

# Murray Basin Rail Project Business Case Review

April 2020

# Executive Summary

## Introduction

In 2015, The Victorian Government committed to delivering the Murray Basin Rail Project (MBRP). The MBRP sought to upgrade the entire Murray Basin freight rail network (Network) by converting it from broad to standard gauge and increasing train axle load (TAL) capacity from 19 to 21 tonnes.

The justification for the MBRP was set out in a detailed Business Case (Original Business Case) prepared by the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) in 2014/15.

In June 2019, the Minister for Transport Infrastructure paused further delivery of MBRP due to significant challenges during its delivery. The Department of Transport (DoT) was subsequently tasked with undertaking a review of the Original Business Case and providing recommendations on the scope, cost and timeframes of any further investment in the MBRP.

This document sets out the findings of the review of the Original Business Case (the Review) and provides justification for further investment in the MBRP.

## Background

The Murray Basin region covers the North West of Victoria, extending into New South Wales and South Australia. The Victorian portion of the region is bounded by Mildura in the north, Horsham in the South, Murrayville in the west and Swan Hill in the east.

The Murray Basin region is a nationally important producer of grain, mineral sands, fruit, vegetables and wine. Much of this product is exported via the Victorian ports of Portland, Geelong and Melbourne and is transported to port via the region's road and rail networks.

The Murray Basin freight rail network, is part of the Victoria's intrastate freight network and comprises:

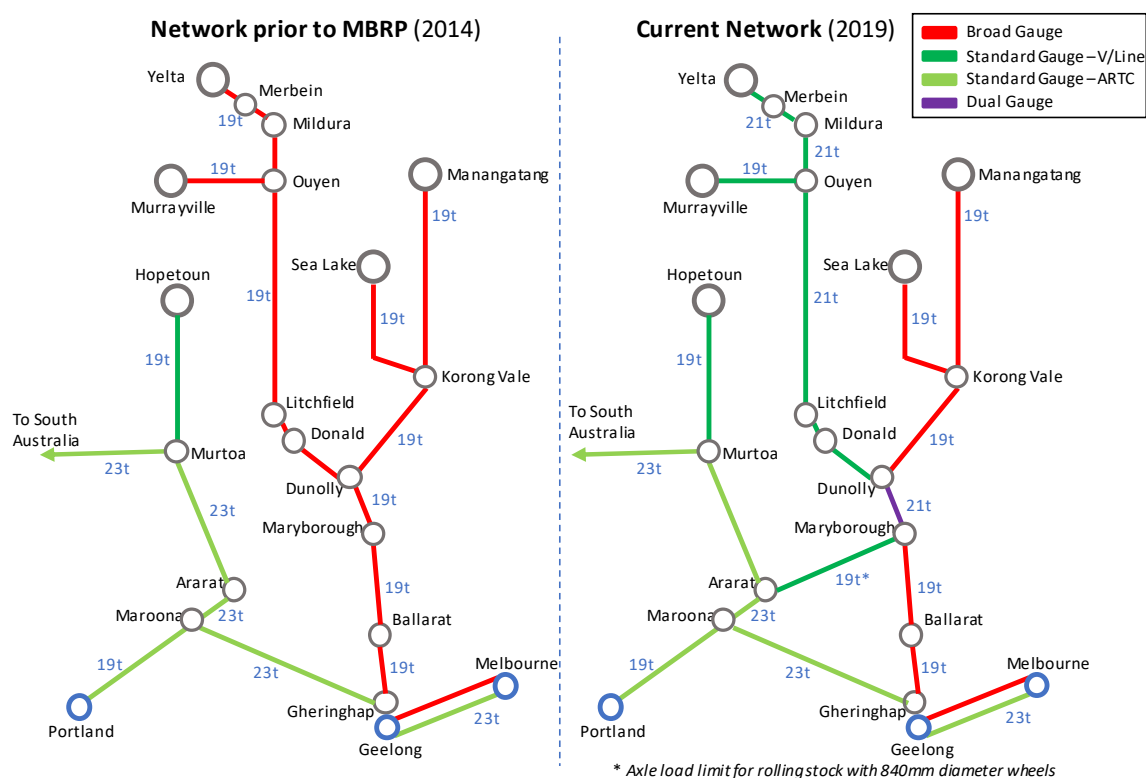
- **Yelta Line:** 406km of single-track mainline from Yelta to Maryborough;
- **Murrayville to Ouyen branch line:** 109km of single track connecting Murrayville to Ouyen on the Yelta Line;
- **Maryborough to Ararat line:** 87km of single track connecting the Yelta Line at Maryborough to the ARTC Interstate network at Ararat;
- **Sea Lake line:** 140km of single track connecting Sea Lake to Korong Vale and then a further 72km to Dunolly, which is located on the Yelta Line;
- **Manangatang line:** 175km of single-track connecting Manangatang to Korong Vale (and then a further 72km to Dunolly); and
- **Maryborough to Gheringhap:** 140km of single-track connecting Maryborough to the ARTC interstate network at Gheringhap to access the ports of Geelong and Melbourne.

The MBRP sought to upgrade the entire Murray Basin Network by converting it from broad to standard gauge and increasing train axle load capacity from 19 to 21 tonnes. The MBRP was expected to be completed by 2019 for an investment of \$440m.

By 31 December 2019, Stage 1 of the MBRP had been fully delivered and most of the Stage 2 had been delivered. The project has faced significant challenges during its delivery, leading to additional scope and increased costs that have put significant pressure on the \$440m budget. Stages 3 and 4 have not commenced and have been paused subject to the findings of this Review and Government approval to proceed.

Figure 1 illustrates the Network prior to commencement of the MBRP and at the end of 2019 following the delivery of Stages 1 and 2.

Figure 1: Murray Basin freight rail network before and after Stages 1 & 2 of the MBRP



## Investment need

The Original Business Case identified three problems that were to be addressed by the MBRP:

- Problem 1: Restricted Access to Victorian Ports is undermining international competitiveness
- Problem 2: poor performance of the rail network is increasing costs to business
- Problem 3: Growing road freight movements are reducing community amenity

Delivery of Stage 2 of the MBRP ensures that the Network now provides a standard gauge connection from Yelta to the Port of Portland (via ARTC’s network). This has allowed Murray Basin (on the newly standardised Yelta line) freight access to the Port of Portland for the first time, to potentially cater for the increased volumes of mineral sands expected over next 15 years. Additionally, the current broad-gauge lines to Sea Lake and Manangatang transport mostly grain and prefer to send this to Geelong and Melbourne because of superior grain handling facilities at these sites.

Performance issues remain with the current Network. A number of these issues remain due to the decision to pause further work on the MBRP, leaving the Network in a configuration state that was not intended to be permanent. These issues are resulting in reduced capacity, increased journey times and increased costs for operators and producers.

The mode share of freight transported from the Murray Basin has continued to shift from rail to road over the past 5 years. Some of this mode shift may have been driven by the disruption caused by the delivery of the MBRP. This shift from rail to road has continued to have a detrimental impact on the condition of roads and the safety and amenity of regional communities.

Table 1 identifies the updated problems that need to be addressed by any future investment in the MBRP.

Table 1: Summary of the rationale for revising the MBRP problems and ILM

Original ILM Problem	Revised ILM Problem
Restricted access to Victorian ports is undermining international competitiveness of bulk products	No longer a driver.
Poor performance of the Network is increasing costs to business	Unresolved performance issues on the Murray Basin Network results in suboptimal and costly industry operations reliant on rail.
Growing road freight movements are reducing community amenity	Growing conflict between road and freight movements and local communities contribute to unsafe and unappealing urban environments

## Benefits that further investment would bring

DoT have undertaken a formal process to review and revise the Investment Logic Map and Benefits Management Plan that supported the Original Business Case. The purpose of this review was to ensure that the ILM reflected current Government policy and the insights gained from delivery of Stages 1 & 2 of the MBRP.

The benefits identified in the Original Business Case were as follows:

1. Reduced costs for industry and reduced burden for Government [REDACTED]
2. Increased private investment [REDACTED]; and
3. Improved efficiency and safety of the road network [REDACTED]

Following the outcomes of the ILM review, the expected benefits from future investment in the Network have been revised as follows:

1. A more competitive Victorian freight industry [REDACTED]
2. A safer, more efficient road network [REDACTED]
3. Protection of public and environmental health [REDACTED]

## Recommended strategic response to the problems

The Original Business Case identified and assessed four high-level strategic options:

1. **Strategic Option A: Producer Focus** - boosting producer output and efficiency, by investing in technology and systems research that can lead to improved productivity.
2. **Strategic Option B: Maintenance Focus** - improving the condition of the Network through remediation and maintenance so that it functions to required operating standards
3. **Strategic Option C: Network Infrastructure Focus** - improving freight network connections and enabling more efficient access to Victoria's ports through complete rail standardisation of the Network.
4. **Strategic Option D: Existing Infrastructure Focus** - optimising the capacity and performance of the current 2019 Network, particularly the Yelta Line, but without converting the remaining broad-gauge lines to standard gauge

The Original Business Case recommended that Strategic Option C was most likely to deliver the benefits sought from the MBRP.

As part of this Review, the strategic options have been re-evaluated to consider the revised problems, benefits and project challenges. The key conclusions of this re-evaluation are that:

- **The relative percentage of full benefit to be delivered by Options C & D is closer:** because Option D is now an enhanced version of the Original Business Case option, with upgraded axle

load capacity and connection to the port of Portland and the capacity to deliver 49 paths per week (subject to further investment).

- **The capital investment required for Option C** [REDACTED]: due to cost escalation and the need to manage conflicts through the Ballarat corridor. This dramatically reduces the benefit cost ratio of Option C.
- **Time required for the delivery of benefits from Option C has increased:** due to a greater understanding of the timeframes required to deliver the significant capital works.
- **The risks of benefit delivery for Option D have been downgraded:** because it is an enhanced version of the Original Business Case option and due to the insights gained from delivery of Stages 1 & 2 of the MBRP.
- **The disbenefits of Option C have increased:** due to the increased potential for conflict with current and future passenger services on the Gheringhap to Ballarat section and through the Ballarat Corridor.

Accordingly, it is recommended that future investment in the MBRP should be based on Option D, Existing Infrastructure Focus. The key element of this recommendation is that no further standardisation of the Network can be justified because:

1. the costs of further standardisation are significantly greater than forecast in the Original Business Case; and
2. the anticipated benefits from standardisation can largely be achieved by enhancing the existing standard and broad-gauge Network.

This recommendation forms the basis for identifying, developing and addressing the Project Options.

While the review finds that at this stage it is not cost effective to standardise the Manangatang and Sea Lake lines and to deliver the Freight Passenger Rail Separation Project, the Department of Transport will continue to assess the need for these works into the future as part of its ongoing network planning processes.

## Preferred project scope

The key elements of the Existing Infrastructure Focus recommendation are:

- Further standardisation of the Network cannot be justified on a value for money basis;
- Existing train routing, via Ararat for standard gauge services and Ballarat for broad-gauge services, should be maintained; and
- Future investment should deliver improvements to the performance and reliability of the current Network and where possible achieve the capacity outcomes originally promised to Industry.

To determine the recommended scope to close-out the MBRP a three-stage assessment approach was undertaken consisting of a rapid assessment, detailed assessment and a final assessment. As part of the initial Rapid Assessment, 21 potential scope items were identified. Each scope item was identified because it had the potential to improve the performance, resilience and capacity of the current Network. Four scope items were set aside as result of the Detailed Review stage. The Final Assessment consisted of an evaluation of each of remaining 17 scope items against three primary criteria: (1) Alignment with Project Benefits, (2) Project outcomes, (3) Project impacts.

An economic appraisal of the Final Assessment scope items was undertaken consistent with Australian Transport Assessment and Planning (ATAP) Guidelines. To facilitate this process the scope items were grouped into four Options (A, B, C and D) and compared with a Base Case. Scope items were grouped to facilitate a meaningful comparison of costs and benefits and to align with the proposed delivery packages. A Minimum Scope option was also identified and assessed. This minimum scope was a subset of Option A, that was deliverable with the available project funding allocation. Each progressive Option requires the previous tranche to be fully funded and completed for benefits to be maximised.

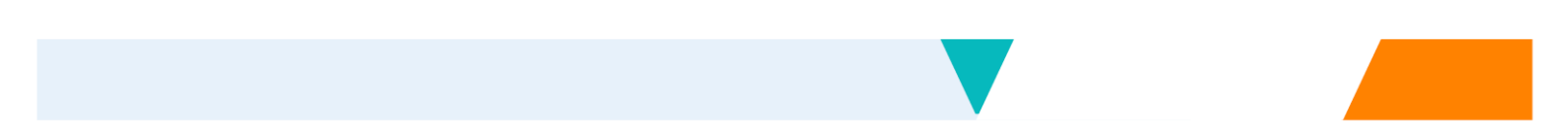
Using the multi criteria analysis the project options were prioritised as set out in Table 2

Table 2: Prioritised scope items

	Priority	Scope	Cuml Costs (\$M)
Minimum Scope	1	Business Case development and sleeper storage costs	
		Ararat Junction: complete signalling works	
		Ararat to Maryborough – re-rail 88km of track	
Option A	2	Complete outstanding MBRP Stage 2 works and provide speed and loading benefits	
Option B	3	Provide the capacity expected from MBRP	
		Passing loops to enable: <ul style="list-style-type: none"> <li>• 1200m passing opportunities on SG</li> <li>• Passing opportunities on BG</li> <li>• Better interface with ARTC network</li> </ul>	
		Review and implement ETO <sup>1</sup>	
		Development of DTPOS	
Option C	4	Provide capacity for horticulture export growth	
		Merbein siding extension Reinstate Road 2 at Donald Yard	
Option D	5	Improve operations (capital)	
		Dunolly junction - Replace gauge splitters with turnouts and re-signal Re-signal Ouyen yard	
	6	Remove speed restrictions on BG Network	
	7	Reduce journey times	
		Re-sleeper sections of Yelta Line with existing concrete sleepers Ouyen to Murrayville -Re-sleeper & rail adjustment (109km)	
8	Reduce freight operating costs		
9	Enable heavier locos		
<b>Total</b>			

<sup>1</sup> Contingent on the delivery of Electronic Train Orders for the Bendigo corridor

<sup>2</sup> This includes an assessment of re-railing Merbein to Mildura to replace 80 lb legacy rail identified as item (2) in Table 17.



The recommendation is to progress the Minimum Scope immediately to alleviate the current bottleneck on the network surrounding the Ararat to Maryborough corridor. This minimum scope package will provide speed benefits on the Maryborough-Ararat corridor and extend 21 TAL loading benefits for 840mm wheels to the entire Yelta line.

## Readiness for delivery

DOT has been accountable for the development of this Business Case Review and will be responsible for ensuring the revised benefits are fully realised upon completion of the project, including monitoring during the procurement and delivery phase.

Rail Projects Victoria (RPV) has been identified as the accountable delivery agency for all future works to be delivered as part of the MBRP. RPV has been involved in supporting this business case review by providing technical expertise to DOT in the definition of scope, costs and benefits.

RPV's existing systems and processes for procuring and delivering works of this type are well established and capable of integrating the MBRP works for rapid transition into delivery.

The MBRP is has a high level of readiness for delivery with:

- the allocated delivery agency, RPV, having been involved in the development of scope and costs for this Business Case Review;
- ██████████ previously allocated funding available to enable commencement of delivery; and
- detailed scoping and cost estimating having been undertaken for the recommended solution.

## Conclusion

This Review demonstrates that the MBRP is critically important to Victoria and will deliver investment, jobs and improved supply-chain productivity to one of the state's most important export regions. The proposed future investment will deliver long-awaited certainty on the configuration, condition and standard of the rail network in the Murray Basin and paves the way for industry decision-making, investment and growth.