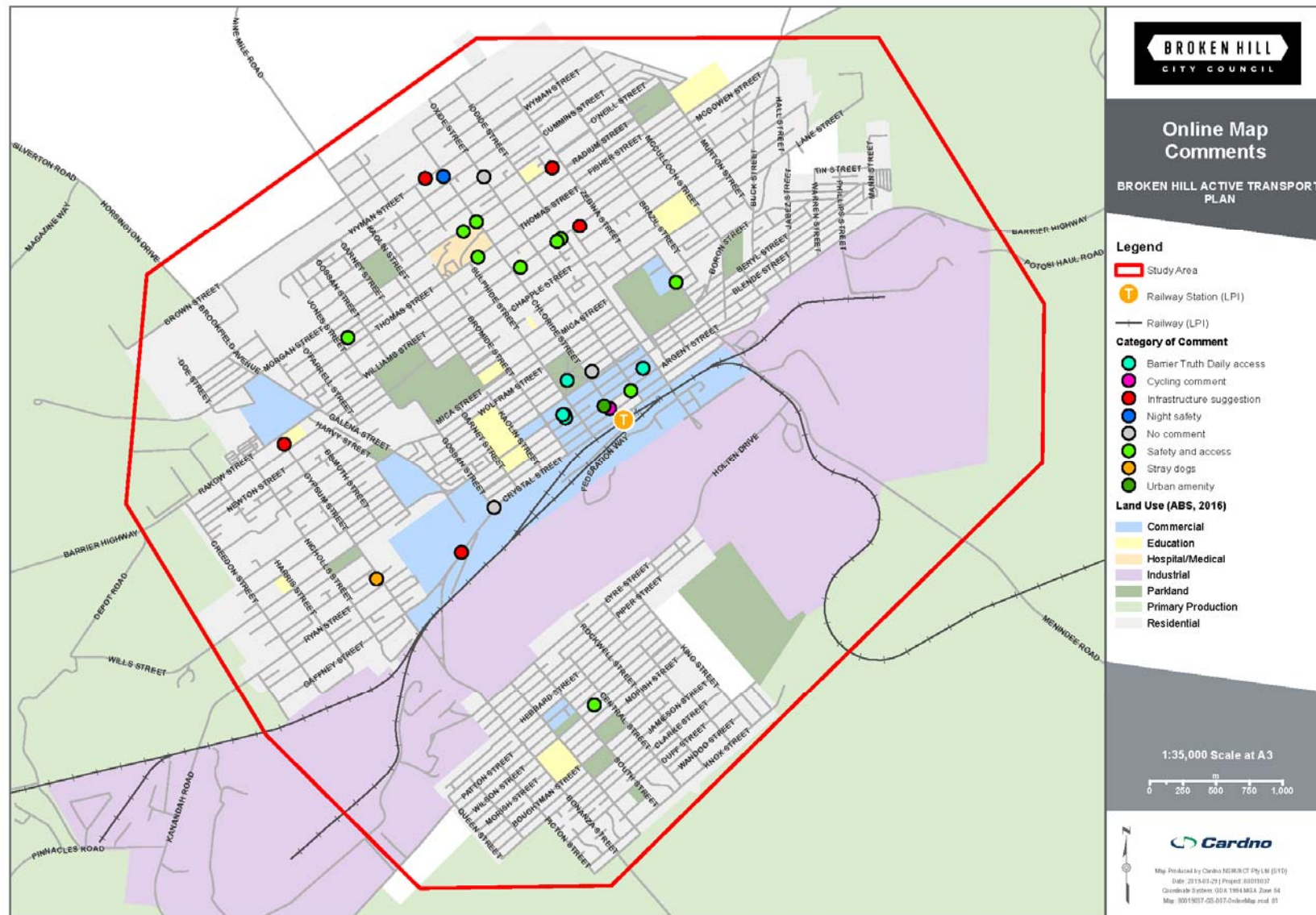
5.4 Key issues summary

There are several reoccurring themes in the survey and online map regarding current issues and opportunities for Broken Hill's active transport network. These include:

- > Numerous stray and uncontrolled dogs;
- > General lack of footpaths outside of the CBD;
- > Accessibility issues across the pedestrian network, particularly for mobility scooters, prams, and walkers;
- > Prevalence of weeds causing tyre punctures on bikes and prams; and
- > Lack of street lighting.

An overview of the issues identified by the community is shown in **Figure 5-1**.

Figure 5-1 Online map comments



5.5 Key opportunities summary

Respondents from the local community suggested a number of opportunities to improve walking and cycling in Broken Hill. These include:

- > More footpaths;
- > Enhanced accessibility;
- > Improved amenity;
- > Animal control;
- > Implementation of bike tracks and/or a continuous walking and cycling loop track around Broken Hill;
- > Community engagement with walking and cycling events; and
- > Increased bicycle parking.

5.6 Broken Hill personas

Based on the output of the consultation, five typical personas representative of the demographic, needs, and travel behaviour of Broken Hill residents were developed. These are outlined in **Figure 5-2**.

Figure 5-2 Broken Hill personas



6 Network development

6.1 Introduction

The extent and topography of Broken Hill is generally favourable to walking and cycling. The climate is a significant hurdle, and leads to a lack of urban amenity due to the lack of canopy cover. Most of Broken Hill, with the exception of South Broken Hill, is contained within a 3 kilometre radius of the town centre. Using a conservative 20km/h cycle speed and standard 4.8km/h walking speed, from the CBD one could get almost anywhere in Broken Hill within a 9-minute cycling trip, or a 40-minute walk.

6.2 Network development

The development of an active transport network for Broken Hill included identifying overarching principles, and applying these principles to a pedestrian network and cycling network, as well as a shared path network to service both pedestrians and cyclists.

6.2.1 Principles

Key principles were used to plan the walking and cycling network for Broken Hill:

- > **Connectivity:** The existing active transport network was analysed, and new routes were identified to enhance the network. This reinforces the coherence of the existing routes and maintains network legibility.
- > **Accessibility:** A key focus for Council is addressing DDA compliance within the existing network. The proposed network considered this requirement, to improve access.
- > **Connection to the CBD:** The network is designed to provide good connectivity to the CBD from all areas of Broken Hill, so that residents, workers and visitors can access employment, services, recreational facilities, and entertainment safely.
- > **Connection to schools and educational institutions:** An important element of the active transport network is to design for its use by school kids. The network was planned to provide connectivity to schools and educational institutions across Broken Hill.
- > **Connection to health facilities and retirement villages:** The network considers the location of health and other community facilities and has been designed to provide safe connections to these destinations.
- > **Distribution of the network across all areas of Broken Hill:** Equity of access for all residents of Broken Hill was another important consideration, and the network is planned to connect areas located to the north, south, east and west.
- > **Catering for future demand:** The network was planned to cater for current and future demand, including connections to schools to encourage kids to walk and cycle, as well as to future land uses and developments.
- > **Stakeholder and community comments:** Stakeholder and community comments on missing network links and priorities for Broken Hill were considered and incorporated, where possible, into the network development process. In particular, the question from the online survey 'What can we do to improve walking and cycling in Broken Hill?' showed that respondents valued connectivity over accessibility.
- > **Value for money:** The network development considered Council's expected ten-year budget, and looked for efficiencies and value for money solutions to balance improved connectivity and cost.

6.2.2 Active transport network

In regional areas, it may be impractical and/or unfeasible to provide desired infrastructure in front of every residence. A prioritisation process was established based on the principles described above to guide development of active transport infrastructure along preferred corridors. This process was used to establish a trunk network of primary routes, with the vision of rolling out additional connecting routes over time to provide a complete connected and accessible network.

6.2.2.1 *Pedestrian network*

The pedestrian network was prioritised into primary and secondary routes. The primary network is 68.2 kilometres, and the secondary network is 73.3 kilometres.

6.2.2.2 *Shared path network*

The shared path network covers a total length of 28.3 kilometres. The network is planned to cater to the needs of both pedestrians and cyclists, and particularly to enable school kids to walk or ride to school.

6.2.2.3 *On-road cycling network*

The on-road cycling network considers the existing routes in Broken Hill and has added a number of additional routes to provide a more complete network, particularly when integrated with the shared path network. On-road cycling routes are 36.4 kilometres.

6.3 **Network demand and investment overview**

An important element of network development was to increase overall population catchment and to consider current and future demand for walking and cycling. With an approximate population of 17,500, two active transport trips per day by 90 per cent of the population would mean 31,500 daily trips across the network. If there are approximately 3,000 students across all of Broken Hill's schools (based on 2016 census statistics), and target walking and cycling mode shares of between 6 per cent and 13 per cent were achieved as per the Regional NSW Services and Infrastructure Plan, the result would be 360 walking and 780 cycling return trips per day. If each of these journeys was on average 1 kilometre, and based on an assumed benefit of \$1.80 per kilometre (see **Section 2.1.2**), this results in \$648 to \$1,404 worth of net economic benefits every school day.

Although investment in active transport is generally focused more on social benefits than economic benefits, an improved network could significantly increase overall walking and cycling trips and support investment.

7 Site audit

7.1 Network standards

The following subsections outline the current design standards and mitigation measures.

7.1.1 Crossing infrastructure

7.1.1.1 Zebra and raised zebra crossings

Zebra crossings provide pedestrians with prioritised road crossing opportunities. Specific non-compliances assessed for zebra crossings and raised zebra crossings are summarised in **Table 7-1** along with the standards against which they were assessed and the recommended improvements.

Table 7-1 Zebra and raised zebra crossings assessment and improvements

Non-compliance	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)	Widen crossing to 3.6 metres wide
Poor sight lines for pedestrians		Focus is given to crests and obstructions that may restrict the clear view of approaching vehicles	Evaluate options to redesign crossing facility
Faded line markings		Pavement markings should be clearly visible by pedestrians and vehicle drivers.	Re-paint line marking
Lack of signage		Signage should be installed as per Figure 1 of AS1742.10-2009	Install signage

7.1.1.2 Signalised pedestrian crossing

Signalised pedestrian crossings provide pedestrians with a green traffic light signal priority to cross a street. Specific non-compliances assessed for signalised intersections are summarised in **Table 7-2** along with the standards against which they were assessed and the recommended improvements.

Table 7-2 Signalised intersection assessment and improvements

Non-compliance	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 pedestrian lantern		A green / red lantern should be visible to pedestrians from both sides of the crossing	Provide pedestrian lantern

7.1.1.3 Pedestrian refuges

Pedestrian refuges allow pedestrians to cross one direction of vehicle traffic at a time, providing a space in the middle of the road. Splitter islands provide a similar amenity; however, these are located on roundabout

approaches (see next section). Refuges are particularly effective in aiding the mobility of pedestrians on multi-lane roads.

Specific non-compliances assessed for pedestrian refuges are summarised in **Table 7-3** along with the standards against which they were assessed and the recommended improvements.

Table 7-3 Pedestrian refuges assessment and improvements

Non-compliance	Standard	Requirement for compliance	Recommended improvement
Refuge dimensions less than 3m (parallel) x 2m (perpendicular)	AS 1742.10-2009 Pedestrian control and protection with reference to RMS supplement and TDT 2011/01a.	3.0 metres parallel to the road direction of travel (minimum).	Reconstruct refuge to provide compliant waiting space.
Faded line marking		2.0 metres perpendicular to the road direction of travel (minimum). Pavement markings should be clearly visible by pedestrians and vehicle drivers.	Re-paint line marking

7.1.1.4 Splitter islands

Splitter islands allow pedestrians to cross one direction of vehicle traffic at a time close to a roundabout, providing a space in the middle of the road to wait before completing the second leg of the road crossing.

Specific non-compliances assessed for splitter islands are summarised in **Table 7-4** along with the standards against which they were assessed and the recommended improvements. Splitter are effective in aiding the mobility of pedestrians on multi-lane roundabouts.

Table 7-4 Splitter island assessment and improvements

Non-compliance	Standard	Requirement for compliance	Recommended improvement
Missing leg	Guidance sought from Guide to road design Part 4B roundabouts, there is some element of engineering judgment involved	Provision of splitter islands on all crossing legs.	Investigate provision of splitter island
Splitter island dimensions less than 2m (parallel) x 2m (perpendicular)		2.0 metres parallel to the road direction of travel (minimum). 2.0 metres perpendicular to the road direction of travel (minimum).	Reconstruct splitter island to provide compliant waiting space
Should be located a minimum 6m from vehicle hold line		Located 6.0 metres behind the vehicle hold line to enable a pedestrian to cross while a vehicle is waiting to enter the roundabout.	Relocate/redesign splitter island

7.1.1.5 Kerb ramps

Kerb ramps are used to assist pedestrians, particularly those who are less mobile, to enter and exit the roadway to cross the street at a designated point. Specific non-compliances assessed for kerb ramps are summarised in **Table 7-5** along with the standards against which they were assessed and the recommended improvements.

Table 7-5 Kerb ramp assessment and improvements

Non-compliance	Standard	Requirement for compliance	Recommended improvement
Missing	AS1428.1-2009 and AS1428.4.1 – 2009	Kerb ramps should be provided where possible.	Construct kerb ramp

Non-compliance	Standard	Requirement for compliance	Recommended improvement
None (Path level with road)	Design for Access and Mobility, and RMS Standard Drawing R0300-11	Where there is no difference between height in the footpath and roadway TGSI is required.	Investigate provision of 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 non-compliant dimensions/grades		Kerb ramps should be 1.5 metres wide to allow for the safe movement of wheelchairs, prams, mobility aids.	Reconstruct kerb ramp
Damaged / poor condition		Kerb ramps should be in a good condition to avoid trip hazards.	Reconstruct kerb ramp

The desktop assessment of the secondary network assessed missing and misaligned kerb ramps.

7.1.1.6 Missing crossing location

Regular road crossings allow pedestrians to access their destinations safely. This is important in areas of high vehicle volumes and speeds or where the crossing distance is long. Issues associated with a lack of crossing opportunities were assessed as part of the site audit. The criteria used to audit these is summarised in **Table 7-6**.

Table 7-6 Lack of crossing infrastructure assessment and improvements

Non-compliance	Requirement for compliance	Recommended improvement
Hazardous crossing location / no formal crossing facility	Crossing facilities along key pedestrian desire lines	Investigate rectification of identified hazard
Evidence of a pedestrian desire line	Crossing facilities along key pedestrian desire lines	

7.1.2 Paths

7.1.2.1 Footpaths

All footpaths and shared paths along the proposed pedestrian network were assessed for their existence, width, condition and other issues. Specific issues assessed for footpath presence and width are summarised in **Table 7-7**.

Table 7-7 Footpath assessment and improvements

Facility	Standard	Assessment	Recommended improvement
Footpath	Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling (AGRD06A-17) Section 5.1	Missing	Construct path
		Non-compliant width (<1.2m)	Reconstruct footpath
		Compliant	None
		Cracked/uneven major	Reconstruct path
		Cracked/uneven minor	Reconstruct or repair path

7.1.2.2 Shared paths

Shared path issues assessed on site are shown in **Table 7-8**.

Table 7-8 Shared path assessment and improvements

Facility	Standard	Assessment	Recommended improvement for compliance
Shared path	Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling (AGRD06A-17) Section 5.1	Missing	Construct path
		Non-compliant width (<2.5m)	Reconstruct path
		Compliant	None
		Cracked/uneven major	Reconstruct path
		Cracked/uneven minor	Reconstruct or repair path

Where a footpath condition is poor, and does not meet the width compliance, the recommendation is to reconstruct the entire footpath.

7.1.2.3 On-road cycle path

A selection of minimum design standards for cycling infrastructure are described in **Table 7-9**. The overarching design factors are to provide a coherent, direct, safe, attractive and comfortable cycling network, ideally supplemented by end-of-trip facilities.

Table 7-9 On-road cycle path assessment and improvements

Defect	Standard	Requirement for compliance	Recommended improvement
On-road cycle path	Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling (AGRD06A-17) Section 5.1	Missing	Construct path
		Non-compliant width (<1.5m)	Reconstruct path
		Compliant	None

8 Identified issues

The site audit identified a range of issues in the pedestrian and cycling network. The issues found directly impact pedestrian and cyclist safety, accessibility and comfort.

These issues are described in this section, with improvements identified in the Schedule of Works in **Appendix B**.

8.1 Path issues





8.1.1 Footpath provision and width

The pedestrian network consists of approximately 140 kilometres of footpath. Of this, 34 per cent (47.1 kilometres) was found to be a compliant width (minimum 1.2 metres), and 63 per cent of the proposed network is missing (88.4 kilometres). Site audits showed that existing footpaths in Broken Hill are generally compliant and do not require upgrading.

The footpath network's composition is shown in **Table 8-1**, and examples of footpath conditions are shown in **Figure 8-1** to **Figure 8-4**. Footpath issues are also identified by location in **Figure 8-5**.

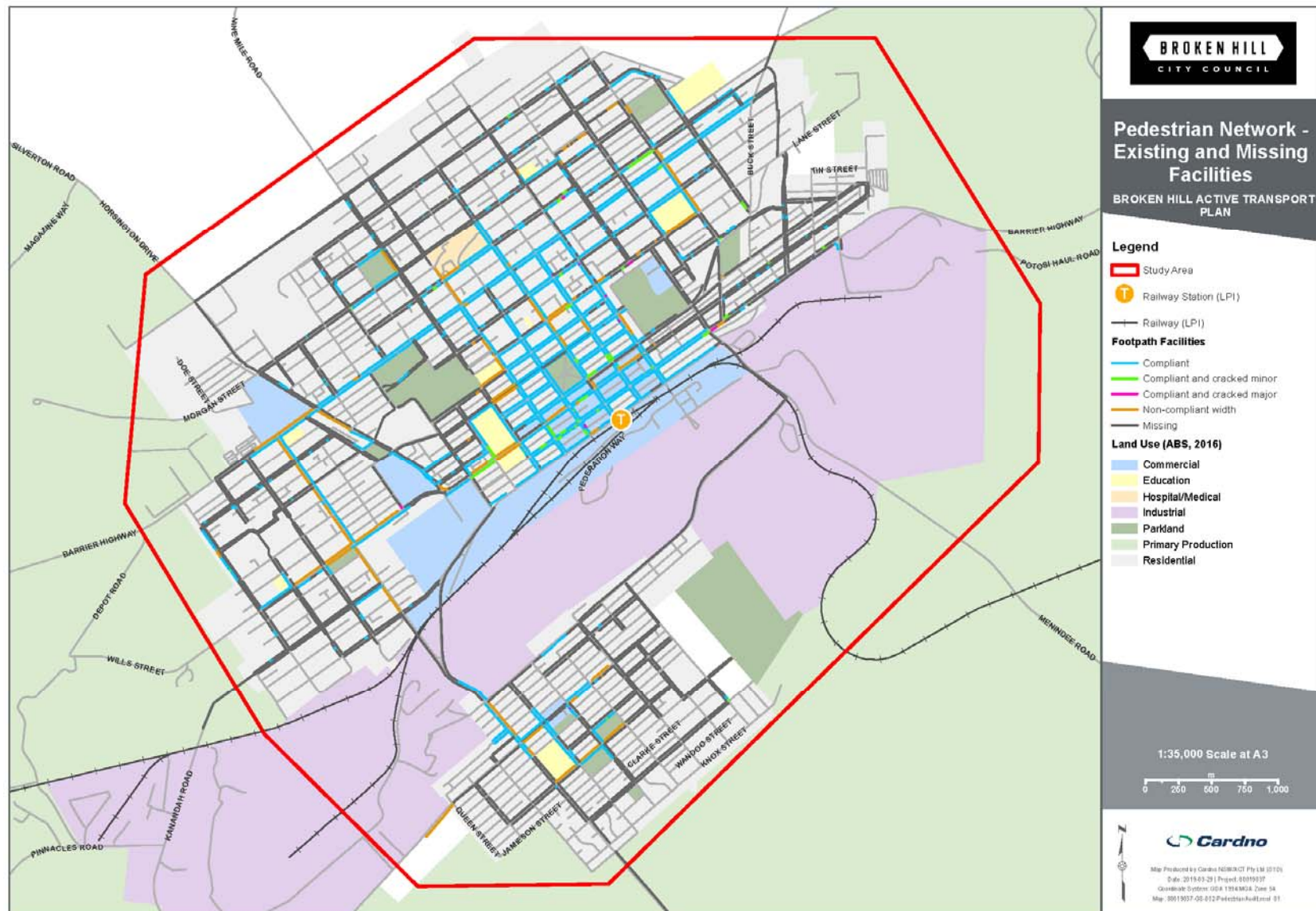
Table 8-1 Footpath network

Footpath width	Length (km)		
	Not cracked	Cracked minor	Cracked major
Compliant width	47.1	1.9	0.28
Non-compliant width	3.5	0	0.15
Missing	88.4		
Total	140.3		

<p>Figure 8-1 Argent Street - compliant width and cracked (major)</p> 	<p>Figure 8-2 Bromide Street - Compliant width and cracked (minor)</p> 
<p>Figure 8-3 Oxide Street - Compliant width and not cracked</p> 	<p>Figure 8-4 Cobalt Street - Missing footpath</p> 

An overview of facilities in the pedestrian network is shown in **Figure 8-5**.

Figure 8-5 Pedestrian network facilities






8.1.2 Shared path provision and width

There is approximately 28.4 kilometres of shared path in the proposed shared path network in Broken Hill. Of this, over half of the paths are missing (63 per cent), and 32 per cent are currently footpaths with a width not adequate for a shared path (minimum 2.5 metres wide).

The shared path network's composition is shown in **Table 8-2**, and examples of shared path conditions are shown in **Figure 8-6** to **Figure 8-8**.

Table 8-2 Shared path network

Shared path width	Length (km)		
	Not cracked	Cracked minor	Cracked major
Compliant width	1.8	0.041	0
Non-compliant width	8.9	0	0.010
Missing	17.6		
Total	28.4		

Figure 8-6 Wolfram Street - Compliant width and not cracked	Figure 8-7 Brazil Street - Missing shared path
	
Figure 8-8 Blende Street - Non-compliant width and not cracked shared path	
	

An overview of bicycle network facilities is shown in **Figure 8-13**.

8.1.3 On-road cycling facilities

On road cycling facilities were audited for 36.4 kilometres of the road network in Broken Hill. The audit identified that the majority of the proposed on-road cycling network is missing.

The composition of the on-road cycling network is shown in **Table 8-3**, and examples of on-road cycling facility conditions are shown in **Figure 8-9** to **Figure 8-12**. On-road cycling facility issues are shown in **Figure 8-13**.

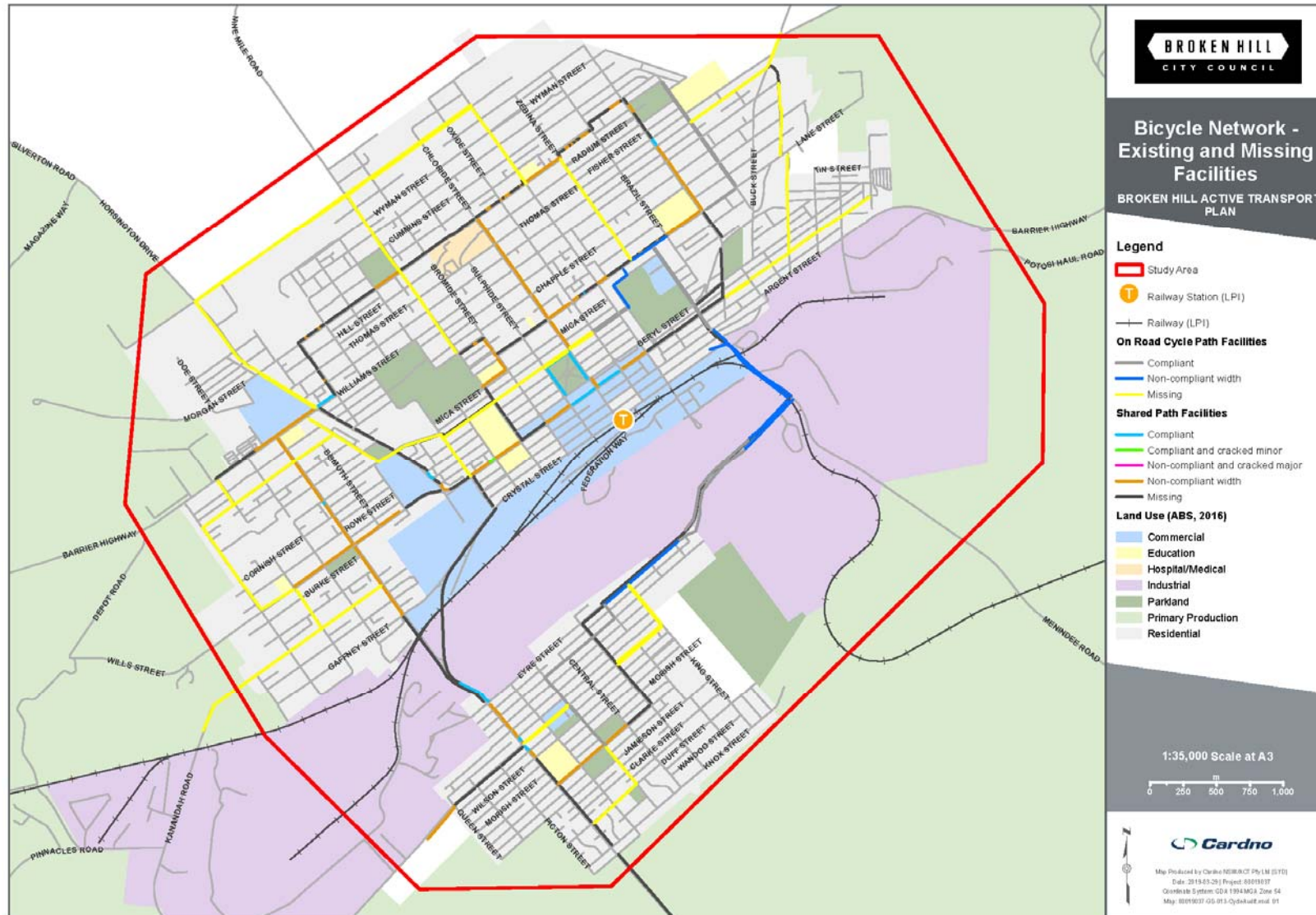
Table 8-3 On-road cycling network

On-road cycling facility	Length (km)
Compliant width	7.8
Non-compliant width	3.8
Missing	24.7
Faded line markings	2.0
Poor path condition	1.3
Total	36.4

Figure 8-9 Piper Street - Compliant width	Figure 8-10 Kanandah Road - Missing path
	
Figure 8-11 Wolfram Street - Faded line markings	Figure 8-12 Iodide Lane - Faded line markings
	

An overview of bicycle network facilities is shown in **Figure 8-13**.

Figure 8-13 Bicycle network facilities



8.1.4 Path obstructions

The majority of obstructions in the Broken Hill active transport network consist of vegetation obstructions. General obstructions included bus stops and gates, and utility obstructions included power poles.

The types of path obstructions are shown in **Table 8-4**, and examples of each are shown in **Figure 8-14** to **Figure 8-17**.

Table 8-4 Path obstructions

Path obstruction	Count
General obstruction	5
Utility	5
Vegetation	31
Total	41

Figure 8-14 Cobalt Street - Vegetation



Figure 8-15 Gypsum Street - Maintenance required



Figure 8-16 Williams Street - Utility



Figure 8-17 Sulphide Street - General obstruction



8.2 Crossing issues

8.2.1 Kerb ramps

Over one half (53 per cent) of all kerb ramps in the proposed pedestrian network were found to be missing, and many existing kerb ramps (18 per cent) were found to be non-compliant. Four per cent of kerb ramps were located on kerbs that were flat with the road.

The condition of kerb ramps in the network are shown in **Table 8-5**, and examples are shown in **Figure 8-18** to **Figure 8-21**.

Table 8-5 Kerb ramps

Kerb ramp condition	Count
Compliant	353
Minor non-compliant	223
Kerb flat with road	96
Non-compliant	419
Missing	1,247
Total	2,338

Figure 8-18 Argent Street - Compliant kerb ramp



Figure 8-19 Kaolin Street - Missing kerb ramp



Figure 8-20 Bromide Street - Path level with road

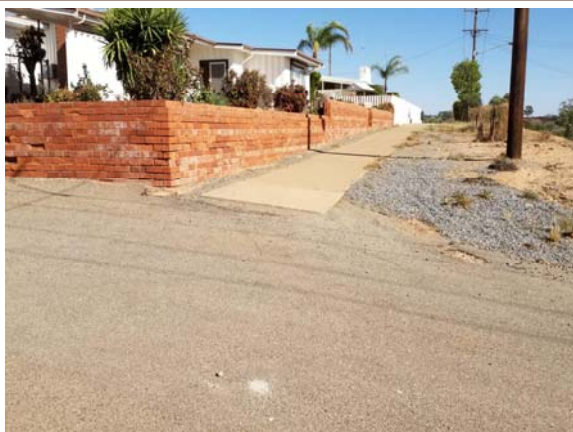


Figure 8-21 Wolfram Street - Non-compliant kerb ramp



8.2.2 Pedestrian refuge

Approximately 11 per cent of pedestrian refuges (18 of a total 171) in Broken Hill were found to be of compliant storage and crossing length.

Pedestrian refuges in Broken Hill are described in **Table 8-6**, and examples are shown in **Figure 8-22** to **Figure 8-25**.

Table 8-6 Pedestrian refuges

Pedestrian refuge condition	Count
Compliant	18
Minor non-compliance	53
Non-compliant	100
Total	171

Figure 8-22 Iodine Street - Compliant pedestrian refuge



Figure 8-23 Zebina Street - Minor non-compliant pedestrian refuge



Figure 8-24 Williams Street - Non-compliant pedestrian refuge



Figure 8-25 Chapple Street - Non-compliant pedestrian refuge



8.2.3 Signalised crossing

All signalised crossing legs in Broken Hill (11) were determined to be minor non-compliant due to widths being less than 3.3 metres. Widths vary between 2.2 and 2.9 metres in width.

Examples of signalised crossings are shown in **Figure 8-26** to **Figure 8-27**.







8.2.4 Splitter island

Of the 70 splitter island crossings in Broken Hill, 11 per cent were found to be compliant.

Splitter islands in Broken Hill are described in **Table 8-7**, and examples are shown in **Figure 8-28** to **Figure 8-31**.

Table 8-7 Splitter islands

Splitter island condition	Count
Compliant	8
Minor non-compliance	17
Non-compliant	27
Missing	18
Total	70

Figure 8-28 Gossan Street - Compliant splitter island	Figure 8-29 Patton Street - Minor non-compliant splitter island
	
Figure 8-30 Bromide Street - Non-compliant splitter island	Figure 8-31 Oxide Street - Missing splitter island
	

8.2.5 Zebra crossing

Zebra crossings generally have adequate width and brightly painted lines in Broken Hill, with 79 per cent of crossings being compliant.

Zebra crossings are described in **Table 8-8**, and examples are shown in **Figure 8-32** and **Figure 8-33**.

Table 8-8 Zebra crossings

Zebra crossing condition	Count
Compliant	15
Minor non-compliance (faded line markings)	3
Minor non-compliance (width less than 3.6 metres)	1
Total	19

Figure 8-32 Argent Street - Compliant zebra crossing	Figure 8-33 Crystal Street - Minor non-compliant zebra crossing
	

8.2.6 Missing crossing

Missing crossing locations were proposed on roads where crossing distances were large or were deemed hazardous to pedestrians. The treatment for missing crossing locations is to provide a pedestrian refuge. A total of 27 locations in Broken Hill were identified as having a missing crossing.

Examples of missing crossings are shown in **Figure 8-34** to **Figure 8-37**.

Figure 8-34 Wolfram Street - Missing crossing



Figure 8-35 Oxide Street - Missing crossing



Figure 8-36 Lane Street - Missing crossing



Figure 8-37 Iodine Street - Missing crossing



9 Improvements and initiatives

Council has guided an ATP budget (incorporating elements of pedestrian and cycling expenditure) of approximately \$10 million over 10 years. There are co-funding arrangements with the state government to further leverage this.

To address the walking and cycling opportunities, improvements and initiatives are presented in three groups:

- > Infrastructure and operations improvements and initiatives (**Table 9-1**);
- > Policy and development improvements and initiatives (**Table 9-2**); and
- > Behaviour change improvements and initiatives (**Table 9-3**).

These improvements and initiatives are outlined in more detail in **Sections 9.2, 9.3** and **0**. These details include a rationale as well as how the improvement or initiative aligns with the specific objectives and strategies of the Broken Hill 2033 Community Strategic Plan (CSP).

Table 9-1 Infrastructure and operations improvements and initiatives

#	Infrastructure and operations improvements and initiatives
IO1	Roll out the infrastructure schedule prioritising the shared path network
IO2	Consider a broad-based local area traffic management study to support the infrastructure schedule
IO3	Review lighting opportunities along the shared path network
IO4	Review opportunities for improved green spaces
IO5	Roll out an infrastructure/ asset management strategy which involves street sweeping and litter removal
IO6	Review signal phasing to seek opportunities to improve pedestrian and cycling phasing and priority
IO7	Develop an action plan to manage stray dogs and other wild animals
IO8	Reconfigure roundabout geometry to radial design
IO9	Adopt bicycle parking standards for LGA
IO10	Install water bubblers and seating benches along active transport network
IO11	Manage maintenance program including vegetation and path management

Table 9-2 Policy and development improvements and initiatives

#	Policy and development improvements and initiatives
PD1	Consider other stakeholders such as public transport operators with network development
PD2	Advertise active transport developments on media platforms
PD3	Champion lower urban speed limits within Broken Hill of 40km/h (or even 30km/h)
PD4	Implement landscaping and urban design upgrades to integrate with delivery of the active transport plan
PD5	Introduce a program for local residents to participate in the construction of footpaths and other infrastructure
PD6	Mandate provision of active transport infrastructure by amending the DCP for new developments
PD7	Develop a wayfinding plan

Table 9-3 Behaviour change improvements and initiatives

#	Behaviour change improvements and initiatives
BV1	Implement electric bicycle hire scheme in Broken Hill
BV2	Collaborate with NSW Department of Education to deliver road safety courses at schools
BV3	Create a Broken Hill duathlon event
BV4	Support the appointment of community champions for walking and cycling
BV5	Introduce active transport days (ride/ walk to work)


#	Behaviour change improvements and initiatives
BV6	Organise 'Sunday Streets' days
BV7	Introduce walking/ cycling school buses
BV8	Deliver 'Cycling in the City' and 'Learn to Ride' courses
BV9	Launch a 'Walk/ Ride/ Scoot the Line' annual charity event
BV10	Develop a Heritage Ride



9.2 Infrastructure and operations actions

IO1	Roll out the infrastructure schedule prioritising the shared path network
Rationale	This Active Transport Plan has developed a comprehensive infrastructure schedule incorporating a detailed footpath and shared path network for implementation over 10 years. Strategically, this network has been costed at \$42,945,838. It will form the foundation for improved walking and cycling activity, safety and amenity in Broken Hill. The schedule of works is discussed in Section 10 .
Alignment with CSP objectives and strategies	1.1.3, 1.2.5, 1.2.6, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1

IO2	Consider a broad-based Local Area Traffic Management (LATM) plan to support the infrastructure schedule
Rationale	A LATM plan will seek to further improve pedestrian amenity and safety. It will rationalise the road network, reducing the likelihood of conflict. A LATM plan can slow traffic on residential streets improving safety outcomes.
Alignment with CSP objectives and strategies	1.1.3, 1.2.5, 1.2.6, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.1.4, 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1

IO3	Review lighting opportunities along the shared path network
Rationale	A lighting installation strategy will support pedestrian and cyclist amenity, especially during low and no light periods.
Alignment with CSP objectives and strategies	1.1.1, 1.1.2, 1.1.3, 1.2.5, 1.2.6, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1

IO4 Review opportunities for improved green spaces	
Rationale	<p>If a LATM plan (as outlined in IO2) is adopted, this will result in more opportunities to replace road space with green spaces, including pocket parks. These pocket parks can be supported by other amenities including benches and water bubblers (as outlined in IO10), and can include recreational infrastructure such as table tennis tables, as per the example from Parkes Shire Council below.</p>  <p><i>Source: Parkes Shire Council Facebook Account, accessed 26 March 2019</i></p>
Alignment with CSP objectives and strategies	<p>1.1.3, 1.2.5, 1.2.6, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.1.4, 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1</p>
IO5 Roll out an infrastructure/ asset management strategy which involves street sweeping and litter removal	
Rationale	<p>Council may consider a program which seeks to remove loose gravel from roads and footpaths. The removal of litter at the same time would improve general amenity and cleanliness of the local community.</p>
Alignment with CSP objectives and strategies	<p>1.1.1, 1.2.5, 1.2.6, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1</p>
IO6 Review signal phasing to seek opportunities to improve pedestrian and cycling phasing and priority	
Rationale	<p>Due to the climate of Broken Hill, pedestrians and cyclists are sensitive to phase cycles at traffic lights. If signal phasing reduced waiting time for pedestrians and cyclists, it would improve overall active transport amenity.</p>
Alignment with CSP objectives and strategies	<p>1.2.5, 1.2.6, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1</p>
IO7 Develop an action plan to manage stray dogs and other wild animals	
Rationale	<p>Council could consider developing an action plan and working with animal control groups to capture stray animals.</p>
Alignment with CSP objectives and strategies	<p>1.1.1, 1.1.3, 1.2.5, 1.2.6, 1.2.7, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1</p>

IO8 Reconfigure roundabout geometry to radial design	
Rationale	<p>Roundabout design in Australia commonly adopts a tangential design, rather than the more traditional radial design seen particularly in Europe. Tangential design allows a high degree of vehicular manoeuvrability, especially for larger vehicles, however it means that smaller vehicles may not need to slow down. By enlarging the roundabout and/or 'squaring up' the entry and departure thresholds, vehicles are forced to slow down to a much greater extent to enter the roundabout.</p> <p>To maintain heavy vehicle access at roundabouts, a roundabout design incorporating mountable cushions can be considered on roads with high proportions of heavy vehicles. Any change in the design of the roundabout should be considered with swept paths tested for the largest vehicles which would reasonably use the road. An example of tangential design and an alternative schematic adopting a more radial design are shown below.</p> <div> <div> <p>Tangential roundabout design</p>  <p>Source: Nearmap</p> </div> <div> <p>Alternative schematic based on radial design</p>  <p>Source: Modified from Nearmap</p> </div> </div>
Alignment with CSP objectives and strategies	<p>1.1.3, 1.2.5, 1.2.7, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7</p> <p>2.1.8, 2.3.4</p> <p>4.1.1, 4.1.2, 4.2.1, 4.4.1</p>

IO9 Adopt bicycle parking standards for LGA	
Rationale	<p>Network infrastructure is one part of a bicycle network, the other aspect is the provision of secure bicycle parking so that cyclists can safely store their bicycle. Council should investigate implementation of Australian Standards for bicycle corrals, and a strategy for implementation of corrals across the LGA. This should focus on key destinations such as recreational facilities, shopping centres, and major employment centres.</p> <p>Council should also work with schools to investigate improving facilities for bicycle storage adjacent to and within school grounds. In addition, Council should champion the provision of active transport infrastructure in new developments using DCP guidelines.</p>
Alignment with CSP objectives and strategies	<p>1.2.7, 1.4.5, 1.5.1, 1.5.6, 1.5.7</p> <p>2.1.8, 2.3.4</p> <p>4.1.1, 4.1.2, 4.2.1, 4.4.1</p>

IO10 Install water bubblers and seating benches along active transport network	
Rationale	<p>Council could consider installing more water bubblers and seating benches. This could be aligned with development of a LATM plan (IO2) and improving green spaces (IO4).</p>
Alignment with CSP objectives and strategies	<p>1.2.5, 1.2.6, 1.2.7, 1.5.1, 1.5.6, 1.5.7</p> <p>2.1.1, 2.1.4, 2.1.8, 2.3.4</p> <p>4.1.1, 4.1.2, 4.2.1, 4.4.1</p>

IO11	Manage maintenance program including vegetation and path management
Rationale	Council should consider allocating a maintenance budget to cover expenses relating to path grinding, vegetation trimming, and other required maintenance activities.
Alignment with CSP objectives and strategies	1.1.1, 1.1.3, 1.4.1, 1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1


9.3 Policy and development actions

PD1	Consider other stakeholders such as public transport operators with network development
Rationale	Public transport relies in part on the provision of an active transport network, and that network may support increased public transport usage. Development of a LATM plan (IO2), and the roll out of a comprehensive active transport network, may impact bus routing in the community.
Alignment with CSP objectives and strategies	1.2.5, 1.2.6, 1.2.7, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.2.2

PD2	Advertise active transport developments on media platforms
Rationale	<p>Council should continue to utilise media and social media channels, as they did to promote community consultation for the Active Transport Plan, to update the community regarding construction of new sections of the active transport network, and accessibility improvements across the existing network. An example of Council's social media updates is shown below.</p> <div data-bbox="417 934 1015 1365" data-label="Image"> </div> <p>Source: Broken Hill City Council Twitter Account, accessed 27 March 2019</p>
Alignment with CSP objectives and strategies	1.2.5, 1.2.6, 1.2.7, 1.5.1 2.1.1, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.2.2

PD3	Champion lower urban speed limits within Broken Hill of 40km/h (or even 30km/h)
Rationale	Reducing vehicular speeds has only a minor impact on journey times, but significantly improves pedestrian and cyclist safety outcomes in the event of an accident.
Alignment with CSP objectives and strategies	1.1.1, 1.1.3, 1.2.5, 1.2.6, 1.2.7, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.2.2

PD4	Consider landscaping and urban design alongside active transport project development
Rationale	The Broken Hill climate is such that an important part of the delivery of an active transport network is the provision of landscaping and urban design improvements in parallel. This will increase overall amenity and providing valuable canopy cover across Broken Hill
Alignment with CSP objectives and strategies	1.2.5, 1.2.6, 1.2.7, 1.3.2, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.2.2

PD5	Create a program for local residents to participate in the development of footpaths and other infrastructure
Rationale	<p>Council encourages participation of the community in various activities to improve the environment and amenity around Broken Hill. Council could consider introducing a program whereby residents can participate in the roll out of the active transport network across Broken Hill. The example below from Council's Twitter account demonstrate the interest of the community in contributing enhancing their local area.</p> <div>  <p>Source: Broken Hill City Council Twitter Account, accessed 27 March 2019</p> </div>
Alignment with CSP objectives and strategies	1.2.1, 1.2.2, 1.2.5, 1.2.6, 1.2.7, 1.3.2, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.2.2, 4.3.1

PD6	Mandate provision of active transport infrastructure by amending the DCP for new developments
Rationale	See IO9
Alignment with CSP objectives and strategies	1.2.7, 1.4.5, 1.5.1, 1.5.6, 1.5.7 2.1.8, 2.3.4 4.1.1, 4.1.2, 4.2.1, 4.4.1

PD7	Develop a wayfinding plan
Rationale	A wayfinding plan may be considered to support pedestrian and cycling movement along preferred corridors.
Alignment with CSP objectives and strategies	1.1.3, 1.2.5, 1.4.1, 1.4.2, 1.5.1, 1.5.6, 1.5.7 2.1.5, 2.2.1, 2.2.2, 2.2.5 4.1.1, 4.1.2, 4.2.1, 4.4.1

9.4 Behaviour change actions

BV1 Implement electric bicycle hire scheme in Broken Hill	
Rationale	<p>Council could consider investing in a fleet of electric bicycles which could be used by staff during the day and/or rented to members of the public and tourists. This would give people an opportunity to try and electric bicycle which could provide an alternative mode of travel for them, made more attractive by the fact that they require less physical effort, which could be beneficial in extreme heat.</p> <p>Promoting electric bicycle use would also align with the pledge to use electric vehicles from the Power Cities Partnership, of which Broken Hill is a member, noting electric bicycles are legally recognised as electric vehicles.</p>
Alignment with CSP objectives and strategies	<p>1.4.2, 1.4.5, 1.5.1, 1.5.6, 1.5.7</p> <p>2.3.4</p> <p>3.1.3</p> <p>4.1.2, 4.2.1, 4.2.3, 4.3.4, 4.4.2</p>

BV2 Collaborate with NSW Department of Education to deliver road safety courses at schools	
Rationale	<p>Council could collaborate with the NSW Department of Education to deliver road safety courses at schools. These could be completed with the broader public, or specifically focused at school children, and could cover pedestrian and cycling safety, helmet laws, and safe road crossing procedure.</p>
Alignment with CSP objectives and strategies	<p>1.1.2, 1.1.3, 1.4.2, 1.5.1, 1.5.6, 1.5.7</p> <p>2.3.4,</p> <p>4.1.2, 4.2.1, 4.2.3, 4.3.4, 4.4.2</p>

BV3 Create a Broken Hill duathlon event	
Rationale	<p>To promote active lifestyles more broadly, Council could organise a duathlon event (run-bicycle). The duathlon route could incorporate sections of the shared path network, as it is rolled out. This could raise both the profile of, and participation in, walking, running and cycling. It would have the added benefit of helping to promote a more active lifestyle for Broken Hill residents, given that a high percentage of the population are reported to be overweight or obese²⁸.</p>
Alignment with CSP objectives and strategies	<p>1.1.3, 1.2.2, 1.3.2, 1.4.2, 1.5.1, 1.5.6, 1.5.7</p> <p>4.1.2, 4.2.1, 4.2.3, 4.3.4, 4.4.2</p>

BV4 Support the appointment of community champions for walking and cycling	
Rationale	<p>Council could support the development of local walking and cycling groups as well as champions for these groups. Having champions for active transport as well as recreational walking and cycling from within the community will help to increase overall awareness of walking and cycling, and raise the profile of the active transport network that Council is working to implement.</p> <p>Community champions could be invited to participate on relevant Council committees to represent community views.</p>
Alignment with CSP objectives and strategies	<p>1.1.3, 1.2.2, 1.3.2, 1.4.2, 1.5.1, 1.5.6, 1.5.7</p> <p>2.3.4</p> <p>4.1.2, 4.2.1, 4.2.3, 4.3.4, 4.4.2</p>

²⁸ <https://www.abc.net.au/news/2011-08-26/obesity-rates-tipped-to-pressure-hospital-system/2856674?site=brokenhill>, accessed 25 March 2019

BV5 Introduce active transport days (ride/ walk to work)	
Rationale	Council may consider engaging with the local business chamber to develop walk/ cycle to work programs. These are promoted at the state level, but Council may undertake more targeted promotional activities to better suit the local community, for example progressively promoting walking or cycling to work once a year, once a month, and even once a week.
Alignment with CSP objectives and strategies	1.1.3, 1.2.2, 1.4.2, 1.5.1, 1.5.6, 1.5.7 2.3.4 4.1.2, 4.2.1, 4.2.3, 4.3.4, 4.4.2

BV6 Organise 'Sunday Streets' days	
Rationale	Temporary street closures within/ close to CBD areas to create safe spaces for people to walk and participate in community events have grown in popularity worldwide. They have the added benefit of being flexible to suit the local community. Sunday Streets events could be enhanced by other activities such as free yoga/ chair yoga, tai chi, learn to ride and/or try a bike initiatives, and integrated with local craft and farmers' markets. Sunday Streets days could be introduced gradually, e.g. biannually, and expanded to monthly or weekly frequency depending on popularity.
Alignment with CSP objectives and strategies	1.1.3, 1.2.2, 1.4.2, 1.5.1, 1.5.6, 1.5.7 2.1.1, 2.1.7, 2.2.1 4.1.2, 4.2.1, 4.2.3, 4.3.4, 4.4.2

BV7 Introduce walking/ cycling school buses	
Rationale	Council could work with local schools and parents to support the introduction of walking and cycling school buses. Walking and cycling buses would allow kids to be safely guided to school in a group environment with adult supervision. The benefits would include increasing the amount of daily activity for kids, and helping them to understand that walking and cycling are legitimate forms of transport. Their activity could also influence the adults around them to shift their behaviour to consider walking and cycling more frequently. Walking and cycling buses could be rolled out progressively as the shared path network is completed.
Alignment with CSP objectives and strategies	1.1.3, 1.2.2, 1.5.1, 1.5.6, 1.5.7 2.3.4 4.1.2, 4.2.1, 4.2.3, 4.3.1, 4.3.4, 4.4.2

BV8 Deliver 'Cycling in the City' and 'Learn to Ride' courses	
Rationale	Council could consider engaging a service provider or experienced local cyclists to deliver short 'Cycling in the City' and 'Learn to Ride' courses for adults and kids wishing to get on or get back on a bike. These programs are popular across various Councils in metropolitan NSW and could also be beneficial in Broken Hill. They could be rolled out progressively with the delivery of the shared path network.
Alignment with CSP objectives and strategies	1.1.1, 1.1.3, 1.2.2, 1.2.3, 1.3.1, 1.4.2, .3.2, 1.5.1, 1.5.6, 1.5.7 2.3.4 4.1.2, 4.2.1, 4.2.3, 4.3.1, 4.4.2

BV9 Launch a 'Walk/ Run/ Ride/ Scoot the Line' annual charity event	
Rationale	<p>Respondents to the community and stakeholder consultation activities mentioned the importance of the Line of Lode landmark to Broken Hill, as well as the potential for it to become a destination for walking and/or cycling,</p> <p>Council could consider creating an annual charity event to Walk, Run, Ride, or Scoot the Line. This event would be open to pedestrians, cyclists, and mobility scooter users. It could have different levels of competition, including a cycling sprint and a fun run. The community could vote for a charity organisation to support as part of the event.</p>
Alignment with CSP objectives and strategies	<p>1.1.1, 1.1.3, 1.2.2, 1.3.2, 1.4.2, 1.5.1, 1.5.6, 1.5.7</p> <p>2.3.4</p> <p>4.1.2, 4.2.1, 4.2.3, 4.3.1, 4.4.2</p>

BV10 Develop a Heritage Ride	
Rationale	<p>Council could leverage the existing Central City Heritage Walk and design a Heritage Ride with the assistance of local cycling enthusiasts. This would be an important recreational loop ride for locals, and could develop into a key attractor for tourists visiting Broken Hill.</p>
Alignment with CSP objectives and strategies	<p>1.1.3, 1.2.2, 1.2.3, 1.3.4, 1.4.3, 1.5.1, 1.5.7</p> <p>3.2.2</p> <p>4.1.2, 4.2.1, 4.2.3, 4.3.1, 4.3.4, 4.4.2</p>

10 Prioritisation and cost estimates

10.1 Prioritisation

The recommended improvement works were prioritised against a range of criteria agreed with Council, with the objective of developing a priority program of works to be delivered over the next 10 years.

A prioritisation process was used for individual improvement works identified during the audit. Following the initial prioritisation and costing, it was agreed with Council that focusing on improvement works along the shared path network would provide the best value for money, as it would provide greater connectivity and accessibility for both pedestrians and cyclists. Therefore, an additional priority was allocated to works located along the shared path network, to identify the highest priority works. The shared path network has been split into 12 routes, and represented in 12 project sheets which Council can use to support co-funding applications. The project sheets and the shared path network are shown in **Appendix B**.

10.1.1 Prioritisation criteria and weighting

A set of prioritisation criteria were identified, and agreed with Council. The criteria considered the compliance of paths and crossings, as well as proximity to the CBD, educational institutions, and health and retirement facilities.

The prioritisation criteria and their weighting are shown in **Table 10-1**.

Table 10-1 Prioritisation criteria and weighting

Criteria	Details	Score	Weighting
Path condition	Missing	10	40%
	Cracked major	7	
	Cracked minor / non-compliant width	2	
	Compliant	0	
Path obstructions	Debris obstruction	10	40%
	Vegetation obstruction	10	
	Utilities obstruction	5	
	No obstruction	0	
Crossing compliance	Missing	10	40%
	Non-compliant	5	
	Minor non-compliance	2	
	Compliant	0	
Proximity to CBD	Located within a 400m walking catchment	10	20%
	Located within a 800m cycling catchment	10	
	Located outside the catchment	0	
Proximity to schools, TAFE, universities	Located within a 400m walking catchment	10	20%
	Located within a 800m cycling catchment	10	
	Located outside the catchment	0	
Proximity to health institutions, retirement and nursing homes	Located within a 400m walking catchment	10	20%
	Located within a 800m cycling catchment	10	
	Located outside the catchment	0	

It should be noted that the Path condition, Path obstructions, and Crossing compliance criteria (40 per cent each) were not applied across all works. Only one of these criteria was relevant to each work, the other two were excluded. The three proximity criteria (totalling 60 per cent) were relevant to all works. Therefore, the assessment of all works was out of a total of 100 per cent.

Works were prioritised as high, medium, and low priority based on the scores obtained from the above assessment. The timeframes for implementation of works for each priority level are shown in **Table 10-2**.

Table 10-2 Priority rating

Score	Priority	Timeframe
7.0 >	High priority	0-2 years
≤ 7.0 and ≥ 5	Medium priority	3-5 years
< 5	Low priority	6-10 years

10.2 Cost estimates

Strategic cost estimates are based on civil works and unit rates agreed by Council. The costs for each recommended improvement are included in the Schedule of Works spreadsheet, attached below. This is divided into capital works and maintenance works.



20190607_Schedule.xlsx

10.2.1 Total cost estimate

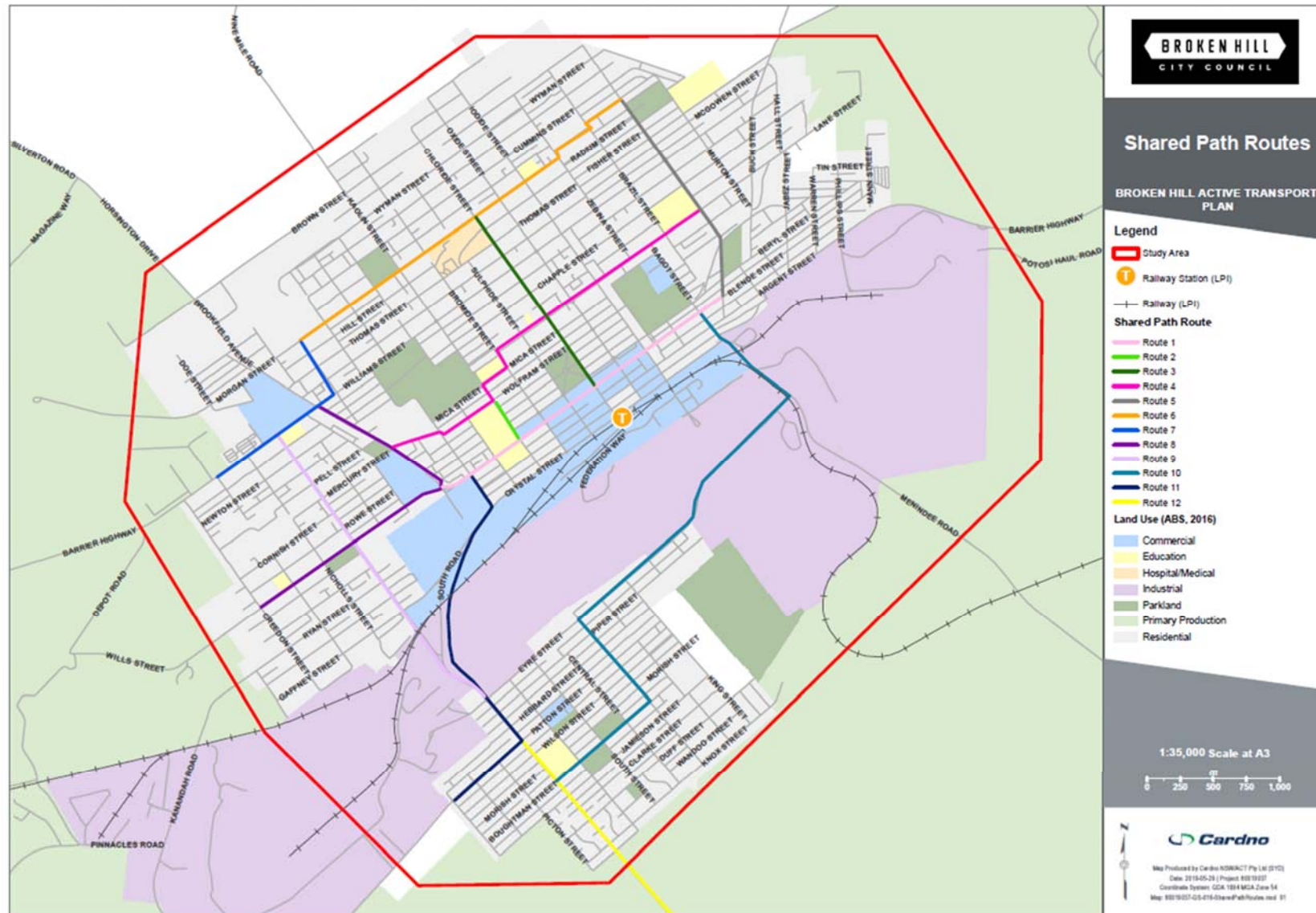
The total cost estimate for the Active Transport Plan improvement works is \$42,945,838. The estimated cost for improvement works relating to the Shared Path network only is \$12,376,544. The cost for each of the 12 routes of the Shared Path network is shown in **Table 10-3**.

Table 10-3 Shared path network cost estimates

Shared Path Routes	Cost
Route 1: Shared path on Blende Street between Galena Street and Silver Street	\$ 1,248,943
Route 2: Shared path between Blende Street and Wolfram Street along Kaolin Street	\$ 129,701
Route 3: Shared path between Blende Street and Morgan Street along Chloride Street	\$ 794,207
Route 4: Shared path between Galena Street and McCulloch Street via Talc Street, Wolfram Street, Mica Street and Lane Street	\$ 1,512,472
Route 5: Shared path between Blende Street and O'Neill Street along Silver Street and McCulloch Street	\$ 741,888
Route 6: Shared path between O'Farrell Street and McCulloch Street along Morgan Street, Uranium Street and O'Neill Street	\$ 1,381,234
Route 7: Shared path between Harris Street and Morgan Street along Rakow Street and O'Farrell Street	\$ 601,595
Route 8: Shared path from Creedon Street to Williams Street via Wills Street and Galena Street	\$ 914,233
Route 9: Shared path between Eyre Street and Williams Street along Gypsum Street	\$ 1,036,537
Route 10: Shared path between Bonanza Street and Argent Street via Boughtman Street, Rockwell Street, Eyre Street and Menindee Road	\$ 2,066,018
Route 11: Shared path between Queen Street and Blende Street via Wentworth Road, South Road and Gossan Street	\$ 1,150,092
Route 12: Shared path between Broken Hill Airport and Patton Street along Airport Road and Bonanza Road	\$ 799,624
Proposed Shared Path Network	\$ 12,376,544

The proposed shared path network is shown in **Figure 10-1**.

Figure 10-1 Proposed shared path network



11 Summary

This Active Transport Plan has been developed to support increased pedestrian and cycling participation in Broken Hill. The plan focuses on improvements to connectivity and accessibility across the active transport network. Improving the network will increase equity of access to all residents, workers and visitors, and encourage greater adoption of walking and cycling by the whole community, including kids.

The plan aligns with Council and State Government vision for active and sustainable transport choices. It will support Council's aim to encourage walking and cycling, and ensure equitable and appropriate access to public transport. The Active Transport Plan:

- > Outlines the local, state, and federal strategic planning context and its applicability;
- > Analyses current population trends and outlines opportunities to increase walking and cycling rates;
- > Summarises the existing transport network conditions and crash data;
- > Proposes a safe and accessible active transport network to connect to key land uses;
- > Highlights common issues identified as part of the site audit;
- > Suggests improvements and initiatives to address current issues and encourage walking and cycling;
- > Develops an infrastructure schedule for implementation over a period of 10 years, informs Council's asset management plan, and supports the Community Strategic Plan; and
- > Strategically costs and categorises identified improvements as high, medium, and low priority for implementation, focusing on the shared path network as the highest priority.

APPENDIX

A

CONSULTATION SUMMARY

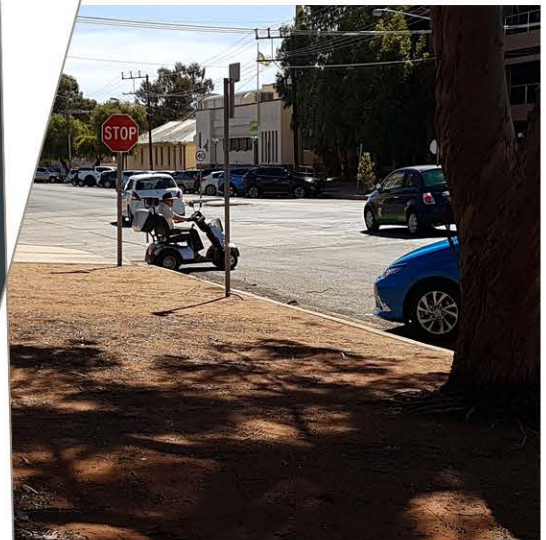
Community Consultation Outcomes Report

Broken Hill Active Transport Plan

80019037

Prepared for
Broken Hill City Council

18 January 2019



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1 Background and approach

Broken Hill City Council has engaged Cardno to complete an Active Transport Plan. This working paper outlines the consultation outcomes following the completion of stakeholder and community consultation activities. These outcomes will inform the development of the Active Transport Plan.

1.1 Project objectives

The objectives of the Active Transport Plan include:

- > To improve the level of pedestrian and bicycle rider access and priority, particularly in areas of pedestrian and bicycle rider concentration such as the Central Business District (CBD), shopping centres, schools and health care facilities;
- > To reduce pedestrian access severance and enhance safe and convenient crossing opportunities on major roads;
- > To facilitate improvements in the level of personal mobility and safety for pedestrians with a mobility impairment and older persons through the provision of pedestrian infrastructure and facilities which cater to the needs of all pedestrians;
- > To ensure that pedestrian facilities are appropriate and relevant to the surrounding land use and pedestrian user groups;
- > To plan, develop and provide safe and accessible amenities for the community along the pedestrian network;
- > To facilitate improvement in cycling mode share, particularly in cycling to work and school;
- > To design a 'bicycle network' as opposed to 'bicycle routes', and plan the network along roads favourable for cycling use, for example, away from roads with high proportions of heavy vehicle movements;
- > To provide a safe, coherent and connected cycling network for use by all members of the community;
- > To plan, develop and provide safe and accessible amenities for the community along the cycling network;
- > To provide links with other transport services to achieve an integrated land use and transport network of facilities that comply with best technical standards;
- > To ensure that walking and cycling facilities meet the required design standards; and
- > To fulfil Council's obligations under the Disability Inclusion Act 2014.

1.2 Consultation strategy objectives

The stakeholder and community consultation objectives are outlined below:

- > Understand the current walking and cycling patterns and mode share in Broken Hill;
- > Understand the issues and opportunities to be taken into account in the development of the Active Transport Plan; and
- > Inform the development of key pedestrian and bicycle rider routes.

1.3 Consultation approach

The following consultation principles were adhered to during the project's stakeholder and community consultation:

- > Consultation activities were approved by Broken Hill City Council;
- > Material prepared for stakeholder consultation was reviewed by Broken Hill City Council staff;
- > Community members were given the opportunity to provide input into the vision for walking and cycling in Broken Hill; and
- > Community consultation is reported on and reflected in the Active Transport Plan.

2 Stakeholders and consultation activities

2.1 Stakeholder identification

Cardno and Council worked collaboratively to identify a list of key stakeholders in Broken Hill. The list included:

- > Schools;
- > Aged care providers;
- > Local Police;
- > Disability organisations;
- > Local businesses;
- > Broken Hill Chamber of Commerce;
- > Transport providers; and
- > Local recreation groups.

A list of stakeholders contacted is provided in **Appendix A**.

Additionally, residents were encouraged to participate in the project consultation activities.

2.2 Consultation activities

Consultation activities for the Active Transport Plan included a mix of online and face-to-face consultation:

- > Stakeholder workshop
- > Community drop-in session
- > Community survey
- > Online map

These consultation activities and their promotion are described in the following sections.

2.3 Promotion of consultation activities

The stakeholder and community consultation activities were promoted to community members using the following methods:

- > News item located on Council's website home page;
- > ABC Radio Broken Hill interview with Council's General Manager on Monday 3 December 2018; and
- > Scheduled social media posts with survey links on Council's Twitter and Facebook pages.

These tools were advertised through, for example, Council's website as shown in **Figure 2-1** with social media posts shown in **Figure 2-2** to **Figure 2-4**.

Figure 2-1 Council website



Source: <https://www.brokenhill.nsw.gov.au>, accessed 5 December 2018

Figure 2-2 Council social media post on Twitter



Source: Broken Hill City Council Twitter page, accessed 5 December 2018

Figure 2-3 Council social media post on Facebook



Source: Broken Hill City Council Facebook page, accessed 5 December 2018

Figure 2-4 Council social media post on Facebook



Source: Broken Hill City Council Facebook page, accessed 5 December 2018

2.4 Stakeholder workshop

2.4.1 Workshop details and attendees

The identified stakeholders were invited by email to a workshop at Council Chambers on 5 December 2018. Representatives from the following organisations attended the workshop:

- > Broken Hill City Council;
- > Roads and Maritime Services;
- > Broken Hill YMCA;
- > Broken Hill Police Station;
- > LiveBetter Community Services;
- > Patton Village Association; and
- > Cardno.

Attendees at the stakeholder workshop reviewed current pedestrian and cycling network maps, and provided feedback on issues and opportunities associated with walking and cycling in Broken Hill. These maps are shown in **Appendix B**.

A brief presentation was shown to attendees, and is provided in **Appendix E**.

2.4.2 Key discussion points

The key discussion points at the stakeholder workshop included:

- > There are many health benefits associated with walking and cycling;
- > Walking and cycling create a broader sense of community;
- > Weather conditions deter civilians from walking and cycling;
- > The footpath network is incomplete;
- > Road safety creates a challenge;
- > Pedestrian and cycling networks should be connected to local tourist destinations;
- > Improved signage is needed in Broken Hill;
- > Bicycle and pedestrian paths should be implemented in the main areas of Broken Hill to promote foot traffic;
- > Current school facilities don't accommodate students cycling to school (lack of bike storage); and
- > More programs are needed to encourage healthy lifestyles and encourage more people to walk and cycle.

Figure 2-5 Stakeholder workshop – Broken Hill Active Transport Plan



2.5 Community drop-in session

2.5.1 Session details

A community drop-in session was held at Council Chambers on the evening of 5 December 2018. The community was informed about the session via Council's website home page, Facebook page, and Twitter account (see **Section 2.3**).

Attendees at the community drop-in session reviewed current pedestrian and cycling network maps, and provided feedback on issues and opportunities associated with walking and cycling in Broken Hill. These maps are shown in **Appendix B**.

2.5.2 Key discussion points

The key discussion points at the community drop-in session included:

- > People not controlling their animals is a barrier to walking;
- > Dangerous crossing points exist at Oxide Street and Williams Street, and McCullough Street and Williams Street. Generally Williams Street is difficult to cross at any point due to truck traffic;
- > Dangerous intersections at Menindee Road and Holten Drive, Silver City Highway and Gossan Street, and the s-bend between Gossan Street and Warnock Street;
- > Three Cornered Jacks cause punctures for prams and force pedestrians on to the road to avoid them;
- > Lack of safe separated walking track to the Line of Lode;
- > More walks could be introduced with new and upgraded infrastructure e.g. from the CBD to the airport;
- > Make walking maps for tourists; and
- > Promote and improve existing bike tracks e.g. Nine Mile Road to Tibooburra Road.

2.6 Community survey

2.6.1 Survey purpose

As well as the community drop-in session, further feedback was gathered via an online Survey Monkey active transport survey, and an interactive online map.

The survey had the purpose of:

- > Collecting demographic information and evaluating whether people identified as a walker or bicycle rider;
- > Evaluating how often people walked/cycled and what the purpose of these trips are;

- > What people like and dislike about walking and cycling in Broken Hill (for people who do identify as walkers and bicycle riders);
- > What are the perceived barriers to walking and cycling in Broken Hill (for people who do not identify as walkers or bicycle riders);
- > What can be done to encourage more walking and cycling in Broken Hill; and
- > What origins and destinations people would like linked by improved facilities.

2.6.2 Survey details

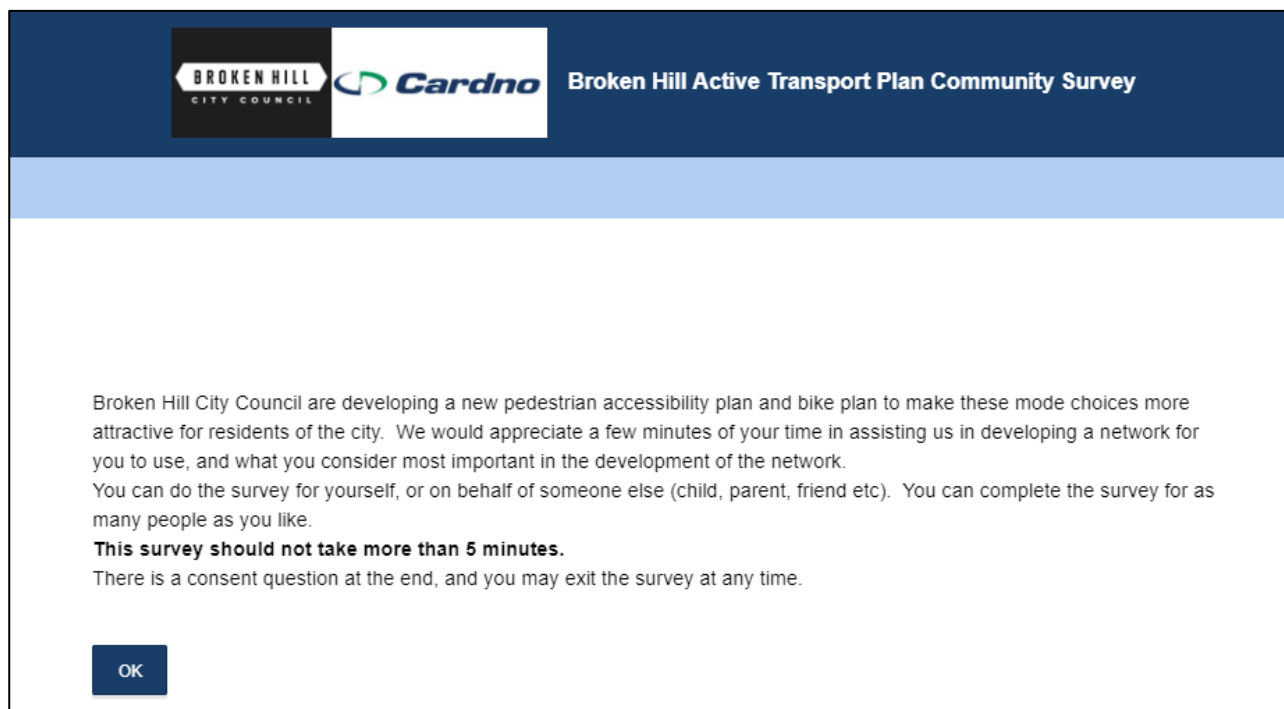
The community survey was developed by Cardno and reviewed by Council prior to launch.


To optimise the outputs and ensure that people only answered questions relevant to them, logic was built into the survey which resulted in a different set of questions depending on the answer provided in the preceding question. The survey introduction is shown in **Figure 2-6** and the logic is illustrated in **Figure 2-7**.

Collection of survey responses commenced on 3 December 2018 and closed on 7 January 2019.

The outcomes of the survey are discussed in **Section 3**.

Figure 2-6 Active Transport Plan community survey introduction



BROKEN HILL CITY COUNCIL  **Broken Hill Active Transport Plan Community Survey**

Broken Hill City Council are developing a new pedestrian accessibility plan and bike plan to make these mode choices more attractive for residents of the city. We would appreciate a few minutes of your time in assisting us in developing a network for you to use, and what you consider most important in the development of the network.

You can do the survey for yourself, or on behalf of someone else (child, parent, friend etc). You can complete the survey for as many people as you like.

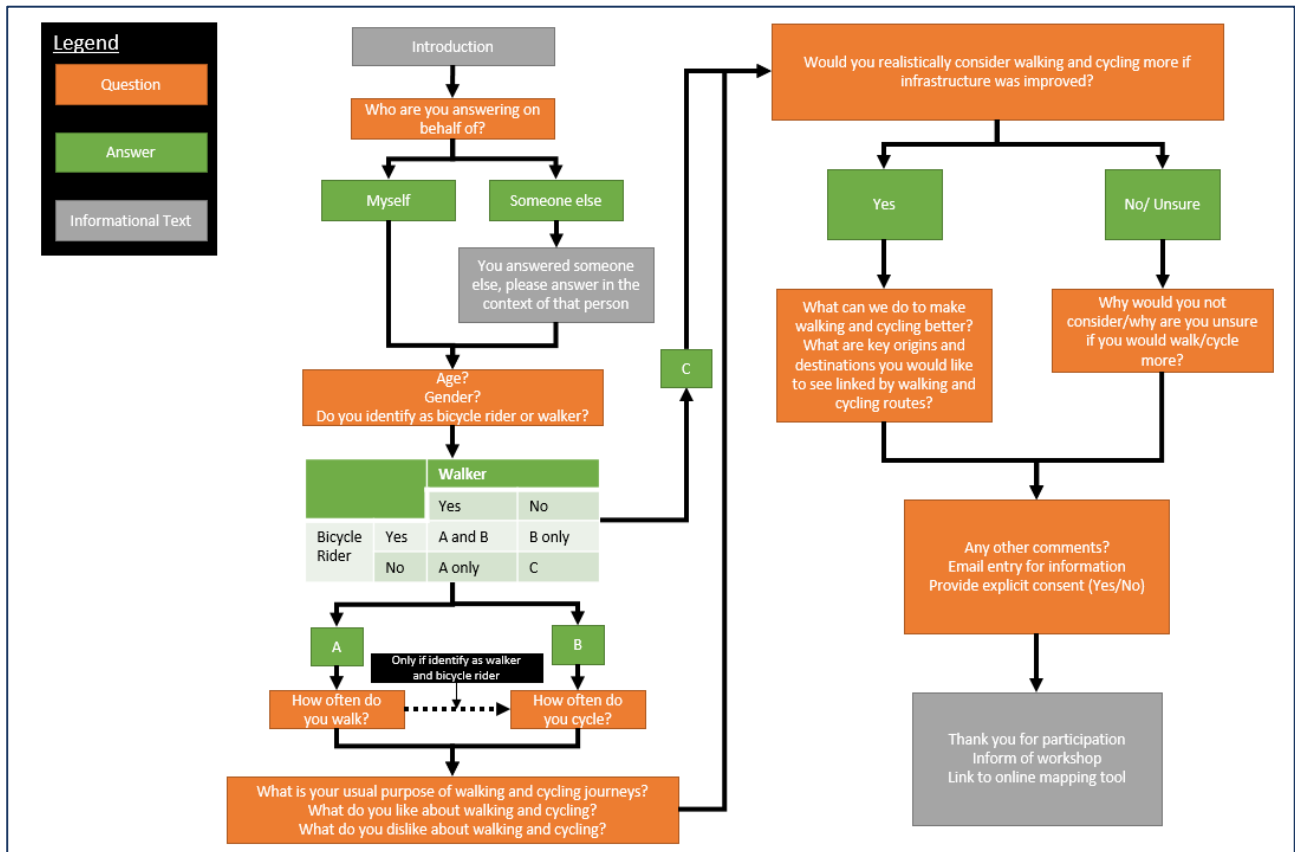
This survey should not take more than 5 minutes.

There is a consent question at the end, and you may exit the survey at any time.

OK

Source: https://www.surveymonkey.com/r/BH_ATP, accessed 7 December 2018

Figure 2-7 Survey logic

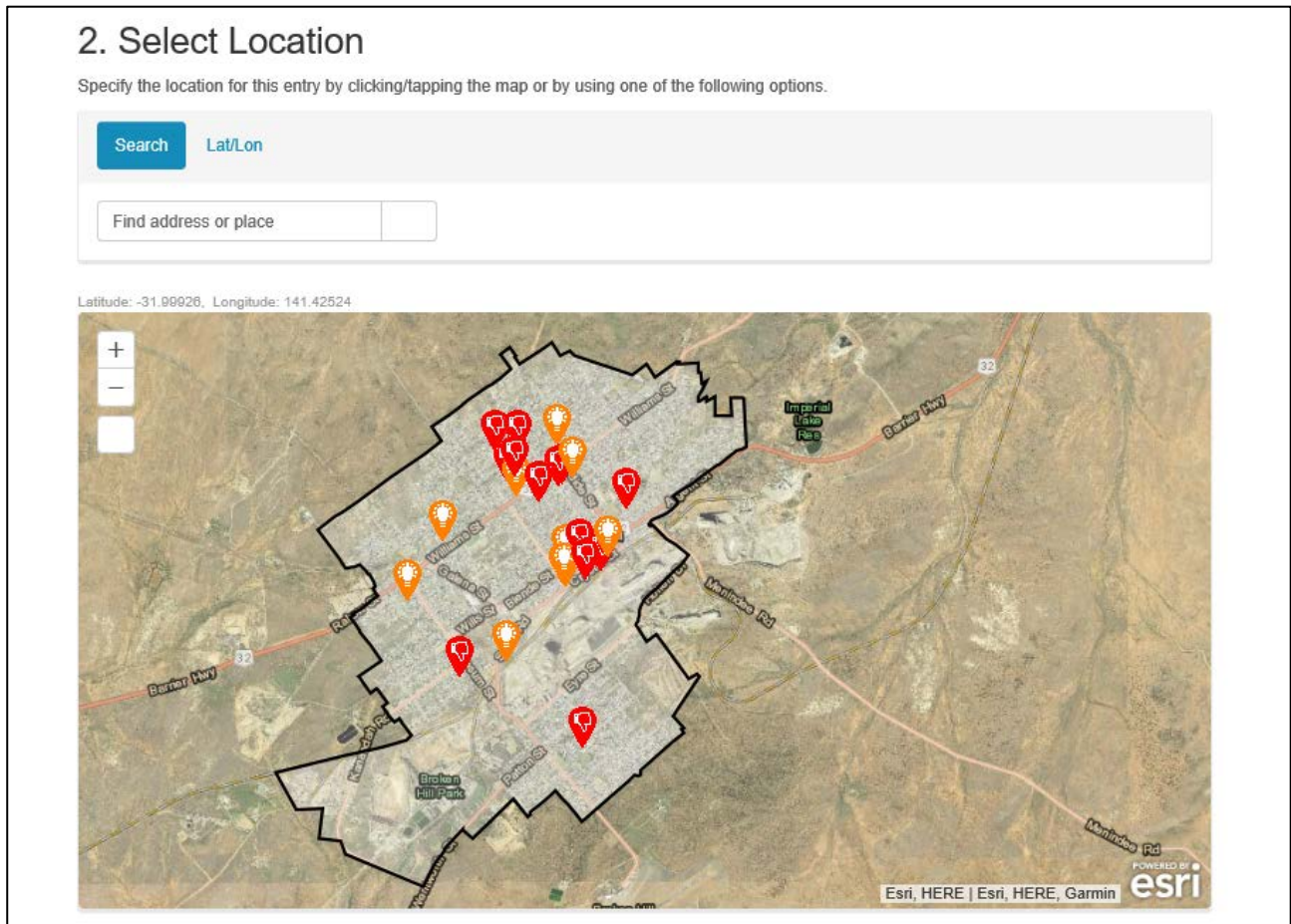


2.7 Online map

An interactive online map of Broken Hill was developed to allow people to spatially identify issues relating to pedestrians and cyclists. The map allowed respondents to identify issues and opportunities for walking and cycling, to pinpoint the location of these on a local area map, and to upload an accompanying photo (optional). Part of the interface of the online map is shown in **Figure 2-8**.

The online mapping tool was opened on 3 December 2018 and, due to the need to review and approve comments prior to them being live, the tool was closed on 21 December 2018.

Figure 2-8 Online mapping tool



Source: Online ArcGIS map, accessed 17 December 2018

3 Survey results

3.1 Responses

The online community survey received 115 responses during the consultation period of Monday 3 December 2018 to Monday 7 January 2019.

The responses identified a number of issues and opportunities that relate to walking and cycling around Broken Hill. Not all participants answered every question, and some questions allowed more than one answer.

The following sections outline the community survey results, with more detail attached as **Appendix C**.

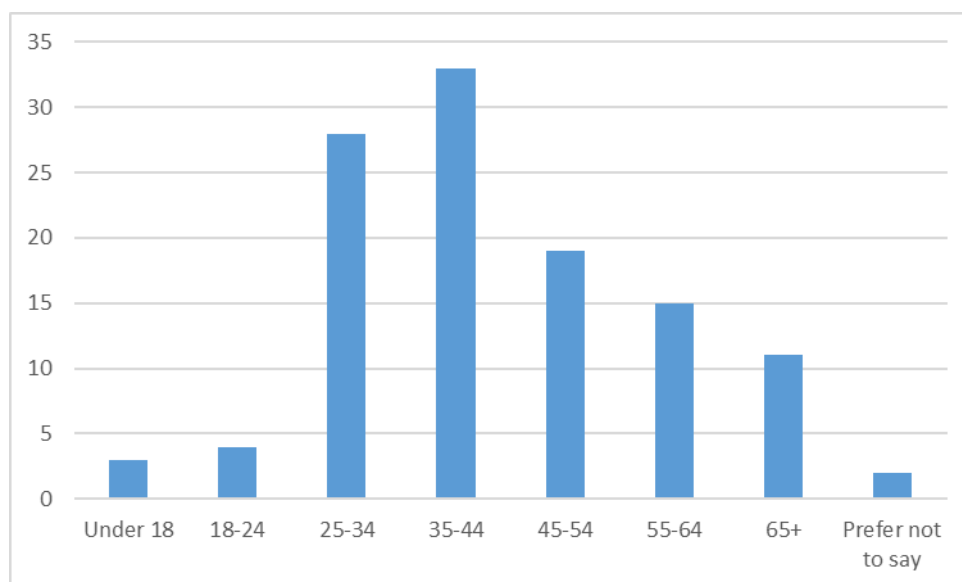
3.2 Survey results

3.2.1 Age and gender

Some 70 per cent of respondents identified as being within an age range of 25-54. The two most common age brackets for respondents were 25-34 years and 35-54 years.

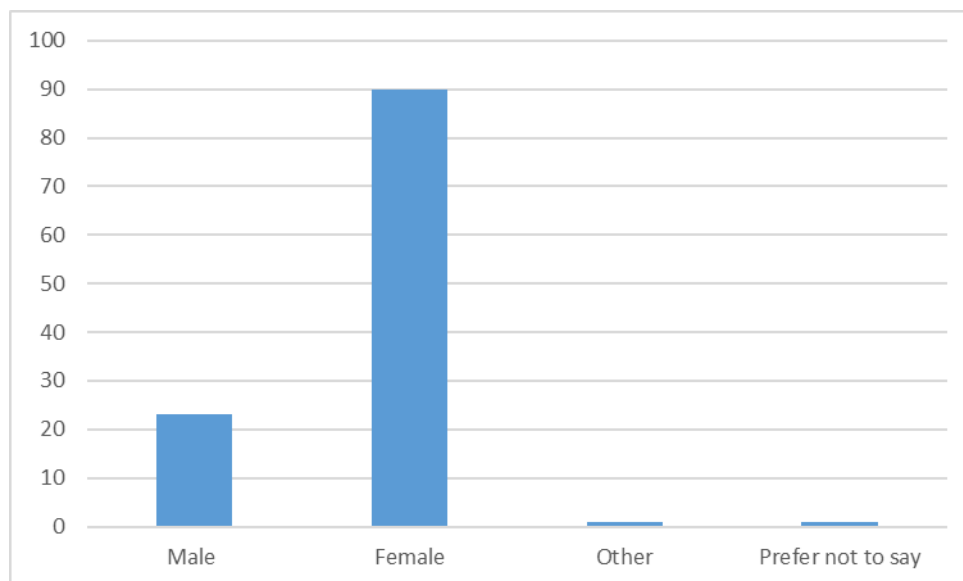
The modal age bracket for respondents was 35-44, and 23 per cent of all respondents were aged 55 or over as depicted in **Figure 3-1**.

Figure 3-1 Q2 Results: 'How old are you?'



Notably, 78 per cent of respondents were female. The distribution of respondents according to their gender is demonstrated in **Figure 3-2**.

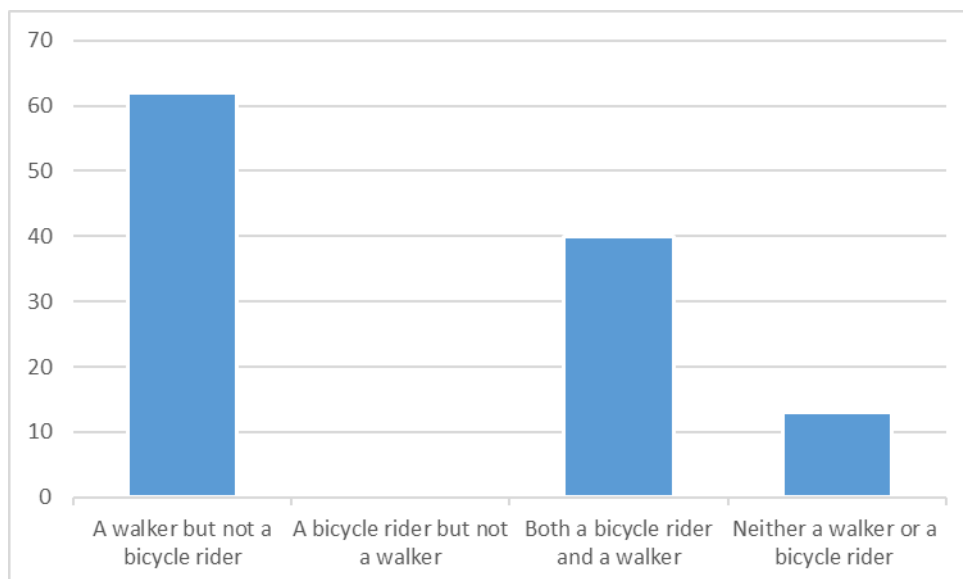
Figure 3-2 Q3 Results: 'What is your gender?'



3.2.2 Identification as walker or bicycle rider

Over half of all respondents identified themselves to be walkers only, with a further 35 per cent also identifying as walkers and bicycle riders. 11 per cent of respondents said they did not identify themselves as either and no one identified to only use a bicycle. The distribution of respondents according to their active transport participation is shown in **Figure 3-3**.

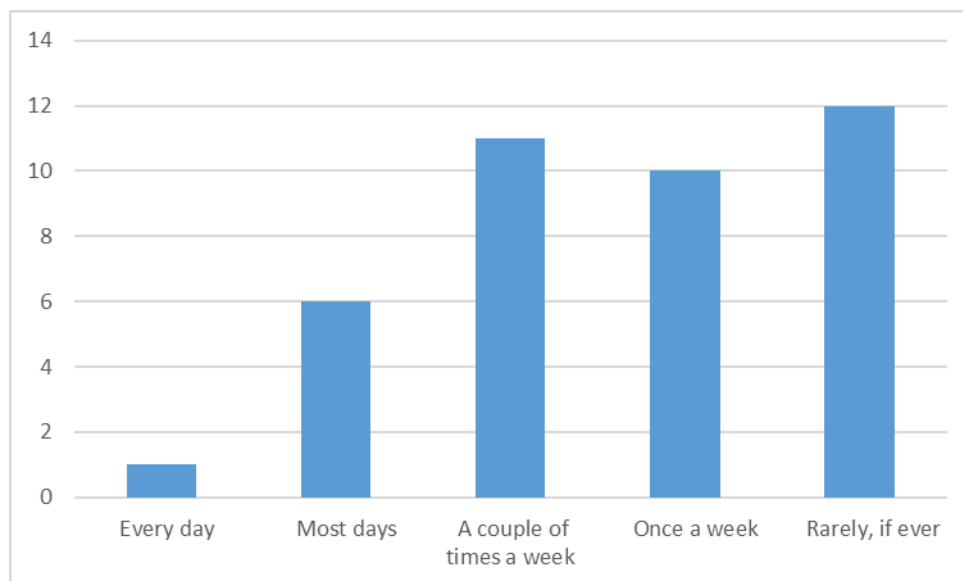
Figure 3-3 Q4 Results: 'Do you identify as a walker and/or bicycle rider?'



3.2.3 Frequency of bicycle riding

Approximately 30 per cent of identified bicycle riders rarely ride a bicycle. 45 per cent of these respondents indicated that they ride a bicycle at least a couple of times per week. The results for frequency of bicycle use are shown in **Figure 3-4**.

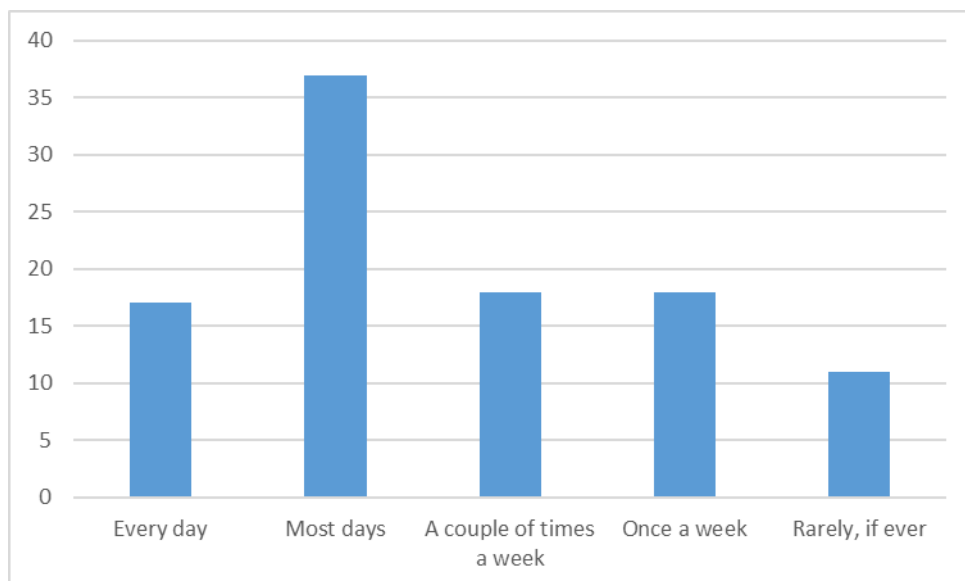
Figure 3-4 Q5 Results: 'How often would you say you ride a bicycle in Broken Hill?'



3.2.4 Frequency of walking

In terms of walking frequency, 53 per cent of respondents said that they walked most if not every day, while 36 per cent indicated that they walk at least once or a couple of times per week. 11 per cent of respondents said they rarely walked, if ever. The frequency of walking trips is shown in **Figure 3-5**.

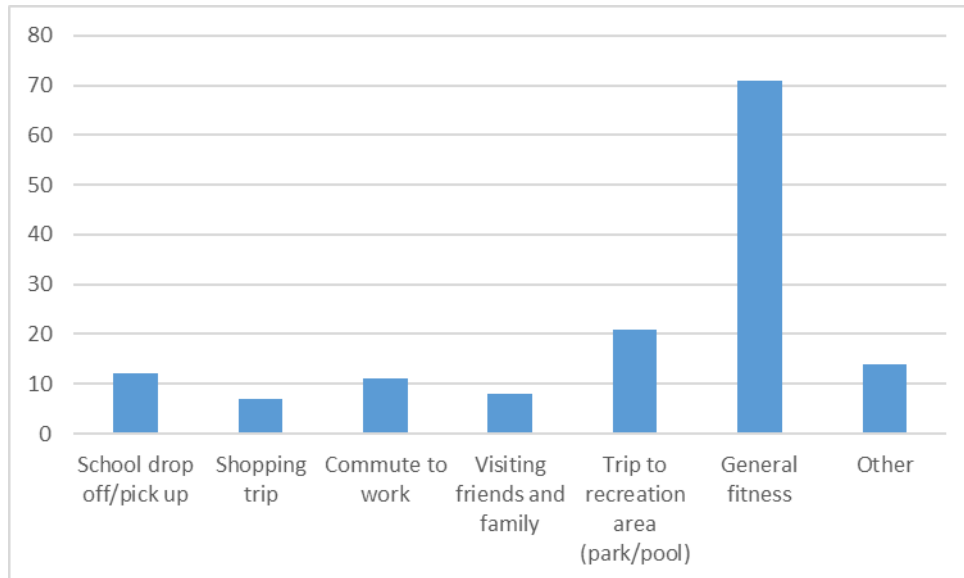
Figure 3-5 Q6: 'How often would you say you walk in Broken Hill?'



3.2.5 Purpose of walking and cycling trips

Out of the 94 respondents who gave reasons for why they might choose to walk or cycle, 71 said general fitness was their dominant reason for doing so. 21 respondents said that they walk or cycle to a recreation facility such as the local park or pool. 12 respondents said they walked or cycled to complete school drop offs and pick ups, while 11 respondents said that they walk or cycle to work. 14 respondents had other reasons for walking or cycling; approximately half of them said they needed to walk their dog. The purpose of walking and cycling trips is shown in **Figure 3-6**.

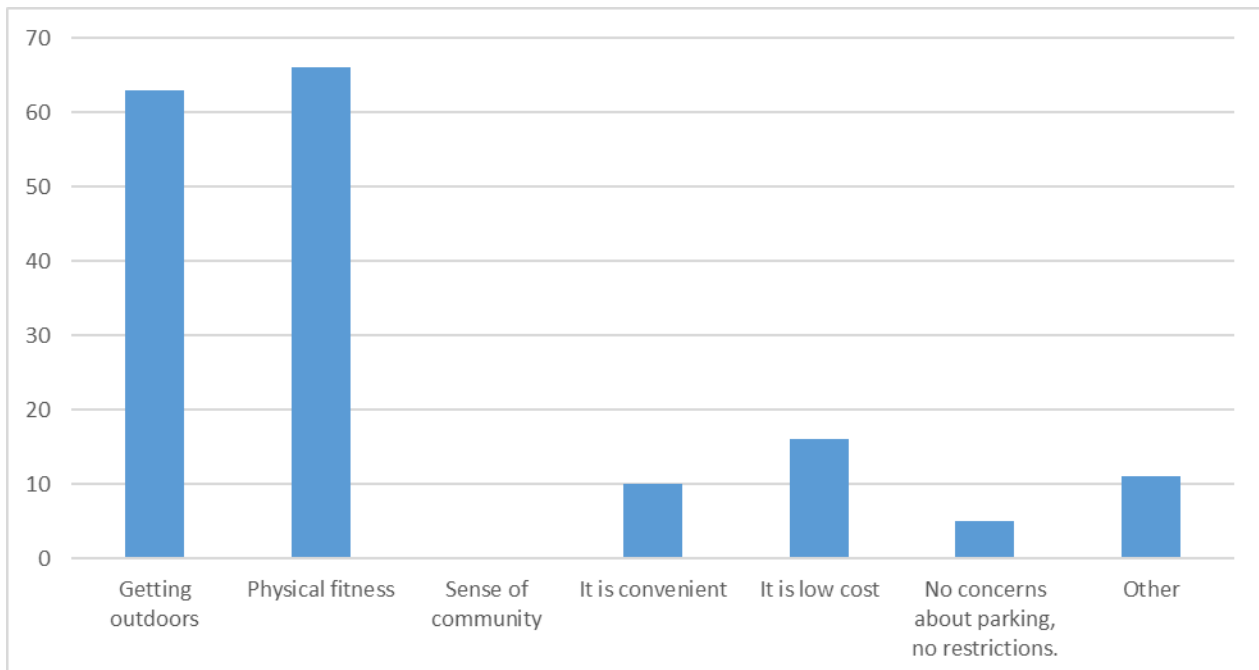
Figure 3-6 Q7 Results: What is the usual purpose of your walking or cycling trips? (max 2 options)'



3.2.6 Perceived positives of walking and cycling

Close to 70 per cent of respondents claimed that both getting outdoors and improving physical fitness were serious benefits of walking and cycling around Broken Hill. 17 per cent claimed active transport was an attractive low-cost alternative to other forms of transport. 12 per cent claimed there was some other reason that attracted them to using active transport. Of the 11 respondents that indicated this, almost half mentioned that spending quality time with their kids and promoting a healthier lifestyle for their children to be a motivation. The perceived positives are detailed in **Figure 3-7**.

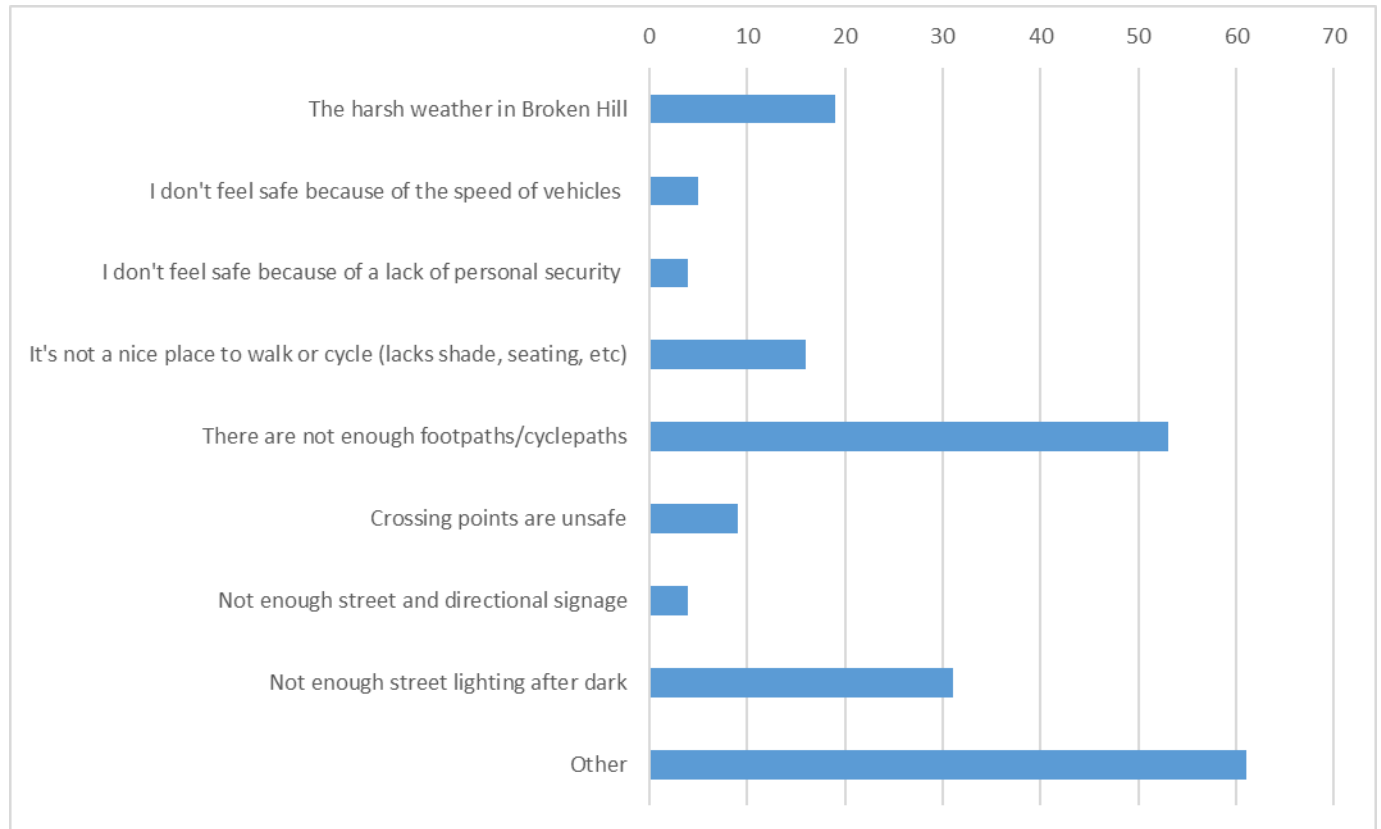
Figure 3-7 Q8 Results: 'What do you like about walking and/or cycling? (max 2 options)'



3.2.7 Perceived negatives of walking and cycling

According to respondents, the most negative aspect of walking and cycling in Broken Hill is that there are not enough footpaths or cycle paths. 37 per cent claimed there was not enough street lighting after dark and 23 per cent said they felt the town's harsh outback climate was a negative. Interestingly, 61 per cent of respondents chose something 'other' to describe as their negative. 30 out of these 51 respondents stated that stray dogs had become a concern, while 17 focussed on poor connectivity and accessibility. The results are shown in **Figure 3-8**.

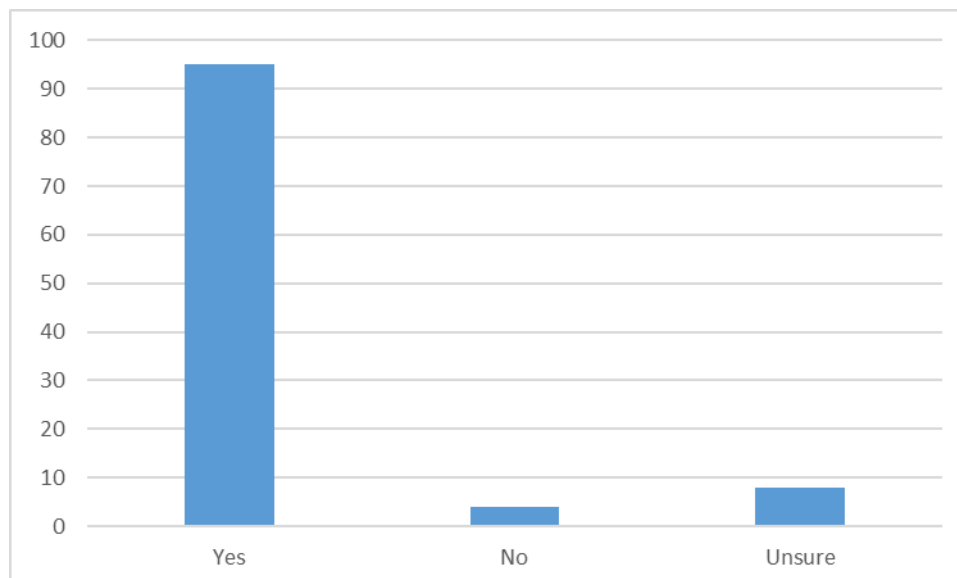
Figure 3-8 Q9 Results: 'What do you dislike about walking and/or cycling? (max 2 options)'



3.2.8 Motivation to walk or cycle more

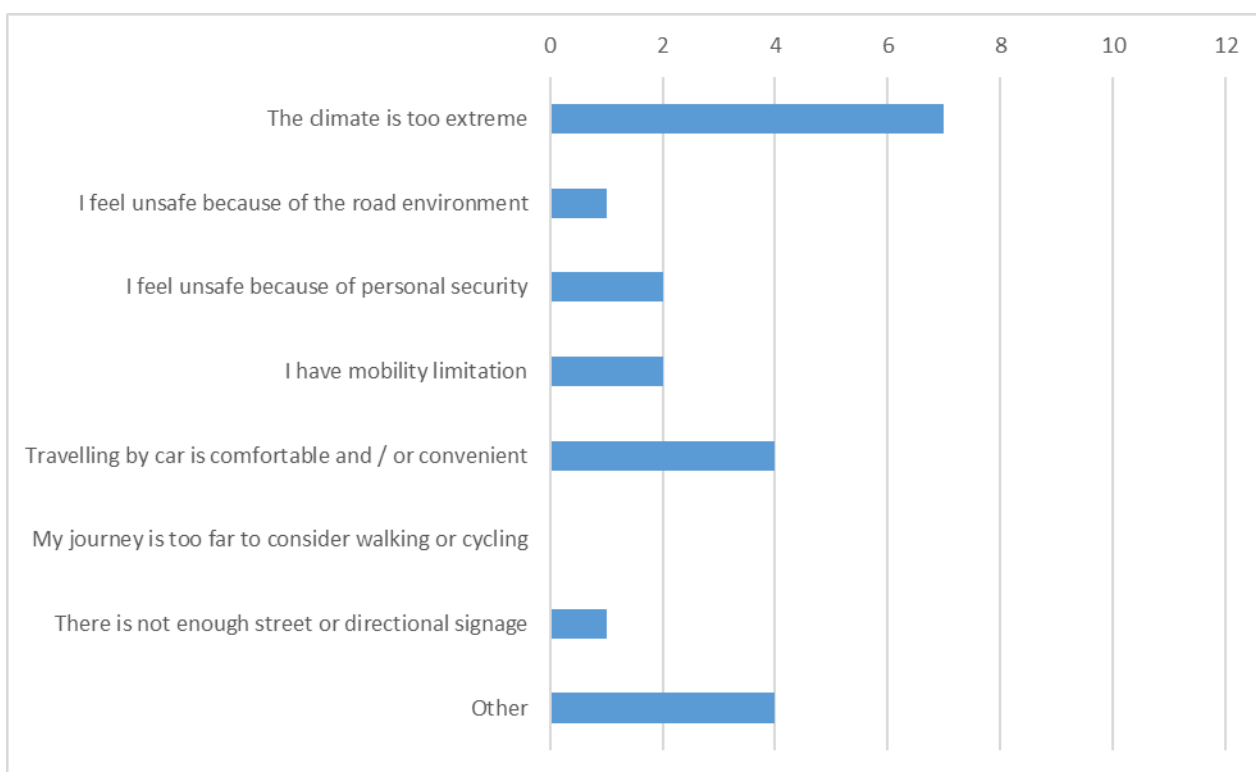
An overwhelming 89 per cent of respondents claimed they would be more likely to consider walking and cycling if associated infrastructure was improved, as shown in **Figure 3-9**.

Figure 3-9 Q10 Results: 'Would you realistically consider walking and cycling (more) if the infrastructure was improved?'



12 respondents said they would not use or were unsure if they would walk and cycle more if infrastructure was improved. Of these, respondents suggested the harsh outback climate to be a deterrent, with four stating their car was more comfortable and convenient than active transport. Perhaps interestingly, no one identified that their journey was too far to consider walking and cycling. The results are shown in **Figure 3-10**.

Figure 3-10 Q11 Results: 'You said you would not/were unsure if you would walk and cycle more, even if infrastructure was improved. Why? (max 2 options)'

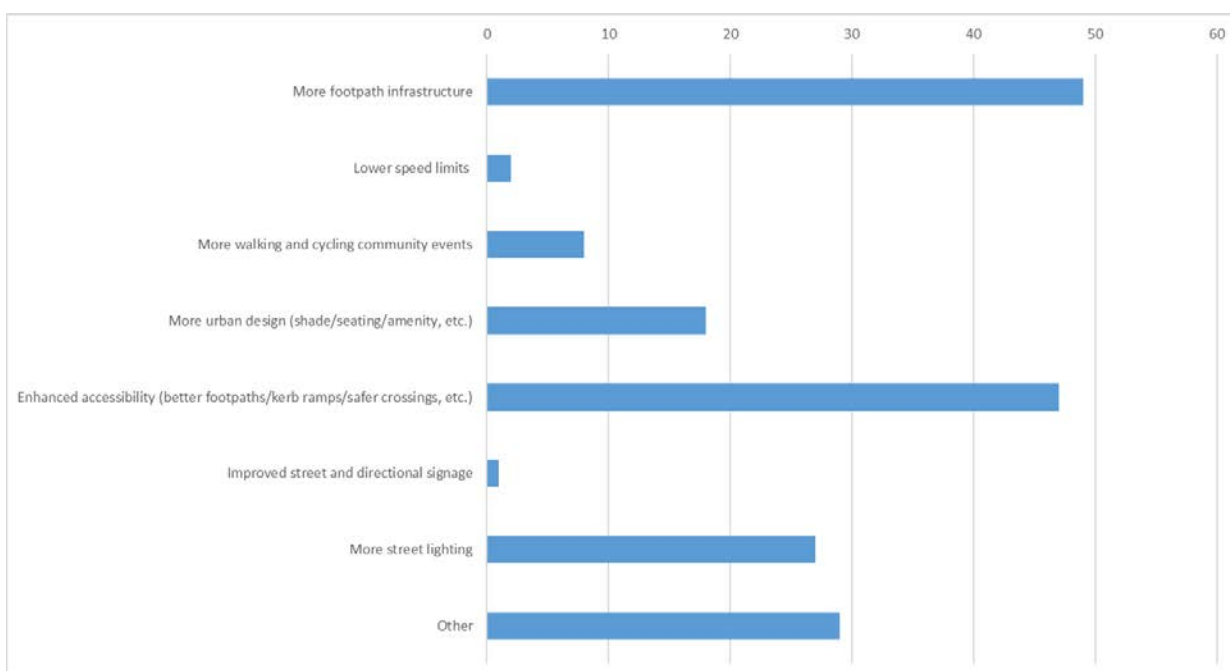


3.2.9 Ideas for improvements to walking and cycling in Broken Hill

When asked what could be done to improve walking and cycling in Broken Hill, 49 respondents suggested more infrastructure and 47 suggested enhanced accessibility (footpaths, kerb ramps, crossings, etc.). 27 respondents suggested more street lighting was required and 18 wanted improvements made to the streetscapes, such as better urban design, more shade, seating and general amenity.

Of the 29 respondents who elected to make an alternative response to the main categories provided, 18 highlighted a problem with stray dogs. Other key issues mentioned included vehicles parking across public footpaths, and a general lack of footpaths in Broken Hill. Respondents' ideas for improving walking and cycling are shown in **Figure 3-11**.

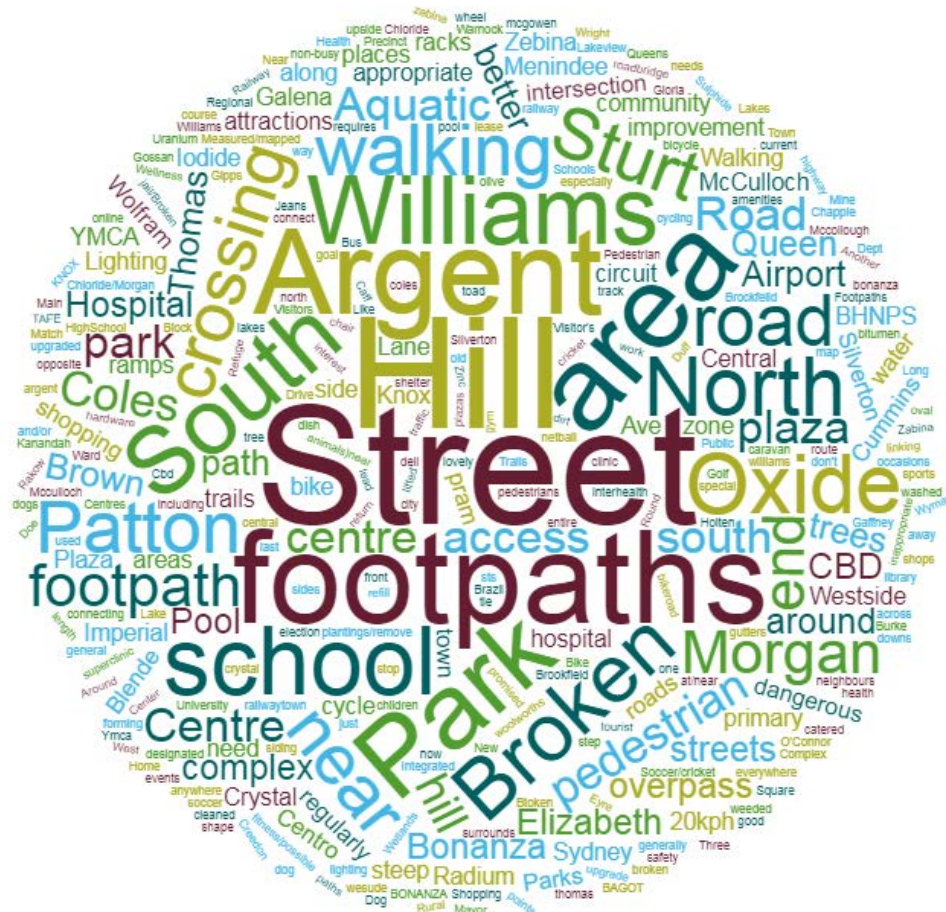
Figure 3-11 Q12: What can we do to make walking and cycling better in Broken Hill? (max 2 options)'



3.2.10 Key destinations for walking and cycling

In Question 13 of the survey, respondents were asked to indicate the origin and destination of trips where they would like to see new or improved walking and cycling infrastructure. The 60 responses to this question are represented in **Figure 3-12** using a word cloud that highlights the most frequent responses.

Figure 3-12 Q13 Results: 'What are the places which you would like linked for new or improved infrastructure?'



Source: Wordclouds.com

From the produced word cloud certain street names stand out, such as Argent, Oxide, Patton and Morgan. It is also notable which locations have been identified multiple times, including schools, parks, the local Plaza (or Coles), the Aquatic Centre, the CBD and the hospital.

3.2.11 Additional comments about walking and cycling

Question 14 asked respondents to provide feedback on any other issues or opportunities for walking and cycling. Of the 64 respondents who answered this question, 18 suggested that stray dogs present a major deterrent. Other recurring themes included a lack of street lighting, a desire to eradicate Three Corned Jacks and other weeds from streetscapes, a need for more shade and the creation of a safe cycling loop around town to encourage recreational uptake – especially for families. A brief summary of the key themes and suggestions is shown in **Table 3-1**.

Table 3-1 Q14: 'Is there anything else you would like to make us aware of regarding walking and cycling in Broken Hill?'

Major themes and suggestions from additional comments
Too many stray dogs around town;
Safety concerns for women or children, especially at night;
Uneven ground, e.g. gravel, screws, weeds, especially 'Three Cornered Jacks';
There is an incomplete cycle network;
Widespread unsafe access for vulnerable pedestrians;
Cars routinely park across existing pedestrian corridors;
Improved amenity required, e.g. more tree plantings and more drinking fountains;
Publish a map of known paths and cycleways online;
Review DDA compliance regarding existing infrastructure;
Extend the pedestrian allowance at signalised crossings (some are too short);
Some busy intersections, like Bromide and Mica Streets require traffic lights as they have none;
Prune those existing trees that obstruct footpaths, etc.;
Develop a family cycling loop around town;
Some people claim to avoid local streets by driving to Sturt Park, as it's the only place they feel 'safe';
Some intersections lack basic street signs, while others have no signalized crossings or traffic lights;
Time of day influences the appeal of walking;
More bicycle racks are required around the city;
Street beautification is required generally;
Community education and adverts are needed to increase safety awareness;
A community notice board is needed in town;
Puncture hazards are deterring cycling;
Stray dogs now threaten domestic dogs when they are being walked;
Better toilet facilities are needed for parents to change kids, for the disabled; and
Fears about cycling within traffic.

3.3 Broken Hill personas

Based on the results of the online community survey, five personas (fictional characters) were developed to represent typical Broken Hill residents. These personas and their profiles reflect typical journey types, lifestyle traits, and frustrations with walking and cycling taken from the online community survey.

The purpose of the personas is to represent the community members in Broken Hill currently using the active transport network, and to highlight the needs of different users.

The Broken Hill personas are shown in **Figure 3-13**.

Figure 3-13 Broken Hill personas



4 Online map results

The online map received 41 responses during the consultation period of Friday 30 November to Friday 21 December 2018. The locations of all specific community comments on walking and cycling issues in Broken Hill are shown in **Figure 4-1**.

The community highlighted a number of barriers to walking and cycling. Specific comments included:

- > Pedestrian crossings and accessibility:
 - Steep descent to street level at pedestrian crossings, so steep it requires handrails (corner of Argent Street and Oxide Street);
 - Dangerous crossing the street, could use a pedestrian crossing (Thomas Street at Broken Hill Health Service);
 - Steep and slippery (Morgan Street near Chloride Street); and
 - Pedestrian crossing required at the Burke Ward School in Gypsum Street between Rakow and Newton streets.
- > Footpaths:
 - Footpath is old bitumen style footpath and could be replaced with concrete to match the rest of the street and make it safer for parents who take their kids on scooters to continue to ride (Williams Street near Iodide Street).
 - Footpath would be beneficial to the Morgan Street primary end crossing to the opposite side.
 - “The gravel on the footpaths is a great hazard!! It is very slippery causing the elderly to fall!!” (Hill Street near Jones Street).
- > Trees and vegetation:
 - Tree roots and tree rubbish in the street causing trip hazards. Trees must be removed;
 - Lack of trees/vegetation; and
 - Tripped over tree stump, has not been removed.
- > Stray dogs:
 - A lot of big dogs on the streets.
- > Street lighting:
 - Swales and no lighting for night walking between Cummins Lane and Wyman Street.
- > Bicycle parking:
 - Lack of bike stands and locking stations across all of Broken Hill.
- > Bicycle wayfinding:
 - Access to cycling maps... common route distances (for fitness) and safe/low traffic areas.
- > Bicycle hire:
 - Broken Hill does not offer any bicycle hiring. An ebike system would be worth exploring. It not only provides a service (particularly to tourists) but also creates revenue.

Figure 4-1 Online map comments



5 Common issues and opportunities

There were several recurring themes in the consultation activities about current issues with Broken Hill's walking and cycling networks. The main consultation outcomes are summarised and presented below. The Survey Monkey outputs are provided in **Appendix C**, and the online map outputs are provided in **Appendix D**.

5.1 Issues

5.1.1 Footpaths and crossings

5.1.1.1 Footpaths

Feedback provided via the consultation activities highlighted that a lack of footpaths is a clear deterrent to walking in Broken Hill. A number of residents highlighted the need to walk on the street as part of their journey, where there are no footpaths. This included residents walking with children and/or using a pram for children.

A lack of footpaths was highlighted as a key safety issue, with residents forced to walk on the road instead. Safety concerns were also raised about the condition of existing footpaths, as well as unsafe and missing kerb ramps.

Maintenance of existing footpaths was also mentioned by numerous residents. The comments included concerns about uneven surfaces, partial paving, paving cracks, rubbish, fallen branches and weeds.

5.1.1.2 Crossings

Concern about a lack of crossings and the condition of existing crossings was conveyed in a number of responses to the community survey and online map. The comments included concerns about steep descents to pedestrian crossings, as well as a lack of safe crossings at the Burke Ward School, and outside Broken Hill Health Service and at the intersection of Bromide Street and Mica Street. A need for longer crossing phases for pedestrians at traffic lights was also mentioned.

5.1.2 Access and connectivity

A number of respondents highlighted the difficulty of using prams, walking frames, and mobility scooters around Broken Hill.

The steep gradient of kerb ramps and need for handrails was noted by several respondents, as well as misalignment and/or missing kerb ramps at some intersections. Outside of the CBD, respondents noted that they need to use the road due to a lack of footpaths, and they feel unsafe doing so. In many cases, they choose to drive into town rather than walk, as they do not have a full footpath network between their home and the CBD.

5.1.3 Safety and security

5.1.3.1 Stray dogs

The prevalence of stray and uncontrolled dogs around Broken Hill was the most mentioned issue across the online map, community survey, and social media post responses. A number of residents mentioned that they no longer walk or cycle due to the number of stray dogs they have encountered. Some have been forced to seek refuge in a resident's yard to avoid them, and a number of survey respondents now visit specific destinations to go walking instead of walking in town.

5.1.3.2 Street lighting

Insufficient street lighting around Broken Hill was mentioned by multiple respondents as a key safety concern. Requests were made for more lighting overall, and maintenance of existing lights to ensure they are working, as well as pruning of overhanging trees obstructing some street lights.

5.1.4 Bicycle infrastructure and facilities

5.1.4.1 Cycle paths

Design and maintenance of existing bicycle infrastructure was raised by several respondents. Some commented that they feel unsafe approaching and riding through intersections, and that cycle paths sometimes disappear on the approach to an intersection without warning.

Maintenance of existing cycle paths was also mentioned by residents. The comments included concerns about loose gravel and glass, and prevalence of weeds (Three Cornered Jacks) causing punctures.

5.1.4.2 Bike parking

A general lack of bike parking across Broken Hill was mentioned by a number of respondents, particularly in the CBD. It was also noted that existing facilities are sometimes not appropriate, for example bike racks in some shopping centres are too narrow to fit mountain bike tyres.

5.1.5 Other

5.1.5.1 Landscaping

The prevalence of weeds on footpaths and streets was raised by multiple residents via the online map, community survey, and social media. In particular, Three Cornered Jacks were mentioned as a key hazard, as they puncture bicycle and pram tyres, and deter residents from taking their children out for walks or bike rides.

Trees were mentioned as both a disadvantage and an advantage by respondents. Tree roots and overhanging tree branches were highlighted as trip hazards along footpaths. On the other hand, some residents also requested that more trees be planted to provide shade.

5.1.5.2 Amenities

Water refill stations were requested by a number of residents as a key amenity considering the climate in Broken Hill. Suggestions were also made to accompany these stations with shade, seating, and toilets.

5.2 Opportunities

A number of potential opportunities were identified to increase walking and cycling uptake in Broken Hill.

5.2.1 Pedestrian infrastructure and facilities

5.2.1.1 Accessibility

Accessibility refers to ensuring that the network is safe and able to be used by community members of all abilities. It also ensures that footpaths are appropriately wide and safe to walk on (free of cracks, gravel etc). There is a significant opportunity to enhance the accessibility of the existing network in providing adequately wide footpaths, repairs to poor quality pavement, safe crossing points and compliant kerb ramps.

5.2.1.2 Connectivity

Connectivity refers to the extent of the network. There is a significant opportunity to enhance connectivity by providing footpaths along key desire lines, and linking points of interest such as commercial and recreational areas, as well as naturally high pedestrian areas such as schools.

5.2.1.3 Amenity

The climate in Broken Hill is harsh, and so weather protection could help to encourage walking and cycling. This could be in the form of awnings, tree plantings which provide shelter and reduce the urban heat island effect, and water fountains might be considered on major paths for people to refill water bottles etc.

5.2.2 Bicycle infrastructure and facilities

5.2.2.1 Bike tracks

Multiple responses suggested the implementation of bike tracks and/or a continuous walking and cycling loop track around Broken Hill. Specific suggestions included a loop connecting Sturt Park, the aquatic centre, the golf course and Westside Plaza. Several respondents noted that they didn't feel safe taking their children riding on the footpaths or roads due to hazards such as weeds and traffic.

5.2.2.2 *Bicycle hire*

A bicycle hire scheme was suggested in the online and face to face community consultation activities as an important opportunity to increase cycling in and around Broken Hill. Suggestions were made to encourage bike hire at the Tourist Information Centre or at local caravan parks to offer tourists an alternative way to get around the CBD once they have parked their vehicle.

An ebike hire scheme was also suggested as a potential initiative for the city.

5.2.3 **Other**

A number of suggestions to support recreational walking and cycling were made in the online and face-to-face consultation activities. These included:

- > Improve the walking path to the Line of Lode and create an activity similar to that in Townsville e.g. 'Walking up the Hill'.
- > Reintroduce Active Broken Hill, original started by a community member, and engage different organisations to collaborate on healthy initiatives.
- > Council could consider renting/hiring bikes, similar to Hay Shire Council.

6 Summary of findings

Face to face community consultation was conducted on 5 December 2018, with a stakeholder workshop and community drop-in session. The online survey received 115 responses. The online map received 41 responses.

6.1 Survey summary

The following are some key statistics about the survey respondents:

- > The two most common age brackets for respondents were 25-34 years and 35-54 years;
- > 78 per cent of respondents were female;
- > Over half of all respondents identified themselves to be walkers only, a further 35 per cent also identified as a bicycle rider, approximately 10 per cent of people do not identify as a pedestrian or a cyclist;
- > Respondents tended to like walking and cycling for health benefits and general exercise;
- > Notable issues facing pedestrians and cyclists included stray dogs and a lack of infrastructure; and
- > Opportunities to increase walking and cycling included improved accessibility, infrastructure and amenity.

6.2 Key issues summary

There are several reoccurring themes in the survey and online map regarding current issues and opportunities for Broken Hill's active transport network. These include:

- > Numerous stray and uncontrolled dogs;
- > General lack of footpaths outside of the CBD;
- > Accessibility issues across the pedestrian network, particularly for mobility scooters, prams, and walkers;
- > Prevalence of weeds causing tyre punctures on bikes and prams; and
- > Lack of street lighting.

6.3 Key opportunities summary

Respondents from the local community suggested a number of opportunities to improve walking and cycling in Broken Hill. These include:

- > More footpaths;
- > Enhanced accessibility;
- > Improved amenity;
- > Animal control;
- > Implementation of bike tracks and/or a continuous walking and cycling loop track around Broken Hill;
- > Community engagement with walking and cycling events; and
- > Increased bicycle parking.

6.4 Incorporation into the Active Transport Plan

The feedback received from the community will inform the development of the Broken Hill Active Transport Plan. These comments will be reflected in the recommendations made, as well as in the prioritisation of these recommendations.

APPENDIX

A

STAKEHOLDER CONTACT LIST

Stakeholder	Category	Email	Telephone	Name
Willyama High school	School			
Morgan Street Public School	School			
Broken Hill North Public School	School			
Sacred Hearth Parish Primary School	School			
Broken Hill Public School	School			
Broken Hill High School	School			
Burke Ward Public School	School			
Alma Public School	School			
Railway Public School	School			
School of the Air Broken Hill	School			
Broken Hill TAFE	Tertiary education			
Charles Sturt University Broken Hill	Tertiary education			
Broken Hill Aquatic Centre	Leisure			
Harold Williams Home	Aged care			
St Anne's Nursing Home	Aged care			
Aruma Lodge	Aged care			
Broken Hill Chamber of Commerce	Industry			
Broken Hill YMCA	Support			
Broken Hill Police Station	Community			
Broken Hill Mountain Bike Club	Leisure			
The Palace Broken Hill	Retail			
Theatre Royal Hotel	Retail			
BusLink Broken Hill	Transport			
Silverlea Early Childhood centre	Disability/Early Childhood/Education			
Disability Links	Advocacy			
Sampsons/Torpys	Argent Street business			
Broken Hill Music	Oxide Street (CBD) business			
Patton Village representatives	South Broken Hill			
RSL	Service			
Seniors Lounge	Aged Service			
Tydvil Hotel				
Alma Hotel				
UDRH	Tertiary education			
CUC Far West	Tertiary education			
PCYC				
Maari Ma	Aboriginal Health			
Robinson College	Tertiary Education			

APPENDIX

B

FACE TO FACE CONSULTATION MAPS



Cycle Routes

BROKEN HILL ACTIVE TRANSPORT PLAN

- Legend**
- Railway Station (LPI)
 - Railway (LPI)
 - Point of Interest (LPI)**
 - Community Home / Retirement Village
 - School
 - General Hospital
 - Park/ Sport Centre
 - Cycling Route**
 - Broken Hill City Council Route
 - RMS Cycleway Finder Route
 - Land Use (ABS, 2016)**
 - Commercial
 - Education
 - Hospital/Medical
 - Industrial
 - Parkland
 - Primary Production
 - Residential

* YMCAT survey done this year said to support was a key barrier

1:25,000 Scale at A3

0 250 500 750 1,000











Cycle Routes

BROKEN HILL ACTIVE TRANSPORT PLAN

Legend

-  Railway Station (LPI)
-  Railway (LPI)
- Point of Interest (LPI)**
 -  Community Home / Retirement Village
 -  School
 -  General Hospital
 -  Park/ Sport Centre

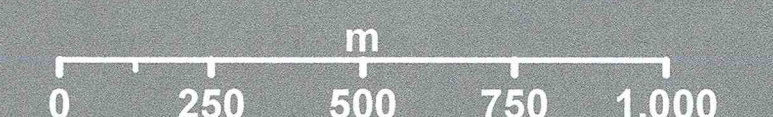
Cycling Route

- Broken Hill City Council Route
— RMS Cycleway Finder Route

Land Use (ABS, 2016)

- Commercial
- Education
- Hospital/Medical
- Industrial
- Parkland
- Primary Production
- Residential

1:25,000 Scale at A3



Map Produced by Cardno NSW/ACT Pty Ltd (SYD)
Date: 2018-12-04 | Project: 80019037
Coordinate System: GDA 1994 MGA Zone 54
Map: 80019037-GS-005-CycleRoutes.mxd 01
Aerial imagery provided by Nearmap (Nov., 2016)

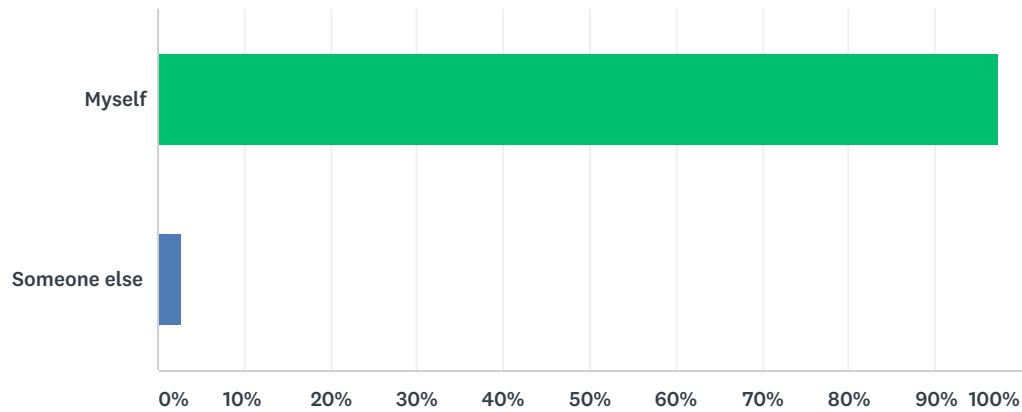
APPENDIX

C

SURVEY MONKEY OUTPUTS

Q1 Who are you responding on behalf of?

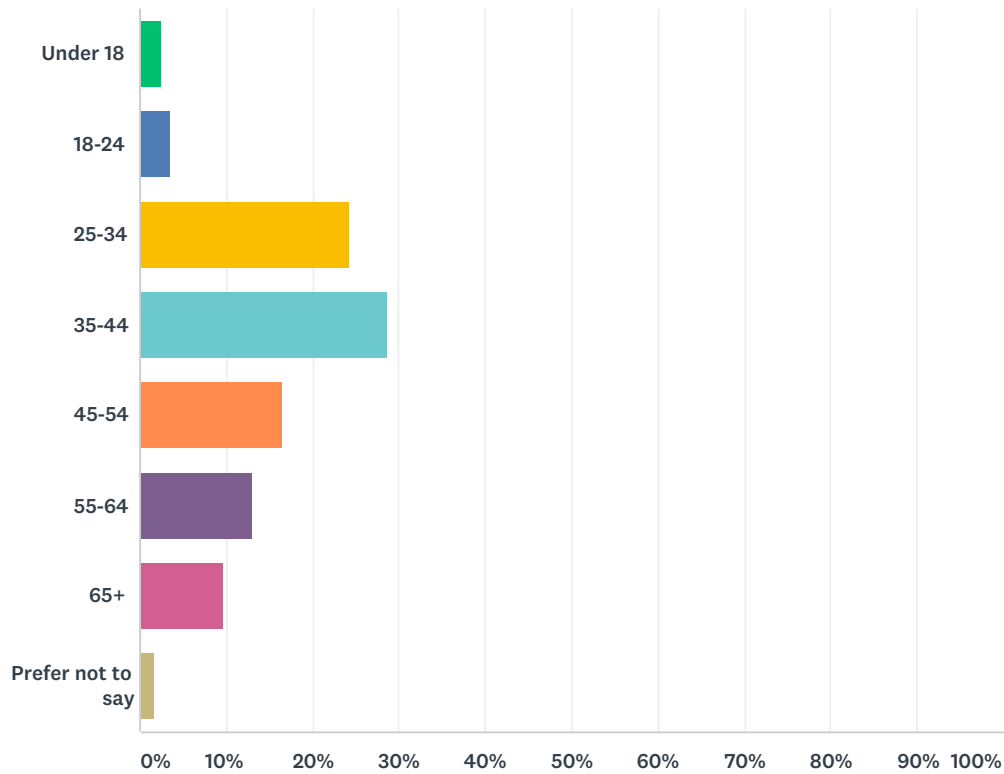
Answered: 114 Skipped: 1



ANSWER CHOICES		RESPONSES
Myself		97.37% 111
Someone else		2.63% 3
TOTAL		114

Q2 How old are you?

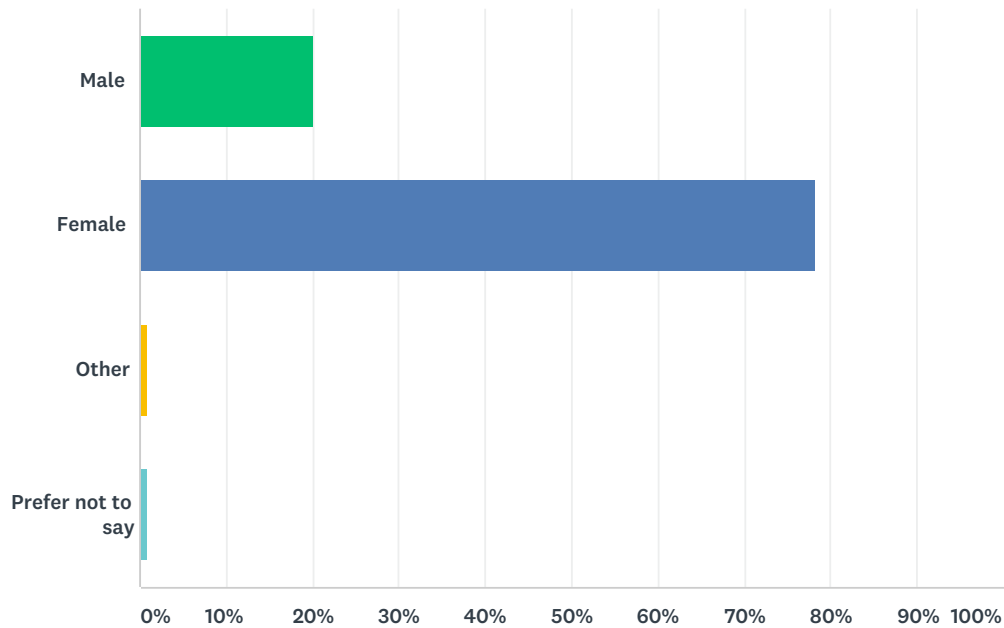
Answered: 115 Skipped: 0



ANSWER CHOICES	RESPONSES	
Under 18	2.61%	3
18-24	3.48%	4
25-34	24.35%	28
35-44	28.70%	33
45-54	16.52%	19
55-64	13.04%	15
65+	9.57%	11
Prefer not to say	1.74%	2
TOTAL		115

Q3 What is your gender?

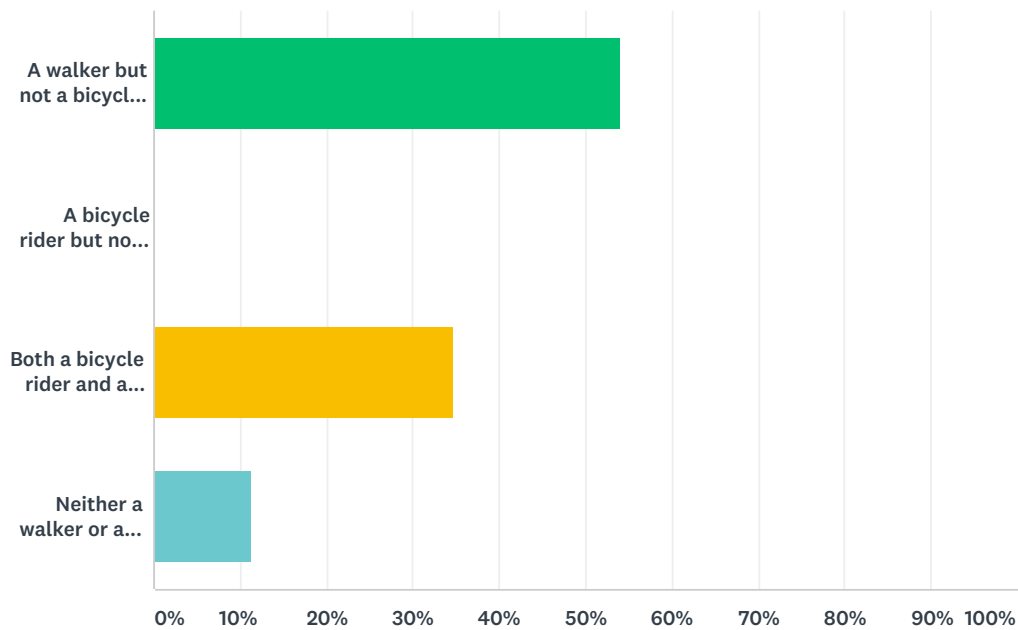
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ANSWER CHOICES	RESPONSES	
Male	20.00%	23
Female	78.26%	90
Other	0.87%	1
Prefer not to say	0.87%	1
TOTAL		115

Q4 Do you identify as a walker and/or a bicycle rider?

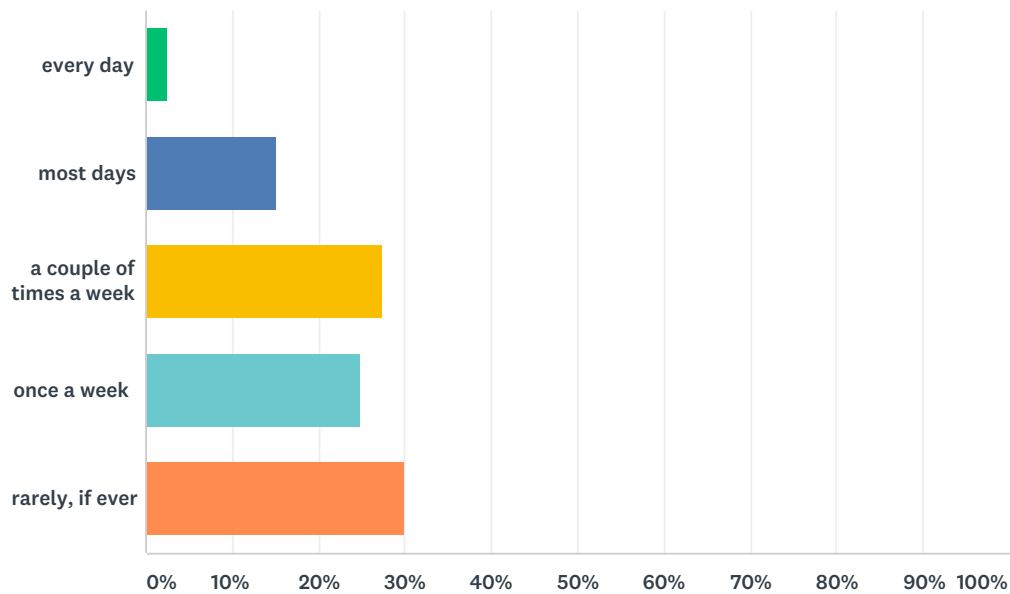
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ANSWER CHOICES	RESPONSES	
A walker but not a bicycle rider	53.91%	62
A bicycle rider but not a walker	0.00%	0
Both a bicycle rider and a walker	34.78%	40
Neither a walker or a bicycle rider	11.30%	13
TOTAL		115

Q5 How often would you say you ride a bicycle in Broken Hill?

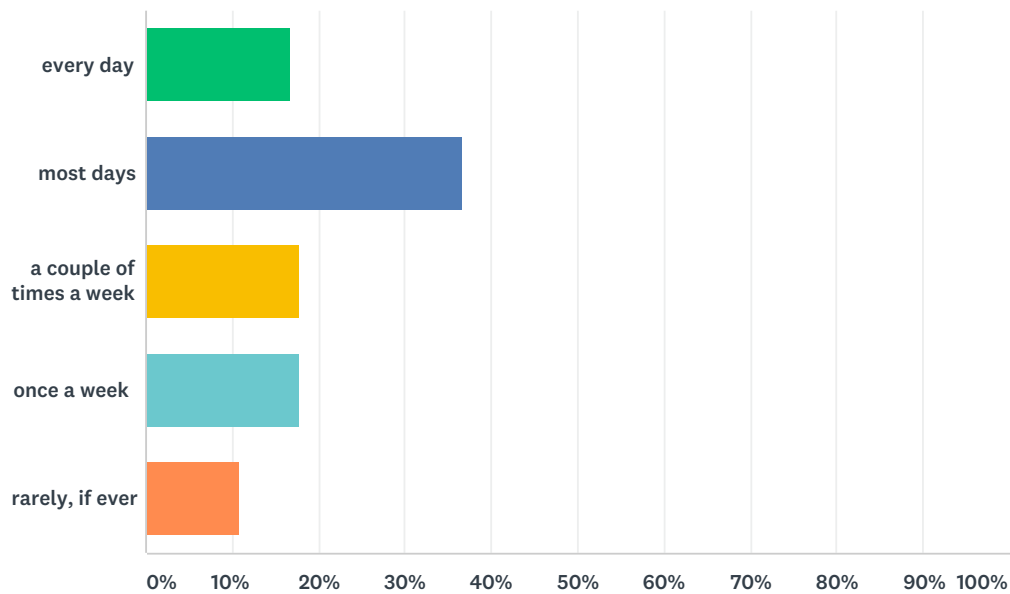
Answered: 40 Skipped: 75



ANSWER CHOICES	RESPONSES	
every day	2.50%	1
most days	15.00%	6
a couple of times a week	27.50%	11
once a week	25.00%	10
rarely, if ever	30.00%	12
TOTAL		40

Q6 How often would you say you walk in Broken Hill?

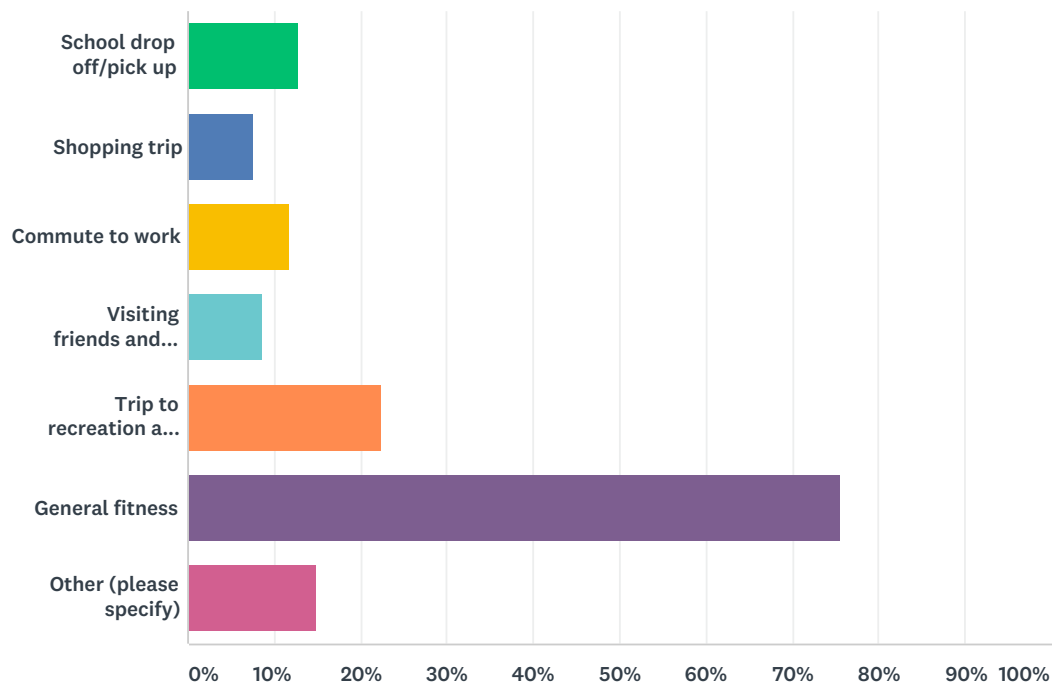
Answered: 101 Skipped: 14



ANSWER CHOICES	RESPONSES	
every day	16.83%	17
most days	36.63%	37
a couple of times a week	17.82%	18
once a week	17.82%	18
rarely, if ever	10.89%	11
TOTAL		101

Q7 What is the usual purpose of your walking or cycling trips? (max 2 options)

Answered: 94 Skipped: 21



ANSWER CHOICES	RESPONSES	
School drop off/pick up	12.77%	12
Shopping trip	7.45%	7
Commute to work	11.70%	11
Visiting friends and family	8.51%	8
Trip to recreation area (park/pool)	22.34%	21
General fitness	75.53%	71
Other (please specify)	14.89%	14
Total Respondents: 94		

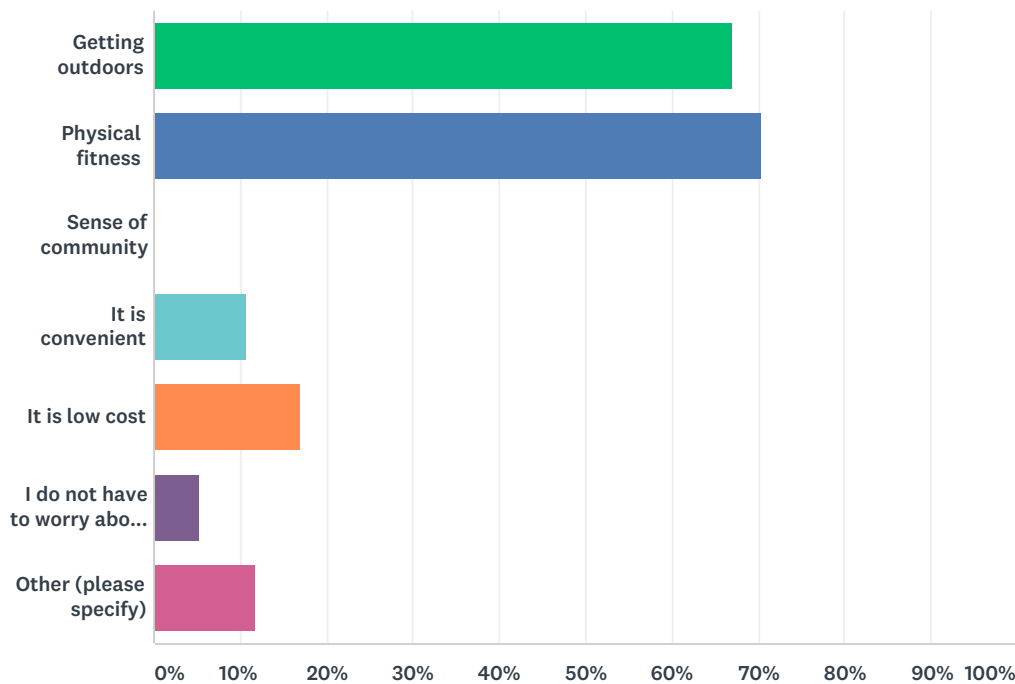
#	OTHER (PLEASE SPECIFY)	DATE
1	Walk the dog	1/6/2019 9:56 AM
2	Taking my children for walks and rides on their bikes	12/30/2018 5:01 PM
3	Walk my dog	12/24/2018 12:13 AM
4	Would love to go walking in BH but there are too many stray dogs and no paths to walk on.	12/14/2018 1:42 PM
5	Walk my dogs	12/13/2018 10:57 PM
6	Dog walk	12/13/2018 8:50 PM
7	Walk the dogs	12/13/2018 1:44 PM
8	Walking my dog	12/13/2018 1:29 PM
9	Get out of the house or out baby to sleep	12/13/2018 11:15 AM
10	Thinking time	12/13/2018 9:45 AM
11	Walking The Dog	12/4/2018 10:20 PM

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12	My children like to go for a walk and to ride their bikes.	12/3/2018 7:04 PM
13	mountain bike trails	12/3/2018 1:32 PM
14	We are visitors during the year and some answers do not suit us. Generally, we'd like to see bicycle tracks, & toilets in each of the parks.	12/3/2018 12:31 PM

Q8 What do you like about walking and/or cycling? (max 2 options)

Answered: 94 Skipped: 21

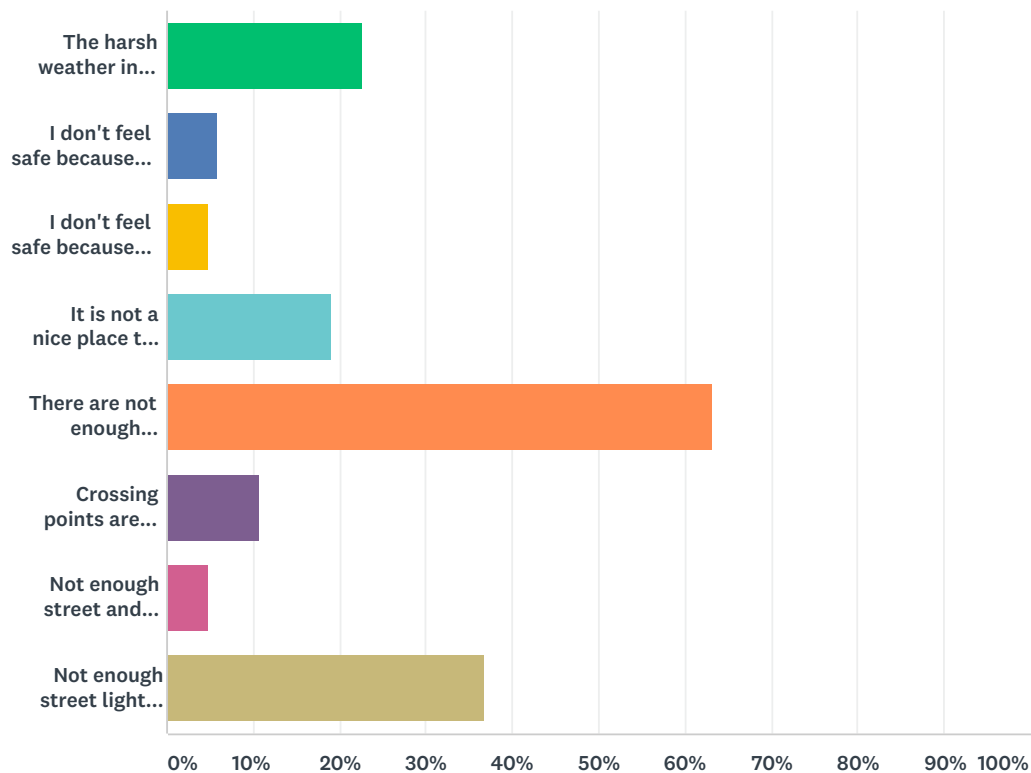


ANSWER CHOICES	RESPONSES	
Getting outdoors	67.02%	63
Physical fitness	70.21%	66
Sense of community	0.00%	0
It is convenient	10.64%	10
It is low cost	17.02%	16
I do not have to worry about finding parking/parking restrictions etc	5.32%	5
Other (please specify)	11.70%	11
Total Respondents: 94		

#	OTHER (PLEASE SPECIFY)	DATE
1	Getting the kids active and keeping them motivated	12/30/2018 5:01 PM
2	It's better for the environment.	12/18/2018 11:02 PM
3	Need to look after my dogs	12/13/2018 1:44 PM
4	Quality thinking time	12/13/2018 9:45 AM
5	Great for my kids to be outdoors walking with me or riding there bike or scooter	12/13/2018 9:36 AM
6	Environmentally friendly	12/10/2018 6:19 PM
7	Like cycling around off track and on road, you can check out what's happening at your pace, fitness and being outdoors, exploring to find the wood & iron house on 2009 stamp etc	12/7/2018 9:22 PM
8	Not allowed to drive so have to walk or ride	12/4/2018 5:18 PM
9	Footpaths covered in weeds & uneven surface so need to walk on road at some points	12/3/2018 10:07 PM
10	Fresh air and fitness for my children and I. Free family time.	12/3/2018 7:04 PM
11	Quality time outdoors with my kid	12/3/2018 2:31 PM

Q9 What do you dislike about walking and/or cycling? (max 2 options)

Answered: 84 Skipped: 31



ANSWER CHOICES	RESPONSES	
The harsh weather in Broken Hill	22.62%	19
I don't feel safe because of the speed of vehicles	5.95%	5
I don't feel safe because of a lack of personal security	4.76%	4
It is not a nice place to walk and cycle (lack of shade, seating etc)	19.05%	16
There are not enough footpaths/cyclepaths	63.10%	53
Crossing points are unsafe	10.71%	9
Not enough street and directional signage	4.76%	4
Not enough street lighting after dark	36.90%	31
Total Respondents: 84		

#	OTHER (PLEASE SPECIFY)	DATE
1	The HUGE amount of roaming unfriendly dogs !!!!!!!!!!!!!	1/6/2019 9:56 AM
2	Dogs roaming. Makes walking difficult.	1/4/2019 7:08 AM
3	Difficulty when walking with a peak as not every footpath has access from the intersection. There's are also some sections without footpaths where there is no choice but to walk on the road.	1/4/2019 12:48 AM
4	Footpaths are in poor condition, trip easily. Some areas don't even have footpaths, just uneven ground. Stray dogs roaming around that could attack my children or myself while walking.	1/1/2019 6:38 PM
5	Dogs roaming is a big problem, Yes some are friendly but others are not.	12/31/2018 12:14 PM
6	I live out the south and i have to drive into town, to walk my dog due to the lack of paths, and because of the prickles and weeds are so bad my daughter can't ride her bike, as she gets flat tyres all the time.	12/31/2018 8:47 AM

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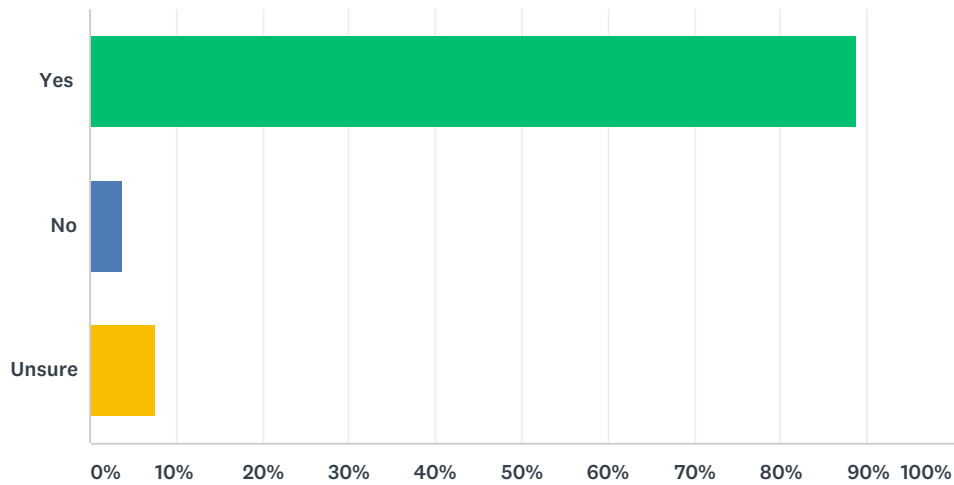
7	My children are young and I dont like them riding there bikes on the road as its unsafe but our footpaths are terrible for little legs peddaling	12/30/2018 5:01 PM
8	TOO MANY STRAY DOGS IN THE STREETS AND WEEDY FOOTPATHS	12/26/2018 9:46 PM
9	you Have to dodge weeds on footpaths and stray dogs.	12/24/2018 12:13 AM
10	Too many stray dogs, where there are footpaths, they aren't necessarily even, need maintenance ect, too many weeds, prickles.	12/21/2018 5:12 AM
11	Feel unsafe in my bike at intersections & roundabouts Lack of green/shade areas to walk throughout/around/to Stray dogs are scary Lighting after dark is non/existant Weeds around footpaths are unsightly	12/20/2018 11:27 PM
12	Cars are parked in cycle lanes.	12/18/2018 11:02 PM
13	There are too many cars parked on footpaths.	12/17/2018 3:18 PM
14	Bloody stray dogs even at sturt park ,we walk there everyday in the hope we wont have to deal with dogs	12/17/2018 12:02 PM
15	Stray dogs	12/17/2018 11:41 AM
16	Cars and other vehicles parking on footpaths.	12/15/2018 6:16 PM
17	Stray dogs are a big problem and the biggest reason I am too afraid to walk as much as I would like to. Magpies and crows are also an issue. Alot of streets don't have proper footpaths and in some areas weeds are not controlled well and there can be alot of pickles. Some streets are poorly lit at night time.	12/14/2018 7:28 PM
18	You need a box — Don't feel safe and can't take the kids out for a walk because there are too many stray dangerous dogs.....	12/14/2018 1:42 PM
19	Stray dogs attacking me	12/14/2018 8:16 AM
20	Roaming dogs and people walking dogs off leash, dangerous state of footpaths with raised pavement, cracks and general damage, high amount of weeds and general rubbish	12/14/2018 8:15 AM
21	Too many loose dogs	12/14/2018 6:57 AM
22	Too many roaming dogs	12/13/2018 10:57 PM
23	Stray dogs	12/13/2018 7:08 PM
24	I'm too scared of my dog getting attacked by stray dogs roaming the streets	12/13/2018 1:29 PM
25	Stray dogs and broken or unsealed footpaths	12/13/2018 1:04 PM
26	Stray dogs. Lack of bike paths, footpaths don't continue all along road ways and large steps at road crossing make it difficult. A continuous looped bike/footpath say from Sturt Park to pool to golf course to plaza would be great.	12/13/2018 12:29 PM
27	Stray dogs and not enough lighting after dark	12/13/2018 12:26 PM
28	I don't feel safe due to a lot of stray dogs.	12/13/2018 12:14 PM
29	The foot paths are atrocious and crossing the roads is annoying	12/13/2018 11:25 AM
30	Stray dogs are a concern because I'm walking with children, not enough lighting at night, footpaths suck	12/13/2018 11:15 AM
31	Stray dogs	12/13/2018 10:09 AM
32	Condition of footpaths and obstacles (such as fallen branches and general litter) make trip hazards	12/13/2018 9:45 AM
33	Stray dogs	12/13/2018 9:33 AM
34	I could have ticked nearly all of the above.	12/11/2018 10:51 AM
35	Lots of loose dogs. There aren't many foot paths and the ramps don't always match up on the next block. Pushing a pram is difficult. Not enough shade throughout the town. You trim the trees in summer! When we need the shade.	12/10/2018 6:19 PM
36	None of the above. Broken Hill is a fantastic place to cycle and walk due to it's marvellous views, streetscapes, landscapes. Of course, one must be careful around traffic but I've found most road users are careful and caring.	12/8/2018 8:55 AM

Broken Hill Active Transport Plan Community Survey

37	Some crossing points also unsafe for cars because of the dips at street intersections and also people park too close to the corners, you have to come out a distance to see if oncoming traffic. *(see around Morgan/ Chloride sts & hosp. Put up a 'no stopping' sign so people don't park so close to corners. The dirt & gravel that washes down after heavy rain and sits near gutters or intersections and takes forever to be removed by council. Poor footpaths, weedy, muddy after rain (and streets flow with water), doesn't take much to get wet cycling to work in office wear! or muddy shoes if walking) and people park across footpath, drivers don't look out for cyclists and underestimate cyclists speed down Chloride st hill	12/7/2018 9:22 PM
38	The gravel and weed foot baths are shocking!! I can't push the pram through it. Not enough scoops at the ends of blocks for prams to go up Street lights after dark are shocking	12/5/2018 9:34 PM
39	There's a lot of trip hazards on footpaths where the concrete paths have moved due to tree roots and ground movement.	12/5/2018 5:37 PM
40	Riding on the dirt roads is safe and great fun. The road users in Broken Hill lack awareness and respect for cyclists. If could ride footpaths would be better.	12/5/2018 9:40 AM
41	And to many not so friendly stray dogs walking the streets	12/4/2018 10:20 PM
42	Footpaths covered in weeds & uneven surface sometimes need to walk on road	12/3/2018 10:07 PM
43	Don't feel safe because there are a lot of dogs roaming /can easily escape their yards. Especially a concern when I have my dog with me and /or small children. Have been chased on a number of occasions.	12/3/2018 7:58 PM
44	Dogs roaming freely in the streets unaccompanied.	12/3/2018 7:04 PM
45	Not enough bike parking Drivers are not aware of cyclists Drivers using mobile phones	12/3/2018 3:55 PM
46	The state of some of the footpaths I walk on are not the greatest. They have either raised from their original position, have cracks in them that are a trip hazard or are heavily covered in dirt and gravel that has washed onto them on the odd occasion it does rain that could also be a trip hazard. Also there are a lot of overhanging trees on some of these footpaths that you have to walk around of duck to go under.	12/3/2018 2:31 PM
47	The car drivers do not look for riders at roundabouts and I see people on their phones all the time.	12/3/2018 1:32 PM
48	Too many stray dogs, my children and I have been accosted too many times and council does not care.	12/3/2018 1:01 PM
49	Broken Hill is a nice place to both walk and cycle around. We don't feel unsafe in this community, but there are not enough dedicated cycle tracks. we look after grandchildren while visiting, and some parks do not have a toilet available.	12/3/2018 12:31 PM
50	Too many stray dogs. Lack of shaded areas and seating. Night time is unsafe due to limited lighting, lights that aren't lit at all, trees covering lights. Crossing points are unsafe, not enough pedestrian refuges in busy areas.	12/3/2018 12:03 PM
51	Dangerous dogs	12/3/2018 11:40 AM

Q10 Would you realistically consider walking and cycling (more) if the infrastructure was improved?

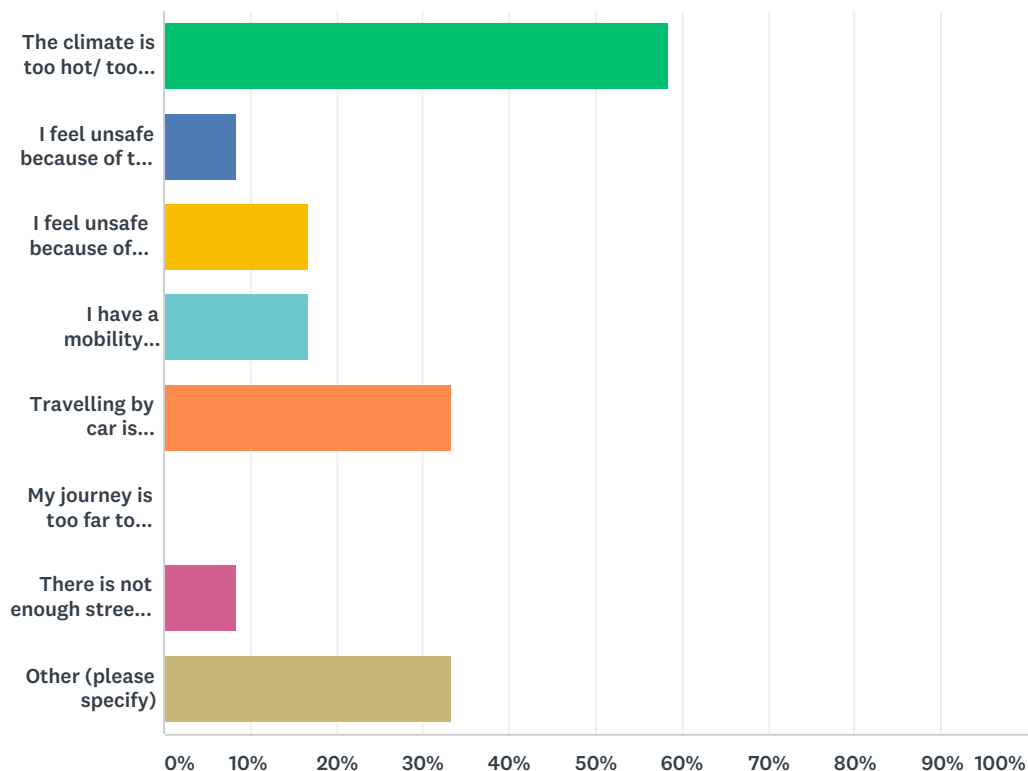
Answered: 107 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes	88.79%	95
No	3.74%	4
Unsure	7.48%	8
TOTAL		107

Q11 You said you would not/were unsure if you would walk and cycle more, even if infrastructure was improved. Why? (max 2 options)

Answered: 12 Skipped: 103

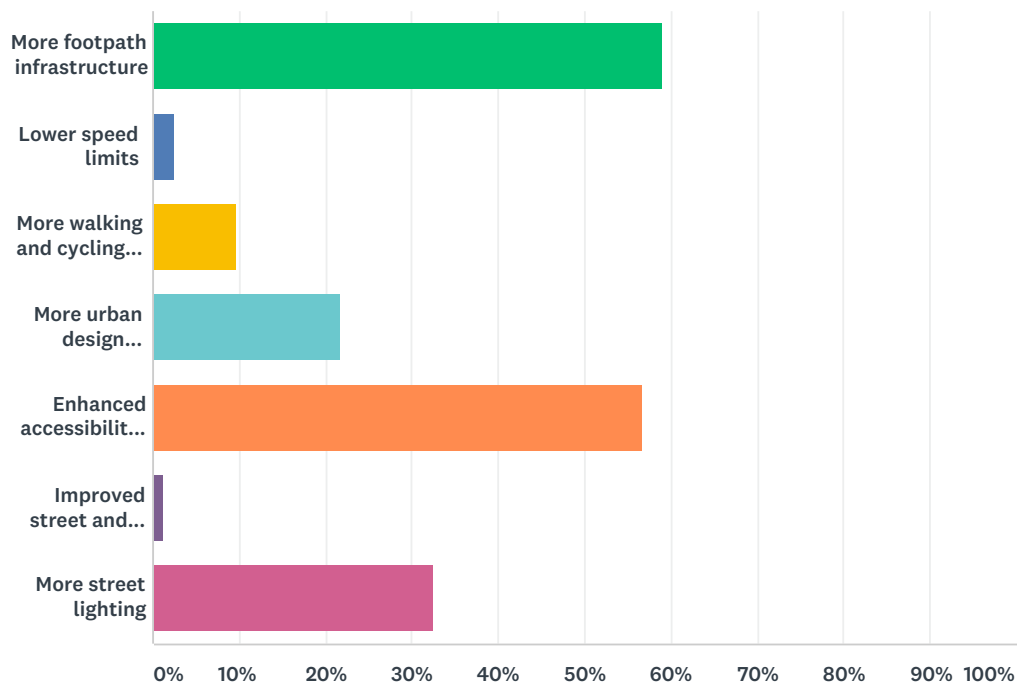


ANSWER CHOICES	RESPONSES	
The climate is too hot/ too cold	58.33%	7
I feel unsafe because of the road environment	8.33%	1
I feel unsafe because of personal security	16.67%	2
I have a mobility limitation	16.67%	2
Travelling by car is comfortable and/or convenient	33.33%	4
My journey is too far to consider walking or cycling	0.00%	0
There is not enough street an directional signage	8.33%	1
Other (please specify)	33.33%	4
Total Respondents: 12		

#	OTHER (PLEASE SPECIFY)	DATE
1	Inadequate cycle parking facilities in shopping centres (trail bike tires don't fit in between metal bars provided)	12/18/2018 11:06 PM
2	too many roaming dogs	12/13/2018 12:14 PM
3	Unsure	12/7/2018 10:34 PM
4	I already walk every day and wouldn't walk more just because that is enough for me	12/3/2018 4:47 PM

Q12 What can we do to make walking and cycling better in Broken Hill? (max 2 options)

Answered: 83 Skipped: 32



ANSWER CHOICES	RESPONSES	
More footpath infrastructure	59.04%	49
Lower speed limits	2.41%	2
More walking and cycling community events	9.64%	8
More urban design (shade/seating/amenity etc)	21.69%	18
Enhanced accessibility (better footpaths/kerb ramps/safer crossing points etc)	56.63%	47
Improved street and directional signage	1.20%	1
More street lighting	32.53%	27
Total Respondents: 83		

#	OTHER (PLEASE SPECIFY)	DATE
1	Less roaming dogs!!!!	1/6/2019 9:57 AM
2	Bike path away from the road/traffic.	1/4/2019 12:51 AM
3	Control the stray dogs, harsher penalties for owners with unrestrained dogs, easier access to dog catcher	1/1/2019 6:43 PM
4	stray dogs are a major problem	12/26/2018 10:12 PM
5	GETTING ON TOP OF THE STRAY DOG PROBLEM	12/26/2018 9:48 PM
6	I would like to see more street trees planted. As Essential Energy has just about halved the canopy cover of street trees in Broken Hill, I see it as only fair that Essential Energy re-instate the shade cover. There are many trees missing from avenues where there are no power or telephone lines, so it would make sense to replant these areas so they may grow unimpeded, and Essential Energy would not be require to massacre the new trees as they have lately in our fair city. I do not see this type of destruction in major cities like Sydney or Melbourne where they love their trees and treat them as an asset.	12/24/2018 5:01 PM

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7	Stop people using footpaths as their own parking allotment. My neighbours even have guest living in a caravan on the footpath	12/17/2018 3:21 PM
8	Dog catcher	12/17/2018 12:03 PM
9	As previous, discourage people from being lazy by parking on footpaths maybe give them a parking ticket !!!!	12/15/2018 6:26 PM
10	Get roaming dogs under control	12/14/2018 2:01 PM
11	Employ a dog catcher to get rid of the dogs for starters.. then install cycleways and footpaths to locals and visitors can freely walk and exercise without feeling frightened of being attacked by dogs. My dog has never left our premises and probably never will, why, because he is likely to get attacked by another dog roaming the streets, BH council get your act together, I am from Away but have made Bh my permanent home. Have never been in a town that is so complacent with stray dogs. Get these dogs off the streets, fine the owners, take their dogs away and rehome them.	12/14/2018 1:48 PM
12	Dog catcher who stops the aggressive dogs from roaming constantly. Absolutely beyond a joke	12/14/2018 8:19 AM
13	Manage the roaming dog issue- have rangers that actually get out and collect the dogs, clean up the footpaths and median strips	12/14/2018 8:18 AM
14	Remove all loose dogs	12/14/2018 6:59 AM
15	Have more dog catchers	12/13/2018 10:59 PM
16	Control Animals	12/13/2018 1:05 PM
17	Better stray dog control	12/13/2018 12:31 PM
18	A five kilometre walking / cycling path without the interruption of having to wait for traffic and getting up and down kerbs	12/13/2018 11:34 AM
19	More enhanced accessibility and street lighting. Council put in swales down footpath outside my place and neighbour but there's no lighting so impossible at night because you don't know they are there and there's a sudden change in direction, especially if going downhill. Improved street signs, they are so high up, small and impossible to read if going other than walking pace and many intersections don't have them	12/7/2018 9:30 PM
20	Broken Hill has lots of loose large breed dogs	12/5/2018 6:20 PM
21	Repairing the existing footpaths to reduce trip hazards is essential and installing new paths would be great. Street sweeping more frequently would also be nice to clean up walking path areas. I've also noticed a lot of loose gravel on existing footpaths which are trip hazards. A small street sweep would be handy to clean up these areas.	12/5/2018 5:50 PM
22	Setting up tracks through the outskirts to enjoy and enhance visits to experience our wonderful country.	12/5/2018 9:44 AM
23	Better dog control	12/3/2018 8:02 PM
24	I walk with small children and at least one is in a pram. With little to no footpaths in my area it is very difficult at times due to the pram getting stuck in the dirt, the children can't ride their scooters/bikes for the entire walk. With the heat of Broken Hill it would be preferable to walk of an evening but the lightening around my area is terrible (near Central Football club) Stray dogs are a big concern. As mentioned I have small children with me and not only am I fearful one will attack but 1 of my children is terrified of dogs and this makes her hesitant to go walking/riding.	12/3/2018 7:13 PM
25	and more footpath infrastructure	12/3/2018 3:59 PM
26	20 kph zones at McCulloch St shops and the North Family Play/Pool Centre. I have had several close calls in these two areas	12/3/2018 1:36 PM
27	Do something about the stray dog problem. I very much miss walking.	12/3/2018 1:03 PM
28	streets are ok to walk around. Cycling is more difficult as there are very few dedicated areas. The speed and proximity of motorised vehicles make it difficult. In fairness to drivers, there is little signage to warn them, and shared areas are difficult because of the slow speed of many cyclists. School areas in particular need drivers to be much more cautious and aware, even though the speed limit is lower. It would be nice to have cycle tracks. The walking/bike track to RFDS @ South is good, though a little rough at times. Often, given the temperature, it is also nice to walk/cycle in shadier areas.	12/3/2018 12:45 PM
29	Better animal control.	12/3/2018 12:09 PM

Q13 What are the places which you would like linked for new or improved infrastructure? You can enter up to 5 places, these might include your home, schools, shopping centres, parks, the CBD, workplaces and community facilities etc. Please be as specific as you can with your answers. For example, nominate a particular school by name.(If you choose to enter your home address, this will be treated confidentially and used only for the purposes of informing the development of the active transport plan)

Answered: 60 Skipped: 55

ANSWER CHOICES	RESPONSES
Enter an origin or destination (name or address)	100.00% 60
Enter an origin or destination (name or address)	85.00% 51
Enter an origin or destination (name or address)	58.33% 35
Enter an origin or destination (name or address)	48.33% 29
Enter an origin or destination (name or address)	30.00% 18

#	ENTER AN ORIGIN OR DESTINATION (NAME OR ADDRESS)	DATE
1	Another designated walking area. Like the one around Sturt Park.	1/4/2019 7:11 AM
2	Bike path on overpass needs improvement	1/4/2019 12:51 AM
3	Zebina st footpaths between thomas and williams st	1/1/2019 6:43 PM
4	Parks in area	1/1/2019 1:56 PM
5	South broken Hill	12/31/2018 8:48 AM
6	Brazil street	12/30/2018 9:49 AM
7	south	12/26/2018 10:12 PM
8	KNOX ST	12/26/2018 9:48 PM
9	South Broken Hill in general - more street trees	12/24/2018 5:01 PM
10	Oxide Street	12/21/2018 5:14 AM
11	Patton Street	12/21/2018 12:03 AM
12	Hospital	12/20/2018 11:30 PM
13	Walking trails out the south that lead to and from Patton Park	12/17/2018 3:21 PM
14	Parks	12/17/2018 11:42 AM
15	■ BAGOT Street	12/15/2018 7:33 PM
16	McCulloch street footpaths	12/15/2018 6:26 PM
17	Lane street	12/15/2018 11:55 AM
18	Williams St near BHNPS	12/14/2018 8:19 AM
19	North Broken Hill	12/13/2018 10:59 PM
20	Zebina Street	12/13/2018 8:52 PM
21	Duff St	12/13/2018 1:46 PM
22	Bonanza Street	12/13/2018 12:43 PM
23	Golf course	12/13/2018 12:31 PM

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24	Imperial lakes	12/13/2018 12:23 PM
25	Queen Elizabeth Park	12/13/2018 11:34 AM
26	Ymca	12/13/2018 11:12 AM
27	Centro wesude plaza	12/13/2018 10:12 AM
28	Sturt Park	12/13/2018 9:47 AM
29	All school areas	12/13/2018 9:39 AM
30	Sturt park	12/13/2018 9:35 AM
31	Railway town school	12/10/2018 6:21 PM
32	Argent street	12/8/2018 8:57 AM
33	█ Chloride st and neighbours	12/7/2018 9:30 PM
34	pedestrian crossing in front of the hospital in Thomas street	12/7/2018 5:12 PM
35	Argent Street - Sydney road end	12/6/2018 6:40 AM
36	█ hill st	12/5/2018 9:35 PM
37	Brown Street	12/5/2018 9:35 PM
38	All streets that don't have good lighting or paths	12/5/2018 9:33 PM
39	Uranium street footpath	12/5/2018 9:21 PM
40	Sulphide st, the footpaths on both sides of the road between Williams st and argent st are dangerous	12/5/2018 5:50 PM
41	Broken Hill to Silverton	12/5/2018 9:44 AM
42	Morgan street school opposite side of the toad to school at primary end requires footpath too especially at the primary crossing	12/4/2018 10:43 PM
43	Menindee Road - Holten Drive - Eyre Street	12/4/2018 9:51 AM
44	North end Williams st	12/3/2018 10:46 PM
45	Bonanza St	12/3/2018 10:11 PM
46	Broken Hill Public school	12/3/2018 9:10 PM
47	Burke Ward school.	12/3/2018 7:27 PM
48	Wright street	12/3/2018 7:13 PM
49	Lakeview caravan to CBD	12/3/2018 5:14 PM
50	coles shopping centre with roadbridge bikeroad to south with pedestrian crossing.	12/3/2018 4:36 PM
51	Gloria Jeans	12/3/2018 3:59 PM
52	Williams Street	12/3/2018 2:34 PM
53	McCulloch St shops 20kph zone	12/3/2018 1:36 PM
54	Queen Elizabeth Park	12/3/2018 1:33 PM
55	Footpaths all over town.	12/3/2018 1:03 PM
56	anywhere out south	12/3/2018 12:56 PM
57	Aquatic centre	12/3/2018 12:55 PM
58	all Schools, TAFE, Visitors Center	12/3/2018 12:45 PM
59	Refuge for Coles complex Blende Street	12/3/2018 12:09 PM
60	Oxide Street - better footpaths entire length	12/3/2018 11:46 AM
#	ENTER AN ORIGIN OR DESTINATION (NAME OR ADDRESS)	DATE
1	A bike path to Silverton away from traffic would be lovely.	1/4/2019 12:51 AM
2	Williams st footpath up from highway deli has lifted forming dangerous upside down v shape	1/1/2019 6:43 PM
3	Cbd	1/1/2019 1:56 PM
4	Airport road	12/31/2018 8:48 AM
5	Mccollough street	12/30/2018 9:49 AM

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6	railwaytown	12/26/2018 10:12 PM
7	BONANZA ST	12/26/2018 9:48 PM
8	CBD - appropriate street tree plantings/remove inappropriate	12/24/2018 5:01 PM
9	Cummins Street	12/21/2018 5:14 AM
10	Patton Street Park	12/21/2018 12:03 AM
11	CBD	12/20/2018 11:30 PM
12	Dog park improvement	12/17/2018 11:42 AM
13	Queen Elizabeth Park, for children now we have catered for dogs	12/15/2018 6:26 PM
14	Lane street	12/15/2018 11:55 AM
15	Galena St near plaza	12/14/2018 8:19 AM
16	Soccer/cricket oval	12/13/2018 10:59 PM
17	Queens Park	12/13/2018 8:52 PM
18	Knox St	12/13/2018 1:46 PM
19	Central Street	12/13/2018 12:43 PM
20	Aquatic Centre	12/13/2018 12:31 PM
21	Airport road	12/13/2018 12:23 PM
22	Aquatic centre	12/13/2018 11:34 AM
23	Pool	12/13/2018 11:12 AM
24	Central area footpaths	12/13/2018 10:12 AM
25	Hospital	12/13/2018 9:47 AM
26	Regional Aquatic Centre	12/13/2018 9:35 AM
27	Centro	12/10/2018 6:21 PM
28	Westside plaza	12/8/2018 8:57 AM
29	Cummins & Oxide sts	12/7/2018 9:30 PM
30	Chloride/Morgan Street intersection, ramps or step downs from steep gutters.	12/7/2018 5:12 PM
31	Wolfram street - Sydney road end	12/6/2018 6:40 AM
32	Hill street area	12/5/2018 9:35 PM
33	Brockfeild Ave	12/5/2018 9:35 PM
34	Morgan Street school area footpath	12/5/2018 9:21 PM
35	A footpath / walking path along bonanza street from Knox all the way to the overpass including pedestrian dish crossing for wheel chair access and pram access	12/5/2018 5:50 PM
36	Broken Hill to Mt Gipps	12/5/2018 9:44 AM
37	Hospital	12/4/2018 10:43 PM
38	Argent Street	12/4/2018 9:51 AM
39	South Rd - overpass	12/3/2018 10:11 PM
40	Williams street	12/3/2018 7:27 PM
41	Long street	12/3/2018 7:13 PM
42	North Blende Street to Sturt Park	12/3/2018 5:14 PM
43	Gaffney street with South road and Coles Complex.	12/3/2018 4:36 PM
44	Shopping Centres	12/3/2018 3:59 PM
45	Iodide Street	12/3/2018 2:34 PM
46	North Pool 20kph zone	12/3/2018 1:36 PM
47	Round Hill walking cycling track	12/3/2018 1:33 PM

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48	New YMCA gym	12/3/2018 12:55 PM
49	a 'circuit' linking attractions, walking or cycle circuit.	12/3/2018 12:45 PM
50	Match up pram ramps for each intersection	12/3/2018 12:09 PM
51	Williams Street - Oxide to Brookfield Ave	12/3/2018 11:46 AM
#	ENTER AN ORIGIN OR DESTINATION (NAME OR ADDRESS)	DATE
1	Oxide street footpaths (access on and off and need work in some places) between Williams and Argent streets	1/4/2019 12:51 AM
2	Morgan st school	1/1/2019 6:43 PM
3	Zabina street	12/30/2018 9:49 AM
4	central	12/26/2018 10:12 PM
5	Crystal St - appropriate trees on railway siding	12/24/2018 5:01 PM
6	Wyman Street	12/21/2018 5:14 AM
7	South dog park	12/21/2018 12:03 AM
8	Sturt Park	12/20/2018 11:30 PM
9	Argent street, footpaths washed regularly and upgraded	12/15/2018 6:26 PM
10	North area near Radium St	12/14/2018 8:19 AM
11	Kanandah Road	12/13/2018 8:52 PM
12	South Broken Hill	12/13/2018 1:46 PM
13	Sturt park	12/13/2018 12:31 PM
14	Mcculloch street	12/13/2018 11:34 AM
15	Argent street	12/13/2018 11:12 AM
16	Crystal Street (Menindee Road end)	12/13/2018 9:47 AM
17	Coles and woolworths	12/13/2018 9:35 AM
18	Argent st	12/10/2018 6:21 PM
19	Coles complex	12/8/2018 8:57 AM
20	More bicycle racks for Argent st and shopping plazas	12/7/2018 9:30 PM
21	footpaths in Morgan street near Interhealth GP clinic	12/7/2018 5:12 PM
22	hill street	12/5/2018 9:35 PM
23	Doe street	12/5/2018 9:35 PM
24	Main roads	12/5/2018 9:21 PM
25	Pedestrian crossing on Thomas street connecting the hospital and superclinic for safety of pedestrians	12/5/2018 5:50 PM
26	Broken Hill North to South and return	12/5/2018 9:44 AM
27	Patton St to Zinc Lake	12/3/2018 10:11 PM
28	Chapple Street	12/3/2018 7:27 PM
29	Warnock street	12/3/2018 7:13 PM
30	Three points along Argent Street	12/3/2018 3:59 PM
31	Argent Street	12/3/2018 2:34 PM
32	Imperial Lakes Precinct	12/3/2018 1:33 PM
33	Bus stop upgrade to be used as shelter	12/3/2018 12:55 PM
34	need a map of these online, & @ Visitor's Centre	12/3/2018 12:45 PM
35	Galena Street - better walking access to Plaza	12/3/2018 11:46 AM
#	ENTER AN ORIGIN OR DESTINATION (NAME OR ADDRESS)	DATE
1	Lighting around zebina, mcgowen st	1/1/2019 6:43 PM
2	Radium street	12/30/2018 9:49 AM

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3	north	12/26/2018 10:12 PM
4	Mine lease Block 10 - water the olive trees	12/24/2018 5:01 PM
5	Brown Street	12/21/2018 5:14 AM
6	█ Patton Street	12/21/2018 12:03 AM
7	Pool	12/20/2018 11:30 PM
8	All footpaths weeded and generally cleaned regularly, not just for special occasions as promised by current Mayor in last election !!!	12/15/2018 6:26 PM
9	Near BHNPS	12/14/2018 8:19 AM
10	Creedon Street	12/13/2018 8:52 PM
11	Bonanza St	12/13/2018 1:46 PM
12	Airport	12/13/2018 12:31 PM
13	Wetlands	12/13/2018 11:34 AM
14	Measured/mapped cycle and/or walking route in non-busy area for fitness/possible community events	12/13/2018 11:12 AM
15	Iodide Street	12/13/2018 9:47 AM
16	library	12/13/2018 9:35 AM
17	Patton Street	12/8/2018 8:57 AM
18	footpaths on steep hill at/near University Dept Rural Health	12/7/2018 5:12 PM
19	█ hill st	12/5/2018 9:35 PM
20	Morgan street	12/5/2018 9:35 PM
21	Walking trails to places of interest around city	12/5/2018 9:44 AM
22	Oxide street	12/3/2018 7:27 PM
23	Gossan Street	12/3/2018 7:13 PM
24	YMCA Integrated Wellness Centre	12/3/2018 3:59 PM
25	Oxide Street	12/3/2018 2:34 PM
26	Williams Street	12/3/2018 1:33 PM
27	Home hardware	12/3/2018 12:55 PM
28	bike racks, water refill (tie up area, for animals)near amenities.	12/3/2018 12:45 PM
29	Brown Street - better roads and footpaths	12/3/2018 11:46 AM
#	ENTER AN ORIGIN OR DESTINATION (NAME OR ADDRESS)	DATE
1	Lighting in all areas	1/1/2019 6:43 PM
2	Wolfram st near the goal	12/30/2018 9:49 AM
3	everywhere	12/26/2018 10:12 PM
4	Thomas Street	12/21/2018 5:14 AM
5	South Broken Hill	12/21/2018 12:03 AM
6	Rakow Street	12/13/2018 8:52 PM
7	Town Square	12/13/2018 12:31 PM
8	Westside Plaza	12/13/2018 9:47 AM
9	North pool	12/8/2018 8:57 AM
10	pedestrian crossing across crystal street near community health centre	12/7/2018 5:12 PM
11	Hill st area	12/5/2018 9:35 PM
12	Trails to connect tourist attractions in BH & surrounds	12/5/2018 9:44 AM
13	West side plaza	12/3/2018 7:27 PM
14	Around the jail/Broken Hill HighSchool area.	12/3/2018 7:13 PM
15	The Caff	12/3/2018 3:59 PM

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16	Any of the streets that have dirt or old bitumen footpaths	12/3/2018 2:34 PM
17	Silverton Road	12/3/2018 1:33 PM
18	O'Connor sports complex for soccer, netball and cricket	12/3/2018 12:55 PM

Q14 Is there anything else you would like to make us aware of regarding walking and cycling in Broken Hill?

Answered: 64 Skipped: 51

#	RESPONSES	DATE
1	Roaming dogs !!	1/6/2019 9:57 AM
2	Need more dog control.	1/4/2019 7:12 AM
3	There's a lot of loose gravel and glass in existing bike tracks, especially on the overpass.	1/4/2019 12:54 AM
4	Dogs make it unsafe. Reported to dog catcher but by the time they come, the dog has returned to its yard. Walker from a nearby street climbed onto our fence to seek refuge from a vicious dog	1/1/2019 6:45 PM
5	I used to walk every day but have stopped due to the dogs which roam the streets and come running at the fence - also lack of footpaths. I used to walk my dogs but the lack of footpaths mean having to walk on roads or dirt full of weeds and prickles - not good for dogs feet	1/1/2019 1:58 PM
6	Weeds. Three corner Jacks!!!!. Cant take the kids bikes anywhere. Down all the lanes are the absolute worst	12/30/2018 9:50 AM
7	yes stray dogs	12/26/2018 10:13 PM
8	THE STRAY DOG PROBLEM	12/26/2018 9:49 PM
9	Removal of asphalt as pedestrian pathways in the city. It is very uneven, unsightly, and has no aesthetic appeal or function what so ever	12/24/2018 5:05 PM
10	We have a constant problem with stray or lost dogs wandering our streets and it needs policing	12/24/2018 12:18 AM
11	I use to walk a lot. It was very difficult if walking a dog. Not safe to walk on the road, and too uneven for my bad ankles to walk on what should be footpaths. There should be a paved footpath running down one side of each street for safety reasons. - We have one down part of ours, including our house, but I cannot walk to the Plaza, without walking on rough grass/dirt.	12/19/2018 12:13 AM
12	Cycle paths tend to end abruptly especially at roundabouts where they 'disappear'. It becomes dangerous to negotiate such areas when cars are rushing behind.	12/18/2018 11:09 PM
13	Dogs	12/17/2018 12:03 PM
14	Rubbish everywhere and weeds	12/17/2018 11:43 AM
15	Poor maintenance of foot paths, weeds, uneven surfaces, partial paving, unsafe curbing.	12/15/2018 7:37 PM
16	Main issues - cars on footpaths, no proper footpaths, untidy footpaths. I don't think it should be too hard to tidy our town and maintain,	12/15/2018 6:30 PM
17	The amount of weeds and lack of footpaths is disgusting	12/15/2018 11:56 AM
18	Stray dogs are a real concern	12/14/2018 2:01 PM
19	Get the dogs off the streets and clean up the council strips and walkways	12/14/2018 1:49 PM
20	Dogs are the main reason why I dont walk. Same dogs daily that leave yards, attack etc	12/14/2018 8:20 AM
21	Manage the infrastructure you already have as a start- improve safety by actually fixing footpaths and collecting roaming dogs	12/14/2018 8:19 AM
22	Too many loose dogs	12/14/2018 7:01 AM
23	Just the need for some dog catchers	12/13/2018 11:00 PM
24	No walking ramps to walk up next to park on Duff St. Its a big step up from the road. Street lighting is extremely poor. I don't feel safe as a single woman.	12/13/2018 1:48 PM
25	Stray dogs are scary and stop me walking with my children. Continuous looped footpaths/bikeway	12/13/2018 12:32 PM
26	Please look into a pound and full time dog catcher	12/13/2018 12:15 PM
27	A proper walking cycling track which can skirt the town with shade and seating and not have to worry about traffic. There's nothing worse than having to stop your stride because of traffic and high kerbs	12/13/2018 11:40 AM

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28	Can weeds be delt with? Sometimes I have to walk on the road because I cannot safely walk across weeds	12/13/2018 11:18 AM
29	Walking tracks/cycling of broken hill maps to download? Fix all sturt park lighting Plant more trees Community fun run/cyclathon Planned track with km markers	12/13/2018 11:16 AM
30	High prevalence of punctures in Broken Hill is why I stopped cycling, some screws still from roofing.	12/13/2018 9:48 AM
31	You need to install watering points - where people can fill their water bottles. With seating and shade - make them a really attractive rest point for walking trails. More rubbish bins with plastic bags for cleaning up your doggy's poop. More control over stray dogs - it's f'ing ridiculous how many dogs are loose in this town.	12/13/2018 9:37 AM
32	Yes The Burke Ward School needs a pedestrian crossing in Gypsum Street. Many near misses occur here weekly.	12/12/2018 1:06 PM
33	Water bottle re fill stations in more places. More shade from trees. Better foot paths and ramps.	12/10/2018 6:22 PM
34	No	12/8/2018 8:58 AM
35	No	12/7/2018 10:35 PM
36	I have a disability, and had to hire a wheelchair sadly had to return it, as was using it up the wrong side of the road as tyres couldnt go through the dirt on my street. Got bogged made me so mad, was in enough pain but to feel humiliated was worse cause I couldnt move.	12/7/2018 10:10 PM
37	You could publish some off road tracks on line, maps etc and also have online cycle maps with routes to pool etc (most places you can get to with minimal hills. What's happening with the Silverton cycleway? Council could get that sorted as half way there (though the "completed" parts are falling into disrepair because not finished)	12/7/2018 9:34 PM
38	- Educating cyclists that riding side by side is neither safe nor conducive to good relations with car drivers. - Painted cycle paths on roads are a bad idea, far better for cyclists to be able to use the road like any other user and ride where they want.	12/7/2018 5:49 PM
39	As a mother with a pram I am limited to the main streets where I don't want to walk, I like to walk in other places and it's very hard with a pram, I usually have to walk in the side of the road which is a bit dangerous	12/6/2018 6:42 AM
40	The residents in hill street are getting old. I feel that it is your duty of care to look after them!! We can't pull our bins out through the gravel or even push prams for walking frames through it. The gravel is slippery causing them to fall!!	12/5/2018 9:38 PM
41	You should really consider the safety of broken hills residents as it is unsafe for us to walk during night time especially being female young and with the amount of crime happening	12/5/2018 9:34 PM
42	Yes most of the towns lack of footpaths mean us parents have to walk with our prams on the road which is totally unsafe	12/5/2018 9:23 PM
43	Give pedestrians more time to cross at traffic lights	12/5/2018 10:54 AM
44	Make the tracks interesting and get people on board to assist with planning and installing.	12/5/2018 9:46 AM
45	Water filter stations periodically especially during hot weather.	12/4/2018 10:44 PM
46	Overhanging / overgrown trees that are blocking pathways or blocking the street lights to let light through	12/4/2018 5:27 PM
47	No	12/3/2018 10:12 PM
48	n/a	12/3/2018 9:29 PM
49	I feel there should be a set of traffic lights and and a crossing at the intersection of Bromide and Mica streets. There is no safe way across Bromide street for children going to both Broken Hill Public and BHHS...	12/3/2018 9:12 PM
50	A family cycling track somewhere would be nice. Somewhere smooth that kids learning can use without worrying about traffic. Three corner jacks are also a problem around town and thornproofing bike and pram tyres is quite expensive.	12/3/2018 8:06 PM
51	More street lights.	12/3/2018 7:28 PM
52	Animal control Lighting	12/3/2018 7:14 PM
53	The terrible state of the footpaths & the savage dogs that roam the streets. I have to drive the car to Sturt park to walk . Only place I feel safe .	12/3/2018 5:17 PM
54	Street signs not all intersections have proper signage	12/3/2018 5:04 PM

Broken Hill Active Transport Plan Community Survey

55	If you go for a walk early (6am) the hot weather isn't too much of an issue. It is very cold in winter of course. It is a great thing to do and highly recommend it for exercise	12/3/2018 4:50 PM
56	Need more areas for bike parking around the city.	12/3/2018 4:38 PM
57	It just needs to be more appealing. Just adding footpaths is not enough we also need beautifying around the city in general so when you do go for a walk or bike ride you are in nicer surroundings.	12/3/2018 2:36 PM
58	Make a TV advertisement to encourage locals to be careful around roundabouts and eg look right ,look left, look bike.	12/3/2018 1:39 PM
59	An events board in the town square....digital photo frame in a window would do!	12/3/2018 1:36 PM
60	It is difficult for kids to cycle when the blocks change from footpath to dirt (so many flat tyres). Dogs ruin the experience for both walking and cycling.	12/3/2018 1:04 PM
61	It's not safe for us to walk our dogs due to the amount of dogs loose in the city. I appreciate that's not the councils fault but it is the main issue we have these days	12/3/2018 12:58 PM
62	Weed control needs to be done more or footpaths would stop the spread of bindis that puncture bike tyres	12/3/2018 12:57 PM
63	Wheel chair/ pram access needs considering on walking/cycle trails, (Toilets: the minimum of a unisex toilet which can be easily accessed by disabled)	12/3/2018 12:48 PM
64	Hesitant to cycle due to other vehicles. Enjoy walking but concerns include heat (hard to control, maybe more shade where possible), stray dogs, lack of footpaths, lots of dust etc.	12/3/2018 11:49 AM

Q15 Would you like to be kept informed of the development of the active transport plan, including when community and stakeholder consultation will occur and when the draft plan is exhibited? If yes, please enter your email. (we respect your privacy and will only use your email to inform you of issues relating to this active transport plan. Your email address will not be published or linked to your responses)

Answered: 36 Skipped: 79

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Broken Hill Active Transport Plan Community Survey

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APPENDIX

D

ONLINE MAP OUTPUTS

UniqueID	CommentDescription	CommentType	CommentCategory	DateSubmitted	CommentMode
1	Steep descent on to street at pedestrian crossings, so steep it requires handrails	Dislike	Footpaths and crossings	27/11/2018 20:32	Pedestrian
2	Trees overhanging the footpath	Dislike	Footpaths and crossings	3/12/2018 3:37	Pedestrian
3	Trees overhang the footpath	Dislike	Footpaths and crossings	3/12/2018 3:39	Pedestrian
4	Footpath raised due to movement and in need of repair	Dislike	Footpaths and crossings	3/12/2018 3:40	Pedestrian
5	Footpath is old bitumen style footpath and could be replaced with concrete to match the rest of the street and make it safer for parents who take their kids on scooters to continue to ride. It's very hard to use a scooter on this type of surface	Idea or Suggestion	Footpaths and crossings	3/12/2018 3:41	
6	Foot path would be beneficial to the Morgan st primary end crossing to the opposite side	Idea or Suggestion	Footpaths and crossings	4/12/2018 11:45	Pedestrian
7	Accessibility for older community members to access footpath in the front of the Barrier Daily Truth via ramp rather than using driveways at either side of the Barrier Daily Truth which has traffic concerns for the elderly	Idea or Suggestion	Access and connectivity	4/12/2018 23:30	Pedestrian
8	The BDT (Barrier Daily Truth) would be better suited to it's customers if there was a ramp out the front for the elderly and people with physical disabilities.	Idea or Suggestion	Footpaths and crossings	4/12/2018 23:43	Pedestrian
9	I am an employee of the Barrier Daily Truth newspaper in Blende Street. Many of our subscribers are elderly and they would benefit from having a ramp out the front for easier access to the office.	Idea or Suggestion	Access and connectivity	5/12/2018 0:02	Pedestrian
10	Out The Front of BDT Office 179 Blende Street, we need a ramp as 65% of our customers are Pensioners and a lot of them struggle to get up the high kerbing	Idea or Suggestion	Access and connectivity	5/12/2018 0:04	Pedestrian
11	A ramp at the front of the BDT building, with a handrail, would be of great benefit to elderly people visiting and those with mobility restrictions	Idea or Suggestion	Footpaths and crossings	4/12/2018 23:46	Pedestrian
12	A ramp with hand rails at the front of the Barrier Daily Truth would be fantastic for our elderly subscribers.	Idea or Suggestion	Footpaths and crossings	5/12/2018 0:14	Pedestrian
13	The placement of a ramp or curb in front of 169 Blende Street and a handrail would benefit elderly patrons who access the building. It would allow them ease of access, safety and security to know they can get out of their car with care and enter the building free of incident	Idea or Suggestion	Safety and security	5/12/2018 0:16	Pedestrian
14	The Barrier Daily Truth office would greatly benefit from a ramp at the front, due to a substantial number of people visiting the office being elderly, this would allow for easier access for them.	Idea or Suggestion	Footpaths and crossings	5/12/2018 0:20	Pedestrian
15	A ramp for elderly customers to get up the footpath when coming to pay their bill at the Barrier Daily Truth	Idea or Suggestion	Access and connectivity	5/12/2018 1:15	Pedestrian
16	Need a ramp at the BDT for elderly customers.	Idea or Suggestion	Access and connectivity	5/12/2018 2:19	Pedestrian
17	Please attached file	Idea or Suggestion	Access and connectivity	5/12/2018 0:29	Pedestrian
18	Would be great to have a ramp at the entrance to the Barrier Daily Truth to assist our elderly and disabled customers	Idea or Suggestion	Footpaths and crossings	5/12/2018 5:55	Pedestrian
19	A lot of big dogs on the street	Dislike	Safety and security	5/12/2018 7:15	Pedestrian
20	At the Barrier Daily Truth Broken Hill N.S.W, there is no Wheelchair ramp (with rails) nor curb cut for the community such as the elderly & Disabled to access the Building in a safely manner.	Idea or Suggestion	Access and connectivity	5/12/2018 8:33	Pedestrian
21	disabled ramp at the front of the BDT	Idea or Suggestion	Safety and security	5/12/2018 11:58	Pedestrian
22	The gravel on the footpaths is a great hazard!! It is very slippery causing the elderly to fall!! It is YOUR duty of care to look out for these residents! They can't push their walkers through it, they can barely shuffle through it. They can't walk on the road as cars come over the hill a million miles an hour. The gravel that goes in our drive way is like skating on ice. I can't pull my full wheelie bin out through it and have to always rely on others. The path can not be used as a footpath.	Idea or Suggestion	Other	5/12/2018 12:36	Pedestrian
23	Elderly/disabled customers to the BDT would benefit from a ramp at the front of the building	Idea or Suggestion	Access and connectivity	6/12/2018 4:36	Pedestrian
24	dangerous crossing the street. could use a pedestrian crossing	Idea or Suggestion	Safety and security	7/12/2018 6:13	Pedestrian
25	gutter is steep to step down from	Dislike	Access and connectivity	7/12/2018 6:15	Pedestrian
26	steep and slippery.	Dislike	Footpaths and crossings	7/12/2018 6:16	
27	swales and no lighting for night walking between cummins lane and Whyman st	Dislike	Footpaths and crossings	7/12/2018 10:35	Pedestrian
28		Dislike	Safety and security	7/12/2018 10:41	Cyclist

29	Poor footpaths and crossings across the whole town. Most don't line up with each other and are a nightmare to try and push a pram. Generally have to walk on the road which is dangerous.	Dislike	Footpaths and crossings	10/12/2018 22:33	Pedestrian
30	A disability ramp at the front of the Barrier Daily Truth as we have alot of disabled and elderly customers who may fall down our high curbs so they try to access the driveways to walk up instead.	Idea or Suggestion	Safety and security	11/12/2018 1:20	Pedestrian
31	Tree roots and tree rubbish in the street causing trip hazards. Trees must be removed.	Dislike	Safety and security	11/12/2018 9:21	Pedestrian
32	Pedestrian crossing required at the Burke Ward School in Gypsum Street between Rakow and Newton streets	Idea or Suggestion	Footpaths and crossings	12/12/2018 2:07	Pedestrian
33	Lack of bike stands+locking stations across all of broken hill	Idea or Suggestion	Parking and pick up/drop off (bicycle/motorcycle/car)	12/12/2018 3:23	Cyclist
34	Lack of trees/ vegetation	Dislike	Other	12/12/2018 3:24	Pedestrian
35	Access to cycling maps.... common route distances(for fitness)+ safe/low traffic areas	Idea or Suggestion	Bicycle infrastructure and facilities	12/12/2018 3:26	Cyclist
36	Need a footpath from gaffney street to south road to coles	Idea or Suggestion	Footpaths and crossings	13/12/2018 9:16	Pedestrian
37		Dislike	Footpaths and crossings	14/12/2018 10:50	Pedestrian
38	Tripped over tree stump, has not been removed.	Dislike	Footpaths and crossings	15/12/2018 8:37	Pedestrian
39	There are no footpaths in Wyman street around our home which makes it very difficult for us to go for a walk especially with young children	Dislike	Footpaths and crossings	18/12/2018 11:51	Pedestrian
40		Dislike		18/12/2018 12:16	Cyclist
41	Broken Hill does not offer any bicycle hiring. An ebike system would be worth exploring. It not only provides a service (particularly to tourists) but also creates revenue	Idea or Suggestion	Bicycle infrastructure and facilities	24/12/2018 6:27	Cyclist

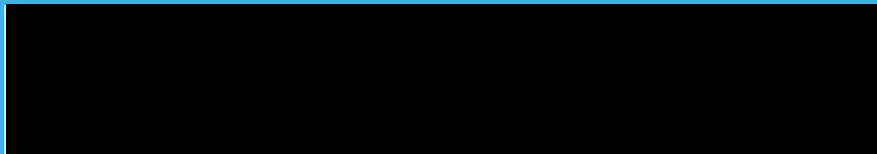
APPENDIX

E

COMMUNITY CONSULTATION PRESENTATION

Broken Hill Active Transport Plan Encouraging Walking and Cycling

PRESENTER:



December 2018

Topics

01 Background

02 Data

03 Pedestrian and Cycling Network

04 Discussion

01 Background

01 Study Background



Broken Hill City Council has commissioned the development of an **Active Transport Plan**.

- How to encourage more walking and cycling in the community.
- Integrate transport planning and land use planning.
- Develop a 10 year schedule to roll out infrastructure improvements and initiatives.
- Update 2013 Pedestrian Access and Mobility Plan and 2013 Bicycle Plan.
- Study partially funded by Council as well as Roads and Maritime Services.



01 Project Objectives



> Walking

- Improve pedestrian access and priority, especially around high pedestrian areas (schools, CBD, shops etc.).
- Facilitate improved mobility.
- Audit existing facilities.
- Review the compliance and safety of the existing network.

> Cycling

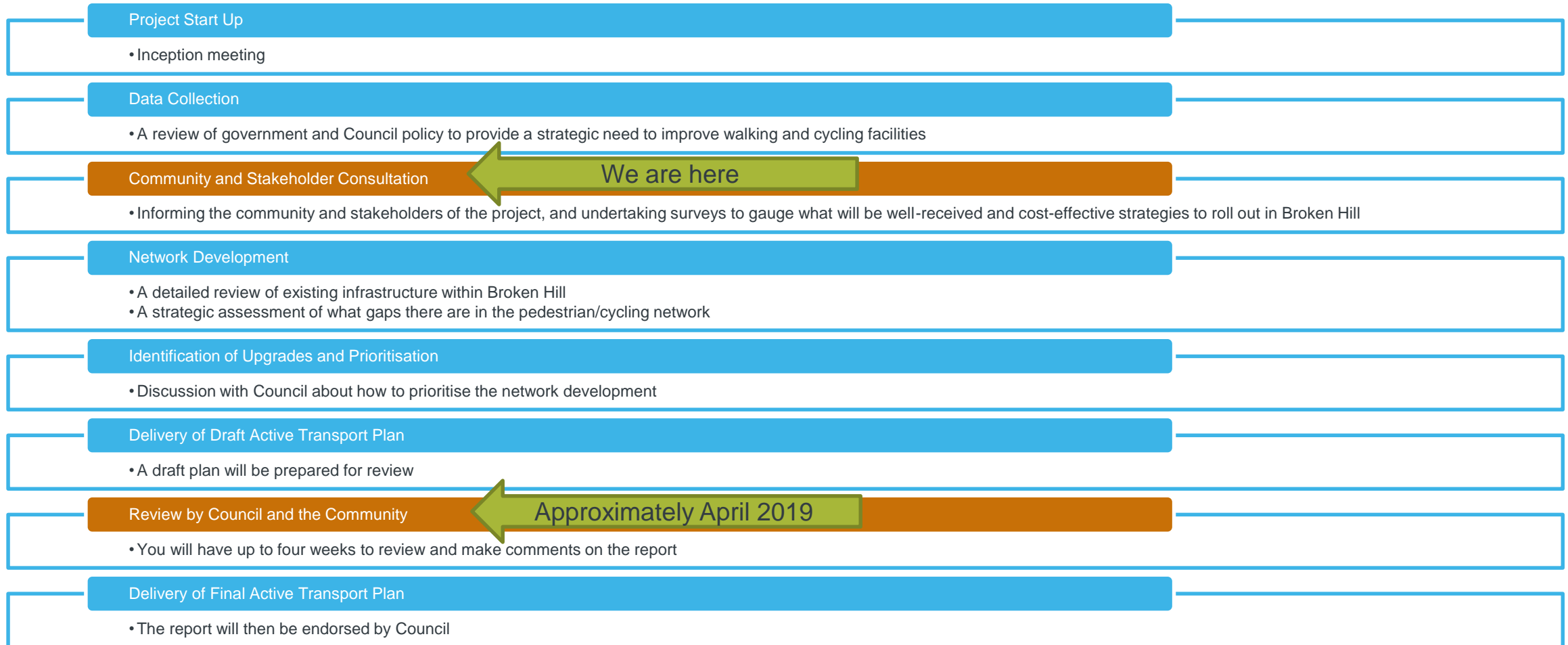
- Encourage cycling for all trip purposes.
- Develop a “bicycle network” as opposed to “bicycle routes”.
- Safe, connected and coherent network.
- Ensure facilities meet design standards.

01 Why should you care about walking and cycling?

- > Walking and cycling are good for your health! Did you know:
 - People who walk and cycle to work have less sick days and are more productive than those who drive.
 - People who walk and cycle in town centres spend more than people who drive.
 - There is more community satisfaction where there are higher walking and cycling rates.
- > Widely recognised that the benefits vastly outweigh the risks.
- > Walking and cycling may be the only viable options for some people (elderly, disqualified from driving, car too expensive to own and maintain etc.).
- > Cycling and walking are fun!



01 Project Flow



02 Data

02 Demographics

> 2016 ABS Census Data

- 17,708 people live in Broken Hill LGA.
 - 1,500 people identify as Aboriginal or Torres Strait Islander.
 - Population is declining (see chart over page).
- 1.5 vehicles per household.
 - 690 households have 0 vehicles.
- 70% of people drive to work, 5% walk, 0.5% cycle.
- Main employment industries include silver-lead-zinc ore mining, hospitals, aged care and supermarket/grocery stores.

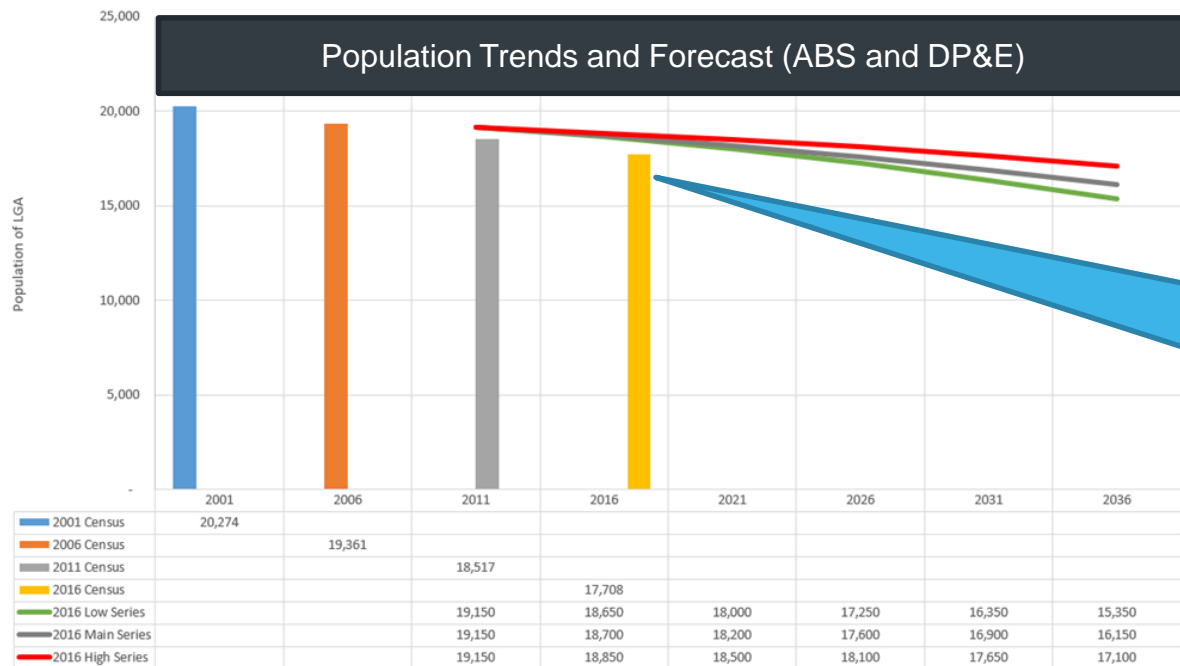
> Other ABS Data

- High levels of socio-economic disadvantage.

> BHCC Disability Access Inclusion Plan

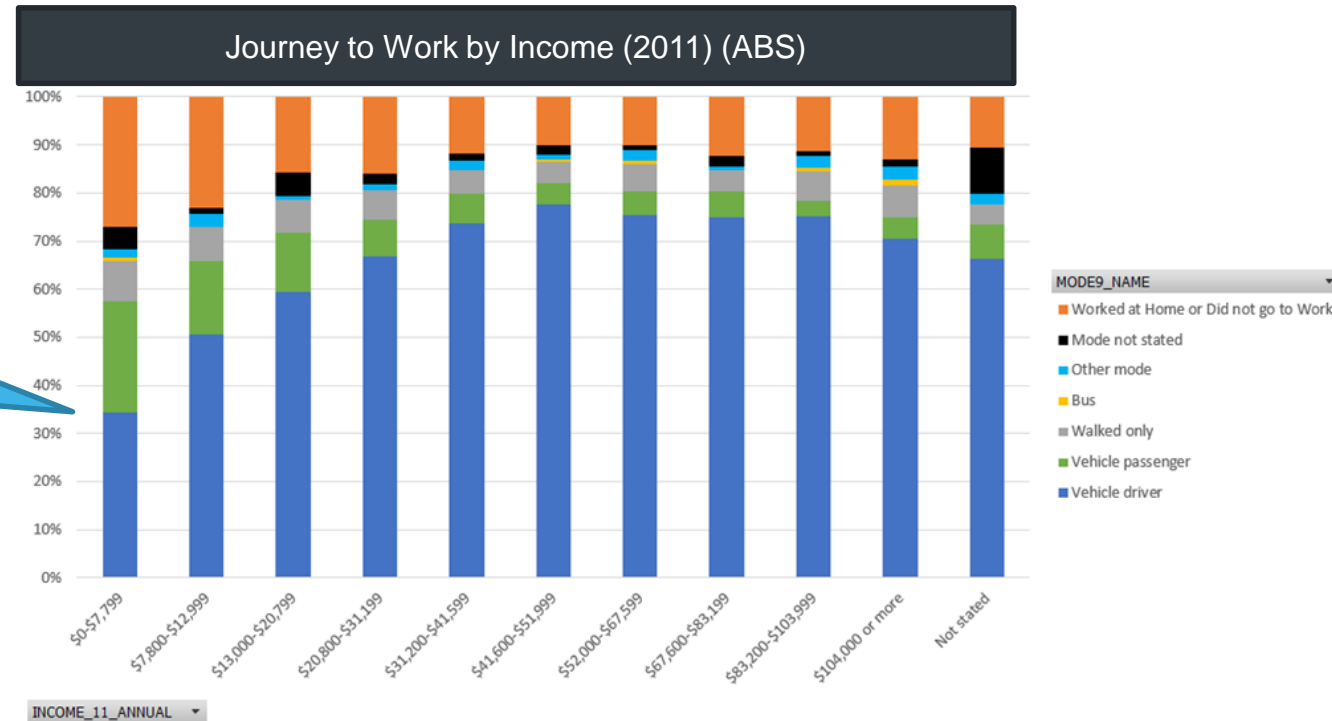
- 1,394 people have a “profound or severe disability” (BHCC).



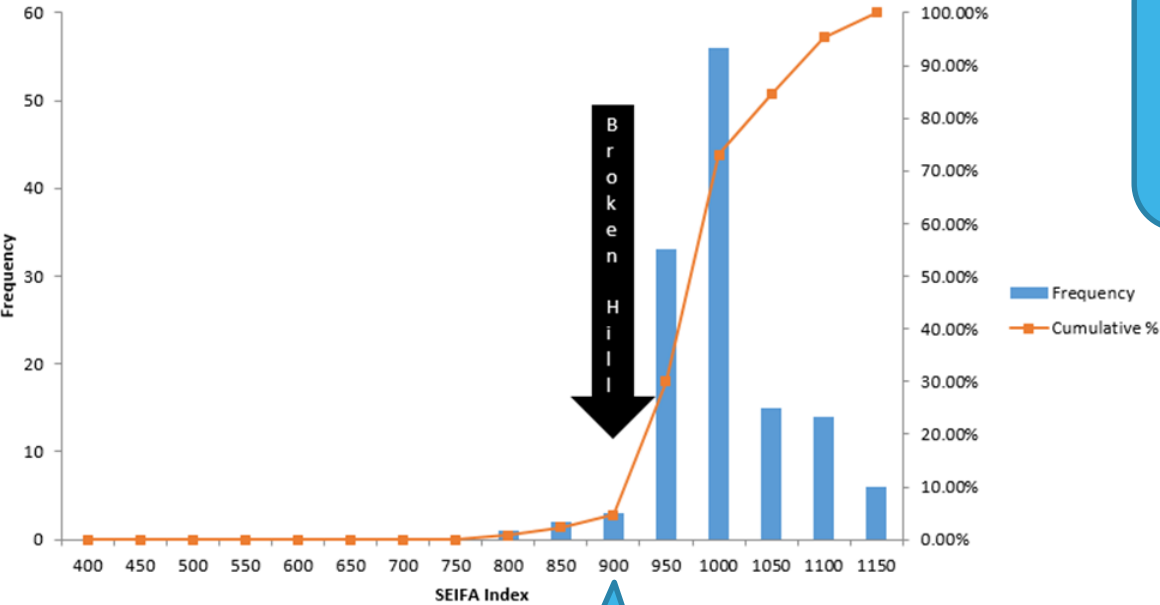


Broken Hill's population is declining, and is forecast to continue declining in the future

Low income earners are less likely to drive a car, and more likely to be a passenger in getting to work



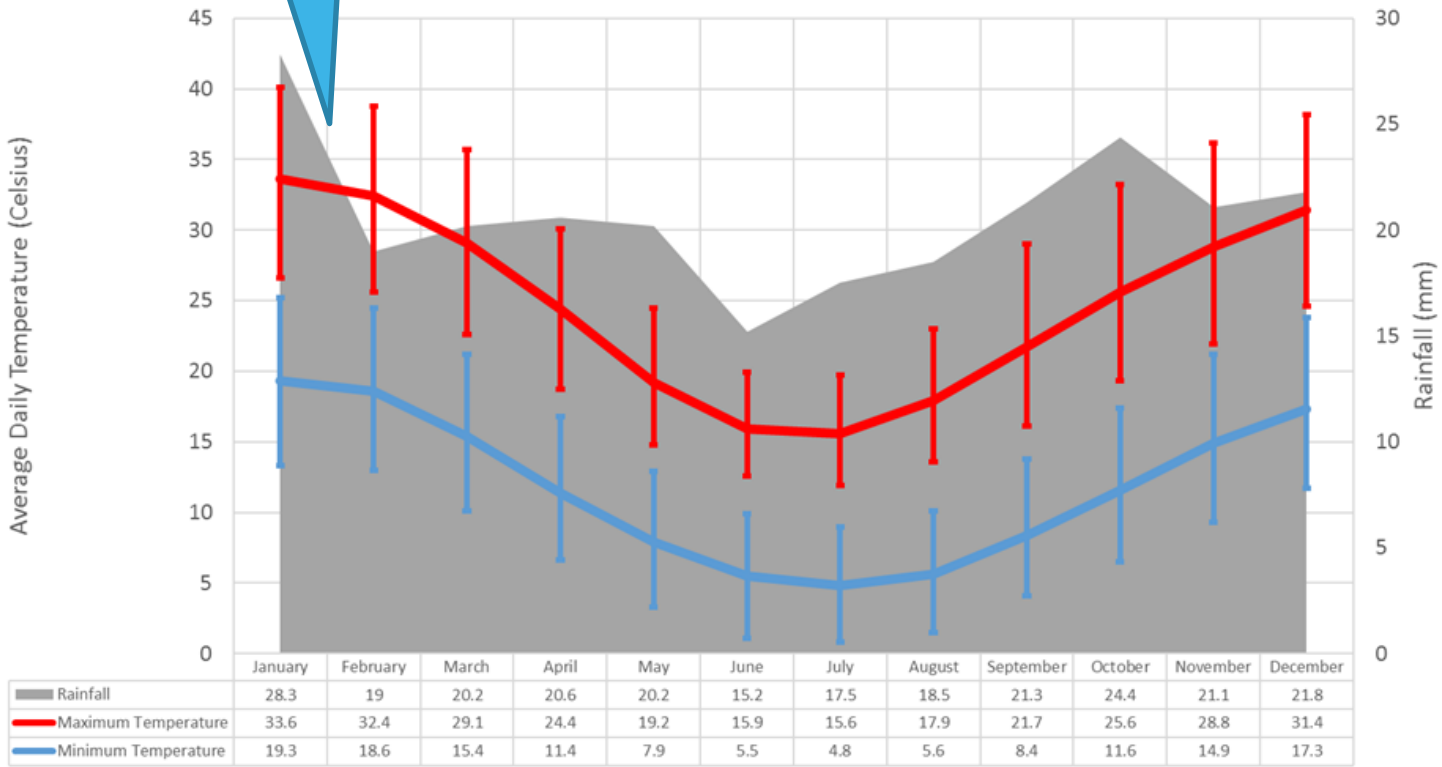
Socio-Economic Index (NSW Council Areas) (ABS)



Broken Hill has some of the highest levels of socio-economic disadvantage in NSW

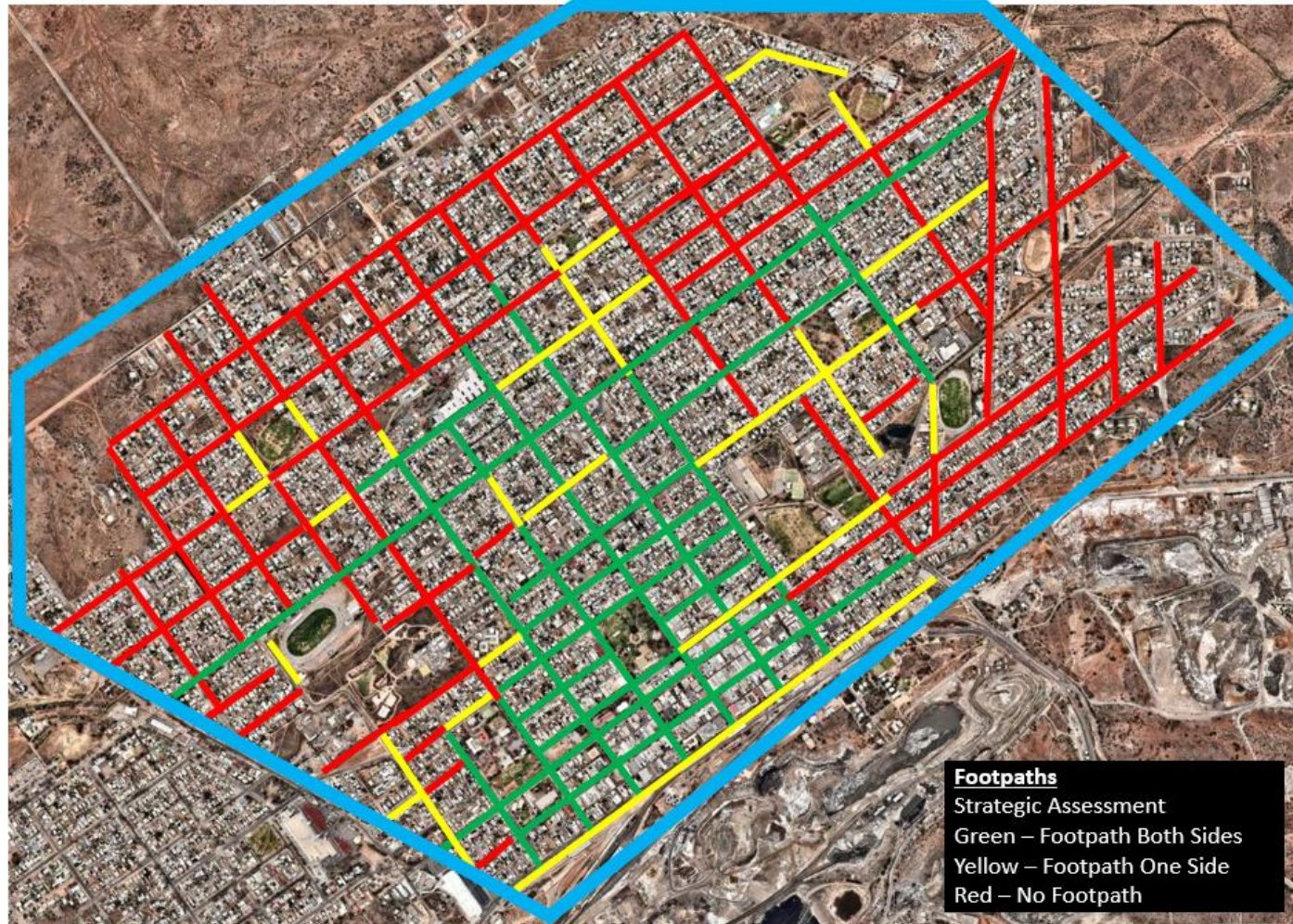
Understandably, one of the issues which might be a perceived barrier is the harsh climate

Climatic Trends (1957-2018) (BoM)



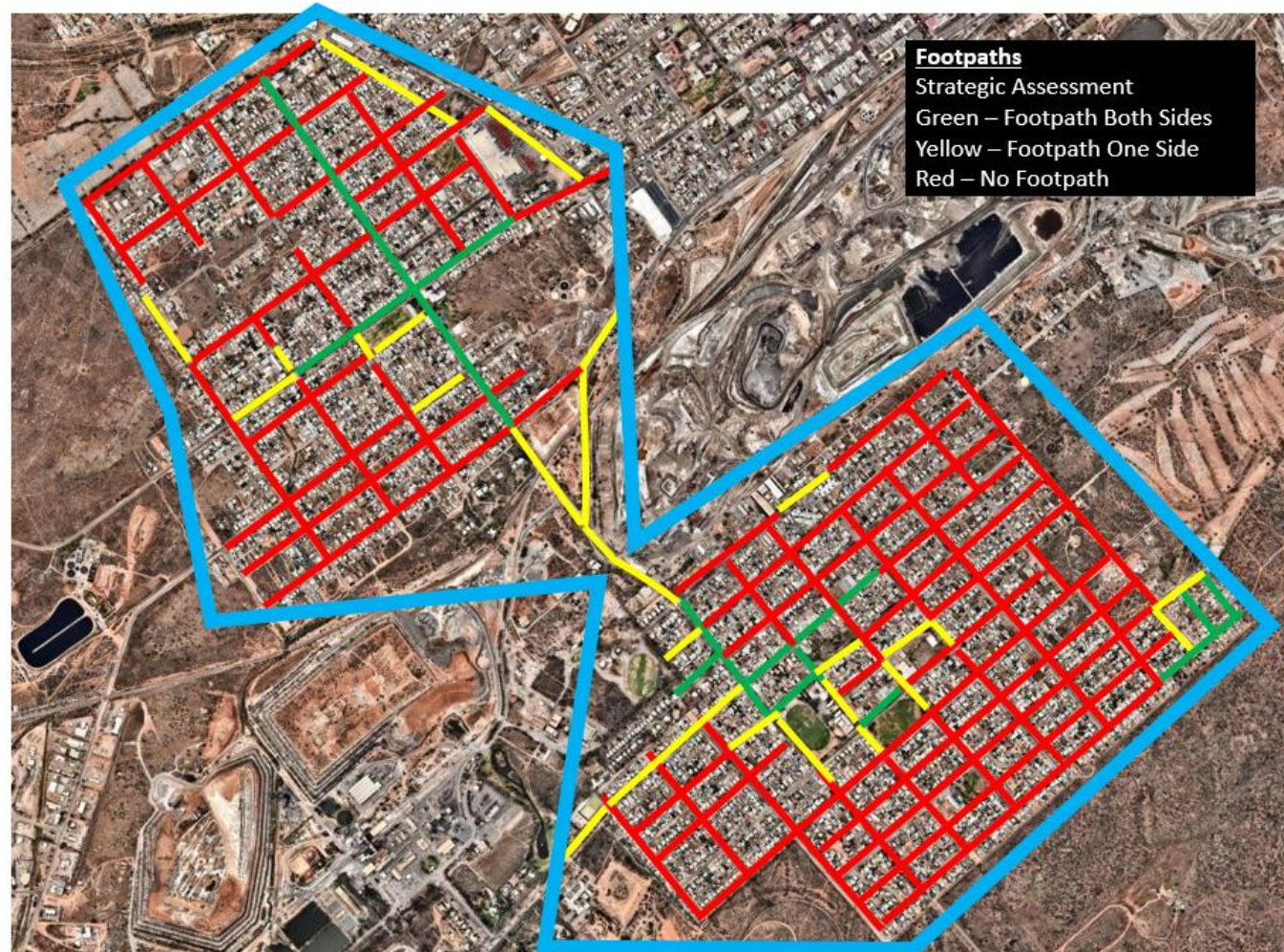
03 Pedestrian and Cycling Network

03 Broken Hill North Pedestrian Network



Indicative Footpath Network as of 18 November 2016

03 Broken Hill West and South Pedestrian Network



Indicative Footpath Network as of 18 November 2016

03 Broken Hill North Cycling Network



Indicative Cycling Network as of 18 November 2016

03 Broken Hill West and South Cycling Network



Indicative Cycling Network as of 18 November 2016

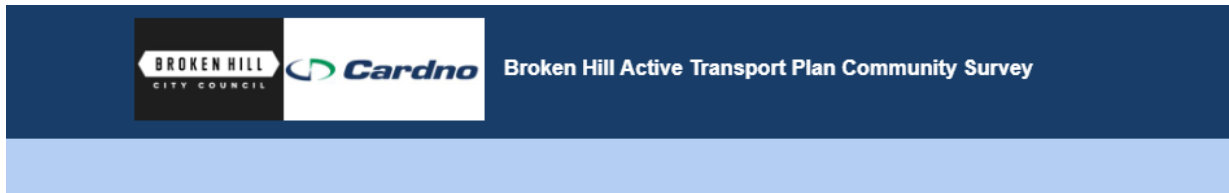
04 Discussion

04 Discussion Points

Opportunities	Challenges
<ul style="list-style-type: none">• City is a good size for walking and cycling	<ul style="list-style-type: none">• The weather is too hot/too cold
<ul style="list-style-type: none">• Health benefits	<ul style="list-style-type: none">• Footpath network incomplete
<ul style="list-style-type: none">• Sense of community	<ul style="list-style-type: none">• Not enough urban design and amenity
<ul style="list-style-type: none">• Encourage active lifestyle	<ul style="list-style-type: none">• Road safety (vehicle speeds/crossing safety etc.)
What other opportunities or challenges do you see to encouraging walking and cycling?	

04 Survey Tools (Online Survey)

- Survey open until 21 December
- What are the challenges and opportunities to encouraging more walking and cycling?



Broken Hill City Council are developing a new pedestrian accessibility plan and bike plan to make these mode choices more attractive for residents of the city. We would appreciate a few minutes of your time in assisting us in developing a network for you to use, and what you consider most important in the development of the network.

You can do the survey for yourself, or on behalf of someone else (child, parent, friend etc). You can complete the survey for as many people as you like.

This survey should not take more than 5 minutes.

There is a consent question at the end, and you may exit the survey at any time.

OK

* 7. What is the usual purpose of your walking or cycling trips? (max 2 options)

- | | |
|--|---|
| <input type="checkbox"/> School drop off/pick up | <input type="checkbox"/> Visiting friends and family |
| <input type="checkbox"/> Shopping trip | <input checked="" type="checkbox"/> Trip to recreation area (park/pool) |
| <input type="checkbox"/> Commute to work | <input type="checkbox"/> General fitness |
| <input type="checkbox"/> Other (please specify) | |

OK

* 11. What can we do to make walking and cycling better in Broken Hill? (max 2 options)

- | | |
|---|--|
| <input type="checkbox"/> More walking and cycling community events | <input type="checkbox"/> Lower speed limits |
| <input type="checkbox"/> Enhanced accessibility (better footpaths/kerb ramps/safer crossing points etc) | <input type="checkbox"/> More urban design (shade/seating/amenity etc) |
| <input type="checkbox"/> Improved street and directional signage | <input type="checkbox"/> More street lighting |
| <input type="checkbox"/> More footpath infrastructure | |

Other (please specify)

04 Survey Tools (Online Map)



- Online map available until 21 December
- See comments made by other people
- Upload a photo if you like!

1. Enter Information

What would you like to highlight or raise?

- ☐ Dislike
- ☐ Like
- ☐ Idea or Suggestion

What is the mode of transport?

- ☐ Pedestrian
- ☐ Cyclist

What is the type of issue?

Select

|

- Safety and security
- Direction/mapping and signage
- Access and connectivity
- Parking and pick up/drop off (bicycle/motorcycle/car)
- Bicycle infrastructure and facilities
- Footpaths and crossings

2. Select Location

Specify the location for this entry by clicking/tapping the map or by using one of the following options.

Search

Lat/Lon

Find address or place

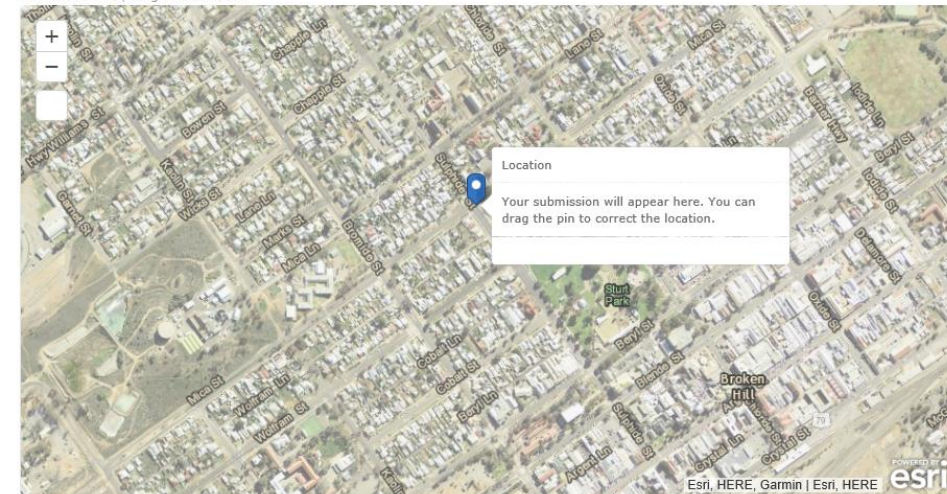
Latitude: -31.95255, Longitude: 141.47007

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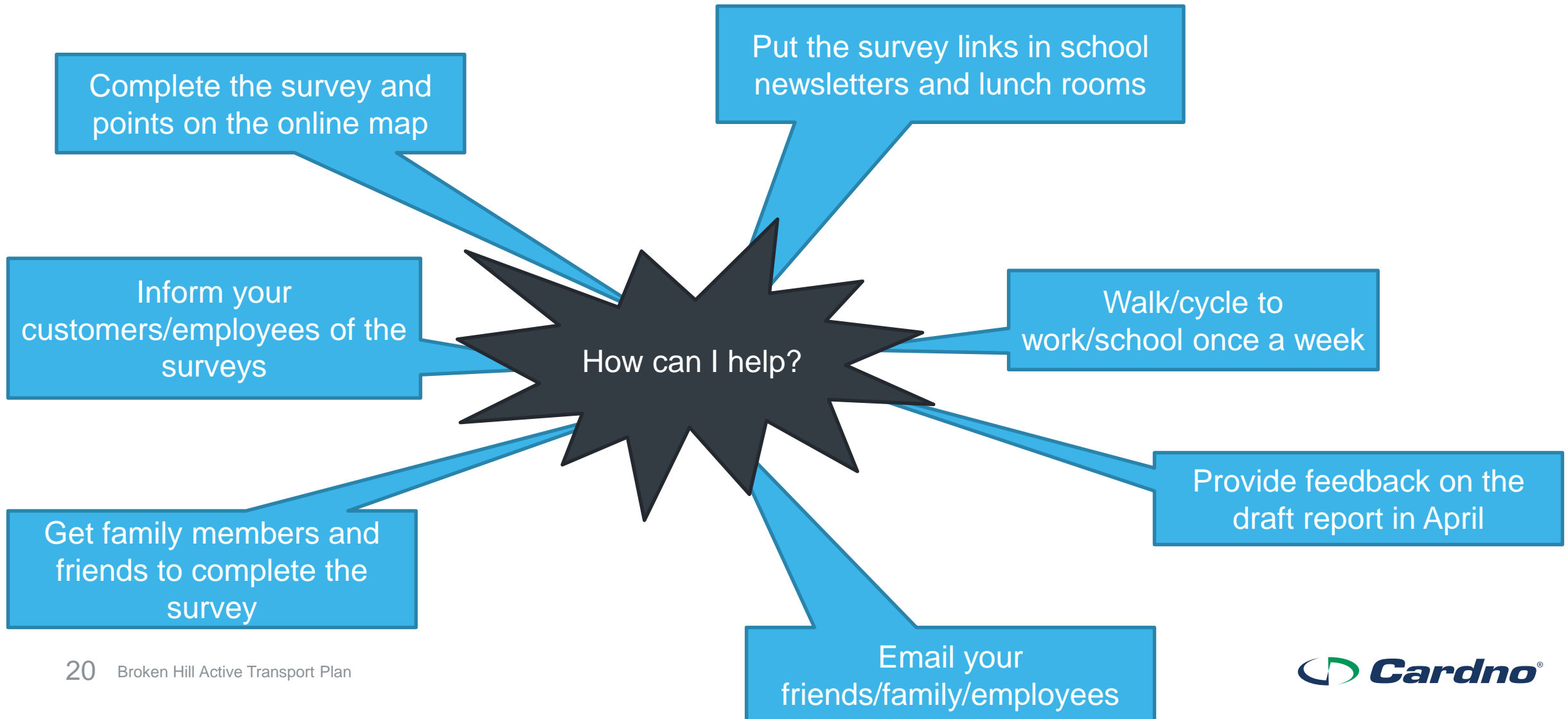
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Location

Your submission will appear here. You can drag the pin to correct the location.

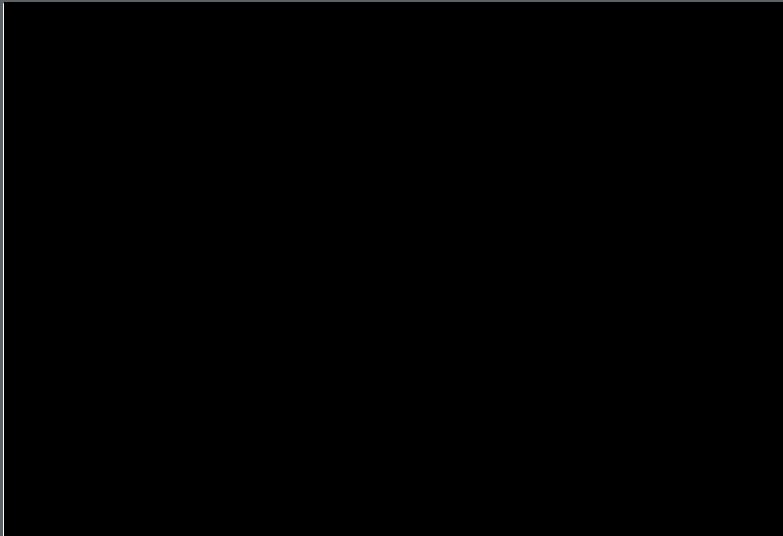
An aerial satellite map of a residential neighborhood. A blue location pin is placed on the map. A white information box is overlaid on the map, containing the text 'Location' and 'Your submission will appear here. You can drag the pin to correct the location.' The map shows streets, houses, and some green spaces. The Esri logo is visible in the bottom right corner of the map area.

04 What can you do?



Thank you

For more information



www.cardno.com

APPENDIX

B

PROJECT SHEETS

1 Shared Path Priority Network

1.1 Introduction

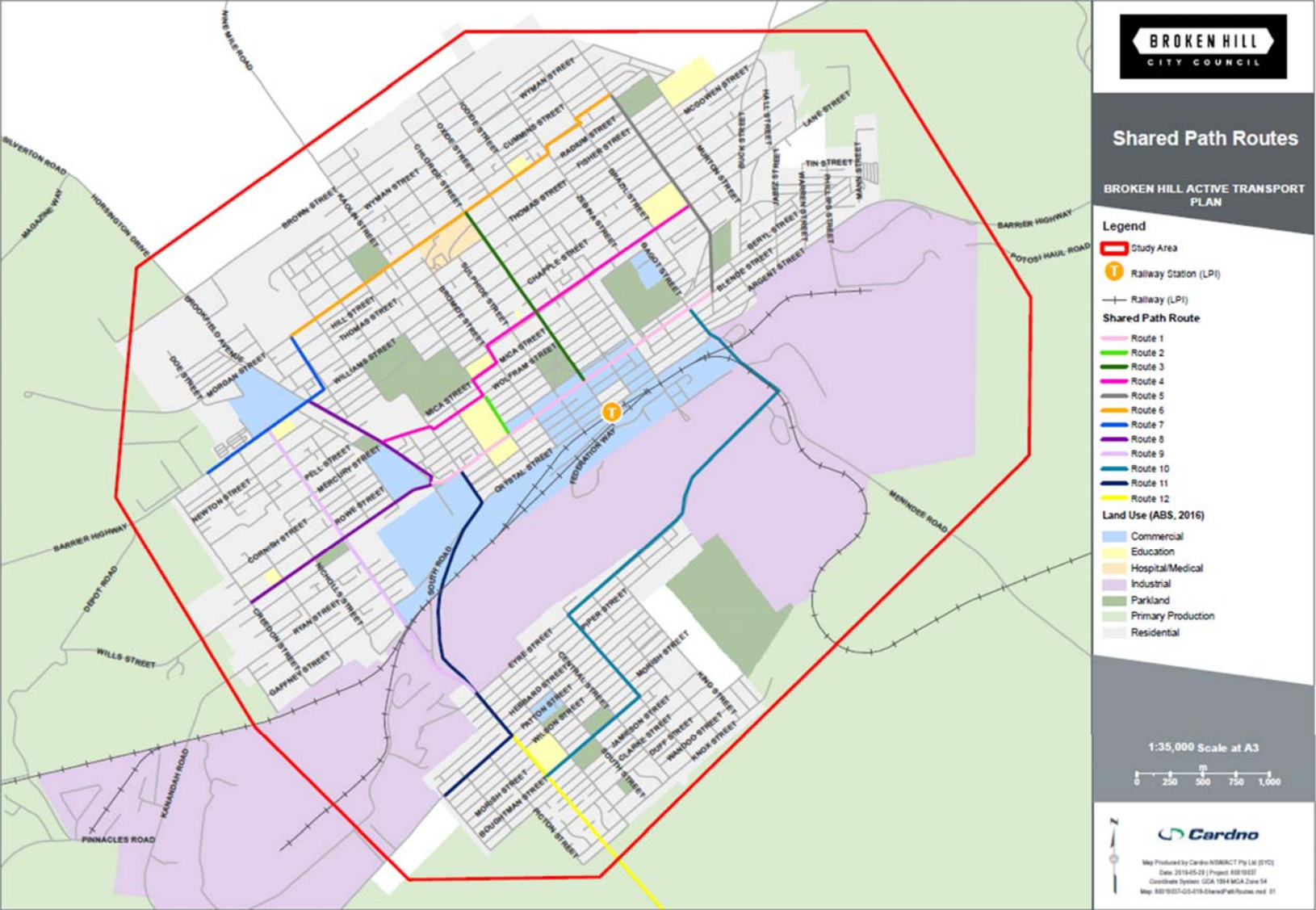
Following the initial prioritisation and costing, it was agreed with Council that focusing on improvement works along the shared path network would provide the best value for money, as it would provide greater connectivity and accessibility for both pedestrians and cyclists. Therefore, an additional priority was allocated to works located along the shared path network, to identify the highest priority works.

1.2 Shared path priority network

The shared path network has been split into 12 sections, which is outlined in the project sheets included below, which Council can use to support co-funding applications.

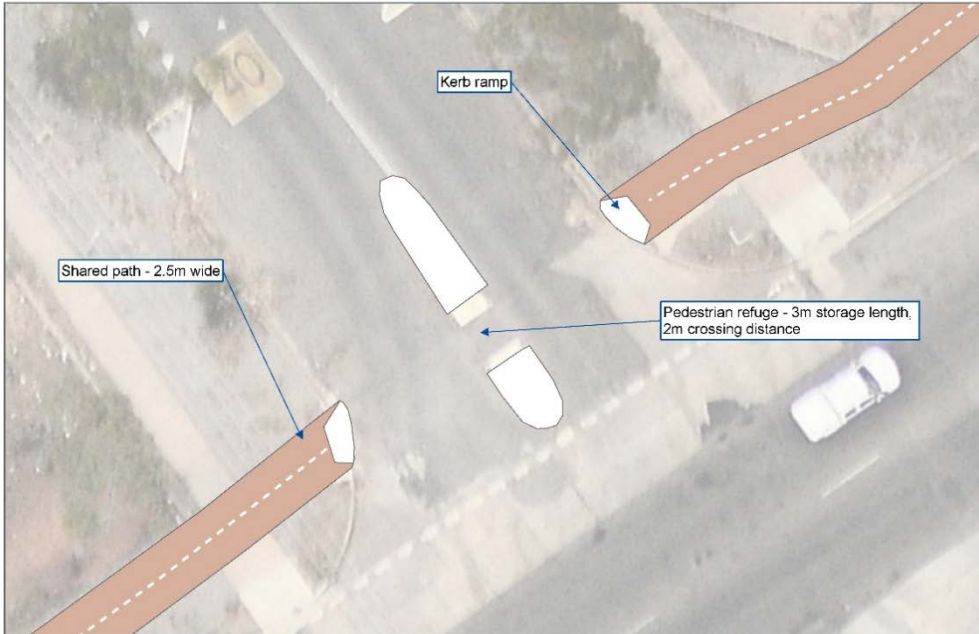
The shared path network is shown in **Figure 1-1**.

Figure 1-1 Shared path network



Project 1 – Shared path on Blende Street between Galena Street and Silver Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced east-west connectivity between Galena Street and Silver Street in close proximity to the Broken Hill CBD. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to Broken Hill High School and the CBD area.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 2,422 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$1,250,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.963225,141.4549338,3a,63.5y,39.69h,90.21t/data=!3m6!1e1!3m4!1sZtD2o65vCAEUiMirDydlpg!2e0!7i13312!8i6656>, accessed 28 March 2019

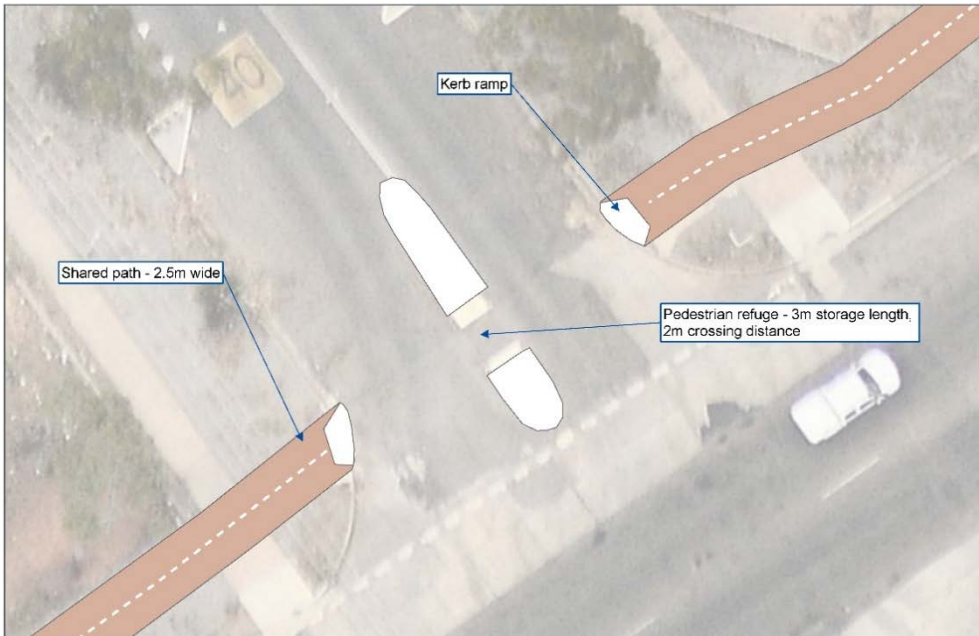


Source: <https://www.google.com.au/maps/@-31.9556635,141.4673606,3a,49.1y,20.47h,86.25t/data=!3m6!1e1!3m4!1sZ8R0RYMo90IGi7sx4DHdZg!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 2 – Shared path between Blende Street and Wolfram Street along Kaolin Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced north-south access between Blende Street and Wolfram Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to the Broken Hill CBD, Broken Hill High School and Broken Hill Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 290 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$130,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.9605019,141.458669,3a,75y,151.09h,90.45t/data=!3m6!1e1!3m4!1sdD2SVjOofJvFjL0M-YVCdw!2e0!7i13312!8i6656>, accessed 28 March 2019

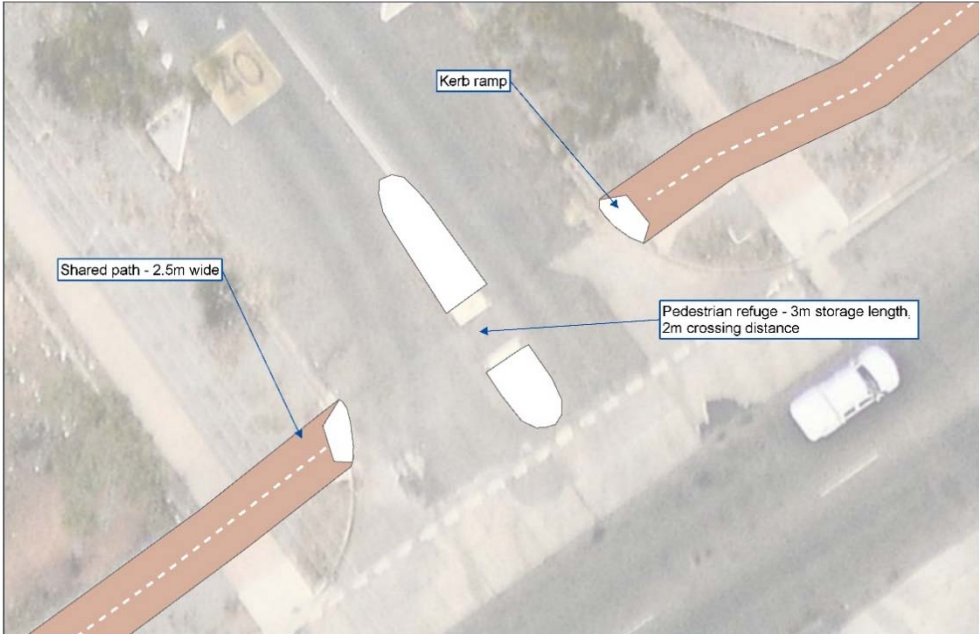


Source: https://www.google.com.au/maps/@-31.9589203,141.4573326,3a,75y,332.85h,87.87t/data=!3m6!1e1!3m4!1skGWrQG1-7n4k0e8ldl0T_g!2e0!7i13312!8i6656, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 3 – Shared path between Blende Street and Morgan Street along Chloride Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced north-south access between Blende Street and Morgan Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to the Broken Hill CBD, local parks and the hospital.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 1,281 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$800,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: https://www.google.com.au/maps/@-31.955844,141.4637722,3a,60y,329.02h,88.33t/data=!3m6!1e1!3m4!1seWcuru2M7wtiOIX_NDYH2w!2e0!7i13312!8i6656, accessed 28 March 2019

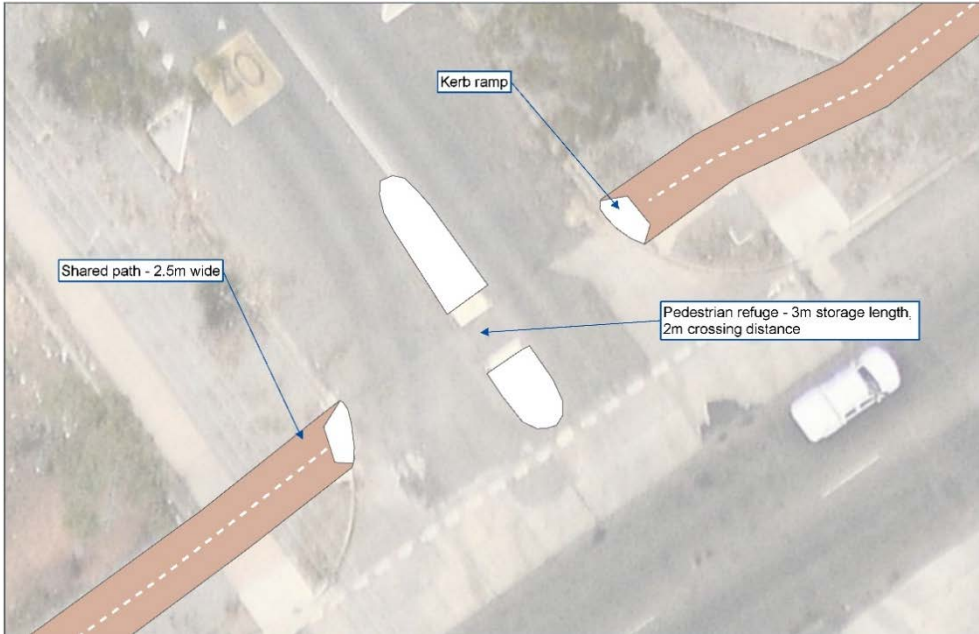


Source: <https://www.google.com.au/maps/@-31.9478608,141.4570555,3a,75y,142.83h,85.88t/data=!3m6!1e1!3m4!1sUWHNc3kOyTDXL-dxjff1fw!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 4 – Shared path between Galena Street and McCulloch Street via Talc Street, Wolfram Street, Mica Street and Lane Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced east-west connectivity between Galena Street and McCulloch Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to several schools and parks including Broken Hill High School, Broken Hill Public School and Broken Hill North Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 2,776 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at \$1,510,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.9457664,141.4721487,3a,75y,272.28h,79.69t/data=!3m6!1e1!3m4!1sJ8IAOdBy1kLBueWlcN5mEQ!2e0!7i13312!8i6656>, accessed 28 March 2019

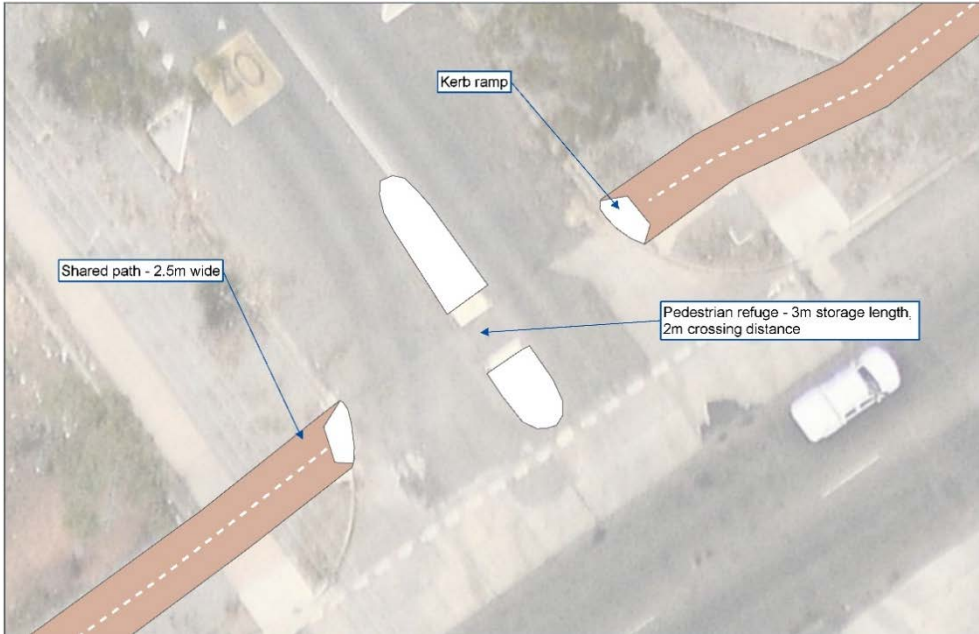


Source: <https://www.google.com.au/maps/@-31.9584808,141.4561511,3a,75y,116.63h,84.93t/data=!3m6!1e1!3m4!1s5jk2s7Y5uT56pkLkEN03Cq!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 5 – Shared path between Blende Street and O’Neill Street along Silver Street and McCulloch Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced north-south connectivity between Blende Street and O’Neill Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to the aquatic centre, Wilyama High school and Broken Hill north Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 1,442 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$740,000.

This cost is dependent on the type of crossings provided at intersections. See the ‘Active Streets – Intersection Treatments’ sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.939264,141.4682711,3a,75y,143.77h,83.79t/data=!3m6!1e1!3m4!1sFnLZLkoFRKqNcqYoF5L0NA!2e0!7i13312!8i6656>, accessed 28 March 2019

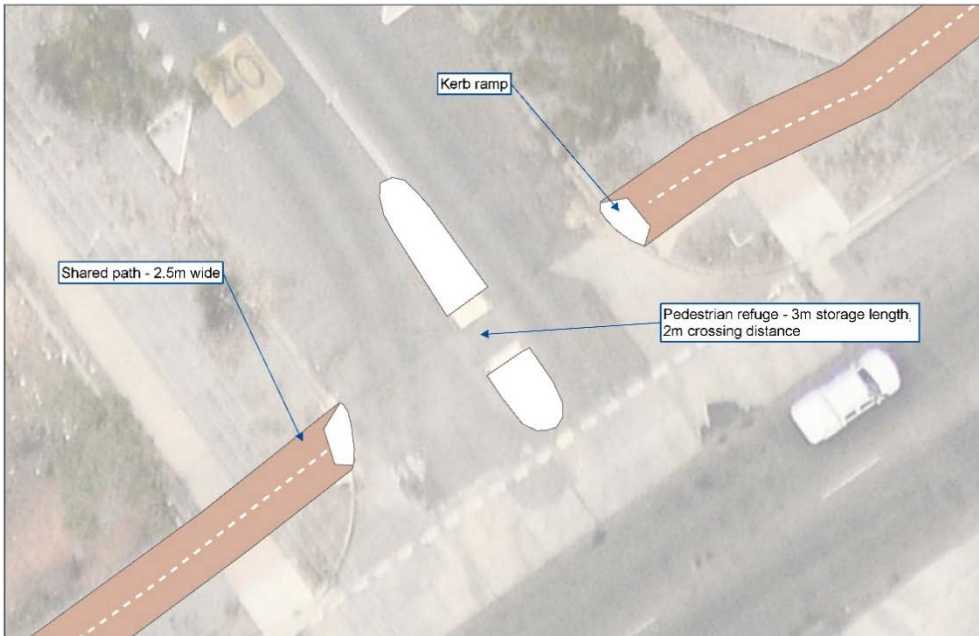


Source: <https://www.google.com.au/maps/@-31.9442183,141.4724837,3a,75y,161.85h,90.37t/data=!3m6!1e1!3m4!1sg-puBnsan7UwxIbRAYsOw!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 6 – Shared path between O’Farrell Street and McCulloch Street along Morgan Street, Uranium Street and O’Neill Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced east-west connectivity between O’Farrell Street and McCulloch Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to Broken Hill hospital, parks, the aquatic centre and Morgan Street Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 2,965 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$1,380,000.

This cost is dependent on the type of crossings provided at intersections. See the ‘Active Streets – Intersection Treatments’ sheet also prepared as part of the Active Transport Plan.

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.



Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



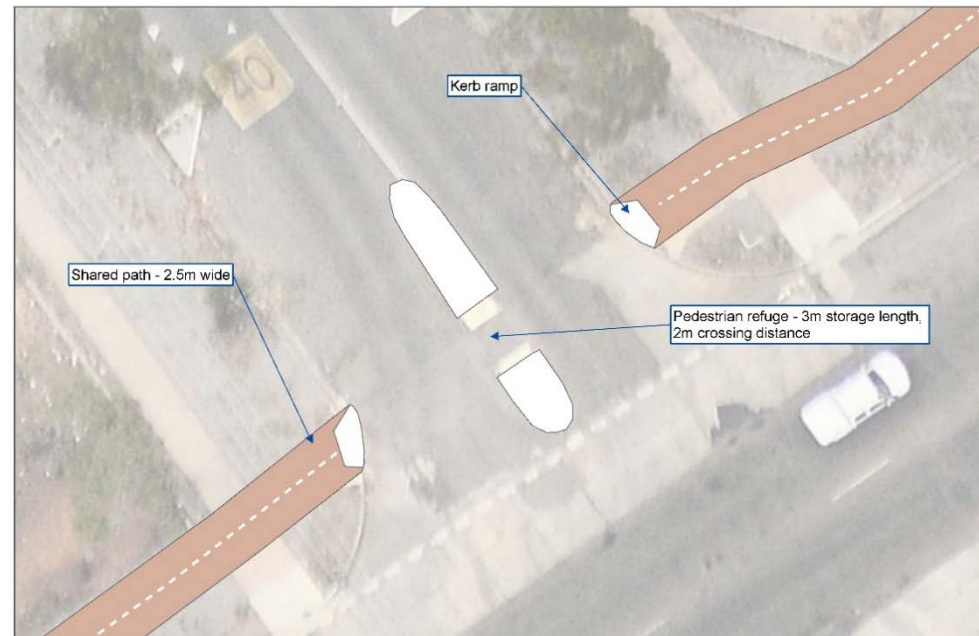
Source: <https://www.google.com.au/maps/@-31.9503361,141.4475657,3a,60y,30.04h,87.01t/data=!3m6!1e1!3m4!1sc7VTZkAJAZ09yGkK0X3oECA!2e0!7i13312!8i6656>, accessed 28 March 2019



Source: <https://www.google.com.au/maps/@-31.943084,141.4593848,3a,75y,47.17h,85.23t/data=!3m6!1e1!3m4!1sd2Z7w8X5MXLREkP7CX3-7Q!2e0!7i13312!8i6656>, accessed 28 March 2019

Project 7 – Shared path between Harris Street and Morgan Street along Rakow Street and O’Farrell Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced east-west connectivity between Harris Street and O’Farrell Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to some commercial areas in north Broken Hill and Burke Ward Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 1,520 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$600,000.

This cost is dependent on the type of crossings provided at intersections. See the ‘Active Streets – Intersection Treatments’ sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.9597669,141.4408098,3a,75y,252.07h,86.64t/data=!3m6!1e1!3m4!1sPCi2ooTXZFhERNCh6ZZwEg!2e0!7i13312!8i6656>, accessed 28 March 2019

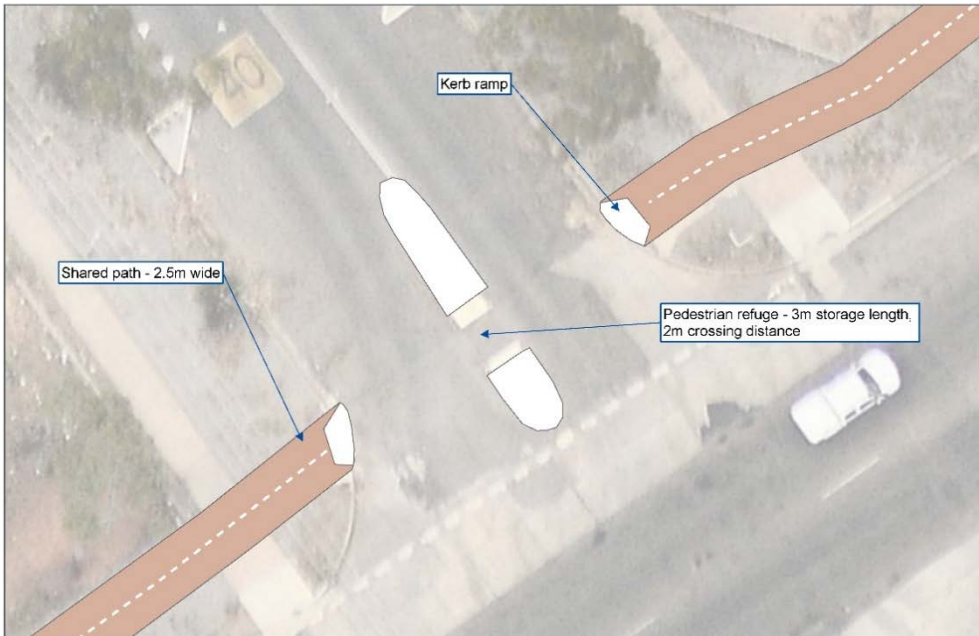


Source: <https://www.google.com.au/maps/@-31.9556004,141.4425334,3a,34.6y,126.35h,88.03t/data=!3m6!1e1!3m4!1syEKsN7cmqAdDGzvTWcag-A!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 8 – Shared path from Creedon Street to Williams Street via Wills Street and Galena Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced connectivity access between Creedon Street and Williams Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access near Westside Plaza, Railway public school, local parks and some commercial facilities.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 2,024 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$914,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.964702,141.4509008,3a,60y,261.34h,86.65t/data=!3m6!1e1!3m4!1sO7vg4FJ0ogrWI4rDL7csKA!2e0!7i13312!8i6656>, accessed 28 March 2019

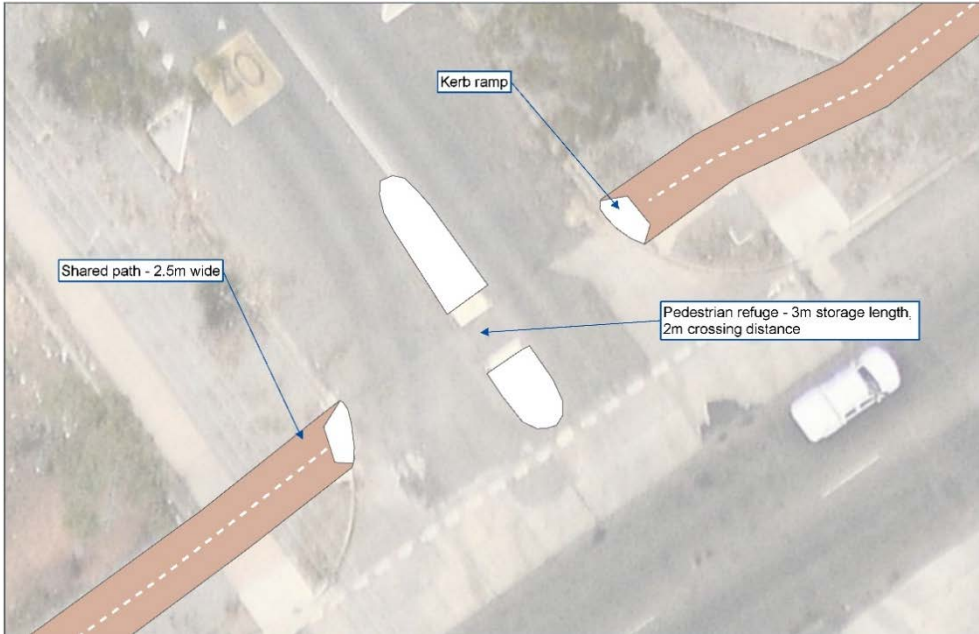


Source: <https://www.google.com.au/maps/@-31.9598058,141.4451586,3a,42.8y,320.38h,88.48t/data=!3m6!1e1!3m4!1sQ6aeZXe8bJwWcgIPS3PYBQ!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 9 – Shared path between Eyre Street and Williams Street along Gypsum Street

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced north-south access between Eyre Street and Williams Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to some local parks and Burke Ward Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 2,352 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

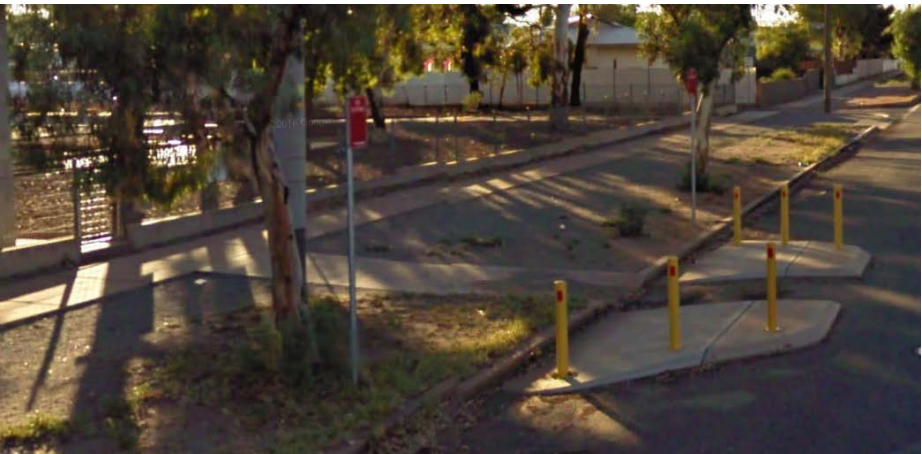
This project has been strategically costed at approximately \$1,036,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: https://www.google.com/maps/@-31.9608636,141.4399495,3a,34.5y,128.4h,85.88t/data=!3m6!1e1!3m4!1s8m5qar_xeCvU2nePe38NcQ!2e0!7i13312!8i6656, accessed 28 March 2019

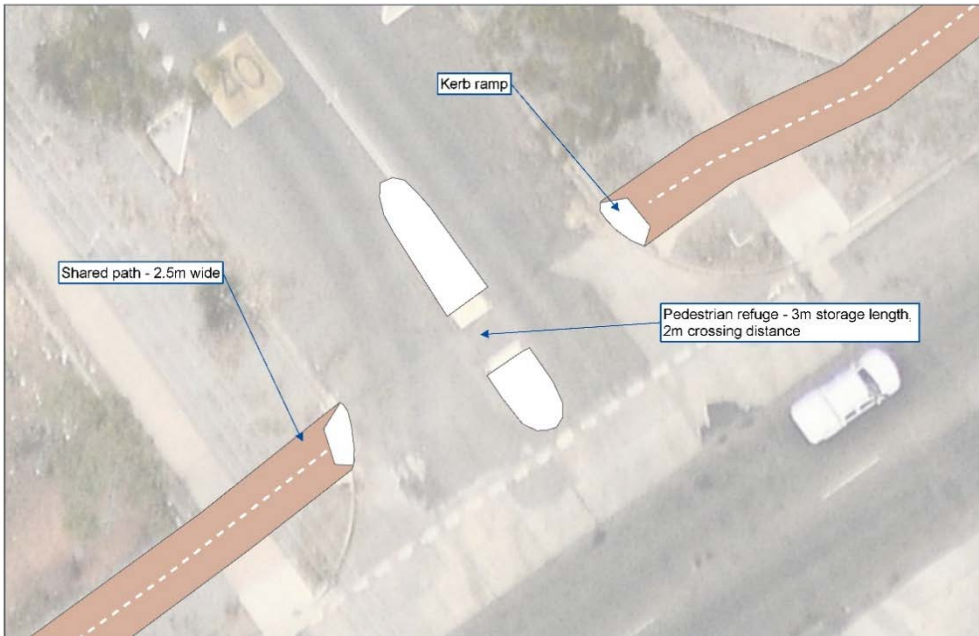


Source: <https://www.google.com/maps/@-31.9741952,141.4511591,3a,43.1y,153.29h,83.5t/data=!3m6!1e1!3m4!1sFTcKkKxJloQg3YBOOhE4yQ!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 10 – Shared path between Bonanza Street and Argent Street via Boughtman Street, Rockwell Street, Eyre Street and Menindee Road

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced east-west access between Bonanza Street and Argent Street. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will largely complete a southern bypass of Broken Hill and act as walking and cycling loop, as well as providing direct connectivity to some schools and parks.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 4,777 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$2,067,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.9606036,141.4771404,3a,75y,5.49h,77.4t/data=!3m6!1e1!3m4!1saDPfUXO2QliqvJoMaRZLw!2e0!7i13312!8i6656>, accessed 28 March 2019



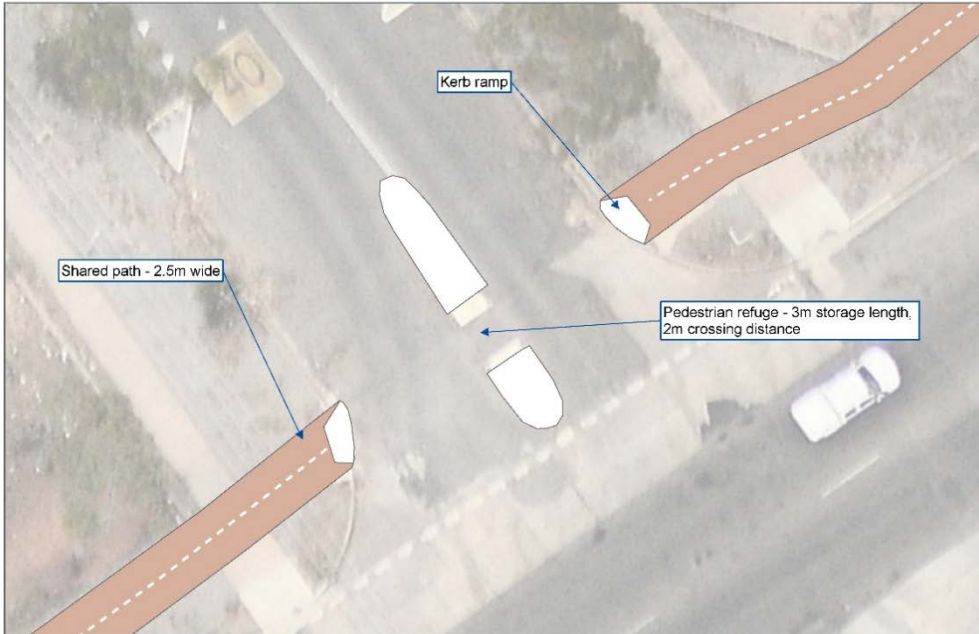
Source: https://www.google.com.au/maps/@-31.9812429,141.4659338,3a,75y,18.33h,78.23t/data=!3m6!1e1!3m4!1sFsOHsd_dlu7zLyqi_w1YWA!2e0!7i13312!8i6656, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 11 – Shared path between Queen Street and Blende Street via Wentworth Road, South Road and Gossan Street



Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced north-south access between South Broken Hill and North Broken Hill. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced connectivity near Robinson College, Perilya Limited, Rainbow pre-school and Westside Plaza.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 2,922 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$1,150,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com/maps/@-31.9821919,141.4579954,3a,56.6y,194.61h,82.98t/data=!3m6!1e1!3m4!1sGi8ZAolBq8Pn8E-mj7T6Yq!2e0!7i13312!8i6656>, accessed 28 March 2019

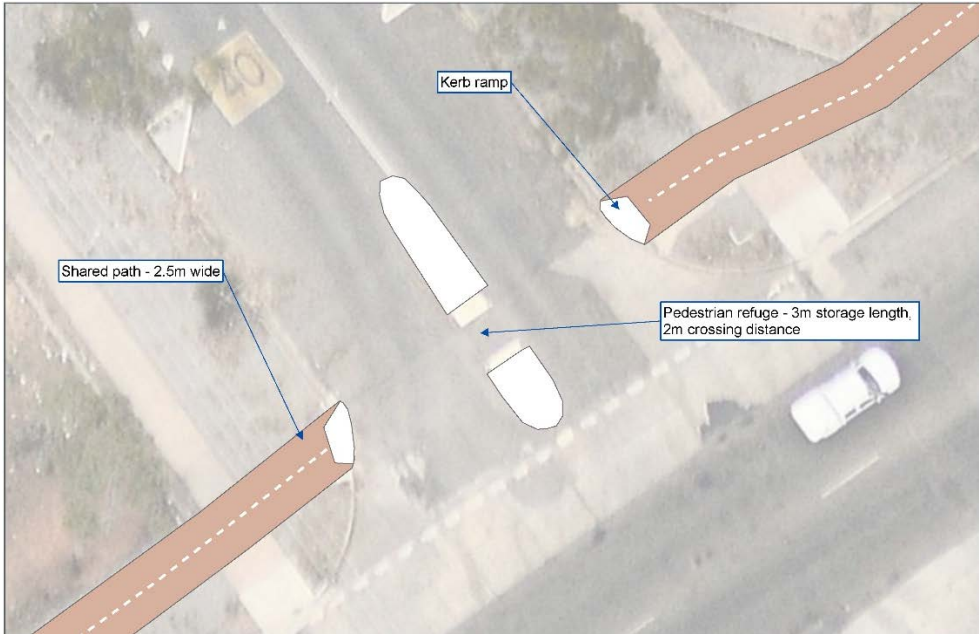


Source: <https://www.google.com/maps/@-31.9660767,141.4560784,3a,31.3y,196.21h,82.55t/data=!3m6!1e1!3m4!1sh9qg8kQb7qYYf0eeKRsaAcA!2e0!7i13312!8i6656>, accessed 28 March 2019

¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

Project 12 – Shared path between Broken Hill Airport and Patton Street along Airport Road and Bonanza Road

Figure 1-1 Indicative concept drawing



Project Description

This link will generally provide enhanced north-south access between Broken Hill Airport and South Broken Hill. The proposed shared path will provide greater connectivity for both pedestrians and bicycle riders. This particular project will provide enhanced access to Broken Hill Airport and Alma Public School.

This project is one of a dozen shared path projects proposed within Broken Hill. The vision is for Broken Hill to provide a comprehensive core network of routes for use by the community.

Project Scope

- > Construction of approximately 1,662 metres of shared path
- > Enhanced crossing facilities including along the route
- > New/upgraded kerb ramps

Strategic Cost Estimate¹

This project has been strategically costed at approximately \$800,000.

This cost is dependent on the type of crossings provided at intersections. See the 'Active Streets – Intersection Treatments' sheet also prepared as part of the Active Transport Plan.

Project Action List

1. Undertake site inspection
2. Confirm funding availability (including co-funding if applicable)
3. Engage with community and stakeholders about infrastructure vision
4. Confirm scope of works including preferred design of crossing treatments
5. Undertake concept design of project
6. Consult with community and stakeholders
7. Undertake detailed design of project
8. Construction of facility
9. Promotion of new infrastructure to community through newsletter and social media

Figure 1-2 Existing site photos



Source: <https://www.google.com.au/maps/@-31.9843822,141.4621515,3a,66.8y,106.38h,91.29t/data=!3m6!1e1!3m4!1sDA1eAQRXPqnc5ZvoYcsbuA!2e0!7i13312!8i6656>, accessed 28 March 2019



Source: <https://www.google.com.au/maps/@-31.9908654,141.4688089,3a,75y,115.55h,85.49t/data=!3m6!1e1!3m4!1sHsG5FIJYGIPBjkfxk8Hv3g!2e0!7i13312!8i6656>, accessed 28 March 2019

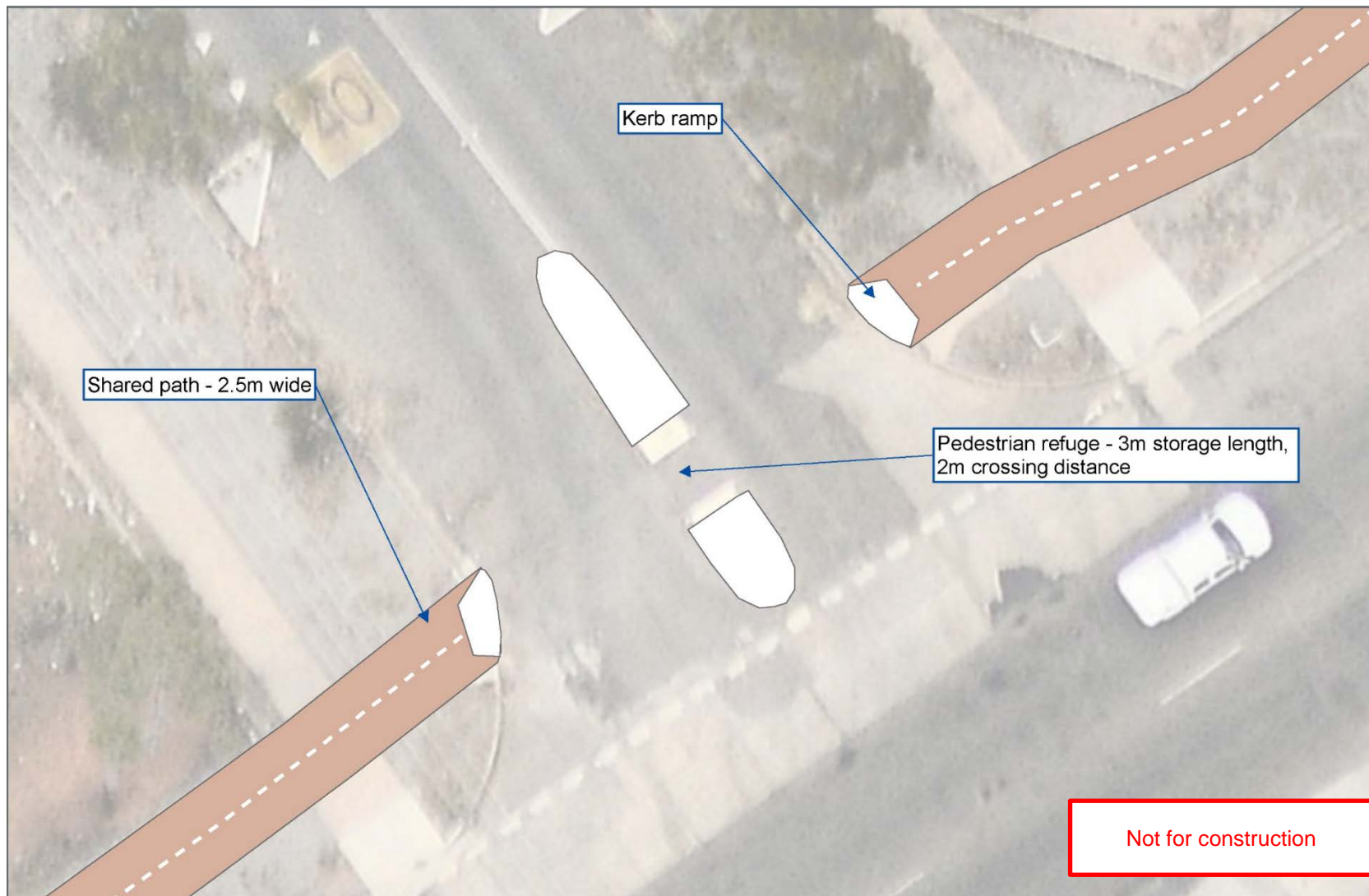
¹ This strategic cost estimate is high level and for initial planning only. It must not be relied upon for quoting, budgeting or construction purposes. It is recommended Council seek input from a qualified quantity surveyor parallel with design development.

1.3 Indicative section concept drawing

A high level concept drawing for a typical section across the shared path network is shown in **Figure 1-2**. This indicates the location of shared path and the location of suggested intersection treatments e.g. kerb ramp, refuge island.

This schematic diagram is for illustrative purposes only and should not be used for construction purposes.

Figure 1-2 Indicative section concept drawing



1.4 Active Streets - Intersection Treatments

Furthermore, alternative intersection treatments to further enhance the shared path network are outlined below. These treatments provide Council with an overview of further options for investigation, in support of the implementation of the shared path network.

Active Streets - Intersection Treatments



Broadly speaking, there are two parts to an active transport network, there is the linear infrastructure which is made up of footpaths or shared paths, and there are intersection crossings. Whilst focus is often given to the paths, the importance of having appropriately designed crossing facilities is critical to the attractiveness, amenity and safety of the network.

At the commencement of the project, Council indicated that they envision that primary school aged kids would be able to independently ride and walk to school. To achieve this not only requires the development of an off-road pedestrian and cycling network, it also requires a change in how intersections are designed.

In the past 5 years, there have been at least 2 accidents in Broken Hill involving pedestrians and at least 4 accidents involving cyclists under the age of 18.

Legally, if a driver is turning left or right into another street, they must give way to a pedestrian, as articulated in Section 72 of the NSW road rules (see example 4 and example 9)¹. However, there is a gap in the legislation – a cyclist is legally recognised as a vehicle (even when on a shared path), and in the example, the vehicle would have priority over a cyclist in the same situation.

Going beyond legal definitions, there is also a ‘perception’ issue. Simply, people (whether drivers or pedestrians) tend to recognise roads as an environment where vehicles have priority. Best practice is to encourage and promote safe road crossings wherever possible. Below there are six examples of intersection treatments in ascending order of desirability for a shared path network for pedestrians and cyclists.

- 1) Road crossing with no kerb extensions and no refuge island
- 2) Road crossing with kerb extension or refuge island
- 3) Pedestrian zebra crossing (road level)
- 4) Continuous footpath treatment
- 5) Partial road closure
- 6) Full road closure with new path

These six are not an exhaustive list of intersection treatments. In nearly all circumstances, small modifications can be made to the design of a crossing facility to accommodate cyclists as well as pedestrians. Options 1 and 2 are generally incompatible with facilitating kids walking and riding to school independently.


In considering improvements to crossing facilities, it is critical that the community is consulted and the reasons and the benefits of changes are communicated. Whilst some members of the community might object to a partial or full road closure, in most instances, the resulting detour (if any) would add an insignificant amount of time to their journey. Indeed, some residents might be a significant beneficiary, with more trees and less traffic volumes on local streets.

¹ <https://www.legislation.nsw.gov.au/#/view/regulation/2014/758/part7/div2/rule72>, accessed 22 March 2019
² https://www.rms.nsw.gov.au/trafficinformation/downloads/td11_01a.pdf, accessed 22 March 2019

1) Road crossing with no kerb extensions and no refuge island

Characteristic	
Threshold to be met?	None
Cost	Low
Impact to traffic	Baseline
Desirability for pedestrians and cyclists	Low
Allows kids to independently walk and cycle	No

This is a typical crossing. It does not offer a pedestrian or cyclist the feeling of protection or priority. For a standard 12m road, it takes a pedestrian 10 seconds to walk across (longer if mobility impaired).




Source: [Google Street View](#), accessed 22 March 2019

2) Road crossing with kerb extension or refuge island²

Characteristic	
Threshold to be met?	None
Cost	Low-Medium
Impact to traffic	Baseline
Desirability for pedestrians and cyclists	Low-moderate
Allows kids to independently walk and cycle	No

This is a crossing typically used around schools, hospitals and higher pedestrian volume areas. It does not offer a pedestrian or cyclist the feeling of protection or priority. It offers a pedestrian a safe waiting space in the middle of the road.




Source: [Google Street View](#), accessed 22 March 2019

³ https://www.rms.nsw.gov.au/documents/business-industry/partners-and-suppliers/guidelines/s-as1742_p1-15.pdf, pg. 17, accessed 22 March 2019

3) Pedestrian zebra crossing (road level)³

Characteristic	
Threshold to be met?	Yes: Ped(P)>30, Vehicle (V)>500 and PxV>60,000 in 3 separate one hour periods of a day
Cost	Low-Medium
Impact to traffic	Variable but usually low
Desirability for pedestrians and cyclists	Moderate
Allows kids to independently walk and cycle	Walk – Generally, yes Cycle – No (Generally yes with modifications)

This is a crossing typically used outside schools, hospitals and higher pedestrian volume areas. It offers pedestrians right of way. Legally, cyclists have to dismount to cross a zebra crossing unless further design changes are considered⁴ and approved. The threshold is difficult to meet in regional areas for new crossings. A zebra crossing may be raised (at footpath instead of road level), and/or be supplemented by refuge or kerb extension - these are desirable design outcomes.



Source: [Google Street View](#), accessed 22 March 2019

⁴ This is typically achieved through the additional installation of a give way line/sign at a zebra crossing. This requires a driver to give way to the cyclist in accordance with Section 71(2) of the NSW road rules <https://www.legislation.nsw.gov.au/#/view/regulation/2014/758/part7/div1/rule71>, accessed 25 March 2019 (See [this link](#) for example in Sydney of combined give way and zebra crossing treatment)

4) Continuous footpath treatment⁵

Characteristic	
Threshold to be met?	Yes – <45 vehicles per hour, no pedestrian threshold
Cost	High
Impact to traffic	Variable but usually low
Desirability for pedestrians and cyclists	Moderate
Allows kids to independently walk and cycle	Generally, yes

There is no precedent for continuous footpaths in Broken Hill, but they are more desirable (from a planning and approval perspective) due to significantly lower volume thresholds. They offer priority to pedestrians and other road users⁶ and because they appear like a ‘continuous footpath’ across a road. Because of this, continuous footpaths offer pedestrians and cyclists more security when crossing a road.



Source: [Google Street View](#), accessed 22 March 2019
Indicative continuous footpath treatment at northern leg of Gossan St and Morgan St incorporating tree installation.



Source: [Google Street View](#), accessed 26 March 2019

5) Partial road closure

Characteristic	
Threshold to be met?	No, but approval likely required from Roads and Maritime
Cost	Moderate-High
Impact to traffic	Moderate
Desirability for pedestrians and cyclists	Moderate
Allows kids to independently walk and cycle	Generally, yes

A partial road closure will restrict vehicular access and reduce traffic volumes through an intersection, limiting the distance that pedestrians and cyclists have to cross the road and adding predictability about traffic movements. It does not have any warrants, but the community should be extensively consulted regarding the benefits, and any impacts to access properties. This treatment may be combined with a zebra crossing or continuous footpath treatment (subject to meeting thresholds).



Source: [Google Street View](#), accessed 22 March 2019
Indicative partial road closure at northern leg of Gossan St and Morgan St incorporating tree installation.



Source: [Google Street View](#), accessed 26 March 2019

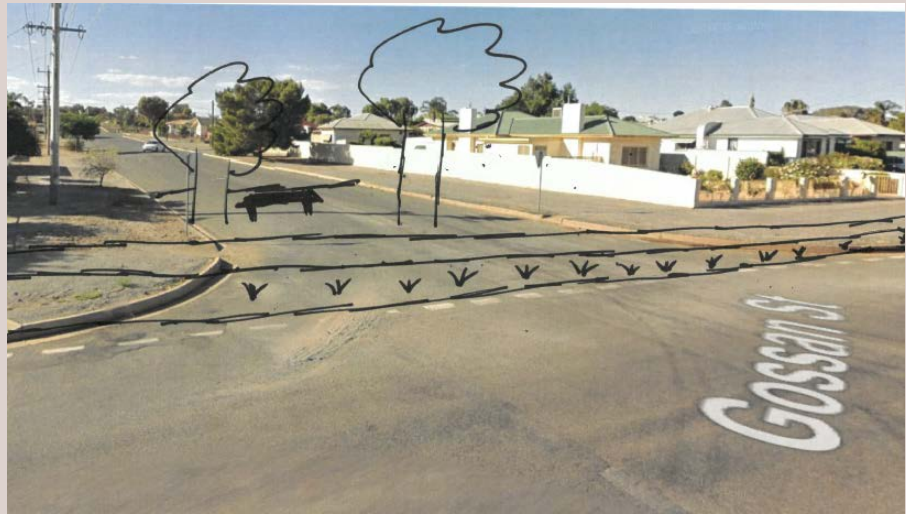
6) Full road closure with new path

Characteristic	
Threshold to be met?	No, but approval likely required from Roads and Maritime
Cost	High
Impact to traffic	High
Desirability for pedestrians and cyclists	High
Allows kids to independently walk and cycle	Yes

A full road closure will prevent vehicular access and reduce traffic volumes through an intersection. It does not have any warrants, but the community should be extensively consulted regarding the benefits, and any impacts to access properties. Full road closures present excellent opportunities for pocket parks and enhanced tree plantations.



Source: [Google Street View](#), accessed 22 March 2019
Indicative full road closure at northern leg of Gossan St and Morgan St incorporating tree and bench installation.



Source: [Google Street View](#), accessed 26 March 2019

⁵ https://www.rms.nsw.gov.au/trafficinformation/downloads/td13_05.pdf, accessed 22 March 2019

⁶ <https://www.legislation.nsw.gov.au/#/view/regulation/2014/758/part7/div3>, accessed 25 March 2019