Mildura Integrated Transport & Land Use Strategy

Summary Document

Mildura Rural City Council

Why have this strategy

The Mildura Integrated Transport and Land Use Strategy (ITLUS) aims to guide how our region should grow, focusing on how people and goods will travel to, within, and through our municipality.

The strategy provides a blueprint for how Mildura Rural City Council should grow and develop to 2050 and beyond, and how the transport network can better serve current and future residents, businesses and visitors. The ITLUS has been designed to compliment regional, state and national transport plans to provide a regional focus on our communities priorities.

The ITLUS features transport and land use actions, outcomes and initiatives that will guide future actions across the municipality. These will respond to key local issues and identified opportunities. These strategies and initiatives were developed with consideration of priorities and actions that were established by Council within previous documents, such as the CBD Access and Mobility Strategy.

The ITLUS will extend from four Key Enablers which consist of large transport infrastructure projects that aim to support freight movements and facilitate efficient movement in more appropriate locations, helping to achieve better land use outcomes, while making it easier and safer to move around as a pedestrian, cyclist, public transport passenger or car driver with a variety of options for every type of trip.

Key Enablers:

1. Benetook Freight Link

2. Intermodal Terminals and Industrial Park(s)

3. A Bridge Crossing at Monak

4. Connection to the Trans-Australian Railway

Key issues

- High use of road for freight transport, which increases road maintenance costs, reduces safety for road users, impacts the public realm and is less efficient than rail
- Lack of access to capital city services, such as medical care, diverse higher education opportunities and other professional services caused by expensive, infrequent and time-consuming long-distance transport options
- Significant distances between existing townships, forcing residents to travel long distances to access everyday services
- Reduced pedestrian and cyclist safety due to a lack of safe and connected networks
- Housing development in areas distant from existing community facilities and established activity centres providing a wide range of goods and services (particularly Mildura CBD)
- Vulnerability to climate impacts, such as flooding, heatwaves and drought

Key themes

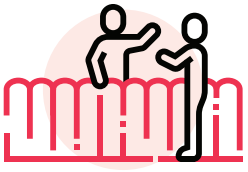
To achieve this vision, five broad themes were developed to inform analysis of issues, opportunities and identification of initiatives to employ, being:

A productive freight network

Appropriate freight network which benefits the environment, economy, public realm, and industry

Accessible and sustainable neighbourhoods

Ease of movement and access to services for all residents and neighbourhoods



Safe and healthy streets

Promotion of active transport, such as walking and cycling, to facilitate healthy residents and communities

A region full of opportunity

Capitalise on Mildura's unique strengths to improve productivity, access to opportunities and economic growth

Adaptable and resilient infrastructure

Effective management of assets to meet the needs of the community, business and industry while being adaptable to the effects of climate change

Consultation and stakeholder engagement

Community consultation, including workshops and online surveys, were held to inform the strategy. A range of views about issues and opportunities for improvement across the municipality were heard.

The key themes that were commonly mentioned by the community include:

- Lack of dedicated freight networks which has led to reduced amenity along streets that freight vehicles currently use to travel along
- Challenges due to the time and costs required to access essential services that are only provided in Melbourne, Adelaide and other regional centres
- A reduced ability to access essential services for members of the community who are unable to drive. This often includes people with disabilities, younger and elderly residents, and those who cannot afford a car

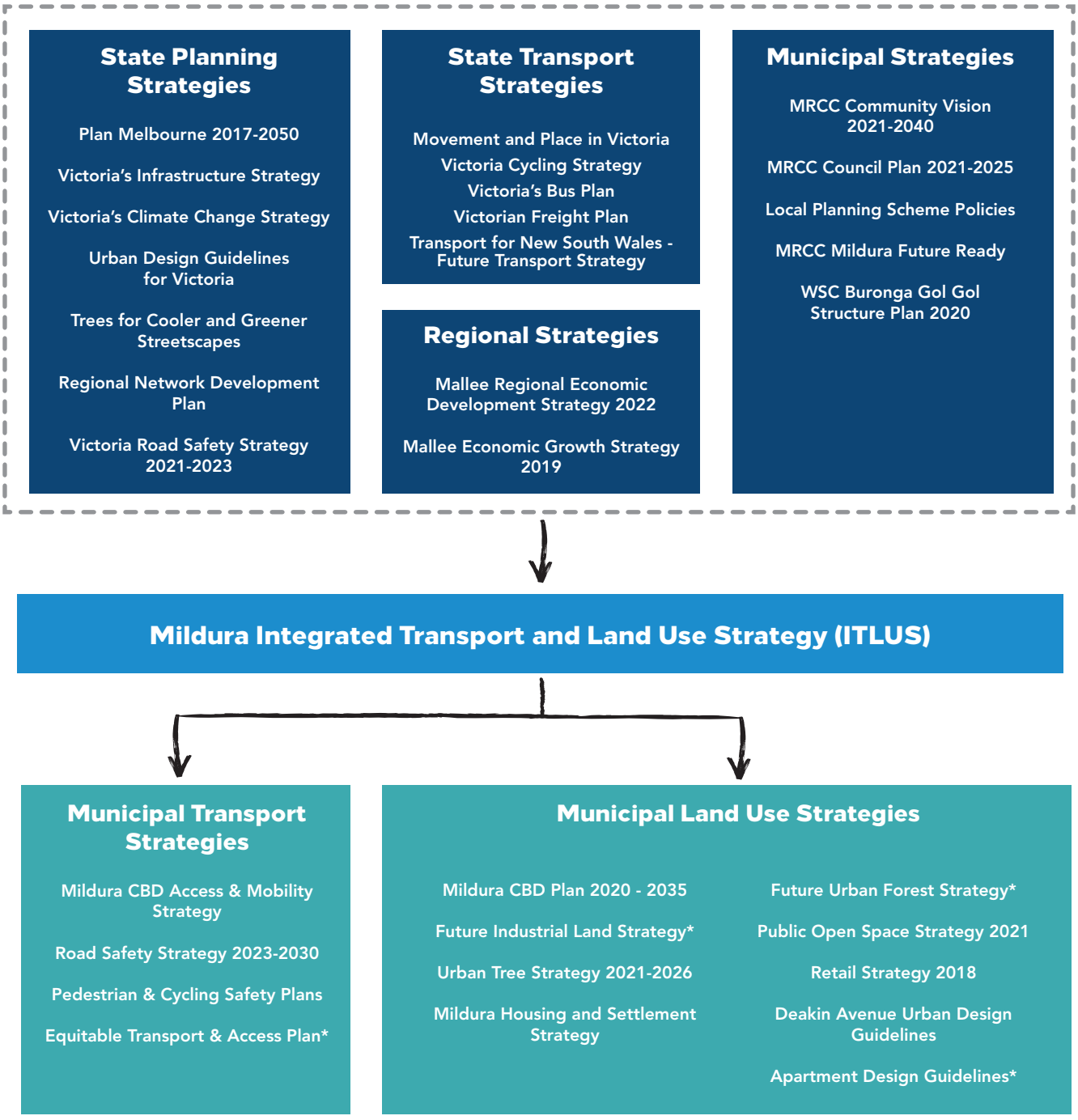
Where this strategy sits

The Mildura ITLUS covers the whole municipality. It also considers key towns that are located just outside the municipality and state border due to many out-of-municipality residents being reliant on the goods and services provided within the Local Government Area.

The geographic scope of the ITLUS is highlighted in the figure below.
Mildura is located at a great distance from higher-order centres such as Bendigo and state capitals. This means that it is integral to support access for the many remote residents whom the closest goods and services are only available within Mildura and key towns.

The ITLUS sits within a broader hierarchy of other state and local government strategies and policies. It will synthesise relevant outcomes from state and regional transport and planning strategies and will also support the implementation of the Council Community Vision and Council Plan. It is also important to recognise the importance of ongoing cross border collaboration with neighbouring Councils and State Governments to enable effective transport infrastructure outcomes.

These state, regional and municipal documents will influence the vision, aims, objectives and initiatives that will be provided within this ITLUS. The image below illustrates the strategic hierarchy of the ITLUS:



Strategic hierarchy of the ITLUS [Source: M&PC (2023)]

Implementing this strategy

Developing a vision and identifying key initiatives for transport and land use in Mildura is just the first step in the process. Collaboration and shared ownership of this strategy and its initiatives will be vital. Council, other government agencies and key stakeholders will need to collaborate effectively to implement the ITLUS, its initiatives and key enablers.

Most initiatives identified have at least one agency responsible for implementation to clearly communicate who is responsible for delivery. The implementation of this strategy will be assisted by implementation of the Mildura CBD Plan 2020-2035 and CBD Access and Mobility Strategy and other Council and regional plans. The alignment of these strategic documents seeks to protect and improve Mildura's CBD.

The ITLUS will be reviewed every four years to reaffirm the direction and priorities required to meet the Community Vision.

Funding and delivery

A key priority of the Victorian Government is to ensure that the needs of all Victorians are met. This will ensure that the unique and diverse communities that reside across our municipality are supported and can flourish. This requires a transport network that provides a range of transport options while being financially sustainable. Intensifying areas close to town centres will enable more residents to reduce their cost of living by walking for some trips. Land use intensity of future growth will determine how productive, efficient, liveable, safe and accessible each of our towns will be.

This strategy comprises 13 actions. While some actions are already in the planning or delivery phases, some new actions can be implemented quickly while others will require additional research and feasibility studies. This will ensure the detail of each action aligns with the transport and land use vision, are feasible and provide the best value for money for the community.

Actions developed as a part of the ITLUS will require collaboration from several stakeholders. The Victorian Government and MRCC will work together to identify ITLUS funding opportunities, including funding from the Commonwealth government (through a Regional City Deal) or private sector investment (such as through developer contributions). Encouraging government and private sector investment to align with our shared vision for Mildura is an essential part of the ITLUS implementation phase.

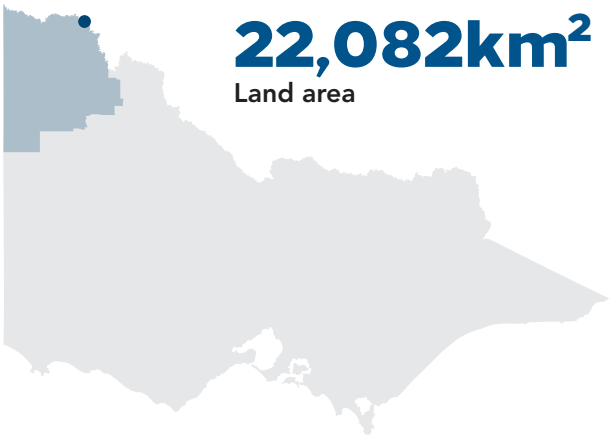
Our region

Located in north west Victoria, the Mildura Rural City Council area covers almost 10 percent of the State.

The region's landscape includes unique Mallee vegetation, broad acre grain properties, extensive horticultural farms and vibrant towns.

Mildura Rural City shares borders with New South Wales and South Australia, which makes it a strategically important regional service centre for three states.

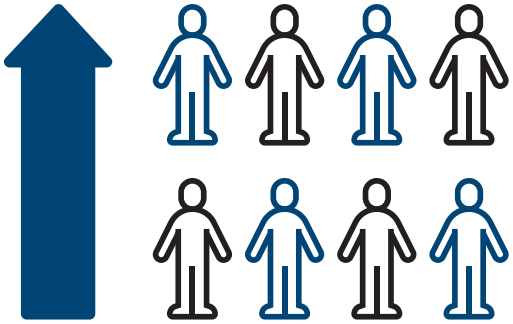
The beautiful Murray River winds its way through much of the municipality and is a focal point for visitors and those who call the region home.



22,082km²
Land area

57,626
2024 estimated resident population

62,986
2031 projected resident population



Key industries

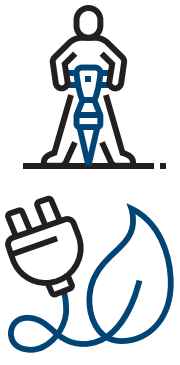
Dryland farming, irrigated horticulture (table grapes, wine grapes, dried grapes, citrus, vegetables and nuts), construction, tourism, food and beverage manufacturing, transport and logistics, retail, health and community services.

Our towns

- Cabarita
- Cardross
- Colignan
- Cowangie
- Cullulleraine
- Irymple
- Merbein
- Meringur
- Mildura
- Murrayville
- Nangiloc
- Nichols Point
- Ouyen
- Red Cliffs
- Underbool
- Walpeup
- Werrimull

Emerging industries

Renewable energy generation, aquaculture, mineral sands mining and recycling



$8.691 billion
Annual economic output

19.34%
Households earning less than $650 a week

4.6%
Aboriginal or Torres Strait Islander

5,434
Businesses

#5
Socioeconmic disadvantage in Victoria

75%
Travel by car

25,423
Jobs

20.12%
Speak a language other than English at home

Sources: 2021 update to Australian Bureau of Statistics and REMPLAN as of 26 August 2021

A productive and sustainable Mildura

- Mildura will be thriving, active, healthy, and connected
- Industry and local businesses will continue to thrive due to updated high-quality freight infrastructure
- Our local streets and activity centres will be people-focused, pleasant and safe
- The footpath and bicycle network will support fine-grain movement and healthy lifestyles for all members of the community, regardless of age, gender or disability
- We will remain connected and able to meet our daily needs through a safe network of streets and effective public transport services
- Transport infrastructure will support future land use development and economic opportunities into the future

Targets

Mildura Rural City Council Community Vision 2021 - 2040

As a part of Council's 20-year Community Vision, a key theme explored is Place.
The Place vision put forward for Mildura is:
"We will be a place to live, belong, and visit with infrastructure and development that enhances our lifestyles."
This will include:

- Well planned development that considers the diverse and changing needs of our community
- Adequate and sustainable infrastructure to meet future demand
- Affordable housing in a range of options to suite community needs
- Outdoor spaces, green spaces and public facilities where people of all ages and abilities can exercise and relax
- Accessible and connected transport options within and to our region
- Friendly places and towns recognised for their individual strengths and unique communities

The vision and priorities for Place in Mildura provide guidance for the ITLUS to develop specific actions and initiatives to help MRCC achieve its vision for 2040.

Victorian Road Safety Strategy 2021 - 2030

The Victorian Government has committed to halving road deaths by 2030 - eliminating all deaths on Victoria's roads by 2050. It also seeks to reduce the occurrence of serious injuries from road crashes. These targets are particularly important for rural Victoria, where fatality rates of motorists, passengers, and motorcycle drivers were approximately 52% higher than motorist fatality rates in Metropolitan Melbourne in 2018.

This ITLUS will support and contribute to these state-wide targets through a focus on road safety improvements, and facilitating the uptake of alternative transport by reducing the necessity of car travel.

Towards Zero Emissions Strategy 2021 - 2050

Councils Towards Zero Emissions Strategy outlines how Council will achieve net zero carbon emissions by 2050. There were several priority areas identified to assist in the transition to a net zero community such as Council's fleet, landfill, buildings and facilities, street lighting and scope 3 emissions (water use, air travel and office paper).

High-level steps to reduce emissions were outlined in this strategy, these include avoidance of energy use, energy efficiency, switching to cleaner energy alternatives and purchasing offsets for any unavoidable emissions.

Council is taking a leading role in implementing this strategy to reduce emissions and support climate action in the municipality. Actions and initiatives developed in this ITLUS will support Council's goal of zero carbon emissions by 2050. These include a range of strategies targeting development patterns and typologies, transport habits, and exploring innovative transport technologies. Encouraging more intensive land use development in Mildura's CBD is one of the key ways in which MRCC and the community can reduce carbon emissions through transport behaviour change and a reduction in the need to construct new road infrastructure.

Victoria's Climate Change Act 2017

In 2017, the Victorian Government established a long-term aim of achieving net-zero emissions by 2050, with five-yearly interim targets to keep track of progress. By 2025, Victoria's target is to reduce emissions by 28-33% of 2005 levels, and 50% by 2030.

The Mildura ITLUS will support and contribute to these state-wide emissions reduction targets. This will be achieved by supporting and facilitating the uptake of low emissions transport modes, through investment in required infrastructure and supporting meaningful behaviour change. Long-term and widespread behaviour change will be needed to achieve these climate outcomes and support a sustainable, liveable, and healthy future. This future aligns with the transport and land use vision for Mildura.

Action plan

Initiatives and actions developed as a part of the ITLUS will require collaboration from several stakeholders. The Victorian Government and Council will work together to identify ITLUS funding opportunities or private sector investment.

A productive freight network

Appropriate freight network which benefits the environment, economy, public realm, and industry

Outcome	Action	Responsbility	Action Type	Timeframe
Productive freight network where efficient movement is prioritised in the right locations	1. Develop a High Productivity Freight Vehicle (HPFV) network plan which includes key connections to the Benetook Freight Link, Intermodal Terminals and Bridge Crossing at Monak	Council	Action	Short term
	2. Develop and implement an advocacy plan to successfully deliver the four key enabler infrastructure projects	Council	Advocacy	Short to long term
Support and protect industrial land development in strategic areas	3. Upgrade roads which have been identified as key freight routes to support their use as preferred freight corridors	Department of Transport & Council	Action	Short to medium term
	4. Advocate for rail infrastructure projects that support the increase in freight on rail	Council	Advocacy	Short to medium term

Accessible and sustainable neighbourhoods

Ease of movement and access to services for all residents and neighbourhood

Outcome	Action	Responsbility	Action Type	Timeframe
Integrated land use and transport planning with diverse housing choices	5. Advocate for expansion of the bus network as well as a high frequency bus corridor along Deakin Avenue	Council	Advocacy	Short term
Inclusive transport connections for people living in remote areas and townships	6. Undertake a Mildura public transport network study based on a high frequency coverage of the city centre as well as an increased coverage to growing suburbs and Mildura Airport and regional public transport improvements (including regional passenger rail).	Council	Advocacy	Short term
Inclusive transport connections for people living in remote areas and townships	7. Apply for funding from the Flexible Local Transport Solutions	Council	Action	Short term

Safe and healthy streets

Promotion of active modes of transport, such as walking and cycling, to facilitate healthy residents and communities

Outcome	Action	Responsbility	Action Type	Timeframe
Infrastructure that supports pedestrian and bicycle rider comfort, priority and safety	8. Develop an active transport network plan that caters for all modes of transport including annual priorities for pedestrian networks and strategic cycling corridors	Department of Transport & Council	Action	Medium term
Attractive and comfortable public spaces and streets that stimulate activity More inclusive public spaces and streets where all people feel safe and secure	9. Advocate for National Highway classification to be moved from Deakin Avenue between Fifteenth Street and Seventh Street to the Mildura freight bypass route along Benetook Avenue to improve pedestrian amenity and safety	Department of Transport & Council	Advocacy	Short to medium term

A region full of opportunity

Capitalise on Mildura's unique strengths to improve productivity, access to opportunities, and economic growth

Outcome	Action	Responsbility	Action Type	Timeframe
Greater employment, education, health and training opportunities which generate high levels of community participation Increased provision of higher-order services in the Mildura township to reduce the need to travel out of the region Improved infrastructure and services supporting first-class tourism in the region	10. Advocate for affordable and convenient regional public transport to Mildura from all regional towns, Adelaide, Melbourne and Sydney.	Council	Advocacy	Short term

Adaptable and resilient infrastructure

Effective management of assets to meet the needs of the community, business, and industry while being adaptable to the effects of climate change

Outcome	Action	Responsbility	Action Type	Timeframe
Effective public transport infrastructure where buses are a convenient transit option	11. Advocate for timely outcomes to Mildura's bus reform and related service improvements	Council	Advocacy	Short term
Appropriate integrated transport and land use planning that mitigates climate change	12. Undertake a Movement + Place assessment (Modules 1 & 2) to establish network priorities	Council	Action	Short to medium term
Efficient management of public assets to support benefits for the entire community Increase use of public transport for everyday travel	13. Advocate for additional overtaking lanes along the Calder Highway	Council	Advocacy	Short to medium term

Key Outcomes

Outcome	Name	Description
1	Productive freight network where efficient movement is prioritised in the right locations	Due to Mildura Rural City Council's strong agricultural sector, freight needs to be carefully considered to meet the needs of our community. This will enable the most suitable mode of freight transport to be used in each circumstance and ensure the impacts of freight movements on the community are minimised.
2	Support and protect industrial land development in strategic areas	Land in strategic areas should be protected from subdivision or the development of sensitive land uses due to the significant high value of the land for the agricultural and freight sectors. Key areas which will be maintained for freight compatible land uses include land parcels along the rail corridor and around the Mildura Airport
3	Integrated land use and transport planning with diverse housing choices	Mildura's new housing is predominantly being provided at the edge of towns, far from existing shops, schools, employment and transport services. This requires every household to own a car to meet their daily trip needs. Affordable and diverse housing options should be created close to town centres and high-quality public transport corridors. This will create more transport choices and reduce the number of cars and traffic congestion on Mildura's road network.
4	Inclusive transport connections for people living in remote areas and townships	Residents of Mildura's rural towns have access to a very limited number of public transport services. These towns are widely dispersed across the region, with residents travelling significant distances to access everyday services including education, employment, healthcare and basic groceries. Affordable transport options should be investigated to reduce isolation within these communities.
5	Infrastructure that supports pedestrian and cyclist comfort, priority and safety	Mildura residents are largely reliant on car travel. Current pedestrian and bicycle infrastructure does not adequately support people in choosing to walk or ride a bicycle to meet their daily travel needs. There is a need to provide infrastructure that will support walking, bicycle riding and catching public transport. This will reduce the cost of living, increase local economic activity, improve health outcomes and help to maintain Mildura's livability.
6	Attractive and comfortable public spaces and streets that stimulate activity	There are some streets that lack active frontages, shade, appropriate tree canopy and visual interest. There is a need to design spaces that encourage people to experience and linger within the public realm on foot or by bicycle. There are opportunities to work with local businesses to explore activation opportunities in priority locations identified in town centres including Mildura CBD.
7	More inclusive public spaces and streets where all people feel safe and secure	People are unlikely to spend time in spaces they don't feel safe in. There is a need to design spaces that are safe for people of all genders, ages, sexualities, religions, cultures, and abilities to enable everyone to enjoy their neighbourhood safely.
8	Greater employment, education, health and training opportunities which generate high levels of community participation	To boost the vibrancy and economic prosperity of Mildura, education and employment opportunities need to be expanded, providing greater opportunities for economic participation across the whole community. A large proportion of young people in Mildura are not engaged in education or employment, and are experiencing social isolation. Greater education and employment opportunities will boost economic, emotional and social outcomes for Mildura residents.

9	Increased provision of higher-order services in the Mildura township to reduce the need to travel out of the region	Mildura is a centre of activity for a vast rural region. There are opportunities to provide a greater number and diversity of higher order specialist services to support a range of needs. The strategy will support the location of services within Mildura to reduce the need for residents to travel to cities such as Adelaide, Bendigo and Melbourne to meet their essential needs.
10	Improved infrastructure and services supporting first-class tourism in the region	Mildura is a unique and beautiful region. People from across Australia should be able to easily visit Mildura by any mode of transport that works best for them, at an affordable price. Once in Mildura, visitors should be able to easily move around the region and experience all it has to offer, including its natural beauty, CBD and outlying towns.
11	Effective public transport infrastructure where buses are a convenient transit option	There are opportunities to simplify the bus network and increase service frequencies and span. Integrating supportive land use development policies focused on key public transport corridors will encourage some consolidation of services onto Deakin Avenue to provide a higher density of residential dwellings, businesses and other trip-attracting destinations. This is already happening along Deakin Avenue due to its history as a key node and link. The existing intensity of activity, key services and residential buildings can be easily increased to make businesses, community facilities and services in the corridor more viable and efficient. Council could also consider funding a supplementary shuttle bus between Mildura CBD and Mildura Central Shopping Centre to increase the service frequencies beyond those that can be funded by the State government.
12	Appropriate integrated transport and land use planning that mitigates climate change	Future land use development should be mindful of MRCC aspirations to reduce the community's carbon footprint and minimise development on fertile agricultural soil. There are opportunities to focus development within established areas such as Mildura CBD and the Deakin Avenue corridor. A greater share of new residential dwellings located within easy walking distance to locations with a higher density of essential goods and services can reduce the municipalities overall carbon footprint through reduced vehicle kilometres.
13	Efficient management of public assets to support benefits for the entire community	Reviewing Council assets including strategic land parcels, will help provide land supply in key accessible locations. It will also assist Council in reducing ongoing costs whilst being able to invest in more services for the community.
14	Increase use of public transport for everyday travel	Council can partner with bus operators to run specific campaigns that encourage people to try the bus. The focus should be on large events that would otherwise create traffic congestion and parking chaos, and free trials for new residents or the whole population. These could be specifically focused on events and festivals at the riverfront or sports complex, where large crowds would quickly create traffic congestion and parking scarcity. For example, Burnie in north-western Tasmania offers free bus services to their annual New Year's Eve celebrations. This creates one time each year when non-users get to experience the bus network, in a manner that creates positive experiences and soft marketing of the benefits of using the bus for specific trips.

Mildura Rural City Council

A productive freight network

Appropriate freight network which benefits the environment, economy, public realm, and industry.

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	4. Advocate for rail infrastructure projects that support the increase in freight on rail	Council	Advocacy	Short to medium term

1 A productive freight network

1.1 A productive freight network

Mildura's transport network needs to be adaptable and resilient to the changes that the future brings. This includes the evolving needs of industry in Mildura. As agriculture is a key sector in the region, it is essential that we ensure Mildura can stay productive and goods can reach their markets at a competitive price.

Transport networks play a significant role in achieving these outcomes. A productive freight network can be fostered through the five key enabler projects. These projects will enable freight access to be managed more effectively, whilst reducing freight impacts on the community. The seasonal nature of the freight task adds to complexity of the transport and intermodal solutions.

1.2 Freight and productivity

Today, Mildura is a key centre of freight located in the northern part of the Mallee and Sunraysia region. The Melbourne-Geelong-Yelta and Murrayville (with future potential link to Adelaide) railways and several highway corridors including Calder Highway, Mallee Highway, Sunraysia Highway, Silver City Highway and Sturt Highway, enable large volumes of products to be delivered from Mildura Rural City Council LGA to metropolitan centres, intermodal terminals, and seaports.

The agricultural industry has been dominant in the region for millennia and currently creates 25% of all Gross Value Added between 1991 to 2018. As economic activity grows, so will the need to facilitate freight movements from the area. It can be difficult to meet future freight transport demands reliably if residential land use developments create increased private vehicle travel volumes on key freight routes.

Mildura Rural City Council LGA and neighbouring regions have not yet fully developed the export potential for local commodities due to high paddock to port costs and a gap in the intermodal rail transport market. Moving more freight from road to rail will have the potential to fill this gap in the Sunraysia region.

In 2004, MRCC completed Planning Scheme Amendment C28 which sought to facilitate the long-term development of the city and surrounding region. This amendment opened the door to the creation of a major intermodal freight gate and industrial park at Thurla which would then permit the relocation of freight operations and fuel depots which are currently serviced by the rail line that travels through the centre of Mildura urban area. However, as part of the development of this strategy and as part of our commitment to improving transportation connectivity, there is a need to evaluate multiple locations for the development of intermodal facilities. These sites will be carefully assessed based on factors such as accessibility, existing infrastructure, demand, and potential for future growth. By considering various locations, we aim to ensure that these facilities effectively integrate different modes of transport, providing seamless and efficient travel options for passengers and freight.

The selection process for future sites will involve collaboration with key stakeholders, including government, the transportation and logistics industry, and community representatives, to identify the best strategic locations. We will also consider environmental impact, economic benefits, and overall feasibility to ensure sustainable and practical solutions. By exploring multiple site options, we can maximise connectivity and convenience, ultimately enhancing the efficiency and accessibility of our transportation network.

The removal of the rail line from the centre of town will have significant economic, environmental, and social advantages. It would also allow the full implementation of the Mildura Riverfront Masterplan by removing physical barriers and enabling more of the CBD to directly address the river frontage. It is noteworthy to understand that this has implications for the passenger rail terminals and connectivity to

Mildura and other townships. Further work needs to occur to support actions in this strategy relating to public transport networks that integrate with potential future passenger rail.

Rerouting of Sturt Highway around the city on a reconfigured Meridian Road, with a new bridge over the Murray River near Monak, would provide further benefits and a direct road connection with industrial areas without the need to travel through built up areas.

1.2.1 Rail

In 2005, there was approximately (on average) one inbound and one outbound (two separate trains) freight train operating on the Yelta line each day (only in grapes and was season), excluding shunting movements within Mildura. In 2023, there was an average of three train movements in each direction each week to Merbein (of various lengths up to 1500m depending on seasonal freight requirements) and additional seasonal grain trains from Yelta. These train movements are impacted by 22 level crossings within the Mildura urban area. Additional freight capacity can be achieved by adding additional services up to 3 times per week at a length of up to 1200m..

As a strategic corridor of the National Land Transport Network, the standardisation of the rail line from Ballarat to Mildura has been completed except for the Ballarat to Maryborough section. There are opportunities to combine the outcomes of this upgrading/standardisation project with the provision of an improved rail link around Mildura.

The relocation of rail freight services away from central Mildura, is considered important as it will:

- Enable better pedestrian connections between Mildura CBD and the river front.
- Reduce road safety risks, given the shunting movements and expected increase in freight and road traffic over time.
- Improve residential and educational precinct amenity, as this would facilitate relocation of some of the less desirable land uses associated with freight activity away from residential areas.
- Reduce delays and associated costs to road-based transport.
- Support the industrial developments located to the south of Mildura streamlining freight operations throughout the area.
- Open upon rail corridors for alternate uses such as pedestrian and cycling pathways, bus corridors and vegetation buffers.

The existing intermodal terminal at Merbein is now operating at close to capacity in peak periods with the ability to double this if required. State government recently extended their siding by 25% to cater for 1,200m long trains. Whilst it is unclear that there is a need to run rail 7 days a week, to facilitate this freight facilities would need a higher level of automation. With automation providing round the clock operation and fewer local jobs (and less need for employees to live locally) such a facility could be located away from built-up areas and within an appropriately zoned surrounding precinct.

Further to this the construction of an alternative rail loop around Mildura, particularly for freight, has been raised in several documents in the past. For example, the rail line could be constructed in stages, initially as a spur line to Thurla, utilising the existing Morkalla Rail Line reservation. Over time this could connect back to Yelta if the grain operations are not moved to Thurla.

A northern rail connection from Red Cliffs via a new bridge at Monak to the Trans-Australian Railway line at Sayers Lake would create more direct, standard-gauge, rail freight connection to Brisbane, Darwin, Sydney and Perth. This would avoid issues associated with rail freight movements via Adelaide that arise from the limited capacity of infrastructure through the Adelaide Hills. However, this future opportunity will be predicated on a further detailed analysis to prove its viability.

Removal of rail from the centre of Mildura will need to remain compatible with any goal to restore passenger services to Mildura. The railway reserve should be preserved for its future potential as a

movement corridor and should be promoted as a part of the high-quality shared user path network, with priority crossings at the 22 streets for pedestrians and bicycle riders on the path.

Redundant rail corridors offer a unique opportunity to enhance public and active transport networks by re-purposing underused or abandoned infrastructure into accessible, sustainable transit routes. For Mildura these corridors offer an opportunity to connect townships with urban areas as they are ready-made pathways for public transport via dedicated bus rapid transit systems. This is also an important consideration for connectivity for passenger rail if the main freight rail line terminates south of Mildura, providing a quick and efficient route for a shuttle service between Red Cliffs and Mildura.

By using existing rail corridors, we can reduce the cost and complexity of building new transport infrastructure. Integrating these corridors into modern public transport systems can help reduce traffic congestion, lower emissions, and improve accessibility for communities with limited transport alternatives.

Brisbane City Council – Nort west Transport Network

In addition to public transport, old rail corridors are ideal for active transport initiatives such as walking and cycling paths. Typically, their topography has gentle gradients and established routes through natural and urban landscapes. This makes them perfect for safe, scenic, and direct trails. When converted into greenways or multi-use paths, these corridors promote healthier lifestyles, increase non-motorised commuting, and enhance connections between townships, parks, and commercial areas. Transforming rail corridors into active transport links can help reinvigorate surrounding communities, boost local economies, and preserve green space, making them a valuable asset in the development of more liveable and sustainable cities.

The Goods Line in Sydney

The High Line in New York

An assessment will be required to investigate the economic viability of each rail investment option (it is noted that this is a significant body of work) This will ensure:
Standard gauge connectivity in the Ballarat-Maryborough corridor to improve efficiency of access to the Ports of Geelong and Melbourne
The strategic locations for future network of intermodal facilities and how they integrate into existing and future connecting infrastructure
The spur line to a new intermodal facility at Thurla and subsequent extensions to form a new rail loop around Mildura
The removal of the rail line from the city centre and conversion to a high-quality shared user path or an alternate community beneficial use
A standard gauge connection, across the Murray River to the Trans-Australian Railway line at Sayers Lake providing access to Broken Hill, Perth, Darwin and Sydney without backtracking if the freight task exists

The following benefits and costs should be considered during assessment:
Opportunities for redevelopment of 4 hectares of CBD river front land. This could provide additional possibilities for new commercial/tourism-related activities
Retention of the railway reserve as a rail trail with a high-quality shared use path between Merbein and Red Cliffs
Savings in time costs (labour and fleet utilisation) from the commercial freight movements by road at each of the 22 level crossings
Opportunities to encourage employment growth in commercial and tourism sectors
Costs associated with the construction of facilities, increased or reduced operating costs and local employment associated with the transport and logistics sector

Benefits and costs associated with connecting the standard gauge line from Red Cliffs to Broken Hill are expected to include:
Opening of new freight paths for transport of existing freight volumes including between Melbourne and Darwin or Perth without passing through the Adelaide Hills
Transport efficiencies associated with future potential industries including those that might become viable only subject to efficient rail transport of materials such as mineral sands mining in the area between Mildura and Broken Hill
Savings from reduced wear and tear on the arterial road network from heavy vehicles (particularly those at maximum weight such as those carrying heavy mineral concentrates)
Tourism opportunities associated with ‘outback experience' and specialised ‘Vinelander’ passenger services, linking Melbourne with Mildura and Broken Hill

A full and comprehensive business case would be required to assess the costs and benefits of this project.

1.2.2 Road

Major highway corridors converging in Mildura cross the Murray River at

- George Chaffey Bridge (Sturt Highway); and
- Abbotsford Bridge (Calder Highway).

The George Chaffey Bridge is currently in good condition, with the existing structure built in 1985. This bridge is funded and maintained by the Federal Government. During periods of heavier traffic, the bridge crossing has reached saturation which sees extensive delays for passenger and freight vehicles.

The Abbotsford Bridge was constructed in 1928, is a single-lane, wooden-deck, lift-span bridge, which is heritage-listed under the NSW Heritage Act. It requires traffic control to ensure single direction traffic flow, enable the lift-span to be elevated and is the responsibility of the NSW state road authority.

When either bridge is obstructed traffic volumes can quickly congest the surrounding nearby road network. The reliability of the interstate freight network in the region relies on these two bridges and with a total of only three travel lanes, leads to increased congestion and increased travel times particularly for freight vehicles. This limitation and growing freight task highlight the need for additional redundancy in the freight network crossing the Murray River. Options for an additional bridge crossing near the location of Monak have been developed and would be the responsibility of State and Commonwealth governments to pursue through a business case.

This has been identified as a high priority through the industry consultation process as this will assist with reducing city congestion and aiding interstate road traffic by reducing transit times. This will require significant cross border collaboration as connecting road networks would need substantial upgrades. This would require support from both Transport New South Wales and Wentworth Shire Council.

There are several important roads within and surrounding Mildura's urban area, providing vehicle access for the local community including:

- Deakin Avenue (Sturt Highway) – which is a major north-south link that runs through several major retail/commercial precincts.
- Benetook Avenue – which is an important north-south connection, located in the southeast of Mildura.
- Fifteenth Street and Seventeenth Street (Calder Highway) – which are major east-west links that run through the city.

As the amount of freight vehicle volumes and vehicle size increase over time, this will create issues as freight access routes currently operate through activity centres and residential environments that are meant to cater for local grain movements. This is particularly problematic in locations with higher volumes of pedestrians, such as within commercial/retail precincts within the heart of Mildura.

Increasing freight vehicle volumes reduces safety and amenity in built up areas if freight access routes and industrial precincts are not appropriately planned. Challenges around employee transport access and the limited provision of essential services and goods can undermine the ability to support, attract and retain high skilled employees and key workers.

The increased number of trucks is being accompanied by ever-increasing pressures to raise the mass of loads carried by trucks for better efficiency. These increased loads place greater pressure on the existing infrastructure, which can potentially lead to an accelerated deterioration of the road pavement.

The existing truck routing pattern is inefficient for truck operations. Long-haul trips through busy town centres, such as Mildura, present several distinct disadvantages for trucks including:

- Increased fuel use, increased tyre wear and general wear and tear on the trucks due to acceleration and deceleration, as trucks that are travelling through built up areas are required to stop and start at busy intersections.
- Increased travel time due to congestion, which results in increased costs to operators, which are then passed on to the end customer.
- Increased safety risks to equipment and freight due to the significant numbers of conflict points throughout the journey – this has already been demonstrated with multiple fatalities at key nodes on highways through town centres and critical choke points at key intersections such as San Mateo Avenue and Seventh Street

- Increased driver stress, particularly in busy retail areas such as Deakin Avenue, where private vehicles can perform unexpected and dangerous manoeuvres, requiring truck drivers to take evasive action.

MRCC has long campaigned for an alternative alignment of the Sturt Highway to remove truck movements from Deakin Avenue. Benetook Avenue is currently the favoured route, and road traffic signs have been installed within Mildura to guide truck traffic away from Deakin Avenue. However, this is not considered a sufficient long-term strategy.

There are several freight terminals within or near Mildura that are serviced by road-based freight transport. The location of these terminals is a significant reason why undesirable freight movements are being facilitated along the road network within central Mildura. The relocation of these freight facilities would assist in supporting the vision for efficient and safe freight access.

It is suggested that the Sturt Highway could be re-aligned to cross the Murray River around Monak and then follow the existing alignment of Kulkyne Way, Millewa Road and Meridian Road to join with the Sturt Highway at Merbein South. This alignment would provide a range of benefits including:

- An effective bypass of the town centre for the Sturt Highway. This would remove the need for regional truck movements to utilise Deakin Avenue. This will result in a reduction in congestion, reduced accident risk, environmental improvements, and enhanced amenity for residents. In addition, operating costs for trucks are expected to be reduced due to fewer interruptions along the journey.
- A direct connection to future Intermodal Facilities south of Mildura or previously identified industrial hubs such as Thurla. This connection will have economic advantages and can be planning with regards to rail freight to establish a true, regional intermodal terminal.
- Reduced costs associated with infrastructure deterioration due to truck usage within the town centre.

Additionally, the Calder Highway could be realigned with the Sturt Highway and extended through to Yelta along the existing Meridian Road alignment. This would support the benefits documented above. The realignment of these Highways can be undertaken in stages and would be subject to business cases with State and Commonwealth support.

The cost of each stage of improvement will reflect the quality of the road and complexity of the terrain, so the prioritisation of key segments should focus on the benefits from each stage to ensure they outweigh the cost of high-quality road outcomes including:

- Constructed to ‘A standard’ in accordance with the VicRoads classification system for arterial roads in the network.
- Grade separated interchanges at each highway junction. These would provide the safest and most efficient connections to various destinations including regional freight terminals.
- A new river crossing near Monak at a site subject to a range of considerations relating to terrain, cultural heritage, cost, benefits, and impact on surrounding communities.

The re-alignment of the highways will provide for regional trips bypassing Mildura’s urban area. This will support the development of residential, commercial, and retail land use in locations where amenity-adverse freight activities will be minimised.

Benetook Avenue should remain as an important link within Mildura’s local road network. It will serve local freight traffic and reduce pressure on Deakin Avenue as it becomes a higher amenity boulevard.

An economic assessment of each option and stage for the road infrastructure projects identified will consider a range of economic benefits and costs, including:

- Options analysis for improvements to key intersections such as San Mateo Avenue and Seventh Street, Benetook Avenue and Eleventh Street, Benetook Avenue and Fifteenth Street (Calder Highway) and Benetook Avenue and Fourteenth Street
- Avoided costs in strengthening or widening the existing Chaffey Bridge.
- Savings in travel time costs for freight, public transport and private vehicles due to more reliable bridge crossings and alternative routes between locations such as Red Cliffs.
- Freight vehicle operating cost savings from reduced fuel costs, braking and tyre wear.
- Increased safety leading to reduced crash incidence and costs particularly at highway crossings where grade separation improvements have occurred.

1.2.3 Mildura Airport

Mildura Airport is located to the southwest of Mildura's urban area and is one of the busiest regional airports in Australia, carrying over 200,000 passengers per year (pre-Covid). Airlines currently serving Mildura Airport include Qantas and Regional Express (Rex). Mildura is directly connected to several major centres including Melbourne, Sydney, Sunshine Coast and Gold Coast.

Mildura Airport is predominantly a passenger terminal at present, with only minor freight movements. Most of the existing airport freight is time sensitive, high-value products delivered on an as-needs basis. There is a small proportion of general freight that is delivered to and from Mildura daily on passenger services. Currently, fresh produce bound for international markets is transported by road to Melbourne and transferred onto international passenger flights.

Passenger movements through Mildura Airport are expected to recover along with growth in the broader travel industry post Covid-19. There is some potential for growth in airfreight, particularly high value express freight, however, rail freight is best suited to high-volume, long-distance freight movements.

1.2.4 Intermodal Freight Terminals

There are opportunities for Mildura to serve the expanding freight task more efficiently. Mildura is already a freight hub with a strategic location at the nexus of key freight corridors. Appropriately planned road and rail infrastructure will be required to facilitate higher demands in freight volumes. There will be a need to prioritise High Productivity Freight Vehicles (HPFVs) onto roads that have dedicated investment funds to maintain them. It will not be financially possible to maintain every road as a HPFV route.

Appropriate future land use and transport planning decisions are needed to actively support the spatial and workforce needs to sustain a stronger and resilient industry and freight network. Whilst Thurla has been the substantive site for a future intermodal facility there would need to be further investigation and feasibility studies into the precise location of the principal and subordinate intermodal sites. Depending on the connectivity of the road and rail freight task and priorities, alternate sites may be considered south of Red Cliffs or along locations in the existing rail corridor. This will enable Mildura to maintain and future proof its position as a significant regional centre for freight.

Developing a high-productivity freight network that incorporates a network of intermodal facilities is a complex task that would require a combination of infrastructure, technology, logistics, policy, and stakeholder collaboration. Intermodal terminals are a key to moving high volume freight from the regions, but operation solely based on freight transfer is not sufficient to ensure viability. Additional considerations such as warehousing and packaging are key parts to the success of the terminal.

Investment in intermodal facilities may facilitate or incentivise new crop types such as export hay production. The Mallee is Victoria's premium oaten hay growing region and its production cycle will assist farmers in dealing with varying rainfall patterns. Export hay is ideal to fill some of the 120,000 empty containers leaving the Port of Melbourne each year (after being used for imports)

Feasibility studies would need to consider:

Infrastructure Development

- Efficient Transport Corridors: Investment in high-capacity roads, railways, ports, and airports designed to handle large volumes of freight with minimal delays.
- Multimodal/Intermodal Connectivity: Connection and integration between transport modes (e.g., rail-to-port, road-to-air) through a series of well-connected hubs.
- Dedicated Freight Routes: Building or upgrade infrastructure specifically for freight to reduce congestion with passenger transport and increasing road safety.
- Urban Distribution Centres: Establish strategically located hubs near urban centres for last-mile delivery.

Technology

- Digital Freight Management Systems: Implement platforms for real-time tracking, routing optimisation, and load matching.
- Automation: Incorporate autonomous trucks, drones, and automated port/warehouse equipment to improve efficiency.
- Internet of Things (IoT): Use IoT sensors to monitor vehicle conditions, cargo security, and environmental factors.
- Data and AI: Leverage predictive analytics for demand forecasting, route optimisation, and congestion management.

Efficient Operations

- Standardised Containers and Equipment: Promote uniformity in freight handling equipment and containers to streamline transfers between modes.
- Just-in-Time Logistics: Optimise inventory and shipment scheduling to reduce storage and idle time.
- Collaborative Networks: Encourage partnerships among shippers, carriers, and logistics companies to share resources and maximise utilisation.

Policy and Regulation

- Streamlined Customs and Trade Procedures: Simplify cross-border freight processes through digital customs systems and trade agreements.
- Weight and Size Regulation Adjustments: Allow larger or heavier vehicles where infrastructure permits (over mass road transport on dedicated freight networks).
- Incentives for Green Freight: Provide tax breaks or subsidies for energy-efficient vehicles and low-emission technologies.
- Zoning and Land Use Planning: Protect land for logistics facilities near major transport corridors and urban areas.

Sustainability and Resilience

- Green Logistics: Prioritise investments in low-emission vehicles, alternative fuels, and energy-efficient infrastructure.
- Climate Adaptation: Design infrastructure to withstand extreme weather events and other climate-related disruptions.
- Circular Supply Chains: Encourage reuse and recycling of materials to reduce waste in the freight process.

Skilled Workforce

- Job Markets: Creation of a local job market to attract jobs from Melbourne to monitor, inspect and pack produce at the source.
- Training and Education: Upskill workers in emerging technologies like automation and data analytics.

- Driver Shortage Solutions: Address labour gaps in trucking through attractive wages, training programs, and improved working conditions.

Stakeholder Collaboration

- Public-Private Partnerships (PPPs): Leverage private sector expertise and investment to enhance public infrastructure.
- Community Engagement: Ensure that local communities support freight projects by addressing concerns like noise, pollution, and land use.
- Global Cooperation: Align with international standards and participate in global freight initiatives.

Data-Driven Decision-Making

- Integrated Data Systems: Use data-sharing platforms across government, businesses, and transport agencies to ensure better planning.
- Performance Monitoring: Continuously measure efficiency metrics like delivery times, costs, and emissions to refine the network.

Challenges to Consider

- High Upfront Costs: Building and upgrading infrastructure requires substantial investment.
- Regulatory Hurdles: Aligning policies across regions and nations can be slow and complex.
- Resistance to Change: Adopting new technologies and practices might face resistance from traditional operators.

Environmental Impact: Striking a balance between economic growth and environmental conservation is essential. There are several potential locations for the establishment of freight intermodals in order to increase the movement of freight in rail. All options being discussed here have numerous benefits and challenges. Further detailed analysis is required on all intermodals to further explore their potential and help determine the best location that will provide maximum benefit to the broader region.

1.2.5 Intermodal Freight Terminals - Thurla

Thurla is an area located to the south of Mildura that currently provides some existing industrial premises. Thurla has previously been identified as a key strategic location for the future freight industry. The previously highlighted key enabling infrastructure recommendations also provide clear support to the development of a thriving industrial development at this site. The provision of quality infrastructure would provide a valuable marketing tool for continued development of this land. The reverse is also true – future development at Thurla will command quality land access to ensure its continued success and viability into the future.

An essential factor in the creation of an intermodal terminal and industrial park at Thurla is the installation of anchor tenants who would act to attract other industrial and transport clients.

To successfully develop Thurla, it will be critical to prepare a Master Plan covering the projected long-term future of the facility, and the staged build-up of the infrastructure. By following a Master Plan (created in consultation with all key stakeholders) it will be possible to proceed on a solid and rational basis with all stages fully funded before proceeding.

The development of a new intermodal freight facility at Thurla represents a major investment in road/rail container and breakbulk freight handling. It will have significant economic benefits for Mildura and the region areas of influence, and for the Victorian economy. The existing facility to handle intermodal containers at Merbein can now take trains up to 1200m but is limited in its capacity for expansion. A new facility should have the capacity of taking even longer trains (up to 2000m) to allow for the eventual connection to the national standard gauge network through a link with the Trans-Australian Railway.

Similarly, storage and handling of LCL (less than container load) cargo is currently less efficient than through purposely designed facilities.

1.2.6 Intermodal Freight Terminals – South of Red Cliffs

Building an intermodal facility south of Red Cliffs near Mildura would provide significant logistical, economic, and connectivity benefits. This location is strategically positioned near major transport routes, including highways and rail lines, making it an ideal hub for efficiently transferring goods between road and rail. Given Mildura's role as a key agricultural and horticultural region, an intermodal facility in this area would streamline the transportation of produce to international markets, reducing costs and transit times for local industries.

Additionally, placing the facility south of Red Cliffs would help alleviate congestion in Mildura's urban areas while supporting regional economic growth. The site offers ample space for development and expansion, ensuring long-term viability. Improved transport infrastructure in this location would also create job opportunities and attract investment, benefiting the wider Sunraysia region. By enhancing freight efficiency and connectivity, an intermodal facility in this area would strengthen supply chains and support sustainable regional development.

This location is ideally located at the crossroads of major highways, the existing rail corridor and the key enabler project for the "Bridge Crossing at Monak". Land is potentially available however significant strategic planning and zoning considerations would need to be undertaken.

1.2.7 Intermodal Freight Terminals – Ouyen[1].

Planning is underway for the establishment of an intermodal facility called the Sunraysia Mallee Port Link. A greenfield site, 11 kilometres south of Ouyen, has been proposed and is adjacent to the junction of the Sunraysia and Calder Highways. This terminal will facilitate efficient movement of containerised agricultural products and other goods such as mineral sands and rare earth elements, to port, via rail.

The Sunraysia Mallee Port Link (SMPL) is an Intermodal terminal development initiated by Ouyen Inc, a community group seeking to fill a gap in rail freight services in northwest Victoria and to improve road safety, carbon emission reductions, economic returns and employment opportunities related to growing industries in the region.

The key reasons identified in GHD Advisory's Business Case supporting this project include:

- Existing rail connections are a significant distance from the product and/or are in the opposite direction to the port and not having a large, diversified freight catchment zone, to ensure trains are full all year round
- 24-hour train cycle to the Port of Melbourne via Ballarat
- Allow up to 5+ train services per week much needed by freight accumulators, resolves truck & driver
- Utilisation issues and will attract freight to rail
- Freight demand of over 34,000 TEU pa across a range of products
- Iluka Resources have stated that the SMPL; *'would certainly be an important consideration in its assessment of the economic viability of developing its deposits in north'*
- Increased employment opportunities in both freight side and warehousing operations
- Diversity and volume of produce will ensure all year-round freight demand and train utilisation
- Support from the road transport industry for the SMPL
- The Ouyen Community have been informed & support the project
- The Intermodal Terminal project is identified in the Ouyen Community Plan 2020 - 2025.

[1] Ouyen Inc. 2021, *Proposed Sunraysia Mallee Port Link rail terminal at Ouyen*, Ouyen Inc., Ouyen, accessed 18 October 2024

1.3 Issues

Agriculture is a major backbone of the MRCC community, accounting for 30.2% of Mildura's regional exports in 2021 ($672.313 million)[2]. According to ABS census National Output statistics, MRCC is Australia's most productive agricultural area[3].

Mildura's valuable exports are currently not being transported in the most efficient and effective ways possible. Citrus Australia, in a submission to a national Parliamentary Inquiry into the value of Australian agriculture to $100 billion by 2030, stated that the primary challenge for the citrus industry relates to market access. Citrus Australia claims that as of 2019, it was more expensive to move citrus from Mildura to Melbourne than it was to ship it from Melbourne to Tokyo due to the cost of road transport. This poses a significant risk for industry in the region[4].

According to a business case for the Sunraysia Mallee Port Link, 80% of MRCC's 1 million tonnes of annual intermodal freight is transported by road[5]. This requires 19 million truck kilometres per annum. The predominate utilisation of road freight vehicles for transport is creating issues related to road safety, road maintenance costs, and carbon emissions. There is significant appetite within the region to diversify the methods used to move goods through and from Mildura.

1.3.1 Safety and efficiency of road freight

Around 80% of exports from the Mildura region travel by road. Mildura is the confluence point for major freight routes between the states of Victoria, South Australia, and New South Wales. Key road corridors include the Calder Highway that connects Melbourne to Mildura (via Bendigo, Sea Lake, and Ouyen), and the Sturt Highway which travels between Adelaide and Wagga Wagga (running through Murray-Sunset and Mildura's urban area).

Trucks of all sizes travel through the municipality, which includes commercial delivery trucks and road-trains. Previous Council policy decisions have allowed large trucks to use any road in the municipality. The universal road access for freight vehicles across the municipality has led to high maintenance costs to repair roads damaged by freight vehicles. There are also additional conflicts between freight access arrangements and the needs of activity centre and local neighbourhoods.

Key issues with road freight transport include:

- Fuel and climate inefficiency: According to an advocacy piece by the freight and transport industry in May 2023, transport and logistics account for 38% of Australia's transport emissions. According to VAGO, road freight produces 16 times more carbon than rail for every kilometre travelled[6]. Emissions from transport accounted for 18% of MRCC's climate emissions, with 46% of MRCC transport emissions from freight transport according to Snapshot Climate[7].
- Negative impacts on public realm: Road freight transport has significant impact on the comfort of the public realm across MRCC. Trucks of all sizes, including road trains, travel through the centre of many towns located along highways in the municipality causing significant noise, impacting air quality, and decreasing feelings of safety for those in the public realm. This can be observed along Deakin Avenue in Mildura. Almost half of all trucks travelling through Mildura township use Deakin

[2] REMPLAN 2024, *Economy, Jobs and Business Insights Mildura Region*, https://app.remplan.com.au/milduraregion/economy/industries/regional-exports, accessed 7 July 2023

[3] Australian Bureau of Statistics 2021, *2021 National Output Statistics*, Australian Bureau of Statistics, https://www.abs.gov.au/statistics/industry/agriculture, accessed 25 July 2023

[4] Citrus Australia 2019, *Submission to the inquiry into growing Australian agriculture to $100 billion by 2030*, Citrus Australia, Mildura, accessed 25 May 2023

[5] Ouyen Inc. 2021, *Sunraysia Mallee Port Link GHD Advisory Business Case*, Ouyen Inc., Ouyen, accessed 8 May 2023

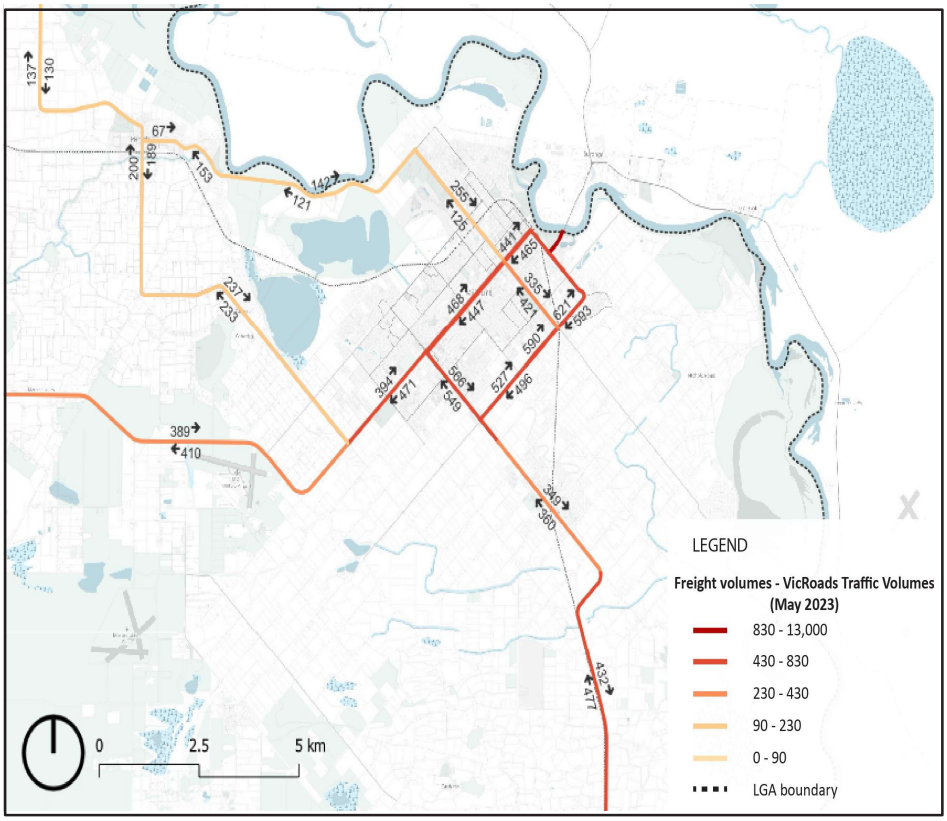
[6] Victorian Auditor-General's Office 2023*, Effectiveness of Rail Freight Support Programs*, Victorian Auditor- General's Office, Melbourne, https://www.audit.vic.gov.au/report/effectiveness-rail-freight- support-programs?section=, accessed 25 July 2023

[7] Snapshot Climate 2022, Mildura municipal emissions snapshot 2020/21, Snapshot, https:// snapshotclimate.com.au/locality/municipality/australia/victoria/mildura/, accessed 25 July 2023

Avenue as a main thoroughfare, significantly reducing the attractiveness and amenity of public space.

- Negative impacts on private amenity: The loud noises and vibrations made by heavy HPFVs create amenity impacts that affect nearby residents and businesses. This can have a direct impact on the productivity of nearby businesses and education institutions. It can also lead to poor health outcomes for residents.
- Costly road maintenance: Despite B-Doubles being permitted to travel on all MRCC roads, most roads are not designed to carry such large vehicles. This can create significant and expensive maintenance works for Council. In addition, truck registration fees do not usually cover the full cost of damage that truck freight inflicts upon roadways.
- Safety: Across the country, fatalities from crashes involving heavy vehicles have increased by 6.1% in the past three years to March 2023 to 188 fatalities (15.5% of all fatal crashes)[8].
- Expensive: The price of transporting freight by road is significant. In 2021, the general cost of a medium road freight trip (around 150-200km) is approximately $0.125 per tonne kilometre for one twenty-foot equivalent unit (TEU), and $0.08-$0.10 for a long trip (around 800km)[9].

In May 2023, Deakin Avenue carried almost the same number of freight vehicles per day as Benetook Avenue and more than most other roads in Mildura and surrounding areas as shown in the following figure:



Daily freight volumes in Mildura Source M&PC (2023)

However, the Victorian Auditor-General's Office (VAGO) has identified several benefits that road freight transport can deliver for industry in MRCC, including:

[8] Department of Infrastructure, Transport, Regional Development, Communications and the Arts 2023, *Road trauma involving heavy vehicles 2021 statistical summary*, Australian Government, Canberra, accessed 25 May 2023

[9] L.E.K Consulting Australia 2021, General Goods - Supply Chain Benchmarking Report: Report for the Department of Infrastructure, Transport, Regional Development and Communications, L.E.K Consulting, Sydney, accessed 25 July 2023

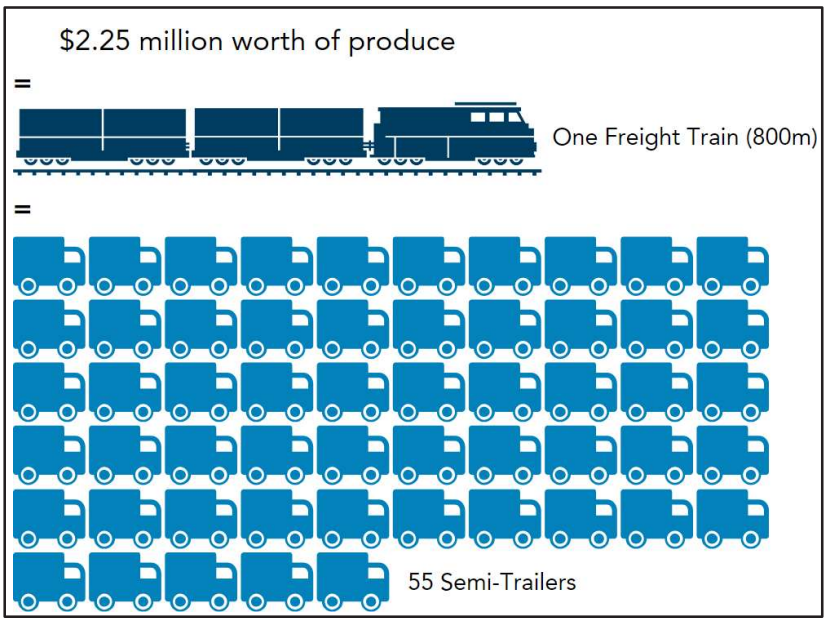
- Flexibility: No fixed network means that vehicles have flexibility in their routes
- Accessible for all businesses: Most businesses have access to major roads and therefore the wider network
- Time efficient: Road transport is generally the fastest mode of transport, particularly for short and medium distances (such as within the state and into neighbouring states).

1.3.2 Underutilisation of rail freight infrastructure

The Mildura standard gauge railway currently facilitates freight movement from Yelta (terminus) to the Ports of Geelong and Melbourne via an intermodal facility in Merbein, Mildura CBD, Benetook Avenue industrial area, Irymple, Red Cliffs and Ouyen. This railway corridor then connects with Maryborough, Ararat and Geelong on the way to Melbourne.

It is recommended that a greater proportion of Mildura's freight to be moved by rail. This is a recommendation of many Commonwealth, State and local reports. One average 800m long intermodal freight train, (like those operating along the Mildura railway line) can carry $2.25 million worth of produce[10] and is equivalent to 55 semi-trailers, illustrated in the figure below.

$2.25 million of produce by road freight and rail freight



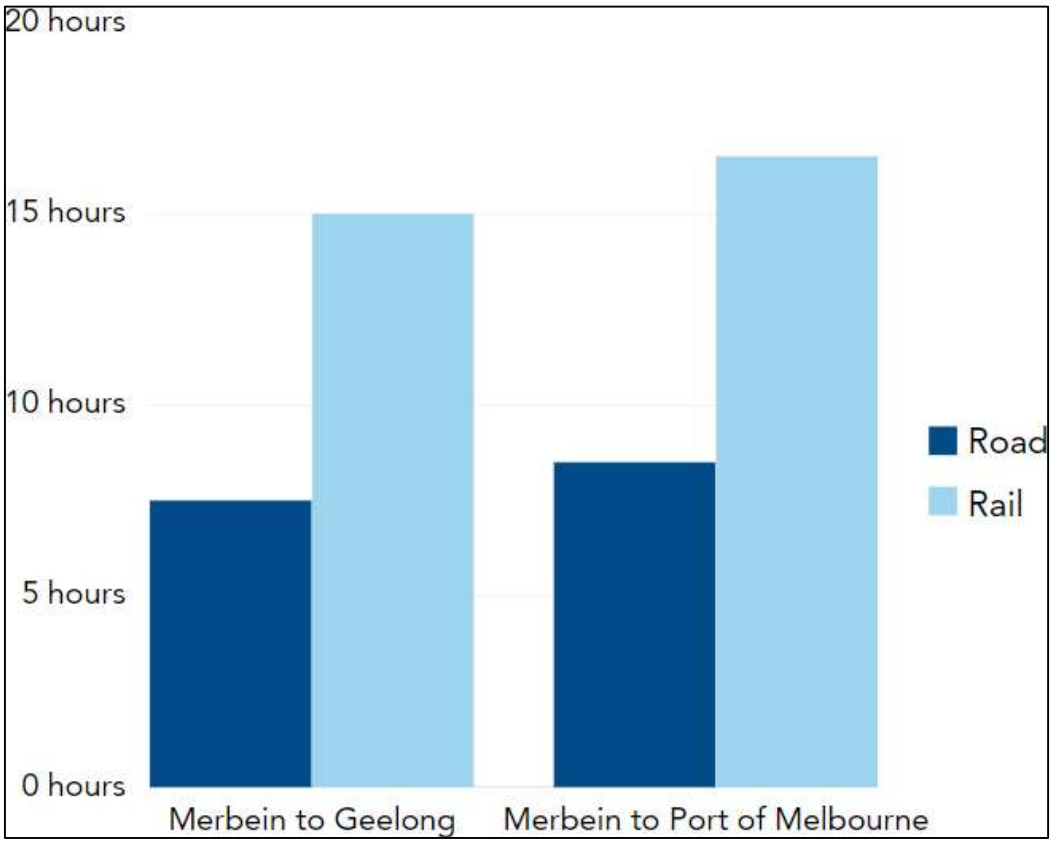
Source: M&PC based on State of Victoria (2023)

Rail freight currently travels slower than road freight over longer distances, in part because the direct rail connections have been severed through the gauge standardisation projects. Rail travel times from Merbein to Geelong and the Port of Melbourne are now significantly longer compared road travel times. By road, the journey is approximately 7h30m to Geelong, and 8h30 to Port of Melbourne from Merbein. However, the same journey by rail takes 15h and 16h30m to Geelong and Port of Melbourne respectively[11] noting that this allows for shunting and crew changes and is not a point-to-point travel time. This is illustrated in the following figure:

[10] State of Victoria 2022, *Keeping the rail freight network moving in Mildura*, Victorian Government, https://www.premier.vic.gov.au/keeping-rail-freight-network-moving-mildura, accessed 26 July 2023

[11] Rail Freight Alliance 2021, *Murray Basin Rail Project Position Paper*, Rail Freight Alliance, Melbourne, accessed 26 July 2023

Freight journey times by road and rail from Merbein to Ports of Melbourne and Geelong



Source: M&PC based on Rail Freight Alliance (2023)

To resolve a myriad of road transport issues, rail freight should be supported as the primary mover of freight. This can deliver a range of benefits for all Victorians, of which include:

- Cheaper operating costs: Transporting freight by rail is generally cheaper compared to other modes of transport. According to the Bureau of Infrastructure and Transport Research Economics, the cost of rail transport (per nominal cents per tonne kilometre) is approximately half that of road transport. In addition, the cost of maintenance of the rail network is generally passed onto rail operators through rail access charges, thereby reducing government upkeep costs.
- Lower amenity impacts: High volumes of trucks can create local amenity impacts and congestion within the Mildura and across other towns in Victoria. A reduction of road freight volumes can deliver improved amenity outcomes within activity centre and neighbourhoods that surround key road corridors.
- More climate efficient: Rail freight produces 16 times less carbon than road freight. While rail transports half of Australia's freight it produces only 4% of Australia's total transport[12].

VAGO has also identified the benefits of increasing Victoria's share of freight transported by rail, of which include:

- Decreased traffic congestion on freight routes
- Reduces the severity of traffic accidents, of which supports Victoria's road safety vision of zero road deaths by 2050.
- Lower truck-related emissions

[12] Climate Change Authority 2021, *Transport*, Australian Government, Canberra, accessed 25 May 2023

- Can assist the transport sector in reaching the state's legislated commitment of net-zero emissions by 2050

4.3.3 High costs of air freight

Mildura Airport currently receives freight goods on Qantas flights, with direct connections to Adelaide, Broken Hill and Melbourne (Tullamarine). Transporting for by air is the fastest available mode, essential for some time critical perishable goods. However, transporting freight by air is much more expensive and leads to heavier emissions of greenhouse gases.

The Mildura region is well positioned to produce green hydrogen in future. The Mallee Hydrogen Technology Cluster, led by the Mallee Regional Innovation Centre, is dedicated to accelerating hydrogen innovation and research, and attracting investment for the development of a hydrogen industry. There is significant opportunity for the growing future hydrogen industry to be in the Mallee region due to the current research being undertaken in Mildura.

1.4 Opportunities

1.4.1 Support a multimodal future freight network

The provision of suitable freight infrastructure will be important in transporting Mildura's significant volume of exports

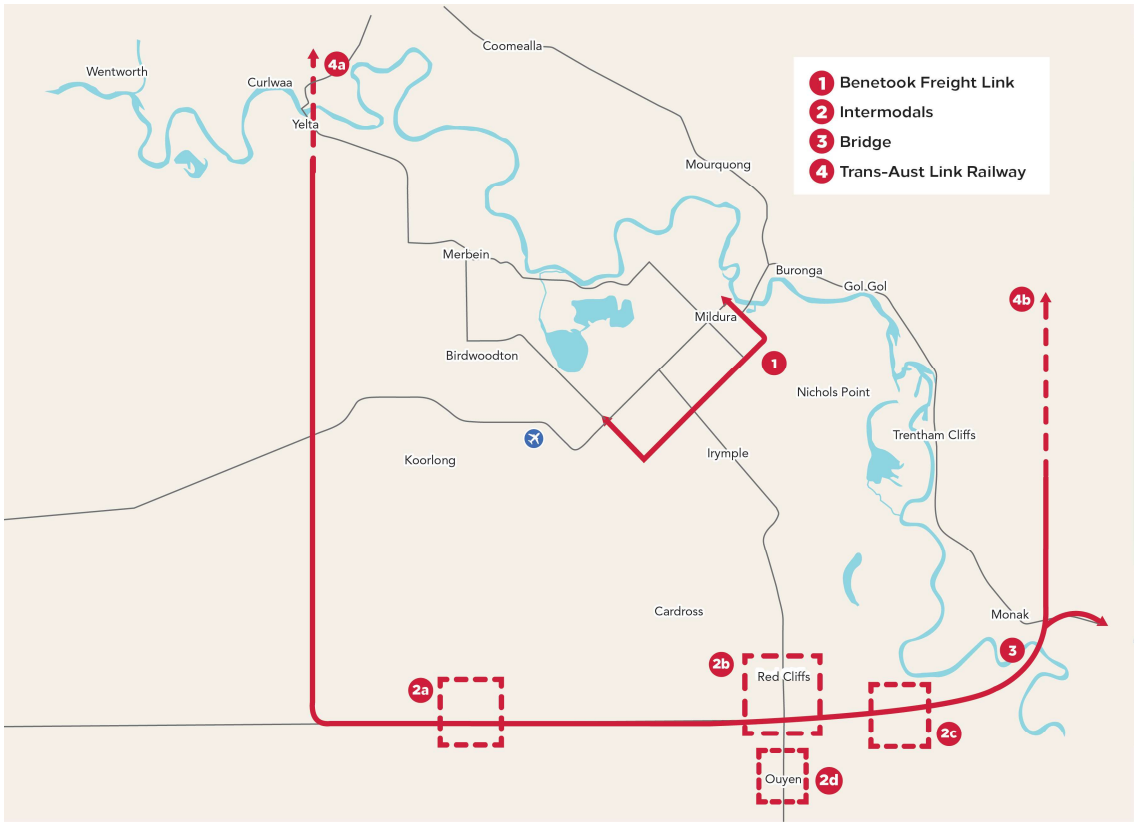
In response to their mode share targets, Council has developed four key enabler projects which will aim to support rail freight uptake and enhance amenity impacts on local streets. These include:

1 - The Benetook Freight Link

2 - Intermodal Terminal and Industrial Parks

3 - A Bridge Crossing at Monak

4 - Connection to the Trans-Australian Railway



1.4.2 Support appropriate freight network planning that is considerate of land use needs

Road freight vehicles are allowed to travel along roads that run through the CBD and residential areas of Mildura. This has resulted in negative impacts on amenity within the public realm.

There are opportunities to plan the future freight network with consideration of land use aspirations. One way this can be achieved is by diverting all freight vehicles onto proposed dedicated freight links that are located away from built-up areas. This will minimise the amenity and noise impacts currently felt by residents, businesses, and visitors who currently patronise or are situated along key roads such as Deakin Avenue.

The new freight infrastructure routes can effectively link current and future industry precincts and freight facilities proposed as part of Council vision. This includes providing stronger freight linkages to sites such as the future Intermodal Terminals. Land uses around industrial precincts will be planned appropriately, to ensure no sensitive land uses are situated where they can be negatively impacted by future freight movements.

This separation of sensitive uses will ensure that there are no residents living close to the precincts. Jobs in these precincts will be beyond a reasonable walking or bicycle riding distance from residential areas. Employees will need to drive and there will be demand for public transport routes to be extended to these precincts.

1.5 Outcomes

Outcome 1: Productive freight network where efficient movement is prioritised in the right locations

Due to Mildura Rural City Council's strong agricultural sector, freight needs to be carefully considered to meet the needs of our community. This will enable the most suitable mode of freight transport to be used in each circumstance and ensure the impacts of freight movements on the community are minimised.

Outcome 2: Support and protect industrial land development in strategic areas

Land in strategic areas should be protected from subdivisions, or the development of sensitive land uses due to the significant high value of the land for the agricultural and freight sectors. Key areas which will be maintained for freight compatible land uses include land parcels along the rail corridor and around the Mildura Airport

These themes and outcomes relate to the following existing documents:

- CBD Access and Movement Strategy
- Towards Zero Emissions Strategy
- Road Safety Strategy
- Mildura Transport Plan for Long Term Regional Development

The outlined outcomes and initiatives relate to the following KPI's developed through the ILM:

- Improve key travel connections
- Reduce Council infrastructure costs
- Higher investment in region

Accessible and sustainable neighbourhoods

Ease of movement and access to services for all residents and neighbourhood.

Mildura Rural City Council

Accessible and sustainable neighbourhoods

Ease of movement and access to services for all residents and neighbourhood

Outcome	Action	Responsbility	Action Type	Timeframe
Integrated land use and transport planning with diverse housing choices	5. Advocate for expansion of the bus network as well as a high frequency bus corridor along Deakin Avenue	Council	Advocacy	Short term
Inclusive transport connections for people living in remote areas and townships	6. Undertake a Mildura public transport network study based on a high frequency coverage of the city centre as well as an increased coverage to growing suburbs and Mildura Airport and regional public transport improvements (including regional passenger rail).	Council	Advocacy	Short term
Inclusive transport connections for people living in remote areas and townships	7. Apply for funding from the Flexible Local Transport Solutions	Council	Action	Short term

2 Accessible and sustainable neighbourhoods

A key element to ensure transport accessibility and sustainability is to support these goals with integrated transport and land use planning. This can enable the promotion of more sustainable travel behaviours and ensure that access to essential goods and services are maximised.

Transport accessibility can be enhanced by carefully planning the development of new residences and businesses in locations that are easily accessible by active and public transport modes. Sustainability is then achieved by a higher rate of the population that can feasibly meet trip needs without requiring a car, thereby lowering greenhouse gas emissions.

2.1 Movement and Place Framework

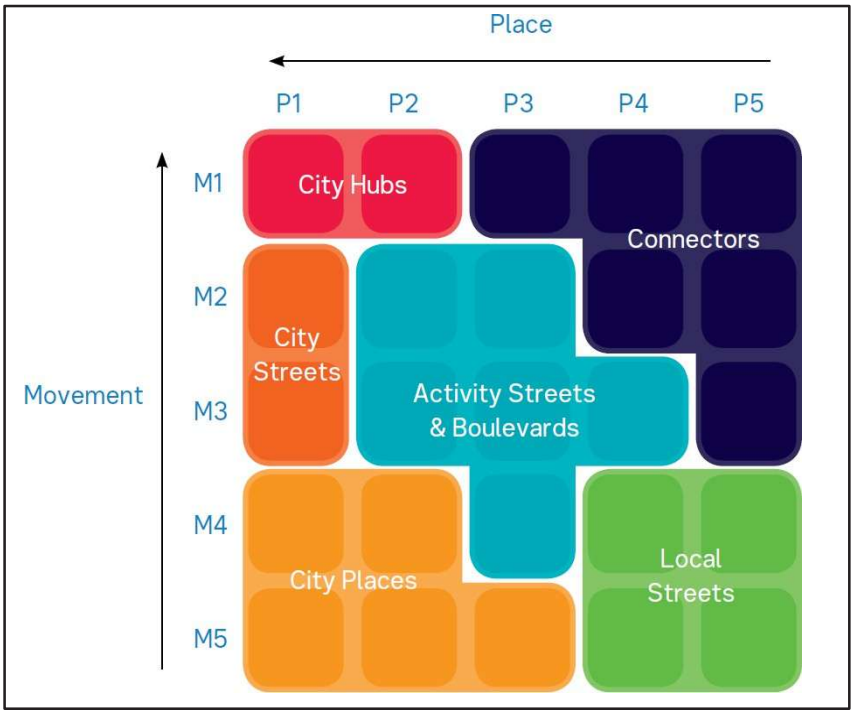
Introduced by the Department of Transport in 2019, the Movement and Place Framework (M+PF) is a method of strategic transport network planning which brings together transport planning, urban planning, traffic engineering, and urban/landscape design. Roads and streets are reconceptualised as places to facilitate the movement of goods and people, and also place for people to experience and linger in.

Mildura's streets are both important public spaces as well as facilitators of movement. They provide space for people to patronise, congregate and be active. Planning streets for both movement and place will allow everyone to move in a safer, more comfortable, and sustainable way.

The M+PF will help shape the vision and transport strategic directions for Mildura by defining what movement and place characteristics specific streets and areas should include. The M+PF provides a structure and methodology for defining options for movement linkages and public spaces.

The framework recognises that not all streets serve the same purpose. Some streets aim to move people efficiently, whereas other streets may aim to become a destination for people to dwell and experience. Recognising the role of each street will dictate the future streetscape design and transport modal allocation of each segment. The image below depicts the M+PF matrix used to classify streets.

Movement and Place matrix



Source: Department of Transport (2019)

As a part of the development of the ITLUS, a M+PF assessment of current and aspirational classifications was undertaken across all modes for Mildura, Irymple, Merbein, Red Cliffs and Ouyen.

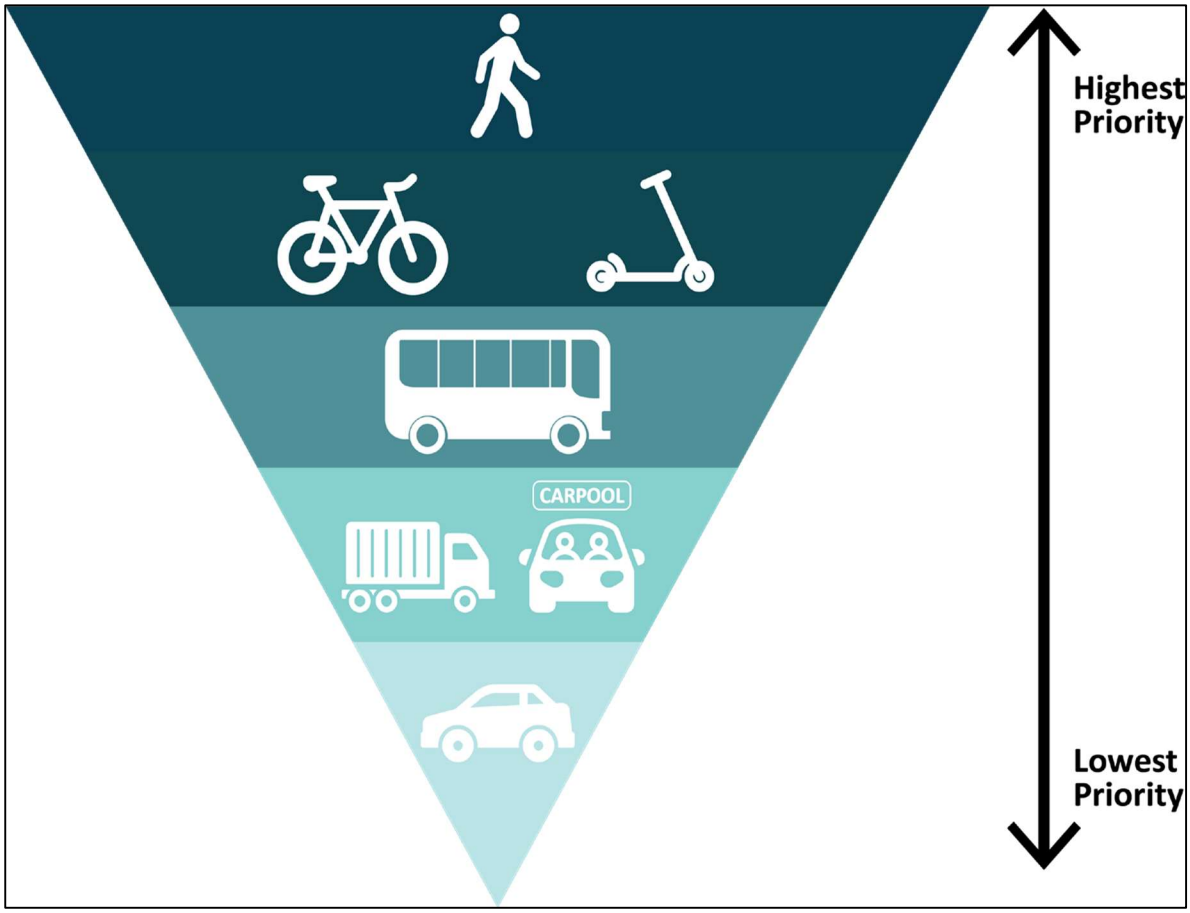
Key recommended amendments of the Department of Transport and Planning's classifications include:

- Increasing the Place score in Mildura's CBD to P1 along Langtree Avenue to enable the precinct to develop into a strategically important tourist destination.
- Expansion of walking classifications across all towns, particularly within town centres and in proximity of schools.
- Addition of cycling classifications along underutilised railway corridors.
- Review of freight classifications across the municipality, particularly within built-up areas and along proposed dedicated freight routes.

2.2 Mode hierarchy

The Mildura CBD Access and Mobility Strategy developed a mode hierarchy for Mildura's CBD. This hierarchy should be considered in other locations where high pedestrian activity is anticipated and where high amenity public spaces are sought. The image below depicts MRCC's mode hierarchy for activity centres.

Mode hierarchy for activity centres



Source: M&PC (2023)

2.3 Issues

2.3.1 Reduced accessibility due to dispersed development patterns

Much of Mildura's goods and services are in one of two places, the CBD or around Mildura Central Shopping Centre. Each business requires a certain size of population catchment in order to be financially viable. It has been found that local shops require approximately 1,700 dwellings within a 400m catchment, which requires a residential density of around 34 dwellings per hectare.

The required 34 dwelling per hectare is higher than the typical 10-15 dwellings per hectare found in Mildura's new residential developments. As a result, these new housing developments are less likely to have local shops, goods and services within walking distance of most residents. This creates reliance on shops, goods and services located further away and cars to get there. This increases the cost of living for all residents, is not accessible for all and creates equity issues while reducing local economic activity due to escaped expenditure on car related imports.

The dispersal of land use development will lead to longer distances on average between places of residence, employment, and providers of essential services. It is also more difficult and costly to plan and provide transport infrastructure and services to service dispersed areas.

Mildura residents are currently overly reliant on cars for transport. In 2021, 75.4% of workers travelled to work as a car driver or passenger, significantly above the Victorian average of 53.4% (ABS census). Between 2011 and 2021, the number of cars owned by MRCC residents has increased by 2,706, or 16% according to the ABS census. A continual increase in car use and ownership will lead to increased traffic congestion as the city grows larger into the future.

There is a need to support initiatives to increase the diversity of housing types, particularly in locations with close access to goods and services. This will improve the option for people to purchase detached dwellings in suburban housing estates and make them cheaper. It will also enable other residents to purchase a home that is closer to the variety of services in Mildura CBD if that meets their own personal needs. It will also increase the population catchment within walking distance of Mildura CBD, strengthening the CBD and creating more business and employment opportunities within it.

This will be integral particularly as the population is set to age, posing a range of challenges including labour shortages, reducing local economic expenditure and the need to support ageing in place.

2.3.2 Connectivity between townships

MRCC is a vast municipality with dispersed settlements and population. Many people live far away from the goods and service currently provide within the municipality's centre of activity in Mildura. Residents of MRCC's rural towns often need to travel long distances to access goods and services such as groceries, medical care, education, or other shopping needs. For example, someone living in Underbool may have to travel to Ouyen multiple times a week for trip purposes such as:

- Weekly grocery shopping needs
- Doctor appointments at the Mallee Track Health and Community Service (nurse practitioner in Underbool only)
- Employment
- Supporting their child's education at Ouyen P-12 College.

This can place a significant strain on those living in rural townships, which can foster feelings of disconnectedness within these communities and the rest of MRCC.

Residents in these rural towns are limited in how they can travel across the municipality. The only public transport within these towns (excluding Irymple, Merbein, and Red Cliffs) is a V/Line coach that travels along the Mallee Highway once a day in each direction between 12:00 and 15:00.

The lack of alternative transport options results in residents requiring a private vehicle to meet their travel needs. Many of these households earn less than $650 a week, meaning that transport costs can

take up a significant portion of their household income. The average running costs of various car types, and the annual financial impact of vehicle ownership on residents is shown in the below.

RACV Average running costs by vehicle type

Vehicle Category	Average monthly running costs	Average yearly running costs
Light cars	$857.16	$10,285.92
Small cars	$1,063.64	$12,763.70
Medium cars	$1,362.69	$16,352.26
People movers	$1,575.87	$18,910.45
Electric cars	$1,541	$18,495.83
Small SUVs	$1,021.52	$12,258.23
Medium SUVs	$1,345.07	$16,140.82
Large SUVs	$1,620.42	$19,445.04
All-terrain vehicles	$2,048.40	$24,580.74

Source: M&PC based on RACV (2023)

2.4 Opportunities

2.4.1 Greater housing choice in highly transport accessible areas

There is an opportunity to provide a greater diversity of new housing types in strategic locations that have good access to shops, education, employment, healthcare, and parks.

Currently most of the housing sold in MRCC are detached dwellings with 3-4 bedrooms, despite the average household size declining between 2011 and 2021 from 2.5 persons per dwelling to 2.4 according to the ABS census. These figures are expected to decline further to 2.23 by 2046, primarily due to an ageing population.

A greater diversity of dwelling provided could include smaller dwellings for older people who are downsizing and want a property with lower maintenance requirements. It could also provide low-cost apartments for young people or short-term renters (including casual farmhands) who need to live in a central location where they can easily access local businesses and explore the city without needing to drive everywhere. This also makes transporting casual farm employees to farms easier, with one central pick up location where most can find housing.

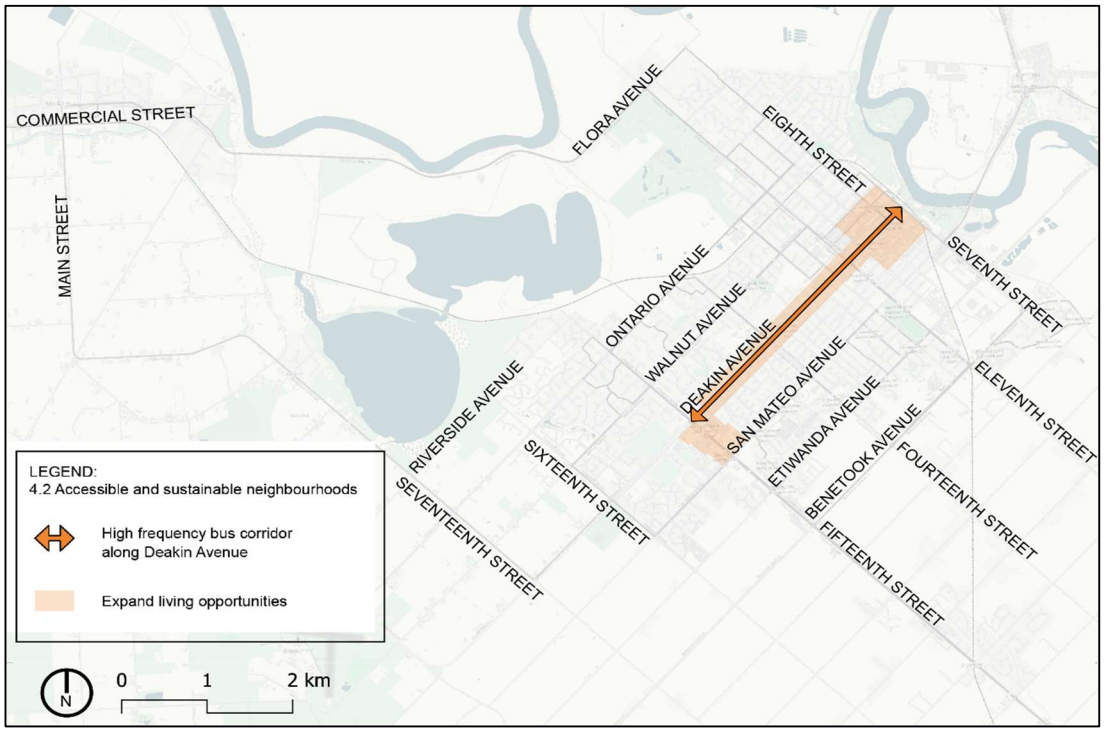
This includes the 6% of Mildura households who currently do not own a car. These households need to live in an area where they can meet their daily travel needs using the active and public transport options available. Increased housing supply, including small affordable apartments, could be provided in strategic areas of Mildura and some other towns, such as in Mildura CBD and along Deakin Avenue.

2.4.2 Integrated transport and land use planning

There is a need to plan future public transport infrastructure investments in collaboration with housing development. This will ensure that any future investments Council or the State Government in public transport infrastructure will be highly utilised due to strong local demand. Strong local demand can be created by establishing a higher density of residences and businesses in each area. This type of development can be extended along a whole public transport corridor, where multiple local routes can then converge along a singular corridor thereby maximising the frequency of bus services along that corridor.

Increasing the number of people and businesses that reside along the Deakin Avenue corridor will make establishing a high frequency bus route along Deakin Avenue viable. Increasing the population within walking distance of Mildura CBD will enable more people to meet their everyday travel need by walking. It will also increase the customer catchment of every business in the Mildura CBD. The areas where housing could be increased in Mildura, and a high frequency bus corridor to support this are highlighted in the figure below.

Living opportunities and high-frequency bus corridor



Source: M&PC (2023)

2.5 Outcomes

Outcome 3: Integrated land use and transport planning with diverse housing choices

Mildura's new housing is predominantly being provided at the edge of towns, far from existing shops, schools, employment and transport services. This requires every household to own a car to meet their daily trip needs. Affordable and diverse housing options should be created close to town centres and high-quality public transport corridors. This will create more transport choices and reduce the number of cars and traffic congestion on Mildura's road network.

Outcome 4: Inclusive transport connections for people living in remote areas and townships

Residents of Mildura's rural towns have access to a very limited number of public transport services. These towns are widely dispersed across the region, with residents travelling significant distances to access everyday services including education, employment, healthcare and basic groceries. Affordable transport options should be investigated to reduce isolation within these communities.

These themes and outcomes relate to the following existing documents:

- CBD Access and Movement Strategy
- Mildura Rural City Planning Scheme
- High quality dwelling design guide (future/draft)

The outlined outcomes and initiatives relate to the following KPI's developed through the ILM:

- Increase in diversity of housing stock
- Reduce reliance on car ownership and use

Safe and healthy streets

Promotion of active modes of transport, such as walking and cycling, to facilitate healthy residents and communities.

Mildura Rural City Council

Safe and healthy streets

Promotion of active modes of transport, such as walking and cycling, to facilitate healthy residents and communities

Outcome	Action	Responsbility	Action Type	Timeframe
Infrastructure that supports pedestrian and bicycle rider comfort, priority and safety	8. Develop an active transport network plan that caters for all modes of transport including annual priorities for pedestrian networks and strategic cycling corridors	Department of Transport & Council	Action	Medium term
Attractive and comfortable public spaces and streets that stimulate activity More inclusive public spaces and streets where all people feel safe and secure	9. Advocate for National Highway classification to be moved from Deakin Avenue between Fifteenth Street and Seventh Street to the Mildura freight bypass route along Benetook Avenue to improve pedestrian amenity and safety	Department of Transport & Council	Advocacy	Short to medium term

3 Safe and healthy streets

It is integral to create safe streets to foster inclusiveness and encourage healthier living. This will require further initiatives to enhance walkability and bicycle rideability and create public spaces that feel safe and comfortable for all.

Safe and healthy streets can be achieved by ensuring that all residents have access to useable footpaths and safe bicycle paths. There are further aims to protect people from external dangers and security risks, through considered road space treatments and crime-preventative urban design. These actions will ensure that all streets within the future Mildura are safe and accessible for all people. This will enable the community to explore their own neighbourhoods and led to improved physical and mental health.

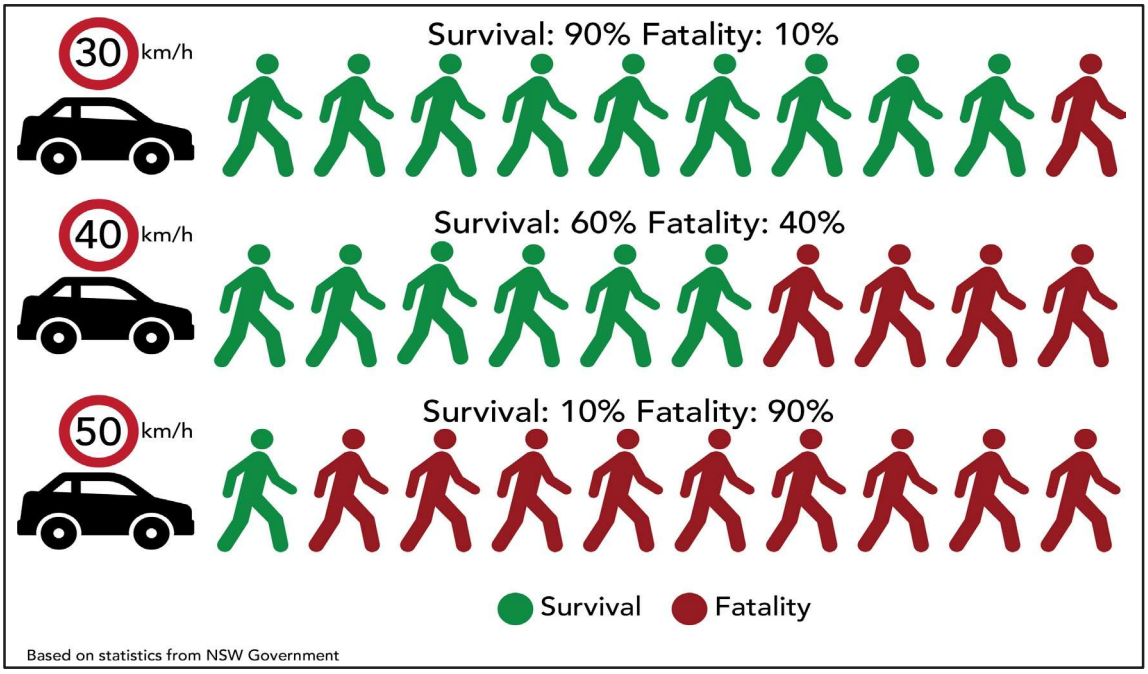
3.1 Safety

It is a key priority to improve safety on Mildura's roads.

One key factor to reduce the chance of injury in road accidents, particularly within towns or urban areas, is speed. Research from the Road Accident Research Unit of the University of Adelaide has found that the risk of causality in a crash, doubles with each 5km/h increase in speed above 60km/h. In addition, a 5km/h decrease in speed can lead to a 15% reduction in crashes[1].

As vehicle speeds increase, chances of survival in an accident decreases for both vehicle occupants and pedestrians. The figure below, shows the chances of survival for a pedestrian that is involved in a crash with a vehicle at various speeds[2].

Pedestrian chance of survival when in a crash with a vehicle by speed zone



Source: M&PC based on statistics from NSW Government and Wramborg (2023)

[1] Kloeden, Ponte & McLean 2001, *Travelling Speed and the Risk of Crash Involvement on Rural Roads*, Road Accident Research Unit, Adelaide University, Adelaide, accessed 8 May 2023

[2] Based on NSW Government and Wramborg 2005, *A new approach to a safe and sustainable road structure and street design for urban areas*, Road safety on four continents conference, 2005, Warsaw, Poland, Swedish, National Road and Transport Research Institute (VTI), Linkoeping, Sweden, accessed 25 May 2023

Additional direction and actions on how MRCC plan to improve road safety are provided within the Road Safety Strategy 2023 – 2030. The ITLUS will work to support the Road Safety Strategy by ensuring its key principles and priorities are at the forefront when developing Mildura's future transport network and priorities.

3.2 The safe systems approach

The Safe Systems approach aims to work towards a road network that is free of road fatalities and injuries. It is underpinned by four principles, being:

- People are fallible: people sometimes make mistakes, but that shouldn't cost a life
- Humans are fragile: Humans have a limited ability to withstand damage when involved in an accident
- Road safety is a shared responsibility: The responsibility of road safety was traditionally on the individual road user. However, under the Safe Systems approach, everyone has a part to play in keeping themselves and other road users safe
- Building a safe road system: A safe road system must have safe speeds, safe roads, safe vehicles, safe people, and post-crash care.
- Initiatives to ensure safer roads, speeds, people, and vehicles need to be implemented together to ensure safety is prioritised across all areas of the road network. The ITLUS will consider the Safe Systems approach and priorities when identifying key actions and initiatives for the future Mildura road network[3].

These principles are shown in the figure below:

Source: Transport for New South Wales (2023)

[3] Transport for NSW 2023, *Safe Systems Approach*, NSW Government, https://towardszero.nsw. gov.au/safesystem, accessed 8 May 2023

3.3 Issues

3.3.1 Poor amenity and unsafe pedestrian and bicycle riding network

Pedestrians and bicycle riders are not provided with sufficient road space, priority, or segregation through the design of the network. To see walking as an attractive mode of transport, pedestrians unconsciously assess walking infrastructure and routes against a hierarchy, being:

- Usefulness: directness of a route
- Safety: risk of injury or danger to self
- Comfort: physical conditions of route supporting wellbeing
- Interest: visual attractiveness of the route and activity increasing enjoyment.

There are some locations where gaps exist in the footpath network. Generally, this street design is not compliant with the Commonwealth Disability Discrimination Act (DDA) which requires footpaths of a specific standard to be provided to every urban property. To comply with these requirements, MRCC should require developers to provide footpaths to the front of every urban property they develop (including industrial properties). Failure to do so will otherwise require MRCC to build them using rate payer funds.

The MRCC community saw 45 crashes involving pedestrians in the five years between 2014 and 2019. Of these crashes, 15 resulted in serious injuries to pedestrians. Many of these crashes occurred at roundabouts or unsignalised intersections which provide minimal priority and protection for pedestrians.

Bicycles are an efficient and low-cost transport option, ideal for use in Mildura's towns due to their small geographic size. However, bicycle riding for transport is often unseen (because they are small, quiet, and fast moving). These attributes make bicycles the opposite of the large, noisy HPFVs and the perfect transport mode for town centres and Mildura CBD. The lack of bicycle lanes outside of the Mildura township discourages residents to ride bicycles for daily travel. Merbein and Red Cliffs provide some on-road bicycle lanes, however, these are limited and not connected to the wider network.

Further information is available in Councils Road Safety Strategy and Pedestrian and Cyclist Strategies.

3.3.2 Public spaces are not inclusive for all

People experience places differently depending on a range of variables, such as gender, age, sexuality, race, religion, and culture. However, the needs of all members of the community are not necessarily catered for across Mildura's transport network and public spaces.

There are many people with a disability that are often reliant on the quality of public infrastructure to meet their daily needs. For example, a person with a wheelchair requires solid ground surfaces and wide accessways to be able to move. There are many locations in Mildura where footpaths are not provided, of which can force wheelchair users to move along roadways. As the population of Mildura ages, there will be a greater need to ensure that our older residents are able to maintain autonomy and access their daily needs.

Research has shown that women are more likely to have personal safety concerns in public spaces than men. Data also shows that women are less likely to have access to a car, particularly in new migrant communities[4]. The gendered difference in experience and concerns of personal security are more apparent when night safety is evaluated. The Australia Institute highlights that 40% of Australian women do not feel safe when walking alone at night, compared to 17% of men[5]. Women have specific

[4] Shafi, Delbosc & Rose 2021, *The role of culture and evolving perceptions in mobility choices amongst immigrants in Australia,* Australasian Transport Research Forum, accessed 25 July 2023

[5] Johnson & Bennett 2015, *Everyday sexism: Australian women's experiences of street harassment*, The Australia Institute, March 2015, accessed 30 May 2023

needs from physical infrastructure and public spaces, which can be provided in the form of gender inclusive urban design practices. It is now a legal requirement in Victoria that public authorities plan townships with these gender inclusive factors in mind.

People under the age of 18 are not legally allowed to drive without supervision in the State of Victoria. They are therefore reliant on other transport modes such as walking, bicycle or public transport (or being driven by an adult). This places some youth in situations where they cannot participate in their community, especially if their parents are unable to drive them to the places that they need to go.

3.3.3 Poor health outcome due to compromised pedestrian mobility

Many studies have shown that people who sit for long periods of time (such as when driving a car), are much more likely to develop physical health issues than those who don't[6]. This may be one of many behaviours that have led to poorer physical and mental health outcomes in the MRCC compared to the state average as shown in the table below.

Population experiencing various health conditions compared to Victorian average

Condition	Mildura (town)	Merbein	Red Cliffs	Ouyen	Victoria
Diabetes	5.9%	6.7%	5.6%	7.4%	3.7%
Heart Disease	4.8%	6.2%	5.4%	5.9%	3.7%
Mental Health	10.7%	12.2%	11%	8.6%	8.8%

Source: Australian Bureau of Statistics (2021)

These negative health outcomes are strongly linked to travel habits and choices. People who consistently travel distances of over 20,000km a year or more in a car are 40% more likely to become overweight or obese than those who travel 10,000km or less a year[7]. Obesity is one of many factors that increase the risk of early death. Positive health outcomes can be gained by encouraging more people to walk or ride a bicycle to meet their daily trip needs.

3.4 Opportunities

3.4.1 Establish a walking and bicycle riding network for all

There is a need to create a footpath and bicycle riding network that is safe for all to use. This will deliver greater autonomy for people who may currently be held-back from conducting their daily activities due to an inappropriately designed active transport network.

There are several strategies that can encourage people to use active transport. The first is to review segments of the footpath network which may not be meeting the needs for all members of the community. Making places accessible for people with a disability is essential and can include footpath widening or leveling works, safer pedestrian crossings, and high-quality pedestrian access routes to

[6] Núñez-Córdoba et. al. 2013, *Annual Motor Vehicle Travel Distance and Incident Obesity A Prospective Cohort Study,* American Journal of Preventative Medicine, vol. 44, no. 3, p.254–259, accessed 15 April 2023

Toke Bjolgerud et. al. 2019, *Does active commuting attenuate the association between adiposity and mortality?* Obesity Facts: European Journal of Obesity, p.5, accessed 16 April 2023

Yang & Zhen 2021, *How does neighborhood walkability affect obesity? The mediating role of commute mode* Journal of Transport and Land Use, vol. 14 no. 1, p.737-759, accessed 16 April 2023

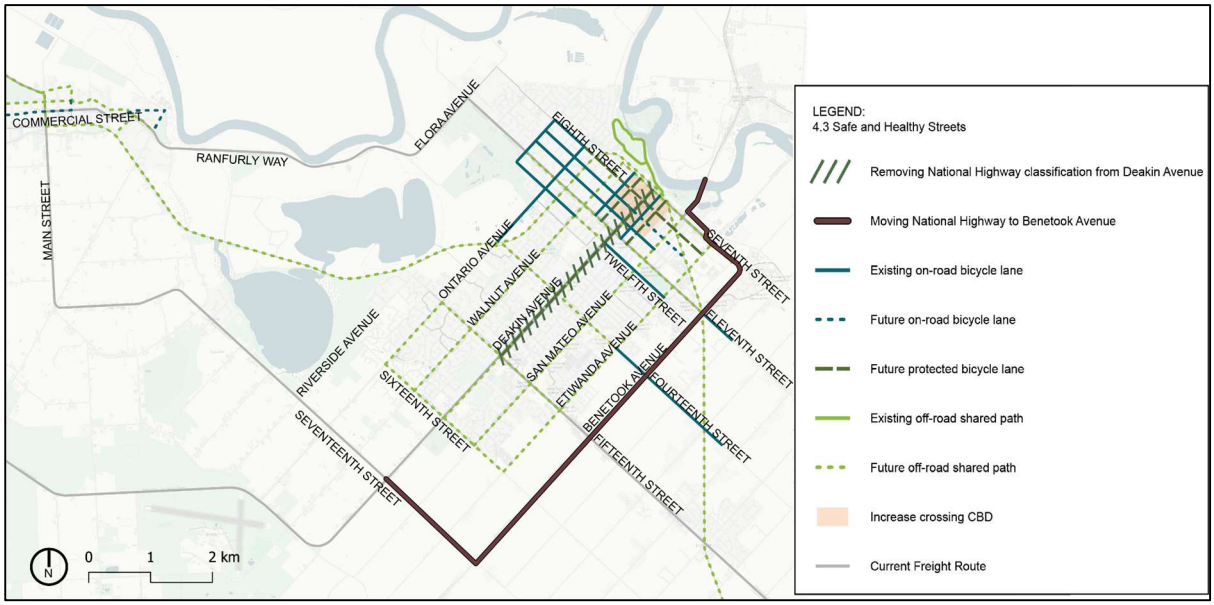
European Association for the Study of Obesity 2019, *Being a car commuter with obesity linked to a 32% increased early death risk*, ScienceDaily, accessed 17 April 2023

[7] Núñez-Córdoba et. al. 2013, *Annual Motor Vehicle Travel Distance and Incident Obesity A Prospective Cohort Study,* American Journal of Preventative Medicine, vol. 44, no. 3, p.254–259, accessed 15 April 2023

public transport stops. This will provide all members of the community, which include children and elderly aged adults, with safe and comfortable spaces to walk and explore their neighbourhoods.

There are many opportunities to provide segregated bicycle paths and establish priority along key roads. This can include on-road lanes with physical separation from cars, and off-road paths linking residential areas with places of education, employment, and entertainment. The proposed active transport network in Mildura and surrounds, Red Cliffs, and Ouyen is shown in the following examples:

Safe and healthy streets - Mildura and surrounds

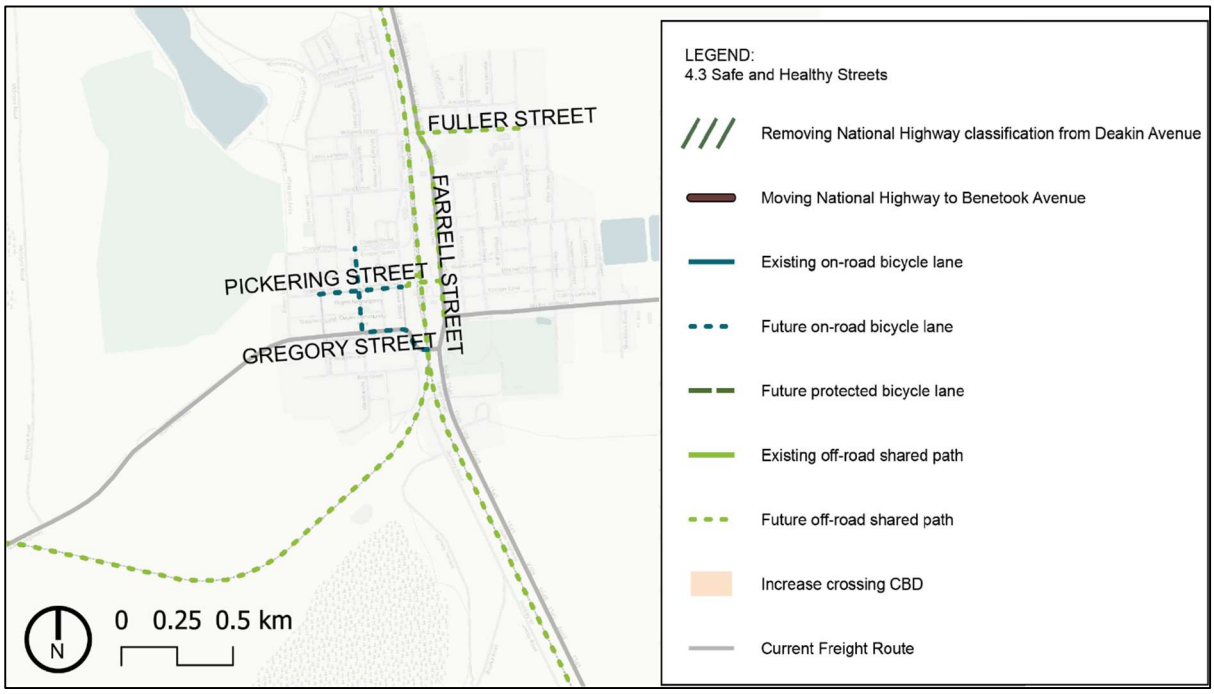


Source: M&PC (2023)

Safe and healthy streets - Red Cliffs

Source: M&PC (2023)

Safe and healthy streets – Ouyen



Source: M&PC (2023)

3.4.2 Create attractive and vibrant public spaces

There are opportunities to create attractive and vibrant public spaces that will enable people to move around the municipality comfortably. This is particularly important in locations where high pedestrian volumes are anticipated, such as Mildura CBD and town centres. It is also likely that these spaces are more often visited by tourists. Given the importance of tourism on the local economy, it will be integral to ensure that these spaces are pleasant to encourage expenditure and further visitation in future.

Creating comfortable public spaces can be fostered through several initiatives. The Mildura CBD Plan highlights how these can improve pedestrian safety, increase tree canopy coverage, and minimise the impacts of vehicle volumes. Managing freight movements, is critical to protect the amenity of built-up areas. Readdressing the priority and safety provided for vulnerable road users will enable all members of the community to affordably, comfortably and safely meet their daily travel needs.

3.4.3 Foster gender inclusive urban design

A persons gender can shape how they experience a public space. Australian women typically do not feel safe when walking alone at night, compared to Australian men[8]. Acknowledgement of the differences in perceptions of personal safety have led to an increased interest in gender inclusive urban design. These urban design standards were created through the understanding that women have specific needs from physical infrastructure and public spaces. The Gender Equality Act 2020, requires MRCC to take these factors into account when planning transport networks.

Examples of gender inclusive outcomes for public spaces, found within the Handbook for Gender-Inclusive Urban Planning Design by The World Bank, include:

- Provision of a network of public spaces accessible by a range of transport modes
- Design of all public spaces to allow access for people with disabilities, children, or the elderly
- Inclusion of shaded and weather protected resting and seating areas

[8] Johnson & Bennett 2015, Everyday sexism: Australian women's experiences of street harassment, The Australia Institute, March 2015, accessed 30 May 2023

- Inclusion of flexible spaces which allow for activities and use for all ages and abilities
- Design of spaces for multiple sports (and non-sport gatherings) catering for all genders
- Provision of signage, art, and wayfinding which is inclusive and welcoming to people of all genders, ages, and abilities
- Inclusion of lighting and clear sightlines
- Inclusion of clean, secure, and accessible toilet facilities.

There are further opportunities to work with all members of the community to identify areas where people feel unsafe or unwelcome. The inclusiveness of public spaces should also consider age, disability assistance requirements, and other personal characteristics.

3.5 Outcomes

Outcome 5: Infrastructure that supports pedestrian and bicycle rider comfort, priority and safety

Mildura residents are largely reliant on car travel. Current pedestrian and bicycle infrastructure does not adequately support people in choosing to walk or ride a bicycle to meet their daily travel needs. There is a need to provide infrastructure such as speed optimisation, traffic calming, intersection upgrades and urban and rural road upgrades that will support walking, bicycle riding and catching public transport. This will reduce the cost of living, increase local economic activity, improve health outcomes, and help to maintain Mildura's liveability.

Outcome 6: Attractive and comfortable public spaces and streets that stimulate activity

There are some streets that lack active frontages, shade, appropriate tree canopy and visual interest. There is a need to design spaces that encourage people to experience and linger within the public realm on foot or by bicycle. There are opportunities to work with local businesses to explore activation opportunities in priority locations identified in town centres including Mildura CBD.

Outcome 7: More inclusive public spaces and streets where all people feel safe and secure

People are unlikely to spend time in spaces they don't feel safe in. There is a need to design spaces that are safe for people of all genders, ages, sexualities, religions, cultures, and abilities to enable everyone to enjoy their neighbourhood safely.

These themes and outcomes relate to the following existing documents:

- Mildura CBD Access and Mobility Strategy
- Merbein Pedestrian and Cyclist Safety Plan
- Mildura Tracks and Trails Strategy
- Road Safety Strategy

The outlined outcomes and initiatives relate to the following KPI's developed through the ILM:

- Improve key travel connections
- Reduce safety incidents with vulnerable road users
- Increase safe active travel options
- Reduce reliance on car ownership and use

A region full of opportunity

Capitalise on Mildura's unique strengths to improve productivity, access to opportunities, and economic growth.

A region full of opportunity

Capitalise on Mildura's unique strengths to improve productivity, access to opportunities, and economic growth

Outcome	Action	Responsbility	Action Type	Timeframe
Greater employment, education, health and training opportunities which generate high levels of community participation Increased provision of higher-order services in the Mildura township to reduce the need to travel out of the region Improved infrastructure and services supporting first-class tourism in the region	10. Advocate for affordable and convenient regional public transport to Mildura from all regional towns, Adelaide, Melbourne and Sydney.	Council	Advocacy	Short term

4 A region full of opportunity

Mildura is a very fortunate region. It is naturally beautiful, productive, unique, and vital to many communities. However, many members of the local community often struggle to access essential services due to unsuitable or lack of public transport options.

There is a need to promote access to local and regional places of importance to enable more members of the community to have access to more opportunities. This will include high-quality local public transport services to promote ease of access within the municipality for people who do not own cars. Improved regional public transport services will also provide easier access for residents who need to travel to larger regional towns and capital cities for specialist services. Enhanced regional accessibility will also support visitors wishing to explore the wider region.

4.1 A region full of opportunity

4.1.1 Cross Border influences

The Mildura municipality shares borders with both New South Wales (NSW) and South Australia (SA). Maintaining connections into NSW and SA is vital for the Mildura community and broader region.

Many border town residents cross into Victoria for work or are reliant on accessing goods and services provided within Mildura. Towns in NSW including Buronga and Gol Gol are also experiencing significant residential development. Future residents of these towns are likely to rely on access to goods and services in Mildura despite living in NSW.

Many residents experienced difficulties during the COVID-19 pandemic and subsequent border closures, which further highlights the importance of cross border access. Cross border communities often acted as one entity to ensure movement was maintained across the border, such as by going into and coming out of lockdown together. This indicates that Mildura must not only consider planning up to the boundaries of its own municipality, but beyond them into other states.

There are complexities around the planning of movement and the provision of services due to cross border differences. This includes policy differences that vary across borders, such as learner and probationary licence requirements which can be confusing for those who live in border communities. People working between states may also require licences to work and operate across borders, such as bus drivers.

4.1.2 Aligned Planning Scheme considerations

The Planning Policy Framework is a section of the Planning Scheme that outlines objectives and strategies to guide future development. Several clauses and schedules are collected within the broader transport clause, of which are outlined below:

- Land use and transport integration (18.01-1S)
  - ☑ Reduce distance that people have to travel to access jobs and services
  - ☑ Enhance access and mobility within local communities
  - ☑ Plan the timely delivery of transport infrastructure and services
  - ☑ Design neighbourhoods to better support active living, and increase the share of trips made using sustainable transport modes
- Transport system (18.01-2S)
  - ☑ Facilitate the efficient, coordinated and reliable movement of people and goods at all times
  - ☑ Improve connectivity and facilitate growth in regional Victoria
  - ☑ Improve local transport options to support 20-minute neighbourhoods
- Sustainable and safe transport (18.01-3S)
  - ☑ Maximise the efficient use of resources including infrastructure, land, services and energy

- ☑ Minimise harm to the environment by protecting biodiversity and reducing transport-related greenhouse gas emissions
- ☑ Prioritise the use of sustainable personal transport

- Walking (18.02-1S)
  - ☑ Support walkability by providing pedestrian routes that are safe, direct and comfortable to use
  - ☑ Enable people to meet more of their needs locally and rely less on their cars
- Cycling (18.02-2S)
  - ☑ Facilitate cycling uptake by providing routes that are safe, comfortable, low-stress, and well connected
- Cycling in Mildura (18.02-2L)
  - ☑ Encourage development that provides a physical separation of bicycle lanes from vehicular movement through road surface treatments and other actions
- Public Transport (18.02-3S)
  - ☑ Facilitate public transport uptake by enhancing connections with activity centres and job-rich areas, coordinating the bus network, and integrating land use development with transport service provisions
- Roads (18.02-4S)
  - ☑ Facilitate an efficient and safe road network that integrates all movement networks and makes best use of existing infrastructure
- Mildura road network (18.02-4L)
  - ☑ Discourage residential development along the proposed Benetook Avenue bypass
  - ☑ Avoid ribbon development along main highways
  - ☑ Use alternate vehicle access arrangements such as rear lanes for properties facing key pedestrian routes
- Freight (18.02-5S)
  - ☑ Facilitate an efficient, coordinated, safe and sustainable freight and logistics system that enhances Victoria's economic prosperity and liveability
  - ☑ Increase the capacity of the rail network to carry larger volumes of freight
  - ☑ Manage negative impacts of freight generating activities on urban amenity
- Airports and Airfields (18.02-7S)
  - ☑ Strengthen the role of Victoria's airports and airfields within the state's economic and transport infrastructure, guide their siting and expansion, and safeguard their ongoing, safe and efficient operation
- Mildura Airport and environs (18.02-7L)
  - ☑ Encourage the Mildura Airport Special Use Precinct to operate as an efficient transport interchange catering for increased air traffic
  - ☑ Encourage land use development that is compatible with the function and operation of the Mildura Airport Special Use Precinct

4.2 Aligned Council strategies

4.2.1 Mildura CBD Plan 2020 – 2050

The Mildura CBD Plan sets out a strategic vision and framework to guide growth and the development of the CBD up to 2035. The vision for the CBD is to establish a responsive, resilient and people-oriented centre for community life, drawing inspiration from the Murray River experience.

Six strategic directions were developed to guide actions. The six directions (along with examples of key actions) are:

- A distinct and dynamic activity hub: Langtree Avenue Placemaking Project, College Lease land studies and investigations
- A connected and compact CBD: Regional freight and passenger service, new bus interchange, improve bus services, CBD intersection upgrades
- An inclusive and people focussed CBD: Greening the public realm, climate responsive shading, Feast Street upgrade, linear parkway project
- A resilient and sustainable CBD: Electric charging points, expand CBD living
- A smart and collaborative CBD: education and innovation clusters
- An expressive and memorable CBD: Destination laneways.
- These actions are carried over to the initiatives developed for this ITLUS.

4.2.2 Merbein Pedestrian and Cyclist Safety Plan 2023

The Pedestrian and Cyclist Safety Plan identifies a number of priority interventions to increase the safety of Merbein's roads for active transport users. This includes upgrading existing facilities and installing new infrastructure at key locations. Extensive community consultation was undertaken with the Merbein community to deeply understand their needs and everyday experiences on Merbein streets.

- Cycling and walking interventions were identified, with key interventions being:
- Installation of on-road bicycle lanes on Commercial Street, Main Avenue North, and River Avenue
- Installation of footpaths on one-side of the road along streets with no existing footpaths, and connecting education and health care facilities
- Installation of shared user paths along Box Street, Main Avenue South, Game Street, Channel Road, Chaffey Street, and within new subdivisions
- Installation of pram ramps, raised pedestrian crossings, school crossings, and refuge medians throughout Merbein.

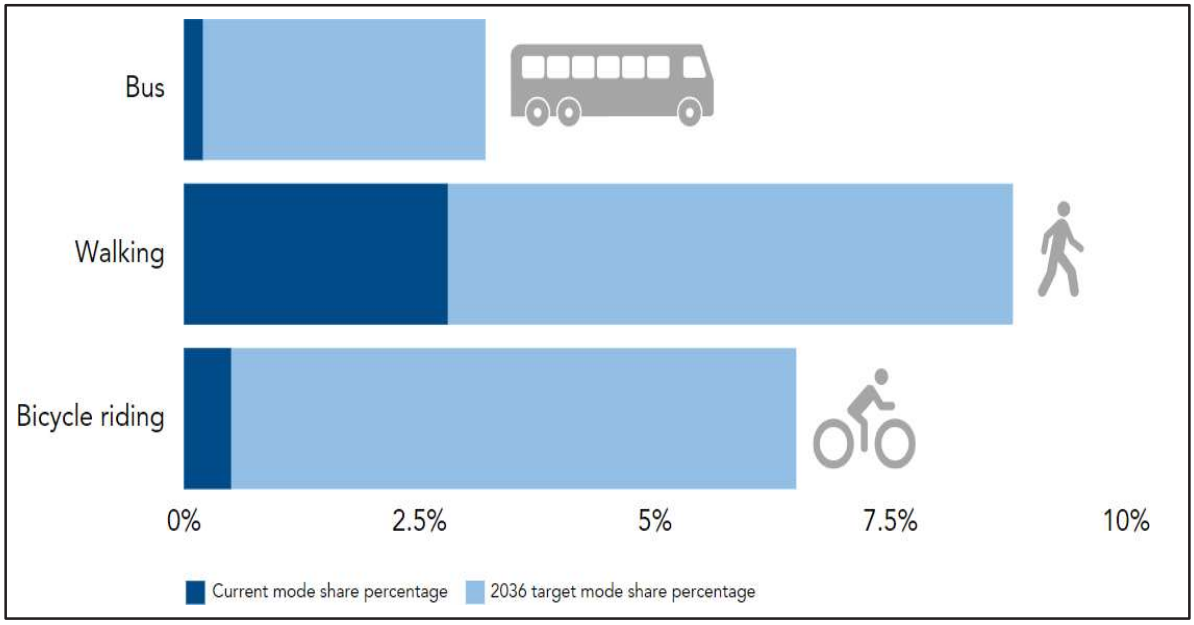
These infrastructure improvements are reflected in the future active transport network developed for the ITLUS.

4.2.3 Mildura CBD Access and Mobility Strategy 2022

The CBD Access and Mobility Strategy guides the implementation of transport and land use decisions in Mildura's CBD. The primary objective of the strategy is to encourage the CBD and surrounding areas to become more diverse with a smarter set of mobility options. The strategy worked in tandem with the CBD plan, both of which aim to reduce car use in the CBD by 15%.

The strategy found that for trips shorter than 2.5km to the CBD, 86% were by car. The strategy sets out mode share targets for travel to work in Mildura in 2036, shown in the figure overleaf.

Mildura CBD Access and Mobility Strategy mode share



Source: M&PC based on Mildura Rural City Council (2023)

Several interventions were identified in the strategy to increase pedestrian and bicycle rider priority, improve the comfort and safety of the public realm, and reduce the number of cars with the CBD. Key actions include:

- Installation of raised pedestrian crossings at all major unsignalised intersections
- Reduced speed limits
- Increased protected bicycle lanes and shared paths
- Increased tree canopy and shading
- Installation of real time parking information systems
- Provision of all day off-street parking on the periphery of the CBD
- Improved wayfinding and signage.

4.2.4 Mildura Track and Trails Strategy 2012

Developed in 2012, the Mildura Track and Trails Strategy aims to identify, develop, upgrade, manage and maintain a network of shared on and off-road walking and bicycle riding paths for both commuting and recreation. It identified a primarily off-road walking and bicycle riding network, with some on-road bicycle lanes identified in the future network.

Key opportunities explored include:

- Access to the Mildura CBD from Nichols Point/ Billabong
- Extend Irymple Green Belt Trail
- Safe school routes
- Equitable distribution of trails throughout small towns in the municipality
- Intra-municipal linkages
- Further development of trail along Mildura railway easement
- Horse riding on trails
- Develop river trail between Lock 11 and Old Mildura Homestead.

In the years since the finalisation of this strategy, some of the actions have been implemented, such as the river trail between Lock 11 and the Old Mildura Homestead.

4.2.5 Mildura Housing and Settlement Strategy 2013

The Mildura Housing and Settlement Strategy provides a strategic framework and associated guidelines to inform decision making regarding rezoning and land use development. It aims to ensure land use development is resilient and meets the future needs of the community.

It noted a few key issues in Mildura, namely:

- A lack of affordable housing and consideration of community health and wellbeing
- Large parcels of undeveloped land due to historic leaseholds
- Limited consideration on the role and function of small rural settlements

There were a number of key opportunities outlined, such as:

- Improve access to services and facilities, particularly by walking and bicycle riding
- Ensure that the residential growth areas of Mildura, Mildura South and Irymple are contiguous with existing residential estates and in locations that reflect logical and cost effective infrastructure servicing options
- Accommodate demand for low density and rural residential development in planned estates
- Consider in-fill development in the Mildura CBD and riverfront area

4.2.6 Deakin Avenue Urban Design Guidelines 2015

Developed in 2015, the Deakin Avenue Urban Design Guidelines outline the future vision for Deakin Avenue as a "premier avenue: a gallery showcasing our history, diversity and vitality", one that "will be a grand boulevard entrance … that appears as a 'desert oasis' and reflects the transition from rural to inner city along its length".

The document outlines the preferred development of land uses and landscape along Deakin Avenue, and how they interact with the street, roadways and median strip. The plan features five precincts along various stretches of the Avenue, with specific design guidelines and treatments including:

- Precinct 1: Horticultural edge (between Gordon Avenue and Seventeenth Street)
  - ☑ Retain farming uses and low scale residential
  - ☑ Extend the dual carriageway and median treatment
  - ☑ Encourage trucks onto bypass roads at Seventeenth Street
- Precinct 2: Residential (between Seventeenth Street and Fifteenth Street)
  - ☑ Support future developments with greenery along property frontage
  - ☑ Establish a shared user path with seating, lighting and shade opportunities
  - ☑ Provide more safe crossing opportunities at intersections
- Precinct 3: City Gate (between Fifteenth Street and Aldinga Drive)
  - ☑ Encourage residential and mixed use development up to two storeys
  - ☑ Minimise car parking within front setbacks
  - ☑ Provide protected bicycle lanes on both sides of roadway
  - ☑ Provide rear property vehicle access where available
  - ☑ Consider redesign of Fifteenth Street intersection to improve safety for pedestrians
- Precinct 4: Mixed Use (between Aldinga Drive and Eleventh Street)
  - ☑ High-quality built-form of up to three storeys
  - ☑ Investigate options for traffic management to prioritise walking and cycling
  - ☑ Provide protected bike lanes on both sides of the Avenue
  - ☑ Avoid car parking within the front setback
  - ☑ Minimise interruptions to pedestrians by avoiding driveways and accessways
  - ☑ Provide mid-block zebra crossings to encourage use of centre median strip
- Precinct 5: City Core (between Eleventh Street and Seventh Street)

- ☑ Built form up to four storeys that is built to the front boundary within the CBD core
- ☑ Prioritise pedestrians and bicycle riders in the precinct
- ☑ Locate vehicle access from the rear laneways (not Deakin Avenue)
- ☑ Enable pedestrians to cross Deakin Avenue in one signal phase
- ☑ Create a protected bicycle lane that is segregated from pedestrians and cars

The intensity of built form gradually increases the closer the precinct is to the CBD. Within spaces with higher built-form intensity, there is a need to prioritise active transport movements and minimise vehicle dominance and impacts.

4.2.7 Buronga Gol Gol Structure Plan 2020

The Buronga Gol Gol Structure Plan provides a strategic land use framework to facilitate quality and sustainable urban development in the Buronga Gol Gol area by setting out what, when, where and how land and infrastructure development should occur.

The Buronga Gol Gol area is currently experiencing rapid housing development prompting the need for. The Structure Plan draws on the community's agreed vision for the Buronga Gol Gol area with respect to housing, population services, infrastructure, community facilities and environmental management. The plan sets out strategic short, medium and long-term land use directions for achieving sustainable urban growth and optimising land development in the area.

The recommendations in this Structure Plan aim to consolidate future urban development, facilitate development of a commercial precinct, rezone to support future and emerging land use needs and expand and/or upgrade infrastructure and services in Buronga Gol Gol.

4.2.8 State policy insights

This strategy seeks to build on strategic state government works, with key insights from documents reviewed listed below.

Document	Description	Insights
Delivering the Goods (2018)	Provides guidance on how to combat freight challenges and deliver freight infrastructure and aims to enhance the efficiency of freight and other infrastructure to meet future needs.	Future strategies need to: Improve road infrastructure along key freight corridors & integrate freight network and land use development planning.
Mallee Regional Economic Development Strategy (2022)	Provides guidance on economic development in the Mallee region. Aims to guide development to obtain the most beneficial social and economic outcomes for residents, workers and businesses in the region.	Future strategies need to: Enhance access to jobs, education and training programs & work with nearby Council's to develop a connected road, rail and freight network.
Moving More With Less (2021)	Provides guidance on how to plan for future freight movements. Aims to utilise existing infrastructure and implement new works to maximise the efficiency of the freight network.	Future strategies need to: Ensure freight routes are most suitable for large vehicles & investigate intermodal freight hubs to efficiently facilitate the transfer of goods.
Victoria's 20-Minute Neighbourhood Framework	Provides a framework to guidance land use development and transport accessibility. Aims to enhance access to essential goods and services for all individuals.	Future strategies need to: Provide new housing in areas with high access to goods and services create a high-quality public realm and open spaces and support climate resilient communities.
Transport for NSW Future Transports Strategy	The Future Transport Strategy sets our direction for continuing to improve every part of our transport system for the benefit of our customers, the community and the economy.	The NSW Future Transport Strategy works to deliver three high level outcomes. These are: • Connecting our customers' whole lives • Successful places for communities • Enabling economic activity.

Source: M&PC (2023)

The revised ITLUS was developed to align with the state government policy documents outlined above. Road and freight network projects will enable Council to tackle challenges related to freight and support initiatives to prevent freight vehicles from travelling through sensitive areas. The ITLUS also aims to encourage uptake of active and public transport modes to ensure transport access for all within the community.

4.2.9 Transport Integration Act 2010

The Transport Integration Act 2010 applies to MRCC as a 'transport body' when it is exercising powers, performing functions or making decisions under transport legislation in its capacity as:

- A coordinating road authority within the meaning of section 3(1) of the Road Management Act 2004; or
- A waterway manager within the meaning of section 3(1) of the Marine Safety Act 2010.

When MRCC exercises a power, performs a function, or makes a decision under transport legislation, section 24 of the Act requires that it have regard to the transport system objectives and decision-making principles. The Transport Integration Act also applies to MRCC in its role as a Planning Authority (see separate Fact Sheet titled Municipal Councils as planning authorities).

Transport bodies are advised to document their decision making to show that they have considered transport system objectives and decision-making principles in the Act.

The key objectives and decision-making principles that have informed this ITLUS are:

- Integration of transport and land use, which facilitates economic and social opportunities through:
  - ☑ maximising access to residences, employment, services, and recreation
  - ☑ reducing the need for private motor vehicle transport
  - ☑ facilitating better access to and within local communities
- Social and economic inclusion, including minimising barriers to access so that the transport system is available to all
- Economic prosperity, which enables efficient and effective access for persons and goods to places of employment, markets and services
- Environmental sustainability, which promotes transport which has the least impact on the natural environment, and preparing and adapting to the challenges of climate change
- Safety and health and wellbeing
- Equity between persons irrespective of their personal attributes and location
- Transport system user perspective.

4.2.10 Investment Logic Map

The Victorian investment management standard is a process for applying simple, common-sense ideas and practices that help organisations to direct their resources and achieve the best outcomes from their investments. It is grounded on three principles:

- The best way to pool knowledge is through an informed discussion that brings together those people with the most knowledge of a subject;
- The 'investment story' is best depicted on a single page using language and concepts that can be understood by a lay person; and
- Each investment should have clearly defined benefits that align with the outcomes the organisation is seeking.

The investment story is developed and depicted through an Investment Logic Map (ILM) which outlines the key problems being faced, solutions to deal with those problems and benefits of doing so.

A full day of ILM workshops was held with regard to the ITLUS, which defined three key problems:

- Poor quality access options over long distances results in high cost of delivering services and infrastructure, and reduced regional competitiveness (30% weighting)
- Lack of coordinated transport, freight network and land use strategy is negatively impacting safety, amenity and efficiency of providing services (30% weighting)
- Current development is not delivering quality and diversity of accommodation options (residential & commercial) resulting in increasing cost of living and constraints on growth (40% weighting)

Participants in attendance in the ILM workshop represented the following organisations:

- Mildura Rural City Council
- Wentworth Shire Council
- Department of Transport and Planning
- Regional Development Victoria

The full ILM is provided in Appendix B and also outlines key performance indicators (KPI) that will assist MRCC and stakeholders to track their progress toward solving the problems.

4.3 Issues

4.3.1 Education, employment, health and training opportunities are not easily accessible

MRCC is located distant from capital cities, and Mildura is the largest city for over 300km in any direction. Residents of the region, and surrounding regions in NSW and SA, are reliant on opportunities provided in MRCC particularly related to education, employment, health and training .

The town currently provides many services related to health, education and training opportunities. However, there are still some services that are only available within the larger regional centres (such as Bendigo and Ballarat) and capital cities. These specialist services are often located in places with a much larger population catchment than what currently exists in Mildura. It is common for many regional communities to have access to a reduced array of goods and services.

Around 20% of young people in Mildura (aged between 20 and 29) are disengaged in education, employment and training. Employment opportunities in service jobs are projected to decline by 65% in rural Mildura by 2046[1]. Whilst some tertiary education options are offered, there are many other courses that will require young adults to travel to larger cities to access their further education needs.

Local public transport services are confusing, indirect, and infrequent. They are not broadly meeting the needs of people accessing education, employment, health and training opportunities. The bus services are seen as a last choice transport mode, used by those with no other option. This disproportionately impacts the youth of Mildura (not old enough to drive), people unable to physically drive and those without the financial means to own a car.

There is a need to ensure that future businesses and services are clustered in areas with good public transport access such as Mildura CBD. This will ensure a greater proportion of the municipality's population can easily access their essential needs without relying on someone else to drive them.

4.3.2 Access to capital cities and regional centres is expensive or time-consuming

Mildura CBD is a key activity centre for an extensive region that spans across three states. Even though plenty of goods and services are provided, there are still many services not provided at the same level they are provided in other regional cities such Bendigo. For example, Mildura and the surrounding region have a lack of specialist medical services, which leads to long waiting times for medical and dental care.

[1] HillPDA 2023, *Mildura Integrated Transport and Land Use Strategy: Economic Outlook,* Prepared for Movement & Place and Rural City of Mildura, 11 August 2023

The shortest travel time to higher order services is provided by plane travel to Melbourne with a flight time of around 90 minutes (not including check-in, boarding, luggage handling and security). There are 2-8 flights each way between Mildura and Melbourne each day (depending on the day of the week). On some days of the week there are also flights to:

- Sydney (2.5 hour flight)
- Sunshine Coast (2.5 hour flight)
- Broken Hill (45 minute flight) – only from October to April
- Adelaide (75 minute flight) – only from October to April.

Council owns Mildura Airport which is managed by an independent Board and has won several awards. Over 600 people travel by plane to and from Mildura airport each day. Unlike most other intra-state public transport services in Victoria, travel from Mildura Airport is not subsidised by the Victorian or Commonwealth governments. Airfares vary based on a range of factors but typically cost $600 for a return trip to Melbourne.

V/Line and some private operators provide coach services to Mildura from various destinations including Melbourne. The cost for passengers has been lowered to $10.60 (full fare) and $5.30 (concession). V/Line coach services take 9 hours to get to Melbourne or 7.5 hours if travelling via Swan Hill and transferring to the train. These travel times do not allow for same day travel, forcing travellers to stay overnight. Should someone need to attend multiple specialist appointments, accommodation can become a significant financial and time burden. The time penalty imposed on those most vulnerable (who cannot afford to fly) is extreme.

A daily train service between Mildura and Melbourne was operated by V/Line until 1993. In 1970, there was one train in each direction six days per week, that took 10-11 hours to complete the journey.

Improving the provision of high-quality connections with capital cities can mitigate the existing burdens related to long-distance travel journeys undertaken by many residents of Mildura. This is important given that many essential services are currently unavailable in Mildura.

4.4 Opportunities

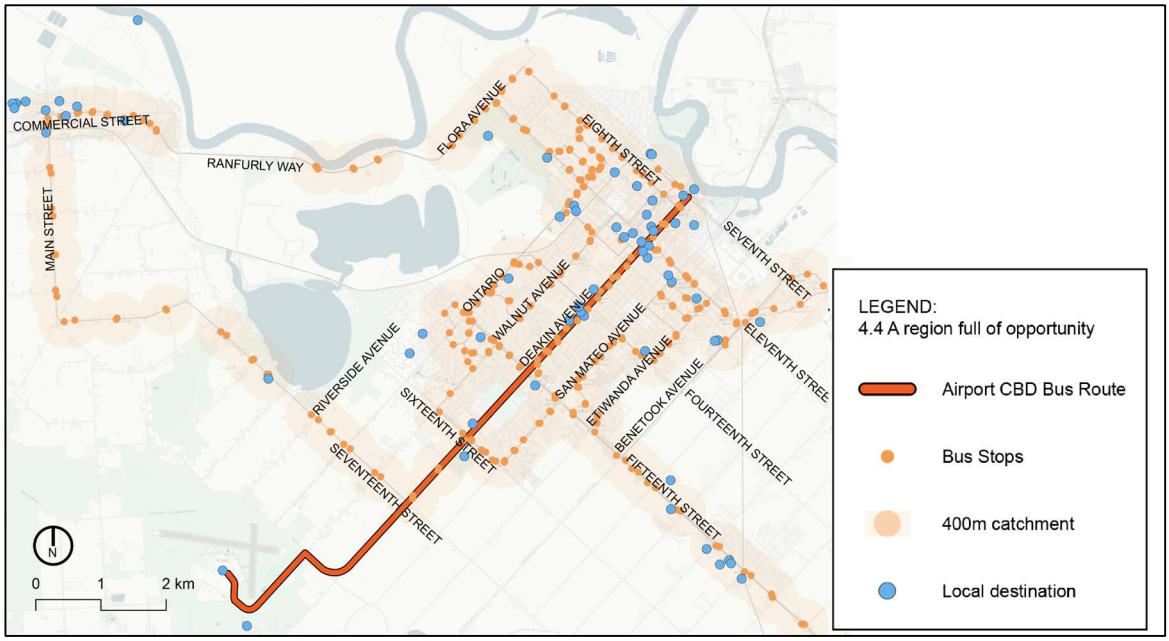
4.4.1 Encourage development of education, training, and employment opportunities in accessible areas

There are opportunities to ensure that new facilities (especially for youth) are in areas that have good access by a variety of modes (walking, bicycle and public transport in particular). Council will carefully plan where to locate future destination precincts and sporting or entertainment complexes with transport travel options in mind (this is required to ensure compliance with the Gender Equity Act and Commonwealth Disability Discrimination Act).

Further initiatives can then be undertaken to enhance public transport services to those areas through a review of the bus network. This review can include assessments on how an airport bus service can be integrated into the current network.

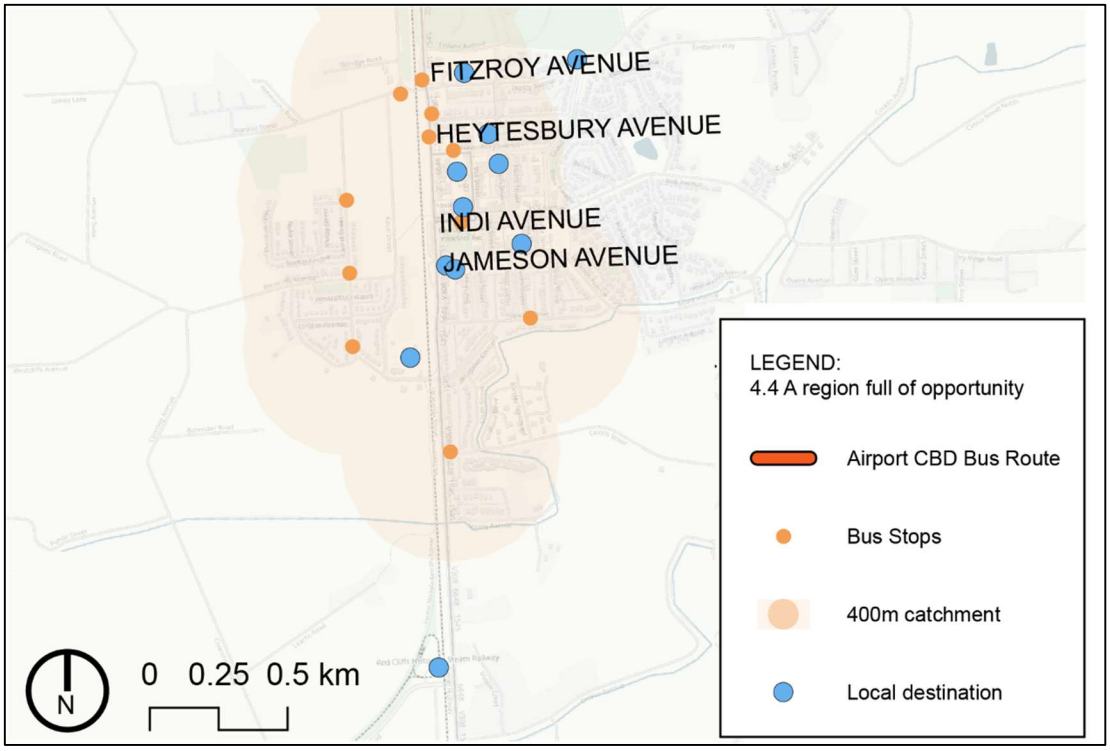
Key destinations and nearby bus stops in Mildura, Red Cliffs, and Ouyen including a 400m walking catchment around bus stops are shown in the following figures.

A region full of opportunity - Mildura and surrounds



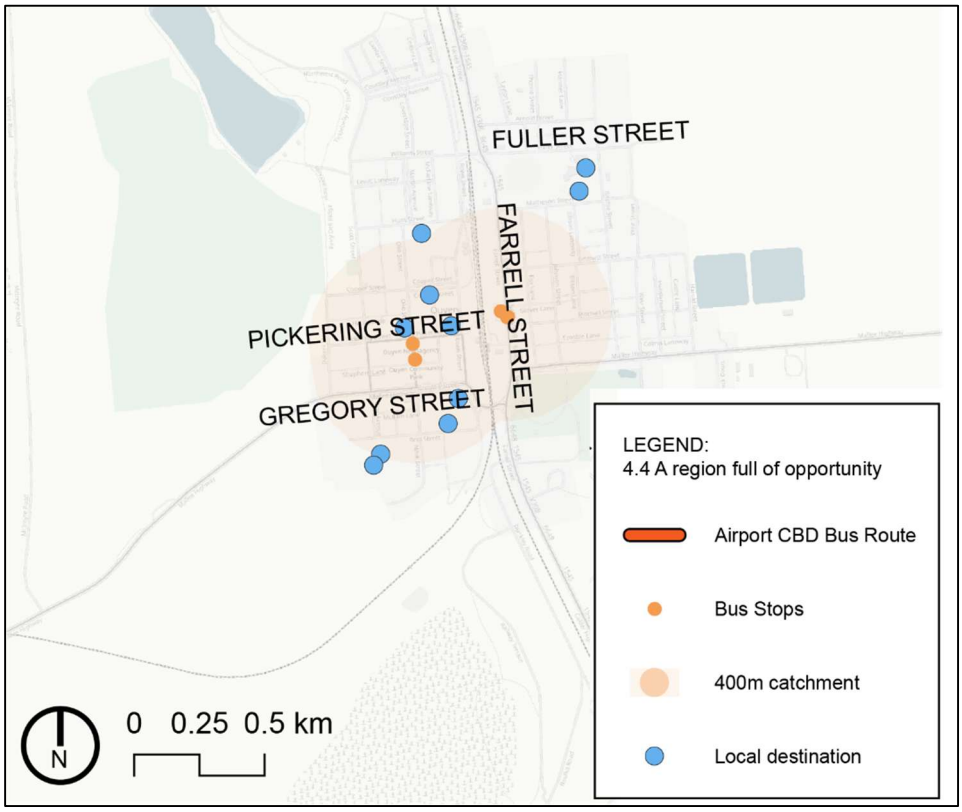
Source: M&PC (2023)

A region full of opportunity - Red Cliffs



Source: M&PC (2023)

A region full of opportunity – Ouyen



Source: M&PC (2023)

4.4.2 Foster ease of regional transport access

Many residents in the municipality are reliant on the specialist services that are only provided in larger regional towns and capital cities. It is important to support growth in local facilities and businesses, while acknowledging there will always be some services that residents can only access by travelling outside the municipality.

There are opportunities to enhance long distance transport services to ensure that Mildura's residents can effectively meet their travel needs with minimal burdens. This will be particularly important as the elderly population grows, resulting in higher demand for specialist health services.

Mildura's airport and coach services can be leveraged to provide greater access, through service frequency increases and better intermodal connectivity. This can enable many residents to make single-day trips instead of being required to stay overnight in other cities.

Consideration will also be given to how local public transport services can support regional visitors once they arrive in Mildura. Services such as an airport shuttle bus can enable visitors to easily transfer between services to key locations such as the Mildura CBD and riverfront, improving the visitor experience.

4.5 Outcomes

Outcome 8: Greater employment, education, health and training opportunities which generate high levels of community participation

To boost the vibrancy and economic prosperity of Mildura, education and employment opportunities need to be expanded, providing greater opportunities for economic participation across the whole community. A large proportion of young people in Mildura are not engaged in education or employment, and are experiencing social isolation. Greater education and employment opportunities will boost economic, emotional and social outcomes for Mildura residents.

Outcome 9: Increased provision of higher-order services in the Mildura township to reduce the need to travel out of the region

Mildura is a centre of activity for a vast rural region. There are opportunities to provide a greater number and diversity of higher order specialist services to support a range of needs. The strategy will support the location of services within Mildura to reduce the need for residents to travel to cities such as Adelaide, Bendigo and Melbourne to meet their essential needs.

Outcome 10: Improved infrastructure and services supporting first-class tourism in the region

Mildura is a unique and beautiful region. People from across Australia should be able to easily visit Mildura by any mode of transport that works best for them, at an affordable price. Once in Mildura, visitors should be able to easily move around the region and experience all it has to offer, including its natural beauty, CBD and outlying towns.

These themes and outcomes relate to the following existing documents:

- Mildura CBD Access and Mobility Strategy
- Mildura Community Vision
- Towards Zero Emissions Strategy
- Youth Engagement Strategy
- Cultural Diversity and Inclusion Strategy
- Equitable Transport Access Plan (future)
- Zero Waste Strategy (future)

The outlined outcomes and initiatives relate to the following KPI's developed through the ILM:

- Increase in jobs in emerging sectors
- Reduce key worker local skill shortage
- Improve key travel connections
- Higher investment in region

Adaptable and resilient infrastructure

Effective management of assets to meet the needs of the community, business, and industry while being adaptable to the effects of climate change.

Adaptable and resilient infrastructure

Effective management of assets to meet the needs of the community, business, and industry while being adaptable to the effects of climate change

Outcome	Action	Responsbility	Action Type	Timeframe
Effective public transport infrastructure where buses are a convenient transit option	11. Advocate for timely outcomes to Mildura's bus reform and related service improvements	Council	Advocacy	Short term
Appropriate integrated transport and land use planning that mitigates climate change	12. Undertake a Movement + Place assessment (Modules 1 & 2) to establish network priorities	Council	Action	Short to medium term
Efficient management of public assets to support benefits for the entire community Increase use of public transport for everyday travel	13. Advocate for additional overtaking lanes along the Calder Highway	Council	Advocacy	Short to medium term

5 Adaptable and resilient infrastructure

5.1 Adaptable and resilient infrastructure

Our region is supported by natural resources, transport, technological and social infrastructure. Infrastructure has been integral to ensure that the municipality can remain liveable, economically strong and self-sufficient despite its remote location.

There are further opportunities to build resilience by utilising existing resources and creating effective strategies to incrementally diversify activities and offerings across all economic sectors. There are also further opportunities to plan for and build new infrastructure that will ensure the adaptability and resilience of the municipality in the future.

5.2 Issues

5.2.1 Public transport effectiveness

There is room to improve existing public transport services to better meet the needs of the Mildura community. Issues with Mildura's public transport network include:

- Significant gaps in public transport provision to several key destinations such as SuniTAFE, Mildura Airport, community sporting facilities, and employment precincts such as the Mildura East industrial area
- Limited public transport options available to the more remote settlements and townships
- Lack of long-distance passenger public transport options such as frequent and affordable air travel and passenger rail.
- Indirect bus routes, which make frequent detours that increase travel time and reduce efficiency. *An example of an existing indirect bus service is Route 400.*
- Infrequent bus services, many of which are provided at hourly or lower frequencies. Some of these bus services also only operate between 7am and 7pm, Monday to Friday. *Examples of infrequent bus services include Routes 211, 311, 600, 602, 500, and 501.*
- Route numbering system can be confusing or not clear for new residents or visitors and online information services need improvement
- Lack of frequent public transport options for regional towns. Regional coach services operate generally once a day which does not allow residents to make to and from journeys on the same day.

5.2.2 Climate change impact mitigation

The liveability and economy of the municipality is supported by its optimal environmental conditions. The Sunraysia region provides a wealth of parklands, reserves, the mighty Murray River and other natural attractions. There are further opportunities to ensure that the natural environment is protected and that future uncertainties can be mitigated.

New housing and business development is predominantly provided within new greenfield developments, found on the outskirts of towns, such as Irymple, Mildura, and Red Cliffs. Whilst these places offer home buyers the option to live in a new detached house, they are typically located far from existing goods and services. Greenfield development also eats into fertile agricultural land located on the fringe of towns, limiting agricultural land located close to existing processing areas and increasing impervious surfaces in the municipality.

Transport creates the third highest share of Australia's greenhouse gas (GHG) emissions, and is the fastest growing sector, largely resulting from car use[1]. Without intervention and change of transport habits, transport will be Australia's largest source of emissions by 2030[2].

n 26 February 2020, Mildura Rural City Council (Council) became the 30th local government in Victoria and the 94th in Australia to declare a climate emergency. It is a call to action for all levels of government to take meaningful steps to reduce greenhouse gas emissions and to develop strategies to mitigate and adapt to the impacts of climate change. Council's commitment to reduce emissions and consult with the community on climate change mitigation and adaptation strategies is an important step in the right direction. Council has committed to zero net carbon emissions by no later than 2050 in line with Councils Towards Zero Emissions Strategy 2021-2050[3]. Improvements in the transport network will play a vital role in achieving this target.

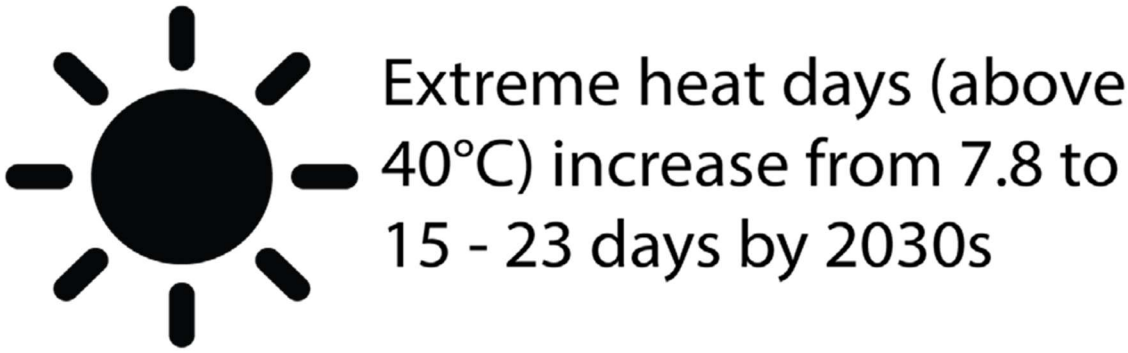
5.2.3 Drought and Flood

The sunny weather and proximity to the Murray River has also enabled the region to nurture a strong agricultural industry for many years. However, climate change can threaten the prosperity of these industries in the future.

Rural communities are significantly more vulnerable to droughts. Mildura, where the water entirely comes from the Murray River, experienced widespread drought from 1995 – 2010 (Millennium Drought), which significantly affected the local economy, particularly irrigation farming. Mildura's irrigation farming areas grapple with significant issues including water trading, which is worsened during times of drought.

Mildura's climate is expected to become warmer with more extreme heat days forecasted. Lower rainfalls and higher evaporation rates result in less soil moisture and decreased river flows. This will increase the occurrences and severity of both rainfall and irrigation droughts, decreasing water available to agriculture[4]. Some of the main effects from climate change based on Mallee Climate Projections undertaken by the CSIRO are outlined in the following figures.

Extreme heat days in the Mallee



Source: M&PC based on CSIRO (2023)

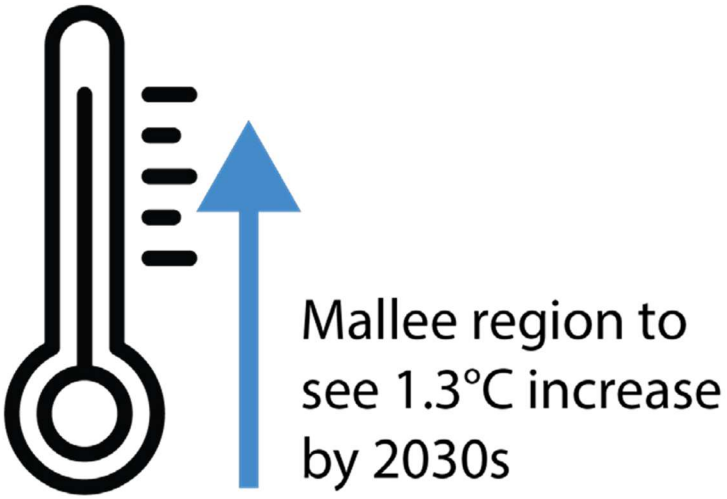
[1] Climate Change Authority 2021, *Transport*, Australian Government, Canberra, accessed 18 April 2023

[2] Department of Climate Change, Energy and the Environment, *Australia's emissions projections 2022*, Commonwealth of Australia, December 2022, accessed 30 May 2023

[3] Mildura Rural City Council website (www.mildura.vic.gov.au), *Towards Zero Emissions Strategy 2021-2050*, accessed 26 February 2025

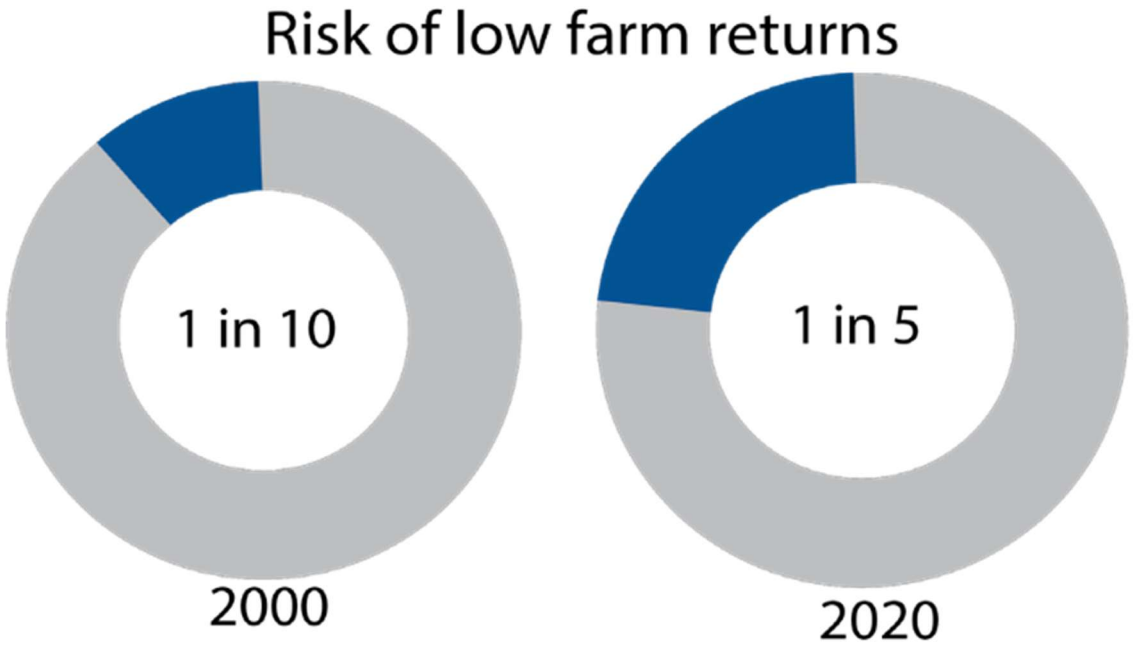
[4] Clarke, Grose, Thatcher, Round & Heady 2019. *Mallee Climate Projections 2019*. CSIRO, Melbourne Australia, accessed 2 June 2023

Temperature change in the Mallee



Source: M&PC based on CSIRO (2023)

Conversely, flood events are increasing in severity due to climate change. The 2022-2023 Murray River flood event is estimated to have caused over $30 million of damage to Mildura, with significant damage to infrastructure across the municipality according to MRCC after the flooding event. A decrease in winter rainfall days and temperature increases result in an increased risk of low farm returns as illustrated in the following figure.



Source: M&PC based on CSIRO (2023)

5.2.4 Land Use

Many new suburban developments are at a higher risk of being impacted by the urban heat island effect. This is created due to a lack of sun shielding features (such as canopy trees) over impervious surfaces, such as concrete, asphalt, and building roofs. Houses in these developments are commonly constructed with black roofs, which can trap heat and contribute to increased ambient temperatures

within neighbourhoods[5]. This, combined with climate change and globally raised temperatures, will cause a greater frequency of extreme heat days with much higher temperatures. Ensuring that any new development is appropriately designed for the future climate is key to ensuring the long-term liveability of Mildura's neighbourhoods.

5.2.5 Crossing the Murray River – George Chaffey Bridge

The Murray River forms the boundary between the two states of Victoria and New South Wales. Given that the Murray River is located within and managed by the New South Wales government, it is their responsibility to plan for and maintain bridge crossings.

The George Chaffey Bridge is one of two crossings within the broader Mildura area. There are many residents and visitors who need to regularly use this bridge to travel across the border for education, employment and health care purposes (including emergency services). It is also used by freight vehicles and residents from Robinvale for whom travelling via NSW is the fastest way to reach Mildura. When the bridge is not in use due to interruptions, local residents and businesses are burdened by significantly increased travel times and costs due to a lack of nearby crossings.

5.2.6 Crossing the Murray River – Abbotsford Bridge

The Abbottsford Bridge plays a vital role in supporting both freight transportation and emergency services in the region. As a key crossing over the Murray River, it connects major transport routes between New South Wales and Victoria, facilitating the efficient movement of goods, agricultural products, and other essential supplies. For freight operators, the bridge ensures reliable access to markets and distribution networks, reducing travel time and costs. Equally important, the bridge provides a crucial route for emergency services, allowing timely response during floods, bushfires, medical emergencies, or other critical events. Without this infrastructure, response times could be significantly delayed, potentially endangering lives and disrupting essential services and freight.

5.2.7 Social license of public transport

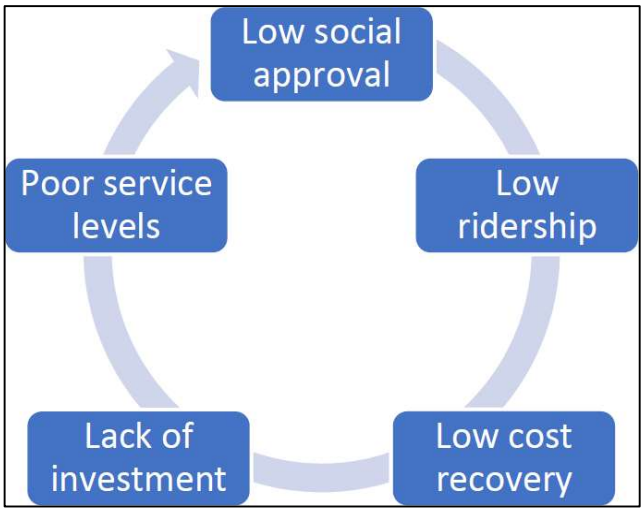
Bus services are the most common and accessible form of public transport in Australia. However, uptake is much lower compared to other transport modes.

The poor uptake of buses can be explained by a lack of "social licence" (or approval) in the community. A weak social approval can lessen the community's desire to use taxpayer funds to improve bus services. Poor investment leads to poorer quality services which further dampens social licence and patronage[6]. This cycle can deteriorate the quality and support for bus operations. This is illustrated in the following figure.

[5] R20 Regions of Climate Action 2012, A Practical Guide to Cool Roofs and Cool Pavements, Global Cool Cities Alliance (GCCA), Oakland, accessed 9 May 2023

[6] Movement & Place Consulting 2022, Investigating the Social Licence for Buses in Australia, Roads Australia, Melbourne, accessed 9 May 2023

Cycle of low bus social licence



Source: M&PC based on Roads Australia, adapted from Infrastructure Australia (2023)

The current DTP review of Mildura's bus services is an important reset for the network which can support access from outlying areas to key education and health facilities. Further work will be undertaken through the recent review of the bus network which includes simplifying the routes and improving service levels.

5.3 Opportunities

5.3.1 Develop an effective and efficient public transport network

There are opportunities to improve transport accessibility for all Mildura residents and encourage uptake from people currently reliant on cars.

The public transport network should be designed to meet existing and future resident needs. This will require a higher frequency of services to travel to areas with high travel demand, such as places with a higher density of commercial, education, health and recreation facilities.

Bus network planning can also be aligned with strategic land use development. For example, Mildura's network of local bus services can be rerouted to overlap in areas with a higher density of travel destinations thereby providing a higher frequency of services for people and businesses who reside along that corridor. This can be trialled along Deakin Avenue given the location of the Mildura CBD, Mildura Central Shopping Centre, and Mildura Airport. The Urban Design Guidelines for Deakin Avenue also propose to increase the provision of commercial premises along the corridor, which will increase the number of businesses that can be serviced by those revised bus services.

5.3.2 Effective management of public assets

Council only has a finite budget for maintaining services and future infrastructure projects. This is obtained through rates, private investment, and State and Commonwealth government funds. It is Council's responsibility to ensure that these funds are spent responsibly on services and infrastructure that are needed.

There are opportunities to evaluate how these funds can be spent on transport infrastructure. This includes consideration of advocacy priorities, that are likely to succeed and create lasting benefit. It is important to ensure that Council is certain that these projects are worthy of investment and can be further supported by local land use and transport planning initiatives.

5.3.3 Consult with all members of the community

There is a need to engage in greater consultation with the community. The Victorian Local Government Act does require councils to consult with the community when making decisions, as it outlines a principle of community engagement where councils are expected to develop plans and processes for actively involving residents in the decision-making process for policies and programs affecting their local area; this is considered a key aspect of good governance Council has a clear responsibility to deliver and advocate for services that will meet the community current and future needs.

In terms of transport and access, it is particularly important to engage with residents who are less likely to own a car given the municipalities current reliance on private vehicles for travel. This may include women, migrants, youth under 18-years old, elderly-aged adults, people with a disability, and families in lower socio-economic demographic brackets. This engagement is particularly vital for people living in remote communities, as they are more heavily burdened by a lack of transport options.

5.3.4 Adapt to climate change and extreme temperatures

There is a need to ensure that Mildura develops in a manner that is resilient to future climate changes. It is predicted that there will be more extreme heat days, and these will change the way Mildura functions as a regional community and economy.

There are opportunities for the municipality to become a part of a wider group of Councils that are looking to minimise the GHG emissions that their communities are creating. This can be achieved by developing a public transport system that can enable residents to easily meet their daily travel needs. Improving the proximity of new development intensity around key nodes (such as Mildura CBD and Deakin Avenue) is critical to supporting and increased diversity of transport options and level of public transport service that will benefit the whole community.

The urban heat island effect is created due to a lack of surfaces that will enable heat to reflect or evaporate into the atmosphere. When a large area contains a higher density of heat absorbing surfaces (asphalt, concrete, and dark-coloured roofs) then the ambient air temperature can increase beyond the temperature expected for the region.

This can be particularly detrimental for pedestrians, given that they are likely to face to brunt of any increases in ambient air temperatures. Increased canopy tree plantations and better building design practices are some ways to mitigate the urban heat island effect.

5.4 Outcomes

Outcome 11: Effective public transport infrastructure where buses are a convenient transit option

There are opportunities to simplify the bus network and increase service frequencies and span. Integrating supportive land use development policies focused on key public transport corridors will encourage some consolidation of services onto Deakin Avenue to provide a higher density of residential dwellings, businesses and other trip-attracting destinations. This is already happening along Deakin Avenue due to its history as a key node and link. The existing intensity of activity, key services and residential buildings can be easily increased to make businesses, community facilities and services in the corridor more viable and efficient.

Outcome 12: Appropriate integrated transport and land use planning that mitigates climate change

Future land use development should be mindful of MRCC aspirations to reduce the community's carbon footprint and minimise development on fertile agricultural soil. There are opportunities to focus development within established areas such as Mildura CBD and the Deakin Avenue and other growth corridors. A greater share of new residential dwellings located within easy walking distance to

locations with a higher density of essential goods and services can reduce the municipalities overall carbon footprint through reduced vehicle and travel kilometres.

Outcome 13: Efficient management of public assets to support benefits for the entire community

Reviewing Council assets including strategic land parcels for land development (including drainage), will help provide land supply in key accessible locations. It will also assist Council in reducing ongoing costs whilst being able to invest in more services for the community.

Outcome 14: Increase use of public transport for everyday travel

Council can partner with bus operators to run specific campaigns that encourage people to try the bus. The focus should be on large events that would otherwise create traffic congestion and parking chaos, and free trials for new residents or the whole population.

These could be specifically focused on events and festivals at the riverfront or sports complex, where large crowds would quickly create traffic congestion and parking scarcity. For example, Burnie in north-western Tasmania offers free bus services to their annual New Year's Eve celebrations. This creates one time each year when non-users get to experience the bus network, in a manner that creates positive experiences and soft marketing of the benefits of using the bus for specific trips.

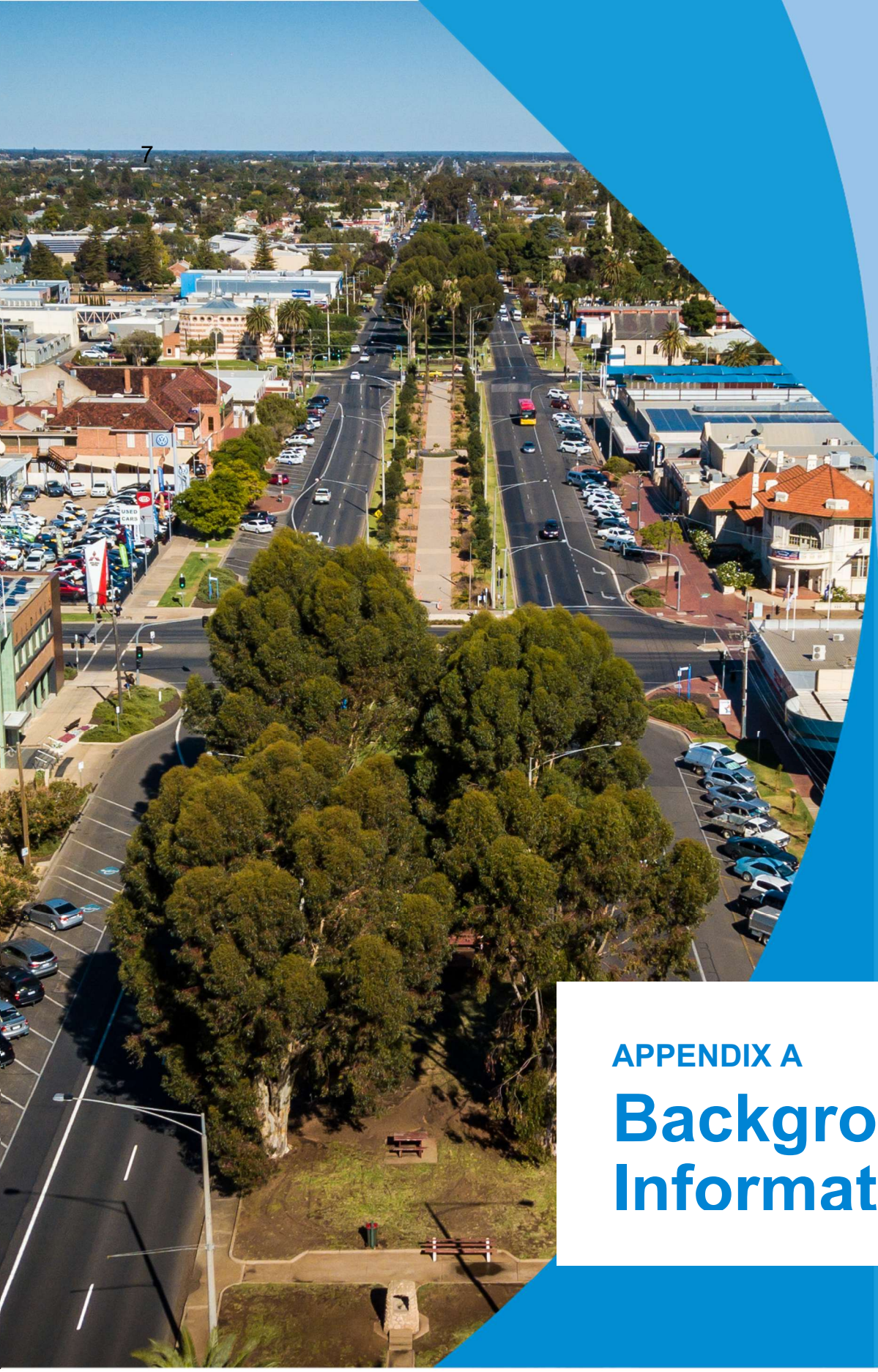
Our Youth Council has also strongly advocated for free bus services in township areas similar to the free tram model seen in the Melbourne CBD. Free public transport improves youth mobility by increasing access to education, jobs, and social activities without financial barriers. It fosters independence, reduces costs for families, and encourages sustainable travel habits. By making transportation more accessible, it enhances social connectivity and ensures that young people can fully participate in opportunities that support their growth and well-being.

These themes and outcomes relate to the following existing documents:

- Mildura CBD Access and Mobility Strategy
- Road Safety Strategy
- Towards Zero Emissions Strategy

The outlined outcomes and initiatives relate to the following KPI's developed through the ILM:

- Improve key travel connections
- Reduce Council infrastructure costs
- Increase in diversity of housing stock
- Reduce reliance on car ownership and use



APPENDIX A

Background Information

Mildura Rural City Council

1 Background information

1.1 Current and future context

Mildura Rural City Council (MRCC) is the largest local government area (LGA) in Victoria and the only municipality to border both New South Wales and South Australia. It is unique in its context and transport needs.

Mildura's urban area serves a vast sparsely populated geographic regional catchment. However, most jobs and services are concentrated within the Mildura CBD and along Deakin Avenue (including around the Mildura Central Shopping Centre). These locations are commercially viable due to the business benefits attributed to agglomeration. This has led to many residents needing to travel for significant distances to access opportunities for tertiary education, work and essential services. These conditions make car ownership and the ability to drive necessary for many people to meet their daily travel needs.

The ITLUS Economic Outlook report prepared by HillPDA (see Appendix A), states that the MRCC population is projected to increase from approximately 56,700 in 2021 to 66,900 in 2046. The Mildura township alone is expected to grow by 11,200 residents. A significant proportion of this growth is anticipated to occur in greenfield developments in Mildura South and nearby the towns of Irymple, Red Cliffs and Merbein. However, recent infill projects, such as the Seventh Street development and Murray River riverfront development in Mildura have shown that there is a growing interest in living close to services and amenities in and around Mildura CBD.

However, many rural areas and remote towns are expected to experience population declines over the same period due to a lack of local services, jobs and access options (transport disadvantage).

Border towns located across the Murray River in New South Wales are also experiencing high population growth rates due to their relative proximity to Mildura CBD. This growth will increase demand for goods, services, employment, and educational facilities in Mildura.

Key industry sectors in MRCC include horticultural and agricultural production, tourism, government services, and retail and commercial activities. Industry sectors that have experienced higher rates of growth are related to energy, mineral sands or specialised agriculture. These jobs are largely located away from built-up areas. This economic base is diversifying with emerging industries such as mineral sands, salt extraction, packaging and solar power generation. The number of Jobs within the municipality is projected to increase by approximately 4,600 in the 25 years to 2046 within the Mildura urban area. However, the number of jobs provided within smaller towns are expected to decline due to a reduction in local population.

The municipality has a much higher share of the local population that is considered socially and economically disadvantaged. It will be integral to ensure that these residents are able to easily access goods and services to meet their daily needs. It will therefore be critical to provide a diversity of transport options that will enable all residents access to jobs, shops, services and schools. This can be achieved through carefully considered integrated transport and land use solutions.

The ITLUS Economic Outlook report provides further economic, demographic and urban growth information, focusing on recent trends and an outlook of approximately 25 years.

1.2 Statements from the consultation process

"Public transport takes so long to get to where you want to go, so I drive everywhere."

"I love living here and I love driving but I often think how difficult it is for people without access to a car to get by, particularly if they need to access medical services outside this area."

"Trucks are very important, and we should make it easy and safe for them to deliver goods here but also if they are passing through. Perhaps reminder signs to motorists to give way when needed and be careful when they are going through roundabouts to stay clear and let them through."

"Limited transport options to and from SuniTAFE within Mildura suburbs identified by young people as a barrier."

"Insufficient buses for socio-economically disadvantaged families and their school aged children."

"Large transport driving through the centre of Mildura to travel interstate, instead of the semis, road trains and B-doubles detouring around town and avoiding Deakin Avenue."

"No cheap, frequent transport to the major capital cities."

"Quality of roads and paths is often an issue. Pedestrian safety and ease of getting around in many outlying areas leaves a lot to be desired (lack of safe road crossings, especially)."

"It would be nice to have the option to leave the car at home to get around for at least some things, but even for a full day return trip, buses are a completely untenable option to arrive where needed on time without the trip blowing out from 10 minutes driving to over an hour; and requiring a lot of walking and/or bus changes."

"A very car centric approach to transport. Changing people's perceptions of roads being for all forms of transport and not limited to vehicles."

"Council does not provide enough loading zones in appropriate areas. Businesses also lack the infrastructure to accommodate the loading and unloading of vehicles leading to delivery drivers being forced to unload their vehicles in unsafe locations."

"School pickup times by car are a nightmare due to congestion on Walnut, Ontario, Riverside and Deakin Avenues and Eleventh Street. It's very difficult to move from West Mildura to Irymple at peak times due to traffic on Eleventh and extension to Eleventh East and merging onto Deakin Avenue at 15th Street."

1.3 Capital for three states

The Mildura township is the largest city in the combined Mallee and Sunraysia region. As the region's capital, it serves a vast area spanning across three states. It is a significant hub for people living in the surrounding municipalities.

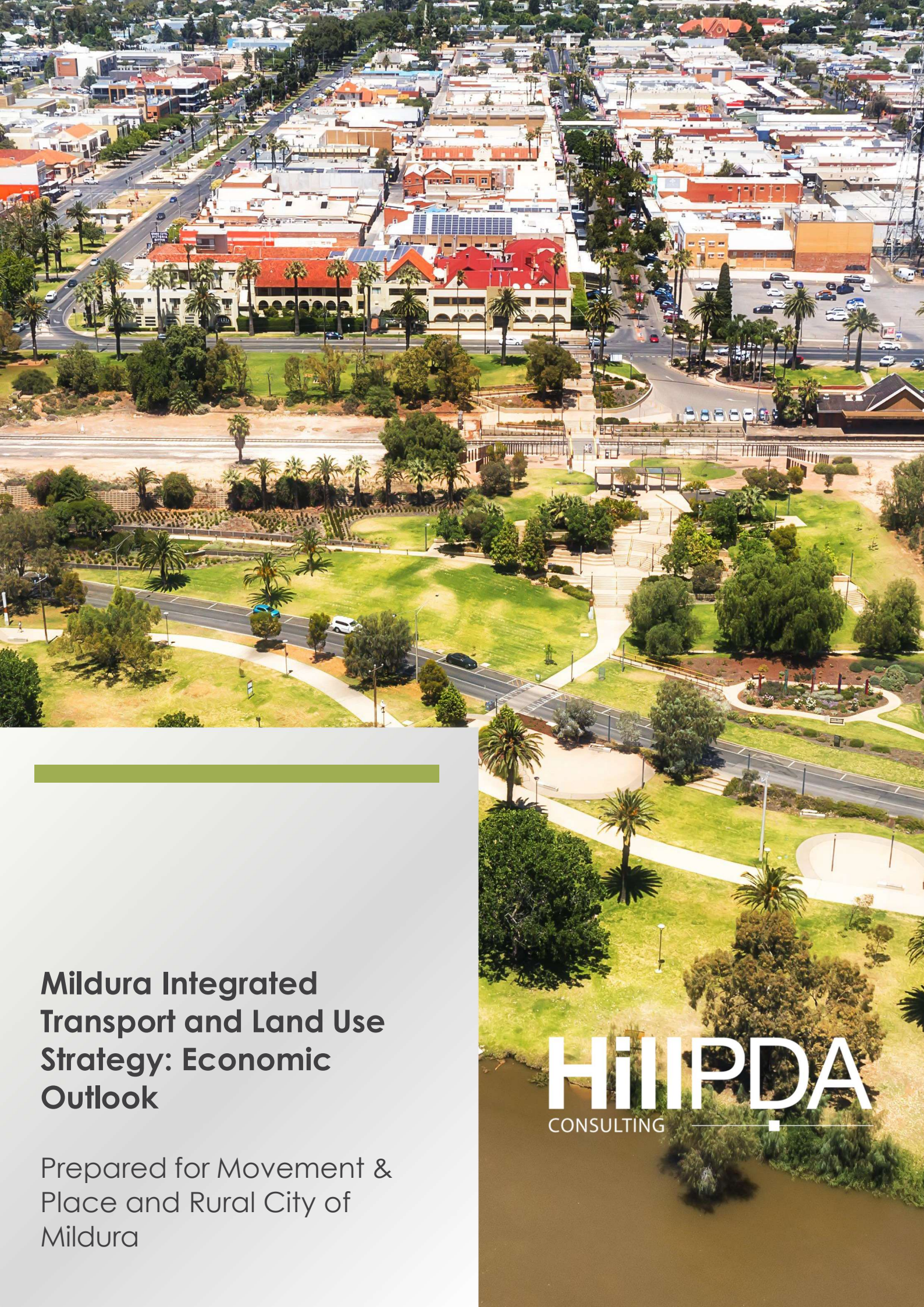
The municipality is located at a great distance away from the three respective State capitals, Adelaide (400km), Melbourne (540km), and Sydney (1,000km). The people that live within this region are highly reliant on the goods and services that are provide within Mildura, of which is the largest town for over 300km in any direction.

Land use across the region is also typified by large distances between settlements, and each settlement having relatively low density and overall population. This results in many people having to make long travel journeys to access goods and services that are only available within the built-up areas of Mildura.

Transport plays an important role in facilitating Mildura's role as the regional capital. Three major highways serve Mildura and provide road connections into each neighbouring state. Coach services provide regional public transport connections to nearby townships, distant regional centres and Capital Cities. Mildura Airport is served by flights to Melbourne, Sydney, Adelaide, Broken Hill, and the Sunshine Coast.

Mildura's offering as a regional capital can be strengthened through infrastructure improvements, carefully planned future development, and initiatives to attract businesses establishment and investment.

There are many opportunities to strengthen Mildura's strategic position. There are opportunities to leverage the vast expanse of fertile irrigated agricultural land, attractive townships, vibrant city centres, and an innovative local community.



Mildura Integrated Transport and Land Use Strategy: Economic Outlook

Prepared for Movement & Place and Rural City of Mildura

HillPDA CONSULTING

11 August 2023

Contents

EXECUTIVE SUMMARY

Overview

This report provides economic, demographic and urban growth information for an Integrated Transport and Land Use Strategy (ITLUS) for the Rural City of Mildura, focusing on recent trends and an outlook of approximately 25 years. The study area is the Rural City of Mildura focusing on Mildura township and surrounding urban area.

Urban Structure

Mildura township is defined by the CBD in the north near the Murray River, established areas to the north and west, the Mildura South growth area and the Fifteenth Street shopping centre and adjacent commercial and industrial precinct.

The current Planning Scheme identifies growth as follows:

- Continuation of the Mildura South growth area
- Future growth between Irymple and Nichols Point.

The Central Business District (CBD) is the primary activity centre in the region providing a wide range of retail, commercial and community services.

The City Gate Activity Centre on Fifteenth Street is a sub-regional activity centre which complements the function of the Mildura CBD.

Industrial precincts are located at Mildura Industrial Estate, Red Cliffs, Irymple and Merbein.

Fifteenth Street from San Mateo Avenue to Benetook Avenue accommodates homemaker and bulky goods retailing.

Other smaller convenience centres are located in towns and in new estates.

Population and Housing

The population of the Rural City of Mildura is anticipated to increase from approximately 56,700 in 2021 to 66,900 in 2046.

Most growth is expected in and around Mildura township: 53,000 residents in 2021 to 64,100 in 2046, representing change of approximately 11,100 residents. Rural areas are expected to contract marginally.

The Planning Scheme notes that residents will be living in a variety of housing styles and environments including medium density clusters in towns and rural living in low density allotments.

Current housing production favours separate houses. The typical lot size is between 500 and 800 sqm.

Land data suggests Mildura has a supply of approximately 11,200 retail lots in unzoned and zoned greenfield land.

There have been limited large infill development projects to date. One example is the residential development along the riverfront near the George Chaffey Bridge.

The last two census data periods (2016 to 2021) suggests that medium and higher density housing (defined as 'semi-detached, row or terrace house, townhouse' and 'flat or apartment') experienced no growth in recent years.

Economy and Jobs

The Rural City of Mildura has 28,200 jobs (26,300 of which are in the Mildura Urban Area).

The key economic drivers of the municipality include horticultural and agricultural production, tourism, government services, and retail and commercial activities.

The economic base is diversifying with emerging industries such as mineral sands, salt extraction, boat building, packaging and solar power generation.

The Murray River is a key economic and social driver of the municipality.

This assessment suggests Mildura Urban Area may increase its stock of jobs by approximately 4,600 in the 25 years to 2046.

The key growth sectors in Mildura Town (Urban) are likely to be (rounded):

- Service sectors: +3,100 jobs; equating to approximately 77,000 sqm of floorspace
- Industrial land sectors: +1,000 jobs; equating to 31 hectares of land
- Primary Industry: +400 jobs; mainly on farm and mining land.

Potential Future Directions

The projections shown above for population and jobs provide a business as usual estimate to the year 2046. The business as usual projections are based on existing conditions, trends and projections developed by the state government and other estimates prepared for this report. This represents a likely outcome based on information available at the time of writing.

The general pattern would be continuation of outward growth and suburban development to the south and east of Mildura. Modest infill development would occur in addition to this pattern of development.

Alternative growth options could be explored for the town.

This could consider a range of options including a higher population and job density outcome at key locations and corridors.

Planning strategies and controls can help support a wider range of housing formats.

Facilitating higher density developments at strategic locations would provide more choice for people, which will be needed as the population grows and diversifies. It would also support more local business activity in areas of higher intensity and visitation.

A potential model could include facilitating more intensive development in areas of higher demand and value: such as riverfront and park side areas and around CBD and retail nodes. This could include a corridor of more intense development along Deakin Avenue linking the CBD to Fifteenth Street and around other nodes of activity. This could unlock a new market for Mildura and generate a net increase in population and economic growth over and above existing projections.

It is also possible that some demand earmarked for suburban development would be redirected to the urban areas.

A planning and urban design study should explore options like this.

1.0 INTRODUCTION

1.1 Purpose

Movement & Place are preparing an Integrated Transport and Land Use Strategy (ITLUS) for the Rural City of Mildura.

This report provides economic, demographic and urban growth information for the ITLUS, focusing on recent trends and an outlook of approximately 25 years.

1.2 Scope of Analysis

The study area is the Rural City of Mildura and sub-areas within it (including an area north of the Murray River), as follows:

- Mildura Urban Area
- Precincts within Mildura Urban Area (see Appendix 1)
- Rural Balance
- Municipal Total
- NSW region adjacent to Murray River.

The data is provided for five year intervals between 2011 to 2046 for the following topics:

- Population
- Dwellings
- Jobs by industry sector (1 digit industry sectors)
- Employment floorspace estimate by development type.

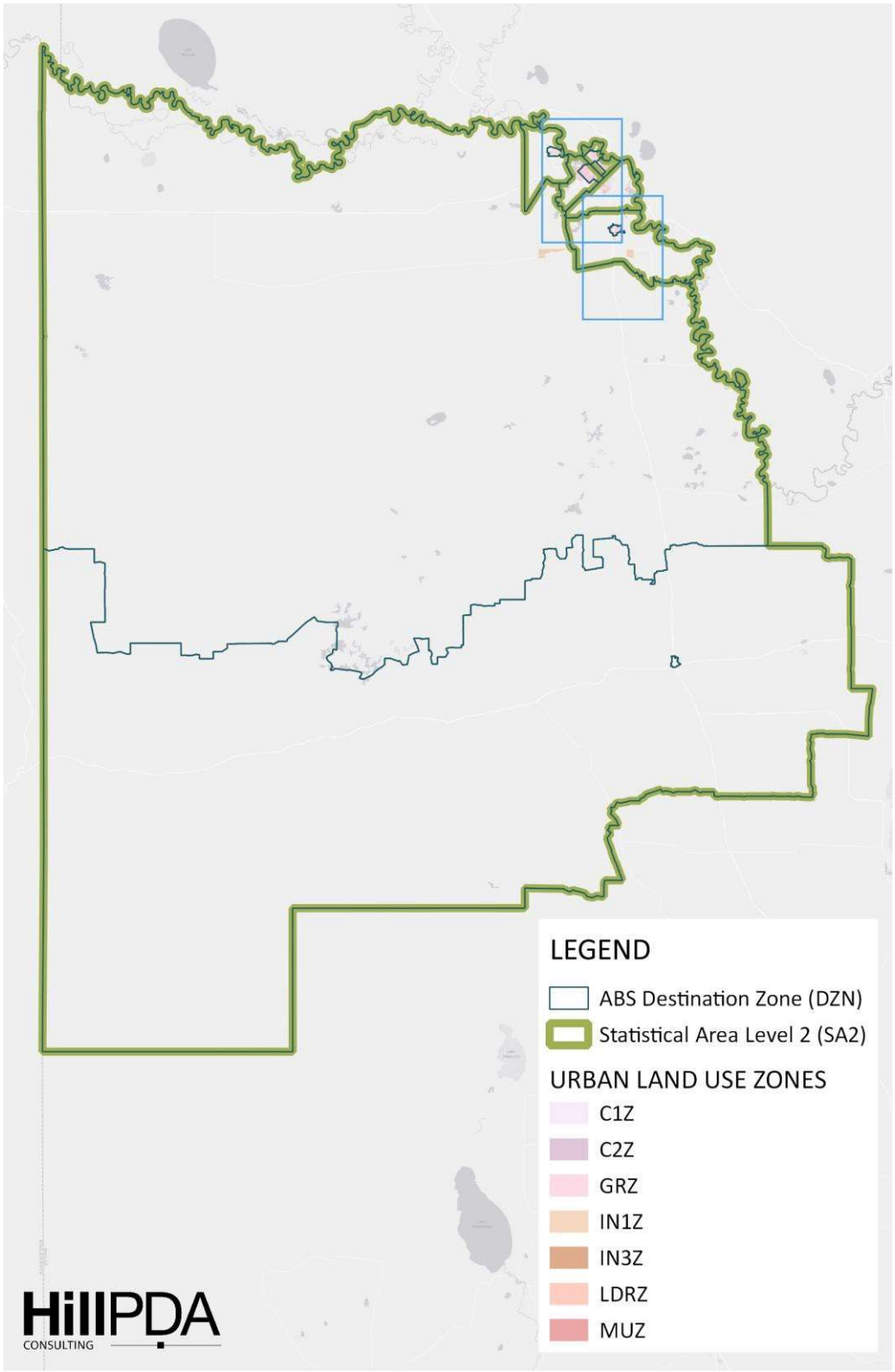
1.3 Structure

This report is structured as follows:

- Section 2 provides an overview of the land use planning framework
- Section 3 provides an overview of property market trends and investment proposals
- Section 4 provides population and dwelling trends and projections
- section 5 provides economic trends and projections
- Section 6 provides projections for small area precincts.

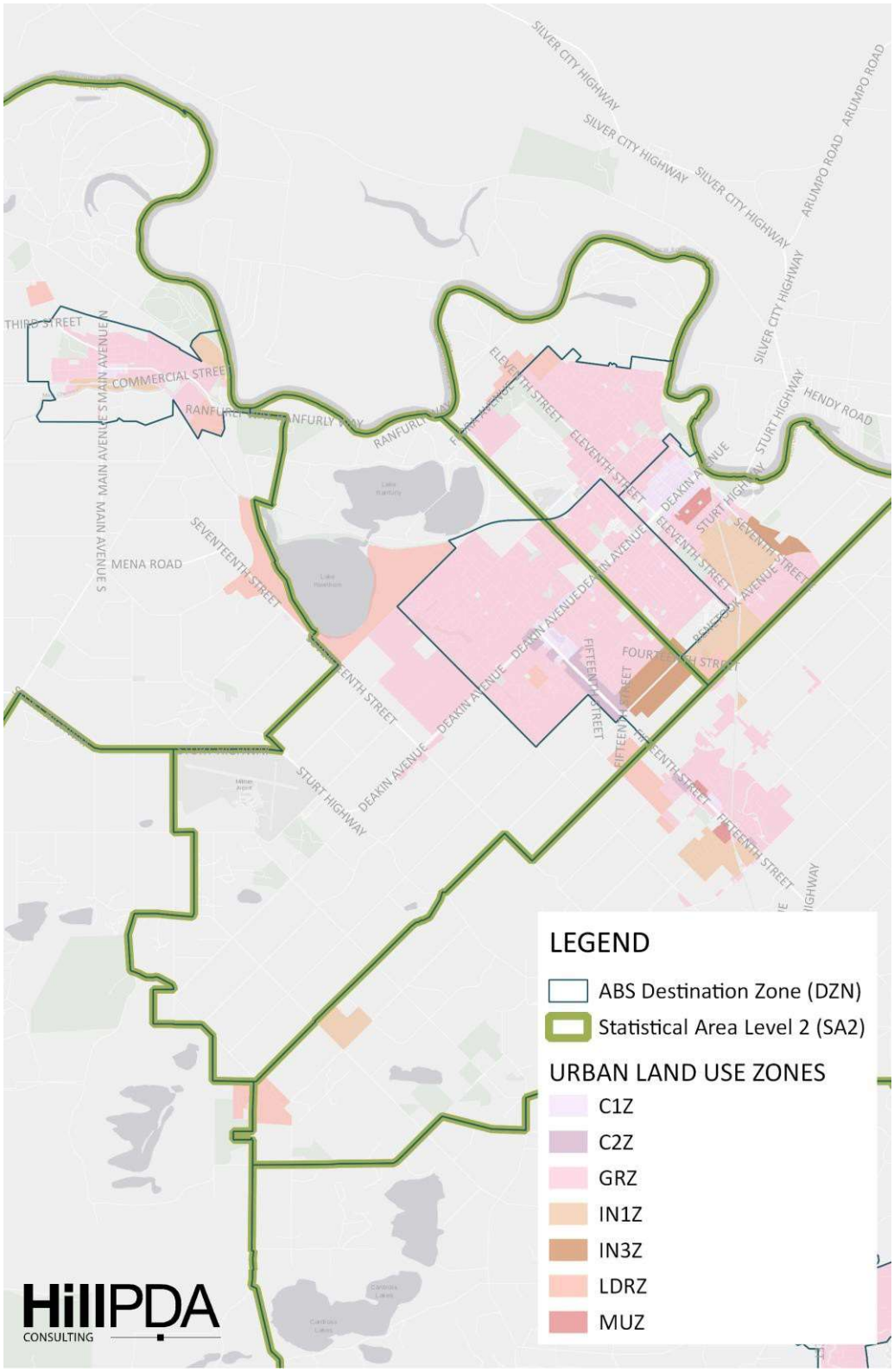
The following figures show selected Australian Bureau of Statistics (ABS) data areas. The small areas are shown in Appendix 1.

Figure 1: Rural City of Mildura



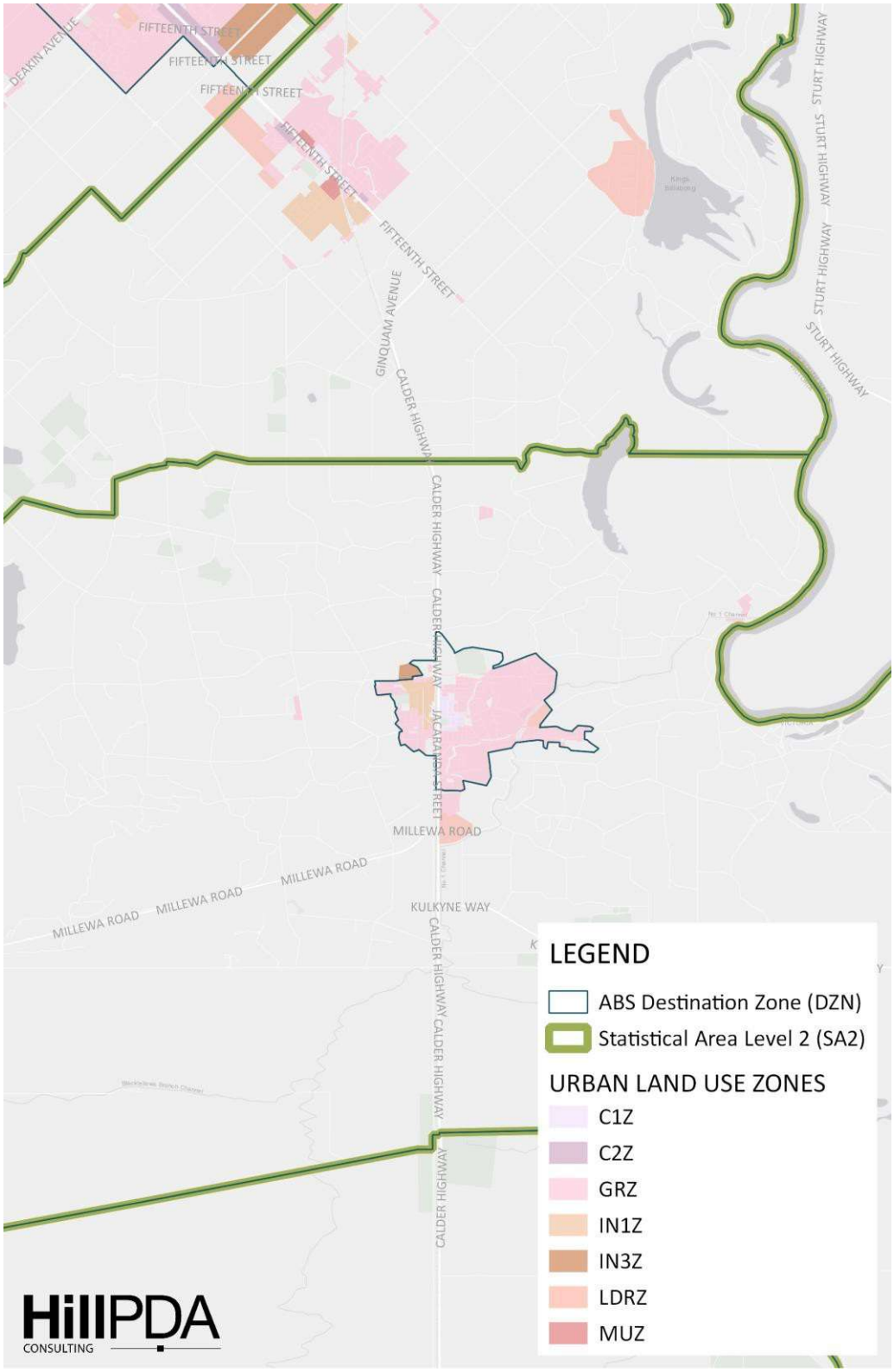
Source: ABS and Vic Data

Figure 2: Mildura Township and Surrounds



Source: ABS and Vic Data

Figure 3: Red Cliffs and Surrounds



Source: ABS and Vic Data

2.0 PLANNING FRAMEWORK

2.1 Overview

Mildura township is the primary focus for development in the municipality. Mildura is surrounded by the satellite towns of Irymple, Red Cliffs and Merbein. Ouyen is the major town in the south of the municipality. Other smaller settlements are located throughout rural areas.

Mildura township is defined by the CBD in the north near the Murray River, established areas to the north and west, the Mildura South growth area and the Fifteenth Street shopping centre and adjacent commercial and industrial precinct.

The Planning Scheme identifies future land release is earmarked for:

- Continuation of the Mildura South growth area
- Future growth between Irymple and Nichols Point.

The following two figures shows the municipal strategic context map and the Mildura Main Urban Area Framework Plan as shown in the Planning Scheme.

2.2 Planning Scheme Statements

A list of points extracted from the Planning Scheme is presented below.

Overview

- *Mildura Rural City is the largest municipality in Victoria (by area), covering an area of some 22,330 sq kms.*
- *Mildura is a significant regional city in a strategic tri-State location that services a catchment of some 250-300kms in a radius extending into South Australia and New South Wales.*

Planning

- *Council supports a high growth scenario which expects the population to be approximately 65,000 by 2032.*
- *Approximately 85% of new dwellings will be constructed in the 'Main Urban Area' comprising Mildura, Irymple and Nichols Point.*
- *An additional long term residential front is to be provided in the area between Irymple, Nichols Point and Mildura, known as the Mildura East Growth Area.*
- *Demographic change, in particular the aging of the population, is driving the need for medium density housing.*
- *The protection of agricultural and horticultural land is important, particularly in the Mildura Older Irrigated Areas (MOIA) and Newer Irrigated Areas (NIA).*

- *The need to maintain an effective 15 year supply of residential land to meet the needs of the market.*

Economy

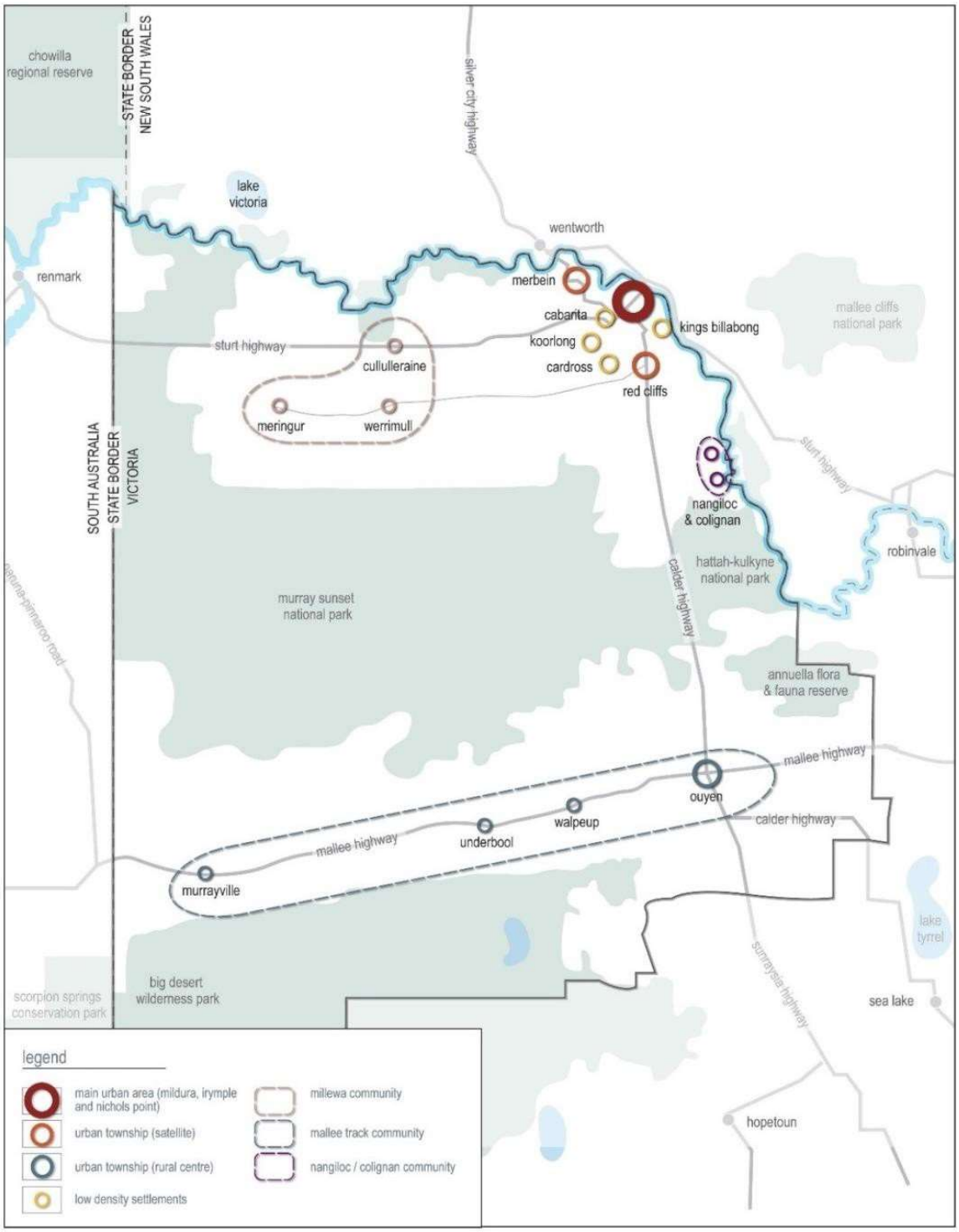
- *The key economic drivers of the municipality include horticultural and agricultural production, tourism, government services, and retail and commercial activities.*
- *The Mildura region has a $2.45 billion economy (2007-08).*
- *Significant agriculture and horticulture sectors generate economic activity in other sectors such as manufacturing, wholesale trade, transport and storage.*
- *The economic base is diversifying with emerging industries such as mineral sands, salt extraction, boat building, packaging and solar power generation.*
- *The Murray River is a key economic and social driver of the municipality.*
- *The municipality and surrounding region are served with a range of transport infrastructure including State highways, railways, airport and limited public transport.*
- *Economic projects may include development of freight intermodal terminals; business development opportunities associated with Mildura Airport; and the establishment of a transport corridor.*
- *Significant economic potential exists through the solar industry; the extraction of limestone aggregate, gypsum, and salt; and future mineral sands mining.*

Land Use Strategy

- *The major concentration of population in the region will be in the Main Urban Area (Mildura, Irymple and Nichols Point). Other significant concentrations of population will be in the towns of Merbein, Red Cliffs, and Ouyen.*
- *The main growth areas for the municipality will be clearly defined, and include both the existing Mildura South Growth Area and a new growth area in Mildura East, to ensure growth is not reliant on a single development front.*
- *Residential development in the Main Urban Area will not encroach beyond Seventeenth Street to ensure long term protection of the Mildura Airport.*
- *Land fronting Deakin Avenue beyond Seventeenth Street will be protected as valued horticultural land that contributes to the gateway of Mildura.*
- *The municipality's towns will be clearly defined.*
- *Low density development will be provided in clearly defined areas where this does not compromise long term growth, and with appropriate minimum subdivision sizes to respond to environmental or infrastructure constraints or to existing neighbourhood character.*
- *Rural residential development will be provided for in planned and well located estates at Merbein, Cabarita and Cardross.*

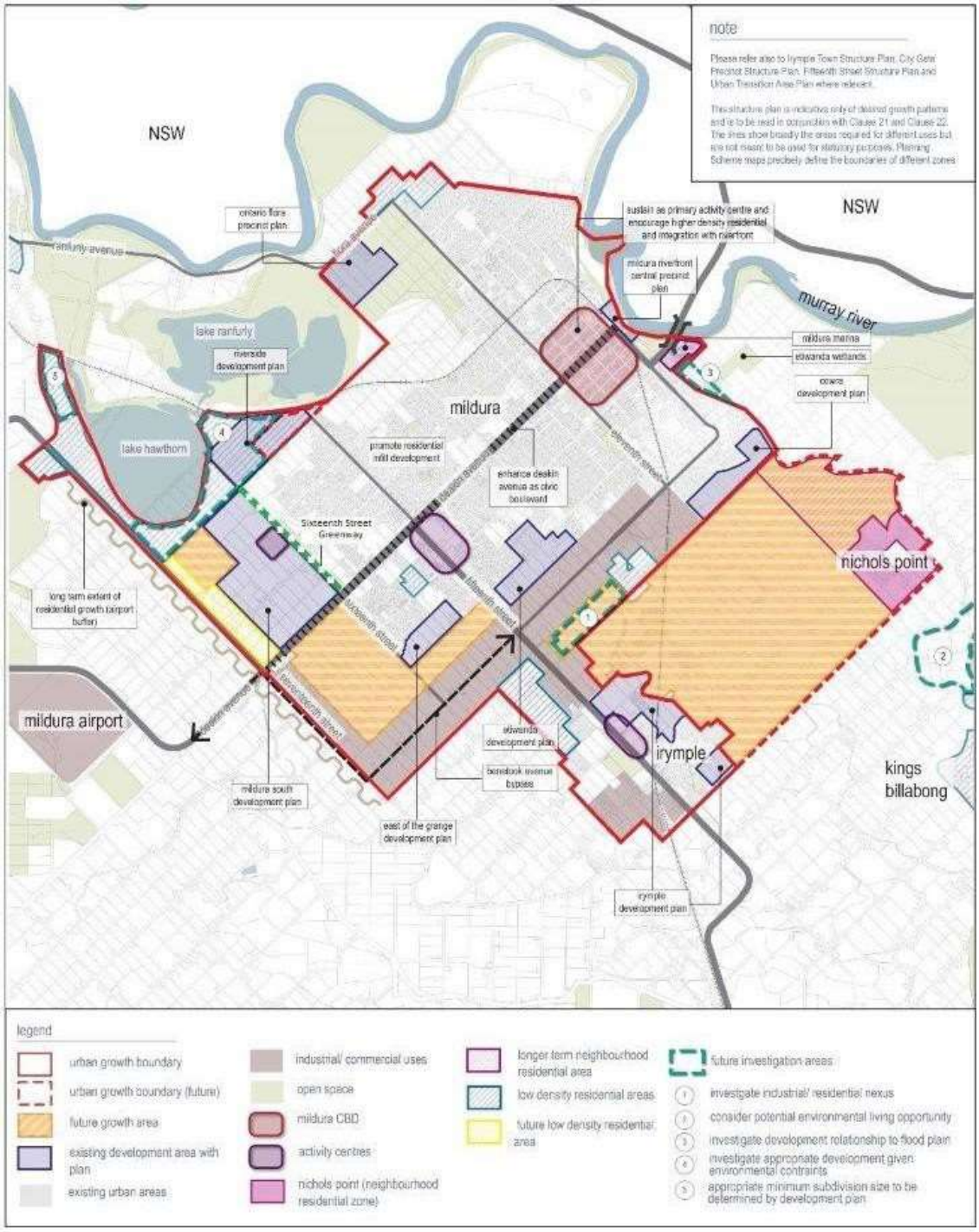
- *The urban transition area between Irymple and Mildura on Fifteenth Street (between Sandilong Avenue and Cowra Avenue) will have a range of education, health, tourism and community uses with attractive buildings within a spacious landscape setting.*
- *The region's industrial needs will be well served by the established and well designed urban and non-urban industrial precincts at Mildura, Red Cliffs, Irymple, Merbein, Thurla and Kulkyne Way.*
- *Benetook Avenue (between Fourteenth Street and Fifteenth Street) will have developed as an extension of the existing Mildura Industrial Estate thereby reinforcing this area as prime light industrial/transport services and associated service commercial hub of the region.*
- *The Mildura Central Business District (CBD) will be the primary activity centre in the region providing a wide range of retail, commercial, financial, community service, recreation and entertainment opportunities for residents in a wide catchment, for tourists and other visitors.*
- *The Mildura CBD will be further integrated with the Murray River waterfront and these areas will accommodate increased residential populations.*
- *The City Gate Activity Centre on Fifteenth Street from Deakin Avenue to San Mateo Avenue will have developed as a fully integrated sub-regional activity centre which complements the function of the Mildura CBD.*
- *Fifteenth Street from San Mateo Avenue to Benetook Avenue will be strengthened as the homemaker / bulky goods retailing centre.*
- *The expanded Fifteenth Street precinct from Benetook to Cowra Avenue will be developed as smaller scale restricted retailing within a landscaped setting.*
- *Convenience centres, including town centres, neighbourhood centres and local shops, will serve an important function in providing limited retail facilities to residents.*
- *Residents will be living in a variety of housing styles and environments. They will range from attractive and consolidated medium density clusters in the major towns, to rural living in low density allotments in clearly defined rural settings that are in harmony with the environment and that are not inhibiting the productivity of agricultural and horticulture activities.*
- *Residents throughout the entire municipality will have access to affordable essential services and facilities and be well served by a diverse range of community infrastructure.*

Figure 4: Settlement Structure Plan



Source: Mildura Planning Scheme (February 2023)

Figure 5: Mildura Main Urban Area Framework Plan



Source: Mildura Planning Scheme (February 2023)

3.0 PROPERTY AND INVESTMENT TRENDS

3.1 Urban Development Program

The 2022 Urban Development Program (UDP) identifies significant residential greenfield land and lot supply in Mildura but no major infill development sites.

Figure 6: Major Residential Growth Locations in Mildura

Source: State of Victoria, Urban Development Program 2022

Over the past decade, approximately 300 dwellings per year have been constructed in Mildura, with most built in greenfield estates in Mildura and small developments and infill in Red Cliffs and Merbein.

The UDP states that Mildura has a supply of approximately 11,200 retail lots in unzoned and zoned greenfield land. This equates to capacity for 3,600 residential lots (18 to 20 years supply) on zoned land and an additional 7,600 residential lots (39 to 43 years supply) on land planned to be rezoned in the future.

Table 1: Estimated Retail Lot Supply in Mildura, June 2022

Development Type	Unzoned Lots	Zoned Lots	Proposed Lots	Total Supply Lots
Greenfield	7,600	3,154	424	**11,178**
Major infill	0	0	0	0
Total	**7,600**	**3,154**	**424**	**11,178**

Source: State of Victoria, Urban Development Program 2022

In recent years (between 2018 and 2021), lot production averaged approximately 160 lots per annum. Preliminary data suggests a higher rate of lot production was achieved in 2022.

The typical lot size is between 500 and 800 sqm. See image below for an example of the development type.

Figure 7: Typical Residential Development in Mildura's Greenfield Areas

Source Metromap (February 2023)

3.2 Dwelling Structure

Dwelling structure is dominated by separate houses according to census data.

Table 2: Dwelling Structure, Rural City of Mildura, 2016 and 2021

Dwelling Structure	2016		2021		Change p.a.
Separate house	16,631	83.9%	18,178	85.4%	1.8%
Semi-detached, row or terrace house, townhouse	1,709	8.6%	1,662	7.8%	-0.6%
Flat or apartment	1,146	5.8%	1,106	5.2%	-0.7%
Other / not stated	330	1.7%	338	1.6%	0.5%
Total	**19,817**	**100.0%**	**21,283**	**100.0%**	**1.4%**

Source: ABS Census 2016 and 2021 (based on occupied private dwellings)

3.3 Property Sales

Am indicator of market activity and demand is provided by property sales data. The profile of sales (by number) over the past year is shown in the table below. This indicates house sales dominate the local property market, followed by townhouse and residential unit sales. The typical land size of townhouse and unit sales is 275 sqm to 300 sqm.

Table 3: Property Sales in Mildura (1 March 022 to 6 March 2023)

Type	Number of Sales	Share of Number
Detached House	708	65.6%
Townhouse / Unit / Flat	214	19.8%
Land	89	8.2%
Business / Commercial	46	4.3%
Farm	13	1.2%
Other	10	0.9%
Total	**1,080**	**100.0%**

Source: RP Data Professional; HillPDA

3.4 Investment Proposals

The Rural City of Mildura has a significant number of projects proposed for investment. The total value is $884m across 50 major projects. The majority of projects (in terms of number and value) are public or private infrastructure projects.

Table 4: Profile of Investment Proposals in Rural City of Mildura Reported March 2023

Type	Community Facilities, Education and Health	Infrastructure	Commercial and Retail	Aged Care	Agriculture
Number Listed	27	14	5	3	1
Total Value	$581,200,000	$258,924,000	$33,800,000	$9,000,000	$800,000
Average Value	$21,525,926	$18,494,571	$6,760,000	$3,000,000	$800,000

Source: Cordell Connect; HillPDA

Twelve projects have an estimated value of at least $5 million (m) according to Cordell Connect data:

- Mildura Base Public Hospital Redevelopment: $500m
- Kiamal Solar Farm Stage 2, Ouyen: $200m
- Lower Murray Water - Water Efficiency Project, Merbein: $37m
- Specialist Drug & Alcohol Residential Withdrawal & Rehabilitation Facility, Mildura: $36m

- 123 Ninth Street Mallee Family Care Commercial Office, Mildura: $18m (construction of a 4,000 sqm 3 level office on a greenfield site)
- Mildura Sporting Precinct Stage 2: $11.9m
- Mildura Multi-Disciplinary Centre: $10m
- Mildura Multi-Level Office: $10m (construction of a 5,000 sqm multi-level office building)
- Yelta Solar Farm: $6.5m
- Sun City Leisure Life Park, Mildura: $6m
- Riverfront Village Square, Mildura: $6m for Stage 2 works
- Millewa Irrigation Pump Station, Cullulleraine: $5m.

The Mildura Riverfront Precinct Redevelopment aims to revitalise a 1.2 km stretch of public land between the Nowingi Place and the Powerhouse next to Jaycee Park. Stage 1 involved investment in precinct revitalisation, landscaping and community infrastructure and facilities.

Stage 2 involves investment in nine hectares of publicly and privately owned land adjacent to the rail line between Madden & Walnut Aves, Mildura. This second stage will focus on the Murray River, cultural heritage, tourism and commercial opportunities and residential land release.

4.0 POPULATION AND DWELLING PROJECTIONS

4.1 Population

The population of the Rural City of Mildura is anticipated to increase from approximately 56,700 in 2021 to 66,900 in 2046 (i.e. change of 10,200 in this 25 year period).

Most growth is expected in and around Mildura township: 53,000 residents in 2021 to 64,100 in 2046, representing change of approximately 11,100 residents.

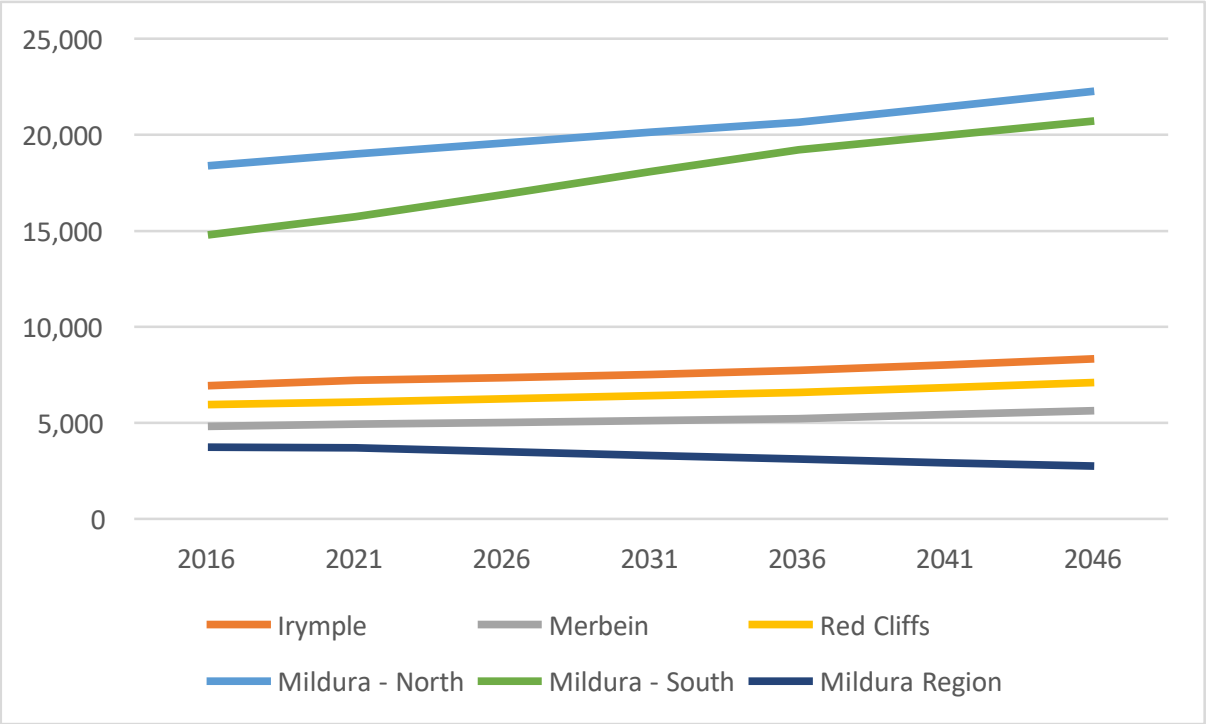
The overall municipal change figure is lower because some decline is expected in the rural areas of the municipality.

Table 5: Estimated Resident Population, Selected Areas, 2016-2046

Area	2016	2021	2026	2031	2036	2041	2046
Irymple	6,945	7,225	7,358	7,517	7,731	8,027	8,334
Merbein	4,820	4,934	5,014	5,107	5,223	5,423	5,630
Red Cliffs	5,947	6,083	6,239	6,404	6,585	6,837	7,099
Mildura - North	18,398	19,008	19,578	20,139	20,671	21,462	22,282
Mildura - South	14,801	15,732	16,887	18,086	19,230	19,966	20,729
Mildura Town	**50,911**	**52,982**	**55,076**	**57,252**	**59,442**	**61,714**	**64,074**
Mildura Region	3,747	3,698	3,503	3,308	3,113	2,929	2,757
Mildura Rural	**3,747**	**3,698**	**3,503**	**3,308**	**3,113**	**2,929**	**2,757**
Mildura (RC)	**54,658**	**56,680**	**58,578**	**60,560**	**62,554**	**64,644**	**66,831**

Source: 2016-2031: Victoria in Future 2019 (VIF2019) Population and Household Projections (Year as at 30 June); 2041-2046: HillPDA

Figure 8: Estimated Resident Population, Selected Areas, 2016-2046



Source: 2016-2031: Victoria in Future 2019 (VIF2019) Population and Household Projections (Year as at 30 June); 2041-2046: HillPDA

Table 6: Change in Population, Selected Areas and Time Periods

Area	2016-21	2021-26	2026-31	2031-36	2036-41	2041-46	2021-46
Irymple	280	133	159	214	296	307	1,109
Merbein	114	80	93	116	200	207	696
Red Cliffs	136	155	165	182	252	261	1,015
Mildura - North	610	570	561	532	790	821	3,274
Mildura - South	931	1,155	1,199	1,145	735	763	4,998
Mildura Town	**2,071**	**2,093**	**2,177**	**2,189**	**2,273**	**2,360**	**11,092**
Mildura Region	-49	-195	-195	-195	-183	-173	-941
Mildura Rural	**-49**	**-195**	**-195**	**-195**	**-183**	**-173**	**-941**
Mildura (RC)	**2,022**	**1,898**	**1,982**	**1,994**	**2,089**	**2,187**	**10,151**

Source: 2016-2031: Victoria in Future 2019 (VIF2019) Population and Household Projections (Year as at 30 June); 2041-2046: HillPDA

4.2 Dwellings

The total number of dwellings in the municipality is expected to increase from 25,400 in 2021 to 31,600 in 2046.

Average dwelling size (persons per dwelling) is expected to decline from 2.23 in 2021 to 2.12 in 2046.

Mildura township and surrounds is expected to increase dwelling stock by 6,400 in the 25 years to 2046 (i.e. from approximately 23,400 to 29,800).

Some decline is expected in the rural areas and as such the overall municipal dwelling change is estimated to be 6,200 overall to 2046.

Table 7: Total Dwellings (Structural Private Dwellings), Selected Areas, 2016-2046

Area	2016	2021	2026	2031	2036	2041	2046
Irymple	2,672	2,821	2,912	3,016	3,140	3,260	3,384
Merbein	1,937	2,007	2,048	2,084	2,137	2,219	2,304
Red Cliffs	2,504	2,577	2,674	2,792	2,932	3,044	3,160
Mildura - North	8,404	8,910	9,399	9,876	10,307	10,701	11,110
Mildura - South	6,529	7,045	7,692	8,372	9,040	9,385	9,744
Mildura Town	**22,045**	**23,360**	**24,725**	**26,140**	**27,555**	28,609	**29,703**
Mildura Region	1,982	2,009	2,038	2,067	2,097	1,974	1,857
Mildura Rural	**1,982**	**2,009**	**2,038**	**2,067**	**2,097**	**1,974**	**1,857**
Mildura (RC)	**24,027**	**25,369**	**26,763**	**28,207**	**29,653**	**30,583**	**31,560**

Source: 2016-2031: Victoria in Future 2019 (VIF2019) Population and Household Projections (Year as at 30 June); 2041-2046 : HillPDA

Table 8: Change in Total Dwellings, Selected Areas and Time Periods

Area	2016-21	2021-26	2026-31	2031-36	2036-41	2041-46	2021-46
Irymple	149	91	103	124	120	125	563
Merbein	71	41	36	53	82	85	297
Red Cliffs	73	97	118	140	112	116	583
Mildura - North	506	489	478	431	394	409	2,201
Mildura - South	516	647	680	668	346	359	2,699
Mildura Town	**1,315**	**1,365**	**1,415**	**1,415**	**1,054**	**1,094**	**6,343**
Mildura Region	27	29	29	30	-124	-116	-152
Mildura Rural	**27**	**29**	**29**	**30**	**-124**	**-116**	**-152**
Mildura (RC)	**1,342**	**1,394**	**1,444**	**1,445**	**930**	**978**	**6,191**

Source: 2016-2031: Victoria in Future 2019 (VIF2019) Population and Household Projections (Year as at 30 June); 2041-2046: HillPDA

5.0 ECONOMIC TRENDS AND PROJECTIONS

5.1 Jobs by Industry Sector

The following three tables provide data on jobs by industry sector for three areas:

- Mildura Rural City
- Mildura Town (Urban), which is the same as the 'Mildura Town' definition in the population and dwelling tables
- Mildura Rural (Surrounds), being the balance of the municipality.

The jobs are classified into 19 industry sectors by the ABS (at 1 digit level). The industry sectors are shown in groups that approximate to land use types as follows:

- Primary Industry
- Core Industrial Land Sectors
- Utilities and Construction
- Service Sectors (i.e. offices, shops and community sectors)
- Other.

The 2016 and 2021 jobs data was drawn from the ABS Census. The data for 2026 to 2046 is an estimate by HillPDA.

The following assessment is provided as a guide to method and likely accuracy of projections:

- Total jobs: derived from a ratio of jobs to population projections; this approach provides a reasonable guide to potential future total jobs
- Jobs by five land use groups: based on the 2021 share of jobs by group; provides a general guide to the possible future composition of jobs
- Jobs by industry sector: approximate guide only, based on 2021 share of jobs.

This assessment suggests Mildura Town (Urban) may increase its stock of jobs by approximately 4,600 in the 25 years to 2046.

The key growth sectors in Mildura Town (Urban) are likely to be (rounded):

- Service sectors: +3,100 jobs; equating to approximately 77,000 sqm of floorspace
- Industrial land sectors: +1,000 jobs; equating to 31 hectares of land
- Primary Industry: +400 jobs; mainly on farm and mining land.

The municipal growth total may be marginally less than this figure if a trends of marginal decline continues in the rural balance of the municipality.

Figure 9: Estimated Change in Jobs, Selected Areas, 2021-2046

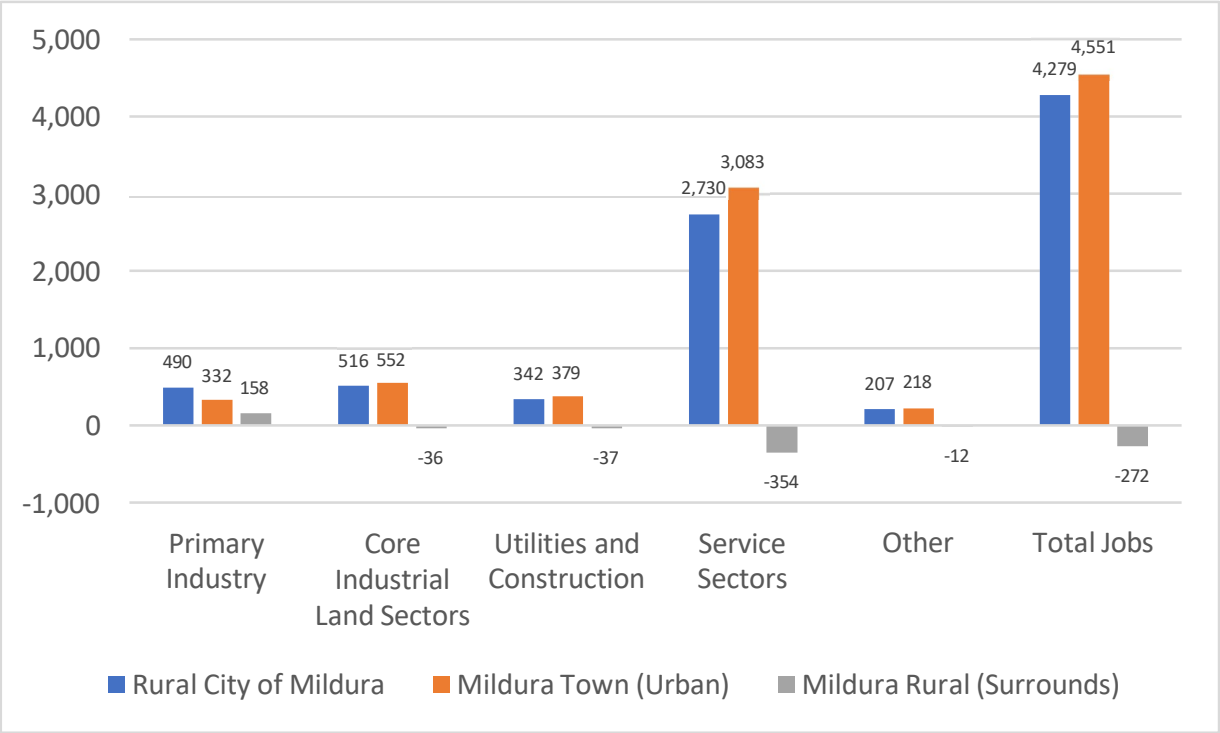


Table 9: Jobs by Industry Sector, Selected Areas, 2016,2046

Area	Rural City of Mildura			Mildura Town (Urban)			Mildura Rural (Surrounds)		
Sector / Year	**2021**	**2046**	**Change**	**2021**	**2046**	**Change**	**2021**	**2046**	**Change**
Primary Industry	2,730	3,220	490	1,580	1,912	332	1,150	1,308	158
Core Industrial Land Sectors	2,877	3,393	516	2,628	3,180	552	249	213	-36
Utilities and Construction	1,908	2,250	342	1,805	2,184	379	103	66	-37
Service Sectors	15,222	17,952	2,730	14,674	17,757	3,083	548	194	-354
Other	1,153	1,360	207	1,039	1,257	218	114	102	-12
Total Jobs	**23,895**	**28,174**	**4,279**	**21,740**	**26,291**	**4,551**	**2,155**	**1,883**	**-272**
Population	**56,680**	**66,831**	**10,151**	**52,982**	**64,074**	**11,092**	**3,698**	**2,757**	**-941**

2016-2021: ABS Census, Working Population Profile; 2016-2021 Population: VIF 2019; 2026-2046: HillPDA

Note: ABS totals subject to error / adjustment and may not exactly sum data above

Table 10: Jobs by Industry Sector, Rural City of Mildura, 2016,2046

Sector / Year		2016	2021	2026	2031	2036	2041	2046
Primary Industry								
	Agriculture, Forestry and Fishing	2,132	2,648	2,737	2,830	2,923	3,021	3,123
	Mining	59	82	85	88	91	94	97
	Sub-Total	**2,191**	**2,730**	**2,822**	**2,917**	**3,014**	**3,114**	**3,220**
Core Industrial Land Sectors								
	Manufacturing	1,274	1,295	1,339	1,384	1,430	1,477	1,527
	Wholesale Trade	591	612	633	654	676	698	722
	Transport, Postal and Warehousing	897	970	1,003	1,037	1,071	1,107	1,144
	Sub-Total	**2,762**	**2,877**	**2,974**	**3,075**	**3,176**	**3,282**	**3,393**
Utilities and Construction								
	Electricity, Gas, Water and Waste Services	281	317	328	339	350	362	374
	Construction	1,149	1,591	1,645	1,700	1,756	1,815	1,876
	Sub-Total	**1,430**	**1,908**	**1,972**	**2,039**	**2,106**	**2,177**	**2,250**
Service Sectors								
	Retail Trade	2,825	2,744	2,836	2,932	3,029	3,130	3,236
	Accommodation and Food Services	1,640	1,600	1,654	1,710	1,766	1,825	1,887
	Information Media and Telecommunications	210	155	160	166	171	177	183
	Financial and Insurance Services	372	332	343	355	366	379	392
	Rental, Hiring and Real Estate Services	250	257	266	275	284	293	303
	Professional, Scientific and Technical Services	767	863	892	922	953	984	1,018
	Administrative and Support Services	892	910	941	972	1,005	1,038	1,073
	Public Administration and Safety	1,141	1,269	1,312	1,356	1,401	1,448	1,497
	Education and Training	1,924	2,079	2,149	2,222	2,295	2,372	2,452
	Health Care and Social Assistance	2,983	3,873	4,004	4,139	4,275	4,418	4,568
	Arts and Recreation Services	215	211	218	225	233	241	249
	Other Services	805	929	960	993	1,025	1,060	1,096
	Sub-Total	**14,024**	**15,222**	**15,735**	**16,267**	**16,803**	**17,364**	**17,952**
Other								
	Inadequately described/Not stated	936	1,153	1,192	1,232	1,273	1,315	1,360
Total Jobs		**21,354**	**23,895**	**24,695**	**25,531**	**26,371**	**27,252**	**28,174**
Population		**54,658**	**56,680**	**58,578**	**60,560**	**62,554**	**64,644**	**66,831**

2016-2021: ABS Census, Working Population Profile; 2016-2021 Population: VIF 2019; 2026-2046: HillPDA

Note: ABS totals subject to error / adjustment and may not exactly sum data above

Table 11: Jobs by Industry Sector, Mildura Town (Urban), 2016,2046

Sector / Year		2016	2021	2026	2031	2036	2041	2046
Primary Industry								
	Agriculture, Forestry and Fishing	1,157	1,530	1,591	1,654	1,718	1,783	1,851
	Mining	45	50	52	54	56	58	61
	Sub-Total	**1,202**	**1,580**	**1,643**	**1,708**	**1,774**	**1,842**	**1,912**
Core Industrial Land Sectors								
	Manufacturing	1,107	1,162	1,209	1,256	1,305	1,354	1,406
	Wholesale Trade	557	575	598	622	646	670	696
	Transport, Postal and Warehousing	820	891	927	963	1,000	1,039	1,078
	Sub-Total	**2,484**	**2,628**	**2,734**	**2,842**	**2,950**	**3,063**	**3,180**
Utilities and Construction								
	Electricity, Gas, Water and Waste Services	268	301	313	325	338	351	364
	Construction	1,104	1,504	1,564	1,626	1,688	1,753	1,820
	Sub-Total	**1,372**	**1,805**	**1,878**	**1,952**	**2,026**	**2,104**	**2,184**
Service Sectors								
	Retail Trade	2,751	2,690	2,798	2,909	3,020	3,135	3,255
	Accommodation and Food Services	1,579	1,540	1,602	1,665	1,729	1,795	1,864
	Information Media and Telecommunications	210	152	158	164	171	177	184
	Financial and Insurance Services	359	324	337	350	364	378	392
	Rental, Hiring and Real Estate Services	250	254	264	275	285	296	307
	Professional, Scientific and Technical Services	754	854	888	923	959	995	1,033
	Administrative and Support Services	852	851	885	920	955	992	1,030
	Public Administration and Safety	1,106	1,232	1,282	1,332	1,383	1,436	1,491
	Education and Training	1,805	1,954	2,033	2,113	2,194	2,278	2,365
	Health Care and Social Assistance	2,848	3,728	3,878	4,031	4,185	4,345	4,511
	Arts and Recreation Services	195	197	205	213	221	230	238
	Other Services	787	898	934	971	1,008	1,047	1,087
	Sub-Total	**13,496**	**14,674**	**15,264**	**15,867**	**16,474**	**17,103**	**17,757**
Other								
	Inadequately described/Not stated	847	1,039	1,081	1,123	1,166	1,211	1,257
Total Jobs		**19,413**	**21,740**	**22,599**	**23,492**	**24,390**	**25,323**	**26,291**
Population		**50,911**	**52,982**	**55,076**	**57,252**	**59,442**	**61,714**	**64,074**

2016-2021: ABS Census, Working Population Profile; 2016-2021 Population: VIF 2019; 2026-2046: HillPDA

Note: ABS totals subject to error / adjustment and may not exactly sum data above

Table 12: Jobs by Industry Sector, Mildura Rural (Surrounds), 2016,2046

Sector / Year		2016	2021	2026	2031	2036	2041	2046
Primary Industry								
	Agriculture, Forestry and Fishing	975	1,118	1,146	1,175	1,205	1,237	1,271
	Mining	14	32	33	34	34	35	36
	Sub-Total	**989**	**1,150**	**1,179**	**1,209**	**1,240**	**1,273**	**1,308**
Core Industrial Land Sectors								
	Manufacturing	167	133	130	127	125	123	121
	Wholesale Trade	34	37	35	32	30	28	26
	Transport, Postal and Warehousing	77	79	76	73	70	68	66
	Sub-Total	**278**	**249**	**240**	**233**	**226**	**219**	**213**
Utilities and Construction				0	0	0	0	0
	Electricity, Gas, Water and Waste Services	13	16	15	13	12	11	10
	Construction	45	87	80	74	68	62	56
	Sub-Total	**58**	**103**	**95**	**87**	**80**	**73**	**66**
Service Sectors								
	Retail Trade	74	54	38	24	9	0	0
	Accommodation and Food Services	61	60	52	45	37	30	23
	Information Media and Telecommunications	0	3	2	1	0	0	0
	Financial and Insurance Services	13	8	6	4	3	1	0
	Rental, Hiring and Real Estate Services	0	3	1	0	0	0	0
	Professional, Scientific and Technical Services	13	9	4	0	0	0	0
	Administrative and Support Services	40	59	55	52	49	46	43
	Public Administration and Safety	35	37	30	24	18	12	6
	Education and Training	119	125	117	109	101	94	87
	Health Care and Social Assistance	135	145	126	108	90	73	56
	Arts and Recreation Services	20	14	13	12	12	11	10
	Other Services	18	31	26	22	17	13	9
	Sub-Total	**528**	**548**	**472**	**401**	**330**	**261**	**194**
Other								
	Inadequately described/Not stated	89	114	111	109	106	104	102
Total Jobs		**1,941**	**2,155**	**2,096**	**2,039**	**1,981**	**1,929**	**1,883**
Population		**3,747**	**3,698**	**3,503**	**3,308**	**3,113**	**2,929**	**2,757**

2016-2021: ABS Census, Working Population Profile; 2016-2021 Population: VIF 2019; 2026-2046: HillPDA

Note: ABS totals subject to error / adjustment and may not exactly sum data above

6.0 SMALL AREA PROJECTIONS

6.1 Small Area Estimates

The following tables provide an estimate of existing conditions for small areas as defined in Appendix 1.

The tables provide an estimate of floorspace by type, number of jobs, number of dwellings and residents in each area. Projections of population and jobs are provided to the year 2046.

The data for areas in the Rural City of Mildura is based on Council property rates information, information in the preceding section of this report GIS data by HillPDA. Data for the Wentworth LGA is provided by the ABS and NSW state government statistics.

Table 13: Small Area Development Estimates

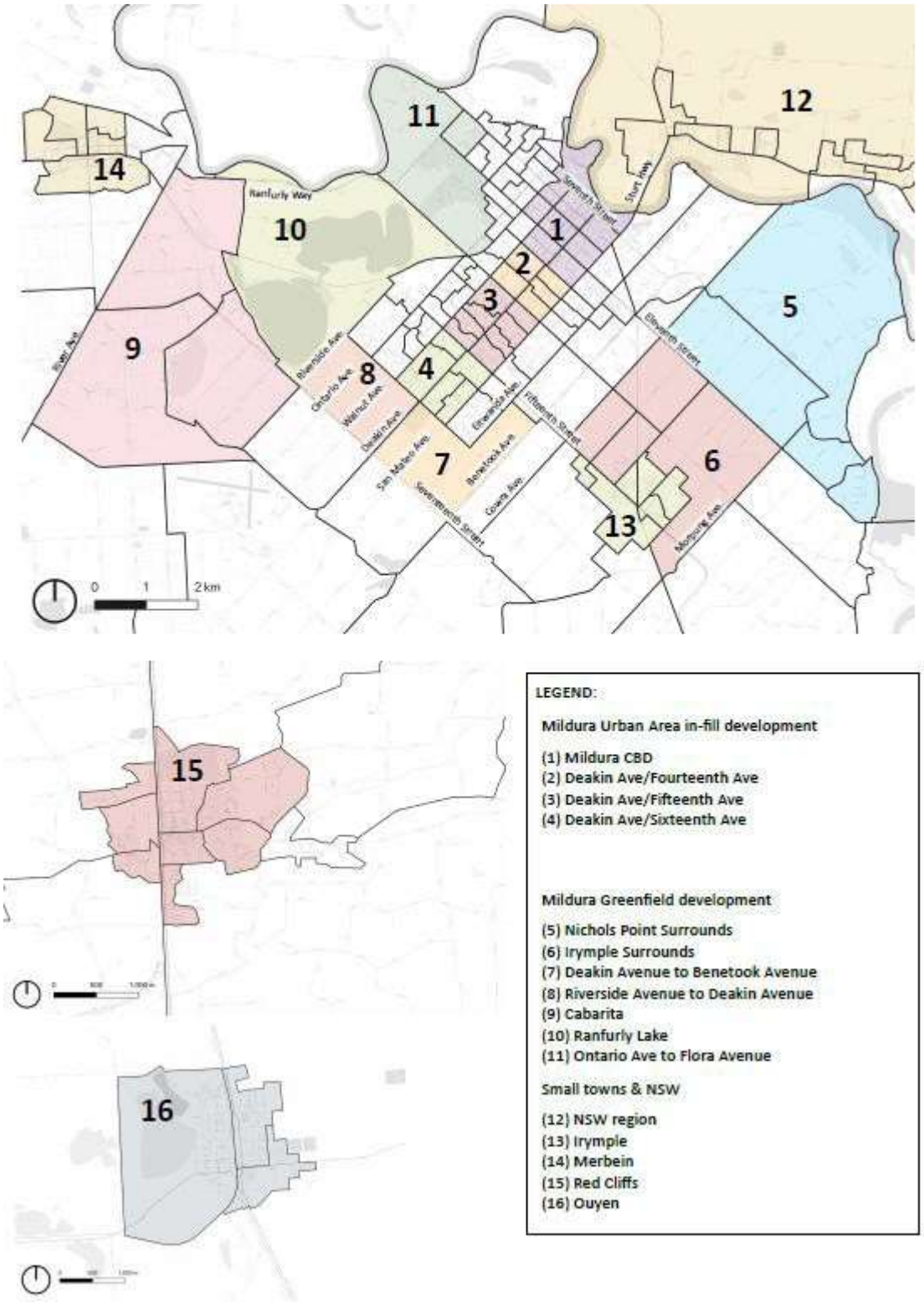
Unit / Area	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	A	B
	Mildura CBD	Deakin Ave/Fourteenth Ave	Deakin Ave/Fifteenth Ave	Deakin Ave/Seventeenth Ave	Nichols Point Surrounds	Irymple Surrounds	Deakin Ave to Benetook Ave	Riverside Ave to Deakin Ave	Cabarita	Ranfurly Lake	Ontario Ave to Flora Ave	Wentworth LGA	Irymple	Merbein	Red Cliffs	Ouyen	Mildura Fringe West	Mildura Fringe East
Gross Land Area (ha)	391	207	658	154	1,807	807	319	253	1,297	1,036	1,343		413	411	302	276	1,329	1,146
Occupied Land (ha)	385	207	656	118	1,800	774	319	250	1,297	1,021	1,331		398	411	263	258	1,320	1,095
Vacant Land (ha)	6	1	1	37	7	33	0	3	0	16	12		16	0	39	18	10	51
Dwelling Units (no.)	1,537	1,231	1,507	1,145	579	607	93	173	416	105	495	3,540	990	615	1,257	591	5,545	3,717
Ave. annual dwelling change (no.)	12	8	3	12	12	12	2	12	9	9	13	-9	30	2	8	2	56	62
Floorspace (sqm)	484,702	157,817	253,760	208,233	127,719	103,375	19,785	15,684	83,886	20,387	96,732	143,516	264,064	139,038	216,392	117,935	820,870	990,494
Ave. annual floorspace change (sqm)	10,375	2,226	3,425	5,515	3,648	1,956	74	409	1,373	1,527	3,585	895	11,405	2,665	4,956	3,652	12,056	32,120
Floorspace (sqm) 2022																		
Agriculture	0	0	0	0	9,369	7,059	3,995	1,776	9,558	1,340	700		164	954	174	150	0	2,179
Commercial	138,101	14,191	20,321	17,177	4,065	1,285	0	850	2,875	1,663	3,475		6,365	10,457	18,802	7,450	25,758	55,333
Education	879	0	0	0	4,460	750	0	0	0	0	4,470		0	1,570	1,640	0	7,163	4,660
Health	7,709	3,198	1,187	94	0	0	0	0	0	0	0		230	763	371	599	10,794	436
Industrial	16,132	0	1,585	1,180	0	948	0	4,020	200	0	2,546		115,517	45,203	27,867	27,919	3,062	369,861
Residential	188,705	137,606	198,236	167,865	109,385	91,880	15,790	9,037	71,253	17,234	85,381		133,852	70,018	151,704	70,343	770,713	454,727
Retail	128,750	2,822	32,432	21,918	357	1,453	0	0	0	0	160		7,639	10,073	15,635	11,472	3,267	102,832
Other	4,427	0	0	0	83	0	0	0	0	150	0		297	0	200	1	113	466
Total	**484,702**	**157,817**	**253,760**	**208,233**	**127,719**	**103,375**	**19,785**	**15,684**	**83,886**	**20,387**	**96,732**	**143,516**	**264,064**	**139,038**	**216,392**	**117,935**	**820,870**	**990,494**

Table 14: Small Area Population and Job Estimates

Unit / Area	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	A	B
	Mildura CBD	Deakin Ave/Fourteenth Ave	Deakin Ave/Fifteenth Ave	Deakin Ave/Seventeenth Ave	Nichols Point Surrounds	Irymple Surrounds	Deakin Ave to Benetook Ave	Riverside Ave to Deakin Ave	Cabarita	Ranfurly Lake	Ontario Ave to Flora Ave	Wentworth LGA	Irymple	Merbein	Red Cliffs	Ouyen	Mildura Fringe West	Mildura Fringe East
Dwellings and Population 2022																		
Dwelling Units (no.)	1,537	1,231	1,507	1,145	579	607	93	173	416	105	495	3,371	990	615	1,257	591	5,545	3,717
Population	3,486	2,792	3,418	2,597	1,483	1,555	211	392	944	238	1,123	7,090	2,536	1,512	2,967	1,088	12,576	8,430
Dwellings and Population 2046																		
Dwelling Units (no.)	1,714	1,373	1,777	1,350	694	728	110	204	534	124	552	3,179	1,187	789	1,687	591	7,179	4,812
Population	3,888	3,114	4,031	3,063	1,778	1,864	249	463	1,211	281	1,252	6,778	3,040	1,940	3,982	1,088	16,282	10,914
Jobs 2022 (estimate)																		
Agriculture	0	0	0	0	383	289	163	73	391	55	29	645	7	39	7	6	0	89
Commercial	2,004	206	295	249	59	19	0	12	42	24	50	442	92	152	273	108	374	803
Education	67	0	0	0	341	57	0	0	0	0	341	208	0	120	125	0	547	356
Health	1,132	470	174	14	0	0	0	0	0	0	0	236	34	112	54	88	1,585	64
Industrial	116	0	11	8	0	7	0	29	1	0	18	735	831	325	201	201	22	2,661
Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail	1,607	35	405	274	4	18	0	0	0	0	2	348	95	126	195	143	41	1,284
Other	802	0	0	0	15	0	0	0	0	27	0	368	54	0	36	0	20	84
Total	**5,729**	**711**	**886**	**545**	**802**	**390**	**163**	**114**	**434**	**106**	**441**	**2,982**	**1,113**	**874**	**892**	**547**	**2,589**	**5,342**
Jobs 2046 (estimate)																		
Agriculture	0	0	0	0	465	351	198	88	475	67	35	804	8	47	9	6	0	108
Commercial	3,177	248	816	332	71	23	0	15	50	29	61	551	163	183	431	108	451	969
Education	320	0	155	10	330	55	0	0	0	0	330	259	17	116	156	0	529	344
Health	1,610	466	469	34	0	0	0	0	0	0	0	294	67	111	119	88	1,572	63
Industrial	29	0	3	161	0	2	0	7	0	0	5	916	673	82	508	201	6	3,888
Residential	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retail	2,164	35	742	297	4	18	0	0	0	0	2	434	133	126	270	143	41	1,286
Other	44	0	4	0	1	0	0	0	0	1	0	458	3	0	3	0	1	4
Total	**7,344**	**750**	**2,189**	**835**	**871**	**449**	**198**	**110**	**526**	**97**	**433**	**3,715**	**1,065**	**666**	**1,495**	**547**	**2,600**	**6,663**

APPENDIX 1: SUB-AREAS

Figure 10: Sub-Area for Data Analysis



Source: Movement & Place

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MEMO

TO: Mildura Rural City Council
FROM: Knowles Tivendale, Movement & Place Consulting (M&PC)
SUBJECT: TIA 2010 Objectives & Principles - Mildura ITLUS

The Mildura Integrated Transport and Land Use Strategy (ITLUS) will work to achieve the objectives and apply the decision-making principles of the Victorian Transport Integration Act 2010 (TIA). Focussing on these objectives and decision-making principles will help to achieve the aspiration of a sustainable and integrated transport system for Mildura Rural City Council (MRCC) and all the Mildura community.

OBJECTIVE/PRINCIPLE WEIGHTING (%)	ITLUS RESPONSE
Objective 1: Social and economic inclusion **10%**	A primary focus for the ITLUS will be to foster social and economic inclusion. Currently, Mildura's transport system and provision of services is inequitable and affects social and economic outcomes for Mildura residents. Some residents, such as those who live on the outskirts of the Mildura township or who live in the other MRCC towns, have reduced access to services compared to those who live close to the Mildura CBD. This can mean that residents are forced to travel significant distances to attend medical appointments or to run everyday errands. Without access to convenient public transport, certain members of the community can become socially and economically isolated and restricted. The ITLUS will focus on concentrating population growth in areas within walking distance of key services. Growth in townships will be focussed within existing township boundaries to intensify population and increase social and economic inclusion within each town.
Objective 2: Economic prosperity **10%**	The ITLUS will promote economic prosperity of the municipality through delivering a more efficient transport network that focuses on low cost, efficient modes and providing choices for all residents. The ITLUS will ensure that the strengths of each town are leveraged through transport and land use integration. This will include facilitating intensification of town centres, increasing population and supporting innovation across the region.
Objective 3: Environmental sustainability **20%**	Environmental sustainability is a key objective of the ITLUS. Transport is currently the third largest source of greenhouse gas emissions in Australia, and the fastest growing source. Providing Mildura residents more choices in how they move around the municipality, and the extent to which people are forced to use cars will significantly improve Mildura's environmental performance in terms of local noise, pollution and road infrastructure impacts including heat island, polluted water runoff. The ITLUS will focus on ways to make walking, bicycle riding, and public transport more attractive. These modes have a far lesser impact on greenhouse gas emissions than private vehicles. Supporting the construction of housing within existing township boundaries will also support environmental sustainability of the Mildura community. New dwellings will be located closer to existing goods and services, reducing distances travelled, and increasing the amount of productive agricultural land that would otherwise be available in future.

OBJECTIVE/PRINCIPLE WEIGHTING (%)	ITLUS RESPONSE
Objective 4: Integration of transport and land use **30%**	The primary focus of the ITLUS is to support the integration of transport and land use. Analysis for this strategy will ensure that the transport network and land use of towns work together to achieve the principles and objectives sought. This will include increased development intensity within walking distance of the CBD and along the Deakin Avenue corridor to align with high amenity and priority walking and bicycle investments and the high frequency public transport corridor.
Objective 5: Efficiency, coordination, and reliability **10%**	The efficiency, coordination, and reliability of the transport network will be improved through the initiatives developed for the ITLUS. This will include increasing population intensity in town centres, limiting township sprawl beyond current boundaries and improvements to efficient transport networks, including: • Walking • Bicycle riding • Public transport • Freight • more reliable parking services.
Principle 1: Integrated decision making **15%**	The ITLUS will consider all levels of government in decision-making and identify government agencies and departments that can assist to achieve each initiative. The ITLUS development process will include staff from across all departments of MRCC, and will identify actions that are likely to cut across departmental lines, needing to be refined and actioned in an integrated way.
Principle 2: Triple bottom line assessment **15%**	A triple bottom line approach will be used when developing vision, objectives and improvement ideas for the ITLUS. Economic, social, and environmental costs and benefits will be considered for all initiatives proposed to ensure that the ITLUS achieves the best outcome possible for all.
Principle 3: Equity **15%**	All members of the Mildura community will be considered when developing the ITLUS. A key focus will be to improve equity across the municipality, and ensure a greater proportion of future residents live within walking distance of the services they need. Due to Mildura's distance from capital cities, the municipality experiences inequitable outcomes in relation to accessing higher order services such as specialist medical appointments. The ITLUS will identify ways in which this tyranny of distance can be reduced.
Principle 4: Transport system user perspective **15%**	The transport user perspective will be at the centre of the analysis of Mildura's transport network. The ITLUS will focus on providing Mildura's residents with more low cost, high amenity transport choices that are safe and enjoyable to use.
Principle 5: Precautionary principle **10%**	The ITLUS will avoid proposing any initiatives or actions which increase environmental threats. The precautionary principle focusses on the impact of human induced climate change on extinction. The ITLUS will focus on low impact solutions that encourage use of low impact transport options.

OBJECTIVE/PRINCIPLE WEIGHTING (%)	ITLUS RESPONSE
Principle 6: Stakeholder engagement and community participation **15%**	Community participation and stakeholder engagement will be used to inform the ITLUS. The experience, needs, issues, and ideas from the Mildura community for transport and land use will be gathered from surveys and workshops. Key stakeholders will be identified and engaged through workshops to gather their issues and ideas. Examples of key stakeholders include: • First Nations representatives • Traders • Government departments • Freight and logistics companies • Education providers • Community transport providers • Community groups. The community will have the opportunity to provide any commentary on the draft ITLUS, which will be considered before finalisation of the strategy.
Principle 7: Transparency **15%**	Access to reliable and relevant information for the public will be improved through the ITLUS. It will collate information on the transport network and land use impacts within the municipality and improve the community's access to locally relevant information.

– ENDS –

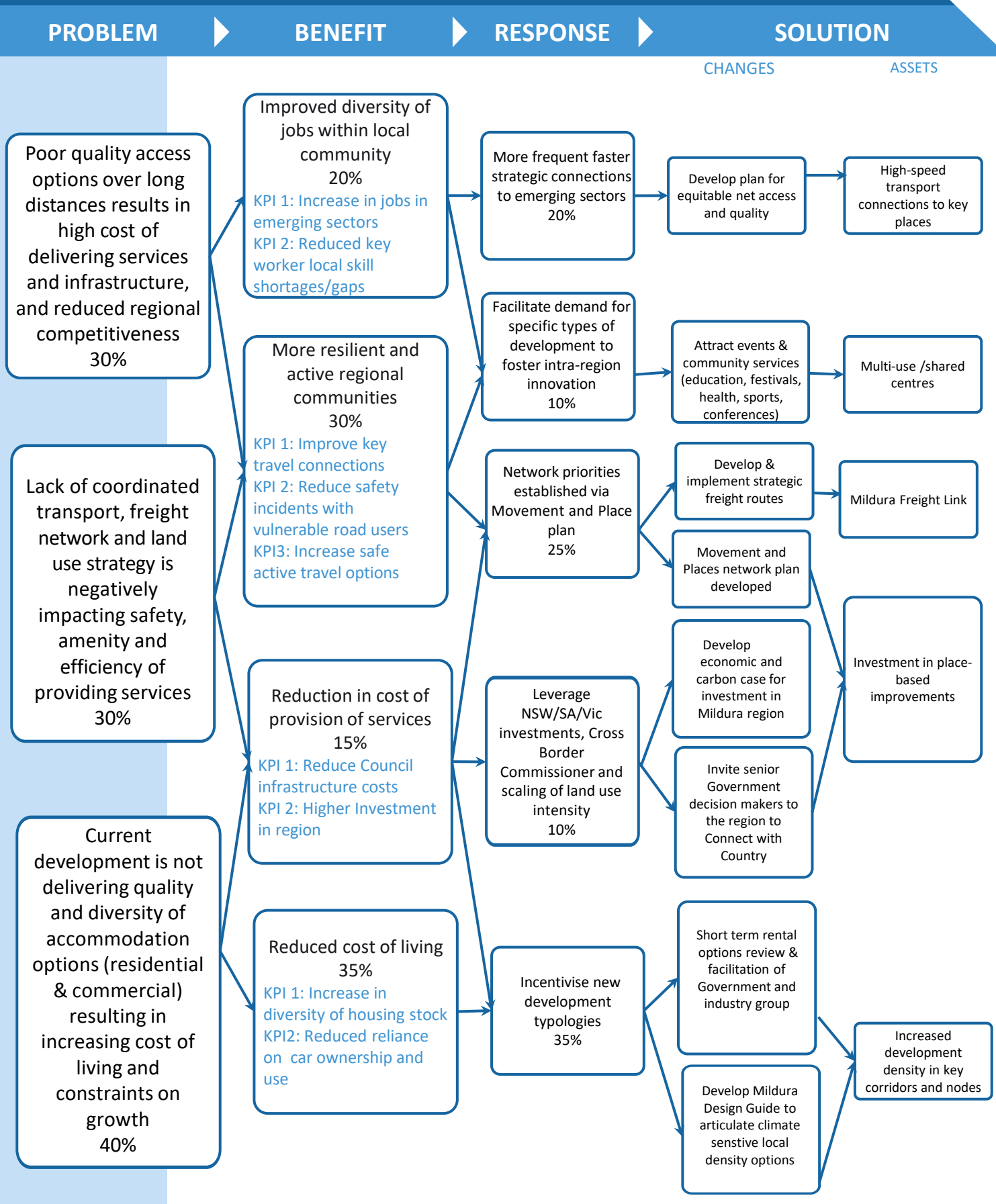
MILDURA RURAL CITY COUNCIL

Enhancing livability and improving access to services, jobs and community

Reducing the cost of living across a growing remote city-region

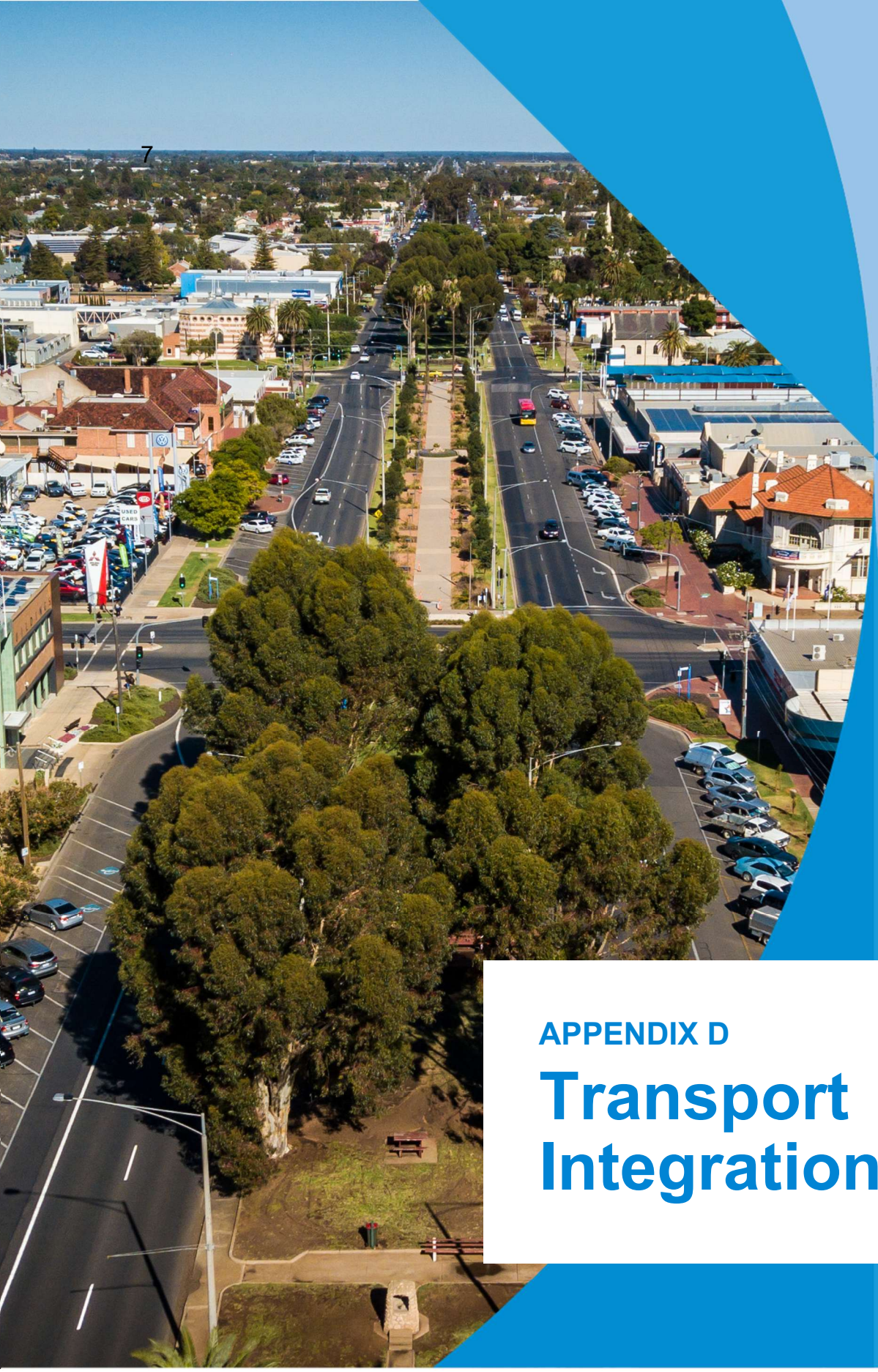
INVESTMENT LOGIC MAP

Program



Investor: Mildura Rural City Council
Facilitator: Will Fooks
Accredited Facilitator: Yes / No

Version no: 0.1
Initial Workshop: 04 April 2023
Last modified by: Will Fooks 18 April 2023
Template version: 6.0



APPENDIX D

Transport Integration Act

Mildura Rural City Council

1 Transport Integration Act

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Objective 2 Economic prosperity 10%	The ITLUS will promote economic prosperity of the municipality through delivering a more efficient transport network that focuses on low cost, efficient modes and providing choices for all residents. The ITLUS will ensure that the strengths of each town are leveraged through transport and land use integration. This will include facilitating intensification of town centres, increasing population and supporting innovation across the region.
Objective 3 Environmental sustainability 20%	Environmental sustainability is a key objective of the ITLUS. Transport is currently the third largest source of greenhouse gas emissions in Australia, and the fastest growing source. Providing Mildura residents more choices in how they move around the municipality, and the extent to which people are forced to use cars will significantly improve Mildura's environmental performance in terms of local noise, pollution and road infrastructure impacts including heat island, polluted water runoff. The ITLUS will focus on ways to make walking, bicycle riding, and public transport more attractive. These modes have a far lesser impact on greenhouse gas emissions than private vehicles. Supporting the construction of housing within existing township boundaries will also support environmental sustainability of the Mildura community. New dwellings will be located closer to existing goods and services, reducing distances travelled, and increasing the amount of productive agricultural land that would otherwise be available in future.
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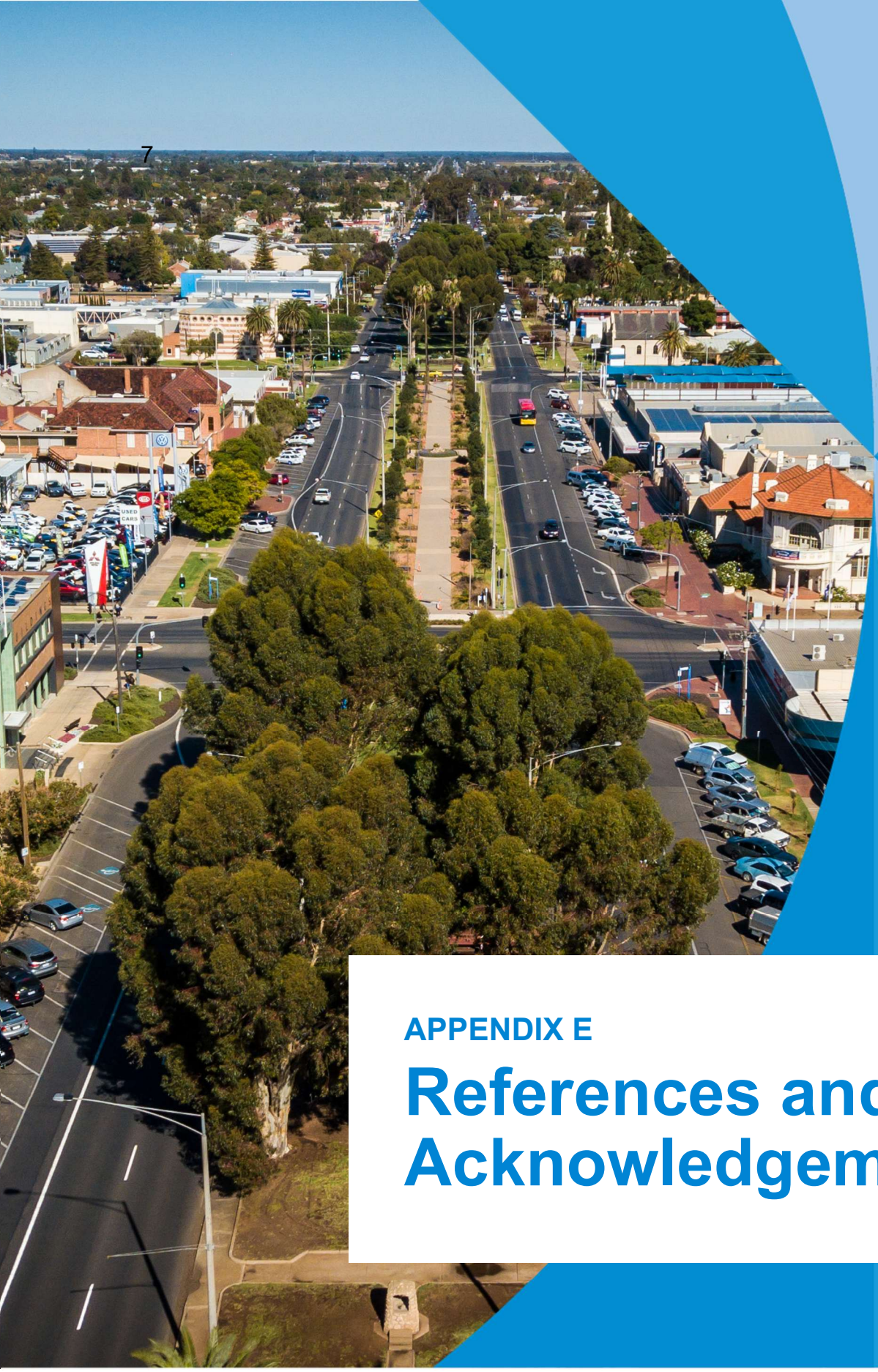

APPENDIX E

References and Acknowledgement

Mildura Rural City Council

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