# Existing Conditions and Issues Report

## Mildura CBD Access and Mobility Strategy

November 2020

Institute for Sensible Transport

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# Executive Summary

**Following Mildura Rural City Council's endorsement of the *Draft Mildura CBD Plan*, Council commissioned a *Mildura CBD Access and Mobility Strategy*. An important element in the development of this Strategy is this *Existing Conditions and Issues Report*, which is based on a *site assessment* undertaken in late October, 2020.**

**This report provides a summary of the site assessment findings and implications for further stages of this project. It includes a comprehensive analysis of the CBD area for all modes of transport, as well as factors impacting on urban design and amenity.**

A *Policy and Data Analysis Report*, previously submitted, provides an overview of the policy context and analysis of existing transport data of relevance to the Mildura CBD.

## Mildura's potential

One important finding is that there are many attributes to Mildura supportive of a more sustainable transport system. Mildura's small scale offers excellent potential to create a successful 20-minute town, in which many daily trips are within a 20-minute trip by sustainable modes. This is the envy of many larger cities, but something that is close to reality in Mildura.

Mildura's laneways offer untapped potential to offer a more relaxed environment to act as active transport corridors and provide more vibrant, people focused places for café dining and other people focused.

While Mildura's weather can make walking and cycling difficult on hot summer days, for much of the year Mildura has conditions relatively favourable for active travel.

The Langtree Mall offers the potential for a vibrant, people focused CBD heart. As will be discussed, better pedestrian permeability from the east and west, regular activities and other features that provide a compelling reasons to visit the Mall are required. Encouraging more hospitality enterprises to take advantage of the Mall will help to activate its potential.

In general, it was apparent that the behaviour of motorists within the CBD was highly courteous to other road users. Even in instances where no zebra crossing was offered, motorists often gave way to pedestrians on smaller streets and again, this is an attribute that supports Mildura's ambition to become a more liveable town.

The legacy of wide streets and nature strips allows for greater diversity in transport choices and amenity, including safer bike infrastructure and more tree plantings, without confronting issues over loss of space for cars.

## Key issues

The following provides a synthesis of key issues identified during the site assessment impacting on Mildura's potential to create a more sustainable, liveable CBD:

*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 larger 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. No on street protected bike lanes.
2. Painted bike lanes that do not continue through intersections, which are statistically more risky than mid block cycling.
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.
5. Wide streets and verges offer opportunities for a denser network of off-road paths.

*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 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 Avenue limits its potential, especially given that mix of businesses on Langtree Avenue north of Eighth Avenue, which 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 capitalise on one of Mildura's greatest natural assets.

*Public transport*

1. Many bus stops did 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*, 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. Signage does not maximise the use of Benetook Avenue as the preferred freight route.

## Key opportunities

As highlighted earlier, Mildura has some great attributes that provide potential for Mildura to become Victoria's most liveable, sustainable regional city. The following provide a synthesis of opportunities that have emerged following the site visit, which will be further developed as this project progresses. An expanded discussion of these points is offered in Section 7 of this report.

1. Consist speed limits within the CBD, with a default of 40km/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 the crossing 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. 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.
6. Install kerb-bulb outs and raised threshold treatments to enhance pedestrian friendliness, and the creation of an *age-friendly* CBD.
7. Install mid-block zebra crossings (one per block) within the core of the CBD.
8. Develop a set of 'default' design guidelines for typical Mildura streets.
9. Introduce real-time parking availability signage in off street car parks.
10. 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.
11. Enhance signage to encourage heavy vehicles to use Benetook Avenue as an alternative to Deakin Avenue

# 1. Introduction

**A site visit was undertaken by Institute for Sensible Transport staff in late October. It included a comprehensive analysis of the CBD area for all modes of transport and urban amenity. The key objective of the site assessment and this report is to document current conditions in the Mildura CBD related to transport and the urban realm, and identify preliminary opportunities intended to enhance the performance of the CBD.**

## 1.1 What we did

Staff used a customised mobile App called *Fulcrum* to log issues and opportunities to enhance transport and urban design outcomes in the Mildura CBD. Additionally, the App was used to highlight examples where Mildura is already demonstrating best practice.

The site assessment was undertaken across two days, on the 27th and 28th of October, with two senior staff from the Institute for Sensible Transport.

The site assessment team were focused on a variety of issues across the categories shown in Figure 1.

- Footpaths
- Bike infrastructure
- Crossings
- Bus
- Amenity
- Road
- Parking

**Figure 1 Site assessment – areas of focus**

The remainder of this document provides a description of the key findings and implications for the development of the *Mildura CBD Access and Mobility Strategy*.

# 2. Site Assessment

Figure 2 shows the overall map of Mildura, encompassing all the points staff logged during the site visit using the Fulcrum App. A total of 151 points of interest were logged in the App.


**Figure 2 Site Visit Map**

Table 1 shows the breakdown in the number of points logged for each category, and whether it was something *existing* or a *proposed change*. *Crossings* were the most common category logged, with 48 records, followed by *Cycling* with 44 records.

**Table 1 Breakdown by type**

| Category | Existing | Proposed | Total |
|---|---|---|---|
| **Bus Stop** | 3 | 3 | 6 |
| **Car** | 3 | 8 | 11 |
| **Crossing** | 7 | 41 | 48 |
| **Cycling** | 21 | 23 | 44 |
| **Parking** | | 4 | 4 |
| **Urban Amenity** | 7 | 19 | 26 |
| **Walking** | 8 | 4 | 12 |
| **Total** | **49** | **102** | **151** |

Figure 3 shows the Site Assessment map zoomed in closer to the CBD.


**Figure 3 Site Assessment Overview - CBD**

## 2.1 Walking

Footpaths were assessed as part of the site visit. We found that footpaths are generally wide with an even surface. Only a small number of points of interest were logged, four of which identified a missing footpath and two points identified arcades. **Note that other walking conditions, such as crossing the road and shade, are covered in other sections of this report.** Figure 4 shows the locations of those points. In particular, Seventh Street does not have a footpath on the northern side of the street. Installing a footpath or shared path would improve connectivity between key destinations, including the bus station, several parks, access to the riverfront, and to the CBD.

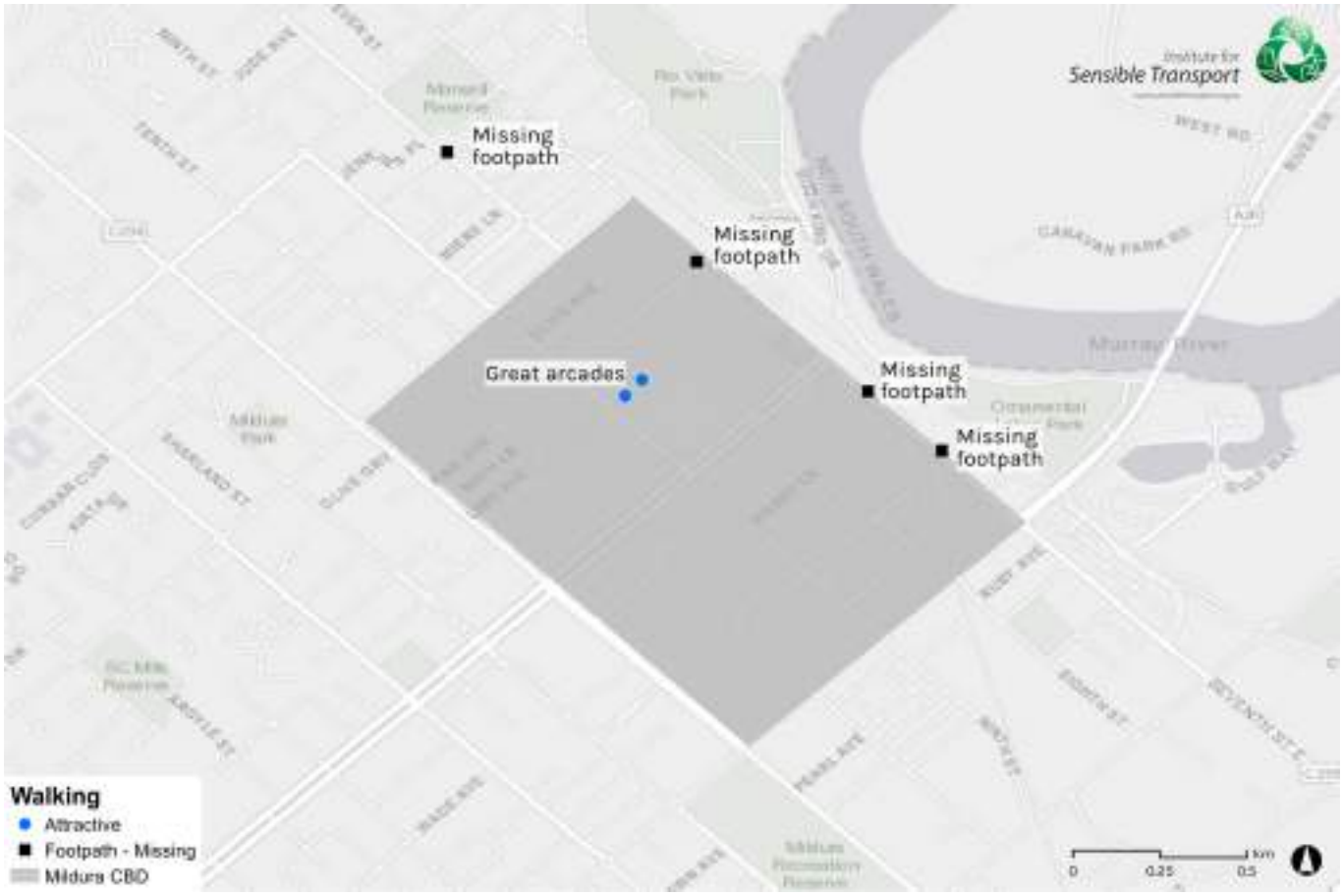


Figure 4 Footpaths

Much of the Mildura is covered by wide and high-quality footpaths, as shown in Figure 5. The CBD footpaths offer plentiful opportunities for people to safely pass one another, for shops and cafés to have outdoor seating, and slow bike riding to take place safely. While there are specific parts of the greater Mildura area that require greater focus on footpath provision, the CBD already performs highly in this regard.


**Figure 5 Wide footpaths**

Figure 6 shows two examples of missing footpaths. The image on the left is the end of the footpath along Seventh Street while the second is a missing footpath and railway crossing opportunity near the Mildura Arts Centre on Chaffey Drive. Both these examples reduce pedestrian access.


**Figure 6 Missing footpaths**

## 2.2 Cycling

Mildura has a mix of bike infrastructure and bike parking. This section will look at the existing and proposed cycling-related points that were recorded during the site assessment. Figure 7 shows the existing cycling infrastructure recorded by the team. Most points correspond with the diversity of bike parking in the CBD, expanded further in the *Bike Parking* section of this report. We also noted several instances of quality bike paths, including the shared path on Eleventh Street, the shared path to the historical homestead, and an underpass and low-stress cycling friendly environment on Twelfth Street.

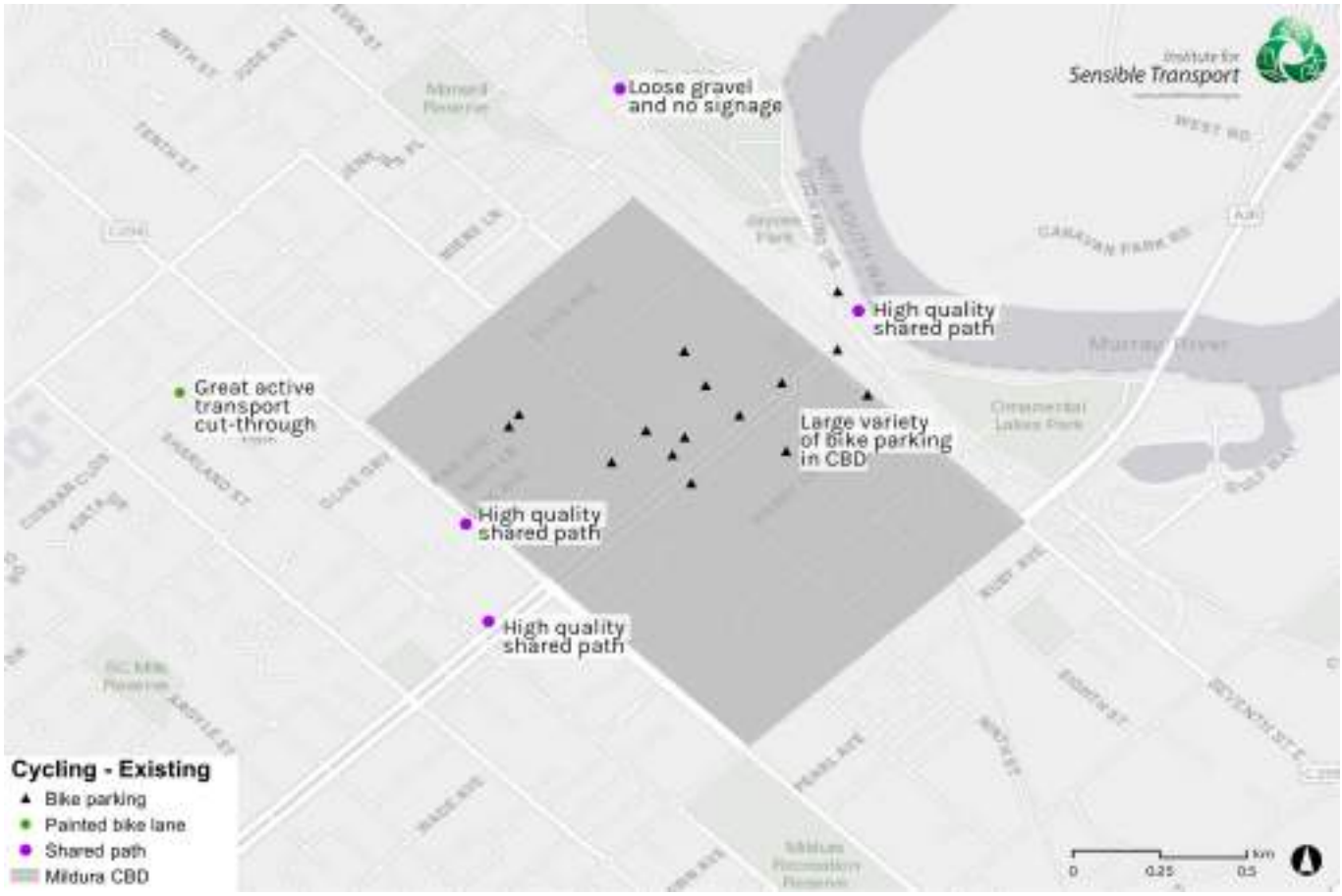


**Figure 7 Cycling – Existing**

Figure 8 shows the sites logged by the team that could improve conditions for bike riders or areas where additional bike parking could be installed.


**Figure 8 Cycling - Proposed**

### 2.2.1 Bike lanes

Mildura has a mix of on-street and off-road bike path within the CBD and in the larger urban area. Bike usage was surprisingly high while undertaking the site assessment, particularly the shared paths along Deakin Avenue and Eleventh Street. The Murray River Trail was also popular, for both walkers and bike riders. Figure 9 provides a sample of the high-quality bike infrastructure identified during the site assessment.


**Figure 9 Examples of good bike infrastructure in Mildura**

A consistent challenge we noted during the site assessment is how bikes are dealt with at intersections. In most instances, on-road bike lanes have been designed to end just prior to the intersection, requiring bike riders to merge into the general travel lane and mix with traffic before the bike lane reappears on the other side. Figure 10 provides an example of this along Pine Avenue. This is coupled with the need to navigate speed humps which are intended to slow traffic before entering the intersection.


**Figure 10 Bike lane ending at intersection**

### 2.2.2 Wide streets and nature strips

As noted in Figure 5, Mildura has a legacy of wide streets. While such allocations of street space may have been necessary in the past, they are in many cases incongruous with the contemporary challenges facing Mildura today. While there are some streets that will continue to function to facilitate the movement of heavy vehicles, therefore require generous lane widths, in many cases, there may be advantages of introducing what has becoming known as *'road dieting'* on other streets. Figure 11 provides some examples of wide streets. Victorian research has identified that most of the population is uncomfortable riding in the types of environments depicted in Figure 11. Utilising more of the road space or nature strip for off-road bike facilities could encourage more people to consider riding for everyday trips while not impacting on existing car parking arrangements.


**Figure 11 Wide Streets**

### 2.2.3 Observed behaviour

During the site visit, the study team observed many people undertaking trips by bike in the Mildura CBD. They consisted of a broad range of demographics and bike riding types. This included women riding e-bikes to the shops, racing cyclists, kids riding to and from school, and people undertaking everyday trips on a regular bike. Most bike riders, except those most experienced (such as racing-type riders) predominately rode off the road. Where shared-paths were not available, many riders opted to use the footpaths, rather than ride on-road with cars. At intersections, riders also preferred to use the existing zebra crossings rather than ride on road, such as those in Figure 10. These observations indicate that most existing riders prefer an off-road riding environment, separated from vehicles, both mid-block and at intersection. These preferences, demonstrated by the Mildura population that currently ride will be used in latter stages of the report related to recommended improvements to the cycling environment.

### 2.2.4 Bike Parking

A variety of bike parking structures were identified within the Mildura CBD. Many of these offer limited functionality for modern bikes (with quick release wheels) and expose the owner to increased risk of theft. Moreover, some present trip hazards due to their low height. Figure 12 provides four examples of the many types of bicycle parking designed in the CBD. None conform to best practice standards, which should allow the frame and front wheel to be easy locked, and the bicycle to be supported in the upright position.

Figure 12 Bicycle parking designs in the CBD

# 3. Bus

## 3.1 Introduction

Mildura's local bus service is run by Sunraysia Bus Lines. Much of the network is focused on serving Mildura numerous satellite towns. This structure helps support Mildura's position as the main provider of services and facilities for its surrounding region.

The urban area of Mildura is serviced by 14 numbered commuter bus routes. These bus routes operate across the urban areas, also connecting Central Mildura with outlying areas of Merbein and Red Cliffs.

## 3.2 Description of routes/services and options for enhancement

The 14 routes comprise six 'pairs' with one numbered route performing the outbound services and a separately numbered routes performing the inbound service. Additionally, route 601 operates a clockwise unidirectional service through the area south of Fifteenth Street and route 312 operates a truncated outbound 311 in afternoons (312 is considered part of the rout 211/311 cluster). Details of these routes can be found in Table 5 of the *Policy and Data Analysis Report*. This route numbering nomenclature is unusual in a Victorian context, with bus services in other urban areas of having a single number for both inbound and outbound.

All buses except route 601 service the CBD. However, unlike Mildura Central Shopping Centre, there are no central bus bays providing convenient interchange. Routes 100/200, 211/311/312 and 250/300 terminate on the eastern side of Deakin Avenue, while routes 400/401, 500/501 and 600/602 terminate on Eighth Street (near Lime Ave). Routes 500/501 and 600/602 operate in a clockwise loop along Eighth Street, Deakin Avenue, and Seventh Street which gives passengers multiple access points through the city and allows for interchange (with routes 100/200, 211/311/312 and 250/300), and with regional coach routes at Mildura Station. Access through the city would be improved if all commuter buses followed the loop pattern of 500/501 and 600/602, allowing more access points throughout the city and maximising interchange opportunities.

Merbein is connected to the CBD with two bus routes (211/311/312 and 250/300). Routes 211/311/312 run along the north, straddling the Murray River and entering the CBD on Eleventh Street, while routes 250/300 run south, along Seventeenth Street. Both these routes connect Merbein to the CBD and Mildura Central Shopping Centre, providing maximum destination choice. Despite entering Mildura from the north, and coming within a one kilometre of the CBD area, routes 211/311 deviate along Ontario Avenue to service Mildura Central Shopping Centre *before* heading back north along Deakin Avenue to service the CBD (with the inverse being true for outbound services).

Route 312, which runs once daily outbound during the afternoon bypasses this deviation, taking only six minutes to travel from the CBD to the corner of Ontario and Eleventh, while routes 211/311 take 16 minutes to connect the same two points (due to the deviation to Mildura Central Shopping Centre first). This creates a significant *time penalty* for those wishing to travel by bus between Merbein and the CBD, which is especially unnecessary due to the direct (and quicker: 10 minutes by routes 250/300 versus 20 minutes by 211/311) path offered by routes (250/300) between Merbein and Mildura Central Shopping Centre. It is unlikely that servicing the CBD before Mildura Shopping Centre would add more than a few minutes to passengers times wanting to travel between Merbein and Mildura Central Shopping Centre on route 211/311, but would save significant time for those wanting to travel between Merbein and the CBD.

There are six route paths connecting the CBD with Mildura Central Shopping Centre. Routes 211/311 run along both Ontario Avenue and Deakin Avenue, but only Deakin Avenue is counted, as it connects these

two areas, while the Ontario Avenue bus route does not. There are several instances where multiple bus routes run along the same section of road. Routes 100/200, 250/300 and 211/311 all along Deakin Avenue. The other instance is the 211/311 routes also run along Ontario Avenue. There are other services that do not share the same section of road, though their routes are often very circuitous. The other connecting roads that provide services between the south and north of Mildura are: the 600/602 running along Ontario Avenue, route 500/501 running along Walnut Avenue and Ontario Avenue, and route400/401 runs along San Mateo Avenue, Etiwanda Avenue and Benetook Avenue.

The current configuration of bus routes, with a concentration of routes along Deakin, reduces the accessibility of the bus network in other parts of Mildura. For instance, passengers are left with poorer quality, circuitous routes along Walnut Avenue, San Mateo Avenue, Etiwanda Avenue and Benetook Avenue. This disadvantages passengers wishing to travel to or from these streets and the surrounding neighbourhoods. There is also significant circuitous running in the north of Mildura (routes 211/311/312, 600/602 and 500/501), which while increasing catchment, my increase travel time, thereby discouraging use. Consideration should be given to straightening and spreading routes along the six avenues, and providing more direct access from the north. Any changes should ensure that all passengers are given a direct and convenient path to the CBD and Mildura Central Shopping Centre. Such a bus network redesign may result in shorter running times, increasing efficiency of the network and permitting more services to be run with a similar operational budget. These options will be developed as recommendations as part of the *Draft Mildura CBD Access and Mobility Strategy*.

Additionally, the unusual numbering nomenclature could lead to confusion, especially amongst visitors, not knowing that routes only operate in one direction (this problem is potentially compounded by PTV maps which do not make this clear). Consideration should be given to simplifying the route numbering, with only seven route numbers replacing the existing 14, an example is given in Table 2. However, as will be discussed in the *Draft Mildura CBD Access and Mobility Strategy*, any changes to route numbering must only be implemented after careful community consultation.

**Table 2 Simplified bus route numbering**

| Current route numbers | Potential new route numbers |
|---|---|
| 100 | 100 |
| 200 | |
| 211 | 211 |
| 311 | |
| 312 | 211a |
| 250 | 250 |
| 300 | |
| 400 | 400 |
| 401 | |
| 500 | 500 |
| 501 | |
| 600 | 600 |
| 602 | |
| 601 | 601 |

## 3.3 Bus stops

There are two major bus interchange opportunities in the Mildura urban area, in the CBD, near the Kmart car park and the Mildura Central Shopping Centre (around Fifteenth Street). All bus services except route 312 service Mildura Central Shopping Centre where there are two bus bays. This provides quick and convenient interchange opportunity for passengers. The bays are also conveniently located adjacent to an entry to the shopping centre. A zebra crossing connects the two bus stop bays, providing pedestrian priority; if vehicle compliance in giving way is low, this zebra crossing could be converted to a wombat crossing.

During our site assessment, the study team observed several key bus stops within the CBD. We looked user experience issues, such as shading, at how they performed for people using them, their proximity to destinations, and the amenity of the stops themselves. Figure 13 shows the location of the stops reviewed as well as the key points for those stops.


**Figure 13 Bus Stops**

Figure 14 shows two examples of relatively high amenity bus stops in Mildura. While the infrastructure may be ageing, it provides seating and shelter, is set a comfortable distance back from the carriageway, and includes timetable and route information. Both stops are also situated close to key destinations. The one on right, on Eighth Street, is also located close to public toilet facilities.


**Figure 14 High amenity bus stops**

Figure 15 shows two examples where bus stops have lower amenity. While they are in residential areas and thus have lower patronage, there remain opportunities to improve access to shade and seating.


**Figure 15 Low amenity bus stops**

The next stage of this project will provide a framework for bus stop design and amenity for different levels of service.

# 4. Driving and Parking

Driving is the preferred way to get around Mildura and this is reflected in the design of Mildura's streets. Most streets maximise the amount of parking available through angled or centre-median parking as well as off-street parking lots, have wide travel lanes, and are given priority at most intersections. As a result, driving and parking is relatively easy within the town centre and most people opt to drive for most trips. While driving and parking is relatively easy compared to other modes of transport in Mildura, there were several opportunities observed during the site assessment that could better manage driving and parking in the CBD. The key points are shown below in Figure 16.

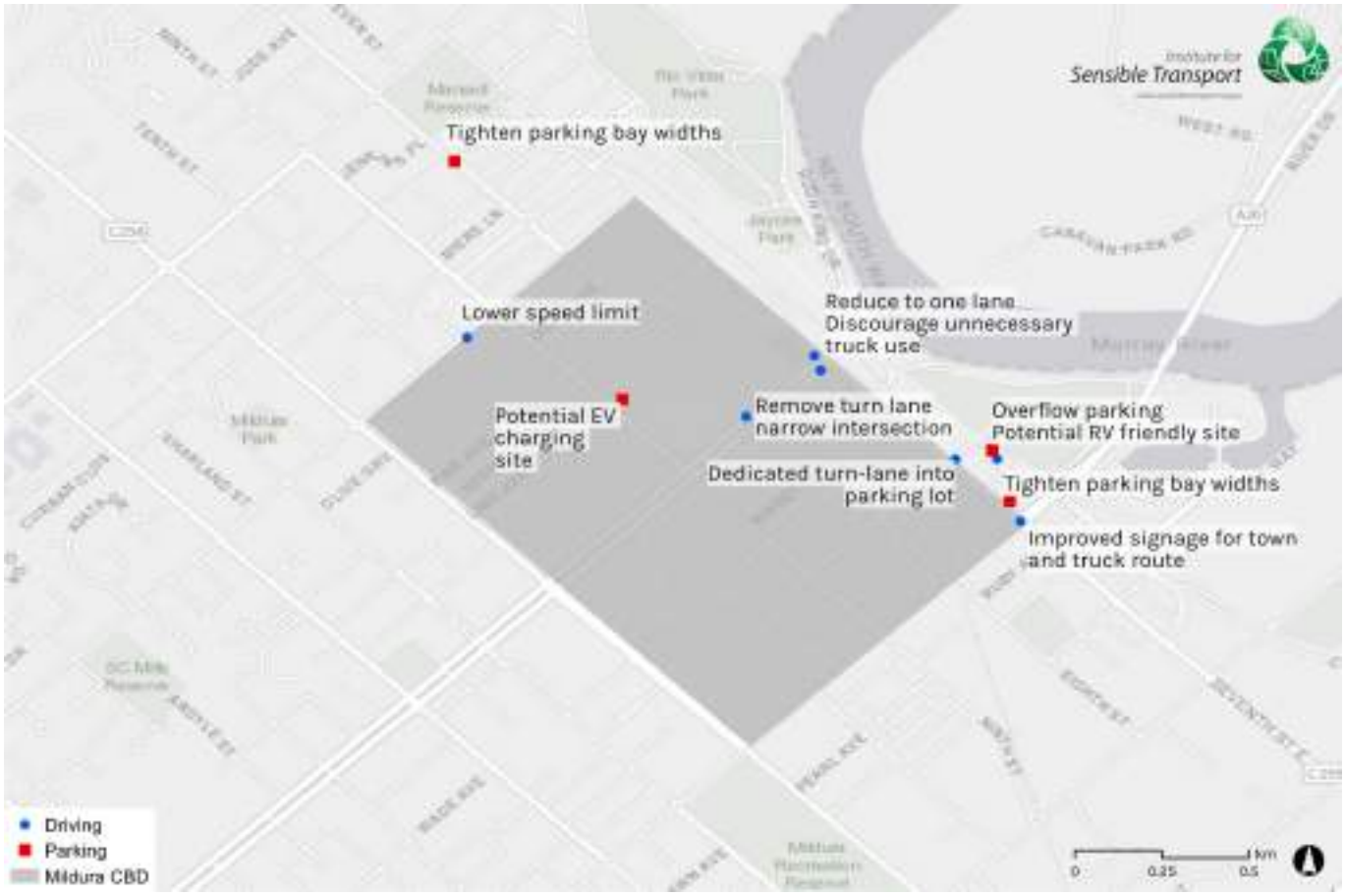


**Figure 16 Driving and Parking**

## 4.1 Car Parking

Parking was overall found to be in plentiful supply across the Mildura CBD, for both on and off-street areas. Note that this site assessment was undertaken while Melbourne residents was restricted from leaving the Metropolitan area. This would have reduced the number of visitors to Mildura, though the site visit coincided with a tourist off-peak time – likely representing other non-tourist times of the year. Earlier analysis, presented in the *Policy and Data Analysis Report* found overall low occupancy levels, even before COVID-19, although there were some on-street parking area at or close to 100% occupancy.

### 4.1.1 On-street

Majority of on-street parking is restricted to 2-hour parking, with some areas of unrestricted all day (24 hour) limits. There were also some examples of shorter turn-over parking, which appears may be linked to businesses with drop off/pick up customers. Parking was seen to be readily available on most streets, even during peak times. Areas very close to the centre of the CBD were the exceptions to this, with higher occupancy rates observed throughout the day and at night. These highly used parking areas included Langtree Avenue, between Seventh and Eighth Streets and between Ninth and Tenth Streets; Lime Avenue, between Eighth and Ninth Streets; and Eighth Street, between Deakin Avenue and Lime Avenue. Parking occupancy was seen to reduce dramatically, even one block away from these streets. This includes Lime Avenue, between Seventh and Eighth Streets, which had very low usage rates during the site assessment. This trend follows most parking constraints observed in many other cities in Australia, and around the world, where the highest demand is found in the most popular areas. One cost effective strategy for assisting motorists in the CBD find a park includes the provision of signage to direct people to those areas that are not in as high demand, but still within a close walk to popular destinations.

### 4.1.2 Off-street

Mildura has a large number of off-street parking facilities within the CBD area. Previous analysis by the Institute for Sensible Transport, published in the *Policy and Data Analysis Report* found that there are over 2,000 off-street bays within the CBD. Like on-street parking, most off-street parking also has 2-hour parking restrictions, though there are a higher proportion of all-day parking options available. Off-street areas were found to have lower parking occupancy than on-street areas, with the Coles parking off Lime Avenue being observed as the busiest. The private and paid off-street parking lot at the corner of Lime Avenue and Seventh Street had the lowest parking occupancy, likely a result of the fee, compared to the large supply of free parking in the vicinity. Despite this, the private car park had a steady amount of parking during the day, which appeared mostly CBD workers parking all-day, and visitors to Langtree Mall at night.

## 4.2 Truck route

Mildura is both an important agricultural region and a vital settlement that provides a wide range of services to the immediate and surrounding population. This dual role has resulted in many of the main roads in Mildura carrying relatively high volumes of trucks, including many oversized trucks and road trains. Benetook Avenue has been identified as the alternative truck route to shift high truck volumes away from the CBD. Observations during the site assessment, and confirmed by traffic volume analysis shows that a greater proportion of trucks do use Benetook Avenue compared to Deakin Avenue. A number of trucks continue to use Deakin Avenue before continuing through to NSW and vice versa – even for trucks that fit the profile of trucks capable of using Benetook Avenue. This may be due to a number of factors, including easier driving conditions (Benetook has roundabouts while Deakin is straight at intersections with traffic lights) or simply habit.

Encouraging more trucks to use Benetook Avenue, rather than Deakin Avenue, would improve local amenity and reduce the *'barrier effect'* bwteene the east and west of the CBD. The development of the Draft Mildura CBD Access and Mobility Strategy will examine and recommend opportunities that make conditions more attractive along Benetook Avenue, and/or make driving *less* attractive along Deakin Avenue. This will require further consultation and coordination with the trucking industry and Regional Roads Victoria.

One area that could be explored to more immediate effect, is the upgrade of signage on the approaches to intersections that better indicate the preferred truck route and bypass for traffic passing through to NSW and not stopping in Mildura. During the site assessment, it was noted that existing signage does not adequately indicate the need or desire for trucks (and through traffic) to use Benetook Avenue. Figure 17 shows the existing conditions at key decision-making points for using the alternative truck route. In the first, approaching Benetook Avenue from the Calder Highway, north-west bound, one sign exists indicating that trucks should follow the A20 (Sturt Highway) rather than Benetook Avenue. In the second, the truck route signage is provided separately, and smaller, after the main sign. Attaching the truck route direction beneath 'Bendigo' would improve legibility for decision-making. Consideration for signage to indicate the direct route to NSW would further assist wayfinding.


**Figure 17 Truck route signage**

# 5. Crossings

Crossings were the most common category logged during the site assessment. Figure 18 shows the proposed crossing changes recorded by the team while on site.


Figure 18 Crossings

## 5.1 Mid-block

Most streets within the Mildura CBD do not offer safe and accessible mid-block crossings. Many do however provide generous median spaces that provide a mid-point refuge for those crossing the street. The exceptions to this are Langtree Avenue, with has one raised zebra crossing between Seventh and Eighth Streets and another between Ninth and Tenth Streets. Figure 19 shows the crossing between Ninth and Tenth, which also includes seating, landscaping, and tree shade on the left-hand side. The right-hand side shows a street with a wide median for pedestrians to wait for a break in traffic.


**Figure 19 Mid-block raised zebra crossing**

Medians can be useful for pedestrians, increasing the ability to cross from one side of the street to the other. However, they are less suitable for elderly people, people with a disability, and children. Providing a safe and prioritised crossing at least once for every mid-block street within the CBD will provide the best outcome for enhancing the accessibility of the CBD, for those aged 8 through to 80.

## 5.2 Intersection

Intersections had the highest number of points recorded during the site visit. In order to properly assess and explore this section fully, it has been split into Signalised, Roundabout, and Side Street intersections.

### 5.2.1 Signalised

Mildura has a relatively lower proportion of signalised intersections compared to towns in Victoria, including Metropolitan Melbourne. The exception to this is Deakin Avenue, which forms part of the National Highway network. As highlighted in the *Engagement Report*, Deakin Avenue is a source of frustration for pedestrians wishing to cross the entire width of the street in one light sequence. Figure 20 offers an indication of the current crossing environment on Deakin Avenue. The nature of the traffic signal timings, which favours motorised traffic along Deakin Avenue, means that pedestrians are not able to walk across Deakin Avenue safely in one cycle. In the site assessment, it was observed that traffic volumes were such that the light sequence for pedestrians could be lengthened without any meaningful impact on travel times for motor vehicles.

**Figure 20 Crossing Deakin Avenue**

There is merit to improving the crossing environment for pedestrians, particularly within the CBD area (Eleventh to Seventh Streets). Given that Due to the high use of Given that through traffic have Benetook Avenue as an alternative to using the CBD, the priority on Deakin Avenue should be in favour of pedestrians and other forms of sustainable mobility and place making. During the site visit, one lane of traffic was closed for northbound Deakin Avenue traffic. We observed traffic flows along this section during peak-hour times (AM and PM) and witnessed congestion free traffic. Most, if not all traffic made it through each light sequence. Based on this, there is merit to further investigating the introduction of a permanent lane reduction along Deakin Avenue, between Eleventh and Seventh Streets. As part of the next stage of this project, we will provide a high-level analysis of the different options for improving the pedestrian experience when crossing Deakin Avenue and road configurations.

### 5.2.2 Roundabouts

While Mildura has relatively few signalised intersections, like many other regional centres, it has a high proportion of roundabouts within the CBD and the greater urban area. Roundabouts, which are often designed to maximise vehicle flow, can result in poor outcomes for non-motorised transport modes, especially if travel speeds are not equitable between modes[1]. However, some of the roundabouts within the CBD area also include zebra crossings and other speed limiting devices which improve safety and priority for pedestrians. Figure 21 shows two examples of roundabouts with pedestrian-oriented treatments.


**Figure 21 Roundabout Crossings**

While the treatments shown in Figure 21 are preferable to a roundabout with no speed control measures, several opportunities to improve pedestrian safety and amenity remain. For the image on the left in Figure 21, while the speed humps slow vehicle speeds prior to the crossing space, pedestrians are not provided priority. The layout of the speed humps as well as the plastic design which creates further obstacles for bike riders. For the right hand side image of Figure 21, pedestrians are provided priority, however vehicle speeds are maintained on the approach to the intersection.

Most of the roundabouts in Mildura have no pedestrian treatments, pram ramps and refuge islands except in the CBD. Much like the mid-block street designs, the historical legacy of wide streets and provision for truck access has resulted in roundabouts that are oversized for their existing function. Oversized lanes and generous sweep paths allow drivers can navigate at speeds inconsistent with the *Safe Systems Approach*. Figure 22 provides two examples of roundabouts with these characteristics, including the recent intersection rebuild in the image on the right-hand side, where the travel lane in the roundabout is at least 50% wider than required.

[1] https://austroads.com.au/publications/road-design/ap-r461-14


**Figure 22 Untreated Roundabout Crossings**

The roundabouts in Mildura, and especially those within the CBD that *do not* serve truck routes, could provide a safer and more attractive walking experience. The historical legacy of different treatment also creates ambiguity as some crossings require you to slow down but not give way while other require you to give way but not slow down. The CBD, and greater urban area, would benefit from a uniform approach to the design of intersections, including roundabouts. As part of the next stage of this project, we will provide a preferred design template for roundabouts where pedestrian movement has been identified as a priority and where oversized truck movements are not preferred or permitted.

### 5.2.3 Side Streets

Side Streets offered the most challenging crossing environment for pedestrians in Mildura. In many instances, the relatively wide streets of Mildura have their roadway width carried through to the intersection as shown in Figure 23. This results in unnecessarily wide crossing distances. Without pedestrian priority, people crossing the street may find that the traffic situation has changed by the time they are part-way through crossing the side street, resulting in informally waiting in the middle of the road. Contemporary designs typically involve kerb blub-outs and raised threshold treatments.


**Figure 23 Side Street Crossings**

Another crossing challenge identified by the site assessment team was the ability to cross over a major street from a side street or laneway. Figure 24 shows an example where it is difficult to cross due to no supporting crossing infrastructure, while the example on the right is relatively safer. Particularly in the CBD, where many of the laneways offer low-traffic environments, making them safer for pedestrians and bike riders, including over intersecting major streets, would improve access and safety for active transport users. Protected refuges islands, kerb bulb-outs, and pram ramps would improve the ability to cross major roads from side streets.


**Figure 24 Side street crossing over major street**

The above issues have been mitigated on some streets, as shown in Figure 25. This includes kerb bulb-outs to shorten the crossing distance and refuge islands to provide a safer stopping point for pedestrians.


**Figure 25 Bulb-outs and Refuge Islands**

While these additions are improvements compared to the status quo, these layouts still result in unsafe and unattractive pedestrian environments. A shift towards raised zebra crossings with shorter crossing distances will be important for encouraging more people to consider walking and for providing safe walking environments for everyone, but especially Mildura's ageing population, as well as children, who have more difficulty crossing streets safely.

### 5.2.4 Ambiguous Crossings

Several ambiguous crossings were noted during the site visit. These crossings, while constructed to a standard to provide priority crossing for pedestrians, in fact did not provide legal right of way. This leads to confusing and unsafe crossing environments, were drivers and pedestrians are unsure who has right of way. While the intentional creational of ambiguity can at times be desirable, in these cases, it was found to be an unnecessary risk by fostering the potential for misunderstanding and road trauma. Figure 26 provides two examples of ambiguous crossings, though others were evident throughout the CBD and along the riverfront. In the right-hand example of Figure 26, during observation, 100% of vehicles gave way to pedestrians, despite pedestrians stopping to give way to vehicles as the signage states. Such ambiguous environments should be avoided where possible. Instead, clear pedestrian priority should be provided. If full pedestrian priority is not possible, it is also recommended that no signage be used to direct pedestrians to yield to drivers. Instead, in these situations, the crossing should be negotiated by pedestrians and drivers.


**Figure 26 Ambiguous Crossings**

# 6. Urban Design and Amenity

This category covered the physical elements that contribute to the amenity of the CBD. This included seating, water fountains, shade, passive / active surveillance, among others. Figure 27 shows the location of records logged. It should be noted that as this project moves towards then development of the *Draft Mildura CBD Access and Mobility Strategy*, more recommendations will be developed seeking to enhance public realm outcomes.


**Figure 27 Amenity pins**

The key issues related to amenity that we found while undertaking the site assessment included a lack of shade, a shortage of water fountains, and areas with poor passive surveillance. The next sections will discuss these issues in further detail.

## 6.1 Shade

Shade is a key consideration for the amenity of Mildura. Mildura's hot summers make walking and cycling more difficult and can reduce people's willingness to '*linger*' in the public realm. Many parts of the CBD do have shade cover, predominately through shop awnings and tree plantings. Some examples of shade cloth and other structures were also recorded, particularly along the Mall. One section of Eight Street also provided shade via a portico design, as shown in Figure 28.


**Figure 28 Shop awnings**

Figure 29 shows several examples where tree shade provided respite from the sun and enhanced the walking experience. In the first image, trees on both sides of the footpath provided a shaded archway of trees, making what would normally be an unattractive walk between angled parking on one side and an open car park on the other a more pleasant experience. The second example, in a more residential area, had private and public trees providing adequate shade cover for that section of the street. The final image, while not having full shade cover, provided a shaded place to wait for the bus.


**Figure 29 Tree shade**

Many parts of the CBD however do not provide shade cover, with some examples shown in Figure 30. Newer buildings, often with set-back requirements, do not provide shade for the footpath, and several stretches of streets did not have any tree plantings.


**Figure 30 Lack of shade**

Shade / heat mapping could provide a useful tool to targeting areas of the CBD where additional tree planting or installation of artificial shade could improve the amenity of the CBD for pedestrians.

### 6.1.1 Passive Surveillance

Mildura was found to have a mix of active and passive street frontage in the CBD. For the most part, the design of the street frontage was heavily aligned to the historical trend at the time of construction. Historic parts of the CBD had a finer grain with active shop frontage onto the street, while newer developments were either set-back or had large tracks of blank or inaccessible walls fronting on to the street. Figure 31 shows two examples of long expanses of blank walls within the CBD. Typical of designs from large format retail, which favour single entry/exit points, the outcome creates dead space within the CBD. This reduces the appeal, attractiveness and perception of safety within the CBD.


**Figure 31 Blank Walls**

A lack of diversity of day-time and night-time shops throughout the CBD further reduces passive surveillance. Where there are no eyes on the street or people visible in an area, it feels less safe.

### 6.1.2 Arcades and permeability

The Mildura CBD was found to have poor pedestrian permeability in some areas, while others provided best-practice examples of permeability. The long avenues can create barriers for pedestrians to easily access shops if there are no laneways or arcades to provide a short-cut. Figure 32 shows an example of an existing arcade that provides access from Lime Avenue to Shillidays Lane. However, there is no corresponding link to provide access through to Langtree Mall. This issue will be addressed with the recommendations of the *Draft Access and Mobility Strategy*.


**Figure 32 Arcades in Mildura**

Despite being attractive spaces and offering respite from the hot weather, the arcades were relatively empty compared to other parts of the CBD. However, the arcade on the right of Figure 32 did have more activity, including some al fresco dining for a burger shop. Encouraging shops to utilise the arcade space would encourage higher levels of activation and activity, including for cafes, restaurants, or bars.

We also found several instances of laneway activation, via al fresco dining and active building frontages. Figure 33 shows one example on Tschirpig Lane. Laneway activation is important for safety in the CBD, real and perceived, by improving passive surveillance. More eyes on the street, or the laneway, during the day and at night helps deter unwanted behaviour and encourages people to stay and experience the CBD in different ways.


**Figure 33 Laneway activation**

This particular laneway activation was allowed through the closure of the lane to traffic, shown in Figure 34. This example shows changing how the laneway is used can be done relatively quickly and without major costs.


**Figure 34 Laneway closure to vehicles**

### 6.1.3 Langtree Mall

Langtree Mall has the potential to be Mildura's premier destination with the CBD, offering a car-free environment for locals and visitors alike. The Mall offers a range of activities, including shading seating, an open amphitheatre, games areas, and space for al fresco dining and shops to extend their wares onto the footpath. Each end of the mall is bookended by cafes with al fresco dining. During the site visit, the Mall was relatively underutilised. There were less people walking or stopping to rest along the Mall. There were also high number of shop vacancies. The current mix of shops were predominately clothing and accessory stores with some small takeaway venues. There was a high amount of signage indicating prohibited activities, including the consumption of alcohol, as shown in Figure 35. There was also a prominent CCTV system throughout the Mall (and other parts of the CBD). While the Mall had a large amount of awnings and tree coverage, during sunny parts of the day, the Mall still felt exposed.

**Figure 35 Langtree Mall**

While it appears many of the restrictions in place on the Mall have been implemented to ensure activity is appropriate and agreeable to everyone, it may also act as a detractor for people to use the Mall for informal purposes, particularly young people. Further analysis may also be required to determine the effect the alcohol ban has as a barrier for a more diversified retail offering, including bars and restaurants that operate past 5pm and can be used to activate the Mall during the evening.

Hudak's Bakery was found to be an excellent example of an active venue that integrated well with the Mall. Al fresco dining, a balcony overlooking the Mall, and evening hours provides a site of activation for the Mall. Those making use of the balcony are offered interesting views of the Mall while also providing passive surveillance to the space. Encouraging more after-hours venues with balcony space would increase the attractiveness for people to visit and linger along the Mall.


**Figure 36 Balcony views onto the Mall**

# 7. Opportunities

**Throughout the site assessment, we saw many opportunities to build on the successes of Mildura and the future planning resulting from the CBD Plan. This section will briefly present the key ideas for consideration as the project moves towards the next stage, where draft recommendations are provided.**

## 7.1 Safe cycling

Mildura has several high-quality off-road shared paths already. However, they end prior to reaching the CBD. Providing separated bike lanes in areas of high vehicle and pedestrian volumes would provide the safest and most attractive option. Figure 37 provides an example of incorporating protected bike lanes into the street with pedestrian and bike rider priority at the intersecting side street.

**Figure 37 Protected bike lanes and continuous footpath**

Source: bikeauckland.org.nz

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 38 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 38 Protected roundabout in Bendigo**

Source: Nearmap

Figure 39 provides an example from Melbourne of the appropriate signage for vehicles at an intersection, like the one above, to ensure right of way is provided to pedestrians and bike riders.


**Figure 39 Give way signage for pedestrians and bike riders**

## 7.2 On-street parking

Providing drivers with dynamic signage for real time parking availability will make it easier for drivers to find available bays. Figure 40 illustrates an example of signage showing the available number of spaces in a given area. A similar scheme could be implemented in Mildura, using on-street only or a mixture of on and off-street parking. This would ensure that all available parking is used to its fullest extent, potentially delaying, or offsetting the need for dedicating more space to the storage of empty vehicles.


**Figure 40 Dynamic Parking Signage**

Source: urbanplacesandspaces.blogspot.com

Dynamic signage is possible through the use of Parking Overstay Detection Systems (PODS). Figure 41 shows the small devices embedded into the asphalt which automatically records when a vehicle enters and exits the bay. This would also provide Mildura with a wealth of data to better understand parking usage and duration of stay.

**Figure 41 Parking Overstay Detection System (PODS)**

Source: The West Australian

### 7.2.1 The 'right' amount of time

There is a tension between changing time-based parking restrictions to encourage higher levels of turn-over and what the average length of stay is for people visiting the Mildura CBD. An opportunity exists to take a strategic approach to time limits, with the objective of fostering the transport behaviour that most closely aligns with the wider strategic ambition of Mildura. This needs to consider the trade-offs associated with providing all day parking for CBD workers with the lower number of spaces available for customers and other shorter term visitors to the CBD. It must also recognise the influence that free, readily available parking has on mode share, and therefore the relative value proposition car use has compared to more sustainable modes of transport. The development of the *Draft Mildura CBD Access and Mobility Strategy* will provide a set of recommended parking time limits actions designed to best support the liveability and productivity outcomes for the CBD.

## 7.3 Off-street parking

While off-street parking, like on-street parking, had a large amount of available spaces during the site assessment, we acknowledge that there are times during the year (peak tourist times) where demand for parking can be very high. Satiating this temporary increase in demand through the development of new at-grade or multi-deck car parks would come at significant expense with most parking remain unused for the overwhelming majority of the year. Instead, it may be more prudent to accommodate these spikes in demand through multi-use spaces. The parking at the MCG may be the best example where a surge in parking demand on game days is accommodated through the parkland surrounding the ground while remaining a source of open space for local residents for the majority of the year. Figure 42 shows Yarra Park full of car parking on a game day and the same park being used for a group exercise session.

**Figure 42 Adaptive spaces for overflow car parking**

Source: East Melbourne Historical Society and Melbourne Cricket Ground

Our site assessment identified several sites that could be suitable for accommodating overflow parking during peak periods, which do already function predominately as (low demand) parking areas. This includes the site behind the Caltex on Seventh Street and next to the skate park. Limited signage indicating the existing of those parking opportunities and poor pedestrian access to the CBD restrict their ability to be better utilised. Actions to improve access and knowledge of existing overflow parking sites will be developed further in the next stage of the project.

## 7.4 Shade

### Case Study: Integrating Shade

Los Angeles is a city that shares similar characteristics to Mildura. It has a hot and sunny climate, and 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 trees to mature, the city has begun integrating shade elements into existing service infrastructure such as bus stops and light poles. Figure 43 shows the new bus stops providing respite from the midday sun while the righthand image illustrates a shade sail integrated with a lamp pole.

**Figure 43 Integrating Shade**

Source: City of Los Angeles

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.

## 7.5 Transport: navigating a fraught policy area

Transport is one of the most difficult policy areas for local government. On the one hand, car dependent communities often want more, free car parking, and yet at the same time, there is a recognition that current travel patterns are unsustainable. Achieving Council's climate change targets, its ambition for a healthier community and a desire to lower traffic congestion are all made more difficult by readily available access to free, and generally plentiful parking. No city has achieved their ambition more sustainable mobility without critically examining the characteristics that make car use the dominant mode of transport.

The desire to provide free and plentiful car parking and maximise car access is often very strong from certain sectors of the community, including local traders. At the same time, wider aspirations to diversify the transport mix, through higher levels of walking, cycling, and public transport use are often embedded in Council policy. We know from extensive research that both policy goals are incompatible. Put simply, Council are not able to facilitate easy, convenient car use that can accommodate the overwhelming majority of travellers, *and* have a sustainable, healthy transport system.

In large part, the cities in Australia and around the world, with the most sustainable transport systems are the result of long-term policies and actions that actively constrained car usage. While many gains can be made by ensuring safe and attractive infrastructure is available for people to choose other ways to get around, much of the target reductions in car use will not be realised without reductions in the availability of parking and ease of car use.

The adopted *Draft CBD Plan* included the target for a 15% reduction in car use. This is most likely to be achieved by focusing on the many short distance car trips that occur to within and to the Mildura CBD everyday. There is a tremendous amount to be gained from striving to achieve the CBD Plan target of reducing car use by 15%. Mildura will be able to reduce its transport emissions, enhance its air quality and become a safer, healthier township. For those that must drive, finding a park will become easier, as they will not be competing with as many other motorists. There are also important liveability and urban amenity benefits. To this end, people are not attracted to CBD areas because of their free and plentiful parking. It is the experience of being in a bustling centre, with high-amenity features, that draw people to an area. All successful, vibrant towns have a parking problem, and this can be seen as a *'good problem'* as it is a sign that the place is popular and desirable. Places don't become popular because they have good parking; they become popular because they are great *places.* The key to the success of the Mildura CBD will be to focus on making it the best place it can be. It is often said that the best transport plan is a land use plan. Growing the residential population of the CBD will be key to its success.

A sequencing of policies that are most likely to be effective *and* politically achievable is outlined below:

1. Provide safe and attractive alternatives to car use (priority crossings, shade, amenity, diverse retail offering during the day and night, special events, protected bike lanes).
2. Increase the population that live within the CBD, where walking is the most convenient choice, through encouraging mixed-use development.
3. Slowly and steadily reduce the supply of parking relative to the size of the population and the ease of access for cars within key CBD areas, through measures that focus on the *gains* rather than the losses (al fresco dining to support local businesses, extending the Mall, etc).

Based on the above steps, this project and the CBD Plan can be seen as predominately focusing on steps 1 and 2, while taking the first steps towards step 3, where those actions yield the most impactful results.

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