A productive freight network

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

Mildura Rural City Council

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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 and restrict HPFV status from residential and other roads where freight vehicles do not need to be	Council	Action	Short term
	2. Develop and implement an advocacy plan to successfully deliver the five 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. Continue to advocate for the completion of the Murray Darling Basin Rail Projects	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.

1.2 Freight and productivity

Today, Mildura is a key centre of freight in the Mallee and Sunraysia region. The Melbourne-Geelong-Yelta railway and several highway corridors including Calder Highway, Silver City Highway and Sturt Highway, enable large volumes of products to be delivered from Mildura 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.

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.

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.

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

1.2.1 Rail

In 2005, there was approximately (on average) one inbound and one outbound freight train operating on the Yelta line each day, excluding shunting movements within Mildura. In 2023, there was an average of three train movements in each direction each week to Merbein, and additional seasonal grain trains from Yelta. These train movements affect 22 level crossings within the Mildura urban area.

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 such as at Thurla, therefore streamlining freight operations throughout the area.

The existing intermodal terminal at Merbein is now operating at close to capacity and State government recently extended their siding by 50% to cater for 1,200m long trains. To facilitate industry development and efficient transport outcomes, 24 hour / 7 days a week operation could be required in future. This freight facility is likely to be more automated. 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, such as at Thurla.

The construction of an alternative rail loop around Mildura, particularly for freight, has been raised in several documents in the past. 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.

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.

An assessment will be required to investigate the economic viability of each rail investment option, to ensure:
Standard gauge connectivity in the Ballarat-Maryborough corridor to improve efficiency of access to the Ports of Geelong and Melbourne
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
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

The following benefits and costs should be considered during assessment:
Opportunities for redevelopment of 4 hectares of CBD river front land. This could open up additional possibilities for new commercial/tourism-related activities
Retention of the railway reserve as a rail trail with a high quality shared user path between Merbein and Red Cliffs
Savings in the time costs (labour and fleet utilisation) from the commercial freight movements by road at each of the 20 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 (and Thurla) 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 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 either the:

- George Chaffey Bridge (Sturt Highway); or
- 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.

The Abbotsford Bridge was constructed in 1928, is a single-lane, wooden-deck, lift-span bridge, that 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 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 a total of three travel lanes. 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 Monak have been developed and would be the responsibility of State and Commonwealth governments to pursue through a business case.

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 increase over time, this will create issues as freight access routes currently operate through activity centre and residential environments that are meant to cater for local fine-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 tend to reduce 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 and 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 a more rapid deterioration of the road pavement.

The existing truck routing pattern is often undesirable 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 often passed on to the end customer.
- Increased safety risks to equipment and freight due to the significant numbers of conflict points throughout the journey.
- 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 the industrial development at 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:

- 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 reduce crash incidence and costs particularly at highway crossings where these have been grade separated.

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, Regional Express (Rex) and Bonza. Mildura is directly connected to a number of 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. The major area for growth is in airfreight, particularly high value express freight.

The Airport has several peripheral activities, including flying schools and aircraft maintenance. A potential industrial estate is also located on the airport estate, on the northern side of the runway.

With some slight deviations, Benetook Avenue could provide a long-term connection between Mildura's existing industrial area, the airport estate and future intermodal facility and industry at Thurla. Providing ground-based transport infrastructure to the Airport is crucial to the long-term success of the airport operating as a freight terminal.

The previously mentioned key enablers could support growth of freight handling at Mildura Airport, with some relatively minor tweaks specifically through:

- Improved efficiency of freight movements along Benetook Avenue and last mile connections via Gordon Avenue and, or Nineteenth Street.
- The proposed Sturt and Calder Highway realignment through to Thurla. This can provide alternative access for trucks to/from the airport, without being slowed down by traffic in central Mildura. However, this relies on protection of the highway operations from future industrial development at

Thurla, which should not allow direct property access onto Millewa Road (which would become the highway).

1.2.4 Intermodal Freight Terminals

Thurla is an area located to the south of Mildura that currently provides some existing industry 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.

Initial anchor tenants could include the Seaway company operations relocated from Merbein (with suitable transition and overlap to avoid disruptions), the existing on-rail and off-rail fuel depots, the GrainCorp operations (relocated from Yelta), and several manufacturing and/or processing and packaging industries.

The development of an intermodal terminal/industrial park of such strategic importance for the northwest Victoria (and Murraylands region of SA and Far West region of NSW) should be eligible for government funding via both the State Government and AusLink. For example, the LOGIC development in Wodonga was granted State Government funding to assist with the intermodal freight terminal component. The remainder of funding for that project came from the City of Wodonga via revenue from land sales within the industrial park.

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.

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 research 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.

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)[1]. According to ABS census National Output statistics, MRCC is Australia's most productive agricultural area[2].

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[3].

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[4]. 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 policy decisions have allowed large trucks (collectively termed High Productivity Freight Vehicles (HPFVs)) 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[5]. Emissions from transport accounted for 18% of MRCC's climate emissions, with 46% of MRCC transport emissions from freight transport according to Snapshot Climate[6].
- 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

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

[2] 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

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

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

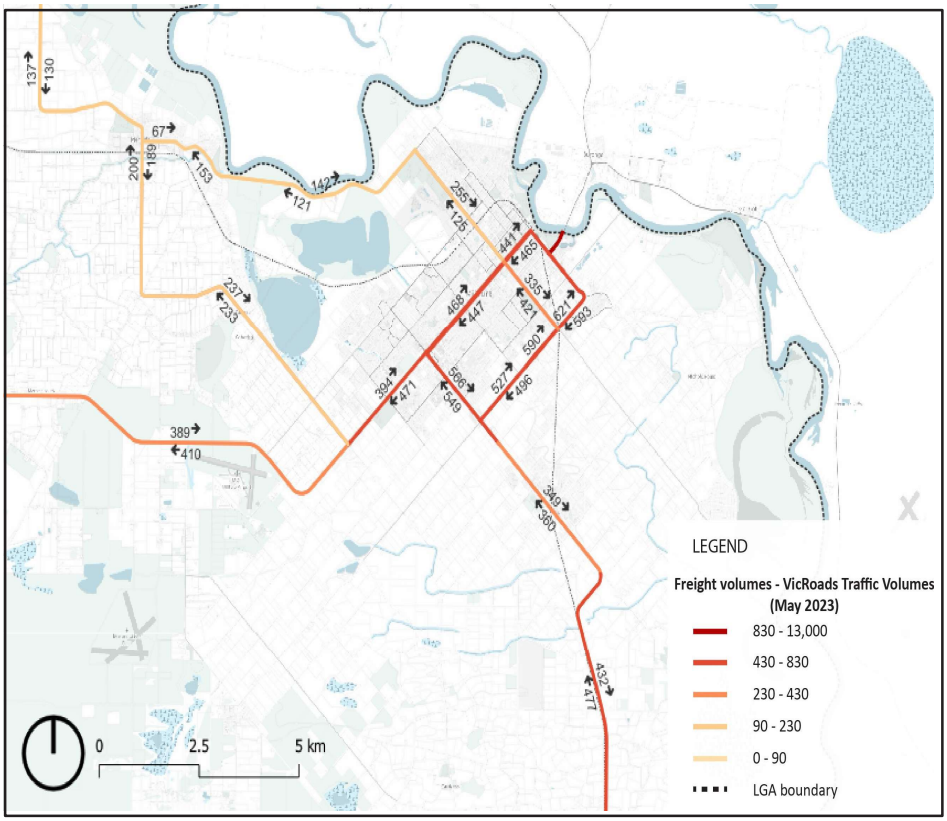
[5] Victorian Auditor-General's Office 2023*, Effectiveness of Rail Freight Support Programs*, Victorian Auditor- General's Office, Melbourne, https://www.audit.vic.gov.au/report/effectiveness-rail-freight- support-programs?section=, accessed 25 July 2023

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

Deakin Avenue in Mildura. Almost half of all trucks travelling through Mildura township use Deakin 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 HPFVs 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)[7].
- 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)[8]. These figures are approximately double the estimated cost of using rail for freight purposes.

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)

[7] 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

[8] 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

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

- 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).

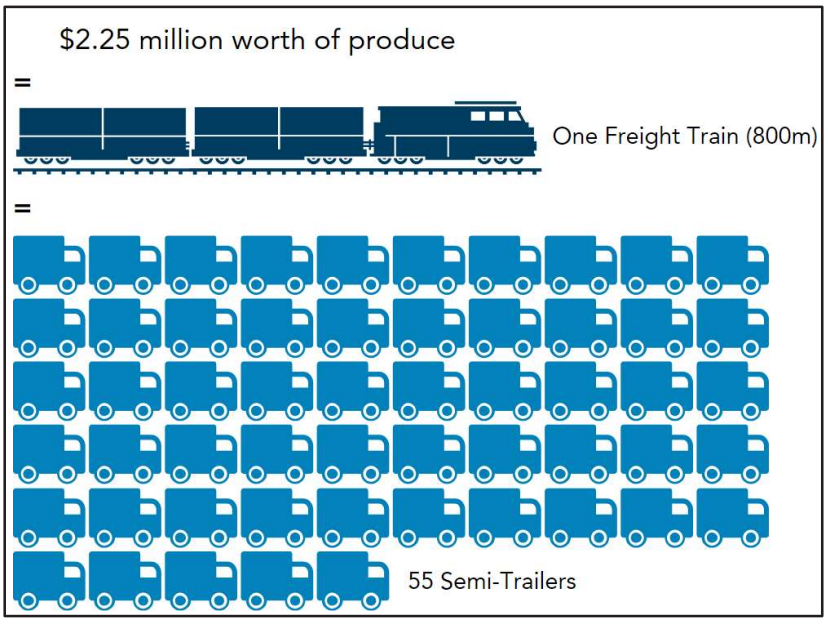
1.3.2 Underutilisation of rail freight infrastructure

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.

There is also a railway line that travels along the Murray Track between Murrayville and Ouyen. This line was recommended to be converted to standard gauge as part of the Murray Basin Rail Project, but a lack of State and Commonwealth political commitment saw the funding used on alternative projects. This line had some track upgrade works undertaken in the past as part of the Murray Darling Basin Rail Project. The track is predominantly used for freight but could also be used for tourism light rail use (potentially with hand operated carts) or addition of share user pathways as a rail trail.

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, (similar to those operating along the Mildura railway line) can carry $2.25 million worth of produce[9] and is equivalent to 55 semi-trailers, illustrated in the figure below.

$2.25 million of produce by road freight and rail freight

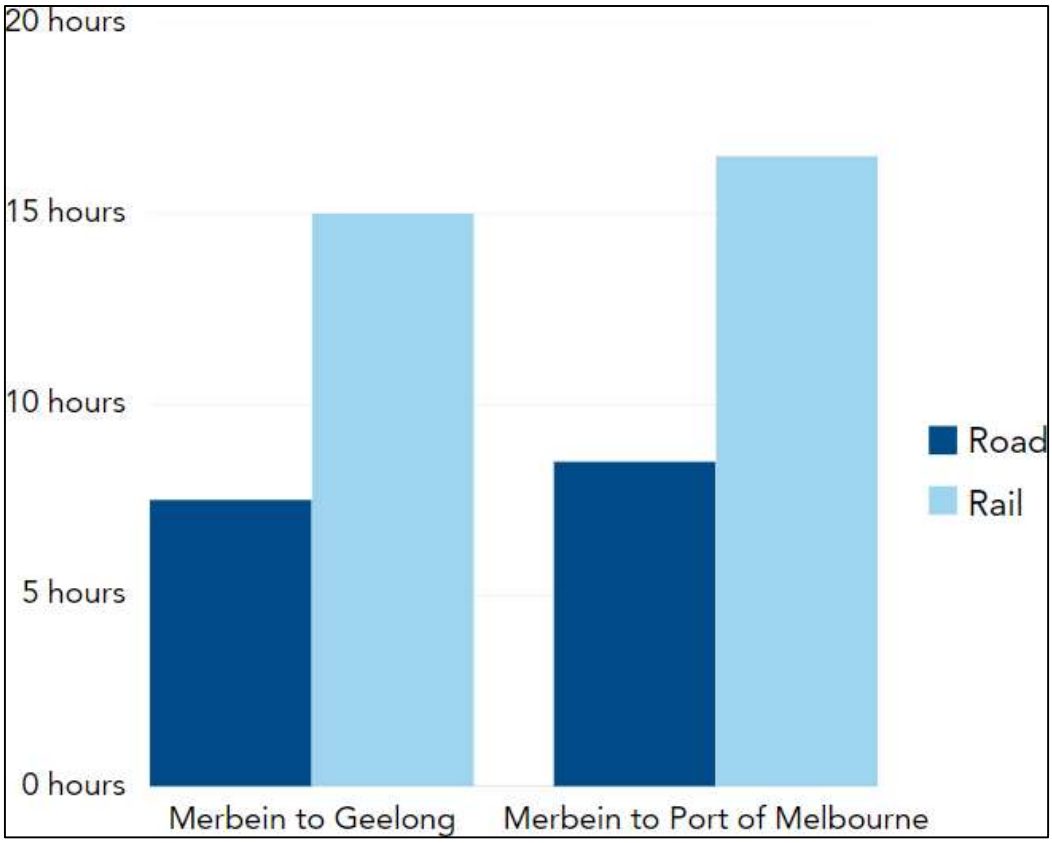


Source: M&PC based on State of Victoria (2023)

[9] 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

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[10] as illustrated in the following figure:

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.

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

- 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[11].

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
- 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.

Emission efficiency is a focus of the aviation sector. Recent development of sub-orbital flight uses hydrogen to power the rockets and planes. This can be a carbon neutral fuel if it is produced in the most sustainable way.

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 located 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. MRCC is a participant in the Victoria Government's Mode Shift Incentive Scheme which aims to make intermodal transport more effective and boost the share of rail freight transport.

In response to their mode share targets, Council has developed five 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

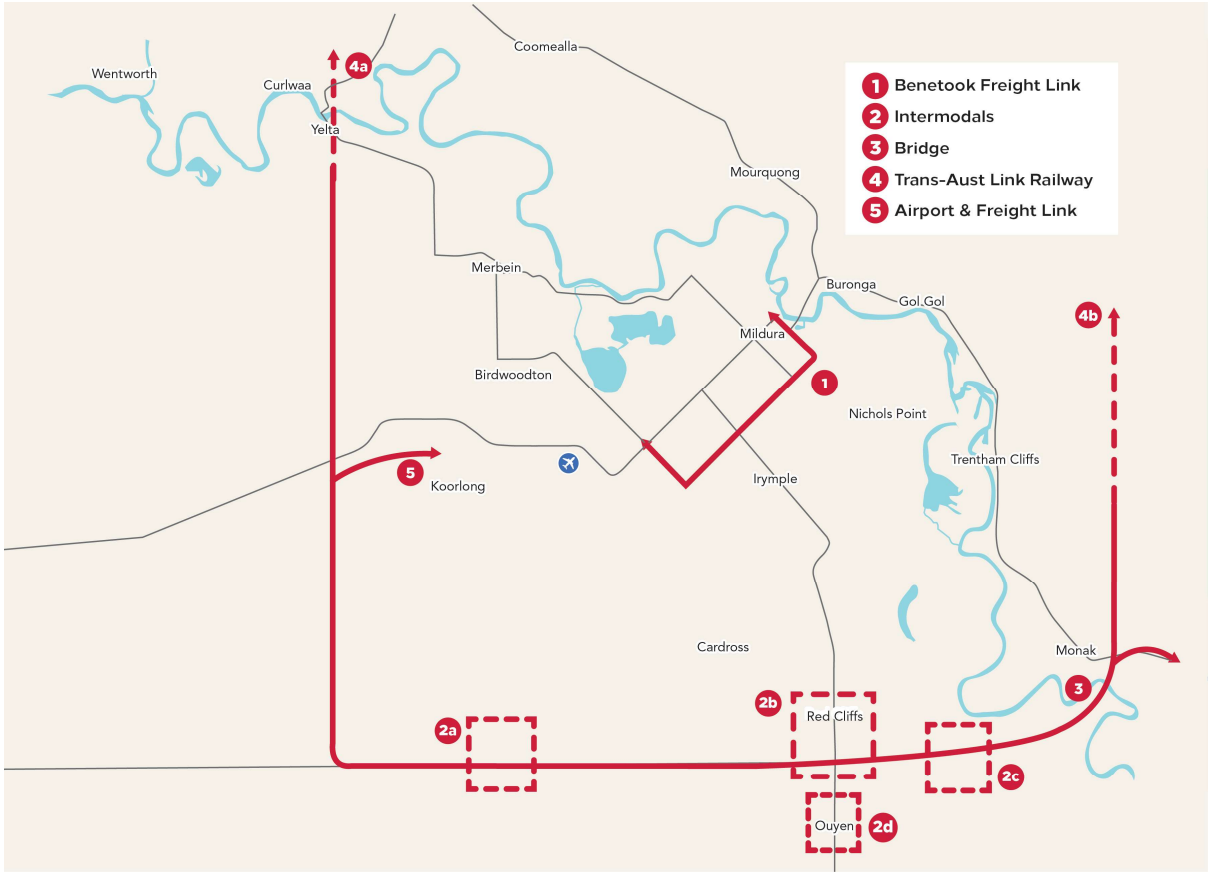
2 - Intermodal Terminal and Industrial Parks

3 - A Bridge Crossing at Monak

4 - Connection to the Trans-Australian Railway

5 - Mildura Airport and Freight Link.

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



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 proposed Thurla Intermodal Terminal and Mildura Airport. Land uses around these 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 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

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