

# Evaluation of regional rail and intermodal projects under Regional Development Victoria's Infrastructure Fund



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Final Report

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## Executive Summary

### Introduction

Regional Development Victoria (RDV) has played an important role in funding and developing infrastructure in regional Victoria. This includes investment in a range of rail and intermodal terminal projects throughout regional Victoria.

This report evaluated 13 regional rail and intermodal projects funded since 2001 by RDV. The objectives of the evaluation were to:

- Assess the extent to which the infrastructure projects met their objectives
- Describe and monetise (where possible) the outputs and outcomes arising from the 13 projects (at the individual project level and for the 13 projects as a whole)
- Complete an economic impact assessment of the 13 projects
- Using an evaluation framework, develop a set of benchmarks or indicators against which future rail and intermodal infrastructure projects could be assessed and compared.

### About the evaluation

The project was undertaken using a comprehensive methodology and a range of analytical techniques. The key elements of the methodology were:

- A detailed file review (electronic and paper-based) of the 13 projects
- A consultation process with project proponents and other stakeholders, including representatives of businesses, State Government departments, local councils and others
- Economic modelling, comprising a Cost Benefit Analysis (CBA) model to identify the direct benefits and costs, and Input-Output modelling to identify broader economic benefits
- A detailed Multi-criteria analysis (MCA) which considered a wide range of indicators for both effectiveness and efficiency.

### Program background

The regional rail and intermodal projects reviewed in this report were all funded through the Regional Growth Fund (RGF) and its predecessor, the Regional Infrastructure Development Fund (RIDF). Six of the projects were funded from the Regional Intermodal Freight Infrastructure Program (RIFIP), a sub-program of RGF/RIDF.

RGF provides for \$1 billion in funding over eight years to build strong vibrant regional cities and country communities, and contributes to strategic infrastructure and community-led local initiatives that improve both the competitiveness and liveability of regional and rural Victoria.

RIFIP was announced in 2005, as part of the then Government's regional statement, *Moving Forward*. The RIFIP initially earmarked \$20 million (later revised down to \$15 million) for projects that increased freight volumes by rail, delivered significant industry benefits, and provided certainty in planning and land-use issues.

### Assessment of effectiveness

The regional rail and intermodal projects have largely met their objectives and can be considered to have been an effective investment. Key findings for effectiveness include:

- Direct net benefits of an estimated \$132.7 million (Net Present Value terms). This comprises direct benefits of \$176.2 million and direct costs of \$43.5 million
- An estimated Benefit Cost Ratio (BCR) of 4.05. This implies that for every \$1 invested in the project, the return has been \$4.05. The BCR for RIFIP projects was 3.67, and for the remainder, 4.20.

- The total net economic impact of the regional rail and intermodal projects is estimated at \$154.6 million over the period 2001-2021. This includes first round or direct economic impact of \$67.3 million and a flow-on or indirect economic impact of \$87.3 million
- Estimated employment gain of 1,957 Full Time Equivalent (FTE) jobs over the period 2001-2021
- Overall freight capacity at funded intermodal terminals may have increased by up to 233% (by over 42,000 TEUs annually). This provides a basis for growth of rail-based freight from regional Victoria in the future
- Strong leveraged investment outcomes. RDV funding accounted for around 32% of the total funding for the projects. This is considerable less than the RGF/RIDF guidelines which call for a maximum of 50% RDV funding for infrastructure projects. Other sources of funding were the Commonwealth Government (13%), other State Government (30%), private sector funding (12%), and local governments (13%)
- Intensification of land use through higher value activities at a number of intermodal terminal sites
- Significant benefits for the broader freight network, enabling rail freight to compete more effectively against road-based competition. Overall, 73% of freight focused projects have had a positive impact on freight costs, and 64% have had a positive impact on rail freight reliability. All of the completed intermodal projects have supported the viability and competitiveness of the rail freight industry
- The projects have driven significant environmental benefits in terms of reductions of greenhouse gas and noxious emissions (valued at \$11.5 million and \$16.0 million respectively). Based on the estimated benefit value of greenhouse gas emissions, we have calculated the total greenhouse gas reduction to be 274,708 tonnes

## Assessment of efficiency

RDV's management of regional rail and intermodal terminal projects is efficient, and consistent with stakeholder expectations as well as external benchmarks for grant program management.

There is a very high level of satisfaction with RDV process from project stakeholders. This, combined with the feedback about RDV strengths and weaknesses indicates that processes are clear and effective.

RDV has put in place robust, detailed project and grant control mechanisms. Overall, the RDV processes conform with guidance from the Department of Finance and Deregulation for the management of grant programs. In particular, RDV processes have included:

- Separation of responsibilities in terms of approving and issuing grants
- Multiple decision makers in the grant selection process
- Robust reporting and record keeping standards
- Transparent guidelines and processes
- Clear and robust legal agreements with project proponents.

## Conclusions and recommendations

Overall, the regional rail and intermodal terminals have returned significant economic, transport and environmental benefits to the State.

While the outcomes have been positive overall, some projects exhibited much higher returns on investment than others. Typically, the most successful in cost benefit terms were those that supported the development of existing, commercial enterprises, including Donald Intermodal, Iron Horse Intermodal and Port of Geelong, which all benefitted existing terminal operators.

By contrast, those projects which did not exhibit a strong BCR and/or have had limited outcomes to date were generally those that were at a greenfields site (Wimmera IFT, Maryvale or the GVFLC), or sought to reactivate a brownfields site (Iluka), but which did not have an existing freight operator as the driver of the project.

This finding has resulted in the evaluation recommending that future projects of this nature need to ensure they have a committed commercial partner at the very start of the project. While projects may still realise positive outcomes without an operator at its inception, realisation of net benefits may take longer to occur.

**Recommendation 1: For greenfield intermodal terminals or disused terminals, that RDV require any future projects to have a terminal operator to be the project proponent, or a part of the proponent group, to ensure that a sound, market tested commercial model is developed up front.**

In terms of program management, there is a high level of satisfaction from project proponents with RDV's management of the application, assessment, reporting and acquittal processes.

The key weakness in the grant management process was the complexity of completing the RGF application form and milestone reporting for some stakeholders.

While the review found that RDV generally offers significant support to stakeholders throughout the application, assessment and reporting processes. Nevertheless, it is worth highlighting the need for RDV to continue to provide support for project proponents to meet reporting requirements.

**Recommendation 2: RDV continue to provide support for project proponents to meet reporting requirements during the application and milestone reporting phases of a project.**

## 1.0 Introduction and overview

### 1.1 Evaluation objectives

Regional Development Victoria (RDV) has played an important role in funding and developing infrastructure in regional Victoria. Since 2001, RDV (and its antecedent) has funded a number of rail and intermodal projects in regional Victoria through:

- The Regional Intermodal Freight Infrastructure Program (RIFIP)<sup>1</sup>
- The Regional Growth Fund (RGF) and its predecessor, the Regional Infrastructure Development Fund (RIDF).

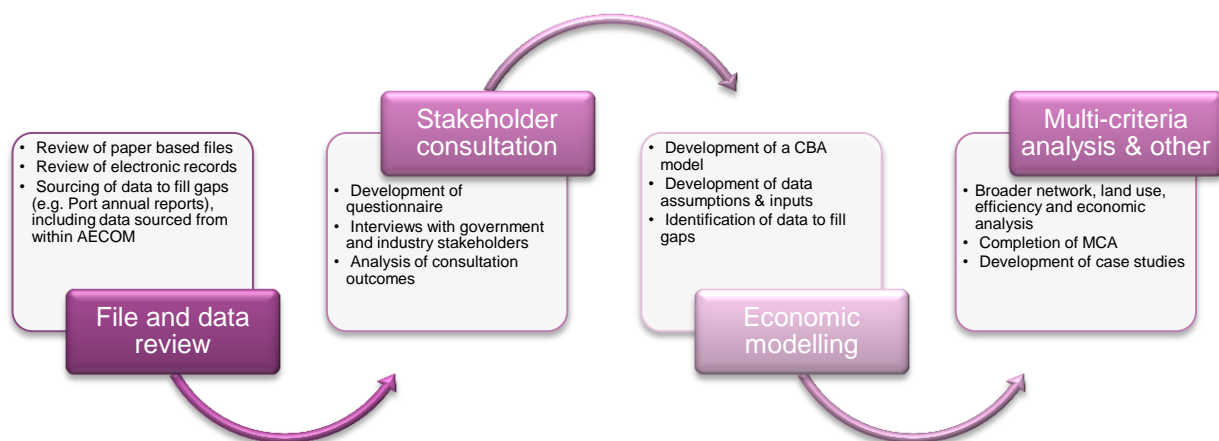
The purpose of this project was to evaluate 13 regional rail and intermodal projects funded since 2001 by RDV. More specifically, the review was to:

- Assess the extent to which the infrastructure projects met their objectives (giving consideration to each individual project, the six RIFIP projects, and the 13 projects as a whole)
- Describe and monetise (where possible) the outputs and outcomes arising from the 13 projects (at the individual project level and for the 13 projects as a whole)
- Complete an economic impact assessment of the 13 projects
- Using an evaluation framework, develop a set of benchmarks or indicators against which future rail and intermodal infrastructure projects could be assessed and compared.

### 1.2 Overview of methodology and approach

AECOM has undertaken a holistic approach to the evaluation process. An overview of the methodology is outlined below:

Figure 1 Methodology for the review



Each of these elements is described in the following table.

<sup>1</sup> The six RIFIP projects are: The Goulburn Valley Freight & Logistics Centre, the first stage of the Iron Horse intermodal terminal upgrade, works at the Donald Pea Growers Cooperative, the Iluka facility at Hopetoun, the Wimmera Intermodal Freight Terminal and the Warrnambool Intermodal Terminal.

**Table 1** Brief overview of methodological components

Component	Description
File and data review	This comprised review, data extraction and collation from the following: <ul style="list-style-type: none"> <li>- Project files (paper-based) held by RDV for each of the 13 projects</li> <li>- Electronic files held by RDV for each of the 13 projects</li> <li>- Selected websites for project proponents and beneficiaries (e.g. Iluka)</li> <li>- Selected data sourced from within AECOM (e.g. historical statistics and forecasts for the Port of Geelong, passenger data for projects such as the Clunes railway station).</li> </ul>
Consultation	A comprehensive stakeholder consultation program with project proponents and other stakeholders. A total of 19 interviews were conducted with representatives of State Government agencies, private sector companies, local councils and others.
Economic modelling	This included the following: <ul style="list-style-type: none"> <li>- Development of a cost benefit model to capture the direct costs and benefits of the 13 infrastructure projects</li> <li>- An input-output model using Australian Bureau of Statistics derived multipliers, to capture indirect (flow-on) economic and employment impacts.</li> </ul>
Multi-criteria analysis (MCA) and other analytical techniques	Based on the evaluation framework, the MCA: <ul style="list-style-type: none"> <li>- Individually assesses all the individual KPIs (using the rating system described in Section 2.2)</li> <li>- Based on these individual assessments, provides a balanced score and assessment about the extent to which the projects has met their objectives.</li> </ul>

### 1.3 Report Structure

This remainder of this report is structured as follows:

- Section 2 provides program and project background and context
- Section 3 details the evaluation framework used to assess the rail and intermodal projects
- Section 4 considers the effectiveness of the rail and intermodal projects
- Section 5 considers the efficiency of the rail and intermodal projects
- Section 6 presents case studies from the rail and intermodal projects
- Section 7 presents the key conclusions of the evaluation.



## 2.0 Program background and context

### 2.1 Freight and logistics in Victoria

Victoria sits at the centre of Australia's freight and logistics industry, both physically and in terms of market share. Victoria has a set of strategic advantages relative to other states, including a mature and extensive road and rail network, strong shipping capacity (Port of Melbourne and the regional ports), a substantial industrial base and a network of intermodal hubs in metropolitan Melbourne and regional Victoria.

Freight and logistics is a major Victorian industry. The estimated freight task in Victoria was estimated at 347 million tonnes in 2012, and is forecast to grow to 927 million tonnes per annum by 2046.<sup>2</sup> The Government's recent freight strategy, *Victoria the Freight State*, recognises the need to invest in enhanced network links for freight, including in regional Victoria. The freight strategy also seeks to grow the amount of the freight task undertaken by rail during this period.

A key barrier to greater freight and logistics efficiency is the ability to move goods quickly and cheaply between modes (usually rail and road), and issues around terminal access (e.g. insufficient rail access for extended trains). Intermodal projects which address these issues can support productivity and growth, and can enhance the overall efficiency and effectiveness of the freight rail network.

### 2.2 Program overview and objectives

The regional rail and intermodal projects reviewed in this report were all funded through the RGF and its predecessor, the RIDF. Six of the projects were funded from the RIFIP, a sub-program of RGF/RIDF.

RGF was established on 1 June 2011 with \$1 billion in funding over eight years to build strong vibrant regional cities and country communities. The RGF contributes to strategic infrastructure and community-led local initiatives that improve both the competitiveness and liveability of regional and rural Victoria through four strategic objectives, those being:

- Strengthening the economic base of regional Victoria
- Facilitating the creation of jobs and improvement of career options for regional Victorians
- Supporting the resilience and sustainability of communities in regional Victoria
- Increasing the capacity of regional communities to drive development in their region.

Within the RGF, the Economic Infrastructure Program is delivering \$221 million over four years and takes the place of the RIDF in delivering key strategic infrastructure for regional and rural communities.

RIFIP was announced in 2005, as part of the then Government's regional statement, *Moving Forward*. The RIFIP initially earmarked \$20 million (later revised down to \$15 million) for projects that:

- Increased freight volumes by rail
- Delivered significant regional and state-wide benefits to industries
- Provided certainty in planning and land-use issues
- Demonstrated strong pre-existing demand for warehousing and freight-forwarding operations from potential tenants.

For all projects funded from RIDF/RGF and its infrastructure sub-programs, applicants must demonstrate:

- Substantial economic, social and/or environmental benefits
- Alignment with State and regional priorities and a demonstrated project need
- Financial viability and capacity (including at least matching funding)
- Project feasibility and ability to deliver the project
- An ability to maximise value to the State.

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<sup>2</sup> *Victoria the Freight State: the Victorian Freight and Logistics Plan, 2013*

## 2.3 Policy alignment

As noted in Section 1 of the report, the regional rail and intermodal terminal projects have delivered on a range of government policy commitments. Alignment is challenging to assess because of the timing of projects (between 2001 and 2012), which means that many of the policy frameworks within which the projects were conceived are no longer relevant.

That said, the projects display dependencies with two current Government initiatives, these being the *Mode Shift Incentive Scheme* (MSIS) and *Victoria: the Freight State*.

The MSIS is designed to encourage the shift from road to rail freight through an incentive payment scheme. The MSIS was established in 2012, with funding provided to six companies to shift around 50,000 containers to and from the Port of Melbourne by rail instead of road.

Although the MSIS is not formally linked to the regional rail and intermodal terminal projects, it has complemented the success of some of the projects, by underpinning the viability of new rail infrastructure. This is discussed further in Section 4 of the report.

*Victoria: the Freight State* is the Victorian Government's freight and logistics plan. Released in 2013, *the Freight State* is structured around a series of Directions, including Direction 16, which is to "Address regional supply chain bottlenecks and network maintenance issues". More specifically, the aim of this Direction is to address:

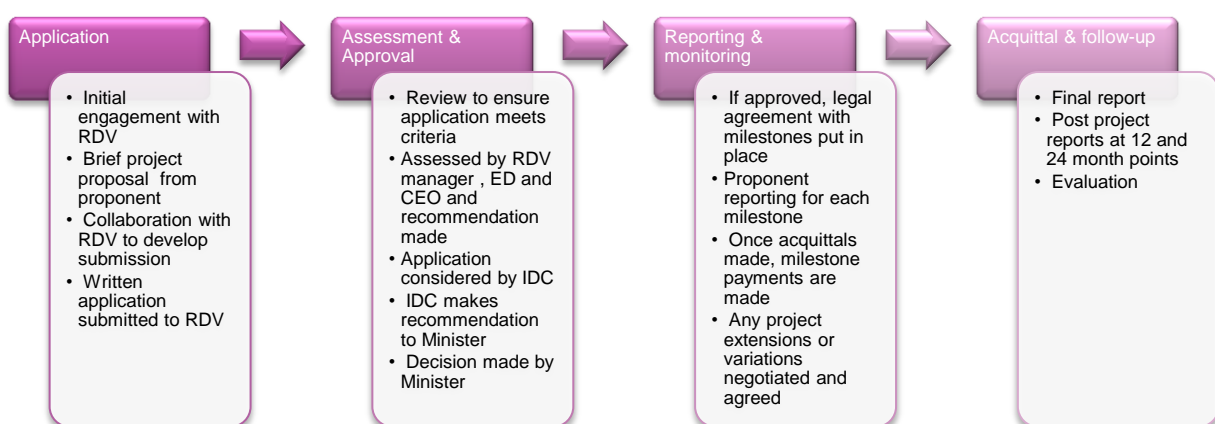
- Specific bottlenecks in the regional rail freight and road networks, rather than focusing on system-wide issues
- Poorly maintained infrastructure on the regional networks, which is inhibiting freight efficiency or expansion.

Many of the regional intermodal terminals are aligned to this Direction through addressing both bottlenecks and other freight network inefficiencies.

## 2.4 Project application and management approach

The following diagram provides a simplified overview of the project and management approach for RDV infrastructure projects. It should be noted that RIDF/RGF processes and proponent requirements have been strengthened over time. This diagram therefore reflects recent RDV practice.

**Figure 2 Simplified RDV application, management and acquittal processes, from the perspective of a project proponent**



The four stages, from the perspective of a project proponent/applicant, are:

1. **Application** – this is an iterative process, where the proponent generally works closely with RDV to determine whether a project is appropriate and, potentially, to help shape the project to maximise the benefits to the State. Typically, this part of the process involves significant planning prior to a formal application being submitted for consideration.
2. **Assessment and approval** – in this part of the process, a formal application for RGF funding is submitted to RDV. Once submitted, it is assessed by the Program Manager, Executive Director and Chief Executive

Officer, and considered by the Inter-Departmental Committee (IDC). If endorsed by the IDC, it is sent to the Minister for Regional and Rural Development for consideration and approval.

3. Reporting and monitoring – a legal agreement is put in place, which identifies milestones during the construction period at which reporting will be done by the proponent and payment made. RDV maintains robust reporting and monitoring, which requires a detailed progress report prior to each milestone payment.
4. Acquittal and follow up – this comprises a final report and final payment. Current RGF legal agreements require the proponent to undertake follow-up reporting at the 12 and 24 month post-completion dates, and agreement to take part in an evaluation (if needed).

## 2.5 Details of funded projects

The table below details the projects which have been assessed.

**Table 2 Overview of projects**

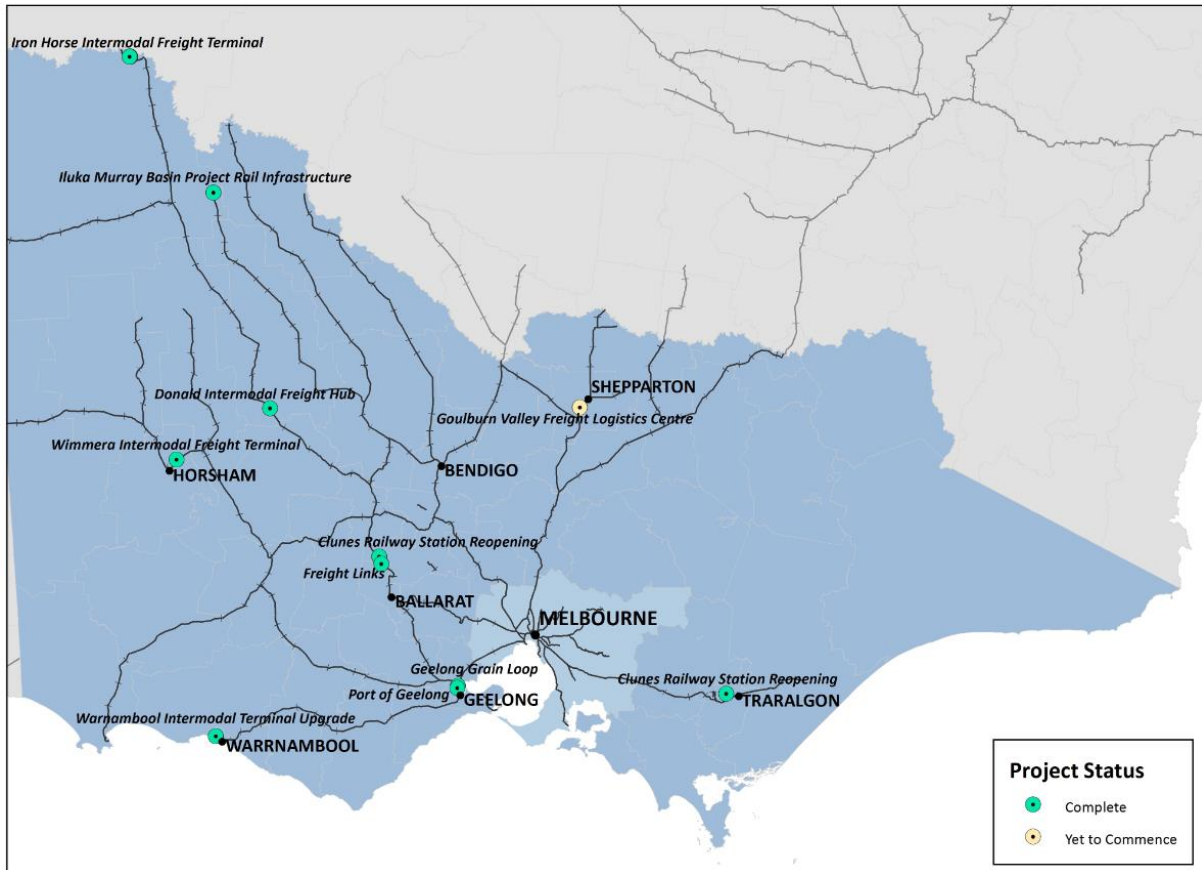
Project Name	Description	Project value	Status
Port of Geelong – Grain Loop (Port of Geelong 1)	The project involved the conversion of the existing broad gauge rail track to standard gauge to enable standard gauge trains to access the Grain Loop. The project comprised the installation of a new crossover to link with the standard gauge mainline, dual gauging of broad gauge mainline and grain loop, and changes to the North Geelong Yard in the vicinity of Separation Street.  This project delivered on a Government election commitment.	\$3,760,000	Completed
Port of Geelong – Corio Independent Goods Line (Port of Geelong 2)	This project involved the construction of a dual gauge dedicated freight line, to be known as the “Corio Independent Goods Line”. The project involved the dual gauging and/or gauge conversion of existing broad gauge rail link and the construction a of dual gauge connection allowing standard gauge access to the Midway facility.  This project delivered on a Government election commitment.	\$18,621,000	Completed
Iron Horse Intermodal (Iron Horse 1)	The project involved the extension of the rail siding and remodelling of the track work at the Iron Horse (Merbein) Terminal and associated signalling works, operated by Wakefield Transport Group.  The project increased the terminal's capacity from 19 wagons to 43 wagons and connected it directly to the intrastate rail corridor.	\$1,275,160	Completed
Wimmera Intermodal Freight Terminal (Wimmera IFT)	The project involved the creation of a new terminal at Dooen, to replace the existing (old) terminal adjacent to Horsham CBD. The new terminal includes new 450 metre long sidings, and up to date infrastructure. The new terminal, with capacity of around 22,000 TEU per annum, represents a substantial increase on the 10,000 TEU capacity of the old site.	\$17,022,837	Completed
Goulburn Valley Freight and Logistics Centre (GVFLC)	The GVFLC, to be located south of Mooroopna, is a planned multi-modal facility which will involve the creation of complementary freight and storage services, combined with a road-rail terminal.  Funding was agreed for Stage 1 of the GVFLC. The grant was to fund internal and external earthworks, a road transport based subdivision and project works. There are six stages envisaged for the site, all of which are outlined in the site Masterplan.  The project is yet to commence and is on hold, until operators/tenants have been identified.	\$14,659,578	On Hold
Donald Intermodal Freight Hub	Funding was provided to upgrade and renew the freight terminal at Donald, used by the Donald Pea Growers Co-Op Limited (Peaco).	\$463,100	Completed

Project Name	Description	Project value	Status
(Donald Intermodal)	<p>Works included renewing the static container gantry at the terminal, resurfacing the hard stand area, drainage and signage.</p> <p>The project aimed to enable an expansion of rail container throughput at the site, provision of greater efficiencies, and safer working conditions in the terminal yard.</p>		
Iron Horse Intermodal Terminal upgrade (Iron Horse 2)	<p>This project aimed to drive operational and overhead costs down at the terminal, so that Wakefield's could deliver a more competitive pricing structure to their customers and increase the potential for modal shift.</p> <p>In particular, the project addressed infrastructure issues so that the terminal could operate unhindered by climatic conditions, as well as public amenity issues. Elements of the project included:</p> <ul style="list-style-type: none"> <li>- A concrete crossing running under the rail crossing on the Calder Hwy/Main Ave Merbein</li> <li>- Trenching of above ground 22kv power line on the east siding area</li> <li>- Asphalt surfacing.</li> </ul>	\$926,465	Completed
Iluka Murray Basin Project Rail (Iluka)	<p>The project was to support the transport of heavy mineral concentrate from Iluka Resources' terminal at Hopetoun, to its Mineral Separation Plant at Hamilton for processing and export.</p> <p>The project involved investment in two distinct elements:</p> <ul style="list-style-type: none"> <li>- A rail loading/unloading facility at Hopetoun (hardstand and associated access roads)</li> <li>- A rail siding at the Mineral Separation Plant in Hamilton.</li> </ul> <p>Additionally, Iluka Resources fully funded the cost of 31 custom-built containers to transport the heavy mineral concentrate and tailings by rail.</p>	\$7,154,957	Completed
Warrnambool Intermodal Terminal Upgrade (Warrnambool Intermodal)	<p>This project aimed to improve the operational capacity of the Warrnambool Intermodal Terminal through enhanced access for road transport.</p> <p>The terminal is operated by Westvic Container Export Pty Ltd, which ships containerised goods for export to the Port of Melbourne. The project included:</p> <ul style="list-style-type: none"> <li>- Re-routing of truck movements through the development to avoid trucks needing to perform a 180 degree loop</li> <li>- Improved access to the terminal</li> <li>- A cross over of the adjacent rail line to allow both sides of the rail to be worked</li> <li>- A separate exit from the terminal Hammond Place, again to facilitate efficient truck movements</li> <li>- Construction of a hard standing area for use by forklifts to load and unload freight trains.</li> </ul>	\$1,608,990	Completed
Clunes railway station reopening	<p>The project funded the reopening of the railway station at Clunes so that passenger trains between Ballarat and Maryborough would be able to stop there in addition to at Creswick. The scope of works included:</p> <ul style="list-style-type: none"> <li>- Platform refurbishment and extension</li> <li>- Refurbishment of the existing shelter and improved amenities</li> <li>- Minor refurbishment of the station building</li> </ul>	\$5,614,907	Completed

Project Name	Description	Project value	Status
	<ul style="list-style-type: none"> <li>- Track and signalling works</li> <li>- Provision of signage, ticketing and communications infrastructure.</li> </ul> <p>This project delivered on a Government policy commitment.</p>		
Freight links	<p>This project involved the upgrade of 15 and closure of three level crossings on the Ballarat to Maryborough section of the Geelong to Mildura rail corridor.</p> <p>The project aimed to benefit both freight and passenger traffic. It sought to enable higher speeds along the rail corridor, which was being hindered by new level crossing standards – known as Australian Level Crossing Assessment Model (ALCAM). ALCAM meant that train speeds were severely restricted at level crossings without active protection for pedestrians and motorists.</p>	\$7,500,000	Completed
Upgrading rail infrastructure - Iron Horse Intermodal (Iron Horse 3)	<p>This project funded the development of a containerised grain packing facility. This facility sought to increase efficiencies and thereby encourage modal shift, and increase capacity at terminal for grain handling.</p> <p>The new grain facility enabled Wakefields to offer the following services:</p> <ul style="list-style-type: none"> <li>- Receive and test grain and carry out AQIS inspections at the grain facility</li> <li>- Pack grain to container – installing false bulk head in the process</li> <li>- Rail packed containers direct to the port of Melbourne, including sea freight containerised grain.</li> </ul>	\$1,761,139	Completed
Australian Paper rail spur bridge (Maryvale)	<p>The implementation of major water and energy reforms and an upgrade to rail infrastructure for Australian Paper's Maryvale mill.</p> <p>This project funded the replacement of a rail bridge on the rail spur from the Morwell main line to the Australian Paper mill. The bridge was suffering from subsidence, and had to be replaced. The project aimed to enable Australian Paper to continue to operate an efficient rail freight service to Melbourne, rather than shifting to road-based freight.</p>	\$1,000,000	Completed

The 13 projects were geographically dispersed across Victoria. The map below illustrates the site of each of the regional rail and intermodal terminal projects.

Figure 3 Project Context Map



## 3.0 Methodology and approach adopted

### 3.1 Evaluation framework

An evaluation framework is a tool which assists us to analyse the extent to which programmatic objectives have been met. It does this by providing a structure for an evaluation, by clearly identifying what we are going to analyse, and how we will analyse it. Typically, an evaluation framework for Government considers:

- Effectiveness – the extent to which the program has been effective in meeting its objectives
- Efficiency – this typically refers to the amount of time, effort or cost to undertake tasks associated with program administration. In this instance, we are assessing efficiency in terms of 'user friendliness' for project proponents
- Appropriateness – the extent to which a program and its objectives are aligned with broader government policies or goals.

In this instance, the evaluation framework has been developed to determine whether RDV has, through the RIFIP and RIDF/RGF, met its objectives with regard to regional intermodal and rail projects.

The RDV evaluation framework has been structured around four evaluation questions. These are:

- What have been the economic impacts of the regional rail investments? (Effectiveness)
- What network benefits have resulted from the regional rail investments? (Effectiveness)
- What environmental benefits have resulted from the regional rail investments? (Effectiveness)
- Was the administrative process for regional rail efficient? (Efficiency).

In addition to the evaluation questions, the evaluation framework contains a number of elements. These are explained in the following table.

**Table 3 Elements of the evaluation framework**

Element	Description
Key performance indicator (KPI)	KPIs are high level indicators which align directly with the evaluation questions. They assist us in demonstrating the alignment between the specific measures and the evaluation questions.
What is being measured (Measurable)	These are specific measures, which are assessed using different qualitative and quantitative data.
Data	This documents the actual data that we will be using to assess the evaluation questions.
Data sources	This specifies from where data will be drawn. Sources have included departmental files, policy statements and stakeholder consultation.

### Scoring and rating using the evaluation framework

In order to assess each of the objectives and question, AECOM developed a simple rating system against which all KPIs/evaluation questions were rated. These are outlined below.

**Table 4 Assessment rating hierarchy for the evaluation**

Assessment Score	Definition
●	The Key Performance Indicator has been achieved or exceeded
◐	The Key Performance Indicator has been partially met
○	The Key Performance Indicator has not been met

The evaluation framework is set out below.

Table 5 Evaluation framework for the regional rail and intermodal terminal evaluation

Evaluation question	Key Performance Indicator	What is being measured	Data	Data source
<b>Effectiveness</b>				
What have been the economic impacts of the regional rail investments?	Direct impacts: - Benefits and costs of regional rail projects - Total increase in freight capacity	- Total costs & benefits in monetised terms - % increase in freight capacity	- Cost data (capex and opex) - Data on user & operator benefits (additional revenues, value of additional freight movements), asset values	RDV files Stakeholder consultations
	Indirect impacts: - Economic impact of regional rail projects (value added) - Employment impacts	- Direct & indirect value of rail projects - Direct & indirect employment created	- Capex and opex by year - ABS multipliers - Stakeholder perceptions of regional impact	RDV files ABS multipliers Stakeholder consultations
	Investment leverage: - Extent to which projects leveraged funding from other sources	- \$ value of funding leveraged compared to RDV grants	- Funding data by project	RDV files Stakeholder consultations
	Land use: - Extent to which the investments have led to higher value land use at terminals or elsewhere	- \$ value of new land use compared to base case which can be attributed to projects	- Land use data over time - Data on post-project investments	RDV files Stakeholder consultations Local councils
What network benefits have resulted from the regional rail investments?	Direct impacts for users (supply chain): - Freight cost reductions - Freight reliability impacts	- \$ and % impacts on freight costs - Data on changes in freight delays or reliability	- Data on freight volume and price impacts - Data on freight movements, incidents & delays	RDV files Stakeholder consultations
	Whole of network benefits: - Extent to which projects have encouraged mode shift towards rail	- Value & volume of freight shifted to rail from road - Value & volume of freight that would have been road freight in absence of projects	- Data on freight volume and price impacts	RDV files Stakeholder consultations
What environmental benefits have resulted from the regional rail investments?	- Decreases in greenhouse gas emissions resulting from mode shift to rail	- Decrease in emissions resulting from mode shift	- Data on freight volumes - Emissions data from road & rail	RDV files Stakeholder consultations



Efficiency				
Was the administrative process for regional rail efficient?	<ul style="list-style-type: none"> <li>- Number of project proponents reporting that processes were clear and effective</li> <li>- Extent to which appropriate financial and risk controls were planned and used</li> </ul>	<ul style="list-style-type: none"> <li>- Stakeholder perceptions</li> <li>- Extent to which processes are consistent with guidelines</li> </ul>	<ul style="list-style-type: none"> <li>- RIDF/RGF guidelines</li> <li>- Department of Finance and Deregulation (DOFD) grant management guidelines</li> <li>- Process maps of key risk &amp; financial management processes</li> </ul>	RDV files Stakeholder consultations

## 4.0 Assessment of effectiveness

### 4.1 Overview

This section considers the effectiveness of the regional rail and intermodal terminal investments undertaken by RDV. This section addresses the three following evaluation questions:

- What have been the economic impacts of the regional rail and intermodal investments? (both monetised and non-monetised)
- What network benefits have resulted from the regional rail and intermodal investments?
- What environmental benefits have resulted from the regional rail and intermodal investments?

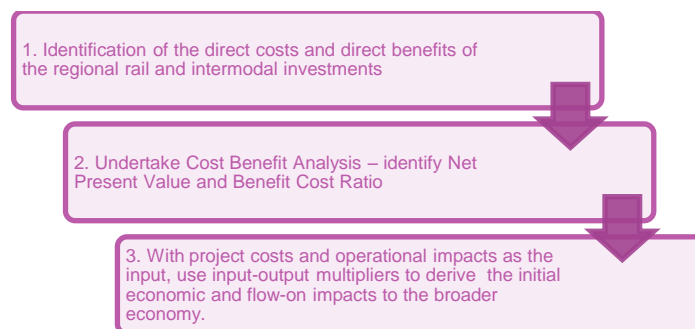
The assessment of evaluation drew extensively on the data review, as well as findings from the stakeholder consultation process.

### 4.2 Monetised economic impacts

#### 4.2.1 Overview of economic impact assessment

In this section, we outline the estimated economic impact of the regional rail and intermodal investments. The figure below illustrates the approach used to estimate monetised economic benefits.

Figure 4 Framework for the economic modelling of the regional rail projects



There are three principal components involved in the monetised economic impact analysis. These are:

1. Identification of the direct costs and direct benefits of the regional rail investments:
  - Costs, comprising the direct costs of project construction<sup>3</sup>
  - Benefits, comprising of the benefits eventuating as a result of the project undertaken. These include operational cost savings and net externalities (e.g. reduced emissions and road maintenance) associated with mode shift from road to rail.
2. The Cost Benefit Analysis which compares the direct costs of the project with the direct project benefits. Only nine projects were included in the CBA because of data limitations. These were: the two Port of Geelong projects, the three Iron Horse projects, Donald Intermodal, Iluka, the Maryvale rail spur bridge, and Clunes railway station.
3. Economic impact analysis, identifying the initial (direct) impact to the economy and flow-on (indirect) impact using Input-Output multipliers. A total of 12 of the 13 projects were considered in the economic analysis.<sup>4</sup>

#### 4.2.2 Limitations

The key limitations on modelling for this assignment are related to data availability and quality.

<sup>3</sup> Opex is not included in calculation of either benefit and costs

<sup>4</sup> The GVFLC was excluded because work on the project is yet to commence.

Good quality, quantifiable data was not available for all 13 projects. For that reason, only nine of the projects were assessed as part of the CBA. The remaining four projects (GVFLC, rail crossings project, Warrnambool Intermodal and Wimmera Intermodal) were not carried through to this analysis due to:

- A lack of substantive data to quantify the benefits. Typically, this meant that we were unable to obtain estimates of efficiency, cost savings or other benefits through the consultation process (both Wimmera and Warrnambool intermodal terminals fell into this category)
- Lack of response from grant recipients. In particular, some of the projects were quite old, and corporate knowledge of the projects had disappeared. This was the case with the level crossings project
- Lack of outcomes. The GVFLC has yet to commence, and so it was not possible to assess its impact. Similarly, Wimmera IFT is not yet fully operational, and its benefits are consequently difficult to estimate.

This analysis also relied on using inputs from old economic models (for the Port of Geelong projects), which were updated and amended to account for changed assumptions. This reflected the lack of corporate memory given the age of some projects (the first Port of Geelong project became operational in 2001, and stakeholders were unable to assess the impacts of the project at that time).

#### 4.2.3 Direct costs

The direct costs were the infrastructure costs for each project. These were provided through data and file reviews from RDV. Only costs for the nine projects were included in the CBA.

Total project costs for the CBA were \$57.1 million. This amount has been adjusted from the original project costs to represent 2013 dollars. These are summarised below, by project, and include both the RDV and other project contributions.

**Table 6** Total project costs, nine projects in the CBA

Project	Project cost (original)	\$2013 rounded
Iron Horse (3)	\$3,962,764	\$4,413,000
Port of Geelong (2)	\$22,381,000	\$24,074,000
Clunes railway station	\$5,614,907	\$6,040,000
Iluka	\$7,154,957	\$7,438,000
Maryvale rail spur bridge	\$1,000,000	\$1,025,000
Donald intermodal	\$463,100	\$498,000
<b>Total cost</b>	<b>\$40,576,728</b>	<b>\$43,488,000</b>

**Note:** Brackets indicate multiple projects

#### 4.2.4 Direct benefits

The economic benefits of the project fall into two main categories:

- **Cost Savings:** benefits which have accrued as a direct result of the introduction of the project. These benefits mainly include the savings in fuel, travel time and efficiency and other operating costs as a result of mode shifts from road to rail, or benefits from more efficient terminal operations. These were mainly derived through the stakeholder consultation process.
- **Externalities:** benefits accruing to society as a whole as a result of changes to transport behaviour following the completion of the regional rail and intermodal projects. These include non-user benefits such as reductions in emissions and other environmental externality savings (such as air and noise pollution) resulting in lower pollution impacts on society.

Direct benefits do not include production benefits associated with increases in freight movements. Because rail freight services compete with equivalent road-based services, it was not possible to attribute additional production to intermodal terminal projects. The CBA assumes that, in the absence of additional rail and intermodal capacity, additional freight would be shifted by road.

Key assumptions made in the CBA model are outlined below.

*Discount rate*

A discount rate allows us to estimate both costs and benefits in present day dollars, so that we compare like with like.

We have adopted a discount rate based on Department of Treasury and Finance (DTF) guidance as outlined in its publication, *Economic Evaluation for Business Cases Technical guidelines* (August 2013). For transport projects such as intermodal terminals, DTF suggests a real discount rate of 7%, which is also consistent with the discount rate recommended by Infrastructure Australia. We have therefore adopted the DTF recommendation in our modelling.<sup>5</sup>

*Timeframe for modelling*

To calculate the operational benefits of each project, it has been assumed that the first year of benefits occurs in the year following project completion. The benefits are assumed to accrue for a period of 10 years following completion to assess the economic impact, unless a specific timeframe had been stated by grant recipients.

As projects evaluated have occurred at different times, values have been indexed to 2013 values to make comparison possible.

*Cost savings estimates*

Cost savings estimates used in the CBA have been provided by project proponents and stakeholders in the consultation phase. These are commercial in confidence, and have not been identified separately in the report.

*Externalities*

For the purpose of this CBA, it has been assumed that the economic cost savings associated with the shift from road to rail is the summation of the parameters given in Table 7.

The Bureau of Industry, Transport and Regional Economics (BITRE)<sup>6</sup> produced, in 2000, a report which estimated the external costs associated with road and rail freight, including air pollution, noise, accidents and unrecovered road maintenance costs. The difference between these figures presents the potential net benefit of a mode shift from road to rail. These have been updated to 2013 values.

The key externality avoided cost assumptions are outlined in the following table. Figures are expressed at dollar cost per net tonne kilometre (NTKM). NTKM, in this instance, is the summation of costs avoided for every one tonne moved one kilometre.

**Table 7 Environmental externality avoided cost assumptions**

Externality	\$/1000 NTKM
Air Pollution	\$0.82
Greenhouse Gas Emissions	\$0.50
Noise	\$0.15
Water	\$0.67
Nature and Landscape	\$0.94
Urban Separation	\$0.00
<b>Total</b>	<b>\$3.07</b>

Source: BTE("Competitive neutrality between road and rail", Working Paper 40, year 2000). Values have been updated to 2013 dollars.

<sup>5</sup> DTF states that "These projects should be discounted using a risk free rate plus a modest risk premium depending on the project's sensitivity to the economy. Based on long term average government bond rates, an appropriate real discount rate for these projects is seven per cent."

<sup>6</sup> In 2000, BITRE was known as the Bureau of Transport Economics (BTE)

#### 4.2.5 Cost Benefit Analysis outcomes

Typically, we present the outcomes of the CBA in several ways. These are:

- The Net Present Value (NPV) is the present value of all benefits less the present value of costs. The NPV is a measure of the *absolute* return on invested funds. Options that have a positive NPV are economic and may be considered worthwhile investments
- The Benefit Cost Ratio (BCR) is the present value of all benefits divided by the present value of costs. The BCR is a measure of the *proportional* return on invested funds. Options with a BCR that is greater than 1 are economic and may be considered worthwhile investments.

A project considered to be economic will always result in a positive NPV and a BCR greater than 1, and an uneconomic project will always result in a negative NPV and a BCR less than 1.

##### Overall impacts

The key findings on the CBA are as follows:

- An estimated NPV (net benefit) of \$132.7 million. The calculation for this is direct NPV benefits (\$176.2 million) less the direct costs (\$43.5 million)
- An estimated BCR of 4.05. This implies that for every \$1 invested in the project, the return has been \$4.05. The BCR for RIFIP projects was 3.67, and for the remainder, 4.20.

A summary of the key CBA outcomes are outlined in the following table.

**Table 8 Benefit Cost Analysis – overall outcomes**

Measure	RIFIP projects	Other projects	All projects
Number of projects in calculation	5	4	9
Present Value Cost	\$12,349,000	\$31,139,000	\$43,488,000
Present Value Benefits	\$45,342,000	\$130,900,000	\$176,242,000
Net Present Value	\$32,993,000	\$99,761,000	\$132,754,000
Benefit Cost Ratio	3.67	4.20	4.05

Overall, we estimated the BCR for non RIDIP projects is more economic (provides a higher return on investment). This is largely due to the Port of Geelong numbers which provide the majority of the net benefits for this sub group. Iron Horse and Donald intermodal projects (both RIFIP projects) presented with higher BCRs, however the total net benefits were on a smaller scale. In terms of type of benefits, operational cost savings generated by greater intermodal efficiency was the largest component of the Net Present Benefits (\$109.1 million of the total), with externalities making up the remainder. The most significant generators of externality benefit were for road maintenance (\$21.1 million) and accident cost savings (\$18.5 million).

The table below provides a summary of individual benefits in NPV terms for all projects.

**Table 9 Benefit type and quantum, NPV terms**

Type of benefit	Value of benefit (NPV terms)
Operational cost savings	\$109,131,000
Accident cost savings	\$18,537,000
Greenhouse gas emissions	\$11,504,000
Noxious emissions	\$15,979,000
Road maintenance	\$21,091,000
<b>Total benefits</b>	<b>\$176,242,000</b>

### Benefits by project

Total benefits differed enormously between projects, with the Port of Geelong totalling \$126.1 million (NPV) in benefit, and Clunes railway station generating only \$42,000 in benefit. The three projects with the largest benefit (Port of Geelong, Iron Horse Intermodal and Donald Intermodal) also had substantial operational cost savings, in addition to benefits generated by a reduction in externalities.

The NPV benefits by project are outlined in the following table.

**Table 10 Project benefits, by individual project (figures have been rounded)**

Project	Operational cost savings	Accident cost savings	Greenhouse gas emissions	Noxious emissions	Road maintenance	Total
Port of Geelong	\$89,094,000	\$10,236,000	\$6,353,000	\$8,824,000	\$11,648,000	\$126,155,000
Iron Horse	\$15,973,000	\$5,567,000	\$3,455,000	\$4,799,000	\$6,334,000	\$36,128,000
Donald	\$4,064,000	\$324,000	\$201,000	\$279,000	\$368,000	\$5,236,000
Iluka	\$-	\$1,099,000	\$682,000	\$947,000	\$1,250,000	\$3,978,000
Maryvale (AP)	\$-	\$1,299,000	\$806,000	\$1,120,000	\$1,478,000	\$4,703,000
Clunes	\$-	\$12,000	\$7,000	\$10,000	\$13,000	\$42,000
Total	\$109,131,000	\$18,537,000	\$11,504,000	\$15,979,000	\$21,091,000	\$176,242,000

The BCR of different projects has a large range, with seven projects having very positive BCRs, and three with BCRs of less than one. The projects with positive BCRs were:

- The two Port of Geelong projects (BCR of 5.20)
- The three Iron Horse projects (BCR of 8.2)
- The Donald Intermodal project (BCR of 10.5).
- The (Maryvale Australian Paper) rail spur bridge (BCR of 4.59)

Details of project NPV costs, NPV benefits and BCRs by project is contained in the following table.

**Table 11 BCR by project**

Project	Present Value Costs	Present Value Benefits	BCR
Port of Geelong (1 and 2)	\$24,074,000	\$126,155,000	5.20
Iron Horse (1, 2 and 3)	\$4,413,000	\$36,128,000	8.2
Donald	\$498,000	\$5,236,000	10.5
Iluka	\$7,438,000	\$3,978,000	0.5
Maryvale (AP)	\$1,025,000	\$4,703,000	4.6
Clunes	\$7,529,000	\$43,000	0.01

### 4.2.6 Economic impact

The economic impact analysis estimates the net direct and indirect economic impact on the economy resulting from the regional rail and intermodal projects.

The economic analysis was undertaken using Input-Output multipliers, sourced from the Australian Bureau of Statistics (ABS). This type of analysis helps us to understand the indirect flow of impacts on economic activity through the economy, and allows us to estimate the increase in final economic demand as a result of the RDV-funded projects, assuming that this demand would not otherwise occur in Victoria in the forecast period.

The Input-Output multipliers measure the net direct and flow-on impacts of an investment or intervention into an economy. That is, they provide a measure of:

- First round impacts – the net effects of an investment into the economy. In this instance, the direct impacts on economic activity of the capital investments in regional rail and intermodal projects. This is calculated by the gross value of production less the costs of inputs into the production process.
- Flow-on impacts – the initial increase in economic activity will lead to flow-on economic activity. For instance, the impact of wages earned from an initial investment will be felt in the economy as the wage earner buys goods and services. In this way, an initial impact can have a substantial *indirect* impact on economic activity over time.

The Input-Output multipliers have been used to estimate the impact on net economic growth and employment growth.

#### *Data inputs and timing*

There were two sets of data inputs used to derive an estimate of economic impact. These were:

- Construction phase – this is the total estimated project investment (i.e. cost) data, estimated at \$74.3 million (in 2013 dollars). Please note that the GVFLC has been excluded from this analysis as the project is on hold, therefore there have been no indirect benefits to the economy to date
- Operational phase – this is the cost savings and efficiencies identified in the CBA. These benefits represent a tangible and quantifiable benefit that has accrued either to producers (e.g. of agricultural products that are shipped through the terminals) or terminal operators.

The value added calculation assumes there is no leakage from the Victorian economy to meet construction/operating demands.

The economic model represents the cumulative economic impact of the regional rail and intermodal projects over time. Effectively, the economic modelling calculates the overall economic impact for the period 2001-2021, representing the full period of project investment as well as operating benefits as calculated in the CBA.

#### *Results*

We used Income Input-Output multipliers to estimate two impacts. These were:

- Initial impact – this describes the first round net impacts of the increased export sales on the economy. Specifically, these are profits, wages, government taxes and charges associated with the companies that actually realised the export sales. This is not the same calculation as the direct benefits used in the CBA
- Flow-on impact – these are the surpluses (wages, profits etc.) resulting from the indirect beneficiaries of the export sales up and down the supply chain.

The initial and flow-on impacts have been calculated for the construction and operational phases.

Overall, the total net economic impact of the regional rail and intermodal projects is estimated at \$154.6 million. This includes:

- First round or direct economic impact of \$40.7 million and a flow-on or indirect economic impact of \$113.9 million
- Total construction phase economic impact (direct and indirect) of \$67.3 million, and total operational phase impact (direct and indirect) of \$87.3 million.

The results of the economic modelling are outlined below.

**Table 12** Estimated value added impact, RDV-funded projects

Value Added impact	Construction phase (\$ million)	Operational phase (\$ million)	Total Impact (\$ million)
Direct	\$14.6	\$26.1	\$40.7
Flow -on	\$52.7	\$61.2	\$113.9
<b>Total</b>	<b>\$67.3</b>	<b>\$87.3</b>	<b>\$154.6</b>

#### 4.2.7 Employment Effects

Employment impacts both direct and indirect were also estimated using Input-Output multipliers. These were estimated for both the construction and operational phases. The results show that estimated direct and flow-on employment gain resulting from the projects totalled 1,957 Full Time Equivalent (FTE) jobs. The results are outlined in the table below.

**Table 13 Estimated employment impact, RDV funding**

Employment	Construction (Short Term)	Operational Savings (Long Term)	Total Impact
Direct	207	306	513
Flow -on	657	786	1443
<b>Total</b>	<b>865</b>	<b>1,092</b>	<b>1,957</b>

The estimated job creation is fairly evenly split between construction and operating phases, with a little more in the operating phases (1,092).

#### 4.3 Other economic impacts

This section considers other economic impacts above and beyond the monetised economic impact estimates. These are:

- The impact of the projects on freight capacity
- The amount of investment leveraged as a result of the projects
- Land use benefits.

##### 4.3.1 Impact on freight capacity

The intermodal projects had a range of objectives, but a number of them sought to increase overall throughput capacity.

While data was difficult to obtain, estimates about enhanced freight throughput capacity were developed for seven projects – the three Iron Horse projects, Donald Intermodal, Iluka and Wimmera IFT. Overall capacity appears to have increased by 233% (over 42,000 TEUs annually). The largest increases were at Wimmera IFT (from 10,000 TEU to 22,000 TEU capacity) and Iluka (effectively zero capacity to around 25,000 TEUs). Please note that these estimates represent potential capacity, and not actual freight volumes.

Estimates are outlined in the following table. Overall, the projects have significantly increased the capacity of regional intermodal terminals, making them more able to handle the growth of volumes over time.

**Table 14 Estimates of increased throughput capacity**

Project	Estimated old capacity (TEUs)	Estimated new capacity (TEUs)
Iron Horse	10,000	13,000
Donald	1,800	2,160
Iluka	-	25,000
Wimmera IFT	10,000	22,000
Warrnambool	10,000	12,000
<b>Total</b>	<b>31,800</b>	<b>74,160</b>

##### 4.3.2 Investment leveraged

Of the 13 projects analysed, RDV funding accounted for around 32% of the total funding for the projects. This is considerable less than the RGF/RIDF guidelines which call for a maximum of 50% RDV funding for infrastructure

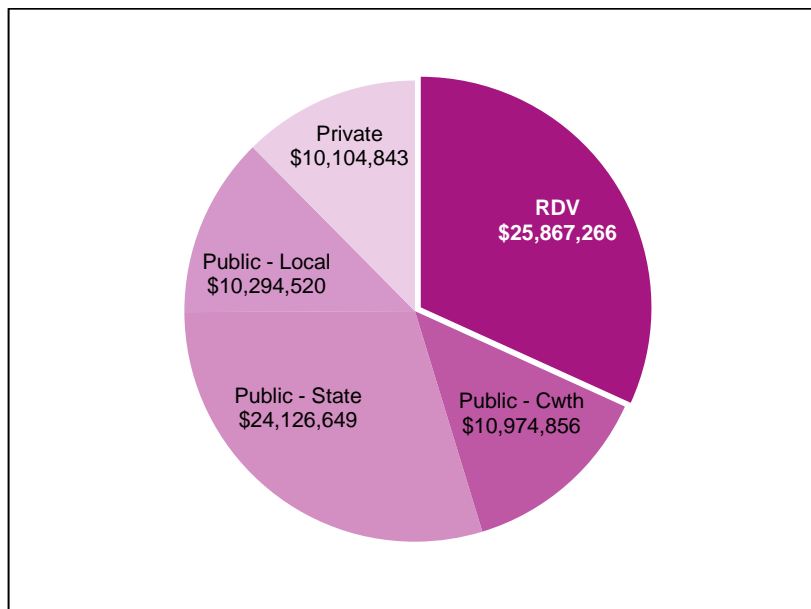


projects. This in turn implies that some of the projects were sufficiently attractive in a commercial and/or strategic sense to gain substantial funding from elsewhere.

With 68% of funding coming from other sources, we can conclude that RDV funding encourages investment from other sources. Other government sources account for \$45 million of total funding, with the majority coming from Commonwealth Government and other State Government (non-RDV) sources (13% and 30% respectively). Private funding accounted for \$10.1 million, or approximately 12% of total investment.

Figure 5 illustrates the distribution of funding for all of the projects analysed as part of this evaluation.

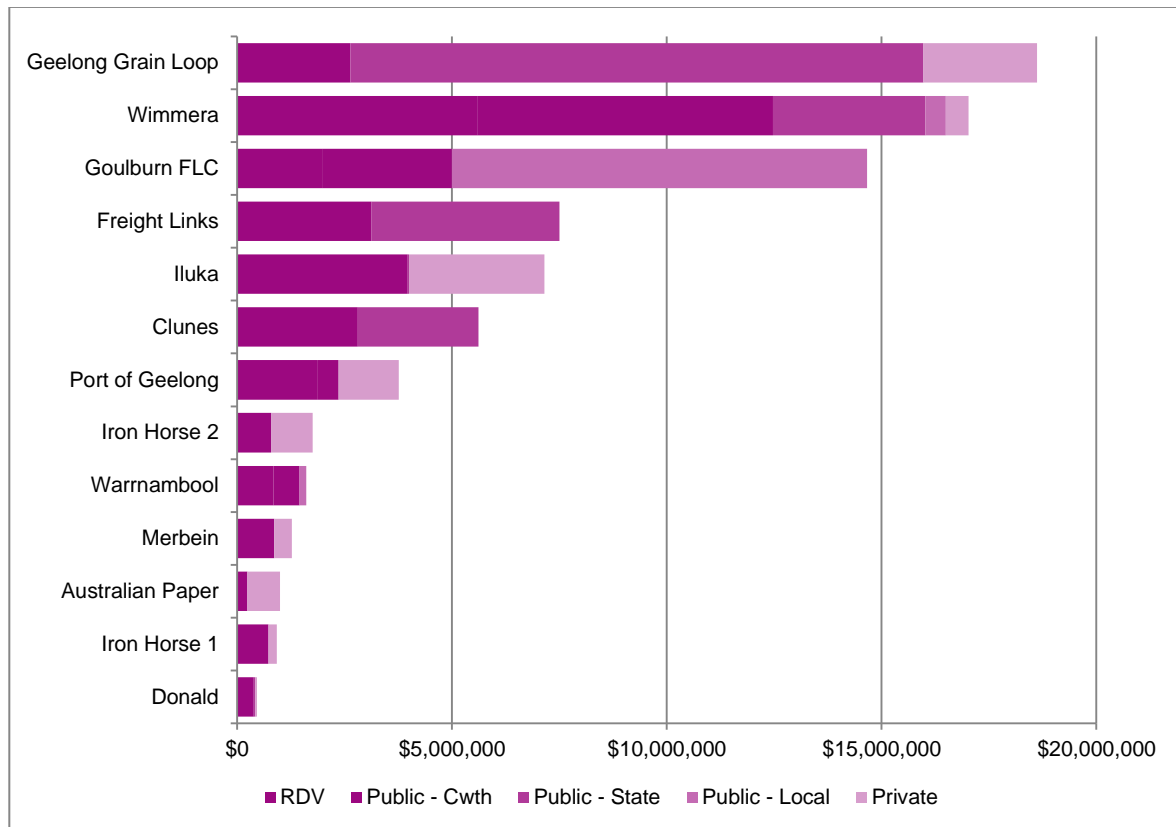
**Figure 5** Distribution of funding by sources



It should be noted that the mix of funding varies considerably by project. Commonwealth Government and other State Government funding were leveraged in only four projects. In these projects, both of these sources accounted for a majority of funding in most cases. For instance, for the Port of Geelong projects, other State Government (i.e. non-RDV) funding accounted for 60% of all investment. By contrast, other State and Commonwealth Government funds accounted for 30% and 13% of total project investment.

Figure 6 displays the investment mix by individual project.

Figure 6 Investment mix by Project



Overall, the regional rail and intermodal terminal projects have successfully leveraged funding and as a group, have more than met the requirement for at least matching funding from non-RDV sources.

**4.3.3 Land use**

The land use analysis considered the extent to which the investments have led to higher value land use at the project site (in practice, at the intermodal terminal sites) and/or have generated precinct development around the terminals.

There is minimal evidence to indicate that the regional rail and intermodal terminal projects have led to significant changes in land use, in terms of increasing the value of land use at or around each site. In particular, there is insufficient data to provide details of the value of land use changes.

That said, several of the projects have led to a greater intensification of activity on site, and one project forms a core part of council precinct and economic development planning.

A summary of those projects which fall into this category are outlined into these two categories is outlined below.

**Table 15 Land use benefits summary**

Land use benefits	Port of Geelong	Iron Horse	GVFLC	Donald	Iluka	Wimmera IFT	Warrnambool	AP – Mayvaley	Level Crossings	Clunes
Land use benefits on site		✓		✓		✓				
Land use benefits within precinct						✓				

*Intensification of land use*

Three of the projects have resulted in an intensification of land use. This means that the types of activities taking place at the site has intensified, i.e. the type of activities taking place has increased and/or higher value activities are taking place on site. These are:

- Iron Horse intermodal – linked to the range of RDV investments at Iron Horse has been a series of other, related investments by Wakefields at the site. These have included additional storage and warehousing, as well as the development of additional services including packing, cold storage, AQIS accreditation, spraying and fumigation and cargo tracking. These services have been, in large part, enabled by the infrastructure investments supported by RDV, or have complemented the diversification of the site
- Donald Intermodal – the RDV investment has confirmed the continued operation of the Donald intermodal facility, and since 2007, Peaco has invested a further \$2 million in warehousing and storage. This has increased the volume and type of goods that can be stored on site and shipped from the terminal
- Wimmera Intermodal – the new terminal has a range of storage facilities, as well as the capacity to handle both containerised and bulk cargo. This represents a significant increase in the type of services offered compared with the old terminal site.

*Precinct development*

The Wimmera Intermodal project is a key component of urban planning for Horsham Rural City Council (HRCC). In particular, the Intermodal project is a key component of two different plans:

- Removal of the old terminal adjacent to Horsham CBD is integral to the *Horsham North Urban Design Framework*. This framework, which outlines a plan to revitalise North Horsham, sees the old terminal area being redeveloped for commercial and residential use. This vision cannot be realised without the development of the new terminal and the closure of the old terminal
- Council is also seeking to promote the development of an industrial precinct (incorporating warehousing, storage, processing and other services) adjacent to the new terminal.

While these plans are yet to be realised, Council is now preparing urban and economic development plans on the basis of the new Wimmera Intermodal facility.

*Conclusion*

Some projects have resulted in an intensification of land use at intermodal terminals (with a concomitant increase in the value of activities taking place at the site), the main ones being Iron Horse (Merbein), Wimmera and Donald. Overall, however, the projects have not yet been a catalyst for development of their respective precincts. That said, precinct development can take years to realise, and it may be too soon for this level of development to have taken place.

**4.4 Network benefits**

Network benefits refer to the benefits to the broader rail freight network, above and beyond the impact at a particular project site. This includes impacts on the cost and reliability of rail freight (supply chain impacts) and the extent to which the projects have encouraged (or maintained) a shift to rail from road freight (whole of network benefits). Both of these benefits enable rail to compete more effectively against road freight and contribute to the sustainability of the rail freight network.

#### 4.4.1 Supply chain impacts

The supply chain impacts considered were the extent to which projects had:

- Led to reductions in the cost of freight by rail
- Increased the reliability of freight.

The analysis below is largely drawn from stakeholder consultation. Not all of the projects could provide monetised estimates of cost reductions, and none could provide sufficient data to enable a monetised estimate of enhanced reliability. Nevertheless, stakeholder feedback was sufficient to enable us to assess the overall impact of each project (and by extension, all of the projects) on the effectiveness and efficiency of rail supply chains.

##### *Reduction in freight costs*

At least eight projects (representing four different sites) appear to have had a positive impact on freight costs, with one project (the level crossings project) potentially having had a positive impact on freight costs (there is insufficient data to be definitive). This means that, of the 11 projects that were freight-focused and have been completed (the two exceptions being Clunes railway station and the GVFLC), 73% have had a positive impact on freight costs, with 9% (one project) potentially reducing freight costs, a total of 82% overall.

In terms of individual projects:

- Both projects at the Port of Geelong had a positive impact total freight costs by reducing the need for modal change during the freight task. The key driver of this outcome was the extension of standard gauge rail and the linking of both the grain loop and Incitec Pivot Limited siding and Midway facility (through the Corio Independent Goods Line) to the main goods line
- The Iron Horse projects have significantly reduced the costs of rail freight, driven largely by increased capacity for loading and improved infrastructure
- The works at Donald Intermodal have enabled a price reduction in the costs of loading per container. This is driven by the new gantry, and the ability to continue operations in inclement weather
- The Iluka project has reduced the costs of shipping mineral sands, mainly through the ability to load and unload wagons more efficiently.

##### *Improvements in freight reliability*

Overall eight separate projects (representing six project proponents) had a positive impact on freight reliability, a total of 64% of completed freight-focused projects (seven out of 11 projects).

Improvements in reliability refer to a number of different impacts, including:

- Reduced delays or likelihood of delays because of equipment malfunction or failure at intermodal terminals
- Reduced delays or likelihood of delays because of poor weather conditions. Projects such as Donald Intermodal provided hard surfaces for work areas that previously could be affected by wet weather.

In terms of individual projects, outcomes included:

- Iron Horse Intermodal – the three Iron Horse projects collectively modernised and improved the reliability of sidings, gantries and associated loading equipment. The works mean that equipment is much less prone to breaking down, and there is greater reliability during high intensity periods
- Donald Intermodal – the works, particularly with the hard surfaces, have meant that the work at the terminal can now be undertaken with all climatic conditions. Previously, work needed to be halted or slowed during very wet periods
- Wimmera IFT – the new Wimmera IFT contains modern, efficient equipment for loading containers and bulk. The old terminal has ageing infrastructure (sidings, loading areas and gantries), which were less reliable and more prone to break down
- Warrnambool Intermodal – the Warrnambool terminal has become more reliable through the enhanced layout of the site. In particular, the reconfiguration has meant that trucks can enter and leave the site more efficiently, reducing delays and the potential for accidents

- Maryvale rail spur bridge – the replacement of the rail spur bridge has significantly enhanced the reliability of the rail link between the Maryvale plant and the main line at Morwell. The bridge is no longer suffering from subsidence, or is at risk from extreme weather events such as floods.

### Summary

A summary of the impacts is illustrated in the following table. Those projects where a positive impact was realised (or partially realised) have been highlighted.

**Table 16 Supply chain impact benefits summary**

Supply chain impacts	Port of Geelong	Iron Horse	GVFLC	Donald	Iluka	Wimmera IFT	Warrnambool	AP – Maryvale	Level Crossings	Clunes
Reduction in freight costs	✓	✓		✓	✓				✓	
Improvements in freight reliability		✓		✓		✓	✓	✓		

### 4.4.2 Whole of network benefits

Whole of network benefits refers to the extent to which projects have encouraged a mode shift from road to rail freight transport.

Most of the intermodal terminals have supported the use of rail freight, or are likely to do so in the future. Indeed, all of the projects, with the exception of Clunes railway station, were wholly or partially seeking to support the use of rail freight in Victoria. The following table summarises the projects that have supported the use of rail freight.

**Table 17 Projects supporting use of rail freight services**

Supply chain impacts	Port of Geelong	Iron Horse	GVFLC	Donald	Iluka	Wimmera IFT	Warrnambool	AP – Maryvale	Level Crossings	Clunes
Projects supporting rail freight	✓	✓		✓	✓	✓	✓	✓	✓	

All of the completed intermodal projects (100%) have supported the viability and competitiveness of the rail freight industry. This support has included freight handling cost reductions, and improved efficiency and reliability.

## 4.5 Environmental impacts

As noted in Section 4.2, environmental externalities were considered as part of the CBA. In particular, the mode shift to rail from road has driven significant environmental benefits in terms of reductions of greenhouse gas and noxious emissions (valued at \$11.5 million and \$16.0 million respectively).

Greenhouse gas emission reductions were identified in nine of the 13 projects (Port of Geelong, Iron Horse, Donald, Iluka, Maryvale and Clunes). Based on the estimated benefit value of greenhouse gas emission, we have calculated the total greenhouse gas reduction to be 274,708 tonnes.

It should be noted that these outcomes have in part been supported by the MSIS. Three of the regional intermodal project operators have received funding under this program, those being:

- Wimmera Container Line (WCL) for Wimmera IFT
- Wettenhalls for Warrnambool Intermodal
- Wakefield for Iron Horse Intermodal.

This may mean that, while the outcomes described above can be ascribed to the regional rail and intermodal projects, they have also been supported by the MSIS.

Greenhouse gas emission reductions by project are outlined below.

**Table 18 Greenhouse gas impacts, RDV-funded projects**

Project	Tonnes of CO2		Value of CO2 (Discounted)
	Total	Per annum	
Port of Geelong	14,688	2,448.0	\$682,000
Iron Horse	78,249.6	7,825.0	\$3,455,000
Donald	4.3	0.4	\$7,000
Iluka	19,468.8	1,946.9	\$806,000
Maryvale (AP)	157,219.1	15,721.9	\$6,353,000
Clunes	5,077.9	507.8	\$201,000
<b>Total</b>	<b>274,708</b>	<b>n/a</b>	<b>\$11,504,000</b>

Greenhouse gases were estimated over a ten year operational period for each relevant project (the exception is Iluka, where the estimated operating life was six years only). All values have been discounted to 2013 dollars.

For the purpose of assessing the environmental impacts, it has been assumed that the greenhouse gases emitted by rail per unit of freight task follow the calculation demonstrated in Table 19.

**Table 19 Greenhouse Gas Emissions Parameters**

Mode	CO@ emitted – g/NTKM
Road	71
Rail	23
Saving	48

The same report used for calculating the project externalities (Bureau of Industry, Transport and Regional Economics "*Competitive Neutrality between Road and Rail*, Working Paper 40) has been used as a source for the amount of CO2 emitted for both rail and road. The difference between these figures presents the potential emissions saved from a mode shift from road to rail.

The saving in the table above has been converted to tonnes and applied to the freight task (in NTKM) which has shifted from road to rail.

## 4.6 Overall MCA assessment

Overall, the regional rail and intermodal projects have been effective. An assessment against KPIs is outlined below.

Table 20 Assessment for effectiveness

Key performance indicator	Rating	Rationale
<b>Economic impacts of regional rail projects</b>		
Benefits and costs of regional rail projects	●	Regional rail and intermodal projects overall exhibited a strong net benefit, including: <ul style="list-style-type: none"> <li>- Total project benefits of \$176.2 million in NPV terms, and net benefits of \$132.7 million in NPV terms</li> <li>- A BCR of 4.05 for all projects. For RIFIP projects, the BCR was 3.67, and 4.20 for non-RIFIP projects.</li> </ul>
Total increase in freight capacity	●	There has been a substantial increase in freight capacity. Of the seven projects which increased capacity, the total increase was in the order of 233%, or over 42,000 TEUs annually.
Economic impact regional rail projects	●	Regional rail and intermodal projects have delivered a substantial net economic benefit to the State, including: <ul style="list-style-type: none"> <li>- A total estimated net economic benefit of \$154.6 million. This is over the period 2001-2021</li> <li>- This comprised \$67.3 million in economic impact from the construction phase and \$87.3 million from the operational phase.</li> </ul>
Employment impacts	●	Estimated employment impacts from the regional rail and intermodal projects are also substantial. These are: <ul style="list-style-type: none"> <li>- Total employment impacts were estimated at 1,957 over the period 2001-2021</li> <li>- Estimated first round employment impacts were 513 jobs</li> <li>- Flow-on employment impacts were estimated at 1,443.</li> </ul>
Extent to which projects leveraged funding from other sources	●	The regional rail and intermodal projects have successfully leveraged funding from non-RDV sources. Overall, 68% of total project funding came from sources other than RDV, well above the requirement of a minimum of 50% (matching funding) from other sources.
Extent to which the investments have led to higher value land use at terminals or elsewhere	◐	While some of the projects have resulted in an intensification of land use (through higher value uses) at terminal sites, they have not been a catalyst for broader precinct development.
<b>Network benefits of regional rail projects</b>		
Supply chain impacts	●	There have been a number of positive supply chain impacts. These include: <ul style="list-style-type: none"> <li>- Eight of the 13 projects have contributed to a reduction in freight costs</li> <li>- Seven of the 13 projects have increased rail freight reliability, mainly through improved and modernised infrastructure and equipment.</li> </ul>
Extent to which projects have encouraged mode shift towards rail	●	All of the projects, except Clunes railway station and the GVFLC have enhanced rail freight sustainability.
<b>Environmental benefits of regional rail projects</b>		
Decreases in greenhouse gas emissions	●	The regional rail and intermodal projects have reduced environmental impacts by supporting mode shift to rail freight. This has included: <ul style="list-style-type: none"> <li>- Reductions of greenhouse gas and noxious emissions (valued at \$11.5 million and \$16.0 million respectively)</li> </ul>

Key performance indicator	Rating	Rationale
		- Estimated reduction in greenhouse gas emissions of 274,708.
<b>Overall assessment</b>		
Overall assessment	●	The regional rail and intermodal projects have resulted in significant economic and environmental benefits to the State, as well as increasing the capacity and viability of the regional intermodal and rail freight network.

The regional rail and intermodal projects have generally met their economic and environmental objectives. Within this, however, the range of benefits from different projects has varied significantly, with certain projects such as Donald Intermodal, Port of Geelong and Iron Horse Intermodal exhibiting substantially higher returns on investment than some other projects.

If a common thread is to be drawn between those projects which exhibited higher returns on investment, it was that the most successful in cost benefit terms were those that supported the development of existing, commercial enterprises. For instance, the highest BCRs (Donald Intermodal, Iron Horse Intermodal and Port of Geelong) all benefitted existing terminal operators. Additionally, they enhanced terminals that we already operating, and did not need to build up a business base from scratch.

By contrast, those projects which did not exhibit a strong BCR and/or have had limited outcomes to date were generally those that:

- Were at a greenfields site (Wimmera IFT), or sought to reactivate a brownfields site (Iluka)
- Where the driver of the project (often the Department of Transport or a council) was not the ultimate operator. This disconnect between ultimate proponent and operator meant that projects had additional commercial dependencies (and risks) which other projects did not have.

The message from this finding is that, for future projects of this nature, there should be a commercial operator driving the project and the outcome, as far as practical. While projects may still realise positive outcomes without an operator up front, realisation of net benefits may take longer to occur.

**Recommendation 1: For greenfield intermodal terminals or disused terminals, that RDV require any future projects to have a terminal operator to be the project proponent, or a part of the proponent group, to ensure that a sound, market tested commercial model is developed up front.**



## 5.0 Assessment of efficiency

### 5.1 Overview

This section of the report considers the administrative efficiency of the regional rail and intermodal terminal projects. It addresses the following evaluation question:

- Was the administrative process for regional rail efficient?

This evaluation question was assessed through consideration of stakeholder perceptions of RDV grant processes, and the extent to which the RDV processes were appropriate in terms of financial and risk controls. This section also highlights stakeholder perceptions about strengths and weaknesses of RDV's management of the RGF/RIDF program.

### 5.2 Project proponent satisfaction with project administrative and governance processes

A high level summary of RDV project administrative processes (from the perspective of project proponents) was outlined in Section 2 of the report.

Project proponents were asked to provide feedback on three elements of RDV's administration and governance of regional rail and intermodal terminal projects. These were:

- Satisfaction with the application and approval stages
- Satisfaction with the reporting and monitoring stage
- Satisfaction with the acquittal and follow-up stage.

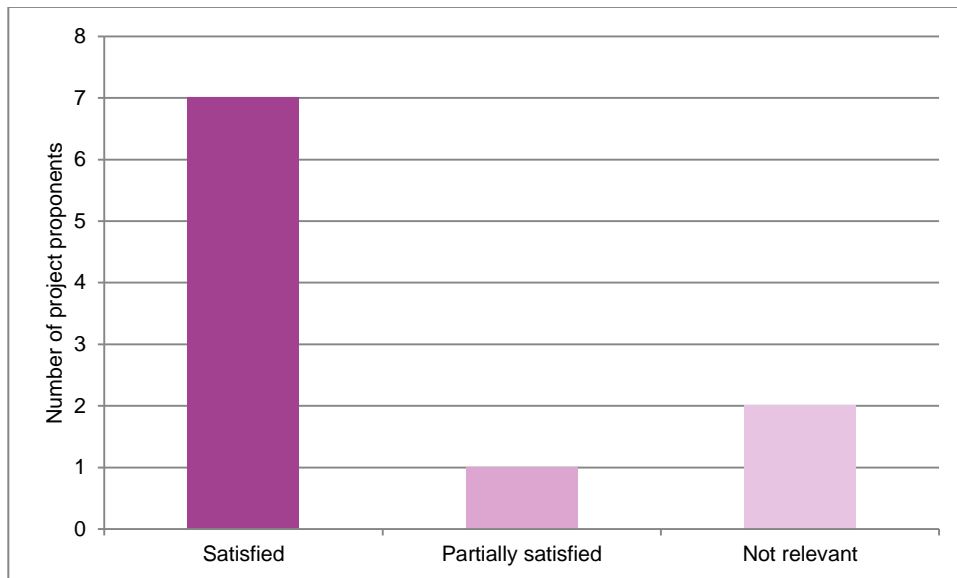
Overall, there were 10 different project proponents. The three Iron Horse projects had the same proponent (Wakefield), as did the two Port of Geelong projects (Department of Transport). For the purposes of analysis in this section, therefore, there were a maximum of 10, rather than 13, responses.

#### Application and approval stages

Most proponents were satisfied with the application and approval processes for RDV. A total of 7 out of 8 proponents (88%) who could provide a perspective were satisfied with the application and approval processes, and one out of 8 was partially satisfied. This is illustrated below. Additionally:

- Because of staff changes over time, there was no corporate memory for two project proponents (Port of Geelong and level crossings. The Department of Transport was the proponent in both instances)
- The reason for the partially satisfied response was that the application and assessment process was slow and that the information sought appeared to be excessive.

**Figure 7 Project proponents, level of satisfaction with the application and approval stages**

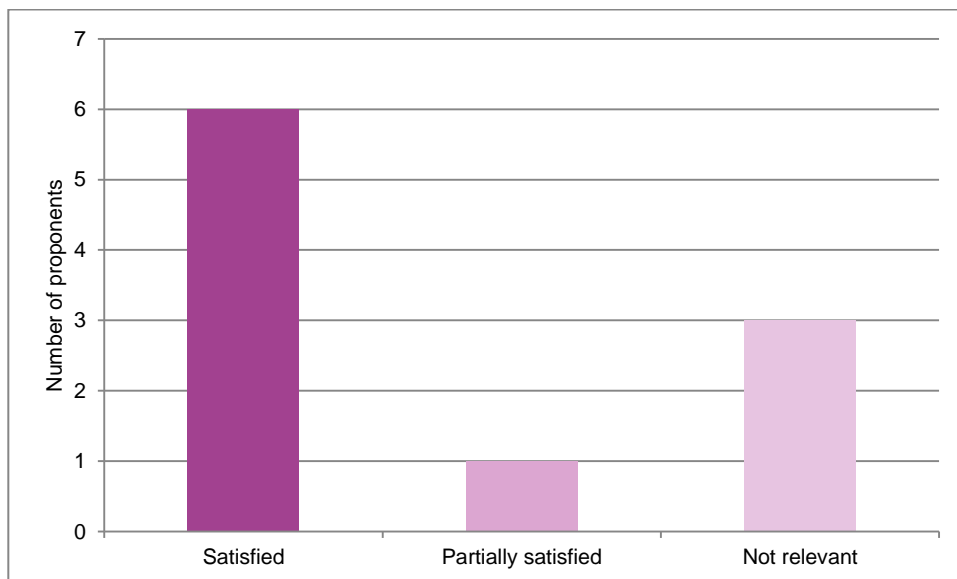


**Reporting and monitoring stage**

There was a high level of satisfaction with the reporting and monitoring processes for RDV projects. A total of 6 out of 7 proponents (86%) who could provide a perspective were satisfied with the reporting and monitoring processes, and one out of 7 was partially satisfied.<sup>7</sup> Consistent with the application and assessment stages, the reason for partial satisfaction was the high level of complexity and detail sought in milestone reporting from RDV.

The results are illustrated in the figure below.

**Figure 8 Project proponents, level of satisfaction with the reporting and monitoring stage**



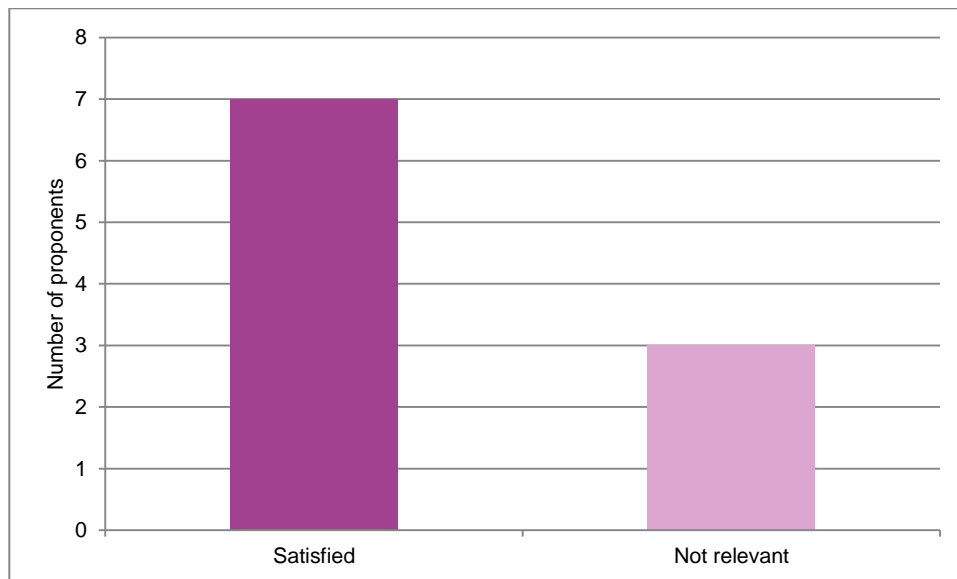
**Acquittal and follow-up stage**

Consistent with the results from the application, approval, reporting and monitoring stages, there was a high level of satisfaction with the acquittal and follow up stage of the grant process. Of those project proponents who were

<sup>7</sup> The three proponents who could not answer this question were for the Port of Geelong, level crossings and Goulburn Valley IMT. In the latter case, no comment could be made because the project is yet to commence.

able to provide feedback on this issue, 7 out of 7 (100%) reported being satisfied with the process of acquittals and final reporting. This result is illustrated below.

**Figure 9 Project proponents, level of satisfaction with the acquittal and follow-up stage**



### 5.3 Strengths and weaknesses of RDV processes

As part of the consultation process, stakeholders were asked to provide an assessment of the strengths and weakness of RDV's management of the grant process. Please note that this feedback was not focused on any particular stage of the process.

Given the high level of satisfaction overall with RDV management processes, there were relatively few areas of strength and weakness identified. We have, nevertheless, categorised and analysed the feedback received below. Please note that:

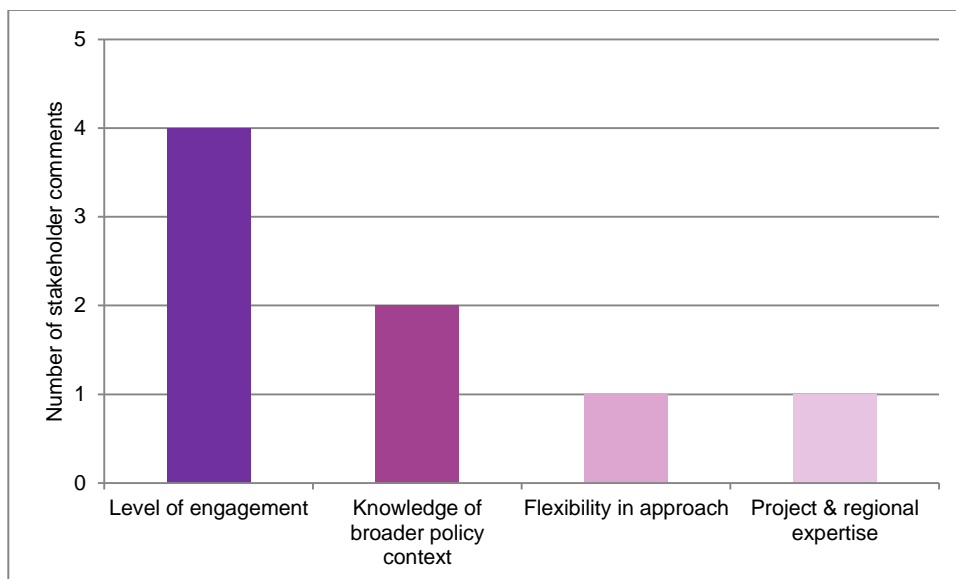
- Feedback was sought from all stakeholders interviewed, not just project proponents
- The number of comments differed, with some stakeholder providing no feedback, and some providing multiple comments.

#### Strengths

Overall, there were eight specific comments about RDV's strengths throughout the grant process. These can be classed into four categories:

- Level of engagement – the engagement from RDV (particularly the project manager) was open, constructive and extensive. Stakeholders felt that there was good communication with RDV at different stages during the project
- Knowledge of broader policy context – stakeholder considered that RDV was able to provide useful advice on how a project linked to broader State and Commonwealth objectives and priorities, which strengthened the likelihood that a project would receive funding
- Flexibility in approach – at least one stakeholder noted that RDV showed considerable flexibility in its approach, for instance, being willing to renegotiate timelines and funding arrangements as the need arose
- Project and regional expertise – one stakeholder noted that the RDV project manager demonstrated a high level of knowledge of the region and of the project in question. This meant that RDV was easy to work with, and made the application and reporting requirements for the project more straight forward

The results of the analysis are illustrated below.

**Figure 10 RDV strengths identified by stakeholders**

Overall, the key RDV strengths identified by stakeholders were:

- The high level and quality of engagement with project proponents and stakeholders throughout the duration of the project
- The knowledge of government policies, processes and objectives, which particularly assisted stakeholders in the application and assessment processes.

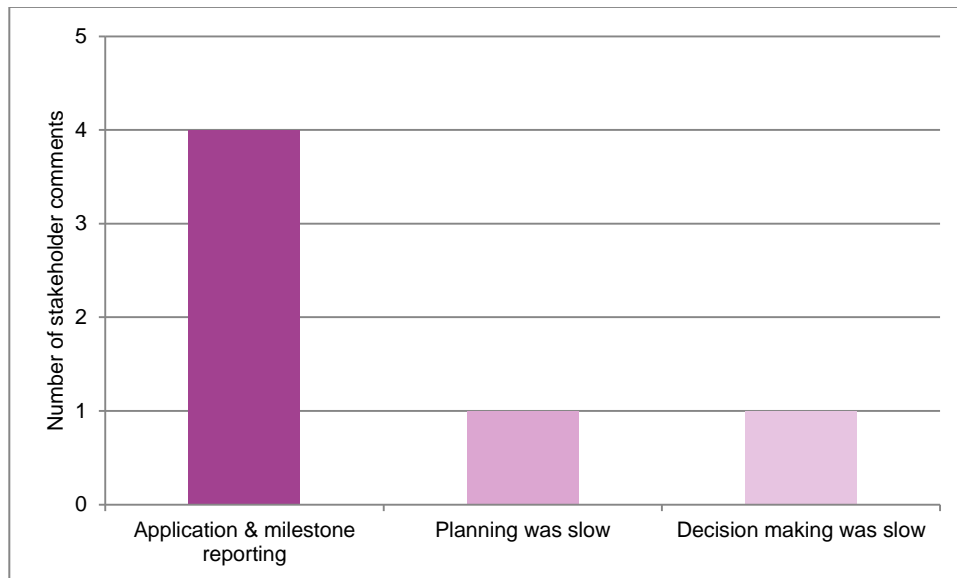
#### Areas for improvement

There were only six suggestions about how RDV's management of the grant process could be improved. These have been categorised as follows:

- Application and milestone reporting – some stakeholders found that completion of the application and milestone reporting reports was challenging. While they recognised why RDV sought the information in detail, several stakeholders considered it unnecessarily onerous
- Slow planning process – one stakeholder noted that the planning process for the project was very slow. This was not a result solely of RDV, however, and in part reflected the complexity of the project and the number of stakeholders
- Slow decision making process – one stakeholder felt that the decision making process was slow, and this delayed project commencement.

The results of the analysis are illustrated below.

Figure 11 RDV potential areas for improvement, identified by stakeholders



Overall, the key negative issue for stakeholders was the complexity of completing the RGF application form and milestone reporting.

As a general rule, RDV offers significant support to stakeholders throughout the application, assessment and reporting processes. Nevertheless, it is worth highlighting the need for RDV to continue to provide support for project proponents to meet reporting requirements.

**Recommendation 2: RDV continue to provide support for project proponents to meet reporting requirements during the application and milestone reporting phases of a project.**

## 5.4 Extent to which financial and risk controls were appropriate

Victorian Government agencies are required to establish and maintain high levels of controls, transparency and accountability in the management of grant programs.<sup>8</sup> The extent of adherence to these principles is regularly audited by the Victorian Auditor-General's Office (VAGO) through its annual performance audits. Because of the significant sums of public money involved, RDV programs are regularly subject to audit, most recently in the 2012 review of the Management of the Provincial Victoria Growth Fund, which found that, *inter alia*:

- Assessment decisions were not always adequately documented
- There were weaknesses in RDV's risk management of programs
- The documentation and recording of all PVGF programs and activities was not complete.

While these do not appear to be issues for the RGF, it highlights the need for RDV to ensure that financial, risk and governance for all grant projects is as effective as possible.

In reviewing the financial and risk controls used for RGF/RIDF projects, we have adapted Commonwealth Government guidance on the management of grant programs, *Commonwealth Grant Guidelines* (June 2013), issued by the Department of Finance and Deregulation (DOFD). We have adopted this approach because:

- An external benchmark is an effective way of assessing RDV approaches to financial and risk management
- There are no equivalent whole of Victorian Government guidelines for the management of grants programs
- The DOFD guide provides a detailed and comprehensive (and up to date) framework on 'best practice' for grant governance and accountability.

<sup>8</sup> [www.audit.vic.gov.au](http://www.audit.vic.gov.au)

To assess the DOFD criteria, we have used a simple assessment system, where RDV practice is consistent with, or not consistent with, DOFD guidelines. The table below outlines the rating system used.

**Table 21 Assessment rating for risk and financial controls**

Assessment Score	Definition
●	RDV practice is consistent (or exceeds) DOFD guidelines
○	RDV practice does not meet DOFD guidelines

The assessment against each of the elements of DOFD good grant management practice is outlined below. For each, we have rated RDV and provided a rationale for the rating.

**Table 22 Elements of good grant program management, adapted from the Department of Finance and Deregulation**

Element (DOFD guidelines)	Rating	Rationale
<i>Governance and accountability</i>		
Roles and responsibilities are clearly defined for staff involved in the grant process	●	RDV has a number of clearly defined roles throughout the grant process, from application through to acquittal. These are documented in: <ul style="list-style-type: none"> <li>- The suite of RGF guidelines</li> <li>- The detailed RGF process map, which clearly outlines roles and responsibilities at different points in the process.</li> </ul> <p>Key staff with defined roles include the RDV project manager, the Executive Director – Infrastructure, the CEO, the Minister and the IDC.</p>
Role of grant recipients is clearly documented	●	RDV has provided very clear documentation about the role and expectations of recipients. These are documented in: <ul style="list-style-type: none"> <li>- RGF guidelines (both general and for sub-programs)</li> <li>- Verbal guidance provided to potential recipients</li> <li>- The application form and instructions</li> <li>- The legal agreement between recipients and RDV.</li> </ul>
Appropriate policies and procedures have been developed for the administration of grants	●	RDV has comprehensive policies and procedures in place to manage RGF grants. These have been extensively documented and are available on the RDV website. Additionally, RDV has had a long-term program of reviewing, refining and updating policies to make them as robust and transparent as possible.
There is good record keeping for grants administration documentation	●	RDV keeps comprehensive paper and electronic records of RGF projects, including for the regional rail and intermodal terminal projects. <p>That said, some of the earliest rail projects (e.g. the 2001 Port of Geelong project) are not as well documented as more recent projects. This difference emphasises RDV's steadily improving record keeping and processes over time.</p>
Agency staff ensure that grant agreements are well drafted and fit-for-purpose	●	Grant agreements are subject to comprehensive legal agreements, which only allow for payments once certain milestones have been met. Additionally, any variations to the original contract (either in amount of funding or timing) need to be negotiated and signed off by the Minister for Regional Development.
Agreement should define project deliverables, schedule payments, specify reporting requirements and acquittal	●	RDV legal agreements: <ul style="list-style-type: none"> <li>- Define project deliverables and outcomes</li> <li>- Identify key milestones, at which funding will be paid to the</li> </ul>

Element (DOFD guidelines)	Rating	Rationale
procedures		<p>recipient</p> <ul style="list-style-type: none"> <li>- Outline the level of evidence to be provided at each milestone</li> <li>- Require recipients to take part in follow up acquittal activities (e.g. post-completion reports) and project evaluation</li> <li>- Outline any other parameters or pre-requisites (e.g. matching funding, property ownership agreements etc).</li> </ul>
Agency staff should ensure that grant agreements are supported by ongoing communication and active grant management	●	<p>RDV project managers have extensive engagement with project proponents before a formal application is lodged, throughout the duration of a project, and post-completion. Feedback from project proponents during the evaluation indicated that RDV project managers:</p> <ul style="list-style-type: none"> <li>- RDV managers undertake ongoing engagement and communication with recipients to monitor progress and ensure that projects are proceeding as planned</li> <li>- RDV project managers are approachable, and willing to engage with recipients to discuss a range of issues, such as project delays, stakeholder issues, and other areas of concern</li> <li>- RDV managers have a good understanding of the transport sector, and are able to discuss issues in an informed, empathetic manner.</li> </ul>
<i>Probity and transparency</i>		
Appropriate internal controls for grants have been established. This includes separation of duties and guards against fraudulent payments. Conflicts of interest are taken into account and avoided	●	<p>RDV has put in place a range of suitable internal controls for grants. These include:</p> <ul style="list-style-type: none"> <li>- Payments need to be approved by the Minister, following a recommendation from RDV and IDC</li> <li>- Within RDV, responsibility for grant payments is split, with necessary approvals from the RDV project manager, Executive Director and CEO.</li> </ul>
Clear and transparent processes have been established, which manage any misconceptions from external stakeholders about the integrity of the system	●	As noted above, RDV processes are robust, transparent and well-documented.
Competitive merit-based processes are used to allocate grants based on clearly defined criteria	●	The regional rail and intermodal projects, like other RGF/RIDF projects, are considered as part of a competitive funding process. At a minimum, these projects have had to meet the basic requirements for RIDF/RGF, and have had to be considered, and prioritised above, against other project proposals.
<i>Overall assessment</i>		
Consistency with grants management guidelines	●	Overall, RDV grant management processes, with regards to regional rail and intermodal projects, are in line with good grant management processes and procedures.

Overall, RDV performed strongly against the DOFD guidelines. While the above analysis can probably be applied to the management of RGF/RIDF rather than simply the regional rail and intermodal terminal projects, it reflects the findings of the desktop review, as well as feedback from project recipients and other stakeholders, both inside and outside government.

### 5.5 Overall assessment for efficiency

Overall, RDV processes for governance and administration of the regional rail and intermodal projects have been efficient. An assessment against KPIs is outlined below.

**Table 23 Assessment for efficiency**

Key performance indicator	Rating	Rationale
Number of project proponents reporting that processes were clear and effective	●	Overall, there is a very high level of satisfaction with RDV process from project stakeholders. This, combined with the feedback about RDV strengths and weaknesses indicates that processes are clear and effective.
Extent to which appropriate financial and risk controls were planned and used	●	RDV has put in place robust, detailed project and grant control mechanisms. These include: <ul style="list-style-type: none"> <li>- Separation of responsibilities in terms of approving and issuing grants</li> <li>- Multiple decision makers in the grant selection process</li> <li>- Robust reporting and record keeping standards</li> <li>- Transparent guidelines and processes</li> <li>- Clear and robust legal agreements with project proponents.</li> </ul> Overall, the RDV processes conform with guidance from the Department of Finance and Deregulation for the management of grant programs.
Overall rating	●	RDV's management of regional rail and intermodal terminal projects is efficient, and consistent with stakeholder expectations as well as external benchmarks for grant program management.

As noted above, there is only one recommendation, which is to continue to offer support and engagement to proponents during the application and assessment process. This will ensure that RDV is able to balance its need to meet VAGO requirements while ensuring that its applications processes are as straight forward as possible.



## 6.0 Case studies

### 6.1 Iron Horse Intermodal

The Iron Horse Intermodal is located at Merbein, just outside Mildura. The Wakefield Transport Group ('Wakefield') is a transport and logistics company which ships a range of commodities between Sunraysia and Melbourne, and which acquired the site in 1985. At the time the Iron Horse site had ageing, 220 metre long broad gauge sidings which could not be used with heavy modern machinery.

While Wakefield made a number of investments at the Iron Horse site, by 1999, when the freight operator V/Line was privatised, it could only be used to load 22 wagons rather than the standard 40 wagon train. This meant that trains had to be broken up to be loaded, a task which is time consuming and expensive. The new freight operator required Wakefield to increase its loading capacity to 40 wagons, which it could not do from Iron Horse without major modifications. At this point, the company recognised that the terminal was no longer fit for purpose.

More specifically, the site faced two key problems:

- The sidings needed to be extended to increase the capacity of the sidings to accommodate up to 40 wagons at once
- The infrastructure at the site was old and failing, and needed to be modernised and strengthened.

Wakefield was faced with the choice of either completely upgrading the terminal, or taking it out of business. Wakefield, therefore, commenced discussions with RDV, and ultimately three separate grants were approved (in 2003, 2009 and 2010).

In terms of infrastructure, the three Iron Horse projects resulted in:

- An extension of the sidings to 440 metres in length, with increased load bearing capacity, and an ability to load a 40 wagon train. Additionally, the sidings have been modified to be able to handle a variety of containerised goods (e.g. appropriate facilities on the sidings for the spraying of containerised citrus fruit)
- Replacement and upgrade of key infrastructure including:
  - Replacement of a rail crossing, which provides access to forklifts on both sides of the site
  - Having a power line put underground, to reduce hazards for forklifts and other vehicles travelling between sidings.
  - Hard standing along the rail loop lines to facilitate load/unload with the very heavy machinery used
  - Fully functional and operational grain storage and container loading facility to enable grain to be received, tested, graded and loaded into 2 foot shipping containers destined for international markets.

The projects have been very successful. Collectively, the works have enabled Wakefield to continue to transport containers by rail. In 2012-13, a total of 9,880 containers were shipped by rail from the site, including fresh fruit, almonds, wine and grain. Without the works to the site, containerised goods would have been trucked to Melbourne. Additionally, the RDV-funded infrastructure works have catalysed a range of other investments at the site, including specialised storage, warehousing and inspection facilities, making the Iron Horse intermodal the lynchpin of comprehensive, whole-of-supply chain logistics service for the region.

Other key outcomes of the Iron Horse investments have included:

- The cost of shipping has decreased significantly, making rail from Merbein more able to compete with road freight services
- The facility now has the ability to load 40 wagons with 30-40 tonnes of product each, without breaking up the train and loading in two shifts. This has increased efficiencies and reduced costs
- Employment at the site has increased from around 30 in 2003 to 82 in 2013
- Significant additional investment from Wakefield in warehouses, coolrooms and hardstand for containers
- The Iron Horse facility is now considered to be one of the key transport assets in Sunraysia, and is an important attractor to potential investors in the region.

These investments would not have been possible without RDV support.

## 6.2 Australian Paper – Mill Rail Spur

Australian Paper's Maryvale paper mill is located just north of Morwell, in the Latrobe Valley. It was constructed in 1937, and is Australia's largest integrated fine paper-making and packaging papers complex, producing more than 500,000 tonnes of paper every year.

RDV supported the construction of a new rail bridge between the mill and the main line at Morwell. A spur line connects the mill with the main line, and is a critical component of Australian Paper's transport and logistics network. The spur line passes over the Waterhole Creek, and the bridge was deteriorating over time, with Australian Paper estimating the spur line was costing more than \$250,000 per annum to maintain.

In early 2010, it became clear that the rail bridge was suffering from subsidence. An inspection confirmed this to be the case, and while it was temporarily repaired and re-opened, speeds were reduced on the bridge, and it had to be inspected weekly. In addition to the impact on Australian Paper's logistics operations, the reduced speeds meant that the level crossing at the nearby Old Melbourne Road was closed for up to 20 minutes at a time while the train crossed, imposing significant impacts on local traffic.

After examination, it was recommended that the bridge be replaced because it had not been designed to handle the frequency and weight of trains that needed to use it. At this point, Australian Paper had two options – to switch all its freight to road, or to find funds to replace the bridge.

Australian Paper approached the Victorian Government through the then Department of Transport, and was referred to RDV. Australian Paper and RDV quickly reached agreement on a project; speed was needed in this instance, because the sub-standard rail bridge was adversely affecting freight operations.

The new bridge became operational in early 2011, and has been a success. Key outcomes of the project include:

- 260,000 tonnes of paper product continues to be freighted by rail rather than road, resulting in the saving of 2,146 tonnes CO2 equivalent, and reduced wear and tear on local roads
- The new bridge is built for rail freight of this nature and is now fit-for-purpose. Australian Paper has observed that the old bridge would not have survived the 2011 Gippsland floods
- Rail speeds have increased, meaning that the level crossing at Old Melbourne Road is shut for three minutes at a time, rather than up to 20 minutes before the rail bridge was repaired.

## 7.0 Conclusions

Overall, the regional rail and intermodal terminals have returned significant economic, transport and environmental benefits to the State.

As a group, the projects exhibited a positive net economic benefit to the State of an estimated of \$132.7 million in NPV terms. Total economic benefits were estimated at \$176.2 million in NPV terms. This impact represented:

- A BCR of 4.05 for all projects
- For RIFIP projects, a BCR of 3.67, and 4.20 for non-RIFIP projects.

Other direct benefits have included:

- A substantial increase in freight capacity. Of the seven projects which increased capacity, the total increase was in the order of 233%, or over 42,000 TEUs annually
- An intensification of land use (through higher value uses) at several terminal sites
- Enhancement of rail freight competitiveness and sustainability. Eight of the 13 projects have contributed to a reduction in freight costs, and seven of the 13 projects have increased rail freight reliability.

The estimated economic impact totalled \$154.6 million for the period 2001-2021, comprising \$67.3 million in first round impacts and \$87.3 million in flow-on impacts.

This economic impact represented estimated employment impacts of 1,957, comprising estimated first round employment impacts of 513 jobs and flow-on employment impacts of 1,443.

Additionally, through consolidating or encouraging modal shift to rail freight, projects have had a net positive environmental impact, including a reduction in greenhouse gas emissions valued at \$11.5 million (and representing an estimated 274,708 tonnes), and a reduction in noxious gas emissions valued at \$16.0 million.

The regional rail and intermodal projects have also successfully leveraged funding from non-RDV sources. Overall, 68% of total project funding came from sources other than RDV, well above the requirement of a minimum of 50% (matching funding) from other sources.

While the outcomes have been positive overall, some projects exhibited much higher returns on investment than others. Typically, the most successful in cost benefit terms were those that supported the development of existing, commercial enterprises, including Donald Intermodal, Iron Horse Intermodal and Port of Geelong, which all benefitted existing terminal operators.

By contrast, those projects which did not exhibit a strong BCR and/or have had limited outcomes to date were generally those that were at a greenfields site (Wimmera IFT, Maryvale or the GVFLC), or sought to reactivate a brownfields site (Iluka), but which did not have an existing freight operator as the driver of the project.

This finding has resulted in the evaluation recommending that future projects of this nature need to ensure they have a committed commercial partner at the very start of the project. While projects may still realise positive outcomes without an operator up front, realisation of net benefits may take longer to occur.

**Recommendation 1: For greenfield intermodal terminals or disused terminals, that RDV require any future projects to have a terminal operator to be the project proponent, or a part of the proponent group, to ensure that a sound, market tested commercial model is developed up front.**

An additional observation is that some projects had very ambitious objectives. These included Wimmera IFT and the GVFLC, which sought to activate an entire precinct. Given the relatively small scale of the investment in each case, it may not be realistic to expect an intermodal terminal investment to act as a catalyst for precinct development, without long term industry or infrastructure support. This has been borne out by the experience of the Wimmera IFT, where the new terminal site is key to the Council planning for an adjacent industrial precinct, but without further funding and incentives, no new supporting infrastructure can be developed, and industry interest in locating at the precinct remains low.

In terms of program management, there is a high level of satisfaction from project proponents with RDV's management of the application, assessment, reporting and acquittal processes. Stakeholder feedback indicates that RDV processes are clear and effective.

RDV has put in place robust, detailed project and grant control mechanisms, which broadly conform with the guidance from the Department of Finance and Deregulation for the management of grant programs. There are no obvious major gaps in the management of regional rail and intermodal project grants.

Stakeholder feedback identified the key strengths of the RDV's management of the grant process to be:

- The high level and quality of engagement with project proponents and stakeholders throughout the duration of the project
- The knowledge of government policies, processes and objectives, which particularly assisted stakeholders in the application and assessment processes.

The key weakness in the grant management process was the complexity of completing the RGF application form and milestone reporting for some stakeholders. While this was an issue of concern for a minority of stakeholders, it is worth emphasising the need for RDV to continue to offer practical support for proponents during the application, assessment, implementation and follow up processes. Typically, RDV currently does this through mechanisms such as providing written and verbal advice on government expectations and requirements for written documents, meeting regularly with proponents and stakeholders to discuss the scope, function and design of projects, and working with proponents to address project delays and other challenges. We would strongly encourage RDV to continue to support proponents in this way.

**Recommendation 2: RDV continue to provide support for project proponents to meet reporting requirements during the application and milestone reporting phases of a project.**

## Appendix A: Stakeholders consulted

### Project proponents

Tony Bawden  
Director of Planning and Economic Development  
Horsham Rural City Council

Ronnie Calvert  
Murray Basin Commercial Manager  
Iluka Resources

Geraldine Christou  
Manager, Economic Development  
Greater Shepparton City Council

Paul Hamer  
Senior Policy Manager  
Department of Transport, Planning and Local Infrastructure

Colin Kemp  
Economic and Business Development Manager  
Horsham Rural City Council

Andrew Paton  
Executive Research Officer  
Warrnambool City Council

Phillip Porter  
National Supply Chain Director  
Australian Paper

Stephen Smith  
Deputy Director – Intergovernmental Relations  
Department of Transport, Planning and Local Infrastructure

Ken Wakefield  
General Manager  
Wakefield Transport Group

Shane Wall  
General Manager  
PeaCo

### Other project stakeholders

Gerard Aherne  
Construction Manager  
Department of Transport, Planning and Local Infrastructure

Antony Borgese  
Supply Chain Manager  
Cargill International

Allistair Boyce  
Wimmera Container Lines

Rodney Clark  
Principal  
Wimmera Container Lines

Craig Cochrane  
Terminal Manager  
GrainCorp Ltd

Warwick Loft  
Managing Director  
Wettenhalls Group & Westvic Container Handling Pty Ltd

Anne Mansell  
Chief Executive Officer  
Mildura Development Corporation

Lachlan McDonald  
Executive Director – Intergovernmental Relations  
Department of Transport, Planning and Local Infrastructure

Malcolm Southwell  
A/g General Manager, Rail and Intermodal (II)  
Department of Infrastructure and Regional Development

