Better Choices

Mildura CBD Access and Mobility Strategy: Draft Discussion Paper

May 2021

Institute for Sensible Transport

Council and the Institute for Sensible Transport acknowledges the traditional custodians of the land, which now comprises the Mildura Rural City Council area and to those of our neighbouring municipalities.

We pay our respects to Elders past, present and emerging; we celebrate and respect their continuing culture and connection to the land.

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Executive Summary

Introduction to this project

The *Draft CBD Plan* was adopted by Mildura Rural City Council in June 2020. This Plan identified the need for an '*Active Transit and Car parking Strategy*'. Such a strategy was commissioned and commenced in 2020, with the title becoming the *Mildura CBD Access and Mobility Strategy*, as this title better reflected the focus and intent of the project.

The unifying objective of the *Mildura CBD Access and Mobility Strategy* is to map a pathway towards the CBD and the surrounding area becoming a city with a more diverse set of smarter mobility options. This will assist Mildura by reducing car dependence and lead to a more liveable, sustainable city. This is wholly consistent with the *CBD Plan* which set out a target for Mildura to reduce private car use by 15%, and an increase in sustainable mobility to improve local health, reduce parking constraints, and increase the vibrancy of the CBD.

This *Mildura CBD Access and Mobility Strategy* has been developed to equip Council with a blueprint for achieving the ambitions set out in the *Draft CBD Plan*.

This project has included a series of earlier reports, as identified in Figure 1. These can be referred to in the Appendices.

Figure 1 Key strategy reports

The Study Area for this project is shown in Figure 2. It highlights that while Mildura as an LGA is vast, the focus of this project, the CBD, is concentrated within a small area (shown in green).

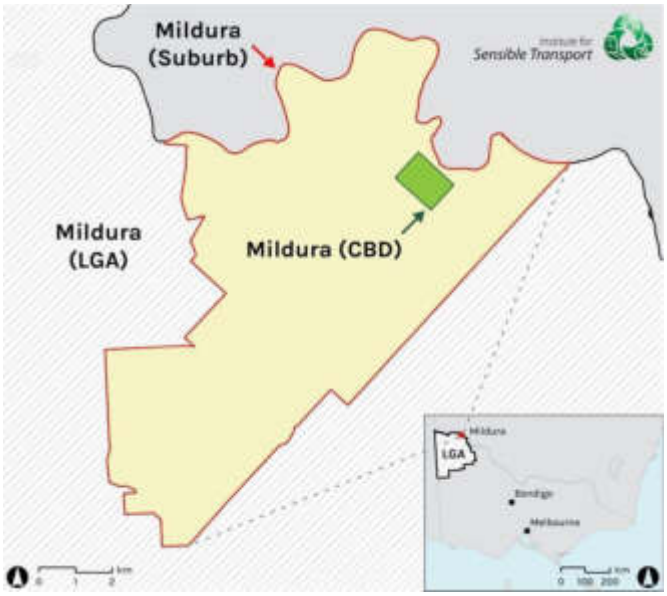


Figure 2 Study area map

The *CBD Plan* set out a target to reduce private car use by 15%.

What we've found

The Mildura CBD has the potential to become Victoria's most vibrant, sustainable regional city. Its small scale, flat topography, and permeable street network supports healthy, active travel. While it can be very hot in summer, for much of the year it has a climate generally favourable for sustainable mobility.

The Mildura CBD has the potential to become Victoria's most vibrant, sustainable regional city.

However, before Mildura will be able to achieve the vision set out in the CBD Plan, it will need to address its long-standing dependence on the car. Some 90% of trips in Mildura are by car. Even for trips less than 2.5km, which are more able to be completed by bike and bus (1 – 2.5 km) and foot (0 – 1 km), Census data shows that 86% are by car, with 2% cycling and less than 0.5% of residents using the bus to the CBD, as shown in Figure 3. The good news is that Mildura residents are beginning to *'vote with their feet'* with almost half of respondents to an online survey ran as part of this Strategy's development reporting that for those that live in the CBD, walking is their typical mode of transport.

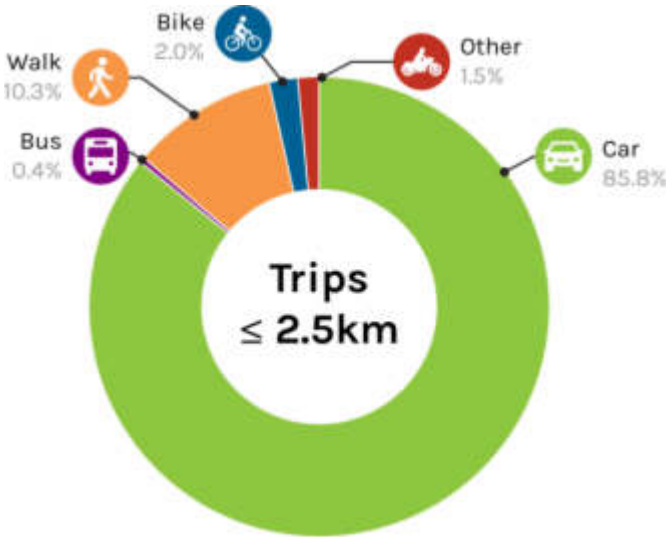


Figure 3 Mode share for Mildura CBD work trips 2.5km or less

Source: Australian Bureau of Statistics (2017)

There is significant potential to achieve major advances towards a more sustainable transport system. This will help support Mildura's goals of becoming a climate friendly, healthy, vibrant and productive community.

The review of policies and strategies conducted for this project can be found in Appendix 1. The review revealed a consistent theme; Council has a long standing desire to lower the high levels of car dependence.

Council has a long-standing desire to lower high levels of car dependence.

The need for change

There are several reasons transport patterns will need to change for Mildura to achieve its strategic ambitions, as summarised below and in Figure 4.

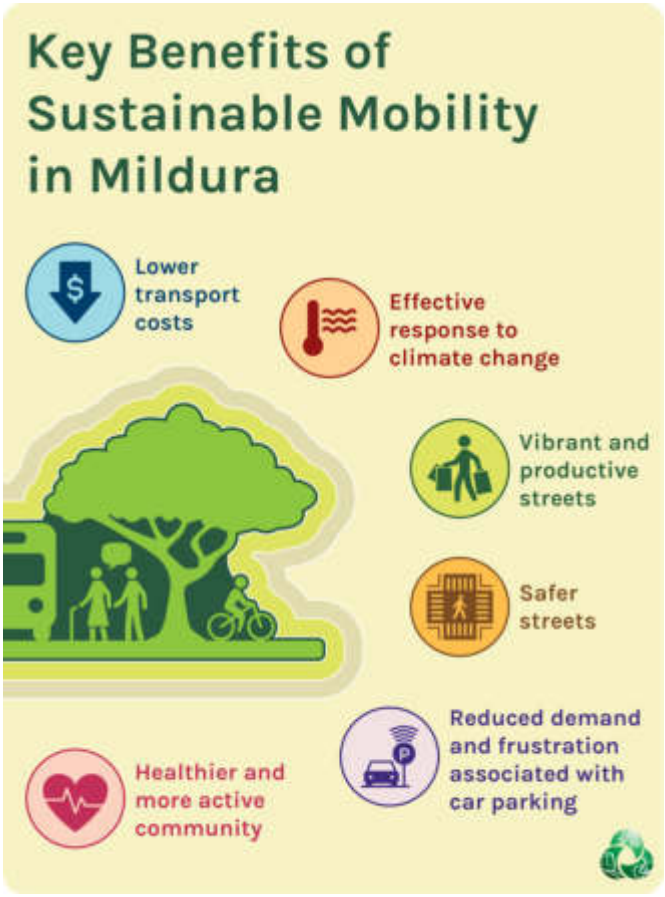


Figure 4 Why sustainable mobility is important for Mildura's future

What is Sustainable Mobility?

Sustainable mobility refers to transport that meets the transport needs of the present, without jeopardising the ability of future generations to meet their needs. In essence, sustainable mobility generally refers to walking, cycling and public transport.

The following provides a brief introduction to some of the key issues facing Mildura that an improved transport system is able to address.

Climate change

Transport is a major source of emissions causing climate change and local air pollution. Mildura's commitment to tackle climate change successfully will require strong and unprecedented action. The transformation of Mildura's streets to better support walking, cycling and public transport will be necessary to reduce these emissions.

Health

The rate of obesity is significantly higher in Mildura than the State average (24% compared to 19%). Providing safe, attractive opportunities for the community to integrate physical activity into their everyday lifestyle is essential to good health. Encouraging walking and cycling is among the most effective mechanisms for creating healthy communities, and Mildura currently suffers from higher rates of some illnesses than the general Victorian community.

An accessible city

Creating a more accessible city will be especially important as Mildura's community ages. Creating a city that is accessible to all, including those too young or old to drive will help increase the quality of life for many of Mildura's residents.

Congestion and parking difficulty

By creating a set of better choices, less people will need to drive, which will make traffic congestion and parking easier for those that do need to drive.

Urban amenity and economic vibrancy

One of the benefits of a more diversified, sustainable transport system is that streets become more pleasant places; to shop, socialise, contemplate and play. This will help bolster the CBD's attractiveness and therefore economic advantage.

Ultimately, as the famous urbanist Jane Jacobs said *'a city is judged by the quality of its streets'*. This *Access and Mobility Strategy* acts as a catalyst to implement Mildura's policy ambitions to become a sustainable, healthy city in which walking, cycling and public transport become safe, attractive options for a larger segment of the population. Implementing the actions included in this Strategy will help Mildura achieve its vision for the city it aspires to be.

A vision for sustainable mobility in Mildura

Transport services, urban design and other supporting infrastructure provides safe, sustainable access for the whole community and supports the ambition for Mildura to be the most liveable regional city in Victoria.

Targets

Figure 5 illustrates both the target mode share for 2036, as well as interim targets, linked to Census years, to enable progressive evaluation. The commitments set out in the *CBD Plan* act as the foundation for these targets. These sustainable mobility targets are ambitious and achievable, but only through consistent, sustained decisions that implement the set of actions found in Sections 1 to 9. These targets include:

- *A reduction* in car use, from 96% of commutes in 2021 (projected, based on 2016), to 81% of commutes in 2036.
- An *increase* in public transport, from just 0.2% of trips to work in 2021 (projected, based on 2016), to 3.2% by 2036, a ~15 fold increase.
- An *increase* in walking, from 2.8% of trips in 2021, to 8.8% in 2036
- A *substantial growth* in cycling, from 0.5% of trips in 2021, to 6.5% in 2036 (a more than 10 fold increase). Cycling is targeted to increase at this rate because of the large number of car trips that currently occur that are within a convenient cycling distance from the Mildura CBD and the very low numbers that currently cycle.

The general trend identified in these targets are broadly consistent with the direction provided in the *Draft CBD Plan*.

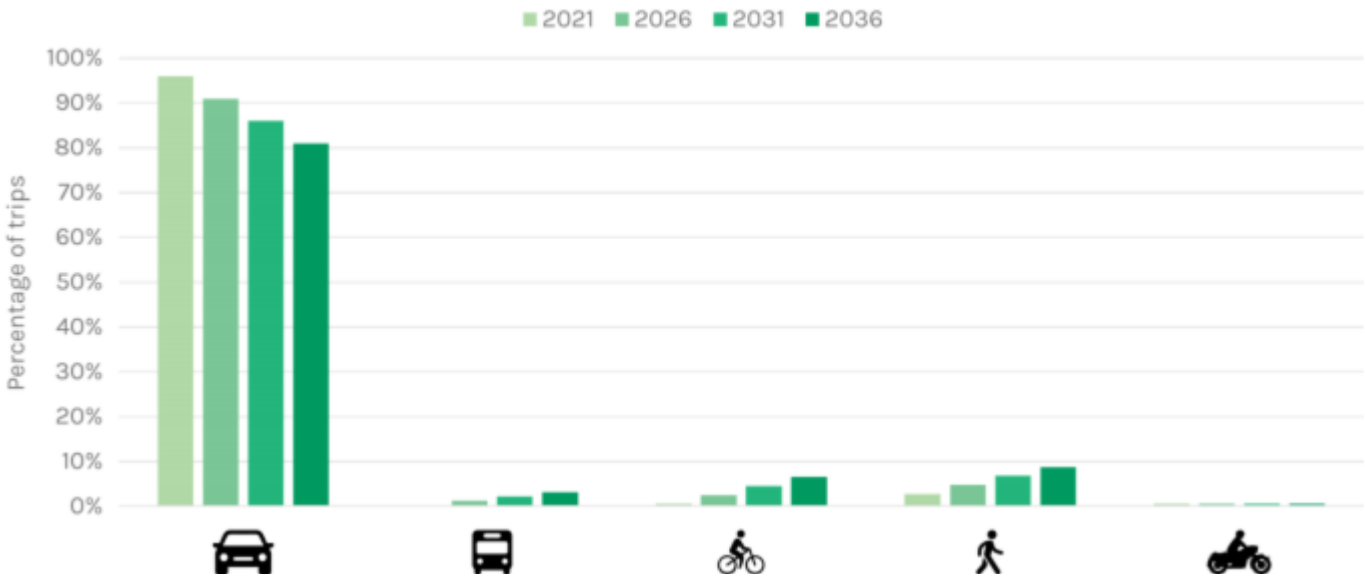


Figure 5 Journey to Work Mode Share Targets 2021 - 2036

NB: These mobility targets refer only to trips to/from work, as it is this trip type for which the necessary data is available.

Major challenges and Key proposed actions

The major challenges preventing Mildura from achieving its potential have been distilled in the far left hand column of Figure 6. Key actions have been identified to directly address these challenges and are expanded upon in Sections 1 to 9.

Figure 7 identifies some of the key actions designed to make Mildura's CBD more sustainable, vibrant and liveable.

Figure 6 Major challenges and key actions

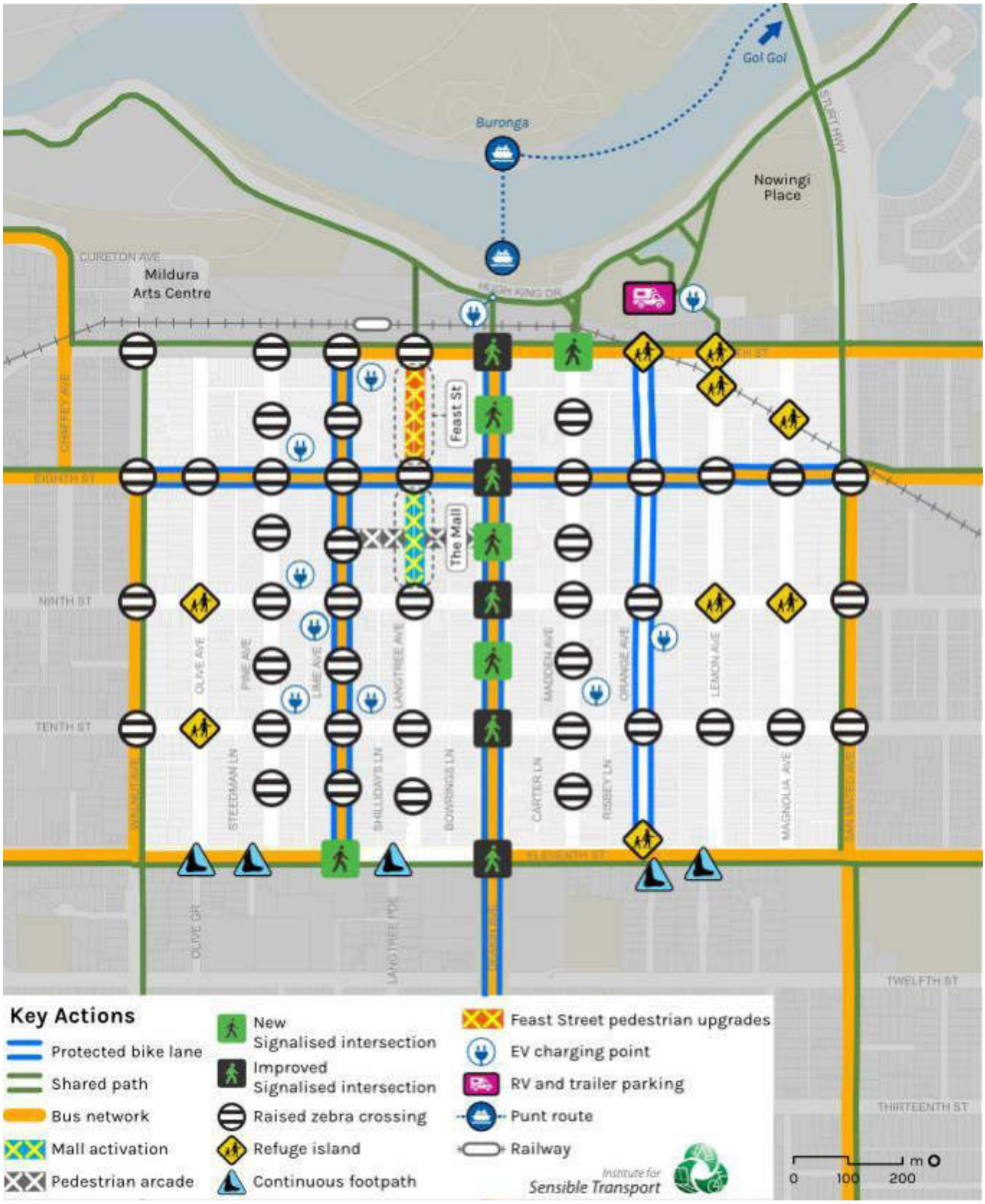


Figure 7 Key Actions in Mildura CBD

1. Introduction and background

1.1 Project background

The *Draft CBD Plan* was adopted by Mildura Rural City Council in June 2020. This Plan identified the need for a '*Active Transit and Car parking Strategy*'. Commissioned in mid 2020, the title was immediately altered to better reflect the objectives of the project and is now known as the *Mildura CBD Access and Mobility Strategy*.

Creating a more diverse set of transport options, in order to reduce the high levels of car dependence within the CBD has been identified as a priority within multiple Council strategies and plans.

The *CBD Plan* set out a target for Mildura to reduce private car use by 15%, and an increase in sustainable mobility. This *Mildura CBD Access and Mobility Strategy* has been designed to facilitate this transformation of the transport system, to achieve the goals set out in the *Draft CBD Plan*. This will support Mildura's future prosperity and liveability, lower transport costs and parking frustration and give the community a better set of transport options.

The *CBD Plan* set out a target for Mildura to reduce private car use by 15% and increase sustainable mobility.

The following page provides a concise overview of the background reports that have been prepared as part of the development of this Strategy. Box 1 identifies the relationship between this Strategy and Council's Climate Emergency Declaration. Box 2 highlights how COVID-19 impacted this project.

Declaring a Climate Emergency

In early 2020, Mildura Rural City Council joined many other councils in declaring a 'Climate Emergency'. Typical actions (some of which Mildura is making significant progress in – including large investments in solar power generation) that follow the declaration of a climate emergency include:

- Powering Council operations by renewable energy, and set targets to increase the level of renewable power for Council operations over time.
- Support cycling through provision of safe, attractive cycle lanes, bike parking and end-of-trip facilities.
- Achieve 100% divestment from fossil fuel aligned investments at the earliest possible date.
- Encourage sustainable transport use such as public transport, walking and cycling through council transport planning and design.
- Lobby state and federal governments to increase sustainable transport options.

Box 1 Mildura's Climate Emergency Declaration

A note on COVID-19 and implications for this project

COVID-19 restrictions came into place early in this Strategy's development. The pandemic had implications for community engagement, where face to face was replaced with online tools.

One unintended consequence of the COVID-19 pandemic has been a resurgence of interest in working from home, and other travel implications associated with minimising infection rates. Section 5.3 looks at low cost, pop up bike lanes as a response to COVID-19. Section 8.1 includes a recommendation to enable Council to maximise the benefits associated with work from home possibilities.

Box 2 COVID-19 and implications for this project

1.1.1 Local Policy and Data Analysis Report

A *Policy and Data Analysis Report* was submitted in October, 2020 and is offered in Appendix 1 of this report. It included crucial background content, covering:

1. Policy review: A review of relevant local government policies and strategies that are pertinent to transport issues within the CBD. An important requirement of this project is to align Council's transport investment and decision making with Council's wider strategic objective and adopted Plans (such as the *CBD Plan*).
2. Data analysis: An examination of available Census and Council data regarding travel behaviour, transport infrastructure and services is an essential component of both this report and the wider project. This examination underpins the evidence based recommendations included in Sections 3 - 10 of this report.
3. Next steps: The final section of the Policy and Data Analysis Report outlined immediate next steps that will be undertaken as part of the development of the *Mildura CBD Access and Mobility Strategy*.

1.1.2 Existing Conditions and Issues Report

An *Existing Conditions and Issues Report* was submitted in November, 2020 and documented the findings from a site assessment that examined all modes of land transport, as well as urban realm issues. The full report can be found in Appendix 3. Key issues identified in the *Existing Conditions and Issues Report* include:

Walkability

1. Difficulty crossing Deakin Avenue, with light sequences too short to enable a full crossing of Deakin Avenue in one sequence.
2. Lack of shade and water fountains, which exacerbate the impact of Mildura's hot summer weather.
3. Limited pedestrian refuges, especially where a major road intersects with a minor street.
4. A lack of mid-block pedestrian priority crossings.
5. Rail line, which acts as a barrier between the CBD and the riverfront.
6. Limited pedestrian permeability on key streets within the CBD.
7. An ad-hoc approach to speed limits, with some streets 40km/h and others 50km/h despite no functional and design differences.

Cycling

1. A lack of safe cycling infrastructure in the CBD and to key employment hubs.
2. Safe cycling infrastructure at mid block that does not continue through intersections.
3. Disconnected bike lanes that reduce the 'network effect' that comes from a coherent, 'joined up' network.
4. Bike parking design is inconsistent, fails to meet Australian standards and at times, presents trip hazards.

The Langtree Mall

1. Suffers from a lack of pedestrian entry points from the east and west.
2. The current mix of businesses lack the variety that makes open air malls successful. In particular, there are insufficient hospitality businesses and other after-hours uses.
3. Lack of water features and other 'playful' elements that can attract people to linger.
4. Lack of regular events that take advantage of the Mall's central, car free environment (e.g., farmers markets, children's story time etc).
5. The Mall's termination at Eighth Street limits its potential, especially given the mix of businesses on Langtree Avenue north of Eighth Street, are fundamentally more conducive to a car free, environment (e.g., vibrant alfresco dining).

Disconnect between the CBD and River

1. The Murray River and the CBD are disconnected. Enhancing the connection between these two destinations will make the most of one of Mildura's greatest natural assets.

Public transport

1. Many bus stops do not provide adequate amenities, such as timetable and route information, seating, and shade.

2. Several bus stops in the CBD did have good access to destinations and amenity, but had ageing infrastructure.
3. Limited transfer possibilities from the existing bus stops.
4. Bus routes that can be circuitous and do not preference the CBD, relative to Mildura Central.

Car parking

1. Supply exceeds demand. While COVID-19 is likely to have depressed demand, the assessment confirms the results from the earlier *Policy and Data Analysis Report*[1], which found significant car parking capacity relative to demand.
2. High demand for free all-day car parking on streets within the CBD (e.g., Olive Avenue).
3. An absence of dynamic signage to indicate available parking spaces.

Freight

1. Large numbers of heavy vehicle through traffic along Deakin Avenue, limiting its appeal and amenity, while also presenting a significant safety risk.
2. Many trucks, including B-Doubles, still use Benetook.
3. Signage does not maximise the use of Benetook Avenue as the preferred freight route.
4. Deakin Avenue is still, on balance, more attractive for truck drivers than Benetook. This is unlikely to change unless infrastructure changes area made.

1.1.2.1 Key opportunities identified by the site assessment

1. Consistent speed limits within the CBD, with a default of 30km/h, 10km/h within laneways in the core of the CBD and 20km/h for CBD laneways outside of the core.
2. Longer 'green man' sequence on lights crossing Deakin Avenue, to enable pedestrians the opportunity to cross in one sequence.
3. Activate The Mall through regular events and activities, enhanced pedestrian permeability via new arcades from the east and west, and encouraging more hospitality businesses.
4. All roundabouts in the CBD upgraded to raised zebra crossings.
5. Wide streets and verges offer opportunities for a denser network of off-road paths.
6. Enhance the quality, level of protection and continuity of bike lanes, to transform them into *'micro mobility lanes'* that can be used not just by people on bikes, but also the growing number of older residents using mobility aids/scooters.
7. Install kerb-bulb outs and raised threshold treatments to enhance pedestrian friendliness, and the creation of an *age-friendly* CBD.
8. Install mid-block raised zebra crossings (one per block) within the core of the CBD.
9. Develop a set of 'default' design guidelines for typical Mildura streets.
10. Introduce real-time parking availability signage in off-street car parks.
11. Use Lime Avenue as a 'demonstration street' for the use of real time parking signage for on-street bays, and the introduction of protected bike lanes.
12. Enhance signage to encourage heavy vehicles to use Benetook Avenue as an alternative to Deakin Avenue

[1] See Figure 35 of Appendix A for occupancy rates

1.1.3 Engagement Report

An important element of this project has been engaging with professional and community stakeholders regarding transport issues and opportunities. The full engagement report can be viewed in Appendix 2.

The COVID-19 Pandemic had an impact on the engagement activities carried out as part of this project. When this project was conceived, prior to Victoria's second wave, it was anticipated that face-to-face engagement would be possible. This changed once it became clear that the scale of COVID-19 required greater physical distancing to limit the spread of the virus. Face-to-face engagement was replaced with workshops held via video conference and intercept surveys replaced with online surveys.

A number of key themes emerged from the *Professional Stakeholder Engagement* that included:

1. Car dependence and the need for it to be reduced.
2. Car parking: unrealistic expectations for everyone to always find a free park outside their destination, managing all-day staff parking and overflow into residential areas, finding a consensus on whether paid-parking should be implemented or not, parking rates in new developments being insufficient, and whether existing time-limits met peoples needs.
3. Vehicle speed, including changes to posted speed limits, the rationale for which is not always clear.
4. Barriers to walking and cycling.
5. Barriers to bus use.
6. The need for better connection between the CBD and the River.
7. Urban design/public realm improvements, including greater efforts to activate the Mall, as well as street furniture improvements across the CBD more generally.
8. Motorised scooters, and the need to develop a plan to reduces risk to pedestrians on the footpath.

The *Community Engagement Online Survey* provided a picture of how people currently travel, their reasoning for using their current mode and what barriers and facilitators they see in choosing more sustainable modes in the future. The full report can be found in Appendix 2, with some summary findings highlighted briefly below:

1. Most respondents depend on their car for travel to the CBD.
2. Respondents living in the CBD have much lower levels of car use than other groups. Indeed over 40% of these respondents typically walk when making trips into the CBD.
3. The most common reason why people say they drive to the CBD is because it is the *most convenient or quickest* option.
4. Approximately 15% of respondents said finding a car park was very difficult.

1.2 Transport in town centres – in brief

Transport presents one of the major challenges to enhancing the liveability, resilience and health of people who live, work or visit Mildura. The growth in car use has exacerbated parking issues, transport emissions, noise and air pollution, as well as our ability to integrate physical activity into everyday lifestyles.

Private cars are used, on average, around 5% of the day (Shoup, 2017). Moreover, each car is estimated to need between 4 – 8 car parking bays in the city, driving up the cost of housing and limiting the space that can be used for more productive or useful purposes (Shoup, 2005). The average motor vehicle occupancy at peak hour is around 1.1 people per vehicle, despite the typical car having five seats.

1.2.1 Car dependence

The urban environment was radically transformed in most developed world towns, including Mildura, in the decades following the end of the Second World War. This transformation was needed to accommodate the space requirements of the car. Car based urban transport mentalities have, over decades, resulted in *automobile dependence* (Newman & Kenworthy, 1999). The broadening geography of cities made the automobile the *default* mode for many and this had a self-reinforcing circle that Ivan Illich captures succinctly (Illich, 1973):

> *Beyond a certain speed, motorised vehicles create remoteness which they alone can shrink. They create distances for all and shrink them for only a few.*

These concepts are captured in *the cycle of car dependence*, illustrated in Figure 8. *The cycle of car dependence* is highly pertinent to Mildura's CBD, where almost all trips are driven, often for short trips with only one occupant. This phenomenon has been termed *forced car use* by Professor Graham Currie et al. (2007), where some people must drive, regardless of what their preference might be, as it is the only viable mode of transport on offer.

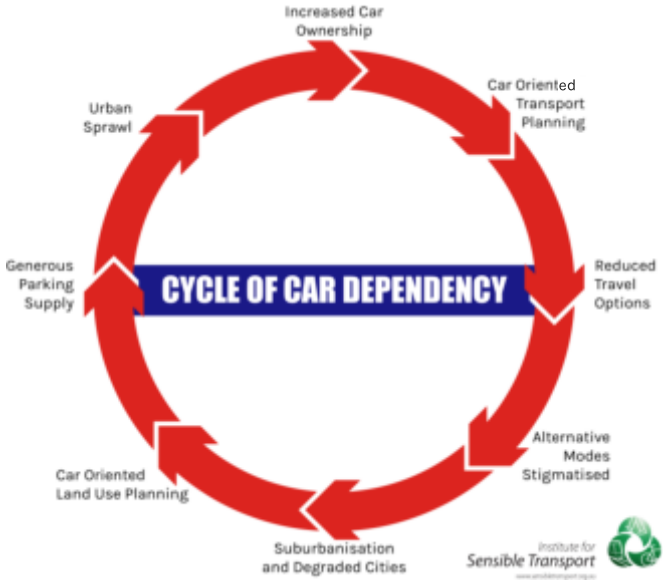


Figure 8 Cycle of car dependence

The space efficiency of different modes of transport is shown in Figure 9. It shows that a 3.5 metre lane can carry 2,000 people by car[2] per hour, 9,000 by bus and 14,000 by bicycle. Whilst public transport is most efficient in this regard, the bicycle is the most efficient vehicle that can be used individually, without adherence to a timetable.

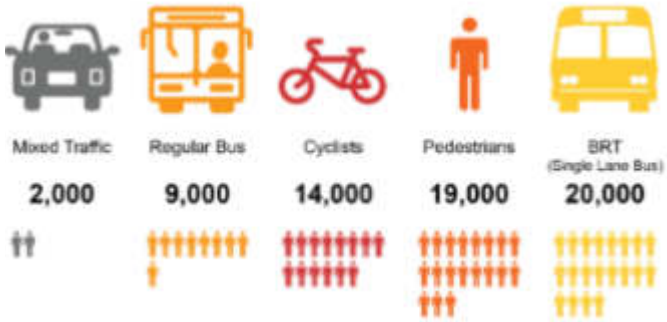


Figure 9 Carrying capacity of different modes, 3.5 metre carriageway

Source: United Nations (2013)

[2] At average peak hour occupancies of around 1.1 – 1.2 people per vehicle.

1.2.2 Physical activity

Modern, urban lifestyles have engineered physical activity out of everyday life and this presents a major threat to human health (Fishman, Böcker, & Helbich, 2015). Active transport is increasingly seen as an important opportunity to counteract the incidence of sedentary lifestyle diseases such as diabetes and obesity (Bauman et al., 2008; Götschi, Garrard, & Giles-Corti, 2015).

Enhancing the health of the Mildura community is of paramount importance to Council. The built environment, which is the result of many years of car dependant design, has inadvertently resulted in the car being used as the default mode of transport, even for very short trips. This means that many people in the community experience barriers in achieving the necessary levels of physical activity to protect against diseases of a sedentary lifestyle. A goal of this Strategy is to reorient our streets to make the healthy choice the easy choice.

1.2.3 Climate change

Transport accounts for between 16 - 19% of Victoria's emissions. Road transport is the main contributor to transport emissions.

Transport is one of the fastest growing sources of greenhouse gas emissions. Reducing the number of vehicle trips, and mode shifts away from car use towards sustainable travel (e.g., walking, cycling and public transport), in combination with vehicle fuel efficiency gains are highlighted as offering high mitigation potential. Figure 10 provides an outline of the pathways through which transport emissions are able to be reduced.

The evidence reviewed in recent assessments (e.g. see Davies & Fishman, 2018) show that current transport emissions exceed the levels required to meet Australia's obligations under the Paris Climate Agreement. These emissions are forecast to increase under the existing policy context. Sustained and unprecedented action in Mildura will be required to arrest and then reverse this trend.

The Australian Government has set the target of reducing emissions by 26 – 28% below 2005 levels by 2030. In reality, this will require steeper per capita reductions, given long-term population growth projections. Mildura, as part of its contribution to a sustainable future will provide a transport environment that allows the community to play their part in bringing down emission levels.

Figure 10 offers an illustration of the different pathways through which Mildura is able to lower transport emissions within and beyond the CBD.

Mildura does not show a trend in mode shift towards sustainable travel that reflects the strategic ambition of Council to lower climate changing emissions. A continuation of existing travel patterns and investments will result in Mildura not meeting its commitment to addressing climate change.

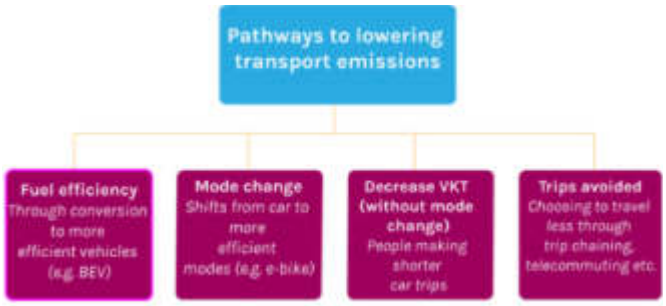


Figure 10 Pathways to lowering transport emissions

Source: Institute for Sensible Transport

NB: BEV is Battery Electric Vehicle, VKT is Vehicle Kilometres Travelled

Despite some improvements in vehicle fuel efficiency, on the whole, given the slow pace of vehicle turn over, as well as many new vehicles having high fuel consumption figures, the efficiency of the Australia fleet has not changed significantly.

Vehicle fuel efficiency

The motor vehicle fleet has shown only modest fuel efficiency improvements over the last 40 years, from around 12 litres per 100km to around 10 litres per 100km. Whilst electric vehicles have made considerable improvement in recent years, a combination of factors, including low petrol price, limited government incentives, a lack of charging infrastructure and high purchase price have meant little uptake within Mildura's vehicle fleet.

Box 3 Australia's fuel efficiency

Figure 11 illustrates the stark contrast between *dirty* and *clean* transport modes and the *space* each mode consumes. The size of the black balloons represent *grams of CO_2 per person kilometre* for the different modes shown. The footprints represent the space consumption for each mode, expressed as m^2 per person. As with many other cities in Australia, the Mildura street network continues to reflect a priority for modes that are both emissions intensive and space inefficient. Mildura's ability to become a more liveable, accessible city will be somewhat dependent on the degree to which it can create the conditions in which walking, cycling and public transport thrive.

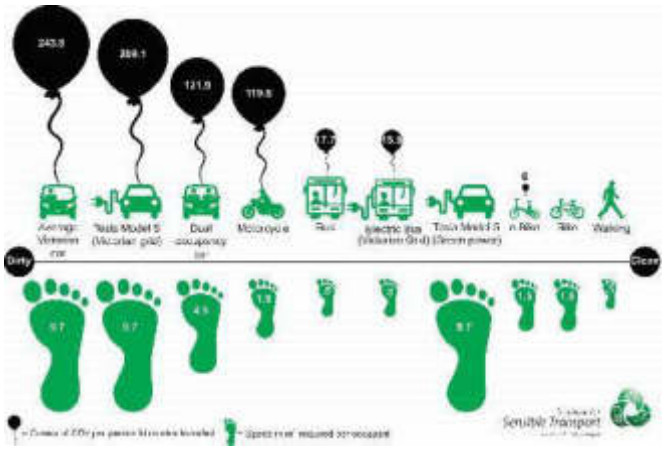


Figure 11 Emissions and space intensity, various modes

Source: Davies & Fishman (2018)

1.2.4 Why Mildura needs an Access and Mobility Strategy

Mildura, like other regional cities in Australia, have developed an automobile-oriented transport and land use planning system over the last 50 years. This has led to a transport system in which the car has become the default mode of transport, even for very short trips. In the last 20 years in particular, many cities have begun the process of trying to diversify their transport system, so it is less dependent on the car, with a greater contribution from walking, cycling and public transport. Mildura has seen changing dynamics, including a shift in retail to big-box stores along Fifteenth Street and growth in online retail; both of which have impacted on traditional CBD retail. Ensuring the CBD remains competitive and draws on its unique features will require changes in the way we think about how people access and move about the CBD.

Over 9 in 10 people in Mildura get to work by car and this has remained unchanged since at least 2006.

The benefits sustainable mobility offers Mildura includes:

1. Lower transport costs.
2. Effective response to climate change.
3. Healthier, more active community.
4. Safer streets.
5. Vibrant, productive streets.
6. Reduced demand and frustration associated with car parking.

Of critical importance to this *CBD Access and Mobility Strategy*, Mildura Rural City Council has demonstrated its commitment to tackling climate change by declaring a climate emergency.

Figure 12 highlights the key benefits of more sustainable mobility options in Mildura.

1.3 Strategic Framework: State Legislative and Policy Context

The Mildura CBD Access and Mobility Strategy sits within an existing State and Local Government legislative and policy context.

1.3.1 State Government

The State Government provides the overarching legislative and policy framework for land use and transport across the State, including the Mildura CBD. The following documents are pertinent for planning the current and future access and mobility of the CBD.

1.3.1.1 Planning and Environment Act

The Planning and Environment Act 1987 establishes a framework to guide planning and development in Victoria. The act aims to protect the long-term interests of Victorians, with regards to land and planning. The act outlines the objectives of planning in Victoria. With regards to transport and public realms, the most important of these are '*to provide for the fair, orderly, economic and sustainable use, and development of land; … to protect public utilities and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community;*' and '*to balance the present and future interests of all Victorians.*'

1.3.1.2 Transport Integration Act

The Transport Integration Act 2010 establishes a framework to support the provision of an integrated, sustainable, transport system. This is to be consistent with the vision statement which states that '*The Parliament recognises the aspirations of Victorians for an integrated and sustainable transport system that contributes to an inclusive, prosperous and environmentally responsible State.*' The Act includes objectives for transport and land use to be planned in an integrated way which also fosters environmental sustainable and promotes economic prosperity. Further objectives focus on having an efficient, reliable, and coordinated transport system with is inclusive and promotes safety, health and increases wellbeing.

1.3.1.3 Movement and Place Framework

The Movement and Place in Victoria framework was released in 2019. The framework is an evolution of the VicRoads SmartRoads programme. Movement and Place is intended for practitioners, across multiple disciplines, to think about streets in a holistic sense. The thinking is underpinned by three planning principles, to put people first, to focus on outcomes, and to think of transport as one system rather than discrete projects. The idea that streets perform many functions, often at one, is fundamental to the Movement and Place framework. Transport links and systems should serve journeys from one place to another, while respecting a destination's sense of place. The framework has four modules – '*network classifications*'; '*network performance*'; '*options development*'; and '*options assessment*' – which each build on the previous, starting with classification and ending with defined options.

1.3.1.4 Victorian Cycling Strategy

The Victorian Cycling Strategy 2018-28 outlines a vision to 'increase the number, frequency and diversity of Victorians cycling for transport'. The strategy recognises the increasing popularity of cycling, and the many health and social benefits of cycling. There are two goals of the strategy, to '*invest in a safer, lower-stress, better-connected network*', and to '*make cycling a more inclusive experience*'. The strategy views a Safe Systems approach as critical to the delivery of new infrastructure, which is safe and attractive to a wide range of users. While the vision has a focus on cycling for transport, the strategy has several strategic approaches aimed at increasing cycling to education, and for social and recreation purposes. The strategy supports investment in new infrastructure, including the Strategic Cycling Corridors (locations identified as part of the SCC network in Figure 30).

1.3.1.5 Victorian Freight Strategy

Delivering the Goods – Victorian Freight Plan is Victoria's state-wide freight plan. Freight volumes have increased in recent years, and are projected to increase from 360 million tonnes in 2014 to almost 900 millions tonnes in 2051. The plan sets out short, medium, and long-term priorities for Victoria's freight and logistics system to be able to accommodate this growth in demand. Projects across Metro Melbourne and Victoria are identified as critical to the freight plan. Victoria's regional rail network is part of the plan's 2051 vision, supporting primary produces access interstate and international markets. For Mildura, the Principal Freight Network currently includes the Sturt Highway, Calder Highway, and Benetook Avenue.

1.3.1.6 Victoria's Climate Change Strategy

The recently published Climate Change Strategy charts Victoria's pathway to Net-Zero emissions by 2050. It also includes the targets of 28-33% reduction by 2025, and a 45-50% reduction by 2030 (below 2005 levels). The Strategy contains several elements pertinent to transport in Mildura. The first is a commitment to have all new public transport buses to be electric by 2025. Second is the goal to have 50% of all new vehicles purchased in Victoria to be electric. Actions also highlight the roll-out of a fast-charging network and subsidies to lower the cost of EVs. Finally, the Strategy commits to a 25% increase in walking and cycling, via the roll-out of cycle infrastructure and delivery of 20-minute neighbourhood initiatives.

Please refer to the Local Policy and Data Review Report for the review of Mildura Rural City Council policies and strategies.

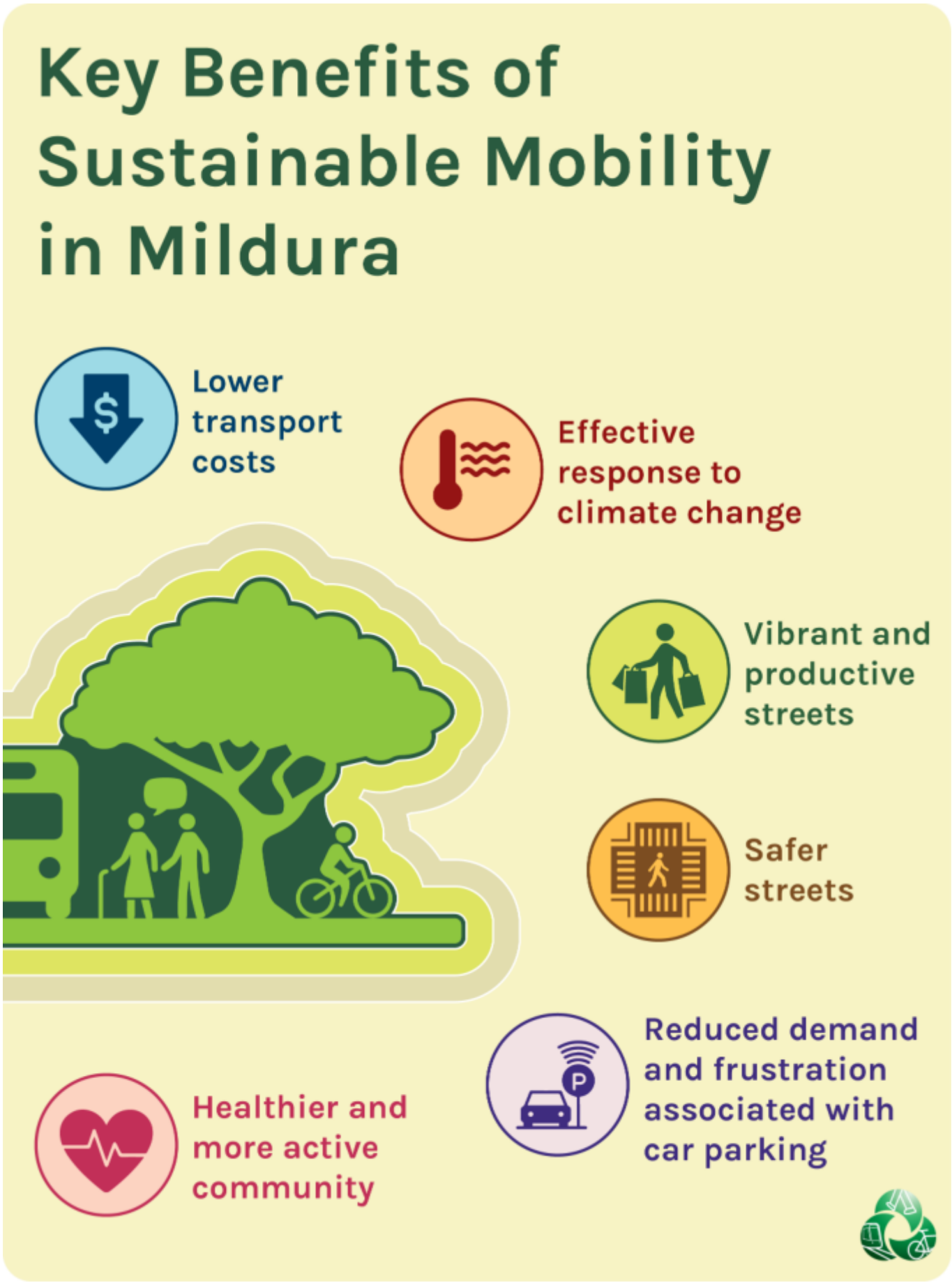
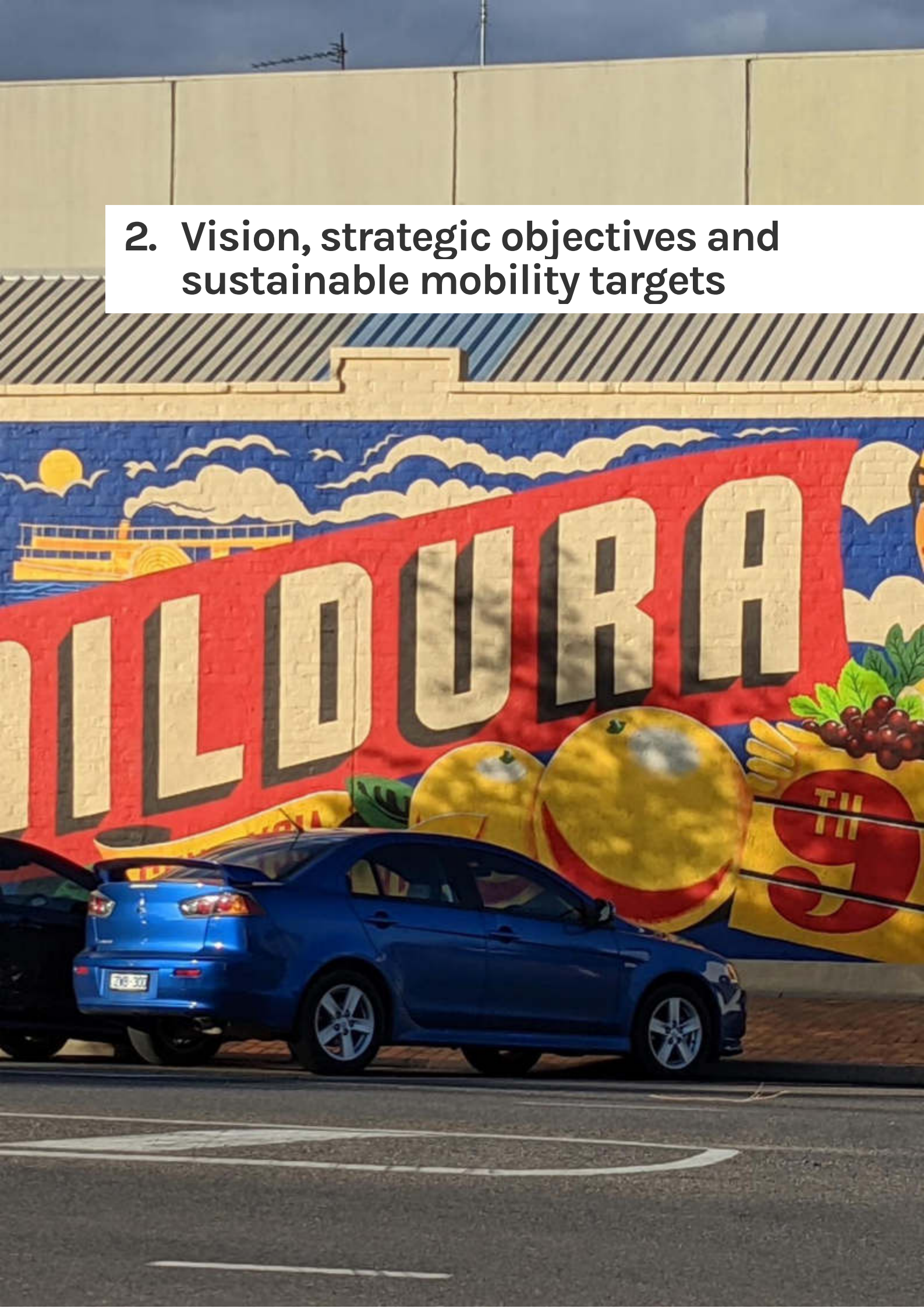


Figure 12 Key benefits of sustainable mobility in Mildura

2. Vision, strategic objectives and sustainable mobility targets



This section lays out the strategic framework for Mildura's CBD Access and Mobility Strategy. Figure 13 provides an overview of the key elements, beginning with the *vision* at the centre. A set of six *guiding principles* have been developed to support Mildura's ability to achieve the long-term vision and six *strategic objectives* provide more substance to guide Council's pathway to turning the guiding principles into reality.

Figure 13 Sustainable Mobility Plan – Structure

***Sustainable mobility targets* (see Section 2.5) allow Council to track progress, and adjust investment and policy decisions over time. This Strategy includes a package of reinforcing, integrated *actions* to provide a clear set of implementable initiatives designed to assist Council achieve its long-term vision for Mildura.**

2.1 Vision

Transport services, urban design and other supporting infrastructure provides safe, sustainable access for the whole community and supports the ambition for Mildura to be the most liveable regional city in Victoria.

2.2 Guiding principles

Six principles have been developed to guide policy and investment decisions, as identified in Figure 14.

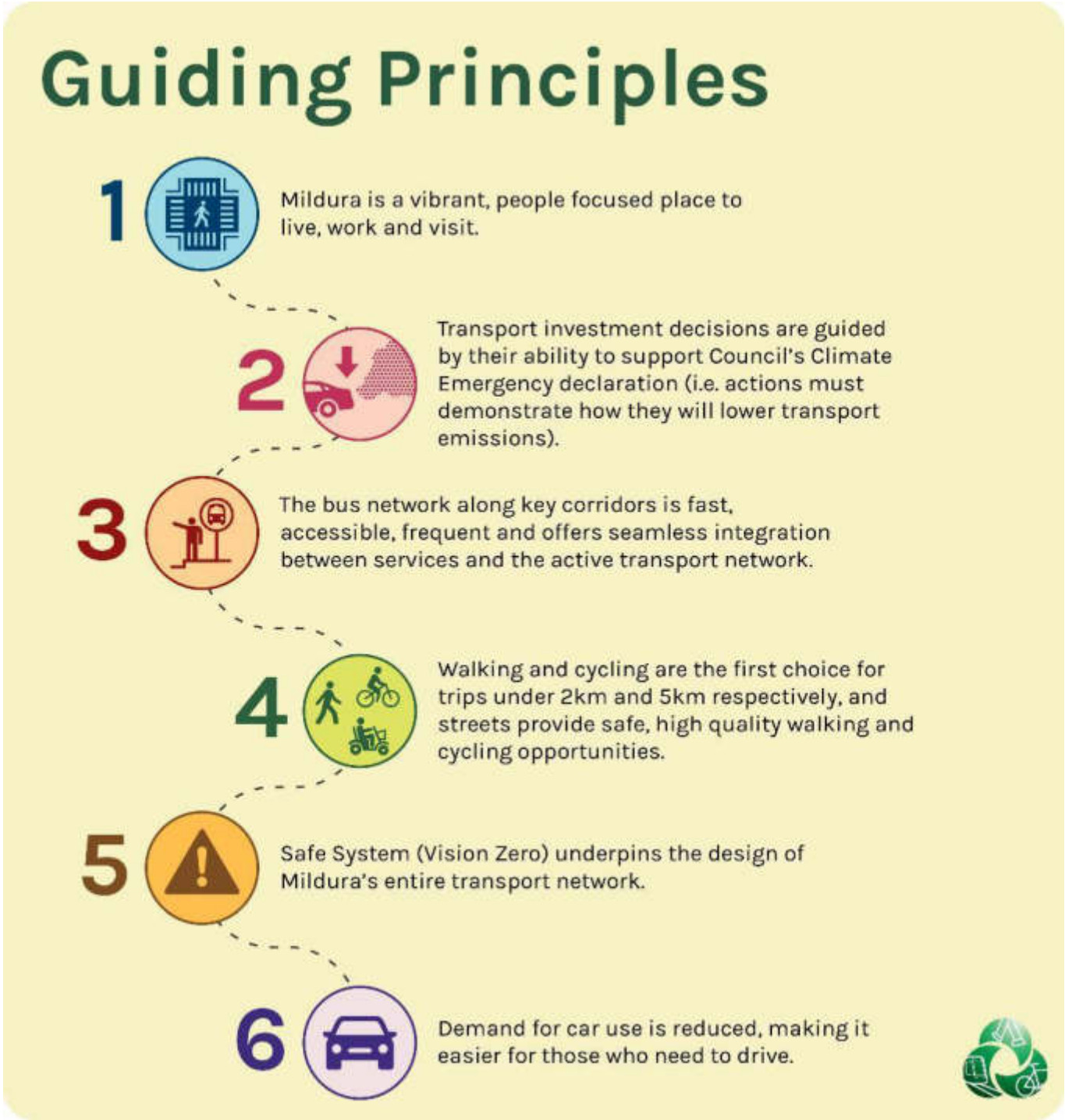


Figure 14 Guiding principles for the Mildura CBD Access and Mobility Strategy

2.3 Strategic objectives

The following set of strategic objectives have been designed to build on the above *guiding principles* by offering *measurability* to assist in evaluation. They are drawn from the key themes emerging from the policy review captured in the *Policy and Data Analysis Report* (see Appendix 1). The six strategic objectives are to:

1. Lower transport emissions, to be consistent with 1.5 degrees of global temperature increase.
2. Increase the proportion of the Mildura community that reach national guidelines for physical activity, via a more supportive environment for walking and cycling.
3. Increase the proportion of the school population that arrive by foot or bicycle.
4. Increase the proportion of the population that are within 200m of a high frequency (at least every 15 minutes during daylight hours) public transport service.
5. Meet the sustainable mobility interim targets set by Council (as shown in Figure 16).
6. Ensure Council lead the community they serve by exceeding Mildura's sustainable mobility targets and convert Council's vehicle to 100% renewable energy, zero emission fleet by 2028.

2.4 A mode hierarchy to guide decision-making

The space on the CBD street network is limited. To assist Council in making consistent, transparent decisions that work to support our vision and principles, a *mode hierarchy* has been developed (see Figure 15). Where there is competition for space, the mode hierarchy will be used to guide how space is allocated on our CBD streets. The needs of pedestrians sit at the top of the hierarchy, as this best supports our goal of an accessible, sustainable CBD. This is followed by public transport, then people on bikes. Commercial and multi-occupancy vehicles are next, followed by single occupancy motor vehicles. This reflects our vision to be a more sustainable, accessible and vibrant city.

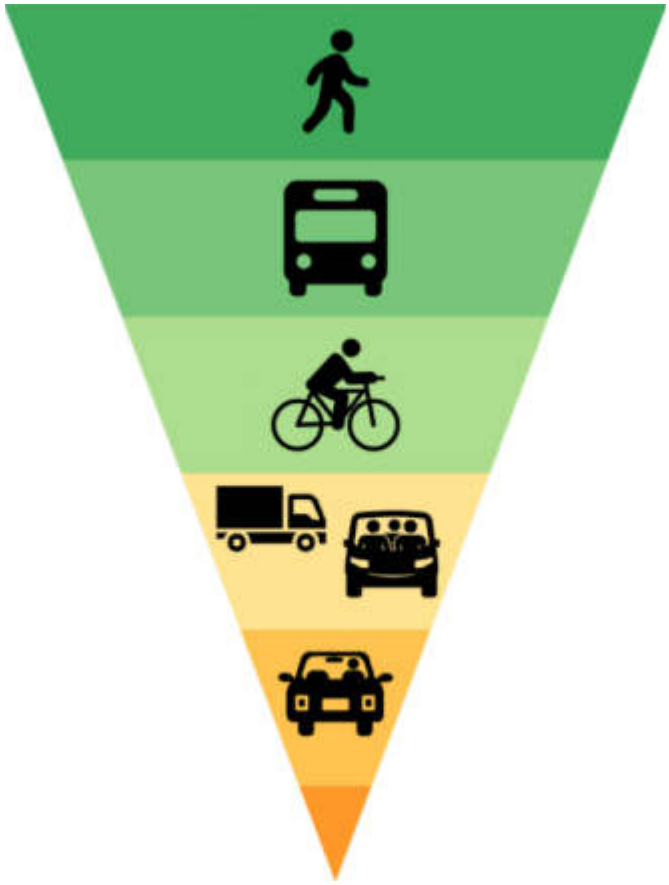


Figure 15 Mildura CBD Mode Hierarchy

2.5 Sustainable mobility targets

A set of *mode share targets* have been developed to guide Mildura towards achieving our vision for transport in 2036. These are grounded in both Mildura's existing mode share (based on the latest 2016 Census data) as well as the policy ambition articulated in the *Policy Review* (see Appendix 1), and specifically the 15% reduction in car use identified in Council's *CBD Plan*. Figure 16 illustrates both the target mode share for 2036, as well as interim targets, linked to Census years, to enable progressive evaluation. These sustainable mobility targets are ambitious and achievable, but only through consistent, sustained decisions guided by both the principles and objectives above, as well as the set of actions found in Sections 3 to 9.

The mode share targets identify that Mildura could achieve:

1. A reduction in car use, from 96% of commutes in 2021, to 81% of commutes in 2036, consistent with the goal set out in the *CBD Plan*.
2. An increase in public transport, from just 0.2% of trips to work in 2021 (projected, based on 2016), to 3.2% by 2036, a ~15-fold increase.
3. An increase in walking, from 2.8% of trips in 2021, to 8.8% in 2036
4. A substantial growth in cycling, from 0.5% of trips in 2021, to 6.5% in 2036 (a more than 10-fold increase). Cycling is targeted to increase at this rate because of the large number of car trips that currently occur that are within a convenient cycling distance from the Mildura CBD and the very low numbers that currently cycle.

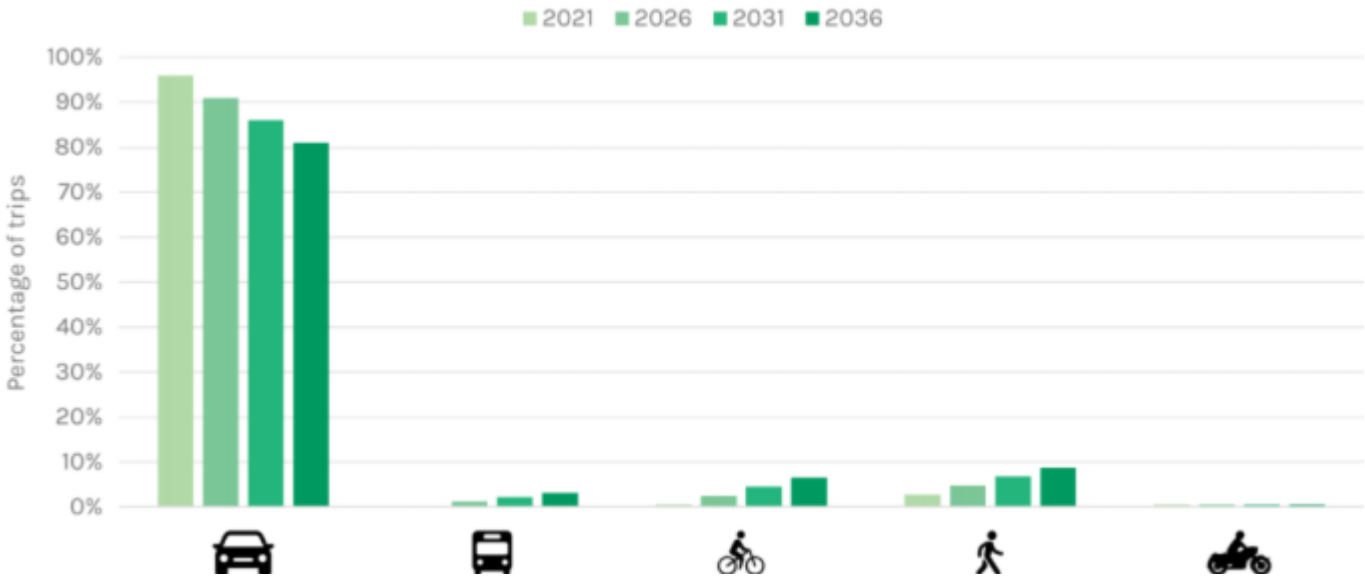


Figure 16 Journey to Work Mode Share Targets 2021 - 2036

NB: These mobility targets refer only to trips to/from work, as it is this trip type for which the necessary data is available. The motor bike symbol represents '*other modes*' including not just motor bikes, but also truck etc.

2.5.1 Maintaining Mildura's liveability during a period of growth

Mildura's relaxed lifestyle is one of its key assets. As Mildura's population grows, it is important transport is managed to protect its liveability. Figure 17 applies Mildura's population growth projections to estimate the number of trips that are estimated to occur per day by 2036, using a *Business-as-usual* scenario (in which transport mode share remains as it is in 2016) and a *2036 Sustainable Scenario*, in which Mildura implements a substantial number of the actions included in this Strategy. Figure 17 highlights the risk of a *business as usual* approach, because it shows almost 7,000 extra trips to/from work per week, by car in 2036, on top of the higher levels of travel for other trip purposes. Should the *Business-as-usual* approach be taken, parking and congestion issues would be expected to worsen. This underlines the importance of adopting the *sustainable scenario* shown in the below set of graphs.

Finally, these targets are modest in comparison to the challenge of meeting the spirit of Council's *Climate Emergency Declaration* and Council may wish to strive for achieving a greater shift towards sustainable mobility.

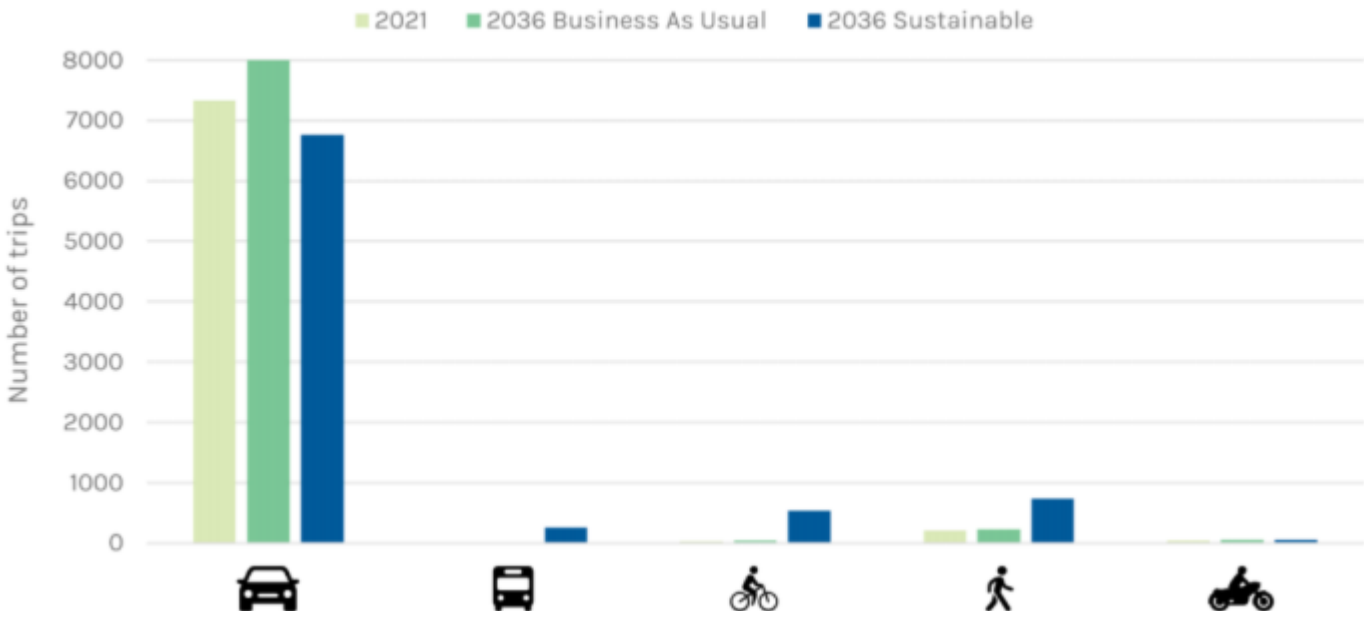
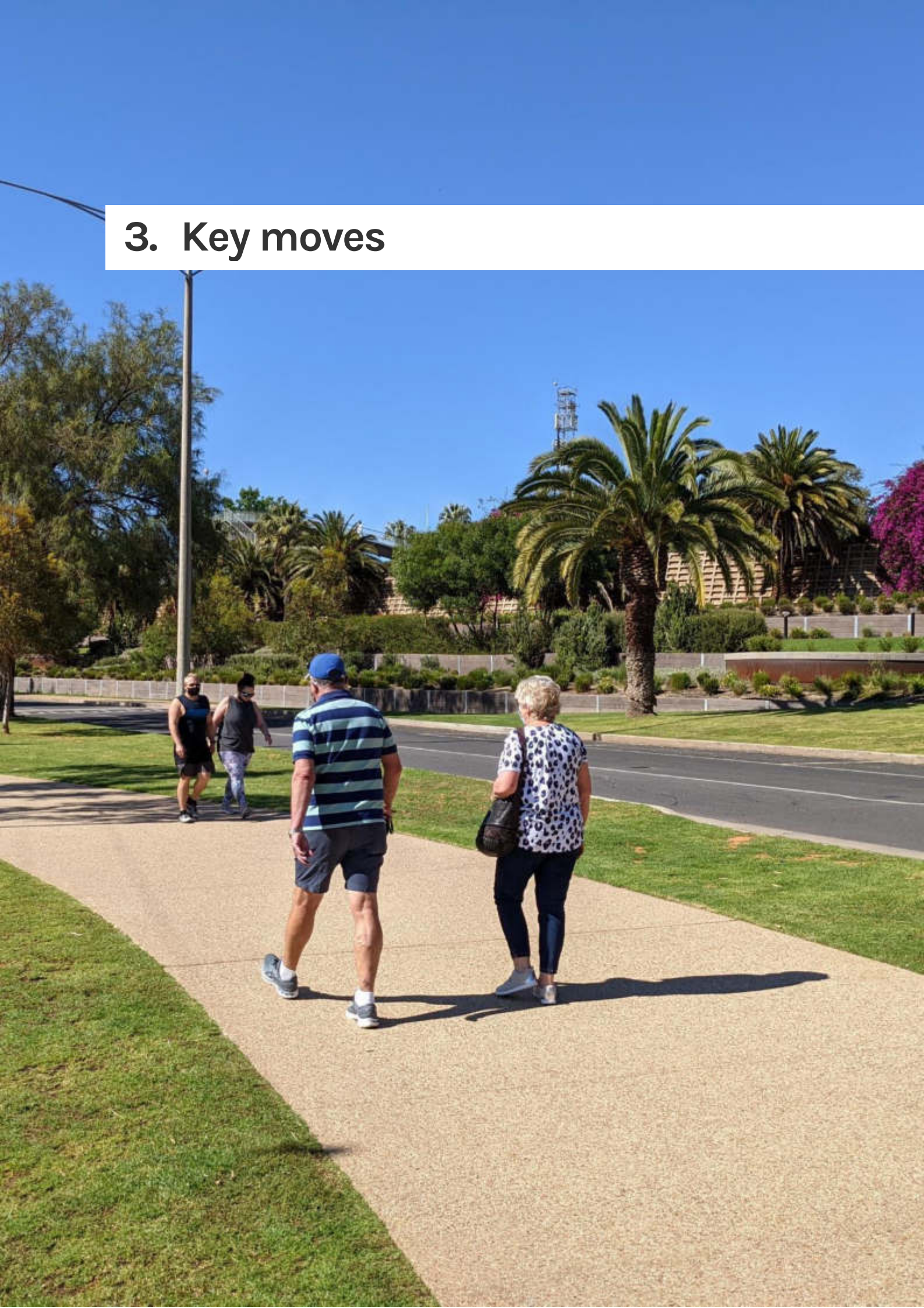


Figure 17 Journey to Work Trips

Source: ABS Census 2016. BAU is Business as Usual. Motor bike represents the category 'other'.

3. Key moves



The major transport challenges preventing Mildura from achieving its potential to be Victoria's most liveable regional city are captured in Figure 18. Key actions have been developed, designed to address these major challenges, and are shown in grey. These key actions will be expanded upon in Sections Error! Reference source not found. **to 9.**

3.1 Eight Quick Wins

Transforming the transport system is a long term, multi-decade undertaking. While many of the actions included in this *CBD Access and Mobility Strategy* will take many years, it is important to identify some of the quick wins (i.e., <2 years), and largely within Council's control. The following are eight *Quick Wins* designed to 'get some runs on the board' and begin the process of enhancing the safety and sustainability of Mildura's transport system.

1. Upgrade pedestrian amenity along Feast Street via the Placemaking Project
2. Introduce raised threshold crossings on key intersections in CBD (see Figure 7)
3. Consistent with the evidence demonstrating significantly enhanced pedestrian safety, lower and standardise internal CBD street speed limits to 30kph (refer to Figure 39 for more detail)
4. Introduce a default policy that whenever a footpath on a numbered street (e.g., Seventh, Eighth, Ninth etc.) or major avenue is being installed or improved, that it is upgraded to a shared path, unless it is not possible due to heightened safety risk (see Proposed Bike Network section).
5. Introduce a default policy that whenever a road is being re-sheeted, a painted bike lane is installed unless there is inadequate space to do so.
6. Initiate talks with the Victorian Department of Transport regarding a central, Disability Discrimination Act (DDA) compliant bus stop that allows transfer to any other service, in addition to lobbying for an urgent Bus Review.
7. Construct protected bike lanes along Deakin Avenue between Seventh Street and Sixteenth Street, in line with Council's *Deakin Avenue Urban Design Framework*.
8. Install Parking Overstay Detection System (PODS) in larger, under-utilised car parks within the CBD and Real-time display signs along Eighth Street and Lime Avenue, to provide motorists with accurate information as to where they can find a park.

Figure 18 Major challenges and key actions

4. Urban Environment

Mildura's CBD has made significant strides towards developing a pedestrian-friendly and amenity rich CBD. The *CBD Plan* identified the need for a greater emphasis on *people focused* public spaces that promote sustainable transport. This Strategy sets out to build on this great work and make the CBD an even more vibrant, people focused city.

Mildura has developed a number of policies and plans that have sought to increase the pedestrian friendliness of the CBD (see Appendix 1 for more information). The background work prepared as part of this Strategy identified that considerable potential exists to enhance the vibrancy and pedestrian friendliness on the CBD, with the following streets in particular holding considerable potential for enhancement:

- Langtree Avenue
- Eighth Street
- Lime Avenue.

Every traveller is a pedestrian at some point of their journey, and therefore all travellers will benefit from upgrades to the pedestrian environment.

4.1 Enhancing The Mall

The Langtree Mall was constructed in 1986 and while not currently thriving, has the potential to be Mildura's premier destination within the CBD. The Mall offers a range of amenities supportive of the directions included within the *CBD Plan*, including:

- Shaded seating.
- An open amphitheatre.
- Space for children and play elements
- Space for footpath trading and al fresco dining.

There are a number of missed opportunities associated with The Mall, as summarised below:

- Lack of diversity of shops that make the most of The Mall's car free environment. Specifically, the predominance of clothing and newsagents, and limited eating and drinking options within the centre of The Mall detracts from its vibrancy.
- Limited opportunity for activity, especially after 5pm, on Sundays, and during peak holiday periods.
- Limited pedestrian connections from Deakin Avenue and Lime Avenue.
- Opportunity to integrate water play elements, like in Nowingi Place.
- Incorporation of key seasonal and cultural events throughout the year.

4.1.1 Recommendations

The following recommendations are designed to enhance the contribution of The Mall to the life of the CBD:

1. Upgrade pedestrian amenity along Feast Street. This will enhance the pedestrian friendliness of the CBD and capitalise on what Mildura has already been able to achieve towards a more sustainable street network. Connecting with the existing Langtree Mall improves the diversity of walking experiences in the heart of the CBD. Langtree Avenue already provides an excellent mix of hospitality opportunities that lends itself to a car free environment, including increasing the attractiveness of the street for outdoor dining and safety for children. It will also support Council's desire, expressed in numerous documents, for a stronger connection between the CBD and the River.
2. Develop a comprehensive program of activities that encourages more people to use The Mall. This might include such activities as children's story time, exercise classes (e.g., lunchtime yoga), and arts/music performances, during the day and night, and on weekends.
3. Encourage a more diverse hospitality and night-time retail offering. This would draw more people to visit and enjoy The Mall continually throughout the day and night.
4. Identify the barriers of entry for food and beverage businesses that complement, and not compete with Feast Street, and undertake tasks to encourage their establishment in The Mall. Food truck nights, cultural food festivals, and night markets are a few examples that have worked successfully to activate similar areas elsewhere in Victoria.
5. Improve pedestrian accessibility to The Mall all the way through between Deakin and Lime Avenues. This could include purchasing and redesigning buildings to provide access through a Public Acquisition Overlay (PAO), buying sites without a PAO when an appropriate building comes onto the market, or by applying a Design and Development Overlay (DDO) onto the property or properties where permeability is most desirable. The latter option would require future development to include the specified changes to access.
6. Enhance the vibrancy of the built form interface with The Mall. The Planning Scheme can be used to encourage developments to actively contribute to more lively environments. This includes encouraging active street frontages and balconies that overlook The Mall. Both provide a more attractive street and more opportunities for passive surveillance. A DDO over the CBD area that articulates the built-form ambitions of Council would provide the necessary statutory requirements to limit poor design outcomes.
7. Inclusion of more civic spaces, such as a parent or community centre.
8. Inclusion of public toilets and changing places facilities.

4.2 Upgrading Lime Avenue

Lime Avenue is a key street within the Mildura CBD. It supports access to off-street car parks and has on-street parking, and painted bike lanes (see top cross section in Figure 19). Lime Avenue represents an excellent opportunity to pilot a range of initiatives that will support Mildura's ambition to become Victoria's most liveable regional city. Making Lime Avenue easier to find a car park, and navigate as a pedestrian or on a bike will support many of this Strategy's objectives.

The existing cross section provides unnecessary lane width for motor vehicles and this reduces space that could be re-allocated to other purposes, without any meaningful reduction in functionality or accessibility for those seeking to travel along Lime Avenue by motor vehicle.

The existing bike lane along Lime Avenue was designed prior to Victoria's adoption of the Safe Systems Approach to road safety. Specifically, the current bike lanes present an unnecessary danger due to reversing cars and is now inconsistent with Australian best practice.

4.2.1 Recommendations

Lime Avenue presents an excellent opportunity for a demonstration street for transport initiatives designed to support Mildura's goal to reduce car use by 15% and reduce the frustration associated with car parking.

1. Install Parking Overstay Detection Systems (PODS), to enable the provision of real time, dynamic signage to direct motorists to available bays (an example of which can be seen in Figure 41). This provides motorists with guidance as to the location of available parking bays, reducing frustration and the amount of circling while looking for a car park.
2. Install protected *Micro-mobility lanes* on both sides of the street (from Eleventh Street to Seventh Street). Protected micro mobility lanes, as discussed in Section 5.1, provide even those unaccustomed to cycling with a degree of convenience that makes cycling, or scootering a real choice for the many short to medium trips that take place in Mildura. Micro-mobility has been recommended as a way of safely managing the growth in mobility scooter use without jeopardising the safety of the footpath.

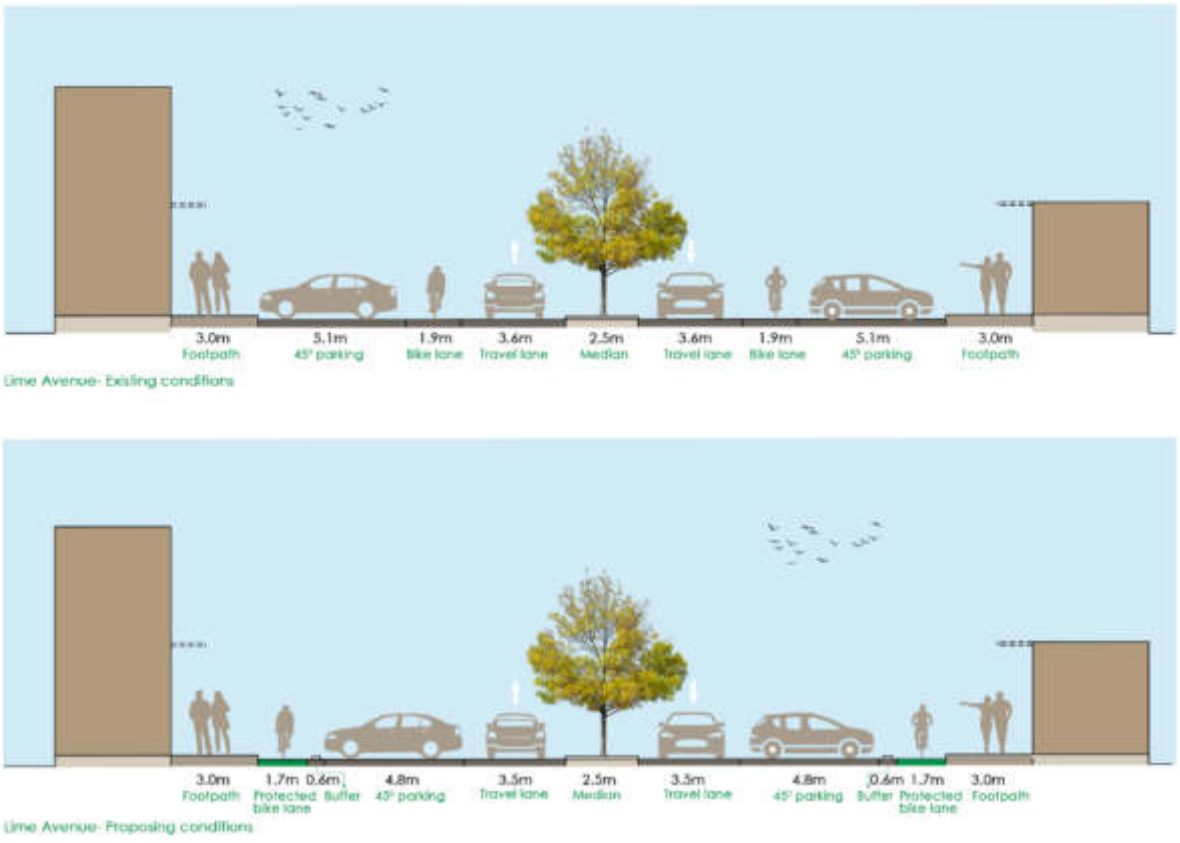


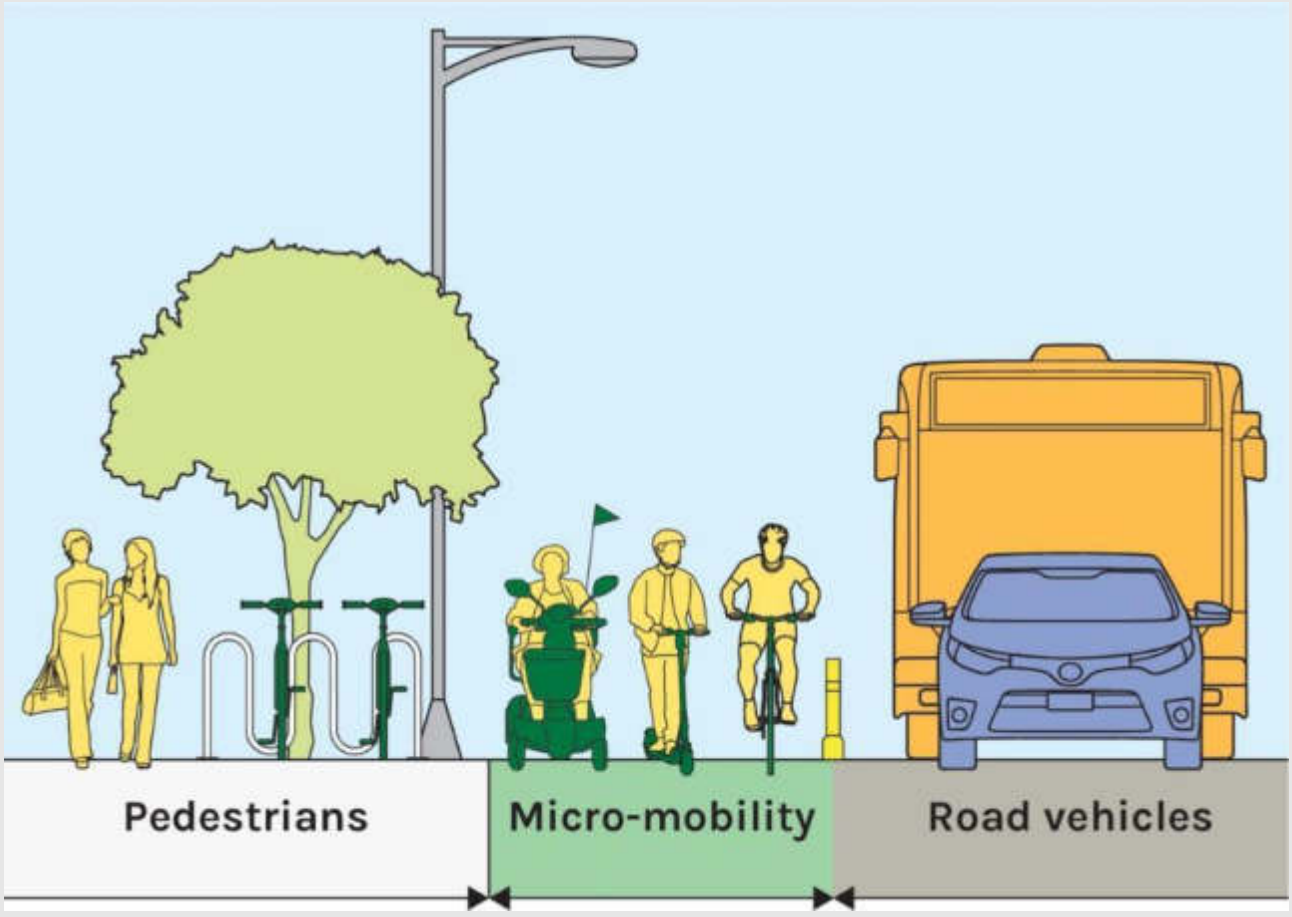
Figure 19 Lime Avenue - Existing and proposed cross-section

Nb. Concept plan only, dimensions may be different along the street, detailed designs will require further analysis

What's a Micro-mobility lane?

In the last decade in particular, an expansion in the range of small, low speed mobility devices have entered the market. These include two, three and four wheeled scooters, in addition to e-bikes and trikes. While these devices vary in their appearance and function, they all have one thing in common. They all travel at a relatively low speed and are a light weight. Sharing the space with pedestrians can be problematic, as can sharing the road with motor vehicles, that are typically much heavier and can travel considerably faster.

A Micro-mobility lane is a special purpose lane designed to provide a safe and comfortable environment for people on these devices. It will also help to make the footpath and roads safer. As Mildura's population continues to age, Micro-mobility lanes will help keep the CBD accessible to our seniors, helping us become an inclusive, age-friendly city.



Box 4 What's a Micro-mobility lane?

4.3 Upgrading Eighth Street

Eighth Street is an important retail street within the core of the CBD. Figure 20 provides the existing and proposed cross section on Eighth Street. The change from angled to parallel parking would potentially reduce the number of on-street spaces. The parking occupancy analysis found that nearby off-street spaces could comfortably off-set any losses.

4.3.1 Recommendations

To enhance the vibrancy and people-friendliness of Eighth Street, the following set of actions are proposed. By implementing these actions, the liveability of Eighth Street will be enhanced, while maintaining vehicle access. Unnecessary vehicle through traffic will be reduced, to prioritise the street for those that seek the core of the CBD as a destination. It is proposed Eighth Street undergo the following upgrades:

1. Prioritise pedestrian movements across Eighth Street while maintaining vehicle access along Eighth Street.
2. Widen footpaths and increase the number of shade trees
3. Install Micro-mobility lanes between the footpaths and parked cars
4. Reduce the speed limit to 30km/h to make it safer for all road users and a more pleasant place to shop.

Figure 21 provides an artist's impression of what an upgraded Eighth Street could look like.

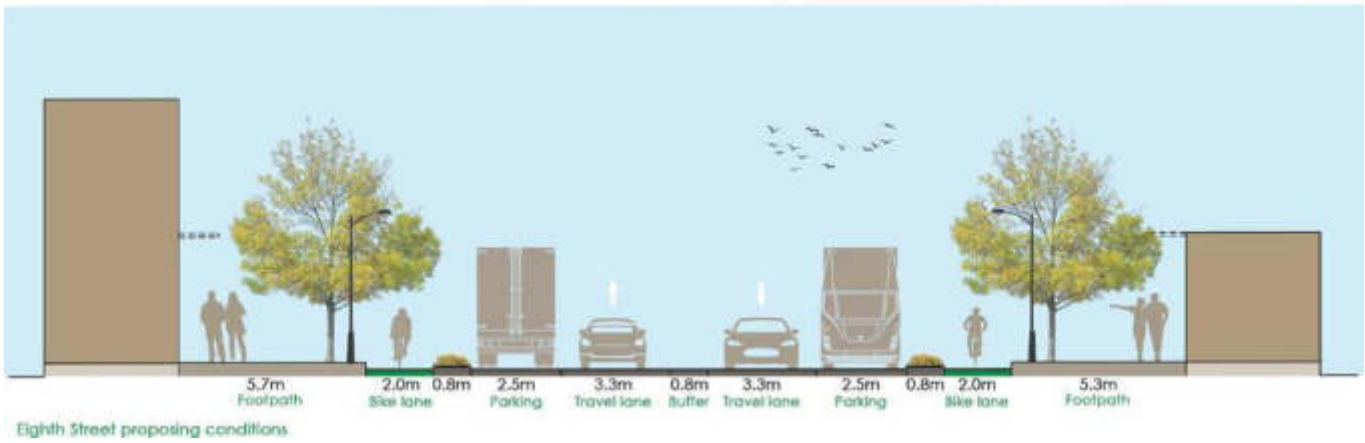


Figure 20 Eighth Street - Existing and proposed cross-section

Nb. Concept plan only, dimensions may be different along the street, detailed designs will require further analysis

Figure 21 Future Eighth Street, artist's impression

Nb. Concept plan only, dimensions may be different along the street, detailed designs will require further analysis

4.4 Wayfinding

An effective wayfinding system is an important component of a wider set of actions designed to encourage greater levels of sustainable mobility. A wayfinding system provides directional guidance, raises awareness of key destinations within an active travel catchment, and can provide time and distance estimates.

Research shows that people commonly underestimate how long it takes to get somewhere by car and overestimate how long it may take by foot or bicycle. An effective wayfinding system can help to overcome this misperception.

There is an opportunity to support active travel decisions through the development of a comprehensive wayfinding system. Once a comprehensive active travel network (infrastructure) has been established, a wayfinding system helps people utilise this network, promoting safer routes.

Mildura has made some efforts to better connect the CBD with the River through wayfinding. By extending the objectives of the signage, by encompassing a broader set of destinations (e.g. educational, key shopping and public transport destinations), a wayfinding system will serve to promote more to be done by foot and bicycle, and help to better integrate active transport modes with public transport.

It is recommended Council develop a Wayfinding Strategy and Master Plan for the Mildura CBD. This will encompass:

1. Location of signage.
2. Type of signage (finger boards, map boards, digital kiosks, interpretative).
3. Maps that include bicycle network, preferred walking routes, public transport stops, taxi ranks, key shopping, educational destinations, public toilets, café/restaurant precincts.
4. 10 minute walking and cycling catchment maps (to enable the user to see what destinations are reachable within a ten minute walk and cycle of their current location.
5. Time and distance estimates for finger board directional signage.
6. QR Codes to enable users conduct self-guided walking tours of Mildura.
7. Accessibility compliance (e.g. contrast, density, letter size and cap X-height).

Figure 22 provides a conceptual example of the *'heads up'* map boards that will be used as part of the wayfinding strategy.

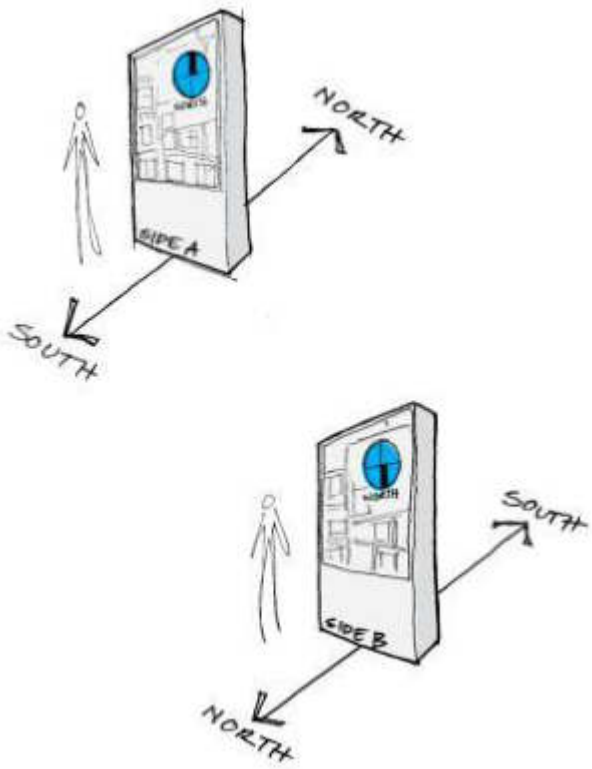


Figure 22 Wayfinding boards to guide people to and within the CBD

Figure 23 provides some examples of the different wayfinding typologies that will be used to enable people to access key destinations within Mildura by sustainable modes of travel.

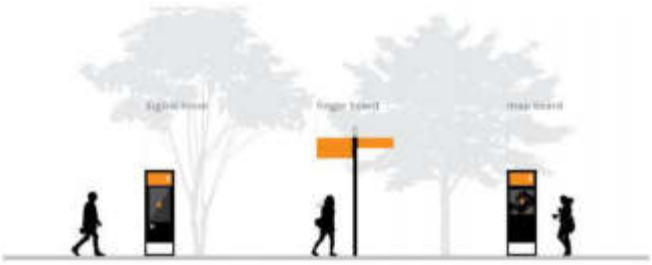


Figure 23 Wayfinding typologies

4.5 Shade

Mildura's hot, sunny climate means that shade is a key consideration for the comfort of people while in the CBD. Creating more shade within the CBD emerged as one of the most common suggestions from the stakeholder engagement undertaken as part of the development of this Strategy.

Some parts of the CBD do have shade, with shops providing awnings and Council increasing the number of trees, however, more could be done to maintain comfort levels, especially given the rise in temperature associated with climate change.

It is recommended that:

1. Council undertakes heat mapping of the Mildura CBD and develop an action plan for reducing heat, using trees, awnings, and other artificial shade structures.

Case study: Integrating Shade

Los Angeles is a city that shares similar characteristics to Mildura. It is a hot and sunny climate, the built-form, and historical legacy has left the city with large parts of the city exposed to the harsh sun for much of the day. To quickly provide relief to residents without having to wait for mature trees to grow in, the city has begun integrating shade elements into existing service infrastructure, such as bus stops and light poles. The image below shows the new bus stops providing respite from the midday sun while the righthand image illustrates a shade sail integrated with a lamp pole.

The designs chosen by the City of Los Angeles provide much needed shade, integrated into infrastructure services, while adding elements that are iconic for the city. Mildura could investigate the ability to implement similar solutions to the CBD, while seeking designs that match the unique aspects of Mildura and the Sunraysia region.

Box 5 Integrating shade into existing services
Source: City of Los Angeles

5. Active Transport

Mildura has the potential to become Australia's premier regional city for cycling. A high proportion of car trips within a cyclable distance, however a lack of safe infrastructure is a barrier for many people to consider riding. There is considerable capacity to enhance the quality of its bicycle network offers exciting possibilities for Mildura to become an example of best practice. Figure 24 illustrates a conceptual map, highlighting destinations, proposed and existing bike routes, and the time it takes to travel between key points.

Mildura's entire built-up area is within a 20-minute catchment, making cycling a viable option, should the infrastructure network serve to support this choice.

As highlighted earlier, despite a history of policies and plans aimed at boosting the role of cycling in Mildura, cycling levels (for trips to work) have remained at negligible levels (i.e. ~1%). In addition to the cycle network proposed in this Strategy, some key bicycle network planning principles are offered to assist local and state government in the delivery of network enhancements. Figure 25 is accompanied by the five complementary principles taken from the Dutch *Design Manual for Bicycle Traffic* (see Box 6).

Five network design principles for bicycle planning

These universal principles for bicycle network development were developed in the Netherlands, and are now used by governments around the world. By applying these principles, cycling comes a mainstream transport option for those aged 8 – 80, enjoyed equally, regardless of gender.

1. Cohesion
2. Directness
3. Safety
4. Comfort
5. Attractiveness.

Box 6 Bicycle network design principles
Source: CROW

Figure 24 illustrates the cycle network proposed in this Strategy, as well as what exists currently. The proposed network will enhance the value proposition cycling offers by:

1. Extending the existing shared path network
2. Providing separated on-road bike lanes in the CBD
3. Making crossing the road safer where a path intersects with a major road or side streets.

The proposed network included in this Strategy has been developed with the above five principles in mind.

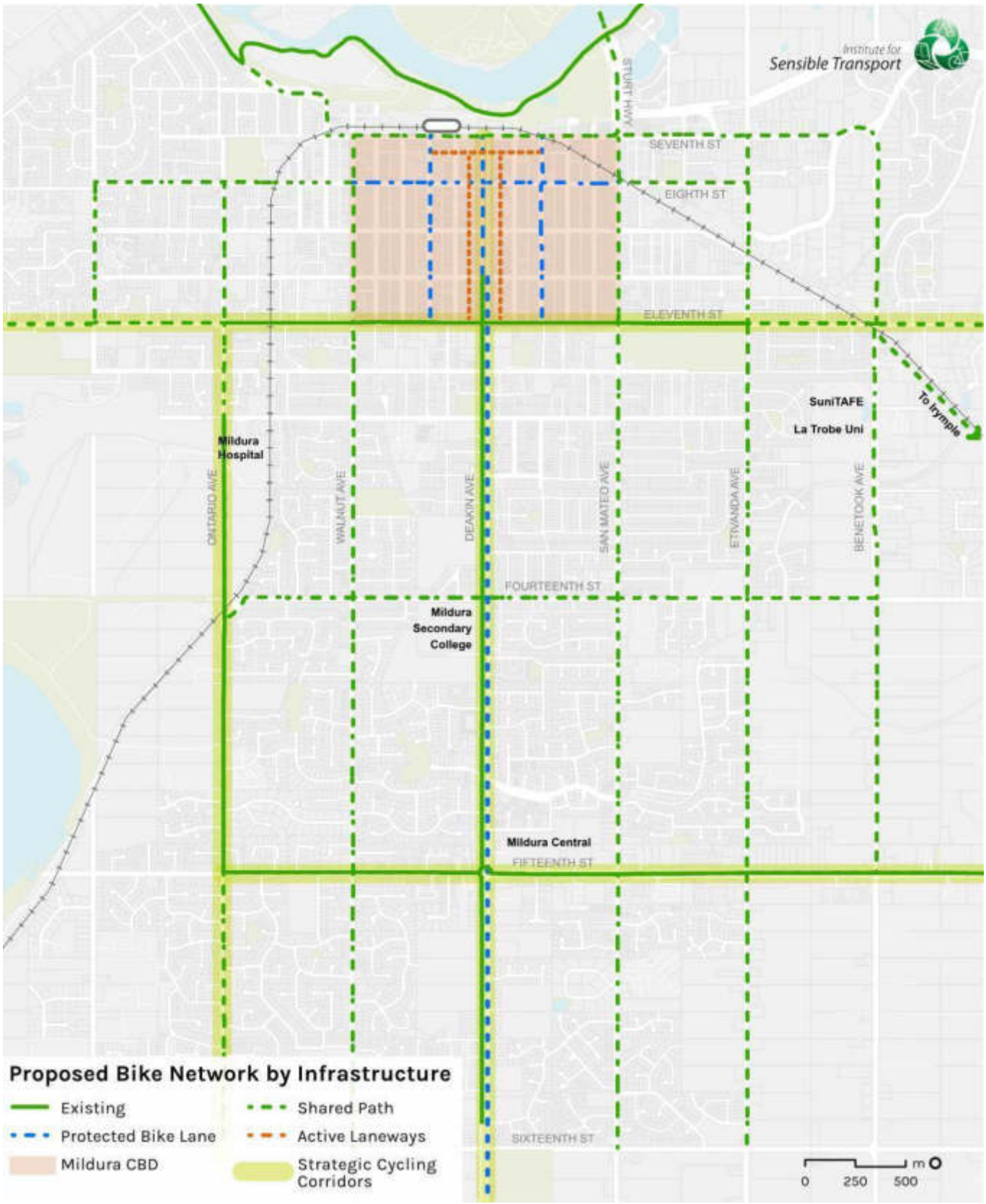


Figure 24 Proposed bike network by infrastructure

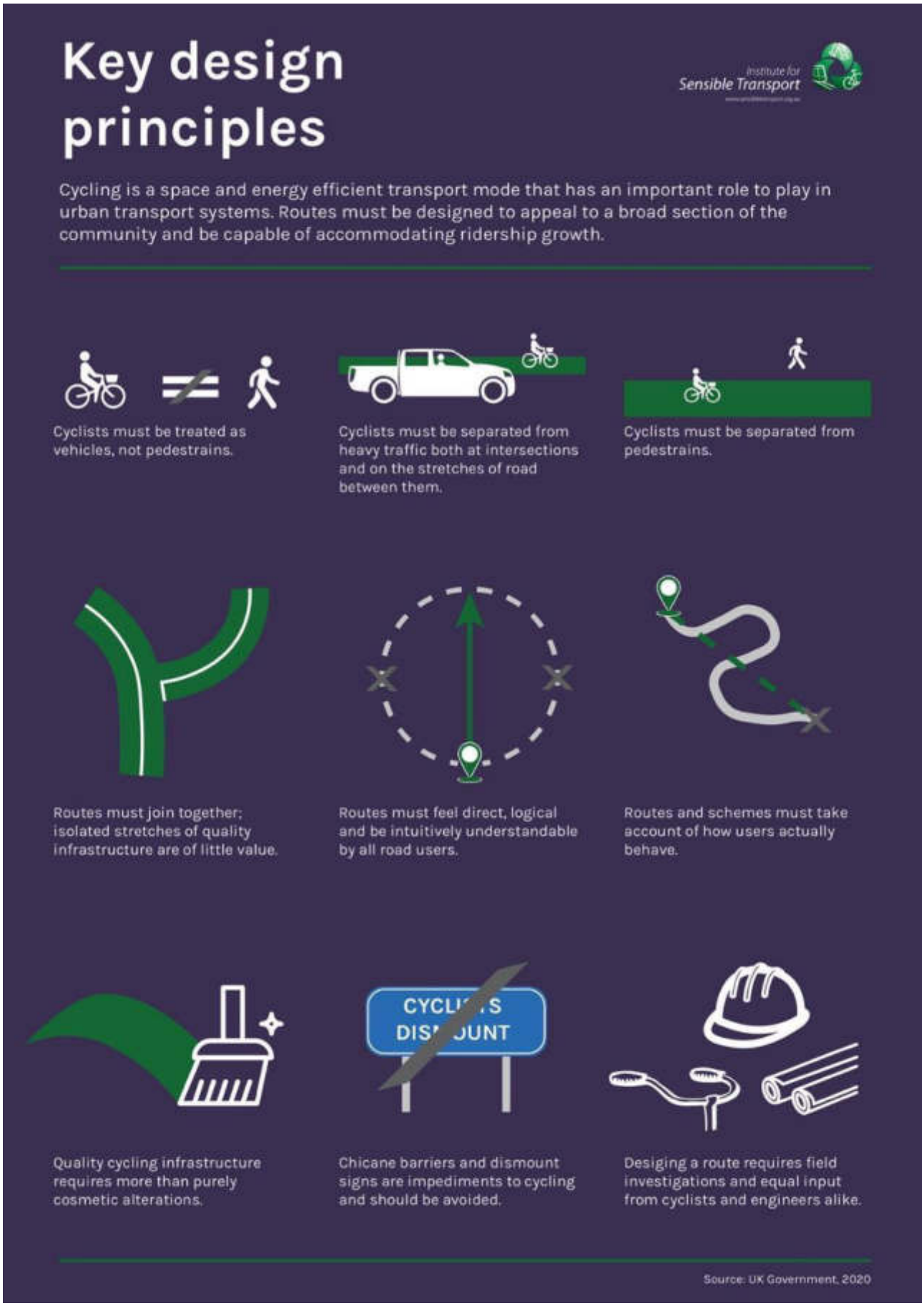


Figure 25 Bicycle network design - conceptual principles

Source: Adapted from work produced by the UK Government, 2020

5.1 Rider confidence by environment

Figure 26 shows the level of confidence that people have riding on different types of bicycle infrastructure. Only when fully separated from traffic are most people confident enough to consider riding. In Mildura, only the existing off-road paths would be considered sufficient for all ages and abilities. The proposed network seeks to increase access to shops, schools, jobs, and services to a greater proportion of the Mildura community. Figure 26 shows that only 6% of people feel confident riding in mixed traffic, but 83% are confident riding when provided with protection from motor vehicles.

Only 6% of people feel confident riding in mixed traffic, but 83% are confident riding when provided with protection from motor vehicles.

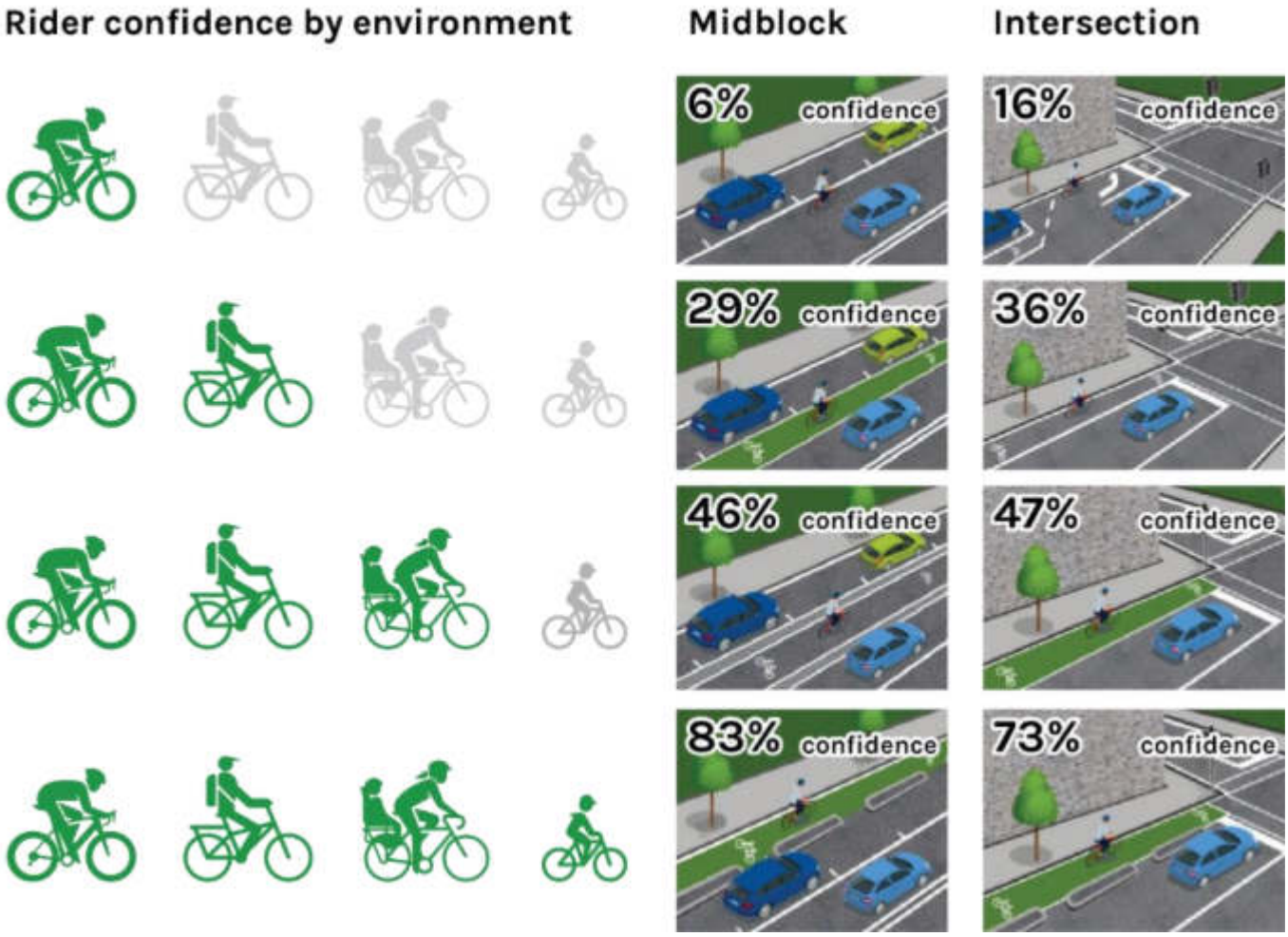


Figure 26 Riding confidence - different infrastructure

Source: CDM Research & ASDF Research (2017)

5.2 Safe intersections

Roundabouts are the most common intersection type in Mildura. In order to safely accommodate bike riders and other personal mobility device users, priority and separation should be provided at intersections. Figure 27 provides an example in Ellis Street, Bendigo. Here, the separated bike lane is brought in-line with the pedestrian zebra crossing where they both have right of way. Their crossing is raised to encourage slower speeds and improve visibility of those using the crossing.

Figure 27 Protected roundabout, Bendigo
Source: Nearmap

5.3 Micro-mobility lanes

Building out a safe and connected bike network in Mildura will not only support more people riding bikes but will future-proof Mildura's streets for new forms of transport technology and will provide space for those who use mobility aids. Figure 28 illustrates the diversity of micro-mobility modes suitable for such lanes.

Figure 28 Micro-mobility lanes

5.4 Low-cost lanes

COVID-19 has prompted many cities around the world to expediate new bike lanes and widen footpaths to maintain social distancing requirements. To make this rapid change, cities have begun using low-cost infrastructure that can be rolled out quickly.

Beyond responding to COVID-19, using low-cost infrastructure can be useful for rapidly prototyping new street designs. Figure 29 shows a pop-up bike lane installed by Darebin City Council in Melbourne.

Figure 29 Pop up bike lane, Melbourne

5.5 Proposed Bike Network

Figure 24 shows the proposed bike network for Mildura by the infrastructure type. This network is recommended to be completed by 2036. This is intended to provide the requisite infrastructure for Mildura to meet its mode share target for cycling by 2035. The green paths are proposed shared paths, similar to that which already exists on sections of Deakin Avenue, Ontario Avenue, Fifteenth Street, and Eleventh Street. The blue paths are protected bike lanes, as shown in the examples in Figure 29 and Box 7. They are intended to provide safe separation between bikes and motorists, and between bikes and pedestrians in busy CBD areas.

The State Government's Strategic Cycling Corridors (SCCs) are highlighted in Figure 30. These corridors have been recognised by both the State Government and Council as priority corridors. While much of the SCC network in Mildura has infrastructure already, completing the network gaps are key.

The research shown in Figure 26 highlights the importance of providing bike infrastructure that is separate from motor vehicles, before most people would feel safe enough to consider cycling. The proposed network in Figure 24 thus focuses on separated facilities in order to encourage greater rates of bike riding, especially those who would consider riding a bike but currently do not feel safe to do so.

The layout of Mildura's urban area is conducive to creating a high-quality cycling network. The major avenues and numbered cross-streets provide the high-quality movement corridors, while the streets in between should be low-speed and low-volume, making them safe for bike riding on-street.

Once the network proposed in this Strategy is complete, Mildura will have the best bike network of any town or city in Australia.

Figure 24 shows the recommended staging of the new sections of the off-road network. The new bike infrastructure is proposed to be built-out in three stages, each consisting of 5 years each. Each stage has a similar amount of bike infrastructure to build, equating to an average of 2.5 kilometres per year. The stages are intended to improve access to existing employment hubs and shops first, plug in gaps in the existing shared path network, and provide safe bike riding facilities to the TAFE / University site. Stage 2 expand out from the built-up parts of Mildura, extending into the southern residential catchments. Stage 3 connects the growth areas of Mildura into the network.

This program will increase access to jobs, shops, and services by bike. The existing network is currently accessible (within 200m of a separated path) to just 11,000 people (or 33%) who live in the suburb of Mildura while the proposed network would increase this to 28,000 people, or 84%.

Priority routes within Stage 1 recommended for construction first are Deakin Avenue north to Seventh Street, Eleventh Street east and south along Benetook Avenue to the TAFE and University, and connecting Ontario Avenue north to Eleventh Street.

Table 1 shows the break-down in each stage, including the proposed build years for each stage.

Table 1 Proposed bike network - staging

Stage	Build Years
Existing Network	N/A
1	2021 - 2026
2	2026 - 2031
3	2031 - 2036

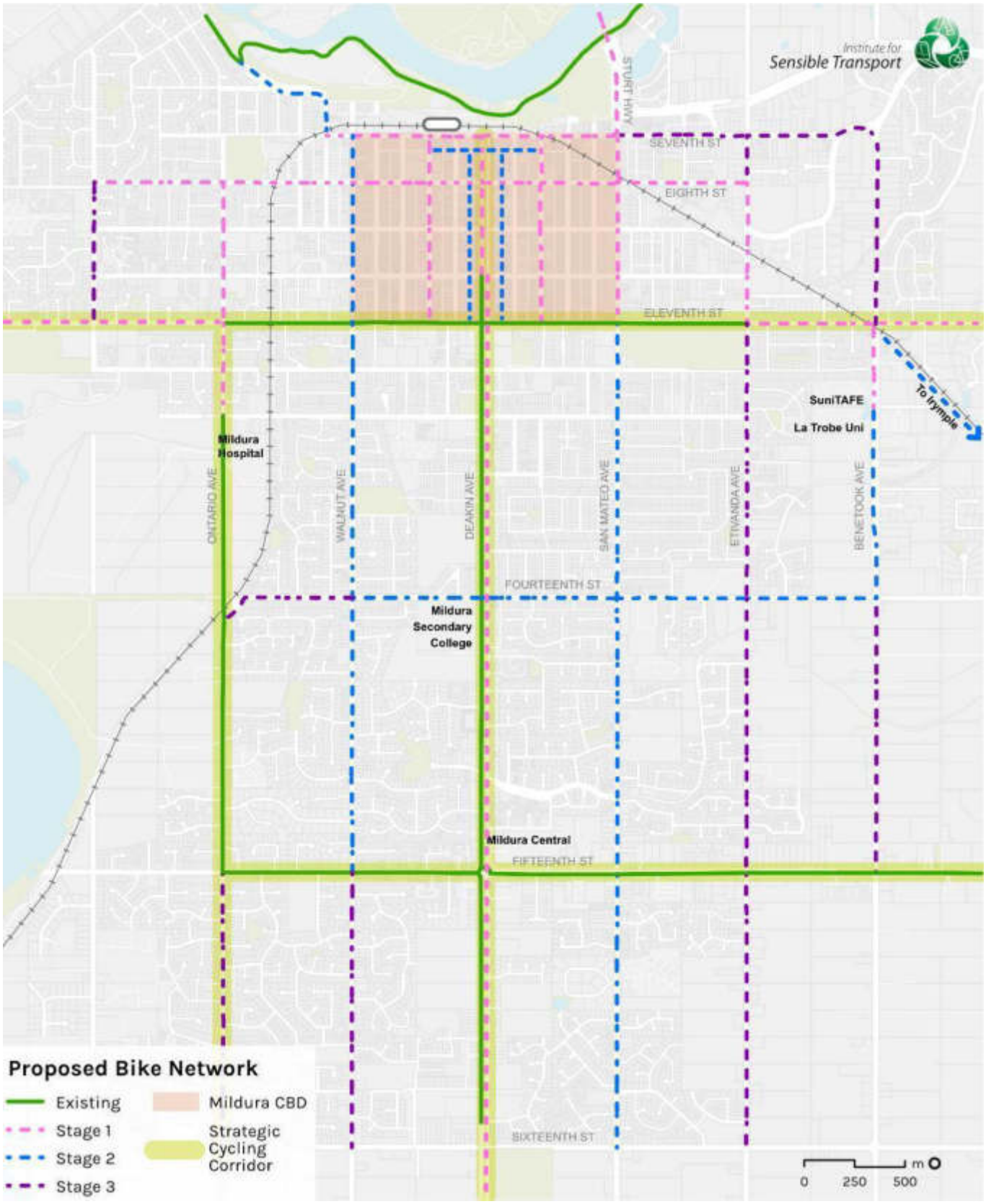


Figure 30 Existing and proposed bike network

5.6 Recommended actions

The following set of recommended actions are designed to maximise Mildura's potential to become a great cycling city and serve to support its ambition to be Victoria's most liveable regional city.

5.6.1 Protected bike lanes

The construction of protected bike lanes is recommended on key corridors leading to and through the CBD. Analysis has found that most of these routes can be provided within the existing carriageway – with minimal impacts to on-street parking and travel lanes. Using low-cost solutions, such as the one shown in Box 7, these streets are to be upgraded for bike use within a short time period and at minimal cost. These streets include:

1. Eighth Street
2. Lime Avenue
3. Deakin Avenue
4. Orange Avenue

5.6.2 Shared Paths

Off-road trails provide safe and separated bike riding experiences for all ages and abilities. Mildura already has some off-road trails. It is recommended the following upgrades be constructed to improve access to the trail network, including access to the CBD from outlying suburbs. It is recommended that one-side of the street be implemented for bi-directional shared path use. Once the proposed network is complete for one side of the street, both sides of the street should be turned into shared paths. When shared paths are provided on both sides of the street, bike riding becomes even more accessible.

5.6.3 Safe path over the George Caffey Bridge

The existing path over the George Caffey Bridge is currently unsafe for most people to consider using it to cross between NSW and Mildura by foot or by bike. Council should work with the neighbouring Wentworth Council to investigate options to advocate to the respective State governments for improvements to the bridge.

Parking protected bike lanes, Albury

Many regional towns in Victoria and NSW have been making significant strides towards making bike riding safer and more attractive. Regional towns are often the perfect size for bike riding to be convenient for most trips, and their wide roads mean that protected or kerbside lanes can be installed without taking away from other modes, which may be more controversial.

The image below shows relatively recent parking protected bike lanes in Albury, NSW. They are low-cost and more likely to attract new bike riders than a painted lane between parked cars and the travel lane.

Box 7 Parking Protected bike lanes, Albury

5.6.4 Active Laneways

Mildura has a unique network of laneways throughout the CBD. While most of these laneways currently serve as rear access points for houses and businesses, there are opportunities to increase the walking and bike riding activity on them. They have low volumes of traffic and slow speed limits already, making them easily upgradeable to safe and attractive walking and bike riding corridors. While not suitable for longer commutes, Active Laneways. can provide interesting environments for the start or end of a trip.

5.6.5 Bike parking

There is significant scope to improve bike parking in Mildura. We recommend Council undertake the following actions:

1. Conduct an audit of on-street bicycle parking opportunities within the Mildura CBD and at bus stops, identifying areas in which medium term demand may exceed existing supply, including at bus stops
2. Develop a map based online portal where businesses or members of the Mildura community are able to request additional on-street bike parking.
3. Construct additional parking based on the audit and the input from the online portal.

5.6.6 Organisational

Increasing the number of bike riding facilities, including protected bike lanes, will require further strategies and plans be developed. We recommend Council undertake the following practitioner guides:

1. Budget: Changes to Council's budget is required to accommodate the recommended changes outlined in this report as well as the recently adopted CBD Plan. An estimated $18.5 million is required for Council to construct the proposed bike network, or $1.25 million every year for the next 15 years. Opportunities to integrate the proposed works into existing maintenance and road re-sheeting is recommended to deliver cost efficiencies. Council should also investigate Grants and external funding from State and Federal Government where budget shortfalls may exist.
2. A road hierarchy framework, with clear differences in function and design requirements for bicycle facilities.
3. A *Mildura Street Design Guide* to create a consistent approach to evolving Mildura streets to better align with the city's aspirations. This can be broader than cycling infrastructure alone, with consideration across all modes of transport, as well as the role of *place* within the street design. The Design Guide should include consideration of different street types, including residential streets, commercial streets, and main roads.

Figure 31 Continuous footpath, Sydney

5.7 Intersections

Intersections are important focal points within the CBD. Intersections are both places of *movement* and *exchange*. Safe and convenient movement throughout the CBD for pedestrians is dependent on safely being able to cross the street. Several of the intersections within the CBD have previously been enhanced, to provide safer crossing opportunities. This has been achieved either through zebra crossing priority or traffic calming devices to slow cars on the approach to the intersection. However, additional opportunities have been identified to make the CBD's intersections even easier and safer to navigate and more attractive.

Figure 33 shows the recommended intersection upgrades, by intersection type, that would provide the CBD with the level of safety and convenience to make walking a first choice for travel within the CBD. The numbers shown within the circles in Figure 33 indicates the proposed staging of infrastructure delivery. The stages are: State 1 (2021–26), Stage 2 (2026-31), and Stage 3 (2031-36). These stages have been determined based on their potential to enhance the safety and attractiveness of the CBD.

5.7.1.1 Raised zebra crossings

Most intersections in Mildura are roundabouts. Designed to optimise vehicle throughput, roundabouts decrease the safety and priority of pedestrians and bike riders. Roundabouts can be retrofitted to prioritise vulnerable road users by making each crossing leg a raised zebra crossing. Figure 32 shows an example from Melbourne which also includes protected bike riding through the intersection. Compared to a typical Mildura CBD roundabout, the preferred roundabout is raised at each zebra crossing, slowing cars down and raising the profile of pedestrians. Bike riders are also provided a safe route through the roundabout while being separated from cars and pedestrians.

The recommendations in Figure 7 for a raised zebra crossing should seek to conform to the standard shown in Figure 32.

Figure 32 Raised zebra roundabout, South Melbourne

5.7.1.2 Continuous footpaths

Historically, Mildura, like most other towns, has maintained motor vehicle priority at intersections, even on side streets with high pedestrian volumes. This Strategy seeks to realign the priority, to enhance the safety and attractiveness of walking in the CBD. Figure 31 shows an example of the type of continuous footpath this Strategy will implement, in order to raise the profile of pedestrians and make it easier for people of all abilities and ages to navigate the CBD on foot. This action will slow traffic down and signal to motorists that they are crossing over the footpath – rather than pedestrians crossing the street.

This treatment will be used in the locations identified in Figure 31, across all side streets. Where a path crosses a major road though, a raised zebra crossing (also called a wombat crossing) is preferred. Continuous footpaths are preferred for side streets and laneways. Further, this design template should be applied for new developments and where street resurfacing or upgrades take place.

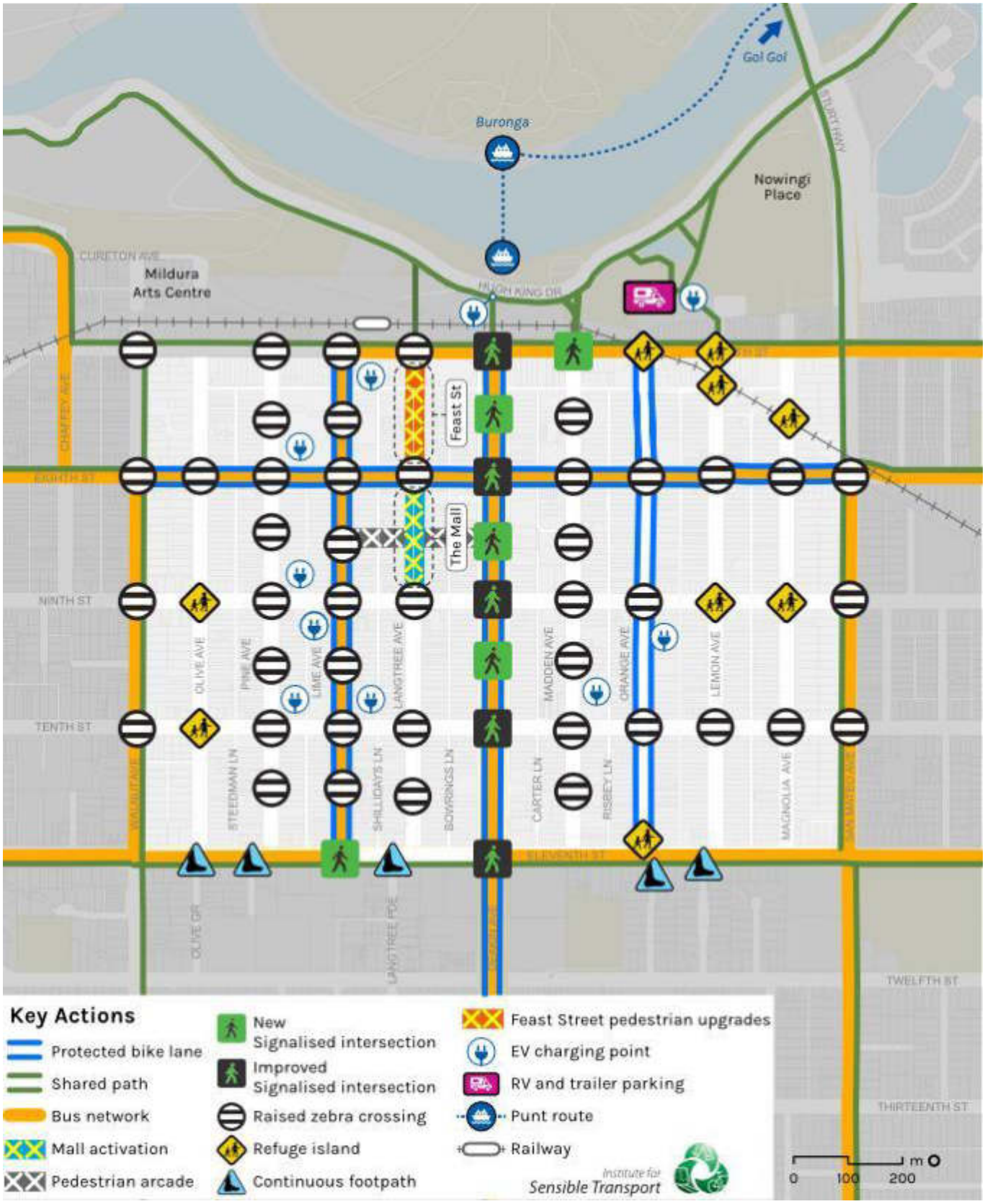


Figure 33 Proposed intersection upgrades

5.7.1.3 Raised Table

Several streets in the Mildura CBD intersect without being controlled by a roundabout or set of lights. An example is shown in Figure 34, at the intersection of Olive Avenue and Ninth Street. These intersections are particularly difficult for pedestrians to safely cross, with long crossing distances, fast car speeds, and no areas for refuge.

To enhance safety outcomes at these intersections, Council will investigate the implementation of a *raised table*, an example of which is shown in Figure 35. While further improvements could be made to the example shown in Figure 35 (e.g. zebra crossings, separate bike infrastructure, etc), it shows how a raised table can improve pedestrian amenity and road safety. Raised tables slow vehicles down and raise the roadway up to the same level as the footpath. This rebalances the street priority from 'pedestrians crossing the street' to 'cars crossing the walkway'.

Figure 34 Uncontrolled intersection at Olive Avenue and Ninth Street

Figure 35 Raised table, example
Source: NACTO

5.7.1.4 Crossing Deakin Avenue

Deakin Avenue is a large boulevard that cuts through the middle of the Mildura CBD. Its role as a national highway is evident in the current design of the road and the layout and timings of the signalised intersections. The wide lanes and long signal priority for motor vehicles encourage through traffic, including freight. Deakin Avenue's existing layout and signal timings creates significant barriers for pedestrians. The current traffic light sequencing requires pedestrians to cross over Deakin Avenue in two cycles (see Figure 36), with a long wait time of up to two minutes before being able to complete the crossing. In stakeholder engagement conducted for this Strategy, the need to improve the treatment of pedestrians on Deakin Avenue emerged as one of the most important issues for the community.

Figure 36 Pedestrians crossing Deakin Avenue

Deakin Avenue's existing layout and signal timings creates significant barriers for pedestrians.

The established preferred truck route as part of Victoria's Principal Freight Network is Benetook Avenue, not Deakin Avenue. It is therefore recommended that:

1. Council continue to work with the State Government for the pedestrian signals to be upgraded along Deakin Avenue (between Seventh and Eleventh Street) to enable safer, more convenient pedestrian crossing. It is recommended Eleventh Street be included in this change due to its high pedestrian volume, particularly for nearby schools and those accessing the visitor centre and swimming pool.
2. Council continue to work with the State Government for enhanced signage to further encourage through traffic to use the designated route along Benetook Avenue.

There are two options Council and the State Government should consider to improve the pedestrian crossing experience across Deakin Avenue.

1. An extension of the green phase for pedestrians, to enable pedestrians to safely cross the entire width of Deakin Avenue in one sequence.[3]
2. Adjust light sequence to shorter, more frequent intervals. This would still require pedestrians to cross in two cycles but with reduced mid-road waiting time. Due to the long distance to walk over Deakin Avenue, increasing the green time for crossing over Deakin Avenue is still likely to be a challenge for some groups, particularly elderly people and people with a disability.

We recommend the latter option be implemented, although, either would be a significant improvement.

[3] Analysis has also found that reconfiguring the traffic signal timings to improve pedestrian crossing times would not negatively impact travel times for motorists. The low traffic volumes along Deakin Avenue during regular network operations leaves significant room to reduce green times without generating congestion.

6. Cars and car parking

A core theme of the *CBD Plan* is the need to diversify transport options, as part of Mildura's transition to a healthier, more sustainable and vibrant CBD. Creating a more people focused CBD will require car use to be better managed, to minimise the negative impact of unnecessary motor vehicle use. While cars will continue to play a major mobility function in Mildura, there are important opportunities to better manage their use.

6.1 Shifting freight traffic away from CBD

Excessive freight traffic on Deakin Avenue diminishes the quality of public realm and reduces business viability. Additionally, through traffic along Deakin Avenue creates a dangerous and unpleasant barrier for pedestrians, dividing the CBD. While Benetook Avenue has been designated as the preferred through traffic route, the data suggests that significant numbers of through vehicles continue to use Deakin Avenue.

The high levels of existing freight use on Benetook Avenue suggest that existing road layouts are sufficient and appropriate for freight, including B-Double, use. Our data analysis, and on-site observations, instead identifies excessive freight priority in the design of Deakin Avenue as a reason many truck drivers continue to prefer Deakin over Benetook. A more effective suite of actions that begin to reprioritise Deakin Avenue as a destination and key CBD area will also decrease the attractiveness of Deakin for freight (while still providing access for CBD shops and businesses to receive freight deliveries.

Actions identified elsewhere in this report already include:

- Lowering the speed limit along Deakin Avenue within the CBD area.
- Increasing traffic light timings for streets that cross over Deakin Avenue.
- Reducing the number of travel lanes to provide wider footpaths, protected bike lanes, trees and shade, and street furniture.

These actions will improve the vibrancy of Deakin Avenue as a destination, improve access to the CBD for other modes of transport while at the same time discouraging freight use by making it less attractive.

Additional data and discussion on this issue is located in Section 3.4.2 of Appendix 1, and Section 4.2 of Appendix 2.

6.1.1 Proposed actions

1. Implement the proposed actions to make Deakin Avenue more attractive as a destination, including lowering speed limit, increasing cross-street traffic timings, and reducing travel lanes to make Deakin *less attractive* for freight.
2. Advocate to Regional Roads Victoria to upgrade Benetook Avenue to improve freight and truck use, including duplication and grade separating the level crossing.

6.2 Safer speeds

Setting safe speed limits within Mildura is key to ensuring it becomes an even more vibrant, safer and pedestrian-friendly city. Figure 38 illustrates the chance of survival when a pedestrian is hit by a vehicle travelling at different speeds. When a pedestrian is hit by a car travelling at 50km/h, they only have a 1.5 in 10 chance of surviving, compared to a 5 in 10 survival rate at 40km/h. When travelling at 30km/h, the chance of survival is dramatically increased, to 9 in 10. Safer speeds also reduce the chance of a collision occurring, and helps to make it easier for pedestrians to judge when it is safe to cross. This is especially important for Mildura, with an ageing population, as older people are disproportionately affected by crashes.

Introducing a default speed of 30km/h within the CBD, 20km/h on Active Laneways and Hugh King Drive, and 10km/h on Destination Laneways. Design elements should be included to bring the design of the street down to the posted speed limit. Figure 39 shows the map of proposed speed limits within the Mildura CBD and surrounding areas. Refer to Figure 21 of Appendix 1 for current speed limits.

The United Nations recent Road Safety week[4] (17 – 21 May 2021) highlighted 30km/h speed limits in built-up areas as an important step to improving road safety.

Recent research[5] by Australian academics highlights both the improvements to safety and road network performance, but also how it supports more people-friendly areas. Figure 37 shows five common myths and the facts behind each one.

Figure 37 Myth-busting 30km/h

Source: Matthew Mclaughlin

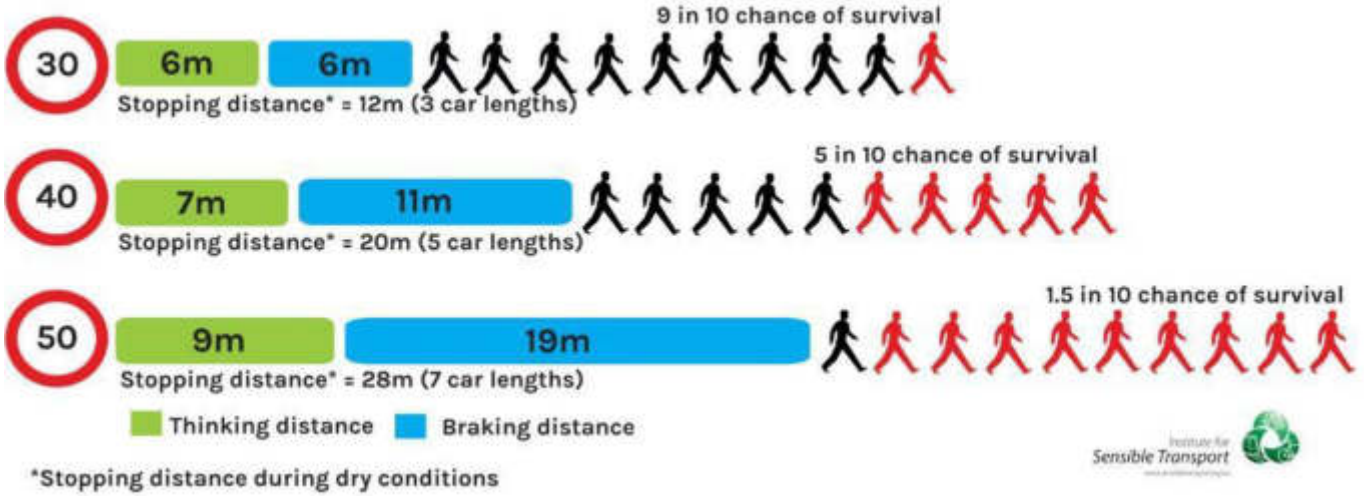


Figure 38 Changes of survival for different vehicle speeds

Source: World Health Organisation

[4] https://www.unroadsafetyweek.org/en/home

[5] https://theconversation.com/busted-5-myths-about-30km-h-speed-limits-in-australia-160547

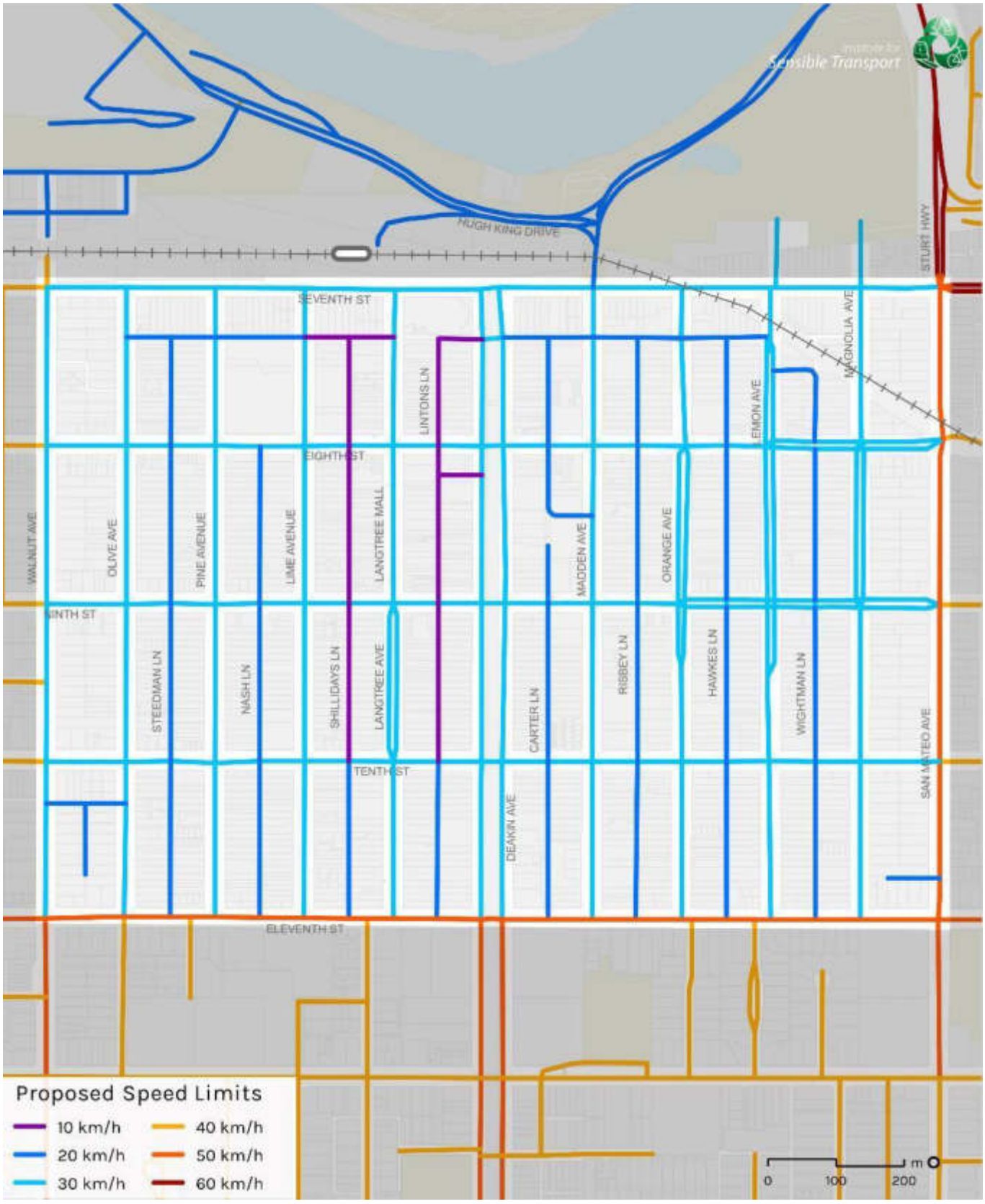


Figure 39 Proposed Speed Limits

Nb. Deakin Ave, Seventh St (between Deakin Ave and Chaffey Bridge), and Walnut Ave require further investigation

6.2.1 Freight routes

Mildura is an important site for freight movements, both in terms of the region's agricultural sector and as a key interstate freight route, carrying produce and goods between the major cities. The primary route – A20 – runs through the middle of the CBD, along Deakin Avenue before turning east to head across the George Chaffey Bridge. Mildura has a long-running alternative freight route, via Benetook Avenue. Analysis of traffic volumes shows that Benetook Avenue is more popular for freight, however many trucks continue to use Deakin Avenue, likely due to the more convenient driving conditions.

Council should continue working with Regional Roads Victoria and Freight Victoria to reduce the amount of unnecessary freight movements along Deakin Avenue. This should include duplicating Benetook Avenue as well as downgrading Deakin Avenue through lower speed limits and greater priority for pedestrian crossing times at intersections within the CBD.

Council should work with RRV and Freight Victoria to identify actions that can be implemented immediately, without waiting for infrastructure upgrades along Benetook Avenue.

6.3 Car parking

Car parking supply has a profound influence over transport mode choice, housing and development costs, as well as the quality of public space. As identified in the *Policy and Data Analysis Report* (Appendix 1), Mildura has very high levels of car parking, on a per capita/per job basis. There are approximately 5,730 publicly available parking bays in the CBD. Of those, 3,459 are on-street and 2,048 are off-street. This does not include private off-street parking used by employees. Our analysis found that while some areas close to the core of the CBD had high occupancy, a large volume of available spaces could be found the next street over.

The Municipal Strategic Statement for Transport and Infrastructure highlights Council's objectives for car parking, stating: *''Recent studies have indicated a need to address issues such as car parking provision and location... these issues have significant implications for the future land use and development pattern of the municipality.''*

Summary of facts related to car parking

- Cars sit idle for 95% of the time
- Historically, car parking policies have shaped cities and influenced transport behaviour
- On- and off-street parking can account for 50% of all land use in a city
- Car parking adds $30,000 - $122,500 to the price of a residential dwelling in multi dwelling developments
- Up to 30% of all CBD congestion can be caused by people seeking no-fee kerbside parking space.

Box 8 Car parking facts

Mildura Rural City Council has identified a desire to ensure all future development contains all potential parking needs within each site, through the direction identified in the Planning Scheme and other documents. Box 9 provides important information on parking policy in Mildura.

Mildura Planning Scheme DDO 1

Some of the key parking objectives sought to be achieved in the DDO for the Mildura CBD include:

- *'To provide incentives for developers to include community benefits in their designs so as to offset car parking requirements.*
- *To achieve a high standard of shopper and pedestrian amenity in the CBD area with respect to accessibility, heritage considerations; streetscape, pedestrian linkages, lighting and personal security.*
- *To provide certainty for developers on options for the alternate provision of parking.*

Box 9 Mildura's Planning Scheme on parking

6.3.1 Better management of car parking assets

Car parking, both on-street and off-street, constitute a significant land use in the Mildura CBD. Our analysis found over 2,048 off-street parking bays and almost 3,500 on-street parking bays within the CBD. While some areas within the centre of the CBD have high levels of occupancy, most other parking areas usually remain available, even at peak times. Figure 40 shows the parking occupancy of the Mildura CBD (pre-COVID).

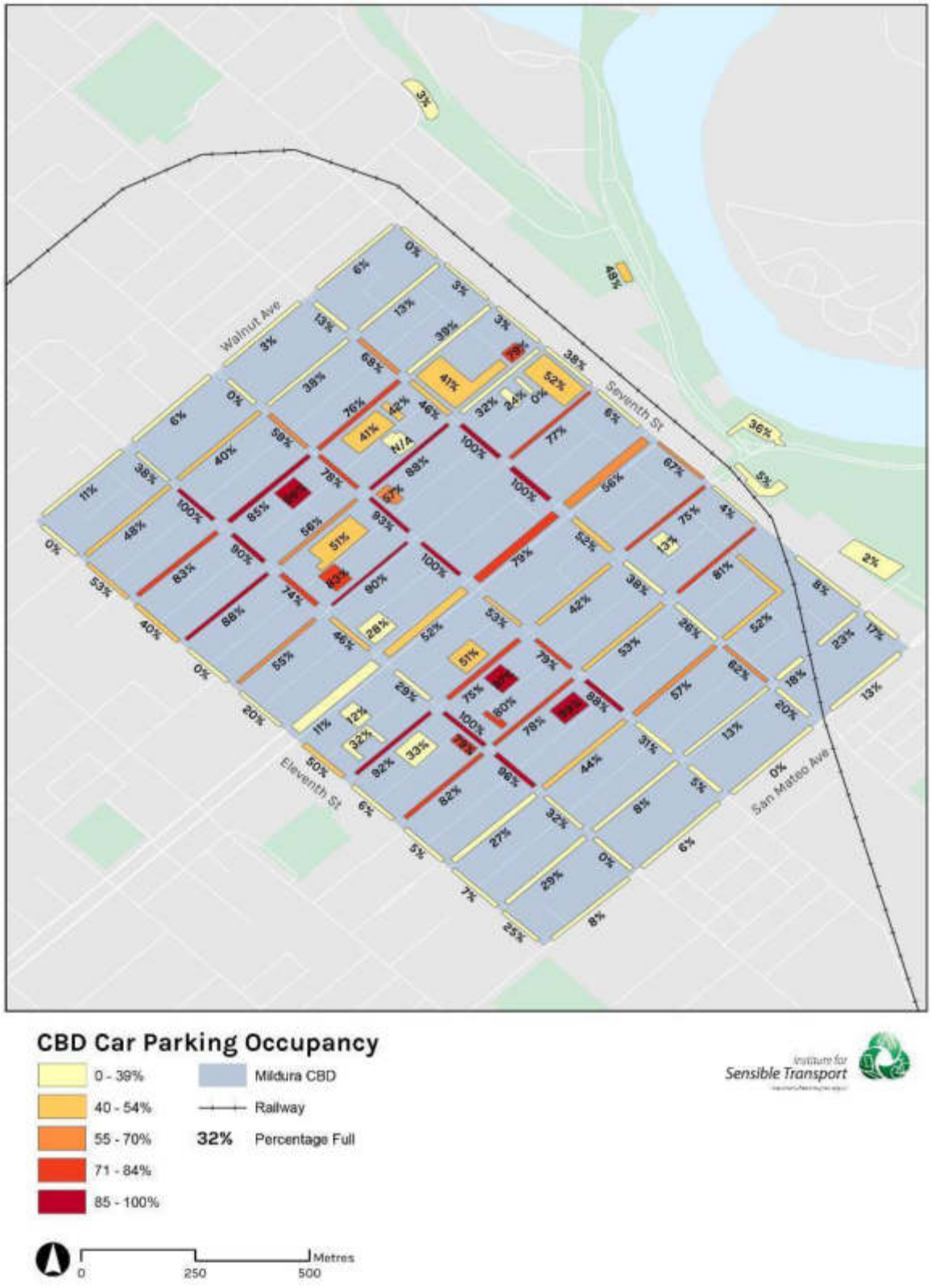


Figure 40 Parking occupancy in Mildura CBD

Nb. This map does not include the secure parking lot underneath First Choice Liquor on Pine Avenue and Eighth Street. Recent analysis found that there are approximately 45 spaces and only 5 spaces occupied.

Freely available parking, close to their destination, is often highly valued by the community and local businesses. Providing new car parking can be expensive, however, there are many actions Council can undertake to maximise the use of existing car parking assets at much lower cost.

Actions include encouraging people who can use other modes to do so via improved walking, cycle, and public transport infrastructure and services, making available parking easier to find, or increasing turn-over in popular parking locations. Partnered with regular data analysis of car parking, these other measures can delay or completely negate the need for building more parking.

To ensure Council and the community are clear on the sequence of actions to improve parking *before* considering new parking lots, Council should implement a car parking decision-making framework. The next section will outline this framework, followed by the key actions within each step.

6.3.1.1 Parking Overstay Detection System (PODS)

Parking Overstay Detection Systems (PODS) are small in-ground sensors linked to a central computer system that provides Council with precise data on the time spent by each car in a PODS equipped parking space. It is used to increase parking enforcement and improve parking compliance. It is also useful for providing Council with detailed occupancy and length of stay data for high-demand areas.

6.3.1.2 Real time parking availability information

PODS can be integrated with real-time parking information. This can improve the efficiency of existing parking supply by directing drivers to available parking spaces. This reduces congestion caused by cars cruising for an available space and provides the community with an accurate and up-to-date understanding of car parking space occupancy in the area.

Other cities have integrated real-time parking information into apps and websites, improving the parking experience. Figure 41 shows an example from Manly, in the north of Sydney.

To begin, we recommend Council implement signage in the following areas within the Mildura CBD:

- All Council off-street car parks in the Mildura CBD
- Pine and Lime Avenues (Eleventh to Seventh Street)
- Langtree Avenue (Eleventh to Ninth Streets)
- Seventh, Eighth, Ninth, and Tenth Streets (Deakin to Walnut Avenues)

It is recommended that these be installed as part of street upgrade programs, to minimise costs by sequencing works, and to pair the improvements to parking with other changes in the area, such as installation of protected bike lanes.

Figure 41 Real-time signage (Manly NSW)

Source: Northern Beaches Council

6.3.1.3 Paid parking vs enforcement

Many Councils manage their on- and off-street parking assets through a mixture of paid parking and enforcement of restrictions. Both options have been used by Councils to improve parking occupancy in high-demand areas; they have also been used to generate revenue to off-set parking management costs and to provide a new revenue stream for funding other Council operations.

Paid parking in particular is often seen as politically sensitive by local community groups and traders. Data from other Victorian Councils also suggests that the revenue generated via paid parking is often much less than that generated through enforcement of restrictions.

It is recommended that Council pursue a program of installing PODs, providing improved parking occupancy information to drivers through real-time signage and mobile apps, and increased enforcement of current restrictions.

6.3.2 At-grade parking lots

Mildura has approximately 2,048 at-grade parking lots within the CBD, that use 6.7 hectares of land. They are a mix of private lots, either standalone or servicing a particular store, and Council owned lots. The ability to access off-street parking is highly valued by local residents and visitors to the CBD.

These car parks also pose several challenges for the future direction of the CBD: They are heat attractors, contributing to the urban heat-island effect; and they reduce the ability to provide other important uses within the area, such as housing or open space. Community feedback as part of this project (Appendix 2) highlighted the need to improve safety and amenity at off-street parking lots.

There are several options where most or all of the existing parking can be retained while providing for more residential, commercial, and open space within the CBD. This includes 'sleaving' the parking, providing housing, or open space on top of the parking.

6.3.2.1 Sleeve the parking

Sleaving a car park involves hiding the car park from the street frontage with shop fronts. This creates an active street frontage, making the street a more vibrant space, while maintaining most or all of the existing parking. Figure 42 shows an example from Albury, NSW, where a multi-deck car park was constructed, and a mix of shop frontages provided on the ground floor.

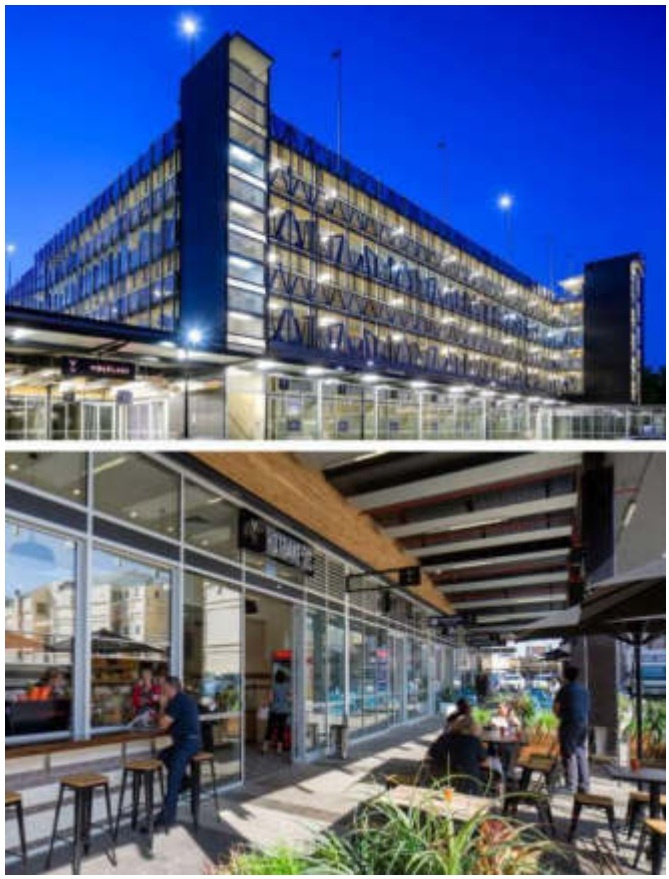


Figure 42 Multi-deck car park sleeved by shops

Source: VoltLane.com.au

Figure 43 from Warrnambool shows at-grade parking sleeved by shops. Multiple pedestrian walkways are also evident in the image providing a fine-grain permeable experience. Also seen are the consistent high-quality raised zebra crossing roundabouts and mid-block raised zebra crossings.

Figure 43 At-grade parking hidden by shops, Warrnambool

6.3.2.2 Adaptive Reuse

While demand for car parking is likely to continue in the short to medium term, this demand is likely to decline over time as cities diversify their transport mix and adopt new transport technology. This trend is likely to make many of these parking structures obsolete. Many parking structures built today are being designed in a way to ensure they can be adapted to other uses without demolishing the structure. This allows for a fast conversion to housing, offices, or other uses.

6.3.2.3 Housing

Victorian councils are beginning to explore the option to increase supply of housing through the air-rights of their at-grade car parks. The City of Port Phillip has recently supported the development of 27 units above a publicly accessible 22 space parking lot, as shown in Figure 44.

Figure 44 Social housing developed on a car park

Source: Housing First

Council should investigate the options to deliver affordable long-term rental housing above Council parking lots. Lots at Ninth Street and Orange Avenue, Madden Avenue (next to the Council offices), and Pine Avenue are recommended for further investigation. Providing increased housing stock within the CBD would improve the passive surveillance of CBD streets, increase land efficiency, and provide a greater diversity of affordable housing stock.

6.3.3 Residential parking permits

Residential parking permits are special rights to on-street parking space issued to residents. They are intended to protect the amenity for existing residents. They vary widely by specific local governments. In some contexts, the rights to on-street permits are limited to older housing built before a certain time. Resident permit systems are introduced to manage on-street parking, reducing commuter parking and limiting spill over from new developments. They are an option for limiting commuter use of on-street parking and future residents in new developments. It is a first step in introducing additional parking management techniques to areas.

City of Sydney and City of Adelaide have policies that only issue residential permits to homes without off-street parking. Canberra has no residential permit scheme, which avoids giving the sense of a right to public on-street parking. This comes with issues of managing commuters. Many inner-Melbourne councils restrict newer apartment buildings (built after a certain date) from accessing permit schemes. This can lead to a two-tier system where those who can afford to live in a detached house are granted parking rights while those who cannot, are not granted access.

The long-term effect of residential permits is that some residents are afforded valuable rights. Permits are normally nominally priced, with the permit fee a small fraction of equivalent on-street parking fees, or of the underlying value of the land. This can encourage low-cost car storage at the expense of streetscapes and local economies. Some research (e.g. see Mingardo et al., 2015) is critical of the amount of subsidy given to residents by residential permits, and the equity issues involved when parking is subsidised but not housing or other services. Amsterdam is now beginning to implement policy changes that increase the price of residential permits and provide financial incentives for residents who 'hand in' their permit, allowing them to purchase other mobility services (e.g., car share, public transport, etc).

As Mildura seek to move towards a residential permit parking system in areas that are experiencing on-street parking constraints, it is important to be cognisant of the challenges commonly faced by existing schemes elsewhere. A system that factors in a residents existing ability to store vehicles off-street, the real cost of providing the parking and managing the scheme, and the equity of access based on housing type and income should be considered to ensure the system is both effective and equitable. We recommend the implementation of a parking permit scheme that does the following:

- Ensures all off-street parking is used first before access to the scheme is granted.
- Permit schemes are priced to reflect the costs of providing the parking and managing the scheme.
- Provisions for low-income earners and pensioners to access discounted parking permits.

Implementing a permit parking scheme in the Mildura CBD would protect existing amenity for residents in areas where increased development is encouraged. Limiting new developments from the scheme will ensure that concerns about changes to on-street parking demand is contained. Ensuring existing residents consume their privately provided parking before being granted on-street parking permits also ensures the permit scheme is not over-subscribed while garages are used for non-car purposes. Nominal permit scheme fees will also likely provide a small barrier to misuse.

It is recommended that the existing Precinct Plan areas (p. 25) should be considered as the starting point for each permit parking zone, reproduced in Figure 45. Parking permits would only be valid within each zone. Parking permit holders should be exempt from time restrictions within their parking zone. P1 and P2 are not recommended for a residential permit scheme, due to their predominant commercial land-uses. Instead continued focus on time-based restriction are recommended. Detailed community consultation will be necessary to investigate the development of such a scheme.

Figure 45 Proposed Parking Controls

Nb. Concept plan only, detailed designs will require further analysis

6.3.4 Special Use Parking

Special use parking is parking that has particular use restrictions associated with it. The most common examples include disabled parking, loading zones, taxi ranks, bus zones, mail zones, and pram parking. Most have particular requirements for the layout of the parking bays and the preferred location of said parking within an activity centre. The amount of parking required can vary for each area and each parking use, depending on the types of business operating and the demographics of visitors. Due to these nuanced differences, Council will need to consult relevant user groups and organisations to determine the appropriate amount of each type of parking and consider universal design elements to ensure the inter-operability of different parking bays for multiple uses. However, the principals for the best locations for each use largely remain the same.

Figure 46 shows the recommended guidelines for the location of accessible parking and loading zone parking bays. While this illustrates the ideal layout for parking along each block, in reality localised needs may require different solutions to the one shown here.

6.3.4.1 Disability Parking

Disability parking is critically important for ensuring people with a disability are able to fully participate in society. Over 3,600 people living in Mildura (LGA) said they needed assistance with core activities in the last Census. This equates to approximately 7% of the Mildura population. Many other people may also require access to disability parking without needing such assistance.

Disability parking is best located in bays closest to a street intersection, in the first or last bay of a row of parking. This provides people with closer access to more destinations, allows easier access to transition from the roadway onto the footpath via DDA compliant ramps, and creates a consistent and predictable parking experience.

Time limits for disability parking may need to be longer than time limits for all-purpose parking bays. Again, the appropriate time limit is dependent on many factors, such as the types of businesses in the area and the types of activities likely to be undertaken by visitors. Engaging with visitors that have a disability and local disability groups is recommended to determine how much time people need.

6.3.4.2 Loading Zones

Loading zones are used by delivery vehicles to drop-off or pick-up goods from local businesses. They are often required throughout daytime hours. As with disability parking, many unique factors will determine the quantum and locations of loading zone parking.

Loading zones share the same preferences with disability parking. Located at the start or end of a row of parking provides more convenient transitions from the roadway to the footpath and ramps aid the porting of goods. The existence of laneways in Mildura's CBD provides improved loading capabilities compared to an on-street bay. Most businesses in Mildura are dual-fronted, with a customer entrance facing the main street while staff access is available from the laneway.

Figure 46 Guideline for special use parking (angled and parallel)

It is recommended that Council encourage loading activities to be undertaken via the CBDs laneways wherever possible. Additional loading zone parking bays on-street should be considered on a case-by-case basis and only where it can be shown that laneway loading is not possible.

6.3.4.3 Taxi Ranks

There are two taxi ranks in the CBD, located in Eighth and Ninth Street, at NE and NW end of the Mall. Taxi ranks provide added safety and predictability as to where to find a taxi, if needed, while boosting natural surveillance at night. Taxi ranks provide a convenient and dependable location for people to find a taxi, and conversely for taxis to easily find a fare. In regional centres, like Mildura, taxi ranks are likely to remain important. Mildura's existing taxi ranks are already well placed in the CBD. Council should continue to monitor the existing taxi ranks to ensure the number of spaces matches demand.

6.3.5 Trailer parking

Mildura has a relatively high proportion of vehicles carrying trailers compared to other parts of Victoria. However, limited space within the CBD has been provided to cater to this group. This limits the opportunities for people travelling to or through the CBD to carry out everyday tasks if their vehicle is equipped with their work trailer. A small amount of parking should be provided to allow people with trailers to stop and access shops and services within the CBD. This would require angled parking to be converted to parallel parking. This parking could be provided where existing parking demand is low and where the road network is best suited to accommodate longer vehicles such as vehicles with trailers.

Areas where parallel parking could be provided include:

- Lime Avenue (Seventh to Eighth Streets)
- Deakin Avenue (Seventh to Ninth Streets)
- Eighth Street (Deakin to Walnut Avenues)

6.3.6 All day employee parking

The Mildura CBD has a large proportion of all-day parking that is used for all-day parking for employees. A parking occupancy analysis found some areas of on-street parking dedicated to all-day employee parking were highly used. Demand fell away quickly from those areas, with the next street over often having a high number of available spaces. It is understood that pressure to improve access to parking in the high demand areas may be strong from parts of the community and local businesses. However, with existing available parking remaining within walking distance it is likely more prudent to improve knowledge of such existing available parking prior to looking at opportunities to increase the amount of parking.

6.3.7 Electric vehicle charging

Electric vehicles (EVs) are a rapidly growing segment of the automobile market and present substantial benefits when replacing internal combustion (ICE) vehicles. The promotion of EVs aligns with Mildura's commitment to tackling climate change and achieving its ambition to become a more sustainable regional centre. As a centre of the solar industry, a shift towards more electric vehicles helps to create a symbiotic relationship with the large investment in local solar power. The benefits of EVs are briefly identified below:

1. Reduced running costs and maintenance.
2. Improved sustainability and energy security.
3. Reduced emission and health impacts.
4. Potential to use the batteries within EVs for electricity network load balancing.

6.3.8 Public vehicle charging

Public charging facilities are one of the most important steps government can take to lower barriers to the adoption of EVs. A 2019 NRMA survey that found 89% of motorists want fast charging adjacent to motorways and 94% would be more likely to use an EV for a road trip if a charging network was in place. Moreover, the presence of EV charging can increase the time and money people spend in commercial districts, which can have a positive economic outcome for nearby shops/services. Mildura, in partnership with the NRMA has begun to provide fast charging facilities in Council owned car parks within the CBD, as shown in Figure 47.

Figure 47 Council has installed fast chargers in the CBD

Mildura already has more EV charging opportunities available to the public than most Australian towns. The chargers operated by Council include: 2 x 50kW DC Fast Chargers in Orange Avenue Car Park (Figure 47). Additional chargers are recommended to improve charging access and visibility within the CBD. An on-street charger out the front of the RACV store on Lime Avenue is recommended as an ideal location. Partnership between Council and RACV would ensure the new charger is adequately promoted and utilised. Other sites, including future RV rest stops should be considered as the popularity of EVs increases within the community and for visitors to Mildura.

These chargers would appear sufficient for the size of the current EV fleet, particularly when noting that around 94% of EV charging occurs at home, rather than at a public site. Given that almost all housing stock in the Mildura region includes off street parking, there is no need to roll out on-street charging facilities for residents, as is the case in many European cities.

6.3.9 Advocacy actions

Evidence from countries where EVs form a larger proportion of new vehicles often have a number of financial and policy incentives that increase the value proposition for EVs over ICE vehicles. These include tax waivers, and other direct financial incentives aimed at encouraging lower emission vehicles. Reduced or waived vehicle registration is another mechanism that can be used to boost the attractiveness of EV ownership. These options are generally not within the control of local government. It is recommended that Mildura, possibly in conjunction with other councils, advocate to the state and federal government to introduce financial incentives to help lower the purchase price of EVs, as this is one of the main barriers to adoption.

1. Engage with the commercial charging industry to explore opportunities to expand market led expansions of the charging network.
2. Avoid Council provided free charging. Offering free charging distorts the market, and makes it more difficult to introduce a fee in the future. If Council were to provide free charging, they would need to be prepared to *'own the market'*, as it makes it less attractive for commercial providers to enter the market.
3. Continue to monitor the market and adjust charging infrastructure development plans in response to changes in demand.
4. Mildura City Council, possibly in conjunction with other councils, advocate to the state and federal government to introduce financial incentives to help lower the purchase price of EVs, as this is one of the main barriers to adoption.

7. Public transport

7.1 Rail

Mildura is the largest regional town in Victoria that does not have passenger railway services. Reinstating passenger rail would improve access to employment, essential services, tourism, and education opportunities. Doing so would bring economic, social, and environmental benefits to Mildura and the north-west region of Victoria. Council should continue their advocacy to State Government for the reinstatement of railway services as part of other key railway track upgrades, including the Murray-Darling Basin Railway Project.

7.2 Bus

The Mildura area has a bus network comprising 14 bus routes. Census analysis tells us that bus patronage is low, predominately serving those without alternative means of transport. The existing bus network, while providing relatively good coverage, has many circuitous routes that make bus journeys slower than they need to be. This section focuses on the actions required to increase bus patronage in Mildura while improving access to bus services and faster journey times.

7.2.1 Network coverage

Bus coverage across Mildura area is relatively good. However, existing bus usage is mostly confined to those who are in low-income groups, the elderly, people with a disability, and students. The wider area has a population of 33,500, with 84% living within 200 metres of a bus route. This indicates that Mildura has a comprehensive bus network, which places almost all residents within walking distance of a bus route.

84% of Mildura's population live within 200m of a bus route. A refresh of the bus network could increase this to 93%.

7.3 Frequency

There are many routes in Mildura's bus network with low frequency. Seven of Mildura's 14 urban bus routes could be classed as 'limited' and have only two or three services per day.

From this perspective, there is significant scope to increase bus frequency, expanding the percentage of the population covered by a quality bus service.

7.3.1 Bus Routes

Mildura's bus network is a legacy system that has remain relatively unchanged for decades. Figure 48 illustrates Mildura's existing local bus network. There are currently 14 local bus routes which cross the suburb of Mildura.

The existing bus services currently do not provide access to Mildura's tertiary education precinct. This is a significant missed opportunity for providing students, the group most likely to use public transport, from accessing the TAFE or University by bus.

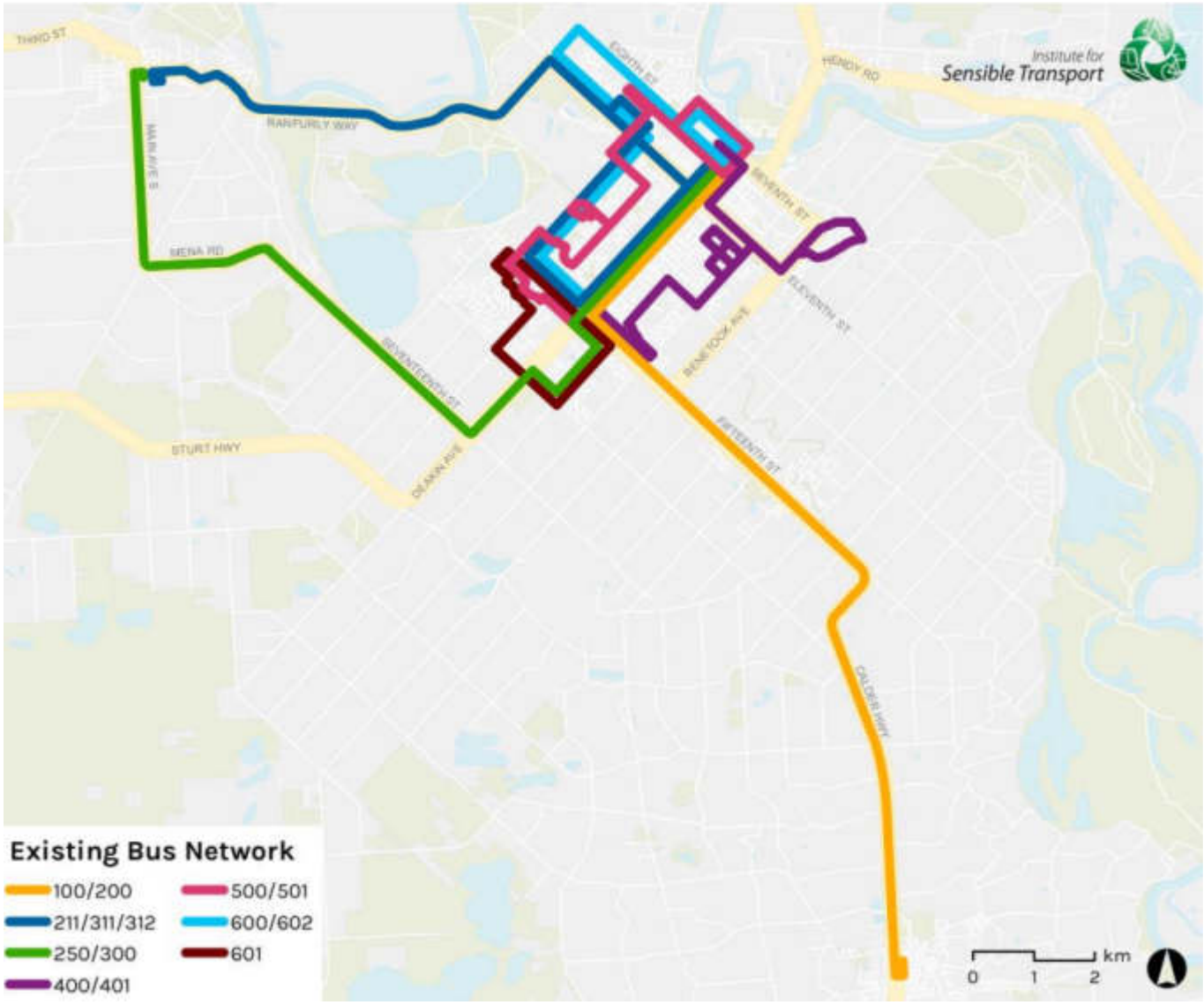


Figure 48 Existing bus network

7.3.2 Refreshing the bus network

There is a significant opportunity to refresh the bus network to better reflect contemporary travel patterns and demands. We have developed a concept plan for what this updated bus network could look like. It is reconfigured in a way that simplifies routes, increases coverage, and reduces journey times. It also connects important destinations, such as the tertiary education precinct.

This proposed network as shown in Figure 49 is a conceptual plan that was developed to illustrate the changes that could occur without increasing total route kilometres compared to the existing services nor by requiring more buses or staff. In this sense, the proposed bus network is revenue neutral.

Further consultation with key community groups and PTV will be required before finalising the preferred proposed routes for Council to advocate for.

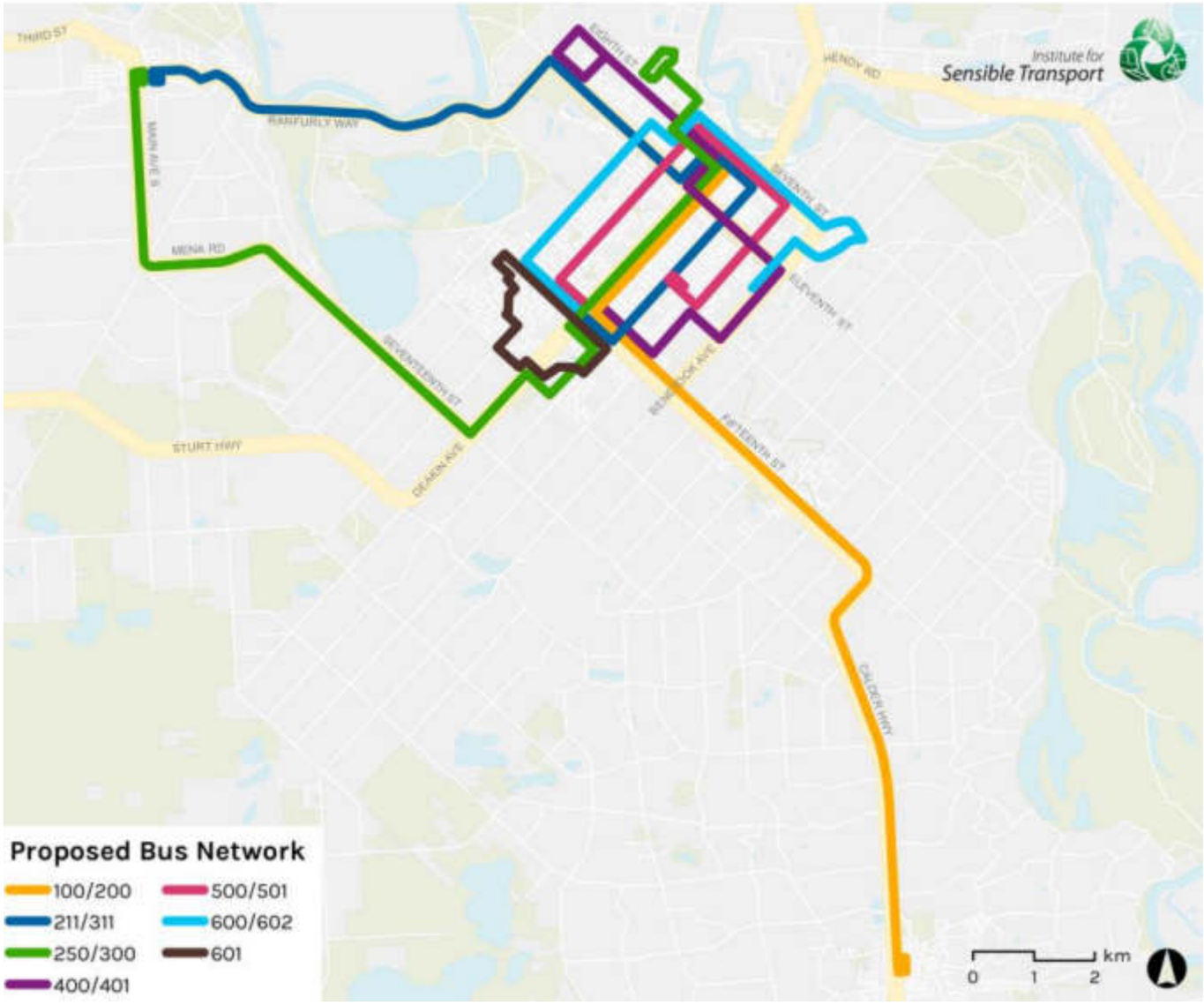


Figure 49 Proposed bus network

Figure 50 examines the coverage of the existing bus network. As of the 2016 Census, the suburb of Mildura has a total of 15,063 households with a population of 33,583. Currently the bus network is within a comfortable walking distance of up to 12,647 households and 28,123 people, which is approximately 84% of the suburb of Mildura.

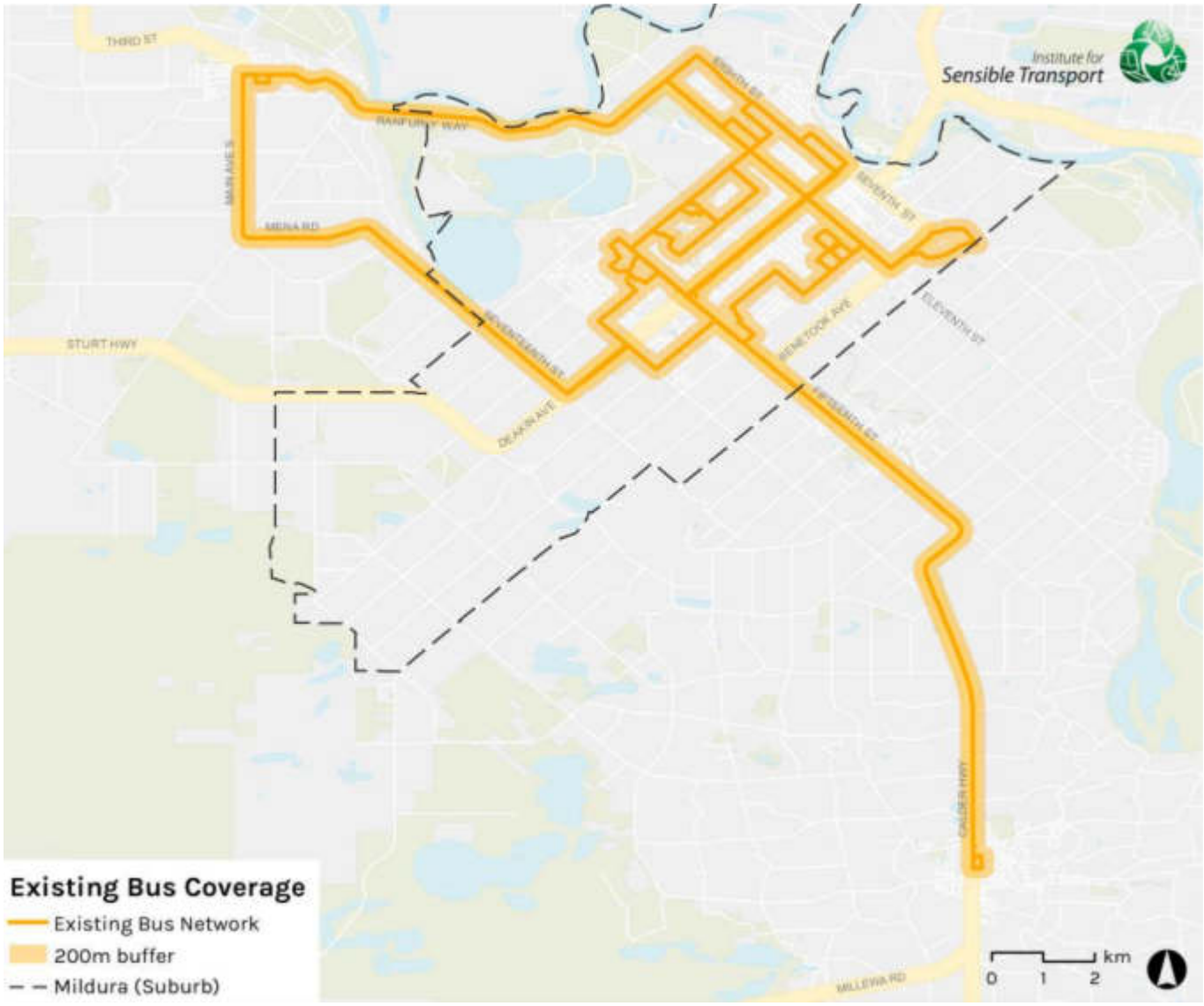


Figure 50 Existing bus coverage

Figure 51 examines the coverage of the proposed bus network. By spreading out the route, the proposed coverage can reach an additional 1,332 households and 2,938 more local residents who live in the suburb of Mildura, Table 2.

The refreshed bus routes also improve access to employment areas that were previously inaccessible. The biggest improvement in access is providing two bus routes that connect with the TAFE and University, previously unreachable by bus.

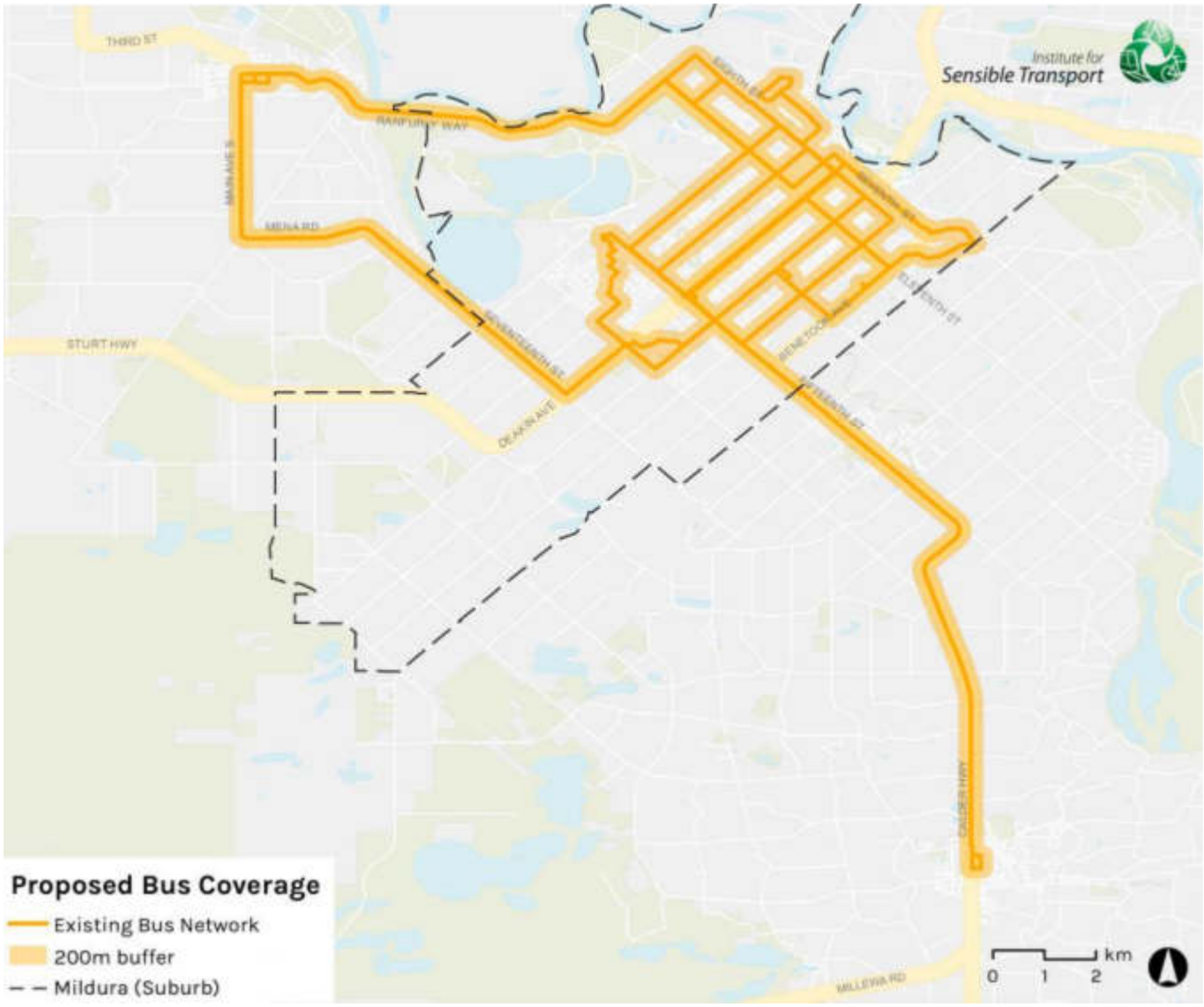


Figure 51 Proposed bus coverage

Table 2 Coverage comparison - existing and proposed bus networks

Mildura (Suburb)	Households	%	Population	%
Total	15,086	100%	33,583	100%
Existing coverage	12,647	84%	28,123	84%
Proposed coverage	13,979	93%	31,061	92%
Change	1,332	+10.53%	2,938	+10.45%

7.3.3 Accessibility

Implementation of any changes to improve accessibility of the bus network should be done in compliance with the *Disability Discrimination Act 1992*, the *Disability Standards for Accessible Public Transport 2002*, and the Commonwealth Department of Infrastructure, Transport, Regional Development and Communications guidelines for developing accessible public transport. It is especially important to place the Department's guiding principles at the fore in any reform or improvement programme (Department of Infrastructure Transport Regional Development and Communications, 2020):

1. People with a disability have a right to access public transport.
2. Accessibility is a service, not an exercise in compliance.
3. Solutions should meet the service needs of all stakeholders and be developed through co-design.

7.3.4 Electric Buses

Changing the bus fleet to electric is an important element in reducing transport emissions and improving air quality. The Victorian Government has recently started trials of electric buses in Metropolitan Melbourne before considering more broader bus fleet conversions. They have also announced that all new buses will be electric by 2025.

Mildura is uniquely placed to showcase the value of using electric buses. With some of the largest solar generation sites in the country nearby, it offers the opportunity to match electric transport with zero-emission power generation. Council should advocate to the State Government to convert the fleet as part of broader bus network reform in Mildura.

7.3.5 Bike racks on buses

The geographic reach of the public transport system can be greatly expanded by facilitating bikes as being part of passengers' journeys. This allows passengers to use a bike for the journey from their home to the boarding bus stop, and/or the journey from the alighting bus stop and the final destination. It is critical that bus racks should be fitted to all vehicles which service the route, providing consistency and certainty to users. Consideration in selection of routes should include turning circles, and how the added length may affect the ability of the bus to navigate the route. The implementation of bike racks on buses is an initiative that would fall under the responsibility of the bus operator and PTV, rather than Council.

In Melbourne, trials of bus racks have been difficult to assess due to poor usage data collection. Automatic digital counters could be fitted to the bike racks, permitting the collection of detailed usage data, allowing rigorous evaluation. Canberra has the most well-developed program for integrating bikes and buses, with a consistent policy of providing a bike rack on the front of each bus in their fleet.

Success should not be based on the level of usage. In most jurisdictions that offer bike racks on their buses, usage is low. One of the main purposes of the racks is to offer the security to new cyclists that if circumstances arise that make it difficult to complete the trip by bike alone, they have another option. Poor weather, mechanical failure, and night-time security issues are just some of the reasons why having bike racks on buses can help boost cycling (and public transport usage). The benefit resides in the peace of mind that comes from knowing you can always put your bike on a bus if you need to.

7.4 Proposed actions

To improve the Mildura public transport network, the following actions are proposed. Many of these will be advocacy actions:

1. Continue to advocate for the return of passenger rail services to Mildura and the north-west of Victoria.
2. Advocate for a bus review based on the proposed route changes identified in this report.
3. Advocate for an updated main bus stop on Eighth Street, including improved accessibility and Real-time travel information, and toilets.
4. Advocate for all local buses, including school buses, to be converted to electric, using local solar power to power the buses.
5. All Mildura buses should be DDA compliant.
6. Bike racks to be installed on all Mildura buses.

8. Behaviour change

Programs designed to help people make smarter, more sustainable transport choices have been found to reduce car use by 5 – 15%. The following set of actions will help people transfer a portion of the many short car trips that occur every day in Mildura to more sustainable modes.

While infrastructure and smart technology can have a powerful impact on the transport decisions people make, behaviour change, and social marketing (known as 'soft infrastructure') can also be an important influence in helping people make smarter choices.

Many habits form during new life stages or after major disruptions (e.g., COVID-19). One major change is when people start a new job or move home. This provides an opportune time to encourage more sustainable modes of transport. This could be through providing a personalised travel plan during the induction phase of starting work, or for residents of a new housing development. It is during these times that people are more receptive to altering their travel patterns.

Conversely, many people choose to drive to work because car usage is in effect, subsidised by their job. This includes the provision of free parking for staff, salary sacrificed vehicles, free or discounted staff cars for executives, and car usage for work-related trips. Subsidies and incentives for car use should be reviewed and wound back where it competes with a corresponding sustainable transport incentive.

Australian travel behaviour change programs have resulted in a 5-15% reduction in car use (Rissel et al., 2010). From a Council perspective, when more staff have a direct experience travelling by foot, bicycle or public transport, they are better able to see the weakness in the current system and what needs to change to make it more attractive or compelling. For this reason actions that maximise the use of sustainable transport among Council staff should be prioritised.

8.1 A leading role for Council

As the organisation that sets the future transport ambitions for Mildura, Council is ideally placed to take a leading position to drive changes in travel habits for internal staff members. This should include setting targets in-line with those outlined in the CBD Plan (15% reduction in car use) and identifying key actions to reach those targets. This should include identifying the things that encourage car use (fringe benefit schemes) as well as those that encourage other modes of transport (bus commuter clubs, Ride2Work Day, etc). Green travel plans should form part of the induction process for all new staff. Yearly and 5-year targets should be set for active transport participation. Incentives for active travel should be provided, including gift vouchers or rewards for those that travel the most by bike each month.

8.2 Proposed actions

1. Develop and implement a *Staff Green Travel Program*, including but not limited to:
    a. Conduct annual staff travel survey to determine barriers and facilitators to more sustainable travel. This should build off earlier work conducted in this area (see *Workplace Sustainable Transport Options)*
    b. Co-contribution towards an annual bus pass or salary sacrificing for public transport.
    c. Salary sacrificing for e-bikes[6]
    d. Personalised travel plans for each staff member / business[7]
    e. A Council e-bike fleet, to enable short work trips to be done by e-bike
    f. Welcome pack for new staff members that highlight green travel options
    g. Internal car-pooling club with preferential car parking

[6] see https://www.e-stralian.com.au/; https://www.cityofsydney.nsw.gov.au/explore/getting-around/cycling/courses/workplace-cycling-courses; & https://swisse.com.au/ride-to-work-scheme

[7] https://www.sustainability.vic.gov.au/-/media/resources/documents/publications-and-research/knowledge-archive/resource-smart-government-program/archive-rs-take-action-transport.pdf?la=en

h. An updated *Work from Home Policy* for Council staff, that seeks to capitalise on the learnings from COVID-19. This should target how to maintain organisation productivity while maximising opportunities for those who wish to work from home.

2. Develop and implement a *Community Green Travel Program* once the physical infrastructure actions proposed in this Plan have begun to be implemented. The target of the program should be the local community who live within a walk or ride of key destinations within the CBD. This program should include:

   a. Rewards program for people who ride and walk, including signage for participating businesses.

   b. The development of a *Mildura Smart Mobility* branded set of accessories designed to make active transport easier to integrate into people's lifestyle, including discounted personal shopping carts (shopping jeeps), bike baskets and panniers, and umbrellas. Developing a discount with local traders is encouraged.

3. The marketing of sustainable mobility options should only occur once the actions to improve the environment for walking and cycling have been implemented. Promoting modes that currently provide low levels of service have little impact and can serve to '*put people off*' attempting to travel more sustainably in the future.

4. Incorporate a requirement for *Green Travel Plans* into the Planning Scheme for Mildura multi-unit residential developments and commercial developments.

5. Actively participate and promote existing walking and cycling events, including Walk to School Month, Ride2School Day, and Ride2Work Day. Engage with existing non-profit organisations to assist, including VicHealth, Victoria Walks, Bicycle Network, among others.

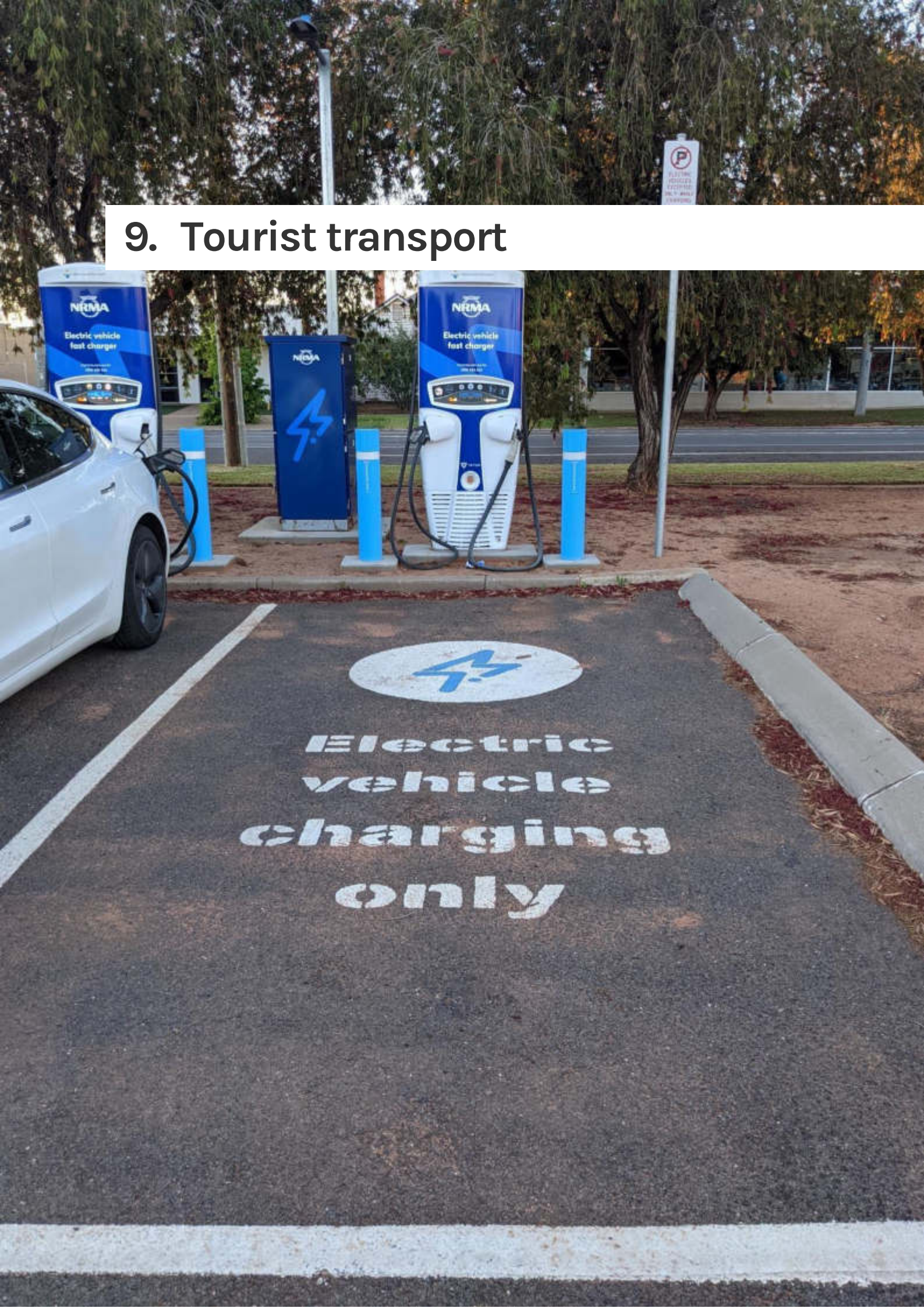
6. Celebrate Mildura with regular street festivals. Special events, run regularly during summer or annually, can be helpful in showing people new ways to use street space. Special on street events, provide opportunities for the Council and the community to trial a new road layout or space configuration, allowing for tweaks and adjustments. If popular, some of these changes may become permanent. These events can also be used to build community support for change that might not exist without seeing it work successfully beforehand.

8.2.1 Electric vehicles and charging

Electric vehicles and EV charging infrastructure is new to many residents and local businesses. Providing information, through targeted messaging, online, and in-person events will help the community better understand how to change to an EV and use the new infrastructure. The following actions are aimed at improving people's understanding and advocating to private business and other levels of Government.

1. Produce a series of engaging, accessible *fact sheets* downloadable from Council's website. This will serve to assist residents and business owners gain a better understanding of EVs. This should include a description of the models available, range, price, charging time, charging requirements, what to do if you do not have off-street parking and where to go for more technical information. These fact sheets should be updated at least annually, given the speed of development within the sector.
2. Educational information should also include a prominent statement regarding the importance of powering EVs with the use of renewable electricity, as EVs offer limited environmental benefits when charged from fossil fuels.
3. Hold annual Open Days, where Council, in conjunction with the EV community (e.g., Victorian branch of the AEVA) to showcase both Council and privately owned electric vehicles. It is suggested this be done as a wider sustainable transport 'festival', and not be limited to four wheeled vehicles (i.e., include e-bikes, e-trikes, as well as other environmentally sustainable forms of transport).
4. Prepare and promote a fact sheet for businesses wishing to install publicly available EV charging facilities on their premises.
5. Advocate to private land owners to install EV charging points in off-street parking lots.

9. Tourist transport



Tourism is a major driver of transport use within Mildura and the broader Sunraysia Region. During peak tourist periods, demand on the Mildura transport system can become intensified. This adds additional strain to Mildura's transport system, particularly car parking within the city centre. There are many actions Council could undertake to encourage tourists to use alternative modes of transport while visiting Mildura, helping people explore and experience the area in new and exciting ways, while minimising impact on the transport system. This section explores several opportunities.

9.1 Park Once Program

Mildura is also an important tourist hub for people visiting the Sunraysia region. Many of these tourists stay at caravan parks or bed and breakfasts and visit local attractions. Developing a 'park once' tourist program where guests staying in the area are provided with maps and information to help them make as many trips by foot or bike as possible will ease pressure on Mildura's transport and parking infrastructure, and also provide visitors with the ability to explore the area's unique environmental and historical attractions. This would support local businesses, through bike hire schemes and providing Cellar Door / Provedore-type opportunities for visitors to engage with local produce.

9.2 RV Friendly Site

Grey Nomads are one of the most important tourist markets in Australia, including for Mildura. Many arrive with caravans or RVs, either for a half or full day stop over. Providing quality facilities for visitors within proximity to the CBD will increase the tourist potential for people to visit the Mildura CBD. We have identified the car park behind Caltex on Seventh Street as an ideal location for an RV rest site. Infrastructure supporting the site should be provided as well as improved pedestrian connections from the car park to the CBD. Supporting infrastructure includes a dump site, potable water, public toilets, electrical points, EV charging, among others.

9.3 The Mildura – Murray Punt

Mildura, like many towns situated on the Murray River, has a long and rich history of water transport services. Many of these historic steamer paddle services continue today as popular tourist activities. However, many of these services are no longer based on providing transport services. At present, travelling between popular destinations on either side of the Murray River requires the use of a car. While crossing the River via the Sturt Highway bridge is possible on foot, in reality it is a narrow path next to a busy road with a high volume of large trucks; it feels highly exposed and unsafe for the majority of people. Even with improved walking or cycling access over the bridge, distances to some destinations are too far to consider using other modes of transport.

Figure 52 shows the Westgate Punt that provides services across the Yarra River, connecting Spotswood and Port Melbourne. It operates on a timetabled schedule during the week and on-demand on the weekend. It predominantly supports pedestrians and bike riders commuting between the inner western suburbs and the Port Melbourne industrial precinct. Conversely, Mildura could run such services in reverse: on-demand during the week during off-season and via a time-tabled service during weekends and peak tourist times (such as school holiday periods).

Figure 52 The Westgate Punt
Source: Paul G Dodd Photography

A Punt service could provide a novel opportunity to improve access between the Mildura CBD and several key destinations situated along or close to the Murray River. The service could operate, at least initially, during peak holiday periods. Hourly services during daylight hours would provide a reliable and attractive alternative to driving between these destinations. Stops for the Punt could include:

- CBD / Riverfront
- Riverside / Buronga Caravan Parks
- The Marina
- Mildura Racecourse / Golf Club (Weekends / Special events)
- Gol Gol Hotel
- Trentham Estate Winery (Weekends / Special events)

Such a system could be provided by Council, in partnership with local businesses. Funding could be delivered through sponsorship and / or via a gold coin donation.

Figure 53 shows a conceptual plan for what the Mildura Punt Service could look like. Note that it is intended as indicative only and further consultation would be required to determine any finalised route and stops.

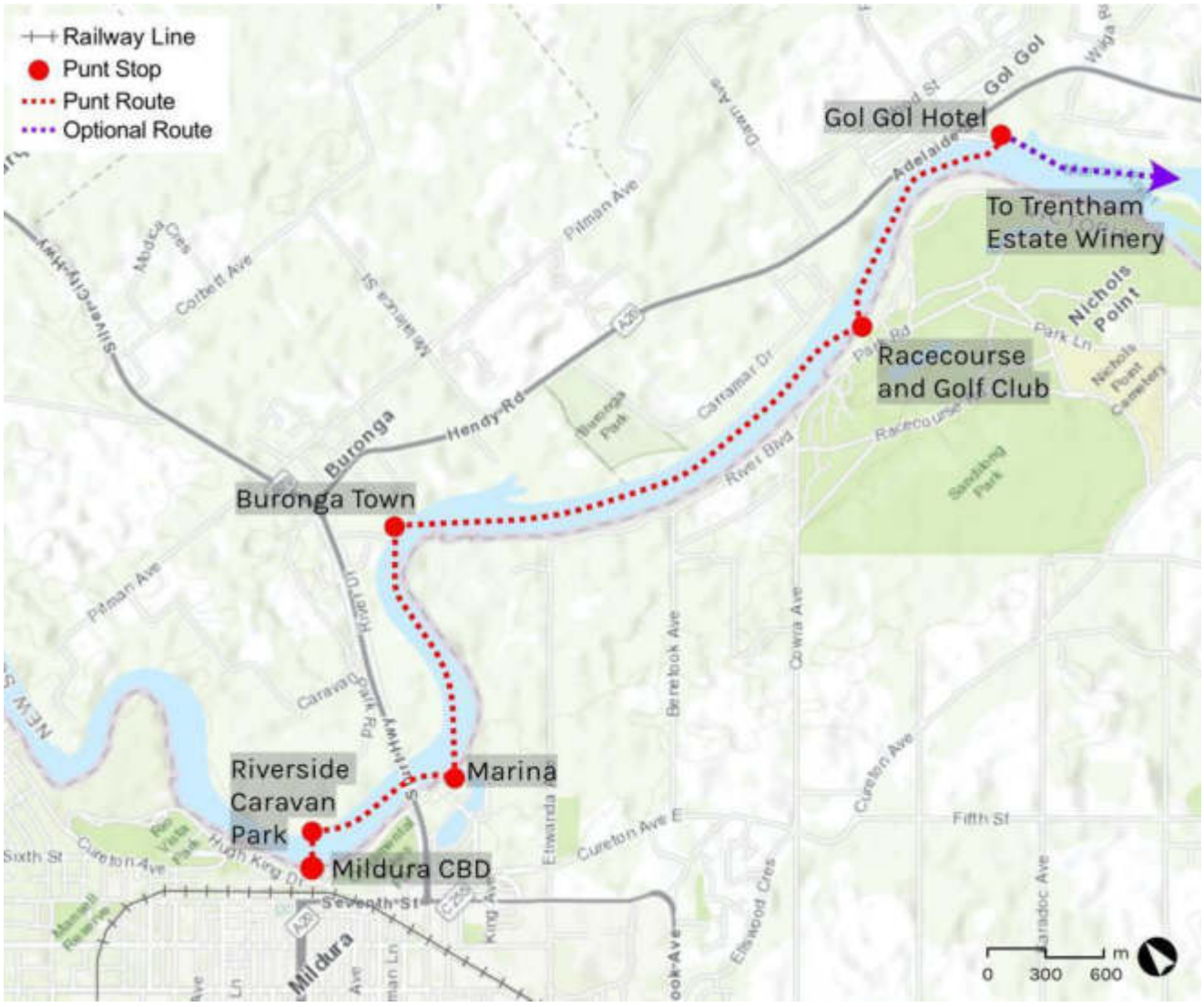


Figure 53 Mildura Punt - Proposed Stops

9.4 Ride the bus campaign

Mildura's existing bus services are not well used by the wider population. This is likely due to a mixture of factors, including poor service offerings and a cultural preference for private vehicles. While improving the bus network should be a priority, additional work should be considered to promote bus usage. This could include a campaign like the one PTV ran for Melbourne in 2017, shown in Figure 54.

Aspects such a campaign could focus on, include:

- Highlighting competitive trip time and convenience
- Friendliness of bus drivers and safety riding the bus
- Economic savings compared to driving
- Provides access to important destination

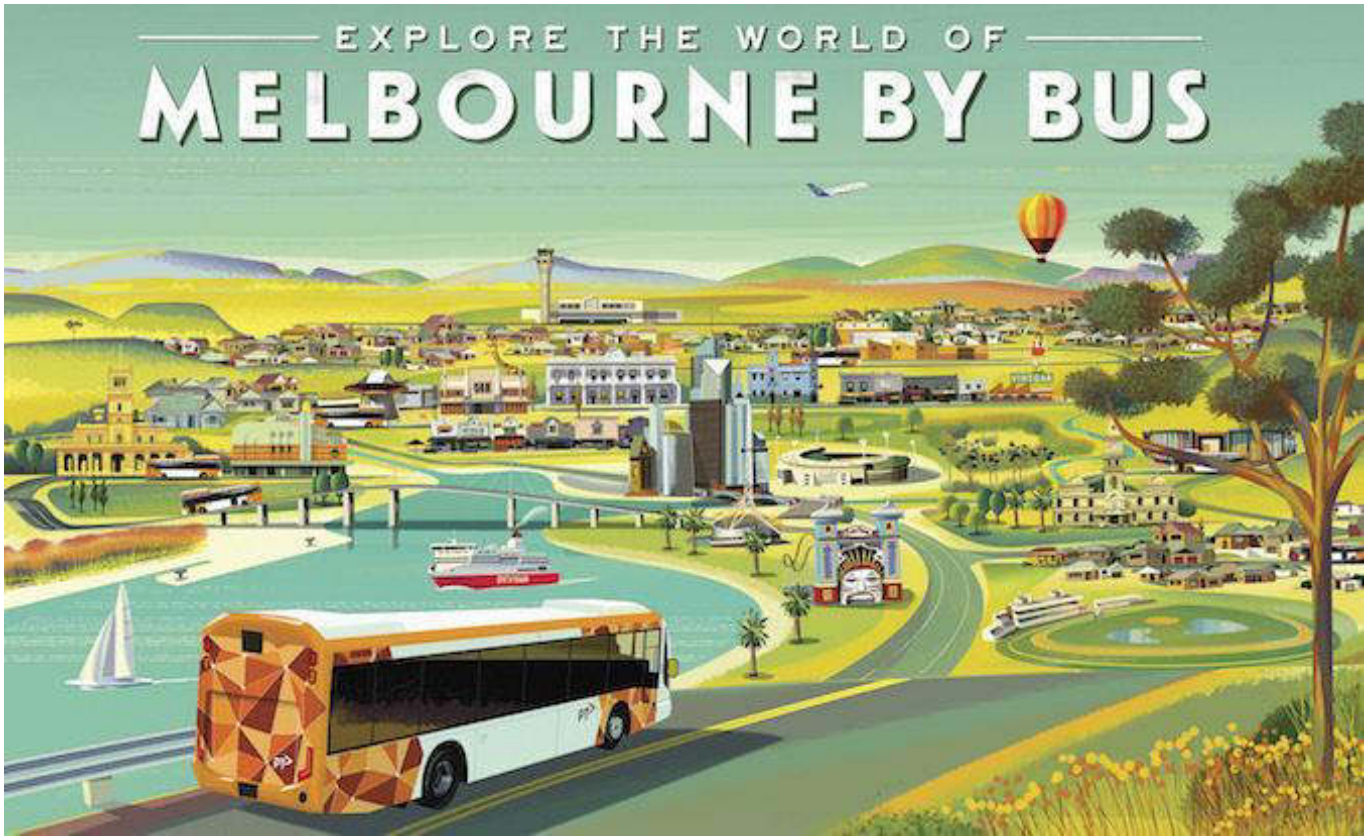


Figure 54 Bus Promotion Campaign – Melbourne
Source: PTV

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11. Appendices

Several background papers and reports were prepared to inform the development of this report.

They may be found on the project page of the Mildura Rural City Council's website.

1. Local Policy and Data Analysis Report
2. Draft Community Engagement Report
3. Existing Conditions and Issues Report

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