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Fixing Country Roads - Program Evaluation Final Report

ARRB Project No.: 017282

Author: Aidan McGann (MVA),
Simon Xue and Tim Martin
(ARRB)

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1.0

Summary

The Victorian State Government's Fixing Country Roads (FCR) Program was announced in the 2018-19 Victorian State Budget to provide grants to rural and regional councils for support of local road projects which were beyond regular road maintenance.

Rural Councils Victoria (RCV) initiated this evaluation to inform its engagement with the State Government on the outcomes the FCR Program has achieved to date and support rural councils to participate and maximise benefits for their communities from the grants.

The recommendations in this report are based on three types of analysis:

1. Quantitative assessment of the direct economic benefits and appraisal of the return-on-investment of representative projects selected from the first two rounds of the program
2. Qualitative assessment of the wider social and community benefits of the program that have not been captured as direct benefits
3. Comparison of the FCR program with other similar grants and identification areas of improvements in the administration process and approach of funding decisions.

The economic merit of seven representative projects selected from Rounds 1 and 2 of the Program were assessed based on the ATAP's guidance on cost-benefit analysis for transport projects. Out of these projects, five were road projects and two were bridge projects. A range of outcomes were obtained for these projects with their NPVs ranging from -\$746,558 to over \$4.25 million. Specifically, three of five road projects were assessed as generating positive returns and both bridge projects were also economically meritorious. The FCR Program as a whole was assessed as economically justified with an overall estimated BCR of 1.9 and an NPV of nearly \$80 million. This is a satisfactory result assuming the sample projects were representative of the whole program.

A social and community benefit assessment has identified a range of potential indirect positive impacts of the FCR programs including the avoidance of detours, enhancement of amenity, improved confidence with access and safety perceptions as well as flow-on impacts due to improved access for public transit and freight purposes.

In light of the quantitative and qualitative evaluation results of the FCR Program obtained in this report, comparison of the program with other similar grants have enabled the identification of eight potential opportunities for improvement that RCV may consider for future rounds of the FCR program. Specifically, we suggest the RCV advocate for the State Government to:

- develop a clearer framework of project outcomes in FCR guidelines (with worked examples and typical values). This could act as a prompt and opportunity for councils in the submissions process and a more objective evaluation framework.
- provide more advanced warning of grants schemes to assist councils to identify strategic priorities, undertake engagement and develop project submissions aligned with a more structured grants program.
- recognise that multi-year grants, like the Roads to Recovery program, are best placed to support councils to build meaningful forward programs and project development capabilities and anticipate future council financial contributions
- resource councils or regional groupings to develop pipelines of projects linked to regional strategies and council plans with accompanying evidence.
- consider programs involving capital investment need to provide sufficient time for project development, environmental, planning and cultural heritage approvals, engagement, local funding approvals,

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announcements, procurement and award, delivery and completion reports. Twelve months is not sufficient time to work through these project activities, often with seasonal restrictions on pavement work, and in a market heated from many councils competing for suppliers.

- publish information on the benefits and outcomes of the FCR program, not just project descriptions and costs, to better inform the community
- streamline the reporting obligation on councils under grants which impose an administrative burden which effectively duplicates the assurance provided under the Local Government Act 2020.
- pilot future SmartyGrants processes with a small number of councils to ensure the submissions process is efficient.

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1. Introduction

1.1 Background

The Victorian State Government's Fixing Country Roads (FCR) Program was announced in the 2018-19 Victorian State Budget to provide grants for rural and regional councils to support local road projects which were beyond regular road maintenance. It aimed to, "...assist councils improve the current state of their local roads to enhance the connectivity, reliability and efficiency of regional communities".

Regional Roads Victoria (RRV, part of the Department of Transport responsible for the operation and management of regional and rural arterial roads) has published descriptive information on the project locations, scope and funds expended in two rounds of the program. No evaluation has been published of either program round to date.

Rural Councils Victoria (RCV) recognises the importance of grants like the FCR to support councils in managing the condition of current roads and addressing gaps. RCV engages with the State and Federal governments to advocate for grants that are effective, efficient and sufficient to ensure local roads meet the immediate and vital needs for local communities, and safe and reliable access that the whole community depends upon.

1.2 Report Objectives

Rural Councils Victoria (RCV) initiated this evaluation to inform its engagement with the State Government on the outcomes the FCR Program.

The evaluation aimed to estimate the program benefits from the first two rounds (within the capacity of available information) and identify improvements in the process and approach of FCR and similar grants from the perspective of Victorian rural councils. Further, the project sought to advise on ways to enhance the strategic fit and effectiveness of initiatives and inform future grants processes.

The evaluation estimates the direct economic impact of the funded road and bridge improvements from the two rounds of the FCR program using a sample of typical projects scaled up to the state-wide level.

The evaluation also assesses the type and scale of social and community benefits which may be the objective of the grants or a by-product of the improvements. Rural councils have identified that economic analyses of direct cost savings for users or councils do not sufficiently capture the benefits they expect from FCR projects. A sample of projects has been qualitatively assessed to inform advice on opportunities to ensure social and community benefits are recognised and can be addressed in future grants or rounds of the FCR.

A comparison of the FCR program's focus, value, and process efficiency with similar programs from state and federal governments is provided. Observations on the application of recommendations from the Victorian Auditor-General's Office (VAGO) recent audit of local road maintenance for the findings of this evaluation are provided.

These findings should assist RCV to reflect upon the valued features of various grants schemes and inform the State Government on opportunities to improve the demonstrable benefits of projects, support councils to respond effectively and efficiently and avoid unnecessary process.

1.3 Context

Rural councils understand well the pressure of maintaining often extensive lengths of critically important local roads. In many cases, doing so with operating costs growing faster than revenues and community expectations rising faster again. The latest National State of the Asset estimated the replacement cost for local infrastructure nationally at approximately \$426B, of which 43% is attributed to roads and bridges by participating local governments (LG) which account for over 90% of the local infrastructure in Victoria (Australian Local Government Association 2018).

The VAGO report this year on Maintaining Local Roads noted \$870m was spent by Victorian councils in 2018-19 on local roads, equivalent to 10% of total expenditures.

Further challenges for rural councils include the limited scale economies for maintenance and investment, increased pressure for use of larger and heavier vehicles, safety, rapid emergency response and recovery, changing travel demands and service levels, while having limited capacity to respond to emerging issues and opportunities.

Grants are a critical part of rural councils' funding support, and they are very positively viewed by councils as delivering vital support for rural communities. Responding to grant requests, fulfilling the service and delivery expectations and administering them draws considerable resources from rural councils.

Councils in Victoria are subject to a newly defined robust governance framework set in law and regulations (the Local Government Act 2020), intended to provide community and government confidence in the capacity of local governments to deliver services, manage and invest in assets and account for resources. Clarified governance and accountability expectations, confirmed processes for audit and risk monitoring, strategic planning and stakeholder engagement and transparency were introduced in 2020 as the FCR Round 2 initiatives were being completed. This likely alters the context for future grants programs from the State Government, given the checks and balances already in place to manage risks of implementation.

1.4 Fixing Country Roads (FCR) Program

The FCR Program was developed to, "...assist councils improve the current state of their local roads to enhance the connectivity, reliability and efficiency of regional communities through projects such as:

- pavement quality improvements including, pavement rehabilitations and sealing of gravel roads
- reconstructing damaged roads, with priority given to strategic transport links or connections to essential community services
- bridge improvement works including bridge strengthening/replacement on strategic freight and tourist routes
- capacity upgrades to promote better traffic flow and journey efficiency and reliability including intersection improvements
- local road intersection improvements
- safety upgrades on local roads."

The FCR \$100m State Government fund was allocated in grants over two rounds in successive years and is now complete.

In Round 1, the program dispersed \$30.17m for 78 projects in rural and regional councils with a total estimated cost of \$34.48m. Rural councils contributed \$2.77m, regional councils \$1.41m and other funding sources accounted for the remaining \$0.13m.

In Round 2, the program dispersed \$68.29m for 106 projects across regional Victoria, co-funded on a 2:1 basis with rural councils and 1:1 for regional councils representing regional cities outside Metropolitan

Melbourne. The total estimated cost of Round 2 projects was \$115.12m. Rural councils contributed \$29.88m, regional councils contributed \$10.02m and others provided \$6.92m.

The State Government's costs of administration drawn from the fund were kept to a minimum through use of the SmartyGrants process.

Guidance was issued to councils with the first round although the process offered only weeks to respond at first and the support to assist councils was limited. The second round provided more support and time for councils to identify priorities and make submissions. Rural councils interviewed indicated officers of RRV were available to provide guidance on the grant processes, likely project types and reporting requirements.

RRV published two descriptive reports on the project locations, costs and council prepared proposals on the merits and scope of projects. An internal Department of Transport report was prepared by Remplan Consultants which estimated the total output, employment effects and value-add of the whole program (regional and rural). The Remplan Report was not released but was viewed by the authors.

Besides the Council submissions shared in the FCR Reports, there is no published information on the economic impact of the investments individually or collectively nor the broader impacts in securing reliable access to schools, social connections, the productivity of transport critical to business prosperity or safe egress in natural emergencies.

A previous State Government Country Roads and Bridges Program distributed \$1m annual grants to councils for similar initiatives and had been very popular with rural councils.

1.5 Structure of this Report

The remainder of this report is organised as follows:

- Section 2 outlines the methodology for this project
- Section 3 describes the approach, data, assumptions, and the results of the cost-benefit analysis
- Section 4 provides the analysis of social and community benefits
- Section 5 provides a comparative analysis between the FCR and other programs
- Section 6 concludes and provides a list of recommendations for RRV.

2. Methodologies

2.1 Project Classification

The project team initially separated details for regional and rural council projects under the FCR program and assigned projects to the relevant RCV/MAV regional groupings. This aided sampling and ensured assessments and interviews could be distributed among rural councils across the state.

Drawing on the project descriptions in the FCR reports (Regional Roads Victoria 2018, Regional Roads Victoria 2019), we identified 12 project types and, although the detail varied considerably, we judged the purpose and scope of projects and assigned a project type, as shown in Table 2.1. Table 2.2 shows the projects assigned by type and each region of rural councils.

Table 2.1: Classification of project types

Project type	Round 1	Round 2	Total
Design	11	0	11
Reseal Extension	1	2	3
Rehab, Reconstruct	18	17	35
Rehab, Reconstruct Widen	24	48	72
Bridge Replacement	2	8	10
Bridge Upgrade/Widen/Strengthen	3	5	8
Safety Intersection Upgrade	5	5	10
Safety Other (Pedestrians Guard Rails)	3	6	9
Sealing Unsealed Roads	9	13	22
Reseals & Widening	0	1	1
Shoulders Upgrade Widening	2	0	2
Resheet Unsealed	0	1	1
Total	78	106	184

Table 2.2: Project types in each region

Project type	North West	South West	North Central	South Coast	North East	Gipps /East	Total
Design	2	1	3	1	3	1	11
Reseal Extension	3	0	0	0	0	0	3
Rehab, Reconstruct	1	10	7	5	8	4	35
Rehab, Reconstruct Widen	21	5	12	12	17	5	72
Bridge Replacement	0	2	2	3	3	0	10
Bridge Upgrade/Widen/Strengthen	3	2	0	2	0	1	8
Safety Intersection Upgrade	2	0	0	1	7	0	10
Safety Other (Pedestrians Guard Rails)	1	0	0	3	4	1	9
Sealing Unsealed Roads	6	4	2	3	4	3	22
Reseals & Widening	0	0	0	0	0	1	1
Shoulders Upgrade Widening	0	0	1	0	1	0	2
Resheet Unsealed	1	0	0	0	0	0	1
Total	40	24	27	30	47	16	184

2.2 Project benefits

Projects under the FCR program generate a range of benefits. Most frequently they are direct cost savings in maintenance or lower costs borne by road users and reduced costs from crashes, offsetting the costs of investment, new maintenance, operation and administration of the projects by governments.

However, other benefits may be assumed or referenced although they can be measured. For example, the costs of diversions saved by a project. Other benefits may be outcomes or secondary impacts associated with an enhanced local economy, improved investment conditions, more attractive location for visitors, enhanced access which builds confidence of a community. They may be enabled by projects which save costs or reduce risks.

To address both economic performance and broader social and community impacts, we considered the presence of monetised, non-monetised and secondary impacts (as defined in the Australian Transport Assessment and Planning (ATAP) Guidelines (Australian Transport and Infrastructure Council 2018) based on the detail in the project description and project type. Cost-Benefit Analysis (CBA) addresses the monetised benefits and social and community assessments relate generally to the non-monetised and secondary impacts.

2.2.1 Cost Benefit Analyses

This project assesses the economic return of the FCR program applying a CBA to each of seven sample projects drawing on data in the FCR reports and additional data provided by rural councils.

The purpose of the CBA is to identify and quantify the economic benefits of seven representative sample projects and evaluate whether they have generated, or will generate, sufficient economic benefit to justify the project cost incurred.

The seven projects were drawn from across as many of the regions and most represented project types as practical. The net present value of benefits is then scaled-up to the program level to generate an overall picture of the program benefit (See Section Table 3.6).

See Section 3.1.4 for sample selection and Section 3.2 for detail on the CBA and findings.

2.2.2 Social and Community Impacts

Social and community impacts may include improved visitor attraction leading to greater retail and accommodation turnover, higher productivity for freight operations, improved or more reliable access for emergency services or egress in an emergency for residents, improved liveability and confidence in the safety of walking and cycling, enhanced community access to services and improved social cohesion with reduced isolation.

Benefits like these are important drivers for councils and agencies but they are less readily measured, requiring resources to estimate which currently can be beyond some councils. Council staff reflected to the project team the importance of not just relying on narrow direct economic benefits for projects providing wide community impacts.

Section 4 describes how we applied a social and community impact scale to all projects and then assessed a small sample of projects reflecting the most significant benefits (and one low benefit example for comparison) to illustrate the benefits and see opportunities to support councils referencing in future. The small sample assessment addresses the following questions:

- Are there primary monetised costs/cost savings associated with social and community impacts which could be practically measured in future to add rigor to appraisals and evaluations?

- Are there non-monetised impacts which may not be cost-effective to estimate but could be made more explicit in guidelines to guide evaluations and inform communities?
- Are there secondary impacts anticipated and how can these be more consistently referenced in future to aid project comparisons and judging of outcomes?

2.3 Council Interviews

Up to six interviews were proposed with rural councils to ascertain how the FCR program was perceived in terms of both the program's processes, effectiveness, and their ability to participate.

The interviews were loosely structured around several prompting questions and addressed the following:

- administrative efficiency and reporting obligations
- project scope flexibility
- the timeframe available and support for councils to participate
- the strategic relevance of proposals submitted and prior preparation of proposals
- whether sourced from asset maintenance initiatives, other project lists or developed at the time of the grant
- the availability of information and strategies/programs to support a proposal
- experience with project development and implantation
- comparison with other grant programs
- observations on any potential improvements they saw which would aid rural councils and State and Federal governments deliver the best value through infrastructure grants in the future.

The interviews also served to reinforce the value of the surveys circulated to a small number of councils to inform the economic analysis. The interviews involved senior staff from the following:

- Gannawarra Shire
- South Gippsland Shire
- Benalla Shire
- Moyne Shire
- Golden Plains Shire (with further observations from personal experiences at Mt Alexander Shire and City of Greater Geelong)
- Murrindindi Shire.

Appendix A documents the questions used in the interviews.

3. Economic Evaluation of Selected Projects

3.1 Purpose, Scope and Limitations

3.1.1 Purpose

An objective of this project is to assess the economic return of the FCR program. This assessment is undertaken in the form of Cost-Benefit Analysis for each selected project identified in Section 2 using data sourced from relevant councils.

The purpose of the CBA is to identify and quantify the economic benefits of each selected project and evaluate whether the project has generated or will generate sufficient economic benefit to justify the project cost incurred.

3.1.2 Scope

To evaluate the economic return of the FCR program, the scope of works of the CBA includes:

- identify an appropriate methodology for undertaking the CBA of selected projects identified in Section 2.
- estimate the cost of individual projects
- estimate the economic impacts (benefits and disbenefits) of individual projects
- calculate the economic return of individual projects in a spreadsheet model
- test the sensitivity of results with respect to key modelling assumption
- document the methodologies, data sources, assumptions, and the results of the CBA.

3.1.3 Limitations

Primary limitations of this report include:

- the accuracy of the CBA results is limited by the assumptions made to estimate the cost and benefits of individual projects
- CBA results are assessed and reported for individual projects selected for the program evaluation. It should therefore be noted that reported CBA results are an indicative, and not a precise, measure for appreciating the economic return of similar projects within the program.

3.1.4 Description of Selected Projects for CBA analysis

As Table 2.1 and Table 2.2 show, there were a total of 184 projects funded under Rounds 1 and 2 of the FCR Program over 2018/19 and 2019/20 financial years. Seven representative project types were selected for the cost benefit analysis based on the fact in total that they represented 168 out of the 184 projects, as shown in Table 3.1.

Table 3.1: Representative project type selection

Project type	No.	Condensed project type	Sample no.
Reseal extension (RS)	3		
Rehab./ reconstruct. (RR)	35	Rehab./ reconstruct. (RR)	1
Rehab./ reconstruct./ widen (RRW)	72	Rehab./ reconstruct./ widen (RRW)	1
Bridge replacement (BR)	10	Bridge replacement (BR)	1
Bridge upgrade/widen/strengthen (BU)	10	Bridge upgrade/widen/strengthen (BU)	1
Safety intersection upgrade (SI)	11	Safety intersection upgrade (SI)	1
Safety other (pedestrians guard rails) (SO)	9	Safety other (pedestrians guard rails) (SO)	1
Sealing unsealed roads (SU)	21	Sealing unsealed roads (SU)	1
Reseals & Widening (RW)	1		
Shoulders upgrade/widening (SH)	2		
Resheet unsealed roads (RU)	1		
Design/other	10		
Total	184	Total	7

The design/other project types were not included in the project samples as these projects were yet to be constructed. Project types with limited numbers (≤ 3) were also excluded due to their low numbers.

Table 3.2 provides a detailed description of each selected CBA sample project.

Table 3.2: Details of selected sample projects

Project description	Project type	Municipality	Project scope	Total cost
Keegans Lane & Gundowring Road Intersection Safety Upgrade	SI	Alpine	Change in intersection layout primarily for safety purposes with reduction in expected crash rates	\$244,761
Gavan Street Pedestrian Crossing Points	SO	Alpine	New kerb outstands and centre median refuges were constructed and are expected to reduce crash rates and may incur additional maintenance cost to the base case	\$255,000
Rodborough Road Stabilisation	RR	Central Goldfields	A 2 km segment of a two-lane road was resealed and stabilised. This project is expected to lead to a reduction in maintenance costs and mid-block crash rates	\$450,000
Widening of Timboon-Curdievale Road, Timboon West	RRW	Corangamite	A 1.57 km segment of Timboon-Curdievale Road was widened by 3 m. Additional maintenance cost may be incurred for the new pavement area offset by reduced crash rates and reduced vehicle operating costs	\$455,000
Fixing Wiggs Lane	SU	Moyne	A 2.5 km of a two-lane unsealed country access road was sealed and widened to 6.5 m. While new pavement area was constructed, maintenance cost may be lower after the upgrade. Before and after maintenance costs are needed to determine the net change in maintenance cost. Reduced crash rates and reduced vehicle operating costs are expected.	\$850,000
Eurambeen-Streatham Road Bridge Replacement	BR	Pyrenees	The new bridge is 12 m in length and in 9.6 m in width designed with 100-year asset life. Significant savings in maintenance cost is expected due to the project. Before (old bridge) and after (new bridge) maintenance costs are needed for the change in maintenance cost. Bridge will now allow unrestricted access.	\$654,458

Project description	Project type	Municipality	Project scope	Total cost
Timms Road Bridge Poowong, Widening & Strengthening	BU	South Gippsland	A 10 m long two-lane bridge is strengthened and widened from 6.7 m to 7.4 m. The strengthening of the bridge addresses the wear and tear of the bridge built in 1960s designed for H20-S16-44. After the project, the bridge is designed under AS5100 and should cater for all General Mass Limits and Higher Mass Limits vehicles with appropriate safety factors. Bridge will now allow unrestricted access and increased demand.	\$600,000
			Total	\$3,509,210

3.2 Cost-Benefit Analysis

3.2.1 Methodology

The economic analysis framework refers to the steps and principles followed for assessing transport projects and initiatives. The economic analysis framework in this report follows the Australian Transport Assessment and Planning (ATAP) guidance documented in *T2 Cost Benefit Analysis* (Australian Transport and Infrastructure Council 2018). Other complementary ATAP guidance followed include:

- *PV2 Road transport* – guidance on assessing the benefits of road-related projects and initiatives (Australian Transport and Infrastructure Council 2016)
- *PV5 Environmental parameter values* – guidance on assessing environmental impacts of transport projects and initiatives (Australian Transport and Infrastructure Council 2020)

CBA is a well-established method for assessing the economic merit of transport investment in Australia. A rapid CBA, as opposed to a detailed CBA, only requires indicative-level estimates of investment cost and benefits which makes it a cost-effective alternative to a detailed CBA.

A rapid CBA is undertaken in 5 steps following guidance provided in (Australian Transport and Infrastructure Council 2018) and they are:

- Define base case and project case – this defines the base case scenario without the project and the project case scenario after the completion of the project (Section 3.2.2).
- Cost estimation – this step describes the data, assumptions and estimation method adopted for the estimating project costs (Section 3.2.3)
- Traffic demand forecasts – this step describes the data, assumptions and estimation method adopted for estimating current and future traffic volumes supported by the treated infrastructure of individual projects. (Section 3.2.4)
- Benefit estimation – this step presents the parameter values and benefit estimation method calculating the economic benefits associated with individual projects (Section 3.2.5)
- Modelling results – this step presents modelling assumptions, main CBA results and sensitivity tests of key modelling assumptions (Section 3.3).

3.2.2 Base Case and Project case

As the CBA compares the change in benefits to the change in costs due to the project, a base case scenario and a project case scenario will first be defined prior to other steps of the CBA.

Because there are seven projects to be analysed (see Table 3.3), there are therefore seven pairs of base case and project case. The scenarios for the base case and project case are described as follows:

- **The base case** in all seven pairs refers to the scenario in which that the selected project has not taken place in the council area.
- **The project case** in each pair refer to the scenario in which the selected project has been completed.

3.2.3 Cost Estimation

Capital costs

Capital costs or once-off project planning, design and construction costs are based on the Total Project Cost for individual projects documented in Regional Roads Victoria's reports on funded projects in Round 1 and Round 2 of the FCR program (Regional Roads Victoria 2018, Regional Roads Victoria 2019). Total project costs of selected projects are presented with the breakdown of state and council contributions in Table 3.3. The 'State contribution' columns represent the amount of funding received under the FCR program.

Table 3.3: Total project costs

Council	Project name (Funding round)	State contribution	Council contribution	Other contribution	Total project cost
Alpine	Keegans Lane & Gundowring Road Intersection Safety Upgrade ⁽¹⁾	\$163,011	\$81,750	\$0	\$244,761
	Gavan St Pedestrian Crossing Points ⁽²⁾	\$170,000	\$85,000	\$0	\$255,000
Central Goldfields	Rodborough Road Stabilisation ⁽²⁾	\$300,000	\$150,000	\$0	\$450,000
Corangamite	Widening of Timboon-Curdievale Road, Timboon West ⁽¹⁾	\$455,000	\$0	\$0	\$455,000
Moyne	Fixing Wiggs Lane ⁽²⁾	\$500,000	\$240,000	\$110,000 ⁽¹⁾	\$850,000
Pyrenees	Eurambeen-Streatham Road Bridge Replacement ⁽²⁾	\$431,942	\$0	\$222,516 ⁽²⁾	\$654,458
South Gippsland	Timms Road Bridge Poowong, Widening & Strengthening	\$400,000	\$200,000	\$0	\$600,000

1. Landowner contribution

2. Roads to Recovery

Source: (Regional Roads Victoria 2018, Regional Roads Victoria 2019)

Maintenance costs

Maintenance costs are recurring costs associated with maintaining and repairing the road infrastructure. Any impact on maintenance costs due to the project would need to be assessed as a part of the CBA – calculated as its difference between the project case and the base case. Specifically, an increase in maintenance cost due to the project may occur when new infrastructure is added by the project. On the other hand, a project may reduce maintenance cost when an existing infrastructure is renewed or reinforced by the project. The incremental impact on maintenance cost will therefore depend on the type of works completed by the project.

The primary source of information for establishing the project impact on maintenance cost is the corresponding councils for the selected projects. When such information is not available from the councils, the following approach was adopted for estimating the project impact on maintenance cost.

- When new infrastructure is added by the project annual maintenance cost is estimated as the yearly average of the total project cost over the expected asset life. The rationale for this estimation method is that it assumes a fixed portion of the asset is replenished by the maintenance activity every year to ensure service continuity of the road asset.¹
- When the project is expected to result in a reduction of maintenance cost, base case annual maintenance cost is first estimated using the physical dimensions of the existing infrastructure and maintenance cost factors published in Hore-Lacy et al. (2009) which is documented in Appendix B.
- A reduction factor in percentages based on the base case annual maintenance cost is then estimated by consulting the corresponding councils and asset management experts at ARRB.

¹ In practice, the asset may be maintained in different intervals other than a yearly frequency.

- When no impact on maintenance cost is expected if the project did not significantly improve the condition of existing infrastructure or added new infrastructure.

Annual base case, annual project case and annual incremental changes in maintenance cost of individual projects are presented in Table 3.4, which reflect the description of project impacts on maintenance as follows:

- **Keegans Lane & Gundowring Road Intersection Safety Upgrade (Alpine)** – no change in maintenance cost is expected due to the change in intersection layout for safety purpose.
- **Gavan St Pedestrian Crossing Points (Alpine)** – this project constructed new kerb outstands and centre median refuges and they will incur additional maintenance cost to the base case.
- **Rodborough Road Stabilisation (Central Goldfield)** – this project is expected to lead to a reduction in maintenance cost
- **Widening of Timboon-Curdievale Road, Timboon West (Corangamite)** – widening in this project may either increase maintenance cost due to increased pavement area or reduce maintenance cost as, for the same amount of traffic, wider roads have slower deterioration rate due to higher load sharing capability Maintenance cost before and after the project are therefore required to assess the incremental impact on maintenance cost.
- **Fixing Wiggs Lane (Moyne)** – While new pavement area was constructed in this project, maintenance cost may be lower after the upgrade due to improved asset condition. Consequently, before and after maintenance costs are needed to determine the net change in maintenance cost.
- **Eurambeen-Streatham Road Bridge Replacement (Pyrenees)** –Significant saving in maintenance cost is expected due to this project. Consequently, before (old bridge) and after (new bridge) maintenance costs are required to determine the incremental change in maintenance cost.
- **Timms Road Bridge Poowong, Widening & Strengthening (South Gippsland)** – This project renewed and upgraded the existing bridge to a higher weight tolerance. Consequently, maintenance costs before and after the project are required to determine the change in maintenance cost.

Table 3.4: Estimated annual maintenance costs

Project	Length (km) for road and Area (m ²) for bridges	Base case AADT (vehicle count)	Annual maintenance cost (base case)	Annual maintenance cost (project case)	Incremental annual maintenance cost
Keegans Lane & Gundowring Road Intersection Safety Upgrade ⁽¹⁾	1	147	\$7,149	\$7,149	\$0
Gavan St Pedestrian Crossing Points ⁽²⁾	1	1,840	\$9,073	\$9,073	\$0
Rodborough Road Stabilisation ⁽³⁾	2	69	\$35,598	\$5,381	-\$30,217
Widening of Timboon-Curdievale Road, Timboon West ⁽⁴⁾	1.57	175	\$3,278	\$6,535	\$3,257
Fixing Wiggs Lane ⁽⁵⁾	2.5	136	\$2,980	\$5,381	\$2,401
Eurambeen-Streatham Road Bridge Replacement ⁽⁶⁾	115.2	597	\$9,502	\$0	-\$9,502
Timms Road Bridge Poowong, Widening & Strengthening ⁽⁷⁾	67 ⁽⁸⁾	577	\$5,526	\$5,526	\$0

1. Base case maintenance cost is based on PPI-adjusted road preservation cost for rural roads (AADT 100-500) documented in Hore-Lacy et al. (2009). Project case maintenance cost assumes no reduction from base case.
2. Base case maintenance cost is based on PPI-adjusted road preservation cost for urban roads (AADT 1,000-5,000) documented in Hore-Lacy et al. (2009). Project case maintenance cost assumes no reduction from base case.
3. Base case maintenance cost is based on PPI-adjusted road preservation cost for rural roads (AADT <100) documented in Hore-Lacy et al. (2009). Project case maintenance cost assumes an 85% reduction from base case.
4. Base case maintenance cost is based on PPI-adjusted road preservation cost for rural roads (AADT 100-500) documented in Hore-Lacy et al. (2009). Project case maintenance cost assumes an 80% reduction from base case.
5. Base case maintenance cost is based on PPI-adjusted road preservation cost for rural roads (AADT 100-500) documented in Hore-Lacy et al. (2009). Project case maintenance cost assumes an 80% reduction from base case.
6. Base case maintenance cost is based on PPI-adjusted bridge preservation cost for concrete bridges. Project case assumes no maintenance cost based on council advice.
7. Base case maintenance cost is based on PPI-adjusted bridge preservation cost for concrete bridges. Project case maintenance cost assumes an 80% reduction from base case.

3.2.4 Demand and Safety Data

Demand data

Demand data reflect the level of traffic and pattern of travel demand before and after the projects. Demand data include average travel time, average travel distance, freight tonnage and traffic volume of passenger and freight vehicles. Whether a particular type of demand data is needed for the CBA depends on the likely impact of the project. For example, average travel time before and after the project is required to assess the impact on travel time if the project is expected to cause a reduction or increase in travel time.

Table 3.5 presents our assessment on the potential impact of individual projects on the various measures of local traffic.

Table 3.5: Project impact on traffic pattern and travel demand

Project	Average travel time	Average travel distance	Freight tonnage	Traffic volume (light vehicles)	Traffic volume (heavy vehicles)
Keegans Lane & Gundowring Road Intersection Safety Upgrade	No change	No change	No change	No change	No change
Gavan St Pedestrian Crossing Points	Increase	No change	No change	No change	No change
Rodborough Road Stabilisation	Reduction	No change	No change	No change	No change
Widening of Timboon-Curdievale Road, Timboon West	Reduction	No change	No change	No change	No change
Fixing Wiggs Lane	Reduction	No change	No change	No Change	No change
Eurambeen-Streatham Road Bridge Replacement	No change	No change	No change	No Change	Increase
Timms Road Bridge Poowong, Widening & Strengthening	No change	No change	No change	No Change	No change

Based on our assessed impacts on traffic pattern and travel demand, corresponding demand data in the base case and project case are estimated with a combination of council -supplied data and public data. Table 3.6 to Table 3.9 present the data and our assumptions on travel time, travel distance, freight tonnage, and total traffic volume and freight vehicle compositions, respectively.

Table 3.6: Travel time impact assumptions

Project	Base case average travel time in minutes (travel speed)	Project case average travel time in minutes (travel speed)	Incremental travel time in minutes
Keegans Lane & Gundowring Road Intersection Safety Upgrade	0.6 (100km/hr)	0.6 (100km/hr)	0
Gavan St Pedestrian Crossing Points	0.75 (80km/hr)	0.80 (75km/hr) ⁽¹⁾	+0.05
Rodborough Road Stabilisation	2 (60km/hr)	1.2 (100km/hr)	-0.8
Widening of Timboon-Curdievale Road, Timboon West	1.57 (60km/hr)	0.94 (100km/hr)	-0.63
Fixing Wiggs Lane	2.5 (60km/hr)	1.5 (100km/hr)	-1
Eurambeen-Streatham Road Bridge Replacement	0.012 (60km/hr)	0.012 (60km/hr)	0
Timms Road Bridge Poowong, Widening & Strengthening	<0.01 (60km/hr)	<0.01 (60km/hr)	0

3. A 6% reduction in traffic speed due to the installation of mid-block pedestrian refuge (Saleh et al. 2020)

Note:

- Base case average travel time is calculated by dividing the length of the project segment of the road by an average speed of 60km/hr
- Project case average travel time is calculated by dividing the length of the project segment of the road by an average speed of 100km/hr

Table 3.7: Travel distance impact assumptions

Project	Base case average travel distance in kilometres	Base case average travel distance in kilometres (project case)	Incremental travel distance in kilometres
Keegans Lane & Gundowring Road Intersection Safety Upgrade	1	1	0
Gavan St Pedestrian Crossing Points	1	1	0
Rodborough Road Stabilisation	2	2	0
Widening of Timboon-Curdievale Road, Timboon West	1.57	1.57	0
Fixing Wiggs Lane	2.5	2.5	0
Eurambeen-Streatham Road Bridge Replacement	0.012	0.012	0
Timms Road Bridge Poowong, Widening & Strengthening	0.01	0.01	0

Table 3.8 presents our estimates of freight tonnage associated with projects that has an impact on supporting the greater use of heavy vehicles which are:

- Eurambeen-Streatham Road Bridge Replacement
- Timms Road Bridge Poowong, Widening & Strengthening

Due to the lack of route-specific freight tonnage data. The base case freight tonnage is estimated by multiplying an average freight moved on Victoria's regional and interstate routes (172,900 tonne-kilometre) with the length of the freight route supported by the treated asset. Out of conservatism, it is also assumed that the total freight tonnage will remain unchanged by the projects, which is more likely an outcome of economic activity rather than road condition. However, projects that support the greater use of higher mass vehicles will be reflected in the before and after distributions of vehicle composition travelling on the road shown in Table 3.10.

Table 3.8: Freight tonnage impact assumptions

Project	Freight route	Route length	Freight tonnage (base case and project case)
Eurambeen-Streatham Road Bridge Replacement	Eurambeen-Streatham Road (Western highway to Glenelg Highway)	39km	6,743,100
Timms Road Bridge Poowong, Widening & Strengthening	Timms Road (Main S Road to Drouin-Korumburra Road)	6.6km	1,141,140

Table 3.9: Total vehicles traffic volume impact assumptions

Project	Base case AADT	Project AADT	Incremental light vehicle traffic volume AADT
Keegans Lane & Gundowring Road Intersection Safety Upgrade	147	147	0
Gavan St Pedestrian Crossing Points	1840	1840	0
Rodborough Road Stabilisation	69	69	0
Widening of Timboon-Curdievale Road, Timboon West	175	175	0
Fixing Wiggs Lane	136	136	0
Eurambeen-Streatham Road Bridge Replacement	597	597	0
Timms Road Bridge Poowong, Widening & Strengthening	577	577	0

Note:

- Base case light vehicle traffic volumes are estimated based on the total traffic AADT and percentage of light vehicles traffic provided by respective councils

- Project case total traffic AADT is assumed unchanged by the selected projects

The freight vehicle volumes for all selected projects are estimated by assuming a share of 20% of the total AADT.

Table 3.10 provides a breakdown of freight traffic light and heavy vehicles that travelled through the treated road asset before and after each project. The breakdown of freight traffic by vehicle weight is important for calculating the environmental cost freight as it is more energy efficient to use heavy vehicles for significant freight tasks than light vehicles. The environmental parameter values associated with the use of light and heavy vehicles for freight are reported in Table B.6.

Table 3.10: Freight Vehicle Profile Breakdown

Project (council)	Base case heavy vehicles share	Project case heavy vehicle share
Keegans Lane & Gundowring Road Intersection Safety Upgrade (Alpine) ⁽¹⁾	3%	3% ⁽¹⁾
Gavan St Pedestrian Crossing Points (Alpine) ⁽²⁾	3%	3%
Rodborough Road Stabilisation (Central Goldfield) ⁽¹⁾	37%	37%
Widening of Timboon-Curdievale Road, Timboon West (Corangamite) ⁽¹⁾	6%	6%
Fixing Wiggs Lane (Moyne) ⁽¹⁾	7%	7%
Eurambeen-Streatham Road Bridge Replacement (Pyrenees)	22%	35%
Timms Road Bridge Poowong, Widening & Strengthening (South Gippsland)	14%	14%

4. Council did not provide the 'after' HV traffic share. Assumes no change in HV share before and after the project.

5. Council did not provide the 'before' or 'after' HV traffic shares. Assumes 3% based on the data provided in the same council area

Safety data

Safety data are needed to assess the project impacts on crash costs. Specifically, three types of safety data are required: the number of fatality crashes, the number of injury crashes and the number of crashes that involved property damage. To assess the incremental safety impact of the project, safety data that correspond to the base case and project needs to be collected.

Safety data are critical for assessing the benefit of projects that are specifically designed to improve safety outcomes by reducing the likelihood of vehicles crashes. With the selected projects, these projects include:

- Keegans Lane & Gundowring Road Intersection Safety Upgrade (Alpine)
- Gavan St Pedestrian Crossing Points (Alpine)

In addition, projects that resulted in widening of the carriageways are also expected to contribute to crash reduction and these projects are:

- Widening of Timboon-Curdievale Road, Timboon West (Corangamite)
- Fixing Wiggs Lane (Moyne)
- Timms Road Bridge Poowong, Widening & Strengthening (South Gippsland)

Safety data for the projects identified above are presented in Table 3.11. Crash numbers are sourced from Crash Statistics provided by VicRoads (VicRoads 2021).

The base case crash numbers are based on the average crashes occurred for a similar road location (e.g., intersection or local road) within the local council area from 2014 to 2019. For example, the base case number of injury crashes assigned to the Keegans Lane & Gundowring Road Intersection Safety Upgrade project is based on a total of 122 injury crashes occurred at 24 different intersections (an average of five

injury crashes per intersection) located within the Alpine Shire Council area. This approach provides an estimate for the expected number of crashes for the base case.

The project case crash numbers are estimated by applying a Crash Modification Factor that redefines the safety improvement introduced by the project. A Crash Modification Factor can be interpreted as the reduced probability of crashes due to the safety treatment. Relevant Crash Modification Factors used to estimate project case crash numbers are sourced from Austroads (2015) and they are reported in Table B.5.

Table 3.11: Traffic accident data - annual average from 2014 to 2019

Project	Base case			Project case		
	Number of fatality crashes	Number of injury crashes	Number of property damage crashes	Number of fatality crashes	Number of injury crashes	Number of property damage crashes
Keegans Lane & Gundowring Road Intersection Safety Upgrade ⁽¹⁾	0.005	0.05	0.5	0.0025	0.025	0.25
Gavan St Pedestrian Crossing Points ⁽²⁾	0.0625	0.625	6.25	0.0312	0.312	3.12
Widening of Timboon-Curdievale Road, Timboon West ⁽³⁾	1.0	2.0	2.2	0.36	0.71	0.77
Fixing Wiggs Lane ⁽⁴⁾	1.3	1.5	1.0	0.80	0.90	0.60
Timms Road Bridge Poowong, Widening & Strengthening ⁽⁵⁾	0	2.2	0	0	1.3	0

1. Base case crash numbers are based on Austroads (2010)

2. Base case crash numbers are based on Austroads (2010)

3. Base case crash numbers are based on historical average of crashes on local roads (excluding intersections) within the Corangamite council area from 2014 to 2019

4. Base case crash numbers are based on Austroads (2010)

5. Base case crash numbers are based on Austroads (2010)

Note:

• Project case crash numbers are estimated by multiplying the Crash Modification Factors to the base case crash numbers of each project.

Source: Base case crash numbers are sourced from (VicRoads 2021). Crash Modification Factors are sourced from Austroads (2015) and reported in Table B.5.

3.2.5 Benefit estimation

A key component of the CBA is to translate the various projects impacts on traffic presented in Section 3.2.4 into economic impacts such as travel time savings and crash cost savings. Economic impacts may also be negative which are known as disbenefits when the project case produces higher economic cost than the project case. For example, the environmental cost of the project case may be higher than the base case if the project attracts more polluting vehicles into the project area.

Following the ATAP guidance on CBA and the implementation of the guidance in Transport for NSW's CBA template for its FCR program, the following economic benefits are assessed for the selected projects:

- Maintenance Cost Savings – expected in projects that reduce the ongoing maintenance cost of the road asset
- Value of Travel Time Savings – expected in projects that reduce travel distance and/or improve traffic flow
- Vehicle Operating Cost Savings – expected in projects that improve pavement condition and/or traffic flow
- Environmental Cost Savings – expected in projects that reduce travel distance and/or traffic volume
 - Air pollution Savings

- Greenhouse Gas Emission Savings
- Noise Savings
- Nature & Landscape Savings
- Upstream & Downstream Cost Savings
- Crash Cost Savings – expected in projects that introduce new safety features and/or reduce traffic volume
 - Reduction in Fatality Cost
 - Reduction in Injury Cost
 - Reduction in Property Damage Cost

To calculate the economic benefits, the economic cost associated with each benefit type presented above are first monetised for the base case and the project case using the appropriate demand data presented in Section 3.2.4 and the parameter values provided by ATAP. For example, the Value of Travel Time Savings is calculated as the difference in Travel Time Cost between the base case and the project case which in turn is calculated as the product of the parameter value for travel time (\$/min) with the average travel time in either case. The ATAP parameter values used for monetising the traffic and safety impacts are provided in Appendix B.

Table 3.12 presents the expected impact of individual projects on the range of benefit assessed in this report.

Table 3.12: Expected economic impacts by project

Project	Maintenance Cost Savings	Travel Time Savings	Vehicle Operating Cost Savings	Environmental Cost Savings	Crash Cost Savings
Keegans Lane & Gundowring Road Intersection Safety Upgrade	None	None	None	None	High
Gavan St Pedestrian Crossing Points	None	Disbenefit	None	None	High
Rodborough Road Stabilisation	High	None	High	None	None
Widening of Timboon-Curdievale Road, Timboon West	High	None	High	None	High
Fixing Wiggs Lane	High	None	High	None	High
Eurambeen-Streatham Road Bridge Replacement	High	None	None	High	High
Timms Road Bridge Poowong, Widening & Strengthening	None	None	None	None	High

3.3 Modelling results

3.3.1 General assumptions

Based on the input data and assumptions presented above, a benefit-cost ratio (BCR) and a net present value (NPV) are calculated in a spreadsheet model with the following general modelling assumptions summarised in Table 3.13.

Table 3.13: CBA modelling assumptions

Assumption	Value
Base year for assessment	FY2020/21
Year in which project completes	FY2020/21
Benefits start in year	FY2021/22

Basis of assessment	All values expressed are in real \$2020/21 terms
Evaluation period	30 years (FY2020/21 – FY2049/50)
Central discount rate	7%

3.4 CBA results

Table 3.14 presents a summary of CBA results for the seven selected projects from the FCR program. The CBA results are reported using two metrics BCR and NPV. BCR is the ratio of the incremental benefit of the project over the incremental cost of the project valued at FY2020/21 terms. NPV is the difference between the incremental benefit of the project to the incremental cost of the project valued at FY2020/21 terms.

Usually, a BCR greater than 1 and an NPV greater than 0 suggest that there is a positive return on investment based on the assessed benefits.

Table 3.14: CBA results

Projects	BCR	NPV
Keegans Lane & Gundowring Road Intersection Safety Upgrade	1.5	\$134,281
Gavan St Pedestrian Crossing Points	17.7	\$4,255,263
Rodborough Road Stabilisation	-0.28	\$89,653
Widening of Timboon-Curdievale Road, Timboon West	0.07	-\$445,843
Fixing Wiggs Lane	0.13	-\$746,558
Eurambeen-Streatham Road Bridge Replacement	4.7	\$2,412,775
Timms Road Bridge Poowong, Widening & Strengthening	4.4	\$ 2,035,323

3.5 Discussion of CBA results

3.5.1 Keegans Lane and Gundowring Road Intersection Safety Upgrade

For this intersection upgrade, the primary source of the benefits was that due to the reduced crash rates. Table 3.11 shows that the crash rates for fatalities, injuries and property damage were reduced by 50%. No reductions in annual maintenance spending due to the intersection upgrade was assumed, nor was any change in traffic levels and heavy vehicle traffic composition assumed. A positive NPV for the project was the result along with a BCR of 1.5.

The BCR can range between 1.2 and 2.5, depending on the real discount rate used and the variation in crash rates at rural intersections.

3.5.2 Gavan St Pedestrian Crossing Points

With the introduction of pedestrian crossing points, the primary source of the benefits was again that due to the reduced crash rates. Table 3.11 shows that the crash rates for fatalities, injuries and property damage were reduced by 50%. A minor increase in travel time was assumed due to impact of the crossings on travel speed. No reductions in annual maintenance spending due to the crossings was assumed, nor was any change in traffic levels and heavy vehicle traffic composition assumed. This project has a positive NPV and the highest BCR of 17.7 largely due to the relatively high AADT of 1840 vehicles per day which directly effects the quantity of benefits from the reduced crash rate.

The BCR can range between 13.4 and 28, depending on the real discount rate used and the variation in crash rates at pedestrian crossing points.

3.5.3 Rodborough Road Stabilisation

This road stabilisation significantly impacts on the annual maintenance costs due to its impact on restoring the surface and reducing the road user costs due to the improved surface conditions. No safety benefits were assumed due to the stabilisation. A positive NPV for the project was the result. Although the BCR is -0.28, this still represents an overall benefit. The negative BCR result was due to the large reduction in annual maintenance spending of the project relative to the base case cost in the denominator of the BCR.

This is a positive economic result showing classic spending in a timely manner can deliver an economic benefit avoiding the high ongoing repair costs. The restored stabilised pavement has relatively low initial treatment costs (\$32/m²). Having a relatively high percentage of heavy vehicles (38%) is a source of road user benefits.

3.5.4 Widening of Timboon-Curdievale Road, Timboon West

The road widening resulted in increased annual maintenance spending principally due to the widening itself as shown in Table 3.4. There were reductions in the crash rates of more than 50% as shown in Table 3.11, while no change in the road user costs were assumed due to the widening. The overall outcome was a negative NPV with a BCR of 0.07. The project work was not justified in strict economic terms mainly due to the low level of traffic with an AADT 175 vehicles per day.

The negative economic result occurred because the benefits were only due to roughness reduction and crash cost savings. Possible travel time savings could occur if the resurfacing and width change allowed an increase in speed. A significantly higher traffic level AADT of around 2000 vehicles/day could deliver a positive NPV and BCR. More comprehensive crash reduction measures would also increase benefits but will also increase the project cost.

3.5.5 Fixing Wiggs Lane

This project involved both widening and sealing of the unsealed road surface. As Table 3.3 shows, this project had the highest capital cost of all the sample projects with a relatively low AADT of 136 vehicles per day. The sealed road surface resulted in reduced road user costs as well as reduced crash rates of 60% for fatalities, injuries, and property damage as shown in Table 3.11. However, despite these benefits, the high capital costs resulted in a negative NPV for the project with a BCR of 0.13. Again, the benefits from safety and reduced road user costs were not sufficient to gain a positive NPV due to the low AADT.

Again, a negative economic outcome results when the benefits rely only on roughness reduction and crash cost savings. A significantly higher traffic level AADT between 300 to 600 vehicles/day with 20% heavy vehicles could deliver a positive NPV, and BCR.

3.5.6 Erambeen-Streatham Road Bridge Replacement

For this bridge project, the benefit assessment is based on the project outcome that a new bridge is built that has removed the need for ongoing maintenance and former restrictions on the mass of vehicles it can support. The drivers for the incremental economic benefits for this project are therefore savings in maintenance cost and the savings in environmental costs due to the use of a higher-mass and more productive freight vehicles. As shown in Table B.6, on a per tonne-kilometre basis, heavy freight vehicles have significantly lower GHG emission induced environment cost, and upstream and downstream environmental costs. A positive NPV was found with a BCR of 4.7.

The BCR can range between 3.5 and 7.5, depending on the real discount rate used and the variation in the efficiency of freight vehicles using the replacement bridge that drive the environmental benefits.

3.5.7 Timms Road Bridge, Poowong, Widening & Strengthening

For this bridge project, the benefit assessment assumes that the works undertaken (widening and strengthening) has not upgraded the bridge in terms of vehicle mass limits. Consequently, unlike the Eurambeen-Streatham Road Bridge project, no environmental benefits due to the use of more productive vehicles were assessed. The primary driver of economic benefits for this project is that of safety impact from the bridge widening. For this project, due to the special nature of the location (road bridge over a creek), a location-specific crash rate was estimated to assess the safety benefits instead of crash rates estimated by a general model. A positive NPV was found with a BCR of 4.5.

The BCR can range between 3.3 and 7.1, depending on the real discount rate used and the variation in the crash rates that impact on the safety benefits on the upgraded bridge.

3.6 Estimation of FCR Program NPV

Based on the estimated NPV of the selected projects, it is possible to estimate the NPV of the full FCR program by using the results of selected projects as an approximation to other projects within the same project category according to Table 3.1 and Table 3.2. The validity of this approach lies in the assumption that the average incremental project benefits and costs within each project category are similar to the selected project from that category. A program-level NPV and the PV of costs can both then be estimated based on the project NPV and the project PV cost separately divided by the project cost weighted by the total program cost of each project category as follows:

	=	Project NPV / Project cost * Program cost	3.1
For the program PV costs			
	=	Project PV cost / Project cost * Program cost	3.2

Table 3.15 presents the estimated program NPV and the PV of costs which shows that they are \$79.7 million and \$89.8 million, respectively. Based on these estimates, the FCR program overall appears to be well economically justified on a program funding of \$117 million. Using the program NPV and the PV of costs, an overall program BCR of 1.9 was estimated.

Table 3.15: Estimation of program return

Project type	BCR	Project NPV	Total project cost	No. Projects	Total Program Cost	Program NPV	Project PV Costs	Program PV Costs
Safety Intersection Upgrade (SI)	1.5	\$134,281	\$4,037,594	10	\$6,097,324	\$3,345,119	\$231,900	\$5,776,939
Safety Other (SO)	17.7	\$4,255,263	\$5,360,132	9	\$5,389,499	\$89,936,218	\$241,600	\$5,106,286
Rehab, Reconstruct (RR)	-0.28	\$89,653	\$51,108,954	35	\$23,647,409	\$4,711,247	-\$70,198	-\$3,688,891
Rehab, Reconstruct Widen (RRW)	0.07	-\$445,843	\$38,287,529	72	\$56,511,515	-\$55,374,205	\$481,339	\$59,782,848
Sealing unsealed roads (SU)	0.13	-\$746,558	\$3,468,702	22	\$12,400,387	-\$10,891,304	\$862,108	\$12,577,027
Bridge Replacement (BR)	4.7	\$2,412,775	\$11,843,028	10	\$9,858,713	\$36,345,887	\$476,365	\$7,175,932
Bridge Upgrade (BU)	4.4	\$ 2,035,323	\$1,514,250	8	\$3,430,292	\$11,636,253	\$544,826	\$3,114,854
					\$117,335,139	\$79,709,216	\$2,767,940	\$89,844,995

4. Assessment of Social and Community Effects

4.1 Impact Assessment

The purpose of this assessment of social and community impacts in the FCR program is to understand which impacts have been identified and explore which improvements could be addressed in the future. A better focus on broader economic and social (and environmental) outcomes can enhance the strategic value of projects, aid communication with communities on the merits and improve accountability.

In order to gain a perspective on the ways councils have interpreted the guidelines and recognised the impacts of investments, we assessed the scale of social and community impacts of all projects except low-cost design projects. The aim was to identify candidates for more detailed qualitative assessment. The project team assigned a score from 1 to 5 on the presence of the impacts defined in the descriptions as shown in Table 4.1.

Table 4.1: Categorisation of social/community impacts of FCR projects

Social/Community Impact Scale	Description of impacts
5	Either: <ul style="list-style-type: none"> significant local improvement in access to community facilities/services secured emergency access or EM response avoids detours likely impact on the perception of safety for pedestrians, cyclists, visitors and boost for the tourism economy sizeable impact on amenity and liveability, or opportunity to secure or access important economic sites/facilities which is likely to enhance or sustain local productivity
4	Either <ul style="list-style-type: none"> some local improvement in access to community facilities/services – minor travel time gain more confidence in emergency access or response minor improvements to address safety perceptions some improvement to local amenity, or opportunity to seek HML access for freight vehicles addressing first/last mile access as a boost to productivity of local firms.
3	Either <ul style="list-style-type: none"> Some improvement in safety and wider pavements and structures which permit heavier vehicles Could alter travel times and distances for local producers or those travelling through regions if not addressed/developed, or Addresses safety risks, although it is unlikely to alter the perception of enhanced community access, and builds public confidence in councils
2	An improvement which enhances road safety and makes a journey less taxing but does not alter the travel time or influence access levels
1	Limited impact on safety and no change in access. Primarily a project which addresses asset management costs

Dominating the assessment of scale has been the provision of new or more reliable access to critical community services and functions or scope to improve productivity. Beyond the physical access, the council interviews reinforced the psychological significance for rural communities of reliable roads upon which to grow businesses, attract people, remain connected with each other and the broader community and deliver vital services.

Safety and amenity improvements in towns are included as they have an important bearing on local perceptions of liveability and visitor attraction and can influence environmental sustainability and community health and wellbeing through higher rates of walking and cycling.

For each non-design project, the scale of impact was assessed against project type for both rounds of the FCR program and the results shown in Table 4.2.

Table 4.2: Alignment of project types and social and community impacts

Social/Community Impact Scale	FCR Round 1	FCR Round 2
5		1 Bridge Replacement 1 Safety Other
4	1 Safety Intersection Upgrade	4 Bridge Replacement 1 Safety Intersection Upgrade 4 Safety Other
3	2 Bridge Upgrade 2 Bridge Replacement 1 Safety Other	4 Bridge upgrade 1 Rehabilitated Road 2 Bridge Replacement 3 Safety Intersection Upgrade 3 Seal on unsealed road
2	1 Bridge Upgrade 20 Road Rehabilitated and Widened 1 Shoulders upgraded, widened 1 Reseal extended 4 Safety Intersection Upgrade 2 Safety Other 5 Seal on unsealed road	1 Bridge Upgrade 48 Road Rehabilitated and Widened 1 Rehabilitated Road 1 Reseal extended 1 Resheet an unsealed road 1 Reseals and Widening 1 Safety Intersection Upgrade 1 Safety Other 6 Seal on unsealed road
1	18 Rehabilitated Road 4 Road Rehabilitated and Widened 4 Seal on unsealed road	15 Rehabilitated Road 1 Reseal extended 5 Seal on unsealed road

Notwithstanding these are relatively small-scale projects, 12 were likely to have a measurable bearing on social and community impacts.

Bridge replacements or upgrades, safety upgrades in towns and significant intersection improvements were identified as most influencing the social and community impacts, especially where this may alter routes, use of transport modes, shape freight business or influence the way town's function.

Road rehabilitations, road widenings or sealing of gravel roads improve access and can influence travel speed, safety and route choice access and even use of more productive vehicles but these effects are addressed as part of the economic analysis.

Safety intersection improvements ranged in their impact on social and community access. Those influencing the perceptions of safety in towns were seen as more impactful in this category than important intersection treatments between towns.

4.2 Detailed Project Assessment

The project team selected eight projects to examine in more detail. Seven with higher scoring potential social/community impacts and a further low-scoring initiative to act as a point of comparison. Three of the projects were proposed by councils involved in the interviews. This provided an opportunity to examine the genesis of the projects and how community benefits were factored into the submission and grant allocation.

For all eight projects, the assessment addressed the type and presence of benefits/impacts related to the three questions posed in Section 2.3 and structured as:

- Readily monetised benefits associated with the length of detours avoided or being addressed
- Non-monetised effects on amenity associated with enhanced streetscapes, changing perceptions of safety and barrier effects on communities associated with unreliable or lost access
- Secondary impacts and outcomes including higher employment, the productivity of firms, more attraction for tourists, enhanced connectivity and social cohesion, improved access to community services incl schools, health facilities, cultural facilities, banks, etc.

Since most projects were implemented within the last two years and through a period of pandemic impacted traffic demand including considerable regional and state-wide lockdowns in that period, it is too early to assess the impact of safety treatments or changes in demand. The FCR program requires annual reports on achievement of project outcomes, and we suggest in future years there will be further evidence available to support judgements on the effectiveness of the program.

The findings of the qualitative assessment of the projects are outlined in Table 4.3.

Table 4.3: Social and community impacts of FCR projects

Project	Assessment of Impact
Loch Wonthaggi Road safety upgrade and flood mitigation Bass Coast Shire FCR Round 2 \$1,500,000	<p>Upgrades to Loch-Wonthaggi Road with 500m of rehabilitated pavement and new culverts to reduce road closures and safety issues associated with regular flooding and pavement defects. The site has a history of flooding and is referenced in the flood management plan for Bass Coast Shire. The project aims to resolve critical access issues with emergency services and industry including; dairy, agricultural, tourism and extractive industries.</p> <p><u>Detours:</u> If closed, emergency access from Wonthaggi and Bass Hwy to Bass Hills Region and Almurta, Loch, Bena and Jeetho areas will be impacted. Avoiding a closure on Loch-Wonthaggi Road requires a detour of 7.3km onto a neighbouring local road via Dalyston. In the event of Bass Hwy closure, it is a key exit point from Wonthaggi north to the South Gippsland Hwy.</p> <p><u>Amenity, access confidence and safety perceptions:</u> There have been 4 reported crashes along this section of road since 2010. All are single vehicle, run-off road crashes involving three minor and one serious injury. The road is seen as an important link between the area and Wonthaggi – the nearest service centre.</p> <p><u>Secondary impacts associated with access:</u> The Shire highlights this is a vital commuter link and direct connections between residents in South Gippsland and Baw Baw regions and the regional centre of Wonthaggi.</p> <p>This road is also a major strategic freight and transport route for larger vehicles servicing the dairy, agriculture and extraction industry. There was no information provided in the reports to demonstrate the scale of demand. The road is not a declared B Double route nor open to Higher Mass Limits accredited vehicles.</p>
Appin South Bridge Replacement Gannawarra Shire FCR Round 2 \$1,179,00	<p>The project replaces the Appin South Road Bridge, which, due to carrying additional heavy loads, is degrading quickly. The Loddon River at Appin South Road has a history of nine notable floods since 1974, the most significant major flood in 2011.</p> <p><u>Detours:</u> The Appin South VFA Station is located immediately west of the bridge. Emergency access east of the river would be impaired with a mass limit or closure of the bridge. The closest CFA stations to east is Macorna 15km away, Loddon Vale 20km to the south or Kerang 30km to the north via Loddon Hwy. Diversion distances are around 40km</p> <p><u>Amenity, access confidence and safety perceptions:</u> There have been no reported on or near the bridge in recent years. Gannawarra Shire indicated that there is local concern about disconnection from the CFA Station for residents east of the river. There are relatively few major settlements within 10minutes of the bridge.</p> <p><u>Secondary impacts associated with access:</u> Primary access impact is to freight movements and emergency access. Grain is a major commodity and primary driver of the economy. The bridge is on B Double route and HML although its economic significance is not documented in any detail.</p>

<p>Safer Birchip Town Centre Project</p> <p>Buloke Shire</p> <p>FCR Round 2</p> <p>\$480,000</p>	<p>This project aims to improve the safety and efficiency of the Birchip town centre by altering traffic management, parking and restructuring pavement and thereby improve safety, encourage active transport and improve visual amenity of Birchip Town Centre.</p> <p><u>Detours:</u> Not relevant. Cumming Avenue is an extension of the Birchip-Sea Lake Rd. The project won't impact access to the town by vehicle but might attract some more walking and cycling. Speeds should be lower.</p> <p><u>Amenity, access confidence and safety perceptions:</u> There has been one run off road crash involving serious injury but no reported pedestrian or cyclist casualties.</p> <p>The project will improve traffic management, will better delineate and denote safe crossing points for pedestrians and improve the visual amenity and outside dining opportunities. I can be expected to attract travellers from the Sunraysia Hwy and locals to Cumming Avenue. The aim is to slow vehicles down, offer more parking opportunities and encourage pedestrians. The town has a population of 822 and an area wide population of 1200.</p> <p><u>Secondary impacts associated with access:</u> Visitor attraction and local amenity improvements are a primary objective. No data was provided in the description. Tourism has not been a major driver of jobs (only 9 from 323 in the town) to this point – the majority are in health and community services, serving the ageing population.</p> <p>This remains a B Double and HML route.</p>
<p>Gavan Street Bright Pedestrian Crossing Points</p> <p>Alpine Shire</p> <p>FCR Round 2</p> <p>\$255,000</p>	<p>This project introduces safer pedestrian crossing points in Gavan Street to encourage locals and visitors walking and accessing shops and restaurants to enjoy this locality.</p> <p><u>Detours:</u> Gavan Street is part of the Great Alpine Road and there are few suitable detours on the south side of the Ovens River and only one to the north. This section is not accessible by B Doubles or HML vehicles.</p> <p><u>Amenity, access confidence and safety perceptions:</u> There have been 8 casualty crashes in the record since 2006 along this short section of road. Only one was a pedestrian crash in this length of Gavan Street, the rest are crashes involving vehicles impacting at intersections, hitting parking cars or cars emerging from driveways or hitting U turning vehicles. Safety challenges along this section of Gavan Street/Great Alpine Rd can be attributed mostly to collisions with vehicles emerging, stopping, parking.</p> <p>It is implied that these changes will improve the perception of pedestrian safety and encourage people to walk the precinct. It could encourage active transport among locals and visitors and boost amenity of the area further.</p> <p><u>Secondary impacts associated with access:</u> Although there are few references provided in the program report, tourism in Bright and the Alpine Shire has been climbing and tourism is the second highest employer (186 out of 928 jobs, REMPLAN). Accommodation and Food supplies employ another 37. The Alpine Shire's Travel Snapshot 2019 shows visitor numbers climbing consistently in the region and that 2/3 seek entertainment and eating out when in Bright which is a feature of this section of Gavan St. (Alpine Shire Travel to Alpine Shire Travel Snapshot 2019)</p>
<p>Eskdale Intersections</p> <p>Towong Shire</p> <p>FCR Round 1</p> <p>\$749,833</p>	<p>The project involves upgrading intersections connecting the Eskdale road network to the Omeo Hwy and formalising the service roads both side of Omeo Hwy. Construction of kerbs / kerb outstands and stormwater system in order to improve pedestrian safety and safer vehicle movements. The funds are also likely designed to improve the attractiveness of the town to travellers. While the town is viable and boasts a football team, primary school and 24hr ambulance, the population has dropped considerably from 351 to 242 between 2011 and 2016.</p> <p><u>Detours:</u> Not applicable.</p> <p><u>Amenity, access confidence and safety perceptions:</u> A lack of delineation of road edge, lack of kerbing and control lines makes it hard to differentiate the highway from service lanes, increasing risks and discouraging walking and cycling or perhaps discouraging visitors from stopping. There have been no reported crashes within the township in the past 5 years although there has been a single vehicle fatality in 2006 and crashes on the Omeo Hwy outside the town boundaries in the past 5 years.</p> <p><u>Secondary impacts associated with access:</u> The Omeo Hwy is a relatively low volume arterial road with around 600 vehicles a day, of which around 82 are trucks. This small town is adjacent the Omeo Hwy and is accessible to B double and HML vehicles.</p>
<p>Coopers Bridge</p> <p>Golden Plains Shire</p> <p>FCR Round 2</p> <p>\$1,600,000</p>	<p>This project involves replacing a single-lane 20 tonne load limited bridge with a 2-lane unrestricted bridge and improved road geometry for vehicles. The project description did not make much of the safety history at the site.</p> <p><u>Detours:</u> This local road links Steiglitz and Meredith and is an important link between Geelong and Ballarat regions. If closed, the detour involves an 80km round trip south via Geelong. The bridge is on B double and HML route post implementation. Loss of the bridge would impede access considerably in the area.</p> <p><u>Amenity, access confidence and safety perceptions:</u> This area is a blackspot with 9 recorded crashes in the last 5 years. All were single vehicle run off road crashes or vehicles striking the bridge or other objects and most involved serious injuries. Securing this crossing and addressing safety concerns is likely to increase connections between Meredith, Lara and Geelong areas.</p> <p><u>Secondary impacts associated with access:</u> This is an attractive route for tourists and links Meredith area to Steiglitz Historic Park. The description notes the important access to the Danly and Mountain View Quarries.</p>

	It is unclear what benefits the upgraded bridge will provide the extractives industry and nearby agricultural producers but conceivably higher productivity vehicles and more efficient movement of products.
Replacement of Quambatook-Boort Road Bridge Gannawarra Shire FCR Round 2 \$635,000	<p>The project will replace the current bridge over the Avoca River along Quambatook-Boort Road at Quambatook.</p> <p><u>Detours:</u> If the bridge was lost it would likely involve some minor diversion for locals accessing Quambatook but they have other options to the south. A lost bridge means a 22km additional journey to the Boort grain receivals facility. The route is currently B Double and HML approved without conditions.</p> <p><u>Amenity, access confidence and safety perceptions:</u> There is a CFA Station at Gredgwin to the south so access for emergencies is not significantly impacted.</p> <p><u>Secondary impacts associated with access:</u> Grain access is the primary benefit from upgrading the bridge. Grain is critical to the economy and employs more than ¼ of all workers and a major share of the \$500m GRP of the municipality.</p>
Forest St widening and bridge replacement, Colac Colac Otway Shire FCR Round 2 \$898,600	<p>Forest Street is a local road running north-south near the eastern boundary of Colac as primary access to low density development south of Colac, a link between Colac and the industrial area both at southern end and to the north and a connection to Princes Hwy. The road is narrow with a bridge crossing of Barongarook Creek which will be replaced.</p> <p><u>Detours:</u> Forest Street supports the industrial area and critical access for the Bulla Factory south of the bridge. If closed, heavy vehicles would need to detour from Forest St, via Gravesend Street and travel through the very centre of town to access the Princes Hwy. There are no outer links. This would involve a 5 km detour to avoid 1.5km route with impact on the amenity and impact road assets in the centre of Colac.</p> <p><u>Amenity, access confidence and safety perceptions:</u> There have been no reported crashes along this street in 5 years. If closed, emergency access would be impacted but there are alternatives.</p> <p><u>Secondary impacts associated with access:</u> A substantial concentration of industry along Forest Street means a significant local economy effect were this route to not be enhanced. This is an important access between the Princes Hwy, low density and industry developments to the south. The route is nominated for B Doubles but not HML vehicles (presumably owing to the bridge's load capacity).</p>
Talbot Avoca Road renewal and upgrade Central Goldfields Shire FCR Round 2 \$694,000	<p>This project was scored as a 2 for social and community impact. It was assessed as a counterpoint to the other 7 projects</p> <p>The project allows for the renewal and upgrade of a section of Avoca Road, at the intersection with McIntyres Road, Amherst. It also involves the removal of trees (and off-sets) to provide the minimum safety clearance for the entire road. The upgrading of Avoca Road is in accordance with the Central Highlands Regional Transport Strategy - Freight.</p> <p><u>Detours:</u> Avoca Road provides a shortcut for traffic from Talbot to Avoca and beyond. The project description indicates it links Ballarat/Maryborough Road to Pyrenees Highway. The description indicates it permits a direct route which saves a 33 km detour via Maryborough although it is unclear why this intersection would close and require such a detour.</p> <p><u>Amenity, access confidence and safety perceptions:</u> This intersection and road upgrade project is likely to encourage use of Avoca Road and is likely to improve safety risks. There are not expected to be access or travel time savings. There are more likely to be savings in maintenance costs</p> <p><u>Secondary impacts associated with access:</u> It is unclear what secondary impacts are likely from this project.</p>

4.3 Findings

It is not a surprise that this assessment found a minority of projects referenced or supported social or community access benefits. The FCR guidance emphasised the asset types and project activities that would be acceptable and referenced a few outcomes (community access) as a way to prioritise. Applicants were encouraged to provide outcomes, objectives, outputs and funding details to support submissions.

Within this high-level guidance, rural councils quickly identified projects drawing from past strategic plans, asset management plans and projects that were the subject of pressing community need. The descriptions varied in detail, but it is clear that rural councils endeavoured to reinforce the merits of proposals by connecting them to asset and community outcomes. Generally, there was limited evidence provided in support as this can be difficult to access.

Council staff advised us they: 1) welcomed the relatively open ended nature of the criteria; were 2) concerned that projects were not prioritised on the basis of cost benefit analysis alone (given the sometimes low volumes relative to other jurisdictions); and that 3) they did not have the capacity (but often have the capability) to draw an empirical connection between the project (e.g. bridge replacement) and the outcomes (e.g. more reliable access for grain movements, more reliable access in emergencies).

A number of councils did reference social and community impacts and we qualitatively assessed what was referenced in project definitions against the following three questions:

Are there primary monetised costs/cost savings associated with social and community impacts which could be practically measured in future to add rigor to appraisals and evaluations?

- We found that there were some fairly easily estimated effects which could be added in future submissions given sufficient time and resources.
- Future program guidance could encourage applicants to describe the consequences in a do-nothing case and estimate the costs imposed and costs saved by the intervention.
- Where floods are likely to cut access, the ATAP Framework has developed a simple flood resilience methodology to estimate the costs generated in a flood closure.
- Councils could draw on previous consultation findings or ask the effected community what it would mean to them and their businesses if access was impeded.
- It is important that a crash analysis or assessment of risk underpins safety claims.

Are there non-monetised impacts which may not be cost-effective to estimate but could be made more explicit in guidelines to guide evaluations and inform communities?

- A number of projects pointed to amenity improvements or an expectation that safety improvements would encourage people to visit or support mobility for locals needing some assistance.
- An Appraisal Summary Table accompanying a cost benefit analysis, or in place of one, provides a way to identify the presence (and perhaps the scale of changes) in hard to define benefits like visual amenity, public satisfaction with changes in access, impacts on culture. With guidance from the grant provider, respondents can rate the level of benefits they anticipate based on planning work,
- Community insights can be powerful – drawing on past or new consultations to gather a view on the significance of an access barrier or the perception of poor safety to hamper tourism attraction or business investment.

Are there secondary impacts anticipated and how can these be more consistently referenced in future to aid project comparisons and judging of outcomes?

- Secondary outcomes such as tourism economy benefits, or more productive freight businesses, have been referenced by many councils in FCR grant applications. The degree to which the outcome is logically linked to the change brought about by the project, varies. The closer councils can align the project induced change with the outcome, the more compelling the case for the project.

- Impacts like assessing a boost in the tourism economy or potential enhancement in the productivity of grain haulage require specialist skills, significant information and time and money that councils often cannot justify. Ideally, grant providers could provide some general guidance on typical relationships between direct road user costs and secondary outcomes under certain demand levels.
- It is important that, where secondary impacts are estimated (for example, the increased productivity of a business) they are not added to monetised benefits (for example, a reduced travel time) as this can result in double counting. When in doubt, reference the monetised benefits and reference the outcome outside any cost benefit analysis.

5. Program Comparison

5.1 Importance of Grant Funding

Grant funding directed at local government road infrastructure is essential in supporting local governments, particularly as in most cases their revenue base is insufficient to meet their local community's basic level of service needs (Australian Local Government Association 2018). Local roads provide a fundamental 'last mile' connection of agriculture and other rural based industries to the wider arterial road network for their economic viability to deliver and receive goods and services. Local roads are a fundamental part of the national transport system.

The demands on local government road infrastructure are increasing with the demand for increased freight transport efficiency, greater safety measures and a strong community focus all of which can have significant economic and social benefits. Freight efficiency is largely achieved by using larger heavier vehicles with increased payloads resulting in higher axles loads that in many cases exceed the structural capacity of the existing roads.

Much of the current local road infrastructure was constructed during the 1960s and 1970s and is rapidly approaching the end of its economic service life with pavement ages between 60 and 70 years. Most of these pavements are now not able to provide adequate levels of service without substantial reinvestment. Australian Local Government Association (2018) noted the current need for investment in local government infrastructure exceeds \$30 billion and is likely to continue to grow to meet national productivity, safety, and community requirements. This funding requirement well and truly exceeds the funding capacity of the local government sector under current revenue arrangements. Currently there are no accepted direct mechanisms to raise ongoing local infrastructure revenue through specific road user charges within local government areas.

5.2 Programs

5.2.1 List of State Government Road Infrastructure Programs

Name	Fixing Country Roads Program
Agency	Regional Roads Victoria (part of Department of Transport)
Type of program	Grants provided to councils to undertake local road projects beyond regular maintenance
Who aimed at	Rural and regional councils in Victoria
Purpose	Created to assist councils improve the current state of their local roads to enhance the connectivity, reliability and efficiency of regional communities
Scale and timeframe	\$100m over two rounds, each year in 2018-19 and 2019-20
How delivered	<p>Announced in 2018-19 Budget</p> <p>Guidelines issued in late September 2018</p> <p>SmartyGrants process deployed</p> <p>Round 1 submissions were required in Oct 2018 with only weeks available to prepare submissions, successful Round 1 grants were published in late Oct 2018 for delivery by June 2019</p> <p>Round 2 submissions required in early 2019 providing councils with more time to prepare submissions. Successful grants published in May 2019 for delivery by June 2020</p> <p>Projects were largely completed in 2020 and 2021</p> <p>The guidelines require councils, upon completion of projects, to submit annual evaluation reports assessing the project's success in meeting its stated objectives, outputs and outcomes. No evaluations have been made available to this review at this stage.</p>

What it achieved and any evaluation	<p>The program was welcomed at all 48 rural and regional councils received funds. State outlays of around \$100m plus local government funds and contributions from other sources saw total expenditure of just under \$150m into Victoria's rural and regional local roads.</p> <p>Two reports on project descriptions and funding shares for each of the two rounds. No publicly available reviews.</p> <p>Unreleased analysis prepared for the State Government on the economic value of the projects in terms of effects on local economic output, jobs and value-added.</p>
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Name	Country Roads and Bridges Program
Agency	Department of Transport, Planning and Local Infrastructure
Type of program	Allocation of up to \$1m per year for 4 years for 40 eligible regional councils
Who aimed at	40 eligible regional councils in Victoria
Purpose	To ensure regional roads and bridges are renewed and maintained.
Scale and timeframe	2011-12 to 2014-15, \$1m allocation
How delivered	Simple transfer of funds annually once eligible councils identified
What it achieved and any evaluation	<p>Untied grant which was popular as it provided autonomy for councils and a multi-year program upon which they could build a program of works, confident these funds would be available to support implementation.</p> <p>Authors not aware of any published evaluation.</p>

Name	Local Government Infrastructure Program
Agency	Regional Development Victoria, a statutory body now part of Department of Jobs, Precincts and Regions
Type of program	<p>A Part of the Regional Growth Fund under a previous Victorian Government, this initiative aimed to provide regional and rural councils with certainty to plan for, and build, new public infrastructure or to renew assets.</p> <p>The Local Government Infrastructure Program (LGIP) was a \$100 million initiative.</p>
Who aimed at	LGIP was only available to the local councils.
Purpose	To support a range of council initiatives and community assets
Scale and timeframe	\$100m
How delivered	<p>Projects funded through the LGIP were nominated through councils' Forward Capital Work Plans, which are the councils' long-term infrastructure programs.</p> <p>Funding was determined by a formula based on several demographic factors including population.</p>
What it achieved and any evaluation	<p>This was an untied grant which was popular as it provided autonomy for councils and a multi-year program upon which they could build a program of works, confident these funds would be available to support implementation.</p> <p>The authors not aware of any published evaluation.</p>

Name	Regional Infrastructure Fund (Part of Regional Jobs and Infrastructure Fund) – Rounds 1 and 2
Agency	Regional Development Victoria, a statutory body in the Department of Jobs, Precincts and Regions – under the Andrews Government
Type of program	<p>Funding will be provided for projects that:</p> <ul style="list-style-type: none"> - improve the economic performance, potential and outcomes of a precinct, town, or region - improve business, transport, retail, education, social, cultural, industry or community linkages - provide multi-purpose infrastructure, suitable and accessible for a wide range of business and community groups such as business hubs, co- working spaces, community, and event and visitor facilities - support cultural initiatives of economic significance to the region such as renewal of buildings and sites, arts and cultural centres or resource facilities. <p>Projects to plan or develop strategies or ongoing services were excluded but interestingly, at least one Victorian Council grant related to an integrated planning study associated with road realignment.</p>
Who aimed at	Applications were invited from regional and rural councils, associations and rural organisations with proposals meeting the criteria
Purpose	The Regional Infrastructure Fund Round Two (RIF) forms part of the RJIF and seeks to assist the growth of rural Victoria by providing grants for infrastructure projects that have the potential to stimulate

	<p>economic and community activity, including those that seek to support recovery from COVID-19 and other major economic challenges, in regional Victoria.</p> <p>The objectives of the RIF are:</p> <ul style="list-style-type: none"> - to create and retain jobs and support regional economies and communities, including transition, diversification, and recovery efforts - to increase economic and social benefits through improved community access and usability of precincts, town, or region - to increase economic and social benefits through investment in strategic and public enabling infrastructure.
Scale and timeframe	Funding requests will be considered between \$20,000 and \$3 million excluding GST.
How delivered	<p>Consisted of two rounds of funding. Round 2 has now closed.</p> <p>RIF-R2-Approved-Guidelines-2.pdf (rdv.vic.gov.au)</p> <p>Applications were assessed against a weighted set of criteria including:</p> <ul style="list-style-type: none"> - project aims (incl economic benefits, catalyst for growth, social and env benefits) 20% - project need (strategic need shown) 30% - project delivery (incl feasibility, investment ready, all approvals available) 30% - capability, capacity and track record 20%.
What it achieved and any evaluation	Not known.

Name	Local Roads to Market
Agency	Agriculture Victoria
Type of program	Improve local road connections and create more direct routes along Victoria's road-freight network to support farmers and agribusinesses.
Who aimed at	The program supported rural, regional, interface councils and unincorporated areas
Purpose	The objective of the program was to improve the competitiveness of the agriculture sector by upgrading local roads and bridges to enable and improve safer access for heavy vehicles transporting livestock, produce and other agricultural products to market.
Scale and timeframe	<p>\$25m has been made available with funding for local roads projects uncapped and funding for bridges capped at \$300,000.</p> <p>Round one of the Local Roads to Market program funded 29 projects across regional and rural Victoria, with total project investment worth \$22.2 million.</p> <p>Round two in late 2017 resulted in 39 projects worth \$24 million.</p>
How delivered	<p>Local Roads to Market projects include the following:</p> <ul style="list-style-type: none"> - upgrading the load bearing capacity of local roads and/or bridges to a standard suitable for heavy vehicles (e.g. B-doubles, road trains, higher productivity vehicles, higher mass limits vehicles) - sealing of gravel roads and/or widening of existing local roads - improving local road intersections, including the intersection of a local road with an arterial road or national highway.
What it achieved and any evaluation	<p>Local Roads to Market was a key part of the Government's Agriculture Infrastructure and Jobs Fund.</p> <p>Agriculture Victoria and the then Minister for Agriculture (2017) published information on the name, location and cost of grants assigned under the first program. No evaluation has been cited.</p>

Name	AgriLinks Upgrade Program (AUP)
Agency	Agriculture Victoria
Type of program	AgriLinks Upgrade Program (AUP) is funding shovel-ready local road improvement projects to support jobs and bolster the state's agri-food sector.
Who aimed at	AUP provides rural, regional and interface councils with up to \$350,000 for eligible road improvement projects. Additional funding was made available on a co-contribution basis.
Purpose	Projects funded under AUP aim to strengthen business productivity, support local communities, and assist Victorian farm businesses, agricultural supply-chains and agri-food producers to grow.
Scale and timeframe	The program was allocated \$20 million from the \$2.7 billion Building Works package
How delivered	<p>AUP is funding local road, intersection, and bridge improvement projects that:</p> <ul style="list-style-type: none"> - benefit the agriculture or food sector - are 'shovel ready' - can be completed within 18 months of commencement. - It has supported 50 road and infrastructure projects.

What it achieved and any evaluation	AUP opened in August 2020 and has now closed for applications
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Name	Fixing Country Roads (NSW)
Agency	Transport for NSW
Type of program	Funds to repair and upgrade local and regional roads to facilitate the movement of freight, to key freight hubs and state roads.
Who aimed at	Local councils can apply to repair and upgrade local and regional roads
Purpose	Fixing Country Roads is about moving freight more efficiently supporting jobs, economic growth productivity of regional NSW by reducing the cost of getting goods to market. As costs come down, consumers benefit at the till of their local supermarket and exporters become more competitive. Project outcomes enhance access for High Productivity Vehicles to key freight hubs and state roads.
Scale and timeframe	The NSW Government has invested a total of \$386 million into 302 projects across regional communities. The 2019 investment in fixing country roads is part of a \$543 million commitment for Restart NSW Fixing Country Roads. The NSW Government's existing \$543 million Fixing Country Roads program will be boosted to a total of \$1.54 billion in funding available to councils before and after the upcoming state election; including a \$500-million Fixing Local Roads program to assist councils in repairing, maintaining and sealing important local roads; and a \$500-million Fixing Country Bridges program to replace the worst timber bridges in regional and rural communities.
How delivered	The programs also include the transfer of up to 15,000km of council-owned roads back to the state government to manage. A new independent panel will be created to oversee the asset transfer process under the new programs. "The majority were 'gifted' as assets by state governments that were well aware they would become a huge expense for the receiving council.
What it achieved and any evaluation	Some examples of projects funded under Fixing Country Roads include road repair and strengthening, sealing of unsealed roads, road widening and construction of new roads. Other projects include strengthening, widening of, or replacing of an existing bridge or culvert, as well as the construction of rest areas and improvement to flood resilience of infrastructure.

Name	Fixing Local Roads (NSW)
Agency	Transport for NSW
Type of program	This NSW program supports shovel-ready projects to repair, maintain and seal priority local roads across NSW.
Who aimed at	The Fixing Local Roads Program is available to local government bodies in regional NSW - 93 eligible regional councils, Unincorporated Far West and Lord Howe Island. Councils can apply for funding to complete vital works to improve journeys for regional communities, farmers and freight.
Purpose	Councils can apply for funding to complete vital works to improve journeys for regional communities, farmers and freight. The Program will assist councils to accelerate upgrades and reduce their local roads maintenance backlogs.
Scale and timeframe	The NSW Government funded this program with \$500m over 5 years. In 2020, the Australian Government committed an additional \$191 million to the Fixing Local Roads Program to support economic activity in regional NSW. This increased the total funding for the Program to \$691 million.
How delivered	Round 1, launched in 2019, has seen funding of over \$243 million provided to 84 councils to deliver 253 projects. Round 2, launched in 2020, has seen further funding of \$150 million provided to 90 councils to deliver 108 projects. Program guidelines issued in June 2021 for the Round 3 launch were refined from experience with the first two rounds. The grants are administered through the SmartyGrants system. TfNSW uses a multi-criteria assessment process (consistent with the Transport for NSW Principles and Guidelines for Economic Appraisal of Transport Investments and Initiatives) using an evaluation framework and weightings and 'prioritisation attributes' (see App XXX)
What it achieved and any evaluation	To date, the Program has provided funding to 499 projects across the state, improving the day-to-day lives of locals and supporting vital jobs in regional NSW. Fixing Local Roads is an investment in the resilience of regional NSW. Well-maintained roads play a vital role in our regions, supporting growth and development, as well as providing access to critical services

	such as hospitals and schools. These benefits and connections stimulate the economy and contribute to the social wellbeing of our communities.
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5.2.2 List of Federal Government Infrastructure Programs

These programs were designed to assist councils, the Commonwealth Government provides the following three important programs.

Name	Roads to Recovery (R2R) Program
Agency	Department of Infrastructure, Transport, Regional Development and Communications (Commonwealth)
Type of program	Local councils are responsible for choosing road projects on which to spend their Roads to Recovery funding, based on their local priorities.
Who aimed at	The Program provides funding to all local councils and State/Territories in areas where there are no councils (unincorporated areas).
Purpose	The Roads to Recovery Program supports the maintenance of the nation's local road infrastructure assets, which facilitates greater accessibility and improves safety, economic and social outcomes for Australians.
Scale and timeframe	As part of the Local and State Government Road Safety Package announced in the 2019-20 Budget, the Australian Government committed an additional \$100 million per year to the Roads to Recovery Program from 2019-20. From 2013-14 to 2023-24, the Government will provide \$6.2 billion under the Roads to Recovery Program, with an ongoing commitment of \$500 million each year. On 6 November 2019, the Government announced \$138.9 million additional Roads to Recovery funding in the 2020 calendar year for the 128 Local Government Areas eligible for the Drought Communities Programme Extension. All Drought Extension funding has been paid to the relevant councils.
How delivered	Under the Roads to Recovery Program, direct funding to local councils is distributed according to a formula based on population and road length set by the Local Government Grants Commissions in each state and the Northern Territory. Each council's Roads to Recovery allocation is fixed for the life of the Program.
What it achieved and any evaluation	ALGA - The Commonwealth Government will have provided \$6.2 billion funding to local councils under R2R between the 2013-14 financial year to the 2023-24 financial years. In the 2020 calendar year an additional \$138.9 million was provided to the 128 Local Government Areas eligible for the Drought Communities Programme Extension.

Name	Bridges Renewal Program (Round 5) and Heavy Vehicle Safety and Productivity Program (Round 7)
Agency	Department of Infrastructure, Transport, Regional Development and Communications (Commonwealth)
Type of program	Funds to upgrade, replacement of bridges, and approach roads, assisting local communities.
Who aimed at	State, territory and local governments were encouraged to submit funding proposals for projects
Purpose	The Bridges Renewal Program (BRP) is an Australian Government initiative to fund the upgrade and replacement of bridges to enhance access for local communities and facilitate higher productivity vehicle access.
Scale and timeframe	Australian Government is providing more than \$760 million over the 10 years from 2015-16 to 2024-25, with an ongoing commitment of at least \$85 million per year from 2025-26. Available Australian Government funding is limited to a maximum of \$2 million per proposal for LGAs and \$2.5 million per proposal for states and territories. Proponents are limited to 5 proposals across either or both programs (BRP5 and HVSP7)
How delivered	Projects are funded in funding rounds. Since the program commenced in 2015 five funding rounds have been undertaken. The assessment criterion requires a page each on: <ul style="list-style-type: none"> - Structural Improvements Contributing to Access and Productivity - Evidence of Economic and Social Benefits (incl BCR, vehicle counts) - Construction Readiness and Risk - State and Territory Input. - Commencement required with 12 months and completion required within 24 months. BRP5 guidelines attached: BRP_R5_Guidelines.pdf (infrastructure.gov.au) HVSP guidelines attached: Heavy Vehicle Safety and Productivity Program (infrastructure.gov.au)

What it achieved and any evaluation	BRP5 is aimed at helping councils to upgrade or replace local bridges, especially timber bridges. The Australian Government is providing \$640 million from the 2015-2016 financial year to the 2022-2023 financial year, with an on-going commitment of \$85 million each following. (ALGA)
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Name	Black Spot Program
Agency	Department of Infrastructure, Transport, Regional Development and Communications (Commonwealth)
Type of program	Funding for relatively minor road improvements to address sites with a recent history of multiple casualty crashes (blackspot)
Who aimed at	<p>The Commonwealth Government invites nominations for Black Spot locations from state and territory governments, local councils, community groups and associations, road user groups, industry and individuals</p> <p>In Victorian, the State Government no longer seeks Black Spot Funding through this mechanism and encourages local governments to make submissions.</p> <p>More than 60% of road deaths and a significant proportion of serious injuries occur outside metropolitan areas. In line with national road safety policy objectives, approximately 50% of Black Spot funds in each state (other than Tasmania, the Australian Capital Territory and the Northern Territory) are reserved for projects in non-metropolitan areas. This ensures that crash locations in rural areas are treated (DITRDC 2021).</p>
Purpose	Black Spot projects target those road locations where crashes are occurring. By funding measures such as traffic signals and roundabouts at dangerous locations, the program reduces the risk of crashes. Programs of this sort are very effective, saving the community many times the cost of the relatively minor road improvements that are implemented.
Scale and timeframe	As part of the Local and State Government Road Safety Package announced in the 2019-20 Budget, the Australian Government has committed an additional \$50 million per year from 2019-20 to the Black Spot Program. The Government will provide \$1.2 billion to the Black Spot Program from the 2013-2014 financial year to the 2024-25 financial year, with an on-going commitment of \$110 million each year following.
How delivered	The Victorian Department of Transport administers the program on behalf of the Commonwealth Government, seeking input from a Black Spot Consultative Panel (chaired by a Member of Parliament or Senator appointed by the responsible Minister in each state and territory and including representatives drawn from community and road user groups, industry, Australian and local government, and state road and transport agencies). The Panel reviews applications and makes recommendations on the program. The state monitoring achievement through its regions and distributes funds in accordance with the program rules.
What it achieved and any evaluation	<p>There are numerous evaluations of blackspot programs.</p> <p>The Commonwealth Government states that "programs of this sort are very effective, saving the community many times the cost of the relatively minor road improvements that are implemented" on its program website (DITRDC 2021).</p> <p>A 2012 Monash University evaluation of the National Black Spot Program was estimated to have reduced fatal and casualty crashes in total at treated sites by 30% and property damage only (PDO) crashes by 26%.</p>

5.2.3 Lists of Other Federal Government Grants Programs

Name	Local Roads and Community Infrastructure Program
Agency	Department of Infrastructure, Transport, Regional Development and Communications (Commonwealth)
Type of program	Grants for local councils to deliver priority local road (signs, street lighting, bridges, tunnels, rest areas, off-road facilities and walkways) and community infrastructure projects across Australia, supporting jobs and the resilience of local economies to help communities bounce back from the COVID-19 pandemic.
Who aimed at	Local Councils across Australia
Purpose	<p>Deliver priority local road and community infrastructure projects across Australia to support jobs and the resilience of local economies to help communities bounce back from the COVID-19 pandemic.</p> <p>It is expected that councils will use local businesses and workforces to deliver projects under the LRCI Program where possible to ensure stimulus funding flows into local communities.</p>
Scale and timeframe	On 22 May 2020 the Australian Government announced a new \$500 million Local Roads and Community Infrastructure Program (LRCI Program). Through the 2020–21 Budget, the Australian Government announced a \$1 billion extension of the LRCI Program, following strong community and local government support.

How delivered	<p>There have been 2 phases of the LRCI Program and the third has been announced to commence from 1 Jan 2022.</p> <p>Projects for the first phases were required to be implemented within 6 months. Co-contributions are not required and the funding ranged from less than \$50,000 to more than \$2m in Phase 1.</p> <p>The scope of the LRCI Program supports a broad range of Eligible Projects so communities can fund the infrastructure that they need, support businesses and create employment opportunities across their communities.</p> <p>The formula used to calculate a Nominal Funding Allocation has been modelled on funding allocations under the Roads to Recovery Program (R2R) and the local road component of the Financial Assistance Grants Program.</p> <p>From 1 January 2022, councils will be able to access funding through LRCI Program Phase 3, with projects under the Program to be delivered by 30 June 2023. The increased funding available under LRCI Program Phase 3, as well as a longer delivery window, will allow for local governments to pursue larger, more complex projects that may be a higher priority and have a bigger impact on the community.</p> <p>COVID-19 Local Roads and Community Infrastructure Program Guidelines</p>
What it achieved and any evaluation	Grants funded under the first two rounds have been published by the Commonwealth Government.

5.3 Other Grant Funding Programs Comparison with FCR Program

5.3.1 General Features

The above sections show that there are some 12 grant funding programs, including the FCR Program, that provide funding for various aspects of state and local road infrastructure. These programs are administered by various state government bodies, while all federal funding programs are administered by the Department of Infrastructure, Transport, Regional Development and Communications (DITRDC). Using the DITRDC to manage grant funding at the federal level may have the advantage of consistency and some administrative efficiencies even if the aim, scope, and scale of these various federal grant funding programs differ.

5.3.2 Scope and Scale of Funding

At a state and local government level, the grant funding programs vary greatly in terms of their scale of funding and scope. The Country Roads and Bridges Program in Victoria has the lowest annual total grant of \$1 million, while the Fixing Local Roads New South Wales (NSW) Program has a similar level of annual funding to that of the FCR Program of around \$100 million. One major difference between these programs is that the Fixing Local Roads NSW Program is directed at local road projects that are ready to commence construction, i.e., 'shovel ready'. While this means that these projects take less time to complete compared with projects that are funded from the concept stage to being 'shovel ready' and then constructed, it has the consequence that the local government agency must spend its own resources getting projects 'shovel ready'. This approach runs the risk that in getting some of the projects 'shovel ready' they may not receive any funding if they do not meet the funding selection criteria.

The federal Roads to Recovery Program (R2R) currently has annual funding of \$100 million which is expected to increase to \$500 million. This will make this program the highest grant funded road program across Australia. This program's funding is based on a formula that considers population and road lengths set by the Local Government Grant's Commission. This is a different criterion than that used by the FCR Program for funding grants. The R2R Program's scope is applied widely to local roads across all states and territories and in areas where there are no councils. The federal Bridges Renewal Program is clearly focussed on replacing and upgrading local roads bridges with annual funding varying between \$76 million to \$85 million.

The federal Black Spot Program funding is directed to minor road safety improvements to rectify local black spot crashes. The annual funding is over \$100 million and because it is clearly targeted to specific localised safety defects, the program has been found to be highly effective.

Several grant funding programs have a clear social objective, such as the Regional Infrastructure Fund (RIF) and the Local Government Infrastructure Program (LGIP) both administered by the Victorian Department of Jobs, Precincts and Regions. Other programs such as the Local Roads to Market (LRM) and the AgriLinks Upgrade Program (AUP) administered by Agriculture Victoria, are clearly aimed at improving both the competitiveness and business productivity of agriculturally based industries. The grant funding of these programs is directed at upgrading rural roads and bridges. These programs have similar levels of annual funding ranging between \$20 million to \$25 million.

5.3.3 Administrative Matters

Section 6 has limited information about the time frames required to meet the various grant funding program opportunities and milestone requirements. It appears that the FCR Program has a relatively tight program from project conception to approval and then onto being 'shovel ready' to reach final project completion over a time span of 12 months or so. Other grant funding programs that provide funding at the 'shovel ready' stage have a similar time span of 12 months for this stage to project completion which appears to be more accommodating of the realities of project construction activities.

From Section 6, other grant funding programs do not appear to have a post project review phase that examines and seeks to assure how effective each approved and funded project was in achieving its stated aims. This is a significant feature of the FCR Program.

The opportunity for multi-year large scale projects does not appear to be a feature of any of the grant funding programs. There can be considerable benefits in delivery of these projects due to scale and other efficiencies.

5.4 Lessons from the Victorian Auditor-General's Audit of Maintenance of Local Roads

The Victorian Auditor General's Office (VAGO) recent report on maintaining local roads critically noted that councils were not able to determine, in quantitative terms, whether they were achieving value for money in maintaining their road networks (Victorian Auditor General's Office 2021). This was largely seen to be because many councils do not have sufficient road asset condition and detailed cost data to assess and benchmark their performance. Some councils were also found not to be effectively engaging with their communities to fully understand the road users' needs on their local road networks.

These critical comments, although not representative of all councils, suggest that many councils are not using best asset management practice for managing their road networks to achieve low whole of life cycle costs. If this is the case, it suggests that many of the grant funded projects could be deferred when better maintenance practice reduces rates of road deterioration. Nearly 60% of the grant funded projects (see Table 3.1) are involved with some form of pavement rehabilitation, so the adoption of best asset management practice has the potential to either reduce council's reliance on the FCR Program or allow funding of a range of project currently not funded that have economic and social merit.

6. Conclusions and Recommendations

6.1 Key findings

Rural local transport networks form a fundamental part of Victoria's integrated transport system which all governments have a role to play to develop, maintain and manage. The benefits derived from local roads accrue to ratepayers and non-ratepayers alike, although taxation and charging powers are not so equitably shared. Consequently, grants and funding programs from the state and federal governments are fundamental to safe and reliable access for Victorians and visitors in rural areas. This is particularly the case in a rate-cap environment.

Following council staff interviews, a program comparison, analyses of the economic and social impacts of projects under the FCR Program and the authors' research and road management experience highlight a number of observations before we offer recommendations.

Having a stock of high merit proposals with strategic fit developed and ready to fund.

Whether grants are tailored to tightly defined objectives or general and broad allocations to enhance or support council initiatives, many rely on councils to have a pre-existing stock of 'shovel-ready' investments. Grant providers also assume projects are demonstrably strategic with requisite planning and environmental approvals in place. Some councils do but for many rural councils, the strategy may be clear, the public demand strong and the concept obvious but resources for project planning hard to justify before grants are announced. Few grants support strategic or detailed project feasibility work but assume councils manage this.

Council staff pointed to past Regional Development Victoria (RDV) funding support for regional planning capability building as helpful for councils to prepare for funding opportunities. Some lamented a loss of regional coordination in planning to ensure cross-boundary matters can be addressed and resources are devoted to ensuring good strategies are implementable when the funding opportunities emerge, often without prior warning.

Some council staff indicated the issue was less about access to information on demand and supply of transport infrastructure to address strategic needs (notwithstanding the VAGO finding that councils inconsistently use asset condition data to support maintenance programs), but the inability to justify the expensive and resource-intensive project development.

Support for Asset Management

Councils welcomed the FCR program as an important opportunity to address asset management pressures beyond annual programs. Some indicated a reluctance to spend rate revenue on road upgrades in a rate cap environment with such large backlogs of maintenance. They felt it better to use rate revenue to fund regular maintenance and use grants to upgrade while they build an infrastructure reserve necessary to meet the pressures of maintaining a growing asset base – especially those 'gifted' after disasters or added to meet growth.

Such grants address improvements which help minimise the annual maintenance requirements and help councils to ensure hazards and defects are addressed as closely as possible with their Road Management Plans.

Councils indicated the short time between announcement and the first FCR program submissions date meant little time was available to develop proposals and provide rich detail to reinforce submissions. Councils were well aware of the value of pro-active asset planning and requirements for asset plans under the Local Government Act (2020) and were equally aware that planning resources and implementation resources are in competition and both are fundamental to asset management which optimises life-cycle cost.

Generally, it seems rural councils were cognisant of the pressures their staff were under to meet the grant submissions and took the technical advice their experts and advisors in selecting the appropriate projects for submission.

VAGO reinforced in its March 2021 report that councils were not able to determine whether they were achieving value for money in maintaining their road networks. This was largely because many councils do not have sufficient road asset condition and detailed cost data to assess and benchmark their performance. Some councils were also found not to be effectively engaging with their communities to fully understand the road users' needs on their local road networks.

Unlike the similar NSW Fixing Country Roads program, the Victorian FCR sought advice on the outcomes, objectives and outputs expected and encouraged supporting information be provided by councils to support their submissions. Evaluation of achievements is flagged to be prepared by councils annually. It should be noted that in many cases, projects have not long been completed and these evaluations could be made public at a later date. The lack of a defined framework or appraisal template for benefits and costs will mitigate against ready post-project comparisons.

Demonstrating effectiveness

The councils interviewed welcomed the broad and flexible nature of the FCR to enable a wider range of needs to be addressed. The FCR guidelines provide a relative loosely defined criteria for councils to complete and for evaluators to judge. The project descriptions usually referenced problems, benefits, and outputs but no evidence of BCRs or multi-criteria assessments was published.

The State Government has assessed the value of the FCR program at a theoretical level through the attribution of value add and employment rates related to economic inputs and outputs. However, what's been missing until now was an effort to define the direct benefit to local communities from changes in user or agency costs or changes in the community impacts of roads. This evaluation has collected relevant project and site information (and assumed some elements) to estimate the economic value for different types of initiative and simply scale this up to the state estimate. The ability to quantify or list the net present benefits and costs, and their ratio, provides significantly more information to shape future submissions and even inform strategies.

Without definitive evidence, it is difficult for councils and RCV to make a strong case for further grants funds and to include changes to make them demonstrably more effective and the process as efficient as possible.

When it came to demonstrating outcomes, some council staff questioned a need for further detail or additional accountability for outcomes. This possibly came from one of three directions: a concern about whether a compelling economic argument could be drawn from the data in the time and with the resources, how the true project value could be reflected when only some of the benefits were readily quantified and, a (less common) view on council autonomy that the outcomes were a matter for local communities, new governance provided assurance and the state was merely a funder.

Better articulation of benefits and costs aids everyone. It helps councils to show communities they are maximising these grant opportunities. It reveals to the sponsor the return on investment and encourages this to be continued. It supports council efforts to enhance strategies and plans and demonstrate a link between initiatives and local and regional outcomes. It builds capability in appraisal and evaluation that can support improvements in a wide range of council investment planning and policy development work.

Rural councils can't do this alone – they need support, resources and opportunities to build the required information, develop compelling appraisals and demonstrate the strategic fit.

The economic merit of FCR Program projects in rural Victoria

As shown in Table 3.14, out of the seven sample projects used to represent the FCR Program funding of 184 projects from Rounds 1 and 2, five were road projects and two were bridge projects. The economic merit of the seven representative projects selected were assessed based on the ATAP's guidance on cost-benefit analysis for transport projects. A range of outcomes were obtained for these projects with their NPVs ranging

from -\$746, 558 to over \$4.25 million. Five projects had sound economic merit with positive a NPV, while the two sample projects without economic merit had low levels of AADT. The consequence of low AADT was that the benefits derived from safety and reduced road user costs were not sufficient to exceed the relatively large capital costs of these projects. An area of uncertainty was being able to estimate crash rates and crash rate reductions with some reliability on low trafficked roads in rural Victoria.

By scaling up the CBA outcomes of the seven sample projects, an estimation of the economic merit of the FCR Program as-a-whole can be assessed. When this was undertaken it found the FCR Program had a NPV of nearly \$80 million and an overall estimated BCR of 1.9. This is a satisfactory result assuming the sample projects were representative of the whole program.

Factoring social and community impacts into assessments

Both council staff recognise, and the program guidelines imply, that initiatives to support social and community needs are important but hard to quantify. As this review has shown, there are opportunities to provide more detail to economic appraisals incorporating social and community benefits. Councils are likely to find value in guidance, parameters and support in appraising these aspects. The State Government should sponsor this capability building effort as it would enable a more structured grants appraisal and evaluation approach for subsequent rounds of FCR and other programs.

The timeframes to plan, develop and deliver

Rural council staff indicated a preference for ongoing programs which offered time to develop initiatives and plan for future rounds.

Once councils provide submissions, they await announcement or project confirmation then have very limited to:

- gain agreement on council co-funding out of budget
- develop initiatives in detail
- consult as required with community including hearing indigenous voices
- gain environmental, cultural heritage and planning approvals
- procure in an often over-heated market with sometimes elevated prices
- account for seasonal limits on some pavement work
- manage delivery
- report and complete in 12 months, all while delivering the councils own program committed before the grant was known.

Some of these obligations are statutory and imposed by the state.

A two-year timeframe from announcement to delivery is more reasonable and would support enhanced project development, generate better value for money and not force truncated engagement or rushed approvals.

6.2 Suggested program improvements

This review has identified several opportunities to improve the process and outcomes of the FCR (and similar) programs from the perspective of rural councils. Specifically, we suggest the RCV advocate for the State Government to:

- develop a clearer framework of project outcomes in FCR guidelines (with worked examples and typical values). This could act as a prompt and opportunity for councils in the submissions process and a more objective evaluation framework.
- provide more advanced warning of grants schemes to assist councils to identify strategic priorities, undertake engagement and develop project submissions aligned with a more structured grants program.
- recognise that multi-year grants, like the Roads to Recovery program, are best placed to support councils to build meaningful forward programs and project development capabilities and anticipate future council financial contributions
- resource councils or regional groupings to develop pipelines of projects linked to regional strategies and council plans with accompanying evidence.
- consider programs involving capital investment need to provide sufficient time for project development, environmental, planning and cultural heritage approvals, engagement, local funding approvals, announcements, procurement and award, delivery and completion reports. Twelve months is not sufficient time to work through these project activities, often with seasonal restrictions on pavement work, and in a market heated from many councils competing for suppliers.
- publish information on the benefits and outcomes of the FCR program, not just project descriptions and costs, to better inform the community
- streamline the reporting obligation on councils under grants which impose an administrative burden which effectively duplicates the assurance provided under the Local Government Act 2020.
- pilot future SmartyGrants processes with a small number of councils to ensure the submissions process is efficient.

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Appendix A Rural Councils Interview Questions

The aim of the interviews was to understand council perspectives of the value of the program's two tranches, that is, Rounds 1 and 2, the project selection strategy and the expected benefits.

Questions

1. Was the Fixing Country Roads grant program well planned, administered and targeted by RRV?
2. What was the selection strategy you used?
 - a. next asset management priority
 - b. next capital investment
 - c. largest capital investment
 - d. highest economic value
 - e. highest community value
 - f. other
3. How did you determine the likely benefits?
 - a. Applied experience from a previous project
 - b. Benefits listed in a council report or plan
 - c. Output from Pavement management system/Asset management system
 - d. Economic appraisal
 - e. Advice from community/business(es)
 - f. We didn't
 - g. Other
4. Have they explored how the project had a measurable impact on communities, businesses, safety?
(Refer to some examples)
5. How could the State and/or Federal Governments improve support for rural roads?

Appendix B Parameter values used for CBA

B.1 Maintenance cost factors

Table B.1: Annualised road preservation costs

Location	Road type	\$/km (@FY2008/09 prices)	\$/km (@FY2018/19 prices)
Rural	natural surface	\$350	\$481
	AADT <100	\$2,500	\$3,437
	AADT100-500	\$5,200	\$7,149
	AADT 500-1000	\$5,800	\$7,973
	AADT >1000	\$6,600	\$9,073
Urban	AADT < 500	\$3,600	\$5,010
	AADT 500-1000	\$4,900	\$6,820
	AADT 1000 - 5000	\$6,600	\$9,186
	AADT >5000	\$10,700	\$14,892

Note:

- FY 2018/19 prices are obtained by multiplying an inflator of 1.37 to the FY2008/09 prices. The inflator is calculated using the second-quarter Produce Price Indices for Roads and Bridges Construction activities published by the Australian Bureau of Statistics

Source: (Hore-Lacy et al. 2009, Australian Bureau of Statistics 2021)

B.2 Economic parameters

Table B.2: Value of Travel Time for Rural Roads

Vehicle Type	Occupancy rate (Persons/vehicle)	Value per occupant (\$/person-hour)	Freight (\$/Vehicle-hour)	Occupancy rate (Persons/vehicle)
Cars- Private	1.7	15.71	0.00	1.7
Cars- Business	1.3	50.28	0.00	1.3
Light commercial (2 axle 4 tyre)	1.3	27.82	0.84	1.3
Medium (2 axle 6 tyre)	1.2	28.18	2.27	1.2
Heavy (3 axle)	1	28.72	7.79	1
Articulated trucks - 4 axle	1	29.07	16.79	1
Articulated trucks - 5 axle	1	29.43	21.40	1
Articulated trucks - 6 axle	1	29.43	23.08	1
Articulated trucks - 7 axle	1	29.43	23.08	1
B-Double	1	29.43	33.39	1
Triple road train	1	29.89	65.78	1

Source: (Australian Transport and Infrastructure Council 2016)

Table B.3: Vehicle operating cost by vehicle type

Vehicle Type	VOC Including Fuel Cost (Cents/Km)
Car	29.83
2x-4ty	48.08

2x-6ty	94.13
3 Axle	108.12
4 Axle	116.50
5 Axle	123.71
6 Axle	133.59
7 Axle	133.59
B-Double	173.04
Road Trains	198.00

Source: (Australian Transport and Infrastructure Council 2016)

Table B.4: Accident Costs

Risk Category	Cost per crash (\$) (Rural)
Fatality Cost per crash	8,461,965
Injury Cost per crash	233,623
Property damage only	10,055

Source: (Australian Transport and Infrastructure Council 2016) –

Table B.5: Crash Modification Factors

Project	Relevant treatment (Crash Modification Factor)	Composite Crash Modification Factors
Keegans Lane & Gundowring Road Intersection Safety Upgrade	<ul style="list-style-type: none"> • Reduce radius on left turn slip lane (0.5) • Painted turn lane (0.8) 	0.4
Gavan St Pedestrian Crossing Points	<ul style="list-style-type: none"> • Kerb blisters (0.9) • Pedestrian refuge (0.55) 	0.495
Widening of Timboon-Curdievale Road, Timboon West	<ul style="list-style-type: none"> • Seal shoulders (0.6) • Delineation (0.85) • Edgelines (0.7) 	0.357
Fixing Wiggs Lane	<ul style="list-style-type: none"> • Seal shoulders (0.6) 	0.6
Timms Road Bridge Poowong, Widening & Strengthening	<ul style="list-style-type: none"> • Seal shoulders (0.6) 	0.6

Note:

- Composite Crash Modification Factor is the product of individual Crash Modification Factor of applied treatments

Source: Austroads (2015)

Table B.6: Environmental parameter values in rural area

Externality type	Light Vehicle (\$/1000 tonne-km)	Heavy Vehicle (\$/1000 tonne-km)
Air pollution	0.00	0.27
Greenhouse Gas Emission	62.65	5.96
Noise	0.00	0.45
Water Pollution	0.30	1.61
Nature & Landscape	0.23	4.48
Upstream & Downstream Costs	208.81	23.87
B-Double	0.00	0.27
Road Trains	62.65	5.96

Source: (Australian Transport and Infrastructure Council 2020)

CONTACT US

Aidan McGann

Director

Mountain Vista Advisory Pty Ltd

E: aidan@aidanmcgann.com

Dr Tim Martin

National Discipline Leader – Performance Modelling,
Asset Performance

ARRB

E: Tim.Martin@arrb.com.au

ARRB.COM.AU

