Version 0.1

Infrastructure Priorities for the Regions

Key findings to inform Victoria's 30-year infrastructure strategy update

December 2020

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1. Executive summary

Victoria's regions are as diverse as they are spectacular. From Gippsland to the Mallee, and Great South Coast to Ovens Murray, each region contains a diversity of experience, strengths, opportunities and challenges. Long-term trends such as changes to local economies, urbanisation, population growth and decline, and climate change are affecting our regions more than ever before. The 2019-20 bushfires and the COVID-19 pandemic have caused major disruption and accelerated the pace of change. Each of Victoria's regions is responding to these shared drivers of change in different ways.

Infrastructure Victoria committed to build a deeper understanding of infrastructure needs and impacts in regional and rural Victoria as part of Victoria's first *30-year infrastructure strategy* in 2016. Over the last three years, we have built our knowledge of regional communities, examining the unique opportunities and challenges facing each of Victoria's regions and exploring recommendations which seek to address them. Infrastructure Priorities for the Regions is one of several work programs that has helped to inform Victoria's draft *30-year infrastructure strategy* update.

We have engaged extensively with stakeholders from across Victoria's nine regions: Barwon, Central Highlands, Gippsland, Goulburn, Great South Coast, Loddon Campaspe, Mallee, Ovens Murray and Wimmera Southern Mallee. This engagement has been invaluable in building our evidence base, testing our findings, shaping our recommendations and allowing us to draw on the extensive knowledge and expertise residing within the regions.

While our work has demonstrated the unique character of each of Victoria's regions, it has also illustrated the extent to which infrastructure needs are shared across them. However, regional Victoria's infrastructure needs are very different to those in Melbourne. Our work has therefore confirmed that regional Victoria faces issues and opportunities which are specific to regional areas, and that solutions designed for Melbourne cannot simply be transplanted.

A clear message emerging from our research has been the need for a dual focus when considering regional infrastructure. Victoria's regions have economic and industry strengths that can help deliver regional economic growth into the future. But within the regions, people living in some areas have access to fewer resources and services, which influences individual, family and community opportunities and outcomes.

The Infrastructure Priorities for the Regions program has developed two complementary frameworks which provide a new and structured approach to prioritising potential infrastructure solutions to specific regional challenges and opportunities. One aims to identify investment priorities that build on regions' unique economic advantages to activate regional growth opportunities (*Comparative advantage framework*). The other seeks to strengthen regional communities by improving economic, health, education and social inclusion outcomes and addressing relative disadvantage (*Addressing regional disadvantage framework*).

The frameworks are built upon a series of outcomes statements which collectively define the regional constraints and opportunities that infrastructure investments will seek to address:

- ***Comparative advantage framework*:**
    - Deliver greater productivity and efficiency.
    - Provide better access to markets.
    - Support industries to be more resilient to economic shocks and climate change.
    - Unlock new industry growth opportunities.
- ***Addressing regional disadvantage framework*:**
    - Improve economic outcomes for individuals by increasing access to jobs and businesses or reducing the costs of living.
    - Improve education and health outcomes by increasing access to health, education and social services.
    - Improve social inclusion outcomes by increasing access to social and civic infrastructure.

While Infrastructure Victoria has used the frameworks to identify infrastructure solutions that will achieve the specific outcomes of our Infrastructure Priorities for the Regions work, we believe they have broader potential application and could be applied to infrastructure planning and prioritisation work in other contexts.

Informed by the *Comparative advantage* and *Addressing regional disadvantage frameworks*, our work program identified and developed 22 draft recommendations that collectively respond to many of the infrastructure-related opportunities and challenges facing Victoria's regions. These recommendations cover a wide range of sectors, aiming variously to enhance

productivity for regional businesses, open up new industry growth opportunities and improve access to jobs, health, education and social services for regional communities. In drafting our recommendations, we have targeted infrastructure solutions that respond to the shared challenges and opportunities across Victoria's regions. Taken together, they seek to support regional economic development and to enhance regional Victorians' quality of life.

While some of our draft recommendations propose building new infrastructure, more focus on making better use of existing facilities and resources. We explored ways of maintaining, upgrading, retrofitting and repurposing existing assets to ensure they are fit for purpose to meet changing regional needs, whether it be sharing community facilities to deliver a range of social services or leveraging the existing rural library network to improve digital inclusion in the regions.

Our recommendations are also underpinned by the role of infrastructure in enhancing connectivity, a priority in the regions given the relatively dispersed populations and large distances between them. It is not always possible to provide the same range and diversity of services in regional and rural Victoria as in metropolitan areas, as evidenced by the increasing consolidation of services in regional centres. But infrastructure can support innovative solutions to connect people to jobs and services which may be outside their local area. Equally, it can improve connections between businesses, producers, markets and customers, allowing regional industries to compete domestically and globally.

These recommendations form a key part of the draft *30-year infrastructure strategy* update, however the full program of strategy work seeking to benefit regional Victoria extends beyond the 22 recommendations outlined in this report. We are publishing our Infrastructure Priorities for the Regions work to coincide with the release of the draft *30-year infrastructure strategy* update for broad community and stakeholder consultation.

This report concludes the Infrastructure Priorities for the Regions program, but our work to build our understanding of regional Victoria's infrastructure needs will not end here. We will continue to work with regional stakeholders and communities to ensure the views of regional and rural Victorians are represented in our work and we look forward to continuing this important conversation through our draft strategy consultation.

1.1 Summary of recommendations

Recommendation 01: Deliver funding certainty for regional road maintenance and upgrades

Within two years, specify clear levels of service for each type of regional road and bridge. Following this, dedicate an ongoing program to fund regional road and bridge maintenance and upgrades to meet these service levels. Funding should be prioritised based on improving safety, decreasing vehicle emissions, and lifting economic productivity.

A road maintenance hierarchy specifying the levels of service, or desired condition, of regional roads will provide a transparent framework so that every road is maintained in a condition suitable for its intended purpose. Long-term funding certainty will ensure that investments can be prioritised more efficiently to support economic and social outcomes.

Recommendation 02: Fund an ongoing regional rail freight maintenance program

Immediately fund an ongoing periodic regional freight rail maintenance program, informed by a publicly available network asset management plan.

The recommendation will form the basis for an efficient investment program to ensure the freight rail network is safe, reliable and fit for purpose. This should provide certainty to businesses and industry about the Victorian Government's commitment to rail freight.

Recommendation 03: Revise the Murray Basin Rail project plan

Immediately revise the Murray Basin Rail project plan, informed by the project's business case review.

Recommendation 04: Continue to address regional Victoria's digital connectivity gaps

In the next five years, continue delivering regional digital connectivity improvements, and review the need for further government investment following the roll-out of the Digital Future Now initiative.

Recommendation 05: Strengthen agricultural water security by modernising irrigation

During the next 30 years, contribute funding toward planning and delivery of irrigation modernisation projects across regional Victoria.

The recommendation aims to reduce water wastage and safeguard water supply for agriculture, in response to the potential impacts of climate change.

Recommendation 06: Upgrade Victoria's emergency water network

Immediately assess the condition, capacity and security of Victoria's emergency water supply point network, and upgrade or replace inadequate supply points. Clarify ongoing responsibility for maintenance and funding to secure a resilient network.

Emergency water supply points provide water for emergency stock and domestic purposes during severe dry seasonal conditions, surface water scarcity, and bushfires.

Recommendation 07: Invest in protecting Victoria's coasts

In the next eight years, invest in coastal protection upgrades and maintenance, including beach and dune protection and rehabilitation, and storm surge protection, particularly for coastal tourism assets in the Barwon, Great South Coast and Gippsland regions.

This will provide the long-term funding security and stability needed to safeguard coasts, homes, tourism and infrastructure.

Recommendation 08: Plan for future investment in regional nature-based tourism infrastructure

In the next five years, develop a Victorian nature-based tourism strategy to guide industry development and prioritise further investments.

Recommendation 09: Boost tourism infrastructure by allowing more national parks to grant long leases

Attract investment in Victoria's regional tourism industry by immediately allowing more national parks to grant leases for up to 49 years for infrastructure proposals that meet specific criteria and complement environmental and heritage values.

This recommendation aims to ensure that future commercial investments are viable, supporting continued growth in tourism across Victoria's regions.

Recommendation 10: Develop a Victorian Aboriginal tourism strategy

Partner with Traditional Owners to develop a Victorian Aboriginal tourism strategy in the next five years to guide future Aboriginal tourism investments, including through Joint Management Plans.

Recommendation 11: Upgrade power supply for agriculture and regional manufacturing

In the next five years, contribute toward strategic power supply infrastructure upgrades for agriculture and regional manufacturing, where an independent assessment demonstrates significant potential for increased productivity, competitiveness and growth.

These encompass energy projects with multiple beneficiaries, delivered through a partnership approach, that are scalable and replicable across regions.

Recommendation 12: Reform regional public transport to meet local needs

In the next five years, gradually redirect some regional transport funding to re-designed, integrated local transport services, based on regional needs assessments, and incorporating flexible services that meet local needs.

Recommendation 13: Improve resilience of regional telecommunications infrastructure

In the next 10 years, develop more resilient regional telecommunications infrastructure so communities can stay safe during emergencies, including greater network redundancy and back-up power supply.

Recommendation 14: Fund regional libraries to provide better internet access

Immediately provide funding for regional and rural libraries to improve community access to fast, free internet services, leveraging existing library infrastructure.

This recommendation will enhance access to modern digital technology that meets local needs, delivering a higher standard of library facilities to more Victorian communities and helping reduce the digital divide for those who do not have access to the internet at home.

Recommendation 15: Use rural schools for children's specialist and allied telehealth services

Retrofit or better use selected rural school infrastructure for children's specialist and allied telehealth services to improve children's health and development. Immediately begin with a trial in Wimmera Southern Mallee.

Recommendation 16: Fund more Youth Foyers in regional Victoria

Fund more Youth Foyers in regional Victoria, beginning with Geelong (Barwon), Wodonga (Ovens Murray) and Bendigo (Loddon Campaspe) by 2026, to build on existing education infrastructure and support vulnerable young people.

Youth Foyers offer affordable accommodation and support services to improve education, employment and housing outcomes as young people transition into adulthood.

Recommendation 17: Build regional residential alcohol and drug rehabilitation facilities

Within five years, build residential detoxification and rehabilitation facilities in regional Victoria to provide equitable access to alcohol and other drug treatment.

Residential rehabilitation provides 24-hour, staffed treatment programs that offer intensive, structured interventions after withdrawal from alcohol or drug dependence. Facilities should be built in regions where they are not currently available or planned – the Great South Coast, Mallee, Wimmera Southern Mallee and Goulburn.

Recommendation 18: Deliver multipurpose shared social service facilities in the regions

Immediately undertake collaborative inter-agency planning for regional social services to identify opportunities for multipurpose shared facilities, then deliver them where appropriate in partnership with local governments and community organisations.

Co-locating services in a shared facility can help meet the complex service needs of regional communities by improving access to services such as primary and allied health, education, child and family, legal and housing, as well as consulting rooms and community spaces.

Recommendation 19: Support regional councils to update, repurpose or retire outdated community infrastructure

Fund regional councils in the next five years to update, repurpose or retire outdated community infrastructure for better service delivery.

This will provide targeted support for councils where service planning demonstrates facilities are no longer fit for purpose. Funding applications should prioritise facility upgrades that are based in or serve disadvantaged communities.

Recommendation 20: Create climate-adapted facilities for rural communities

In the next five years, fund local governments to plan and help deliver a network of designated, accessible climate-adapted community facilities, to manage the health impacts of extreme heat and bushfire smoke.

Existing community facilities such as libraries and community centres can be retrofitted to be made fit for purpose as cool and cleaner air facilities – ensuring they are in safe locations, have suitable air conditioning and filtration, back-up power and comfortable amenities like cooking facilities and internet access.

Recommendation 21: Expand social housing in regional centres, in locations with good access

Focus social housing investments in regional centres, near access to transport and services, to contribute to a target of 4.5 social housing dwellings for every 100 Victorian households by 2031.

New social housing stock in the regions should focus primarily on the regional centres, with those centres with strong forecast population growth an immediate priority (for example, Geelong, Ballarat and Bendigo). These centres are best situated to provide access to transport and services, which are increasingly concentrated in regional hubs.

Recommendation 22: Make social housing suitable for changing local climates

Prioritising northern Victoria, continue to deliver a long-term program of modifying social housing to be climate resilient by improving the energy efficiency and energy affordability of residences.

This includes installation of split system air conditioning, energy efficiency improvements such as insulation, and solar photovoltaic panels. Modifications should be rolled out across the regions over time, with immediate priority given to addressing the already extreme temperatures in the Mallee region and northern parts of Wimmera Southern Mallee, Ovens Murray, Loddon Campaspe and Goulburn.

2. A regional lens to prioritise infrastructure

In Victoria's first *30-year infrastructure strategy* in 2016, Infrastructure Victoria committed to building a deeper understanding of the need for and impact of infrastructure investment in different parts of regional and rural Victoria.

Since that time we have focussed on building our regional evidence base, culminating in Infrastructure Priorities for the Regions. This work aims to examine the unique opportunities and challenges facing regional Victoria and to identify potential infrastructure investments which seek to address these. It is one of several work programs that has helped to inform the draft *30-year infrastructure strategy* update.

Infrastructure plays a significant role in regional development. Firstly, infrastructure can encourage economic growth by removing barriers to industry investment, enabling job creation and creating an environment where businesses can expand. Infrastructure that supports what regions are good at can strengthen regional economies and allow them to compete domestically and internationally. Infrastructure has a further role to play in supporting the needs of regional communities and enhancing quality of life. Infrastructure Priorities for the Regions has explored both aspects in detail, with a focus on how infrastructure can help address pockets of entrenched disadvantage in some parts of Victoria.

The future opportunities and challenges facing regional communities are complex and intertwined. Therefore, the level and mix of infrastructure investments need detailed and deliberate planning in order to maximise regional development and support local communities. To assist in prioritising the extensive range of potential projects across rural and regional Victoria, Infrastructure Priorities for the Regions takes a structured and evidence-based approach to decisions about infrastructure investments.

This report consolidates the findings of our regional work program, bringing together a three-year process of regional research and consultation. It outlines the frameworks we have developed to identify potential infrastructure investment opportunities in Victoria's regions, along with 22 draft recommendations aiming to respond to these. Throughout this process we have drawn extensively on stakeholder input, aiming to leverage the knowledge, expertise and experience held within the regions. Findings from our consultation and engagement are reflected throughout this report.

The recommendations identified in this report form a key input to the draft *30-year infrastructure strategy* update. We are consulting on the draft *30-year infrastructure strategy* update with regional communities and stakeholders as part of our commitment to seeking feedback and evidence that will inform a better infrastructure strategy for all Victorians. The final *30-year strategy* update will be released in 2021.

2.1 An overview of our approach

Our work for Infrastructure Priorities for the Regions was developed over three main stages, each with a strong focus on stakeholder consultation:

Stage 1 – determining regional infrastructure needs

Our Regional Infrastructure Needs research, completed in April 2019, aimed to develop a stronger spatial evidence base to understand regional Victoria's challenges and opportunities in depth across economic, social and environmental domains.

The main output was a series of nine regional profiles,[1] the result of a year-long process of gathering data and working with stakeholders across the state to ensure we had local insights to help us better understand the data. An inter-regional assessment accompanied the profiles, which brought together findings across the regions. While the nine profiles drew out the unique strengths and challenges in different parts of Victoria, the inter-regional assessment

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[1] See Regional Infrastructure Needs, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/

identified common attributes and change drivers across the regions which could inform potential future infrastructure responses.[2]

The initial draft profiles were developed following a review of existing data and research from Australian, state and local governments, regional associations, industry and community bodies. These draft profiles were tested and refined through nine half-day workshops held across regional Victoria, one in each Regional Partnership[3] region: Barwon, Central Highlands, Gippsland, Goulburn, Great South Coast, Loddon Campaspe, Mallee, Ovens Murray and Wimmera Southern Mallee. Workshops were attended by more than 200 regional representatives including Regional Partnerships, local councils, regional-based government agencies, regional and community organisations and representatives from business, health and education providers.

The workshops provided a forum to discuss how to leverage each region's strengths and address their challenges, and what additional infrastructure investments would be required to achieve this. The workshops were invaluable in enabling us to tap into the local knowledge and expertise we needed to inform this work, and findings from our consultation helped to embed local context into each regional profile.

A key finding from the Regional Infrastructure Needs research was that regional infrastructure investments should be targeted towards building on a region's competitive strengths or reducing place-based disadvantage. This understanding provided the foundation for the next stage of our work: developing the prioritisation frameworks.

2017	Program inception
Oct–Dec 2018	Consultation: Regional workshops
Mar 2019	Regional infrastructure needs profiles
Apr–Jun 2019	Consultation: Targeted meetings
Oct 2019	Consultation: Workshops
Nov 2019	Prioritisation frameworks, profiles and factsheets
Dec–Feb 2019–20	Consultation: Submission process
Dec 2020	Final report and draft 30–year Infrastructure Strategy
2020–21	Consultation: Draft strategy
2021	Final 30-year Infrastructure Strategy

Stage 2 – developing the prioritisation frameworks

We developed two complementary frameworks to help determine regionally specific infrastructure opportunities. In line with our Regional Infrastructure Needs findings, one framework identifies investment priorities that build on a region's economic strengths (the *Comparative advantage framework*) while the other addresses regional disadvantage (*the Addressing regional disadvantage framework*).

The frameworks outline a new process, built upon a strong evidence base, to help government identify, evaluate and prioritise regional development opportunities, followed by associated infrastructure responses. They are guided by a series of outcomes statements which collectively define what Infrastructure Priorities for the Regions is seeking to achieve.

We applied the frameworks to each of the nine regions using a combination of desktop research, data analysis and stakeholder consultation to build a more detailed evidence base to supplement the Regional Infrastructure Needs profiles, and to begin prioritising options. This process enabled us to begin identifying infrastructure solutions to meet regional needs. The evidence base is summarised in the regional industry profiles and disadvantage fact sheets which accompany this work.[4] The frameworks are explained in more detail in Section 2.2, with worked examples of how we applied them provided in Appendix A.

Stage 3 – finalising recommendations

The final stage has been to develop our recommendations for the Victorian Government based on the evidence we have collected throughout this work, to feed into the *30-year infrastructure strategy* update.

Consistent with the earlier phases of our work, consultation and engagement have been key in developing and finalising our recommendations. We have tested the approach taken in our frameworks and collected additional "on the ground" data from regional stakeholders, drawing on their direct experience and knowledge of the regions. Two workshops,

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[2] Aither (2019) *Inter-regional assessment – an analysis of regional Victoria's strengths and challenges*, p. 1, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Aither-Inter-regional-assessment-March-2019.pdf

[3] Victoria's nine Regional Partnerships were established by the Victorian Government in 2016, recognising that local communities are in the best position to understand the challenges and opportunities they face. The Partnerships consult and engage with their communities to identify priorities for their regions, develop collaborative solutions to local problems and provide advice on these directly to the Victorian Government. Membership comprises community and business leaders, CEOs of local councils and a representative from Victorian and Australian Governments, to ensure that all levels of government are represented.

[4] See Infrastructure Priorities for the Regions, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

attended by approximately 100 government, regional and industry stakeholders, were used to test the frameworks and the accompanying evidence base.

The workshops were followed by a formal submissions process where we sought feedback on our evidence base, input on regional infrastructure constraints and on potential solutions. The submissions process was central to this stage of our work, helping to test our progress to date and to frame recommendations. A summary of the key themes raised in the submissions is provided in Section 2.4, and a list of submissions is included in Appendix B.

This work has culminated in 22 recommendations which aim to collectively respond to the infrastructure-related opportunities and challenges facing Victoria's regions. These recommendations are referred to in summary throughout this report, with the full recommendation and supporting evidence base outlined in Section 4.

Building a better understanding of regional infrastructure

In undertaking the Infrastructure Priorities for the Regions work program, Infrastructure Victoria committed to examining infrastructure needs across Victoria's regions more closely, and to developing stronger evidence to make better regional infrastructure investments.

Our work has incorporated three main components to build a comprehensive picture of the regions and guide us towards the draft recommendations outlined in this report: detailed research and data collection to build a new regional evidence base, development of a new methodology to help prioritise regional infrastructure investments, and extensive stakeholder consultation and engagement to test our findings along the way.

The scope of our work, and the draft recommendations it has informed, has been shaped by the interaction of these three components. Our research, supported by regional consultation, led us to specifically focus on opportunities to build on the economic strengths of Victoria's regions and to strengthen regional communities by improving economic, health, education and social inclusion outcomes. This guided the outcomes we were seeking to achieve, which were incorporated into the framework design – targeting our recommendations accordingly.

Infrastructure Priorities for the Regions is one of several work programs that has helped to inform the draft *30-year infrastructure strategy* update, however the full program of strategy work seeking to benefit Victoria's regions extends beyond the 22 recommendations outlined in this report. We have released region-specific summary documents alongside the draft strategy update to bring together a comprehensive picture of how the draft strategy's recommendations impact each of Victoria's nine regions.

The significant suite of resources we have developed throughout the Infrastructure Priorities for the Regions work program is available on Infrastructure Victoria's website, and includes:

- nine economic, social and environmental profiles identifying infrastructure needs in each region
- an inter-regional assessment bringing together the common infrastructure needs across regional Victoria
- a background paper on the role of infrastructure in addressing regional disadvantage
- regional disadvantage fact sheets which summarise outcomes for key demographic groups in local areas
- two frameworks to determine potential infrastructure priorities to build on a region's competitive strengths and address regional disadvantage
- nine regional industry profiles which summarise application of the *Comparative advantage framework*.

2.2   Introducing the frameworks

A clear message emerging from our Regional Infrastructure Needs research was the need for a dual focus when considering regional infrastructure. On the one hand, Victoria's regions have specific economic and industry strengths which can be leveraged to deliver economic growth into the future. On the other, some areas experience a relative lack of access to resources and services which influences individual opportunities and outcomes. Regional investments can therefore aim to both build on a region's competitive strengths and reduce place-based disadvantage.

To this end, we have developed two complementary frameworks to use in determining potential infrastructure priorities. One aims to identify investment priorities that build on regions' economic advantages (*Comparative advantage framework*), while the other seeks to strengthen regional communities by improving economic, health, education and social inclusion outcomes (*Addressing regional disadvantage framework*).

These prioritisation frameworks provide an outcomes-focussed and evidence-based approach to guide decision-making about infrastructure at an industry, regional or local level. They respond to Victorian Auditor-General's Office (VAGO)

findings that clear and measurable outcomes, supported by evidence, should be used to understand areas of greatest need and to target regional investments.[5]

The frameworks are built upon a series of outcomes statements which collectively define the regional constraints and opportunities that infrastructure investments will seek to address. These outcomes statements, detailed in Sections 2.2.1 and 2.2.2, have shaped the scope of our recommendations and directed our focus towards infrastructure investments that will make a difference to regional communities. These aim to respond to the needs and opportunities identified via our research and consultation, rather than issues which are not supported by available evidence.

Worked examples of how we have applied the frameworks to develop our recommendations are provided in Appendix A. Further details are available in the *Regional infrastructure investment opportunities and constraints assessment framework* and *Addressing regional disadvantage through infrastructure* reports on our website.[6]

2.2.1   Comparative advantage framework

Victoria's regions each have unique attributes that can grow economies, create jobs and transform industries. Victoria is better off when each region focuses on developing the goods and services aligned to these attributes and which are valued.

Our work aims to encourage economic growth in the regions through leveraging each region's natural (such as their unique landscapes and environment) and built (such as existing large scale infrastructure and connectivity to major end-markets) endowments, as well as the unique skills of the local workforce.

Focussing on each region's comparative advantage to determine priority infrastructure investments will enable economic growth through enhancing existing strengths and unlocking new opportunities. Infrastructure that supports what regions are good at will also strengthen Victoria's position as we compete domestically and internationally.

The *Comparative advantage framework* focuses on identifying and evaluating priority industries which could be supported by future infrastructure investments to build on each region's unique strengths and realise its economic potential.

Key concepts

A key requirement of the *Comparative advantage framework* is to identify the infrastructure-related opportunities and constraints facing industries which can deliver future regional economic growth. This is achieved by considering the different advantages of each region and the resulting areas of industry specialisation. This can be used to identify further opportunities for economic growth which are aligned to a region's existing industries of strength.

For the purposes of Infrastructure Priorities for the Regions, priority industries identified through comparative advantage analysis include industries consisting mainly of private firms and investment. This is because industries driven by private sector investment are considered capable of driving wider economic growth and development, as opposed to services driven mainly by population growth. Industries which have a mixture of private and public sector agencies, such as electricity, gas and water, are included in the analysis if they have comparative advantage. However, industries dominated by public sector investment are excluded as it is assumed that the demand and supply of services within the industry is a consequence of government policy rather than the private market. This includes industries such as public administration which, although major employers in the regions, are largely publicly funded.

Across regional Victoria, priority industries are typically agriculture, manufacturing and tourism, with emerging

> **What is comparative advantage?**
>
> Comparative advantage is an area of relative strength or specialisation. Each of Victoria's regions have industries or sectors which perform well when compared with other regions.
>
> Comparative advantage can be derived from:
>
> - regional advantages, such as geographical location, natural resources or access to critical infrastructure
> - sectoral advantages, comprising a combination of natural and man-made attributes such as skilled workforces, general profitability and favourable climate
> - historical advantage, which considers past industry growth as a potential determinant of future development opportunities.
>
> By incorporating this concept within the prioritisation framework, we are aiming to identify infrastructure priorities which build on each region's existing strengths and opportunities, and leverage these to enhance future economic growth and development.
>
> Our work looks for opportunities in regional industries that are growing, while recognising that other industries are in decline, and may not have an ongoing comparative advantage into the future.

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[5] VAGO (2019) *Regional Growth Fund: outcomes and learnings*, p. ix, available at https://www.audit.vic.gov.au/sites/default/files/20150916-Regional-growth.pdf

[6] See Infrastructure Priorities for the Regions, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

opportunities in mining and energy, although specific sectors and specialisations vary considerably within the individual regions.

Market failure in infrastructure occurs when a project with a net benefit to society is not developed by the private market despite being needed or wanted. One example of market failure is missing markets, where investors or businesses are unwilling to invest in infrastructure, such as energy transmission networks, if they are unable to charge or exclude other users (see *Recommendation 11: Upgrade power supply for agriculture and regional manufacturing*). Coordination failure is another example, where groups of people cannot coordinate themselves in order to achieve the best outcome for all (see *Recommendation 04: Continue to address regional Victoria's digital connectivity gaps* for an example of coordination failure in infrastructure).

Where market failure in infrastructure provision constrains growth opportunities, governments have a potential role to intervene. The framework can be used to prioritise these potential opportunities, ensuring that there is a clear rationale for government intervention before an investment decision is made.

In summary, the *Comparative advantage framework* can be used to identify:

- industries which are important to the future regional economy, and that will drive productivity and growth within a region
- growth constraints or opportunities facing these industries
- opportunities for government intervention in the form of infrastructure investments to remove these constraints or realise opportunities
- the relative priority of these potential interventions.

The framework is intended to help identify and prioritise the types of infrastructure projects required to address the opportunities and constraints facing a region. However, the design and selection of specific infrastructure projects would need to be subject to development of feasibility studies and business cases, as appropriate.

Prioritisation framework

The framework is built upon four outcomes statements which collectively define the regional constraints and opportunities that infrastructure investments will seek to address:

- **Deliver greater productivity and efficiency:** support opportunities to improve operation and production efficiency, to allow regions to compete domestically and globally.
- **Provide better access to markets:** enhance the ability of regions to compete by physically and digitally connecting producers, processors and markets.
- **Support industries to be more resilient to economic shocks and climate change:** identify responses to support adaptation to climate change risks or increase capacity to respond to industry shocks and transitions.
- **Unlock new industry growth opportunities:** support opportunities for new sources of economic growth and industry specialisation.

The framework further incorporates three investment principles which aim to guide decision-making for regional infrastructure and to clarify the appropriate role for government:

- **Principle 1:** infrastructure investments should build on the comparative advantages of industries operating within each region, supporting the infrastructure needs of industries of relative strength which can drive growth at the regional level.
- **Principle 2:** infrastructure investments should aim to address an identified need or maximise an identified opportunity for the industries operating in a region.
- **Principle 3:** government should intervene only where there is evidence of market or policy failure that requires remediation through infrastructure investment.
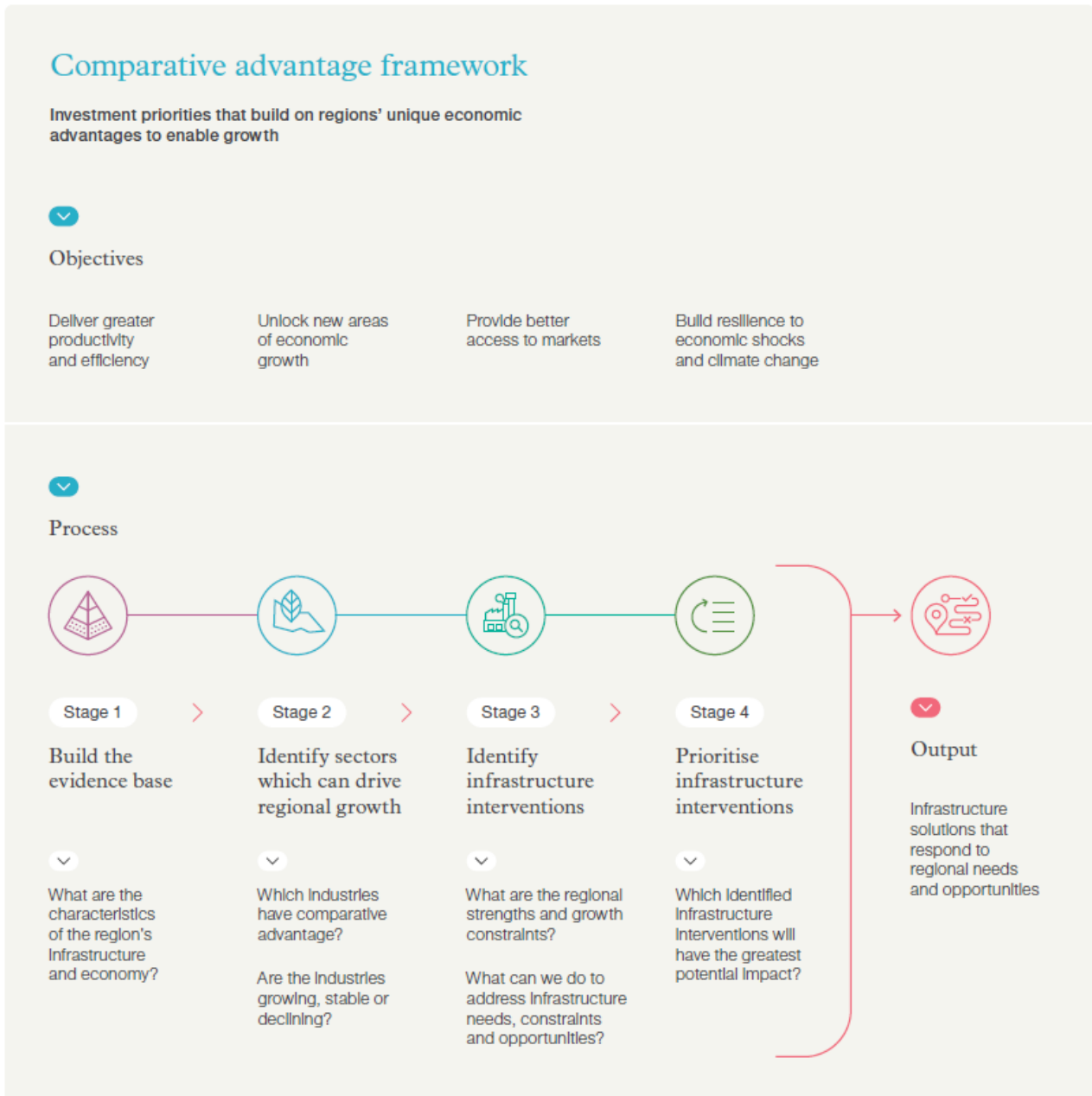
The process embedded in the *Comparative advantage framework* begins with data collection and consultation to build on the Regional Infrastructure Needs evidence. We profiled each region, its assets and industries to understand its sources of comparative advantage. We then used this to analyse industry strength and specialisation, filtering industries and sectors according to their ability to drive productivity and growth for each region.

Having identified industries that can drive future economic growth in a region, we analysed each region's strengths, weaknesses, opportunities and threats to clarify the issues affecting these industries. The next step in the prioritisation process was to identify the potential investments likely to address the infrastructure needs of each region. We undertook a needs analysis for each region and industry to highlight the gaps in current infrastructure provision, identifying the investment opportunities and constraints that government should address.

The final stage in the *Comparative advantage framework* involved a qualitative assessment of potential investment opportunities and constraints, prioritising them according to:

- alignment with the framework's outcomes statements
- ability to deliver economic benefits beyond a single local area, industry or region
- ability to support growth that will be sustained over time.

We applied the *Comparative advantage framework* to each of Victoria's regions, with findings outlined in nine *Regional industry profiles.*[7] The framework's prioritisation process has helps us shape the suite of recommendations aimed at realising regional Victoria's economic potential. A worked example of how we applied the framework is provided in Appendix A.

Comparative advantage framework

Investment priorities that build on regions' unique economic advantages to enable growth

Objectives

| Deliver greater productivity and efficiency | Unlock new areas of economic growth | Provide better access to markets | Build resilience to economic shocks and climate change |

Process

Stage 1	Stage 2	Stage 3	Stage 4	Output
Build the evidence base	Identify sectors which can drive regional growth	Identify infrastructure interventions	Prioritise infrastructure interventions	Infrastructure solutions that respond to regional needs and opportunities
What are the characteristics of the region's infrastructure and economy?	Which industries have comparative advantage? Are the industries growing, stable or declining?	What are the regional strengths and growth constraints? What can we do to address infrastructure needs, constraints and opportunities?	Which identified infrastructure interventions will have the greatest potential impact?	

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[7] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

2.2.2   Addressing regional disadvantage framework

While socioeconomic disadvantage exists in communities across Victoria, it can be more difficult for regional Victorians to access services and supports to help reduce disadvantage when compared with people living in metropolitan Melbourne. The *Addressing regional disadvantage framework* aims to explore infrastructure interventions that will best increase access to services needed to alleviate the disadvantage experienced by some of the most vulnerable communities in regional and rural Victoria.

Key concepts

Disadvantage depends on a complex range of factors related to each person's access to economic, human and social capital resources. These are, in turn, shaped by the areas in which they live.

Infrastructure plays a limited, but important, role in alleviating disadvantage – primarily because infrastructure interventions alone cannot remove the underlying causes of disadvantage. Infrastructure can improve access to economic resources and services through transport and digital connectivity, for example, or by helping to reduce the cost of living. It can also improve access to the facilities and services which help to build social capital, such as community infrastructure which encourages participation and fosters individual health and wellbeing.

Disadvantage occurs within a range of contexts and locations which each have their own characteristics. Infrastructure interventions must therefore meet the needs of a specific location or context. The complexity of disadvantage also means that to be effective, infrastructure interventions need to be part of a targeted package of integrated investment across government that address multiple risk factors simultaneously, rather than focussing on single issues.

Disadvantage can change over time. The changing nature of work, communities, society and the environment can influence the location and nature of disadvantage. Disadvantage may be entrenched in some families, but others experience greater or lesser disadvantage over time, and understanding who is at risk is important. Infrastructure interventions which seek to address disadvantage must therefore have the flexibility to adapt to the changing circumstances of local communities.

> **What do we mean by disadvantage?**
>
> Our use of the term disadvantage is guided by the background paper commissioned to inform this work, *The role of infrastructure in addressing regional disadvantage in Victoria*, available at infrastructurevictoria.com.au
>
> Disadvantage describes people who experience a low standard of living due to a lack of economic, human or social capital resources, or a lack of access to the opportunities to generate those resources.
>
> Disadvantage is a relative concept, with people on a continuum from most disadvantaged to most advantaged. In general, people who experience disadvantage:
>
> - have low incomes or resources, for example because they cannot access work, they are non-wealthy retirees or welfare recipients, or they are experiencing cost of living pressures from housing, energy or health costs
> - live in places with poor access to services and opportunities, for example in areas with declining populations that are unable to maintain viable services, in areas which are located away from economic opportunities and services, or in new developments on the outskirts of cities with no local services and poor transport access.
>
> While disadvantage can be found in all communities in Victoria, it is concentrated in certain regional areas because of drivers relating to the changing nature of industry and work, population ageing, wealth inequality and climate change.

The relationship between infrastructure and disadvantage is further shaped by an understanding of the life stages where targeted interventions in peoples' lives can have greater impact. Infrastructure interventions that support service provision at key moments when an individual is at risk of entrenched disadvantage (such as the early years, transition between school and work, and the transition between work and retirement) can have a greater impact than interventions at other times in people's lives. In addition, the role of community in making infrastructure investments a success must be considered. An infrastructure solution can only succeed if it is supported and valued by the community who will use it.

These considerations mean that place-based approaches are appropriate when considering potential infrastructure solutions to alleviate disadvantage. The *Addressing regional disadvantage framework* recognises that a combination of actions must be considered to improve economic, human and social capital assets in order to reduce disadvantage. It also considers the need to strengthen local and regional institutions and the role of community leaders in ensuring infrastructure solutions are targeted towards the specific needs of locations and their populations.

Prioritisation framework

The essence of the *Addressing regional disadvantage framework* is a filtering process in which a potentially large number of challenges and possible infrastructure solutions are narrowed down to a smaller number that can be assessed in depth.

Similar to the *Comparative advantage framework*, the *Addressing regional disadvantage framework* is designed around three outcomes. These focus on reducing disadvantage by improving:

- **Economic outcomes for individuals:** improve access to jobs and businesses or reduce the costs of living.
- **Education and health outcomes:** improve physical and digital access to health, education and social services.
- **Social inclusion outcomes:** increase access to social and civic infrastructure that helps build social capital or improves life outcomes by enhancing participation.

These outcomes help to reinforce one another. For example, improving someone's education outcomes can ultimately improve their ability to find work and earn a living.

The framework also incorporates five underlying principles which aim to determine the appropriate role for government in infrastructure provision which helps to address place-based disadvantage:

- **Principle 1:** infrastructure prioritised on the basis of alleviating disadvantage must show a strong evidence base linking it to disadvantage.
- **Principle 2:** accessibility and affordability are key considerations in the prioritisation process. The proposed infrastructure should either improve accessibility to key services or increase affordability.
- **Principle 3:** individuals and the community must have the capacity, capability and willingness to access and support infrastructure. Without this, or the potential to build it, the infrastructure will not achieve its intended purpose.
- **Principle 4:** the proposed solution must have the flexibility to meet the complex and changing nature of disadvantage.
- **Principle 5:** the proposed infrastructure must be fit for purpose and appropriate to the location where it will be built.

The first step in the *Addressing regional disadvantage framework* is to define the problem. This involved identifying the place-based policy challenges associated with disadvantage in each region, using a combination of existing reports, stakeholder consultation and available data. We then assessed the evidence base to determine whether the challenges were significant – both in absolute terms and relative to Victoria as a whole.

Having established the significant place-based policy challenges, we sought to establish whether there was a relationship between each of the identified challenges and an infrastructure solution – or whether other (non-infrastructure) policy solutions could more effectively address the issue. We also considered whether communities had the willingness and capacity to support the infrastructure solution and, if not, whether these could be built and sustained over time.

Where a strong link between a policy challenge and a potential infrastructure solution could be made, further consideration was given to whether the solution:

- delivers long-term benefits to the intended communities
- aligns with the region's comparative economic and industry advantages
- aligns with government's broader regional and social objectives.

The final step in the *Addressing regional disadvantage framework* was to prioritise the potential infrastructure solutions according to:

- alignment with the framework's outcomes statements
- ability to reduce the future likelihood or impact of disadvantage, by targeting a key life stage and/or priority cohort
- the willingness, capability and capacity of local communities to access, use and support the infrastructure solution over the longer term.

This prioritisation process has shaped the suite of recommendations aimed at strengthening regional Victorian communities. A worked example of how we applied the *Addressing regional disadvantage framework* is provided in Appendix A.

Addressing regional disadvantage framework

Strengthen regional communities by increasing access to health, education, economic resources and enhancing social inclusion

Objectives

Improve economic outcomes for individuals by increasing access to jobs and enterprise and reducing the costs of living

Improve education and health outcomes by increasing access to life-long learning, health and social services

Increase social inclusion outcomes by increasing access to social and civic infrastructure

Process

Stage 1	Stage 2	Stage 3	Output
Identify and define regional challenges	Establish relationship between regional challenges and infrastructure	Prioritise infrastructure interventions	Infrastructure solutions to help reduce place-based disadvantage
What are the challenges facing the region?	Are there challenges linked to infrastructure issues? What are potential infrastructure solutions? Does the community have, or can it develop, the willingness and capacity to support the proposed infrastructure? Does the proposed infrastructure offer long-term benefits?	Which identified infrastructure interventions will have the greatest potential impact?	

2.3   Drafting recommendations

The frameworks lay out a structured prioritisation process to guide decision-making for regional infrastructure. This was informed throughout by detailed stakeholder engagement and consultation to confirm regional needs and opportunities and guide the frameworks' design. This included targeted consultation with central and regionally-based government agencies, local government and peak groups. We also conducted a regional roadshow of nine half-day workshops with the support of the Regional Partnerships, attended by more than 200 people. This was supplemented by two further workshops, to test our findings and provide feedback on the frameworks.

Stakeholder submissions also helped us apply the frameworks to develop recommendations. We carried out a public submissions process to hear what potential infrastructure solutions were being considered in regional Victoria. These submissions, outlined in more detail in Section 2.4, provided input to help frame and develop our recommendations. Additionally, Infrastructure Victoria worked closely with government departments on potential infrastructure solutions and drew extensively on regional priorities identified by the Regional Partnerships.

Applying the prioritisation frameworks and underlying principles to the broad range of potential infrastructure options has involved exercising informed professional judgement. For example, in determining which investment options should be

taken forward as recommendations we considered the spread of potential investments across frameworks and outcomes, to ensure recommendations addressed a region's comparative advantages and considered ways of alleviating disadvantage. This was important, given that the complex nature of disadvantage means that the link to potential infrastructure solutions can be difficult to determine. We tested draft recommendations with stakeholders throughout the process and obtained further guidance from an expert panel on the role of infrastructure in addressing disadvantage.

Our Regional Infrastructure Needs research highlighted the unique opportunities and challenges facing each of Victoria's regions. However, our subsequent research and engagement to identify potential infrastructure responses have illustrated the extent to which infrastructure needs are shared across the regions. In applying the *Comparative advantage framework*, for example, we identified freight transport infrastructure as a constraint to future industry growth and development in each of the nine regions. Similarly, working through the *Addressing regional disadvantage framework* highlighted a shared need to improve access to health and welfare services in each region.

While these needs may be shared across regions, they are very different to metropolitan Melbourne's infrastructure needs. Our work has therefore confirmed that regional Victoria faces issues and opportunities which are specific to regional areas, and that solutions designed for Melbourne cannot simply be transplanted to the regions. As a result, we have drafted recommendations which can be applied in multiple regions in response to shared issues and opportunities, seeking solutions which, while relevant across regions, have the flexibility to respond to unique local needs.

While developing potential recommendations for Infrastructure Priorities for the Regions, the Victorian and Australian Governments announced a series of economic stimulus measures for businesses and individuals in response to the 2020 COVID-19 pandemic. These stimulus programs are designed to have a wide-ranging benefit. As a result, there are areas of similarity between some of the stimulus measures and the recommendations outlined in this report.

The Victorian Government's Building Works stimulus package, for example, includes provision of more than $11 million for coastal protection across the state,[8] of which $6 million will be for asset protection infrastructure. This has a similar focus to *Recommendation 07: Invest in protecting Victoria's coasts*, which proposes funding of $30 million over eight years to safeguard Victoria's coastline and mitigate the impacts of climate change. Following assessment, however, we believe our recommendation is still required. Government stimulus measures have been framed in the context of an immediate response, whereas our focus is necessarily longer term, to support the objectives of the *30-year infrastructure strategy*. The stimulus measures may provide a critical first step, but the need for additional, long-term responses to the complex issues facing Victoria's regions remains.

2.4   Stakeholder submissions

We consulted extensively with stakeholders throughout the Infrastructure Priorities for the Regions program, culminating in a formal submissions process where we sought feedback on our evidence base, input on regional infrastructure constraints, and potential solutions.

We received 47 formal submissions from local councils, industry groups, regional bodies and service providers, with representation from each of Victoria's regions. Submissions covered a wide range of issues and expressed a diversity of opinions. Some consistent issues and needs are shared across regions, although the way these manifest at the local level varies widely. A summary of the most common issues is provided below, with a full list of submissions in Appendix B.

We have considered all submissions received and examined the potential impacts for supporting regional economic growth and addressing disadvantage. Submissions have been invaluable in helping to shape and confirm the focus of our recommendations and have added considerable local detail to our evidence base. Infrastructure Victoria would like to thank everyone who has contributed to this work.

There will be further opportunities to provide input on our regional work as part of an eight-week period of formal consultation with the community and stakeholders following release of the draft *30-year infrastructure strategy* update. The final strategy will be released in 2021.

Public transport

The most raised issue in the submissions we received was the need for improved public transport in regional areas. This covered both bus and rail services, as well as connections between the two.

While some submissions proposed additional services between Melbourne and the regions, particularly regional centres, a greater number focussed on the need for improvements to local transport within regions. This was a particular issue for young people who are less likely to have their own transport. Multiple examples were provided to illustrate that in many

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[8] Victorian Government (2020) *Protecting Victoria's unique coastline*, available at https://www.premier.vic.gov.au/protecting-victorias-unique-coastline/

cases, where services exist, timetables do not support those needing to access education, training, jobs or services in larger regional centres.

A couple of submissions raised regional fast rail as an area of interest, in part to support decentralisation from Melbourne. Consistent with our *Growing Victoria's Potential* report,[9] Infrastructure Victoria does not support regional development as a solution to Melbourne's population pressures. Our view on regional fast rail is in line with this approach – we consider it unlikely to address Melbourne's growth challenges and it may have negative unintended consequences for the regions. The Grattan Institute shares this view, questioning whether any benefits associated with fast rail would flow to regional cities, and identifying better internet connectivity and freight links as more pressing infrastructure needs in the regions.[10]

Instead of fast rail, Infrastructure Priorities for the Regions has focussed on solutions that can improve transport options within regional areas, to support access to jobs and services which are increasingly located in regional centres.

Community facilities

Multiple submissions from local councils and community organisations explored ways in which facilities can better meet the needs of local communities. Some stakeholders identified opportunities to develop multi-disciplinary medical centres, or integrated hubs offering a range of health and community services from a single facility. Co-location of multiple agencies was proposed to encourage collaboration and improve flexibility of service provision. Others flagged the need to ensure existing facilities are adequately maintained, while adapting facilities to cope with the impacts of climate change was also identified as an emerging opportunity.

The requirement to get more out of community facilities and ensure they remain fit for purpose as community needs change and evolve aligns with the aims we outlined in the first *30-year infrastructure strategy*, to make better use of existing assets. Infrastructure Priorities for the Regions has looked at various ways to support this requirement.

Enabling infrastructure

Stakeholders across Victoria's regions highlighted the need for basic infrastructure to support future investment and industry development. This encompassed power, water and other essential services, as well as amenity infrastructure. While opportunities associated with enabling and amenity infrastructure were most commonly associated with the tourism industry, constraints on development were also identified in the mining and energy sectors.

We heard that digital infrastructure is a further area of constraint across the regions. Improved mobile and internet services are needed to connect communities, particularly during times of emergency, to enhance access to education and services, and to support digital inclusion. The potential for more innovative uses of technology to connect people in regional areas to services was highlighted, such as telehealth. Submissions also highlighted opportunities to improve productivity through digital connectivity in industries such as agriculture and manufacturing. Our analysis has confirmed these opportunities.

Road and freight transport

While public transport was a critical issue from a community perspective, stakeholders were also keen to highlight the opportunities associated with improved road and freight transport, whether from a safety perspective or to support future industry development.

Several stakeholders highlighted individual roads or interchanges requiring capital investment. In line with the objectives of the *Comparative advantage framework*, we have not sought to assess or compare specific infrastructure projects as this would require detailed comparison of business cases or feasibility studies. Instead, we have explored mechanisms which would support improved prioritisation and funding for road and freight transport, to better support planning and provide certainty for both industry and community.

Aboriginal infrastructure needs

We received several submissions about the growing need for fit for purpose and culturally appropriate infrastructure to meet the service needs of Aboriginal people. We recognise this need, and our consultation with stakeholders indicated it also applied to metropolitan Melbourne.

The draft *30-year infrastructure strategy* update has therefore considered Aboriginal community-controlled infrastructure in a statewide recommendation, reflecting the shared need across metropolitan and regional areas.

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[9] Infrastructure Victoria (2019) *Growing Victoria's potential*, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Growing-Victorias-Potential-April-2019-1.pdf

[10] Grattan Institute (2020) *Fast train fever: why renovated rail might work but bullet trains won't*, available at https://grattan.edu.au/wp-content/uploads/2020/05/Fast-Train-Fever-Grattan-Institute-Report.pdf

Affordable housing

The issue of housing affordability was raised by stakeholders across the regions, confirming earlier consultation during our Regional Infrastructure Needs work. Increased investment in social housing was consistently flagged as an urgent priority, but stakeholders also identified a need to invest in maintenance and energy efficiency measures, to provide additional support for disadvantaged residents in relation to cost of living pressures.

3. Regional Victoria's infrastructure priorities

Victoria's first *30-year infrastructure strategy* highlighted the role of infrastructure in building connectivity – linking people and goods to places, enabling the transfer of information and knowledge, and connecting people through shared community spaces.[11] Regional Victoria faces particular challenges in connecting rural areas to regional hubs, to Melbourne and beyond. This has implications for businesses and regional economies, but also for individuals seeking access to work, services and community life.

Compounding existing challenges, the events of 2019-20 have clearly demonstrated that regional Victorians are living in uncertain times. The summer bushfires, followed closely by the COVID-19 pandemic, have caused major disruption to businesses and communities everywhere and the full implications will take time to understand. Regions are already being affected by long-term trends such as changes to local economies, urbanisation, population growth and decline, and climate change. Each of Victoria's regions is responding to these shared drivers of change in different ways.

Infrastructure Priorities for the Regions has taken a structured approach to prioritising potential infrastructure solutions to specific regional challenges and opportunities, to ensure that our recommendations respond to the unique and diverse character of Victoria's regions. In doing so, key themes have emerged which are relevant across Victoria's regions and in framing our recommendations we have sought to seek infrastructure solutions which respond to these shared concerns.

The following two sections outline these in more detail, structured around the frameworks which have guided our work*:*

*   *Realising regional Victoria's economic potential* outlines the opportunities and constraints identified across regions via the *Comparative advantage framework*, with recommendations focussed on supporting economic activity in areas of relative strength.
*   *Strengthening regional communities* comprises the findings of the *Addressing regional disadvantage framework* and identifies opportunities to alleviate disadvantage for key cohorts and communities across regional Victoria.

Findings are organised via the high-level outcomes these two frameworks are aiming to achieve. Brief summaries of the recommendations to support these outcomes are provided throughout. A detailed version of each recommendation, along with supporting evidence, is provided in Section 4.

3.1   Realising regional Victoria's economic potential

Victoria's regional businesses operate within an environment of local and global change. This includes technological innovation, globalisation, industry restructuring and climate change. Each of Victoria's regions has unique economic strengths across a range of industries.

Infrastructure Priorities for the Regions seeks to build on these strengths through targeted infrastructure investments. In our *Regional industry profiles*,[12] we explore the comparative advantages of each of Victoria's nine Regional Partnership regions, identifying potential infrastructure opportunities and constraints facing industries in each region.

We have drawn on this work to bring together challenges and opportunities that are shared across the regions, and which can be addressed by infrastructure solutions. We have identified 11 recommendations which collectively will support the economic base of Victoria's regions by:

*   connecting regional industries to customers and markets and delivering greater productivity (see Section 3.1.1*)*
*   supporting industries to be more resilient to economic shocks and the impacts of climate change (see Section 3.1.2*)*
*   unlocking economic growth potential in emerging and established industries (see Section 3.1.3).

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[11] Infrastructure Victoria (2016) *Victoria's 30-year infrastructure strategy*, p. 42, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/03/IV_30_Year_Strategy_WEB_V2.pdf

[12] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

3.1.1 Enhancing access and productivity

Infrastructure Priorities for the Regions has explored opportunities to support regional industries to compete domestically and globally, whether by improving access to input and output markets or by enhancing production, operation and supply chain efficiencies. This has resulted in four recommendations which focus on improving connections – both physical and digital – between businesses, producers, markets and customers.

Better connect businesses with processors and markets

Reliable and efficient road and rail freight networks are essential to industries across regional Victoria. Regional economies can only operate and grow if they can move goods efficiently between primary producers, manufacturers, wholesalers, importers and consumers – wherever they are.[13] With regional Victoria producing a third of the state's exports,[14] the freight network plays a vital role in supporting regional industry growth and development.

Freight volumes in regional Victoria are forecast to grow at an average rate of 1.5% each year between 2014 and 2051.[15] To cope with current and future expected demand, a reliable and cost-effective freight network for both road and rail has been cited as a critical infrastructure need across Victoria's regions – in particular to support the agriculture, manufacturing, mining and energy sectors.[16] In addition, regional Victoria's tourism industry recognises opportunities to connect visitors with regional attractions via road network improvements.[17]

Freight transport represents a significant part of overall production costs for many industries, accounting for up to 30% for some businesses. Victoria's freight network needs to be efficient and fit for purpose, helping businesses to minimise transport costs and remain competitive.[18] Both road and rail freight networks can be better leveraged to support the needs of regional business.

The road network is an important asset and its condition has far-reaching impacts – on individuals, communities and industries through road safety, vehicle operating costs (including fuel use and vehicle maintenance), vehicle emissions and travel times. As the freight task grows, demands on the regional road network are increasing. Over the last two decades, people and freight travel on Victoria's major country roads have increased by 20% and growth is expected to continue.[19] This has implications for network capacity and road maintenance.

Well-maintained, fit for purpose roads play a critical role for regional industries, facilitating the movement of freight and goods across Victoria and interstate while also contributing to enhanced accessibility and improved safety outcomes for all road users.[20] The role of roads in keeping regional businesses and communities connected and regional economies functioning means they must be properly maintained and, if necessary, upgraded to stay safe, productive and efficient. With death rates on Victoria's country roads four times higher than on metropolitan roads, the safety implications of road network maintenance in regional Victoria are paramount.[21]

Rail facilitates a significant proportion of agricultural and mining exports in moving commodities from regional areas to ports, giving the rail freight network particular importance for the regions.[22] For these industries, rail can be a more cost effective option than road freight when transporting bulk commodities over long distances.[23] Including rail as part of the freight mix can provide additional benefits over diesel-fuelled trucks, helping to reduce road maintenance costs from road damage caused by heavy vehicles and congestion in built up areas. Rail freight can also contribute to reducing traffic accident costs, greenhouse gas emissions and noise impacts.[24]

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[13] Transport for Victoria (2018) *Delivering the goods – Victorian freight plan*, p. 8, available at https://transport.vic.gov.au/-/media/tfv-documents/ports-and-freight/delivering-the-goods.pdf?la=en&hash=3AE9573B325C4886DD60408E190F55E8

[14] Rural Councils Victoria, *Federal Budget submission 2019-20*, p. 5, available at https://treasury.gov.au/sites/default/files/2019-03/360985-Rural-Councils-Victoria.pdf

[15] Transport for Victoria (2018) *Delivering the goods – Victorian freight plan*, p. 19

[16] Acil Allen (2019) *Regional industry profiles*

[17] Ibid

[18] Transport for Victoria (2018) *Delivering the goods – Victorian freight plan*, p. 8

[19] Parliament of Victoria (2018) *Inquiry into VicRoads' management of country roads*, p. 2, available at https://www.parliament.vic.gov.au/file_uploads/LRRCSC_58-04_Text_WEB_sn9mqH6Q.pdf

[20] Ibid, p. ix

[21] TAC, *Towards zero 2016-2020, Victoria's road safety strategy and action plan*, p. 11, available at https://www.towardszero.vic.gov.au/__data/assets/pdf_file/0010/183556/STU_0206_RS_STRATEGY_2016_web.pdf

[22] Deloitte Access Economics (2017) *The contribution of rail in Australia*, p. 16, available at https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-value-rail-contribution-australia-161117.pdf

[23] Australian Government (2018) *Inquiry into national freight and supply chain priorities: supporting paper no.3, road and rail freight*, p. 4, available at https://www.infrastructure.gov.au/transport/freight/freight-supply-chain-priorities/supporting-papers/files/Supporting_Paper_No3_Road_and_Rail.pdf

[24] Ibid, pp. 30-31

However, the potential benefits of regional rail freight are hampered by many factors, including different rail gauges, axle load restrictions, permanent and temporary speed restrictions and maintenance backlogs.[25] The poor condition of, and lack of investment in, the rail freight network is a significant impediment to further uptake of freight on rail. A badly maintained regional rail freight network reduces its performance and reliability, reduces the life of the assets, and increases the risk of catastrophic failures. This in turn leads to economic impacts such as transport delays and higher transport costs. In addition, any uncertainty about Victoria's long-term commitment to regional rail freight will result in industry continuing to shift away from rail and onto road, making rail freight less viable into the future.

Our research and engagement during Infrastructure Priorities for the Regions has confirmed opportunities to better connect businesses and markets across regional Victoria. Multiple submissions were received from local councils outlining potential improvements to the local road network.[26] Infrastructure investment opportunities highlighted during our consultation processes included:

- Investment in rural roads to support new mines and renewable energy projects in Central Highlands, Loddon Campaspe, Mallee and Wimmera Southern Mallee. For example, the existing road network is proving inadequate in transporting large and oversized stock for major infrastructure projects such as wind farms and mining.[27]
- Additional freight network capacity (both road and rail) needed to accommodate increased traffic for Mallee and Goulburn's agricultural and food processing sectors.[28]
- Improvements to local roads and key transport corridors to enable tourist travel in the Barwon, Central Highlands, Great South Coast, Loddon Campaspe and Wimmera Southern Mallee regions. For example, improved local road infrastructure was flagged as an opportunity to support regional Victoria's agritourism businesses in better connecting tourists with farm, food and winery experiences.[29]

The following recommendations aim to respond to the needs of regional Victorian businesses by increasing the productivity and reliability of the freight network. This includes providing funding certainty for road and rail maintenance and, where necessary, upgrades to ensure these critical networks can support current and future requirements. Despite significant one-off funding allocations, particularly for regional roads, neither network has clear long-term funding for maintenance and upgrades, making strategic and efficient management difficult.[30]

Ongoing maintenance programs are essential to ensure freight networks meet required productivity, safety and emissions outcomes while also, in the case of the regional road network, meeting community needs and expectations. In addition, strategic network upgrades, such as the Murray Basin Rail project, will contribute to reducing supply chain costs for important regional industries including agriculture, manufacturing and mining. The Victorian Government has made significant progress in recent years, increasing investment in maintenance programs and commencing work on the Murray Basin Rail project, but there is a need to build on this progress and provide long-term certainty for industry.

Recommendation 01: Deliver funding certainty for regional road maintenance and upgrades

Within two years, specify clear levels of service for each type of regional road and bridge. Following this, dedicate an ongoing program to fund regional road and bridge maintenance and upgrades to meet these service levels. Funding should be prioritised based on improving safety, decreasing vehicle emissions, and lifting economic productivity.

A road maintenance hierarchy specifying the levels of service, or desired condition, of regional roads will provide a transparent framework, so that every road is maintained in a condition suitable for its intended purpose. Long-term funding certainty will ensure that investments can be prioritised more efficiently to support economic and social outcomes.

Recommendation 02: Fund an ongoing rail freight maintenance program

Immediately fund an ongoing periodic regional freight rail maintenance program, informed by a publicly available network asset management plan.

The recommendation will form the basis for an efficient investment program to ensure the freight rail network is safe, reliable and fit for purpose. This should provide certainty to businesses and industry about the Victorian Government's commitment to rail freight.

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[25] VAGO (2020) *Freight outcomes for regional rail upgrades*, available at https://www.audit.vic.gov.au/sites/default/files/2020-03/20200318-Freight-Outcomes-report.pdf

[26] For example, submissions to Infrastructure Priorities for the Regions from Baw Baw Shire Council, Greater Shepparton City Council, Mount Alexander Shire Council, Moorabool Shire Council

[27] Acil Allen (2019) *Central Highlands regional profile, Loddon Campaspe regional profile, Mallee regional profile, Wimmera Southern Mallee regional profile*; Horsham Rural City Council (2020) *Submission to Infrastructure priorities to the regions*

[28] Mildura Rural City Council (2020) *Submission to Infrastructure priorities to the regions*, Greater Shepparton City Council (2020) *Submission to Infrastructure priorities to the regions*

[29] Acil Allen (2019) *Barwon regional profile, Central Highlands regional profile, Great South Coast regional profile, Loddon Campaspe regional profile, Wimmera Southern Mallee regional profile*

[30] VAGO (2017) *Maintaining state-controlled roadways*, pp. ix-xii, available at www.audit.vic.gov.au/sites/default/files/20170622-Maintaining-Roadways.pdf

> **Recommendation 03: Revise the Murray Basin Rail project plan**
>
> Immediately revise the Murray Basin Rail project plan, informed by the project's business case review.

Leverage digital connectivity to improve productivity

Digital connectivity is increasingly critical to Victoria's economic development, breaking down barriers of cost and distance, and opening up new opportunities for Victorian businesses.[31] This is particularly relevant in the regions, where digital technologies provide unprecedented opportunities to reduce the tyranny of distance.

Digital skills and technology can improve business efficiency, increase productivity and improve local economic performance, allowing regional businesses to adapt and thrive in a more competitive marketplace.[32,33] Better broadband can create regional jobs through telework,[34] allow businesses to expand beyond their local market,[35] prevent them having to move elsewhere, and help business resilience during times of crisis. The COVID-19 pandemic has clearly demonstrated the need for reliable, high speed internet connections as more and more business has been, by necessity, conducted remotely. Digital technologies can help businesses to operate and compete anywhere.[36]

People living in regional Victoria often have less positive digital experiences than those in the city. In some regional areas, a lack of connectivity can make it hard to do business, access information or make mobile phone calls.[37] This digital divide is evident not just between metropolitan and regional areas, but also within regional cities, towns and rural localities.[38]

While gaps in the availability of digital services and skills vary from place to place, across regions and within them,[39] there are shared digital barriers and opportunities. Victoria's Regional Partnerships have consistently identified connectivity issues near tourist attractions,[40] along transport corridors,[41] in smaller settlements and in farming areas.[42]

Similarly, industries across each of the regions have identified digital connectivity as a constraint to productivity and competitiveness. This includes the agriculture industry in all nine regions, tourism in the Central Highlands, Goulburn, Great South Coast, Ovens Murray and Wimmera Southern Mallee regions and the manufacturing sector in Ovens Murray. In addition, the finance and insurance sectors in Barwon and Loddon Campaspe recognise opportunities to reach new customers and markets through improved digital infrastructure.[43]

Governments have a role in supporting targeted interventions to boost digital connectivity, to help build business productivity and competitiveness. This is especially important in regional Victoria, where the digital divide is most pronounced and where the market is less responsive.[44] In recognition, the Victorian Government has established the $626 million Digital Future Now initiative, which includes funding for faster broadband for regional towns and a program to eradicate mobile black spots in populated areas of regional Victoria, both in partnership with the Australian Government.[45]

[31] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 2, available at https://djpr.vic.gov.au/__data/assets/pdf_file/0005/1729760/12172-DJPR-RDV-Connecting-Victoria_overview-brochure-A4-revised_v3_FINAL.pdf

[32] Department for Digital, Culture, Media and Sport (2018) *Evaluation of the economic impact and public value of the superfast broadband programme*, p. 6, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/734855/Superfast_Integrated_Report.pdf

[33] Pantelis Koutroumpis for Ofcom (2018) *The economic impact of broadband: evidence from OECD countries*, pp. 8-13, available at https://www.ofcom.org.uk/__data/assets/pdf_file/0025/113299/economic-broadband-oecd-countries.pdf

[34] Deloitte Access Economics (2012) *Creating jobs through NBN-enabled telework*, p. i, available at https://www2.deloitte.com/au/en/pages/economics/articles/creating-jobs-through-nbn-enabled-telework.html

[35] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 14

[36] Ibid, p. 12

[37] Ibid, p. 2

[38] Central Highlands Regional Partnership (2019) *Central Highlands regional digital plan*, p. 19, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0005/1861052/Central-Highlands-Full-Digital-Plan-FINAL-22-Aug-web.pdf

[39] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 14

[40] For example, Gippsland Regional Partnership (2019) *Gippsland regional digital plan*, p. 14 https://www.rdv.vic.gov.au/__data/assets/pdf_file/0010/1872946/Gippsland-Digital-Plan-Final-25-September-web.pdf

[41] For example, Central Highlands Regional Partnership (2019) *Central Highlands regional digital plan*, p. 42

[42] For example Great South Coast Regional Partnership (2019) *Great South Coast regional digital plan*, p. 50 https://www.rdv.vic.gov.au/__data/assets/pdf_file/0006/1885911/Great-South-Coast-Digital-Plan-FINAL-for-publication-1-Oct-web.pdf

[43] Acil Allen (2019) *Regional industry profiles*

[44] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 3

[45] Victorian Government (2020) *Keeping us connected and working, wherever we are*, available at www.premier.vic.gov.au/keeping-us-connected-and-working-wherever-we-are

The government is also investing in pilot infrastructure projects across a range of digital technologies, places and industries via the Connecting Regional Communities Program. The program's digital agriculture stream is exploring the needs of Victoria's agricultural industry and includes a $12 million on-farm Internet of Things trial.[46]

Digital agriculture refers to the use of digital technologies to lift industry productivity and performance. It could lift the value of agricultural production in Australia by as much at $20 billion,[47] by improving productivity, sustainability, profitability and resilience to weather and climate challenges. Despite these opportunities, agriculture is the least digitised industry in Australia. Limited access to reliable network connectivity combined with low levels of digital literacy can prevent the widescale adoption of digital technologies by Victorian farmers.[48]

The Internet of Things (IoT) trial is supporting the uptake of IoT technologies on Victorian farms. IoT enables devices embedded with sensors to connect to and interact with each other via the internet. IoT devices can measure information such as soil moisture and livestock health, as well as monitor fences, vehicles and weather, to help farmers make more informed decisions and improve farm performance. The trial will establish up to 600 IoT-enabled farms across four farm types (dairy, broad-acre cropping, meat production and horticulture) and regions (Gippsland, Goulburn, Loddon Campaspe and Mallee), partnering with participating farmers to evaluate the impact.[49] As the trials are still underway, Infrastructure Priorities for the Regions has not framed any additional recommendations on digital technology in the agriculture industry. We will continue to monitor the evidence being generated, along with any need for further action in the future.

Instead, we have focussed on the need to continue to improve digital connectivity for businesses and communities across regional Victoria. As use of digital technologies expands, regional businesses are not being extended the full benefits. The recommendation to bring faster broadband to regional business precincts seeks to address this, building on the Victorian Government's Digital Future Now initiative to continue to bridge any gaps identified in telecommunications infrastructure provision in the longer term.[50]

Improve resilience of regional telecommunications infrastructure

The *Addressing regional disadvantage* recommendation to *Improve resilience of regional telecommunications infrastructure* (see Recommendation 13) also has relevance in addressing the connectivity challenges facing regional businesses.

This recommendation aims to continue efforts to address digital connectivity in regional areas, focussing on the need to ensure mobile and internet connections in times of emergency.

More reliable digital connectivity will help maintain connections between staff, customers and markets, allowing businesses and industries to recover operations more quickly following disruption.

The COVID-19 pandemic has shown more clearly than ever that work and business opportunities do not need to centre on Melbourne.[51] This recommendation will review the impact of the Digital Future Now initiative and determine whether subsequent government investment is required, to ensure regional businesses are in a stronger position to weather future crises and to take advantage of potential opportunities created by any longer-term shift to remote working.

Recommendation 04: Continue to address regional Victoria's digital connectivity gaps

In the next five years, continue delivering regional digital connectivity improvements, and review the need for further government investment following the roll-out of the Digital Future Now initiative.

3.1.2 Supporting industry resilience

We have considered infrastructure responses which will support industries to adapt to climate change risk, as well as to increase their capacity to respond to industry shocks and transitions. We have identified three recommendations focussed on the agricultural and tourism industries, sectors which are particularly exposed to climate change impacts.

[46] Department of Jobs, Precincts and Regions, *Connecting Regional Communities Program*, available at https://djpr.vic.gov.au/connecting-victoria/connecting-regional-communities-program

[47] Department of Agriculture and Water Resources (2017) *Accelerating precision agriculture to decision agriculture: enabling digital agriculture in Australia*, p. 1, available at https://www.crdc.com.au/sites/default/files/CRD18001-001%20CRDC%20P2D%20Report%20low%20res.pdf

[48] Agriculture Victoria (2018) *Digital agriculture strategy*, pp. 4-6, available at https://agriculture.vic.gov.au/__data/assets/pdf_file/0006/567051/Digital-agriculture-strategy-2018.pdf

[49] Agriculture Victoria, *Victoria's on-farm Internet of Things trial*, available at http://agriculture.vic.gov.au/agriculture/digital-agriculture/on-farm-internet-of-things-trial

[50] Victorian Government (2020) *Keeping us connected and working, wherever we are*

[51] Australian Broadcasting Corporation (ABC) (2020) *Coronavirus has shown us the future of work and it could mean more Australians living in regional areas*, available at https://www.abc.net.au/news/2020-05-28/coronavirus-australians-move-to-regional-areas-remote-work/12293588

Improve water security for the agriculture industry

The agriculture industry is a vital economic driver for the regions. Victoria is Australia's largest producer of food and fibre products, valued at approximately $15 billion[52] and employing almost 200,000 people in production and related manufacturing roles. Many of these businesses and jobs are concentrated in Victoria's regions.[53]

Agriculture is material to the regional economy and capable of driving future growth in each of Victoria's nine regions. In rural areas it is the dominant industry in terms of economic output.[54] However, the dependence on agriculture for both employment and economic output can expose rural areas to major shocks, for example through changes to farming practices, shifts in commodity prices, or wider ranging impacts such as drought.

The outlook for agriculture is further threatened by climate change. The effects of climate change are already being detected in Victoria, disrupting traditional growing patterns as cool season rainfalls decrease.[55] Looking forward, climate change is expected to increase water demand, limit crop productivity and reduce water availability in areas where irrigation is most needed or has comparative advantage.[56] Climate change is also driving an increase in the intensity and frequency of hot days and heatwaves, with time spent in drought projected to increase across southern Australia.[57]

These changes mean that water security, essential for the agriculture industry, is becoming ever more important. Two recommendations respond to this need. The first focuses on continuing to modernise irrigation systems and plan for new water infrastructure, ensuring that infrastructure is fit for purpose and can provide reliable access to water in future. The second identifies an opportunity to ensure that Victoria's emergency water network is optimised so that farmers can continue to access essential water supplies during times of drought and bushfire recovery.

Collectively, these infrastructure responses can assist agricultural industries to adapt and become more resilient to prolonged drought and dry seasonal conditions. They provide long-term support to continue the Victorian Government's Building Works projects to modernise irrigation and replace essential water infrastructure.[58]

Recommendation 05: Strengthen agricultural water security by modernising irrigation

During the next 30 years, contribute funding toward planning and delivery of irrigation modernisation projects across regional Victoria.

The recommendation aims to reduce water wastage and safeguard water supply for agriculture, in response to the potential impacts of climate change.

Recommendation 06: Upgrade Victoria's emergency water network

Immediately assess the condition, capacity and security of Victoria's emergency water supply point network, and upgrade or replace inadequate supply points. Clarify ongoing responsibility for maintenance and funding to secure a resilient network.

Emergency water supply points provide water for emergency stock and domestic purposes during severe dry seasonal conditions, surface water scarcity, and bushfires.

Protect Victoria's coast from the impacts of climate change

Victoria's coast is a key economic asset which contributes to the state through port and trade activity as well as tourism and related services. Many Victorians live, work and play close to the coast. It is home to almost one million people – 14% of the state's population[59] – and four out of five Victorians visit the coast every year.[60]

The coast is also a major destination for a growing tourist market, with nature-based tourism one of Victoria's key growth industries and a significant contributor to the state's economy.[61] Tourism in the coastal regions of Barwon, Gippsland and

[52] Agriculture Victoria, *Agriculture in Victoria*, available at https://agriculture.vic.gov.au/about/agriculture-in-victoria

[53] Agriculture Victoria, *Victoria export performance*, available at http://agriculture.vic.gov.au/agriculture/accessing-international-markets/victoria-export-performance

[54] Aither (2019) *Inter-regional assessment – an analysis of regional Victoria's strengths and challenges*, p. 28, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Aither-Inter-regional-assessment-March-2019.pdf

[55] Goulburn Murray Water (2016) *Briefing paper: water availability – climate change*, available at https://www.g-mwater.com.au/downloads/gmw/FSP_-_workshop_1/20161109__4285431_FSP_PAPER_CLIMATE_CHANGE-3.pdf

[56] Turral, Burke and Faures (2011) *Climate change, water and food security*, p. xvii, available at http://www.fao.org/3/i2096e/i2096e.pdf

[57] Climate Council (2018) *Fact sheet: climate change and drought*, p. 9, available at https://www.climatecouncil.org.au/wp-content/uploads/2018/06/CC_MVSA0146-Fact-Sheet-Drought_V2-FA_High-Res_Single-Pages.pdf

[58] Civil Contractors Federation Victoria (2020) *Delivering $48 million of water infrastructure projects*, available at https://www.ccfvic.com.au/media-release-delivering-48-million-of-water-infrastructure-projects/

[59] Department of Environment, Land, Water and Planning (2020) *Coastal demographics in Victoria*, p. 11, available at https://www.marineandcoastalcouncil.vic.gov.au/__data/assets/pdf_file/0027/455904/Coastal-Demographics-in-Victoria.pdf

[60] VAGO (2018) *Protecting Victoria's coastal assets*, p. 21, available at https://www.audit.vic.gov.au/sites/default/files/2018-03/20180329-Coastal-Assets.pdf

[61] Ibid, p. 7

the Great South Coast contributed over $3 billion to their collective economies in 2018-19, supporting almost 40,000 jobs.[62]

Victoria's coastline is vulnerable to climate change, for example through rising sea levels, increasingly violent storms and coastal erosion. A mixture of natural and built infrastructure, such as sea walls, artificial headlands and dunes, provides critical protection to safeguard coastal communities and essential services such as telecommunications, drainage and sewerage networks.[63]

Many of Victoria's coastal assets are deteriorating or approaching the end of their life. A recent audit suggests that between 20% and 30% of coastal assets are in poor condition, and between 30% and 50% have less than 10 years' useful life remaining.[64] This is endangering Victoria's coastline, and the economies and communities it supports.

The implications of failure to maintain coastal protection infrastructure can already be seen. Stretches of beach have been washed away at Apollo Bay[65] and Inverloch,[66] while coastal erosion is threatening the Great Ocean Road.[67] Future investment is essential to safeguard coastal homes, infrastructure and tourism and to build resilience to the impacts of climate change.

The recommendation to invest in protecting Victoria's coasts aims to provide funding certainty to enable a more preventative and proactive approach to protecting Victoria's coastal tourism assets. While the Victorian Government has announced one-off funding commitments for coastal protection infrastructure as part of the Building Works stimulus package[68] and the Victorian Budget 2020-21,[69] this recommendation aims to provide the certainty to allow for longer term planning.

> **Recommendation 07: Invest in protecting Victoria's coasts**
>
> In the next eight years, invest in coastal protection upgrades and maintenance, including beach and dune protection and rehabilitation, and storm surge protection, particularly for coastal tourism assets in the Barwon, Great South Coast and Gippsland regions.
>
> This will provide the long-term funding security and stability needed to safeguard coasts, homes, tourism and infrastructure.

3.1.3   Unlocking industry growth opportunities

Infrastructure has a further role to play in supporting growth opportunities in regional industries, whether in established industries or emerging sectors. This has particular relevance for the tourism industry, which has been dramatically affected in 2020 by the COVID-19 pandemic.

In exploring infrastructure solutions to support new growth opportunities we have considered potential new sources of economic growth and industry specialisation, such as renewable energy or advanced manufacturing, as well as the development of new product lines within the same industry, for example nature-based tourism. Four recommendations have been identified to remove growth constraints and encourage development across the regions, with a focus on the tourism, agriculture and manufacturing industries.

Lay the foundations for a recovery in tourism

Tourism is an important industry for regional Victoria, worth $9.4 billion to the regional economy and supporting approximately 110,000 jobs in 2018-19.[70] Regional Victoria offers a wide diversity of natural experiences such as alpine forests, deserts, coastal areas and rainforests. In addition, important Aboriginal cultural and heritage assets are present across regional Victoria. These natural assets, combined with a wealth of food and wine experiences, cultural festivals,

[62] Department of Jobs, Precincts and Regions (2020) *Regional tourism summaries, Geelong and the Bellarine, Gippsland, Great Ocean Road, Phillip Island*, available at https://www.business.vic.gov.au/tourism-industry-resources/research/regional-visitation

[63] VAGO (2018) *Protecting Victoria's coastal assets*, p. 7

[64] Ibid, p. 11

[65] ABC (2018) *Great Ocean Road erosion prompts call for plan to preserve tourist destination's future*, available at https://www.abc.net.au/news/2018-08-26/erosion-threatening-great-ocean-road/10147918

[66] ABC (2019) *Inverloch loses more than 30 metres of tourist hotspot beachfront to coastal erosion*, available at https://www.abc.net.au/news/2019-04-30/inverloch-loses-33-metres-of-beachfront-to-erosion/11054240

[67] ABC (2019) *100 years of the Great Ocean Road*, available at https://www.abc.net.au/news/2019-08-24/100-years-of-the-great-ocean-road/10968026?nw=0

[68] Victorian Government (2020) *Protecting Victoria's unique coastline*, available at https://www.premier.vic.gov.au/protecting-victorias-unique-coastline/

[69] Department of Treasury and Finance (2020) *Victorian budget 2020/21: service delivery budget paper no. 3*, pp. 50, 60, available at https://s3-ap-southeast-2.amazonaws.com/budgetfiles202021.budget.vic.gov.au/2020-21+State+Budget+-+Service+Delivery.pdf

[70] Department of Jobs, Precincts and Regions (2020) *Regional Victoria tourism summary*, p. 1, available at https://www.business.vic.gov.au/__data/assets/pdf_file/0011/1943525/Regional_Victoria_Regional_Summary_year_ending_June_2020.pdf

local museums and galleries, have led to tourism being identified as a competitive strength in each of Victoria's regions.[71]

The industry has been dealt a double blow in 2019-20, with the COVID-19 pandemic immediately following a devastating bushfire season. As Victoria recovers, tourism will be a critical component of each region's economic recovery. Support for the industry to further develop the range and quality of tourist experiences available at this time will be vital to encourage future growth.

Even before the impact of bushfires and the COVID-19 pandemic, tourism in regional Victoria had room to grow. For example, only 36% of tourism expenditure in Victoria occurred in regional areas compared with a national average of 43%.[72] Regional Victoria has faced competition from interstate and overseas destinations, with an additional challenge in converting the high numbers of day trips from Melbourne into overnight or longer terms stays.[73]

Nature-based tourism has been one of the fastest growing areas of the tourism industry and regional Victoria's competitive advantage in this sector remains. That said, Victoria lags other states in creating compelling nature-based experiences, despite the state's unique regional landscapes.[74] A lack of tourism facilities on or near national parks and other nature-based tourism assets places constraints on potential visitor numbers.

In addition, nature-based tourism is particularly sensitive to the impacts of climate change and extreme weather, such as droughts, heatwaves, bushfires and flooding.[75] Defining a long-term vision for nature-based tourism in Victoria to help guide future investment in the sector will support regions to capitalise on their natural assets and plan for mitigating the future impacts of climate change.

Aboriginal cultural and tourist experiences present a further growth opportunity for the regions. Aboriginal people have lived here for more than a thousand generations, maintaining complex societies with many languages, kinship systems, laws and spiritualities.[76] Aboriginal cultural and heritage assets have deep historical and educational value, as well as ongoing economic, social, environmental and spiritual value for Victoria.

The number of people seeking Aboriginal cultural and tourist experiences is increasing.[77] Victoria has important Aboriginal sites which can foster this growing interest, including the World Heritage listed Budj Bim Cultural Landscape (Great South Coast), Tower Hill Reserve (Great South Coast) and Brambuk – the National Park and Cultural Centre (Grampians). Partnering with Traditional Owners to guide future investments in Aboriginal tourism would give regional Victoria a more diverse tourism offering, support Aboriginal businesses, generate more jobs for Aboriginal people and build prosperity for Aboriginal Victorians.

The Victorian Government has recognised the key role of the tourism industry in regional economic development. As part of the Building Works response to the COVID-19 crisis, $382 million has been earmarked for upgrades, maintenance and new experiences at tourism destinations across the state.[78] A further $7.5 million will improve management of parks and reserves in Gippsland, as well as the Barmah National Park, in partnership with Traditional Owners.[79] The Victorian Government has also introduced a $465 million Victorian Tourism Recovery Package to help attract more visitors to regional Victoria, which includes a $150 million regional Tourism Investment Fund focussed on nature-based, First Nations, arts and culture and wine tourism projects, identified as priorities in Victoria's Regional Tourism Review.[80]

Three recommendations collectively aim to build on regional Victoria's existing natural assets, encourage private sector participation in regional tourism and advocate for strategies to guide longer-term investments in tourism infrastructure, leveraging significant Victorian Government investments to provide an economic stimulus to the regional tourism industry.

[71] Acil Allen (2019) *Regional industry profiles*

[72] Department of Jobs, Precincts and Regions (2019) *Regional Tourism Review discussion paper*, p. 15, available at https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/4915/6592/7431/Regional_Tourism_Review_Paper_-_Discussion_Paper.pdf

[73] Ibid

[74] Victorian Tourism Industry Council (2019) *Victorian Tourism Infrastructure Council submission to the Regional Tourism Review*, p. 15, available at https://www.vtic.com.au/wp-content/uploads/2019/09/VTIC-Submission-to-the-Victorian-Regional-Tourism-Review-FINAL-30-August-2019.pdf

[75] Climate Council (2018) *Icons at risk: climate change threatening Australian tourism*, p. iii, available at https://www.climatecouncil.org.au/uploads/964cb874391d33dfd85ec959aa4141ff.pdf

[76] Parks Victoria, *Managing Country together*, available at https://www.parks.vic.gov.au/managing-country-together

[77] Department of Foreign Affairs and Trade (2019) *Indigenous tourism surge*, available at https://dfat.gov.au/about-us/publications/trade-investment/business-envoy/Pages/january-2019/indigenous-tourism-surge.aspx

[78] Victorian Government (2020) *Building Works: more jobs for Victorians*, available at https://www.premier.vic.gov.au/building-works-more-jobs-victorians/

[79] Lily d'Ambrosio, Member for Mill Park District (2020) *Managing Country together with Traditional Owners*, available at http://www.lilydambrosio.com.au/media-releases/managing-country-together-with-traditional-owners/

[80] Victorian Government (2020) *Visit Victoria: experiencing the best at home*, available at https://www.premier.vic.gov.au/visit-victoria-experiencing-best-home

> **Recommendation 08: Plan for future investment in regional nature-based tourism infrastructure**
>
> In the next five years, develop a Victorian nature-based tourism strategy to guide industry development and prioritise further investments.

> **Recommendation 09: Boost tourism infrastructure by allowing more national parks to grant long leases**
>
> Attract investment in Victoria's regional tourism industry by immediately allowing more national parks to grant leases for up to 49 years for infrastructure proposals that meet specific criteria and complement environmental and heritage values.
>
> This recommendation aims to ensure that future commercial investments are viable, supporting continued growth in tourism across Victoria's regions.

> **Recommendation 10: Develop a Victorian Aboriginal tourism strategy**
>
> Partner with Traditional Owners to develop a Victorian Aboriginal tourism strategy in the next five years to guide future Aboriginal tourism investments, including through Joint Management Plans.

Remove infrastructure barriers to business investment

Reliable and cost-effective access to enabling infrastructure – whether power, transport, water or ICT – is essential to support industry development and open up new opportunities. Our research for Infrastructure Priorities for the Regions highlighted a consistent need across the regions for improved access to enabling infrastructure to support future growth opportunities outside of regional centres.[81]

Renewable energy has been identified as a significant growth opportunity across the regions, as coal-fired power will need to be replaced by renewable electricity for Victoria to meet its goal of net zero greenhouse emissions by 2050.[82] With excellent wind and solar resources, some regions are building their renewable energy offering – for example, solar in the Mallee and wind in Central Highlands – with more projects in the pipeline.[83] However, local transmission networks are already experiencing congestion and limitations will become increasingly common as more generation comes online.[84] This has led to four solar farms across north-west Victoria being ordered to cut output after a technical fault put the stability of the national grid at risk.[85] Transmission infrastructure in these places is not designed for high generation volumes, or to accommodate the technical requirements of renewable generation.[86] The transmission network will need to be modified to improve capacity and unlock the potential of renewable energy resources in the regions.[87]

Infrastructure Victoria's draft *30-year infrastructure strategy* update recommends augmenting electricity transmission to better connect to other states, supporting renewable electricity generation in Victoria's regions. The strategy further recommends supporting the development of Priority Renewable Energy Zones in Victoria, in which clusters of large-scale renewable energy generation can be efficiently developed. Collectively these measures have the potential to unlock significant growth opportunities for regional Victoria's renewable energy sector.

Given these existing recommendations, Infrastructure Priorities for the Regions has instead focussed on addressing identified development constraints related to power supply. Regional Victoria's agriculture and manufacturing industries have cited inadequate power supply as a barrier to potential business development and expansion in the Ovens Murray, Loddon Campaspe, Central Highlands and Barwon regions.[88] Great South Coast's dairy industry in particular has identified electricity supply as a constraint on farm productivity and future growth.[89]

In much of regional Victoria, particularly the rural areas, electricity is mainly available through outdated infrastructure which can no longer meet the energy demands associated with changing industry practices and needs.[90] Regional

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[81] Acil Allen (2019) *Regional industry profiles*; Stakeholder submissions to Infrastructure Priorities for the Regions, for example Gannawarra Shire Council, Mildura Rural City Council, Horsham Rural City Council

[82] Independent Expert Panel on Interim Emissions Reduction Targets for Victoria (2019) *Interim emissions reduction targets for Victoria (2021-2030): final report*, p. 61, available at https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/4115/5859/1753/Final_Report_Interim_Emissions_Reduction_Targets.pdf

[83] Australian Energy Market Operator (AEMO) (2019) *Victorian annual planning report 2019*, p. 4, available at https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/vapr/2019/victorian-annual-planning-report-2019.pdf?la=en&hash=0AF8BABAA9315FB0A2D9B82E42D37C0C.

[84] Ibid, p. 7

[85] ABC (2020) *Solar farms asked to reduce output as uptake challenges remote West Murray power grid stability*, available at https://www.abc.net.au/news/2020-02-03/mallee-solar-farms-asked-to-reduce-output-to-grid/11912848

[86] Australian Energy Market Operator (AEMO) (2019) *Victorian annual planning report 2019*, p. 4

[87] AEMO (2019) *Draft 2020 integrated system plan*, pp. 34-35, available at https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/isp/2019/draft-2020-integrated-system-plan.pdf?la=en

[88] Acil Allen (2019) *Regional industry profiles*

[89] Great South Coast Food and Fibre Council (2017) *Three-phase power: removing capacity constraint*, p. 2

[90] T&D World (2017) *Storage has a vital role: Ergon Energy extends the life of its rural circuits in Australia*, available at https://www.tdworld.com/grid-innovations/distribution/article/20969753/storage-has-a-vital-role

businesses face timing, coordination and cost issues in upgrading electricity supply which are not faced by their metropolitan counterparts.[91,92] In places with fewer customers to share costs and associated risks, upgrading power supply infrastructure can mean that businesses are less willing or able to invest. This puts regional Victoria at a disadvantage compared to Melbourne in attracting new business investments or facilitating business expansion.

Our recommendation to co-fund power supply upgrades in regional Victoria (in areas which have been independently assessed to confirm the potential for improved productivity, competitiveness and growth) aims to respond to this constraint and open up new investment opportunities for regional businesses. This will continue progress already made by the Victorian Government to upgrade and modernise power supply in regional areas.

> ### Recommendation 11: Upgrade power supply for agriculture and regional manufacturing
>
> In the next five years, contribute toward strategic power supply infrastructure upgrades for agriculture and regional manufacturing, where an independent assessment demonstrates significant potential for increased productivity, competitiveness and growth.
>
> These encompass energy projects with multiple beneficiaries, delivered through a partnership approach, that are scalable and replicable across regions.

3.2   Strengthening regional communities

Victoria's regional communities are having to adapt to an environment of reduced certainty and an accelerating speed of change. Population growth and decline, demographic changes, increasing urbanisation and climate change are playing out in different ways both across and within regions, while drought, bushfires and the COVID-19 pandemic have caused major disruption. Each of Victoria's regions is responding to these shared drivers of change in different ways. Understanding how these influences affect different cities, suburbs, towns and rural areas will be essential to identify infrastructure solutions which respond to the local context.

Our Regional Infrastructure Needs research explored the economic, social and environmental strengths and challenges facing each of Victoria's regions.[93] These have highlighted the unique strengths and challenges in different parts of Victoria while also drawing out areas where characteristics are shared. Across the regions, regional centres are dealing with population growth in a context of relative economic diversity while many rural areas are adjusting to ageing and declining populations and increasing centralisation of services. Peri-urban areas are experiencing population and development pressures which are more commonly associated with metropolitan than regional areas.

Disadvantage is found in all communities in regional Victoria, although it is concentrated in certain areas. The largest number of people who experience disadvantage live in regional cities[94] (for example, Geelong, Ballarat, Bendigo and Wodonga[95]), but there are pockets of disadvantage in peri-urban and rural areas. Disadvantage in regional Victoria is complex, multifaceted and shows few signs of improvement over time.[96]

Infrastructure has an important role to play in alleviating disadvantage, by improving access to economic, education, health and social inclusion resources, but infrastructure alone cannot remove the underlying causes of disadvantage. Because disadvantage is complex, infrastructure needs to be part of a targeted package of integrated investments that address multiple risk factors. Further, disadvantage is different in different places, meaning solutions need to be flexible in response to changing local requirements.[97]

Infrastructure Priorities for the Regions has drawn on our research and extensive stakeholder engagement into regional needs and disadvantage to identify 11 recommendations which will collectively strengthen regional communities by:

- improving connections between people and the services they need, particularly for vulnerable and disadvantaged groups (see Section 3.2.1)
- fostering health, safety and social inclusion through flexible facilities that respond to changing community needs (see Section 3.2.2).

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[91] Australian Energy Regulator (2016) *Annual report on the performance of the retail energy market 2015-16*, p. 60, available at https://www.aer.gov.au/system/files/201516%20AER%20Annual%20Report%20on%20the%20Performance%20of%20the%20Retail%20Energy%20Market_1.PDF

[92] AEMO (2019) *Final report – review of the regulatory frameworks for stand-alone power systems – priority 1*, p. 17, available at https://www.aemc.gov.au/sites/default/files/2019-05/SAPS%20Priority%201%20Final%20Report%20-%20FOR%20PUBLICATION.pdf

[93] Aither (2019) *Regional profiles*, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/

[94] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 4, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

[95] Aither (2019) *Inter-regional assessment – an analysis of regional Victoria's strengths and challenges*, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Aither-Inter-regional-assessment-March-2019.pdf

[96] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 14

[97] Ibid, p. 31-32

3.2.1 Connecting people and services

Infrastructure plays a vital role in connecting regional Victorians to the resources and services needed to alleviate disadvantage. As jobs and services are increasingly consolidated in regional centres, inadequate communications infrastructure and limited transport options compound regional Victorians' challenges in accessing the employment, education and human services that provide opportunities and reduce disadvantage.[98]

Infrastructure Priorities for the Regions has identified six recommendations aimed at improving access to services for regional Victorians. Some of these encompass improved transport and digital connections, aiming to minimise physical distance between communities and essential services, while others seek to improve education and health outcomes for regional Victorians by enhancing access to specialist services – with particular focus on priority cohorts and life stages where this will have the greatest impact, such as early years and the transition to adulthood.[99]

Enable viable transport options across the regions

Transport disadvantage – difficulty accessing public transport due to cost, availability or accessibility of services – is high in regional Victoria. However, Victoria's diversity means that challenges with transport accessibility are not uniform, varying by regions, subregions and towns. Public transport is being stretched in areas of rapid population growth in regional Victoria while in rural areas, smaller populations combined with longer travel distances mean that traditional public transport services can be infrequent, unreliable and potentially unviable.[100] Owning a car is often the only means of transport. However, this can lead to financial stress,[101] particularly among low income households, and is not an option open to transport disadvantaged groups such as those aged under 18 years, many older Victorians and some people with a disability.

There are links between transport disadvantage and social exclusion, where some people cannot fully participate in social and economic life.[102] Around one third of residents in regional and remote areas report difficulty accessing services.[103] As services increasingly concentrate in regional hubs, this is only likely to continue. Fit for purpose transport solutions which allow regional Victorians – particularly those experiencing disadvantage – to access essential services are therefore a priority.[104]

Transport needs vary from place to place, and among different groups of people, meaning the regional transport system needs to be flexible enough to adapt. In addition, in areas where traditional public transport is not viable, tailored, demand-responsive solutions are needed to ensure that the needs of transport disadvantaged groups – including young people, single parents and families with young children, older people, Aboriginal communities and people with a disability[105] – can be met.

Submissions to Infrastructure Priorities for the Regions confirmed the need for flexible, tailored transport solutions, with various issues and opportunities identified by stakeholders, for example:

- The need for usable public transport operating from local towns to regional centres in Loddon Campaspe, and timetables which meet employment, training and appointment requirements.[106]
- Insufficient support for people who need transport to access health care services, particularly those with special needs or mobility difficulties (Gippsland).[107]
- A lack of local bus services in Bacchus March and surrounds (Central Highlands), a barrier for young people in accessing employment opportunities.[108]
- Inadequate public transport between townships in Gannawarra Shire (Mallee). Community transport was suggested as a potential solution.[109]

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[98] Parliament of Victoria (2010) *Inquiry into the extent and nature of disadvantage and inequity in rural and regional Victoria*, available at https://www.parliament.vic.gov.au/images/stories/committees/rrc/disadvantage_and_inequality/report/20101014_for_web.pdf

[99] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 32

[100] Ibid, pp. 20-21

[101] Currie et al (2009) *Investigating links between transport disadvantage, social exclusion and well-being in Melbourne – preliminary results*, available at http://thredbo.econ.usyd.edu.au/downloads/thredbo10_papers/thredbo10-themeD-Currie-Richardson-Smyth-Vella-Brodrick-Hine-Lucas-Stanley-Morris-Kinnear-Stanley.pdf

[102] Stanley and Stanley (2008) 'Social policy and public transport', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 13.1–13.17

[103] Australian Bureau of Statistics (2014) *General social survey: summary results, Australia*, available at https://www.abs.gov.au/statistics/people/people-and-communities/general-social-survey-summary-results-australia/2014

[104] Aither (2019) *Inter-regional assessment: An analysis of regional Victoria's strengths and challenges*

[105] Rosier and McDonald (2011) *The relationship between transport and disadvantage in Australia*, available at https://aifs.gov.au/cfca/publications/relationship-between-transport-and-disadvantage-austr

[106] Campaspe Cohuna LLEN (2020) *Submission to Infrastructure Priorities for the Regions*

[107] Catholic Social Services Victoria (2020) *Social service and infrastructure needs in Gippsland: submission to Infrastructure Priorities for the Regions*

[108] Moorabool Shire Council (2020) *Submission to Infrastructure Priorities for the Regions*

[109] Gannawarra Shire Council (2020) *Submission to Infrastructure Priorities for the Regions*

- A need for more frequent services between smaller towns and regional hubs (Warrnambool, Portland, Hamilton and Horsham) in the Great South Coast, including improved coordination between bus and rail services.[110]
- Challenges in local public transport provision in Bass Coast and South Gippsland which meant students that were unable to access training opportunities. A pilot project as part of the Victorian Government's Flexible Local Transport Solutions Program has proven successful in meeting community needs, although funding is not ongoing.[111]

The recommendation to reform regional public transport aims to respond by establishing integrated transport governance and planning arrangements in the regions to bring together different agencies, transport planners, service providers, local government and community representatives in determining local transport requirements and solutions. The proposed solution will integrate traditional public transport services with more innovative and flexible transport options where traditional services are not viable, leveraging community and on-demand transport services to deliver integrated services which respond to community needs. It further aims to provide ongoing funding certainty for regional transport, moving away from short term trials to lasting funding commitments.

> **Recommendation 12: Reform regional public transport to meet local needs**
>
> In the next five years, gradually redirect some regional transport funding to re-designed, integrated local transport services, based on regional needs assessments, and incorporating flexible services that meet local needs.

Continue to bridge the digital divide

Compromised digital connectivity jeopardises people's engagement in education, access to online services, and labour productivity. Poor digital access is compounding the disadvantage experienced in regional Victoria. Regional Victorians have lower rates of internet connection, inferior internet speed and reliability when compared with Melbourne residents.[112] Those in most need of digital connectivity due to being physically distant from Melbourne are least able to access it.

Internet connection at home is the only reliable measure of digital connectivity in Australia. In regional Victoria, roughly one in four people (22%) live in a household without internet access compared to 14% in Melbourne.[113] A further issue of concern for regional Victorians is the persistent and significant divide in the quality of mobile services compared to metropolitan users, with important implications for public safety, economic development and liveability.[114]

As services shift online (for example banking, job search, health and social services, and education), digital access and digital literacy become increasingly necessary.[115] People with low levels of digital inclusion, either through skills or access issues, find themselves at a disadvantage in accessing these opportunities.[116] The COVID-19 pandemic has illustrated the importance of digital technologies and infrastructure in allowing individuals to remain connected to work, education, family and community. However, the benefits of technological change are not being equally shared across regional Victoria, leading to increased inequality and reduced quality of life,[117] a risk the Victorian Government seeks to address through its Digital Future Now initiative improve mobile coverage and broadband access in regional areas.[118]

The 2019-20 summer bushfires, on the other hand, highlighted the safety implications of gaps in digital connectivity and coverage. Victoria recorded a total of 159 communications outages during the bushfire period,[119] with some communities losing access to triple zero emergency communications, mobile safety apps, text-based emergency alerts as well as the ability to keep in contact with family and friends.

[110] Catholic Social Services Victoria (2020) *Social service and infrastructure needs in Great South Coast: submission to Infrastructure Priorities for the Regions*

[111] Department of Transport (2020) *Submission to Infrastructure Priorities for the Regions*

[112] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 19

[113] Ibid

[114] Gippsland Regional Partnership (2019) *Gippsland regional digital plan*, p. 8, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0010/1872946/Gippsland-Digital-Plan-Final-25-September-web.pdf

[115] Wyatt, McQuire and Butt (2015) *Public libraries in a digital culture*, p. 6, available at https://arts.unimelb.edu.au/__data/assets/pdf_file/0005/1867865/PublicLibrariesinaDigitalCulture.pdf

[116] Kinney (2010) *The internet, public libraries, and the digital divide*, Public Library Quarterly, 29:2, 104-161, pp. 112-113, available at https://www.tandfonline.com/doi/pdf/10.1080/01616841003779718

[117] Infrastructure Australia (2019) *Australian infrastructure audit*, pp. 40, available at https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Australian%20Infrastructure%20Audit%202019.pdf

[118] Department of Treasury and Finance (2020) *Victorian budget 2020/21: rural and regional budget information paper*, p. 11, available at https://s3-ap-southeast-2.amazonaws.com/budgetfiles202021.budget.vic.gov.au/2020-21+State+Budget+-+Rural+and+Regional.pdf

[119] Australian Communications and Media Authority (2020) *Impacts of the 2019–20 bushfires on the telecommunications network*, p. 7, available at https://www.acma.gov.au/sites/default/files/2020-04/Impacts%20of%20the%202019-20%20bushfires%20on%20the%20telecommunications%20network_1.docx

Improving digital connectivity is a priority for each of Victoria's nine Regional Partnerships, as outlined in their detailed *Regional digital plans*.[120] Its importance as a regional issue was further highlighted in our submissions process, with stakeholders variously emphasising the need for equitable access to online services, the vital importance of digital connectivity in times of emergency and the need to improve digital literacy and capacity to support social inclusion among disadvantaged regional communities.[121]

Our recommendations aim to respond to these challenges by continuing to bridge the digital divide for regional Victorians. The recommendation to improve telecommunications infrastructure resilience seeks to explore options to help ensure that regional Victorians can access essential information and services in times of emergency.

The recommendation to improve internet access in rural libraries aims to use existing community infrastructure to improve digital inclusion. While internet access at home would be the most effective means of achieving this, libraries provide a reasonable alternative. This recommendation seeks to support those without internet at home, or the skills to use the internet independently, to access the services they need – leveraging libraries as an important community resource which is well-placed to deliver this support.

> **Continue to address regional Victoria's connectivity gaps**
>
> The *Comparative advantage* recommendation to *Continue to address regional Victoria's connectivity gaps* (see Recommendation 04) also has relevance in addressing the digital divide for regional Victorians.
>
> This recommendation aims to leverage the Victorian Government's Digital Future Now initiative to ensure a long-term focus on improving regional Victoria's broadband and mobile services.
>
> Improved digital connectivity will ensure that regional communities are able to take full advantage of the benefits digital technologies provide.

Recommendation 13: Improve resilience of regional telecommunications infrastructure

In the next 10 years, develop more resilient regional telecommunications infrastructure so communities can stay safe during emergencies, including greater network redundancy and back-up power supply.

Recommendation 14: Fund regional libraries to provide better internet access

Immediately provide funding for regional and rural libraries to improve community access to fast, free internet services, leveraging existing library infrastructure.

This recommendation will enhance access to modern digital technology that meets local needs, delivering a higher standard of library facilities to more Victorian communities and helping reduce the digital divide for those who do not have access to the internet at home.

Improve education and health outcomes for vulnerable Victorians

Infrastructure interventions which help break the cycle of deep and persistent disadvantage can deliver enduring benefits for the individual, local community and state.[122] Investments which target key life stages – including early years, the transition from school to work and family wellbeing – are likely to have bigger positive impacts.[123]

Improved access to education and health care services is needed to improve outcomes for regional Victorians. People living in regional areas have relatively poor access to, and use of, a range of services which contributes to the disadvantage found in regional communities, for example:[124]

• Health and development outcomes for children and young people are consistently worse in regional and remote areas than in cities. More than one in four (27%) children outside metropolitan areas are developmentally vulnerable compared with one in five (21%) in cities.[125]

• Regional areas demonstrate higher proportions of young people not finishing school, or not engaged in work or study.[126] By age 16, approximately one in six (17%) young people in regional Victoria have left full-time secondary

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[120] The Victorian Government has worked with the Regional Partnerships to develop localised digital plans for each of the nine regions, to provide an evidence-based blueprint to improve digital connectivity in each region. See Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria* for further details.

[121] For example, submissions to Infrastructure Priorities for the Regions from Gannawarra Shire Council, Goulburn Broken Greenhouse Alliance, Rural Councils Victoria and Catholic Social Services Victoria

[122] Productivity Commission (2013) *Deep and persistent disadvantage in Australia*, available at https://www.pc.gov.au/research/supporting/deep-persistent-disadvantage/deep-persistent-disadvantage.pdf

[123] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 32

[124] Ibid, p. 7

[125] Royal Far West (2017) *The invisible children*, p. 3, available at https://www.royalfarwest.org.au/wp-content/uploads/2018/09/invisible-children-2018-web.pdf

[126] EY (2019) *Regional disadvantage fact sheets*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

education compared to 13% in Melbourne. By age 24, one third (33%) of regional Victorians are not engaged in either learning or earning.[127]

- Drug abuse and alcohol addiction continue to affect the health and wellbeing of communities across regional Victoria. Drug and alcohol abuse are growing faster in regional Victoria than in Melbourne[128] and the rate of unintentional drug-induced deaths has increased every year since 2012, even as Melbourne's has declined.[129]

Lengthy wait times for treatment are common in rural and regional areas,[130] and access to services can be complex. Travelling to Melbourne is the only option for many,[131] but the distances and costs involved can be a barrier to treatment, as can lack of public transport access.[132] The COVID-19 pandemic has highlighted the opportunities associated with telehealth, and take-up of telehealth services has rapidly expanded.[133] However, not all people have sufficient digital literacy or access to take full advantage of these services, and there will continue to be a need for some face to face interaction with service providers.

Infrastructure Priorities for the Regions proposes three recommendations aimed at improving access to services in the regions, each targeting a different cohort. These recommendations respond to stakeholder submissions and community concerns raised during our research and consultation process.[134]

Our telehealth recommendation aims to improve access to paediatric and allied health care for children and young people aged 0-18, using selected schools as a gateway to provide supported services for children and families to improve outcomes over the long term. Telehealth is one way that access to health services can be improved for regional and remote communities.

This recommendation aims to make better use of the existing technology and infrastructure in schools to overcome some of the barriers to uptake of telehealth, which include poor internet connectivity in regional areas, limited access to IT equipment and poor computer skills.[135] Piloting this approach in a single region, Wimmera Southern Mallee, will ensure that benefits and opportunities for improvement can be understood before expanding services across regional Victoria – noting that services will need to be tailored to meet the specific needs of the communities they are intended to support.

The recommendation to expand Youth Foyer services across regional Victoria aims to respond to the challenges facing vulnerable young people as they transition from school. The labour market in regional Victoria has become particularly challenging for young people without training or qualifications, as entry level jobs that have traditionally employed young people have declined.[136] Successful transition from school into work is critically important for young people's chances in later life.[137] The Youth Foyer model has demonstrated success in intervening in the transition from school to work for vulnerable young people, helping to break the cycle of disadvantage for this cohort. This recommendation aims to further leverage this success.

Our third recommendation to improve education and health outcomes for regional Victorians aims to provide drug and alcohol treatment services in regions where they are not currently available. While telehealth can open up opportunities for remote service provision by connecting people with services which may be otherwise unavailable, the need to provide certain services in the local area remains. Alternative treatments to residential rehabilitation do exist, such as detoxification at home, but they are not appropriate for everyone.[138] This recommendation seeks to expand this treatment option to each of Victoria's regions, providing more equitable access for those in regional areas where the need is growing.

[127] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 24

[128] Infrastructure Victoria analysis of Turning Point Health, *Ambo-AODStats*, (https://aodstats.org.au/index.php?page=34)

[129] Penington Institute (2019) *Australia's annual overdose report 2019*, p. 69, available at www.ourphn.org.au/wp-content/uploads/20190829-Australias-Annual-Overdose-Report-2019.pdf

[130] Wimmera Southern Mallee Regional Partnership, the Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital (2020) *Submission to Infrastructure Priorities for the Regions*

[131] VAADA (2017) *Submission Parliamentary inquiry into drug law reform*, p. 7, available at www.parliament.vic.gov.au/images/stories/committees/lrrcsc/Drugs_/Submissions/163_2017.03.17_-_VAADA_-_submission.pdf

[132] NSW Legislative Council Portfolio Committee No. 2: Health and Community Services (2018) *Provision of drug rehabilitation services in regional, rural and remote New South Wales*, pp. 26, 32, available at https://www.parliament.nsw.gov.au/lcdocs/inquiries/2466/Final%20report%20-%20Drug%20rehabilitation%20services%20-%206%20August%202018.pdf

[133] Department of Health (2020) *Australians embrace telehealth to save lives during COVID-19*, available at https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/australians-embrace-telehealth-to-save-lives-during-covid-19

[134] For example, submissions to Infrastructure Priorities for the Regions from Wimmera Southern Mallee Regional Partnership, the Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital, Brotherhood of St Laurence, Barwon Regional Partnership, Horsham Rural City Council and RMIT University

[135] Moffatt and Eley (2011) *Barriers to the up-take of telemedicine in Australia - a view from providers*, Rural and Remote Health, Vol 11 (1)

[136] Brotherhood of St Laurence (2020) *Submission to Infrastructure Priorities for the Regions*

[137] Cuervo and Wyn (2011) *Rethinking youth transitions in Australia: a historical and multidimensional approach*, available at https://education.unimelb.edu.au/__data/assets/pdf_file/0003/2690301/2010-Rethinking-youth-transitions-in-Australia-RR33.pdf

[138] Turning Point (2014) *A study of patient pathways in alcohol and other drug treatment*, p. 12, available at https://www.health.gov.au/sites/default/files/study-of-patient-pathways-in-alcohol-and-other-drug-treatment.pdf

> ### Recommendation 15: Use rural schools for children's specialist and allied telehealth services
>
> Retrofit or better use selected rural school infrastructure for children's specialist and allied telehealth services to improve children's health and development. Immediately begin with a trial in Wimmera Southern Mallee.
>
> ### Recommendation 16: Fund more Youth Foyers in regional Victoria
>
> Fund more Youth Foyers in regional Victoria, beginning with Geelong (Barwon), Wodonga (Ovens Murray) and Bendigo (Loddon Campaspe) by 2026, to build on existing education infrastructure and support vulnerable young people.
>
> Youth Foyers offer affordable accommodation and support services to improve their education, employment and housing outcomes as young people transition into adulthood.
>
> ### Recommendation 17: Build regional residential alcohol and drug rehabilitation facilities
>
> Within five years, build residential detoxification and rehabilitation facilities in regional Victoria to provide equitable access to alcohol and other drug treatment.
>
> Residential rehabilitation provides 24-hour, staffed treatment programs that offer intensive, structured interventions after withdrawal from alcohol or drug dependence. Facilities should be built in regions where they are not currently available or planned – the Great South Coast, Mallee, Wimmera Southern Mallee and Goulburn.

3.2.2   Fostering health, safety and social inclusion

Infrastructure can further help alleviate disadvantage by fostering participation and social inclusion. This encompasses the facilities and infrastructure that help communities connect – from community facilities to parks, volunteer emergency services or civic infrastructure for governance.[139] Housing also plays a role, not merely through the provision of affordable and appropriate accommodation but by enabling people to connect with local services, facilities, jobs and transport.[140]

Infrastructure Priorities for the Regions has explored the different ways in which social and community infrastructure can support health, wellbeing and community inclusion. In doing so, we have taken existing infrastructure as our starting point and sought to make better use of these assets wherever possible, rather than necessarily building from scratch. This approach has informed many of our recommendations but is particularly relevant here.

We have identified five recommendations which, in different ways, seek to make better use of community infrastructure to respond to changing community needs and to enhance access to affordable, fit for purpose housing.

Make better use of community infrastructure

While disadvantage is concentrated in certain contexts, including small rural areas with declining populations, suburbs in regional cities or high-growth peri-urban areas, it can be found in all communities in regional Victoria.[141] Eight of the top 10 most disadvantaged local government areas are in regional Victoria,[142] and 15% of regional Victorians live below the poverty line (rising to 23% in children).[143] The average health and age profile for regional Victorians indicates a potentially high per capita demand for health and social services relative to Melbourne, for example:

- one fifth (19%) of regional Victorians are aged 65 and over compared with 14% in Melbourne[144]
- an estimated 15% of regional Victorians have asthma compared with 11% in Melbourne[145]
- a higher proportion of regional Victorian adults smoke (19% compared with 14% in Melbourne)[146]
- an estimated 37% of regional Victorians are obese compared with 29% in Melbourne.[147]

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[139] Pope (2019) *The role of infrastructure in addressing disadvantage*, p. 28

[140] Hulse, Jacobs, Arthurson and Spinney (2010) *Housing, public policy and social inclusion*, Australian Housing and Urban Research Institute, available at https://www.ahuri.edu.au/__data/assets/pdf_file/0020/2828/AHURI_Positioning_Paper_No135_Housing,-public-policy-and-social-inclusion.pdf

[141] Pope (2019) *The role of infrastructure in addressing disadvantage*, p. 4

[142] Aither (2019) *Inter-regional assessment: an analysis of regional Victoria's strengths and challenges*, p. 38

[143] Tanton, Peel and Vidyattama (2018) *Every suburb every town: poverty in Victoria*, p. 2, available at https://vcoss.org.au/wp-content/uploads/2018/11/Every-suburb-Every-town-Poverty-in-Victoria-VCOSS.pdf

[144] Department of Environment, Land, Water and Planning, *Victoria in future 2019*, available at https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future

[145] Torrens University Australia (2019) *Social health atlas*, Estimated number of people with asthma, age standardised rate per 100, available at http://phidu.torrens.edu.au/social-health-atlases

[146] Ibid, Estimated number of people aged 18 years and over who were current smokers (modelled estimates), age standardised rate per 100

[147] Ibid, Estimated number of people aged 18 years and over who were obese (modelled estimates), age standardised rate per 100

Local government plays a vital role in providing a range of social and community services, including family and children services, aged care, health care services and programs to foster social inclusion and improve wellbeing.[148] Although the exact type and nature of these services vary in different places, as they respond to the needs of the local community, councils across regional Victoria face shared pressures in continuing to deliver essential services.

Demographic changes, such as an ageing population, are affecting the scope and mix of services councils need to provide. Smaller rural councils have a relatively small ratepayer base which is further constrained by declining populations and lower average incomes, while regional cities such as Ballarat, Bendigo, Geelong and Wodonga experience pressures on services associated with high population growth and greater numbers of disadvantaged residents.[149]

The impact of climate change adds further complexity to the challenges facing local governments and the communities they support. Regional Victoria is exposed to the impacts of climate change with higher temperatures, more days of extreme heat, and declining rainfall forecast across the regions.[150] As well as increasing the incidence of extreme heat and heatwaves, climate change is increasing the frequency of conditions for catastrophic bushfires.[151]

The health impacts of extreme heat, heatwaves and prolonged exposure to bushfire smoke can be significant. Heatwaves, for example, are responsible for more deaths each year than any other type of disaster.[152] While extreme heat and exposure to smoke can affect anyone, the risks are higher for regional Victoria's older, more disadvantaged population.[153]

These pressures mean that regional councils need to be flexible and innovative in their approach to service provision, and to the facilities and infrastructure which support this. Despite the different challenges facing each local area there is a shared necessity to manage ageing assets, do more with less, and make better use of existing infrastructure to respond to communities' changing needs.

Local government recognises these challenges and is seeking to respond. The need for facilities capable of supporting the complex and changing needs of local communities was one of the themes most consistently raised during our consultation for Infrastructure Priorities for the Regions. We received submissions from regional councils and organisations seeking, for example, to:[154]

- develop integrated 'hubs' to deliver multiple health and community services from a single location
- refurbish ageing council assets and infrastructure to better support the delivery of services needed by the local community
- invest in public library infrastructure as a way of providing multi-purpose facilities that bring people together
- adapt community infrastructure to respond to the risks associated with climate change.

In addition, submissions from Aboriginal community-controlled organisations demonstrated that their facilities were struggling to meet the growing service needs of Aboriginal communities in a culturally appropriate way.[155] Stakeholders have confirmed that this is a statewide rather than regional issue. Infrastructure Victoria's draft *30-year infrastructure strategy* update therefore recommends that the Victorian Government co-design an Aboriginal community-controlled infrastructure plan with Aboriginal people, to guide investment in Aboriginal community-controlled infrastructure to meet current and future needs across Victoria, reflecting the shared need across metropolitan and regional areas.

Infrastructure Priorities for the Regions' recommendations relating to better use of community infrastructure collectively seek to support local governments to implement the solutions they have, in many cases, already identified. They focus on the need for infrastructure which is adaptable and resilient in the face of changing demographics, climates and associated service needs. They also respond to issues associated with ageing assets which may be difficult to maintain, supporting councils to upgrade, repurpose or retire them as appropriate.

[148] Know Your Council, *Guide to councils*, available at https://knowyourcouncil.vic.gov.au/guide-to-councils/what-councils-do/community-services

[149] KPMG (2017) *Rural and regional councils sustainability reform program stage 1 project report*, available at https://www.localgovernment.vic.gov.au/__data/assets/pdf_file/0025/214675/Rural-and-Regional-Councils-Sustainability-Reform-Program_Phase-1-Final-Report.pdf

[150] Department of Environment, Land, Water and Planning (2019) *Victorian climate change projections 2019*, available at https://www.climatechange.vic.gov.au/adapting-to-climate-change-impacts/victorian-climate-projections-2019

[151] Garnaut (2011) *The Garnaut climate change review - update 2011*, p. 7, available at https://cpb-ap-se2.wpmucdn.com/blogs.unimelb.edu.au/dist/a/142/files/2016/01/Garnaut-Review-Update-2011-t7k4e9.pdf

[152] Department of Environment, Land, Water and Planning (2016) *Victoria's climate change adaptation plan 2017-2020*, p. 35, available at https://www.climatechange.vic.gov.au/__data/assets/pdf_file/0024/60729/Victorias-Climate-Change-Adaptation-Plan-2017-2020.pdf

[153] Department of Health and Human Services (2019) *Heat health plan for Victoria*, p. 19, available at https://www2.health.vic.gov.au/about/publications/policiesandguidelines/heat-health-plan-for-victoria

[154] For example, submissions to Infrastructure Priorities for the Regions from City of Bendigo, Mildura City Council, City of Greater Geelong, Mount Alexander Shire, Mitchell Shire, Public Libraries Victoria, Catholic Social Services Victoria and Central Victorian Primary Care Partnership

[155] For example, submissions to Infrastructure Priorities for the Regions from Loddon Mallee Aboriginal Reference Group, Victorian Aboriginal Children and Young People's Alliance and Victorian Aboriginal Community Controlled Health Organisation

The intent of these recommendations extends beyond the infrastructure itself, to the policy and governance arrangements needed to facilitate shared service planning across different government departments and agencies. Inter-agency service planning is the first step in identifying which services, locations and facilities may be suitable for shared use. It also provides an opportunity to consider public transport alongside service planning, to ensure that services can be accessed by all who need them.

Recommendation 18: Deliver multipurpose shared social service facilities in the regions

Immediately undertake collaborative inter-agency planning for regional social services to identify opportunities for multipurpose shared facilities, then deliver them where appropriate in partnership with local governments and community organisations.

Co-locating services in a shared facility can help meet the complex service needs of regional communities by improving access to services such as primary and allied health, education, child and family, legal and housing, as well as consulting rooms and community spaces.

Recommendation 19: Support regional councils to update, repurpose or retire outdated community infrastructure

Fund rural and regional councils in the next five years to update, repurpose or retire outdated community infrastructure for better service delivery.

This will provide targeted support for councils where service planning demonstrates they are no longer fit for purpose and that different types of facilities will better meet community needs. Funding applications should prioritise facility upgrades that are based in or serve disadvantaged communities.

Recommendation 20: Create climate-adapted facilities for rural communities

In the next five years, fund local governments to plan and help deliver a network of designated, accessible climate-adapted community facilities, to manage the health impacts of extreme heat and bushfire smoke.

Existing community facilities such as libraries and community centres can be retrofitted to be made fit for purpose as cool and cleaner air facilities – ensuring they are in safe locations, have suitable air conditioning and filtration, back-up power and comfortable amenities like cooking facilities and internet access.

Enhance access to affordable, fit for purpose housing

Social housing infrastructure meets a basic need for secure, affordable and appropriate housing among low income and vulnerable Victorians. Well-located social housing, in places with good access to transport and services, can help alleviate disadvantage. This is particularly relevant in regional Victoria given the higher proportion of disadvantaged residents when compared with Melbourne.[156]

Declining housing affordability means that home ownership rates have been falling for all Victorians, especially those on lower incomes.[157] However, at the same time as renting in regional Victoria has increased, rental affordability has declined.[158] Very few properties in the regions are now considered affordable and appropriate for most households on income support, with single people faring the worst (less than 1% of available properties in regional Victoria are considered affordable for this cohort).[159]

At the same time, homelessness is a growing problem in Victoria's regions, increasing by 4% between 2011 and 2016, with some regions (Barwon and Great South Coast) seeing increases of more than 20%.[160] Homelessness in Shepparton, Geelong and Ballarat now exceeds median numbers in metropolitan areas.[161]

Existing social housing provision is not meeting current demand, let alone future growth. There is also a mismatch between existing social housing dwellings and the needs of current and future tenants, with estimates indicating that the number of one-bedroom dwellings would have to nearly double to meet demand.[162] Compounding these issues, the existing stock of social housing is poorly adapted to help tenants cope with the impacts of climate change.

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[156] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, pp. 7-8

[157] Grattan Institute (2018) *Housing affordability: re-imagining the Australian dream*, p. 3, available at https://grattan.edu.au/wp-content/uploads/2018/03/901-Housing-affordability.pdf

[158] Parliament of Victoria (2017) *Housing affordability in Victoria*, p. 13, available at https://apo.org.au/sites/default/files/resource-files/2017-12/apo-nid123711.pdf

[159] Anglicare Victoria (2020) *Rental affordability snapshot 2020*, p. 7, available at https://www.anglicarevic.org.au/wp-content/uploads/2020/04/RAS2020_Mini-Report_AnglicareVictoria_April2020.pdf

[160] Australian Bureau of Statistics (2016) *Census of population and housing: estimating homelessness*, available at https://www.abs.gov.au/ausstats/abs@.nsf/exnote/2049.0

[161] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 16

[162] VAGO (2017) *Managing Victoria's public housing*, p. 20, available at https://www.audit.vic.gov.au/sites/default/files/20170621-Public-Housing.pdf

Stakeholder engagement throughout Infrastructure Priorities for the Regions has confirmed that access to affordable housing, including social housing, is a growing concern across the regions. Regional Partnerships in the Barwon, Central Highlands, Goulburn, Mallee and Wimmera Southern Mallee regions have identified improved access to affordable housing as a priority issue, while councils in Geelong, Shepparton, Bendigo and Ballarat are committed to developing their own housing plans.[163] Additionally, submissions were received from stakeholders across Victoria's regions identifying, for example:

- a need to increase social housing in regional centres and bushfire-affected areas in Gippsland
- more social housing needed in Goulburn, to reduce the number of families waiting for safe and stable accommodation
- an opportunity for all levels of government to work together to respond to the growing need for social and affordable housing in the Loddon Campaspe region.[164]

Our recommendation to expand social housing aims to increase supply of housing for vulnerable people in Victoria's regions, focussing on regional centres. These centres are best situated to provide access to transport and services, which are increasingly concentrated in regional hubs. The complex set of issues associated with disadvantage mean that services such as health, community, justice and emergency services need to be readily accessible. Integrating future social housing investment with transport and service planning to ensure access to essential services will help to address the multiple drivers of disadvantage.

As climate change increases the incidence of heat waves and days of extreme heat across Victoria, housing needs to adapt to ensure vulnerable communities can remain healthy in their homes. The recommendation to retrofit existing social housing stock aims to ensure dwellings are appropriately climate-adapted, while further seeking to alleviate financial stress for households by improving energy efficiency – including provision of renewable energy through solar photovoltaic panels.

These recommendations will build on work commenced under the Victorian Government's $5.3 billion Big Housing Build, which will build an estimated 2300 new social housing dwellings across regional Victoria over the next four years.[165] The Victorian Government is also investing in targeted energy efficiency upgrades for social housing properties.[166]

> ### Recommendation 21: Expand social housing in regional centres, in locations with good access
>
> Focus social housing investments in regional centres, near access to transport and services, to contribute to a target of 4.5 social housing dwellings for every 100 Victorian households by 2031.
>
> New social housing stock in the regions should focus primarily on the regional centres, with those centres with strong forecast population growth an immediate priority (for example, Geelong, Ballarat and Bendigo). These centres are best situated to provide access to transport and services, which are increasingly concentrated in regional hubs.
>
> ### Recommendation 22: Make social housing suitable for changing local climates
>
> Prioritising northern Victoria, continue to deliver a long-term program of modifying social housing to be climate resilient by improving the energy efficiency and energy affordability of residences.
>
> This includes installation of split system air conditioning, energy efficiency improvements such as insulation, and solar photovoltaic panels. Modifications should be rolled out across the regions over time, with immediate priority given to addressing the already extreme temperatures in the Mallee region and northern parts of Wimmera Southern Mallee, Ovens Murray, Loddon Campaspe and Goulburn.

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[163] As outlined in council submissions to Infrastructure Priorities for the Regions

[164] For example, submissions to Infrastructure Priorities for the Regions from Catholic Social Services Victoria, Centre for Excellence in Child and Family Welfare and Central Victorian Primary Care Partnership

[165] Homes Victoria (2020) *Victoria's Big Housing Build*, p. 2, available at www.vic.gov.au/sites/default/files/2020-11/hv_more_homes_for_more_Victorians_0.pdf

[166] Victorian Government (2020) *Making Victoria a renewable energy powerhouse*, available at https://www.premier.vic.gov.au/making-victoria-renewable-energy-powerhouse

4. Detailed recommendations

Infrastructure Victoria has identified 22 draft recommendations during the Infrastructure Priorities for the Regions work program. Each recommendation is detailed in full in the following section, along with our supporting evidence.

Recommendations are listed in the order they appear in the body of the report and include details of how each aligns with the Infrastructure Priorities for the Regions frameworks and the outcomes we are seeking to achieve.

4.1 Comparative advantage recommendations

Recommendation 01: Deliver funding certainty for regional road maintenance and upgrades

Industry: Various – including agriculture, tourism, manufacturing, mining

Framework: Comparative advantage framework

Outcome: Provide better access to markets; Deliver greater productivity and efficiency

What is the recommendation?

The indispensable purpose of keeping regional communities connected and their economies functioning means regional roads and bridges must be properly maintained and, if necessary, upgraded to stay safe, productive and efficient. Current road maintenance and upgrade funding is unpredictable, hindering road managers' ability to triage and target investment across the network from year to year.

To realise a more strategic road maintenance and upgrade strategy, within two years the Victorian Government should specify the level of service, or desired condition, of each type of regional road and bridge in a clear and transparent hierarchy. Each regional road should be allocated a level of service based on its intended purpose and desired condition. The level of service could specify the desired speed, volume, safety and types of vehicles the road is intended to carry. These levels of service need to match local and regional needs.

The Victorian Government should then dedicate an ongoing funding program to regional road and bridge maintenance and upgrades. Long-term funding certainty will allow road managers to prioritise investments more efficiently, invest in upgrades to support economic and social outcomes and undertake maintenance at an earlier stage, before it becomes critical and more expensive. After specifying road service levels, funding should be allocated to priority maintenance and upgrades, determined based on improving safety, vehicle emissions and economic productivity outcomes, and existing condition.

Roads and bridges need to cater for a region's local travel, freight, through traffic, and industry needs. As these factors change, road levels of service may need to change to match. Data on regional road categorisation, utilisation, condition, safety, vehicle emissions and economic importance should be regularly collected, analysed and published to inform prioritisation of maintenance and upgrades.

Road upgrades are any measures to improve the service offering on roads, paths or road-related infrastructure. This can include new roads and bridges, road duplications, extensions, bridge upgrades, intersection treatments, safety improvements and improved services such as rest stops. Road maintenance can be categorised as routine, periodic and rehabilitation, with rehabilitation the most expensive as it requires major repair or even replacement of the asset.

Why is this needed?

In many regional areas, transport options are limited, and people rely on the road network to reach jobs, education, health care, services, shopping and recreation.[167] Beyond enabling people's mobility, roads and bridges support regional industries. Regional Victoria produces a third of the state's exports,[168] and the road network plays a vital role in supporting regional economic growth. Roads connect producers with suppliers, transport regional goods and produce to market, and ensure tourists can access regional attractions.

Well maintained and upgraded roads help keep motorists safe. A substantial body of research highlights the safety risk from poorly maintained roads.[169] Much of this research also indicates that there is a more significant relationship between road maintenance and safety in rural areas than in cities.[170] Death rates on Victoria's country roads are four times higher than on metropolitan roads.[171]

At the same time, the demands on the regional road network are increasing. Over the last two decades, people and freight travelling on Victoria's major country roads have increased by 20% and this growth is expected to continue.[172]

[167] VAGO (2017) *Maintaining state-controlled roadways*, p. vii, available at https://www.audit.vic.gov.au/sites/default/files/20170622-Maintaining-Roadways.pdf

[168] Rural Councils Victoria, *Federal budget submission 2019-20*, p. 5, available at https://treasury.gov.au/sites/default/files/2019-03/360985-Rural-Councils-Victoria.pdf

[169] See, for example, Cairney and Bennett (2013) *An exploratory study of surface characteristics and crash occurrence on selected roads in Australia*, Research Report ARR 382; Cairney and Styles (2005) *A pilot study of the relationship between macrotexture and crash occurrence*; VAGO (2017) *Maintaining state-controlled roadways*

[170] Tredrea (2001) *Relationships between surface texture and accidents for selected rural and urban roads*, ARRB Transport Research Ltd Contract Report

[171] TAC, *Towards zero 2016-2020, Victoria's road safety strategy and action plan*, p. 11, available at https://www.towardszero.vic.gov.au/__data/assets/pdf_file/0010/183556/STU_0206_RS_STRATEGY_2016_web.pdf

[172] Parliament of Victoria (2018) *Inquiry into VicRoads' management of country roads*, p. 2, available at https://www.parliament.vic.gov.au/file_uploads/LRRCSC_58-04_Text_WEB_sn9mqH6Q.pdf

Parts of the regional road network are in a very poor condition, presenting a growing risk to public safety and increasing the costs of travel through increased fuel use, vehicle maintenance costs and travel times.[173] Moreover, funding provided for maintenance and upgrades is insufficient, resulting in inefficient government investment and higher lifecycle infrastructure costs. Simply maintaining the existing funding allocation is likely to lead to a continuing deterioration of the road network.[174]

Road and bridge maintenance in regional Victoria is particularly challenging for government to fund. The road network is extensive and much of the network serves relatively few vehicle trips. However, the need to maintain roads and structures to a safe, productive and efficient standard remains. Reviews have been critical of the government's road maintenance strategy, prioritisation processes and failure to optimise the road maintenance program to reduce whole-of-life costs.[175]

Many factors contribute to road maintenance and upgrade costs, beginning with the sheer size of the regional road network. Of the 23,000 kilometres of arterial road and freeway lanes in Victoria,[176] 19,000 are in the regions.[177] Victoria has more than 3180 bridges, 3500 other structures, and over 3400 sets of traffic signals and other electrical systems (such as street lighting and freeway management systems).[178]

Roads and supporting infrastructure are vulnerable to extreme weather, exacerbated by climate change.[179] Managing the condition of the regional road network is also made more difficult by the age of many roads. A large proportion of the road network is more than 70 years old and made from materials which weren't intended for current truck loading and vehicle requirements.[180]

Road maintenance is most effective and cost-efficient to undertake when roads are still in a fair condition. Roads which have deteriorated beyond this point require more costly and disruptive rehabilitation work.[181] Current maintenance funding is volatile, declining in real terms in some years, and rising significantly in others.[182] Lack of funding certainty for upgrades and maintenance as a result of year to year budget allocations makes it difficult for the road manager to strategically and efficiently allocate road funding, with funding increasingly being directed towards the roads and structures in the worst condition. This means maintenance is left until it is most expensive, ultimately inflating costs.[183]

Moreover, there is no clear strategy for prioritising road upgrades in Victoria. The approach is primarily bottom up, with responsibility given to regions to determine their own priorities and little guidance on the broader outcomes through a statewide framework. As such, road priority interventions are often not well defined or well linked to the evidence base, and therefore upgrade priorities cannot be effectively measured across regions.

What will be the impact?

Because of the multiple and concurrent functions the regional road network performs, the condition of this important asset has broad impacts: on individuals, communities and industries through road safety, vehicle operating costs (including fuel use and vehicle maintenance), vehicle emissions and longer travel times.[184]

With greater certainty of funding allocations over time, road managers can prioritise investments more efficiently, investing in upgrades and maintenance at an earlier stage (before it becomes critical) and reducing the lifecycle cost of the road asset.

Ongoing funding for regional road and bridge maintenance and upgrades would assist in meeting the outcomes that matter to government and the wider community, including:

- **Safety:** with travellers not being subject to the risk that a lack of maintenance or upgrades will make roads more dangerous and contribute to crashes.

[173] VAGO (2017) *Maintaining state-controlled roadways*, p. vii

[174] Ibid, p. 39

[175] VAGO (2008) *Maintaining the state's regional arterial road network*, available at https://www.parliament.vic.gov.au/papers/govpub/VPARL2006-10No115.pdf; VAGO (2017) *Maintaining state-controlled roadways*

[176] VicRoads (2017) *Pavement management strategic plan*, available at https://www.vicroads.vic.gov.au/about-vicroads/our-strategy/pavement-management-strategic-plan

[177] VicRoads (2019) *Annual report 2018-19*, p. 14, available at https://www.vicroads.vic.gov.au/about-vicroads/corporate-responsibility/vicroads-annual-report

[178] VicRoads (2017) *Pavement management strategic plan*, p. 4, available at https://www.vicroads.vic.gov.au/-/media/files/documents/utilities/about-vr/strategy/pavement-management-strategic-plan--final-web-version.ashx?la=en&hash=C0BD401A36E51943FE66829D72A25F38

[179] VicRoads (2015) *Climate change risk assessment*, p. 6, available at https://www.vicroads.vic.gov.au/-/media/files/documents/utilities/about-vr/strategy/climate-change-adaptation-strategy.ashx?la=en&hash=EF4F172E7C6C4E8B110A41CC9A499F35

[180] VicRoads (2017) *Your insights our actions*, p. 24, available at https://regionalroads.vic.gov.au/-/media/60a3e70bd4ea409c9db698ff958ee5b5.ashx?la=en&hash=87C768F8AF29BBDEAA26AD6D9D85D043

[181] VAGO (2017) *Maintaining state-controlled roadways*, pp. 9, 13

[182] Ibid, p. 18

[183] Ibid, p. 27

[184] Ibid, p. vii

- **Economic:** without additional monetary costs imposed on drivers and businesses through additional wear and tear because roads and their supporting assets are in poor condition.
- **Efficiency:** without speed restrictions and detours due to poor asset condition making journeys longer and less reliable than they should have been.
- **Cost-effective:** with available funds allocated to achieve the best results possible, taking account of the benefits of addressing problems before they become serious.
- **Fit for purpose:** meeting customer expectations about the service levels required for different classes of road.

Looking forward, well maintained, fit for purpose roads, bridges and other structures will be crucial to introduce more efficient freight vehicles such as high productivity freight vehicles. Well maintained roads are also likely to be a requirement for early adoption of automated vehicles, for which there are substantial potential economic, health and safety benefits.[185] There are also increasingly advanced safety functions in vehicles that benefit from a well-maintained road.

Which regions does this recommendation assist?

The recommendation is relevant across Victoria's regions. A 2017 audit of Victoria's road network shows clear deterioration over a ten-year period with the proportion of roads in very poor condition rising from 11% to 15%, while the proportion of roads in good-fair condition decreased from 66% to 62%. The deterioration of the road network has occurred across all areas of the state, with the south western, northern and eastern regions showing a particularly significant decrease in road conditions.[186]

Figure 1: Change in Victorian road condition, 2005-06 to 2015-16

The road network has been identified as a potential constraint on business growth and productivity in each of Victoria's nine regions.[187] This was confirmed in multiple stakeholder submissions from local councils and industry associations to Infrastructure Priorities for the Regions.

How does this align with the frameworks?

The recommendation aligns with the *Comparative advantage framework* and responds to the outcomes *Provide better access to markets* and *Deliver greater productivity and efficiency*.

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[185] Infrastructure Victoria (2018) *Advice on automated and zero emissions vehicles infrastructure*, p. 23, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Advice-on-automated-and-zero-emissions-vehicles-October-2018.pdf

[186] VAGO (2017) *Maintaining state-controlled roadways*, pp. 21, 65-77

[187] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

A more strategic and efficient approach to prioritising and funding regional road upgrades and maintenance will support the freight task in Victoria's regions. The proposed infrastructure response will address a potential development constraint identified for agriculture, mining, tourism manufacturing and energy – key industries of comparative advantage in regional Victoria.[188]

In addition, this recommendation will support Victorian communities, enhancing safety outcomes and helping to connect regional Victorians to jobs, education, health care and other essential services.

Providing clear prioritisation and funding certainty for regional road maintenance and upgrades will respond to Victorian Auditor-General's Office findings that a more strategic approach to road maintenance is required in Victoria.[189]

How does this recommendation work with others?

This complements the recommendations *Fund an ongoing regional rail freight maintenance program* and *Revise the Murray Basin Rail project plan* in better connecting Victorian producers with processors and markets.

It also aligns with the recommendation *Reform regional public transport to meet local needs* in supporting the transport needs of regional Victorians, whether by private or public transport.

[188] Ibid

[189] VAGO (2017) *Maintaining state-controlled roadways*, p. xii

Recommendation 02: Fund an ongoing regional rail freight maintenance program

Industry: Agriculture, mining, manufacturing

Framework: Comparative advantage framework

Outcome: Deliver greater productivity and efficiency; Provide better access to markets

What is the recommendation?

Immediately fund an ongoing periodic maintenance program for the regional rail freight network, informed by a network asset management plan. This should include an assessment of the current state of the freight rail network and funding for immediate high priority works.

The program, and the long-term asset management plan which informs it, should be publicly available, providing certainty to businesses and industry of the Victorian Government's commitment to freight rail. This will form the basis for an efficient investment program to ensure the freight rail network is safe, reliable and fit for purpose.

Why is this needed?

Freight volumes in regional Victoria are forecast to grow at an annual average rate of 1.5% between 2014 and 2051.[190] To cope with current and future expected demand, a reliable and safe rail freight network has been cited as a critical infrastructure need for the agriculture, manufacturing and mining industries in Wimmera Southern Mallee, Central Highlands, Great South Coast, Barwon, Loddon Campaspe and Mallee.[191]

While rail is well positioned to play an important role in the growing freight task and the existing rail freight network has sufficient capacity to significantly increase freight volumes, the share of freight on rail in Victoria has not changed significantly for almost two decades, and in some markets has gone backwards.[192] This has led to a network that is currently under-utilised for freight, particularly on freight-only rail lines in regional areas.

The regional rail freight network's efficiency is stymied by many factors, including different rail gauges, axle load restrictions, permanent and temporary speed restrictions and maintenance backlogs.[193] The poor condition of, and lack of investment in, the rail freight network is a significant impediment to further uptake of freight on rail. Despite recent funding boosts, including a short-term maintenance funding boost of over $100 million for regional passenger and freight rail in the Victorian Budget 2020-21,[194] routine and major periodic maintenance have not kept pace with the required investment.[195]

Compared to the regional passenger network, rail freight has significantly more assets in average, poor or end of life condition (see Table 1). The scale of funding required to address the maintenance backlog can be significant. A 2015-16 assessment of V/Line's asset base identified a maintenance backlog valued at approximately $534.8 million across the V/Line network, of which $315.9 million was for freight.[196]

Table 1: Condition rating of V/Line assets

Condition rating	Passenger network	Freight network
End of life	3.7%	11.7%
Poor	3.4%	4.7%
Average	19.8%	34.6%
Good	52%	31.7%
New	21.1%	17.3%

[190] Transport for Victoria (2018) *Delivering the goods – Victorian freight plan*, p. 19, available at https://transport.vic.gov.au/-/media/tfv-documents/ports-and-freight/delivering-the-goods.pdf?la=en&hash=3AE9573B325C4886DD60408E190F55E8

[191] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[192] Transport for Victoria (2018) *Delivering the goods – Victorian freight plan*, p. 42

[193] VAGO (2020) *Freight outcomes for regional rail upgrades*, available at https://www.audit.vic.gov.au/sites/default/files/2020-03/20200318-Freight-Outcomes-report.pdf

[194] Department of Treasury and Finance (2020) *Victorian budget 2020/21: service delivery budget paper no. 3*, pp. 14, 21, 24, available at https://s3-ap-southeast-2.amazonaws.com/budgetfiles202021.budget.vic.gov.au/2020-21+State+Budget+-+Service+Delivery.pdf

[195] VAGO (2017) *V/Line passenger services*, p. xi, available at https://www.audit.vic.gov.au/sites/default/files/2017-08/20170809-VLine-Passenger-Services.pdf

[196] Ibid, p. 46

A badly maintained regional rail freight network reduces its performance and reliability, reduces the life of the assets, and increases the risk of catastrophic failures. There have been several derailments in Victoria involving passenger and freight trains. Freight train derailments generally occur more frequently but have a lower consequence than passenger train derailments. However, freight train derailments still expose train crews, recovery teams and, depending on the location of the derailment, members of the public to potential harm.[197] In addition, they lead to economic impacts such as transport delays, higher transport costs and reduced certainty for industry. While derailments are not always related to track condition and deficient maintenance, the effective management of track defects is critical to minimising the risk of derailment and maintaining safe rail operations.

There is currently no publicly available asset management plan for the rail freight network to form the basis of a periodic major maintenance program. The lack of clarity regarding asset condition and future maintenance funding needs to be urgently addressed. Without a long-term commitment to investment in crucial rail infrastructure maintenance and upgrades, rail will become increasingly less competitive, shifting freight ideally suited to rail onto road, increasing costs for industry and damaging Victorian roads.

To achieve a fit for purpose network, an efficient maintenance regime for the regional freight network is needed. The 2018 Victorian Freight Plan proposed an asset management plan, to form the basis of an annual major maintenance program for the network. This was to include an allowance for achieving the required 'future state' for the rail network by 2050.[198] However, it is unclear what stage this is at and no timeline has been given for completion, meaning that Victoria currently has no transparent, sustainable maintenance plan for the rail network.

It is therefore imperative that this is completed and a commitment to funding a periodic maintenance program for freight rail is made to provide certainty to industry about Victoria's commitment to freight rail.

What will be the impact?

Rail freight has a basic cost advantage over road freight when transporting bulk commodities over long distances.[199] A single freight train can carry as much as 110 trucks.[200] Rail freight provides additional benefits over diesel-fuelled trucks, causing less road congestion, especially around ports, and reducing maintenance costs from road damage caused by heavy vehicles. Rail freight also reduces the accident costs per kilometre by more than 90% and reduces greenhouse gas emissions by a similar amount.[201]

Research has estimated that moving freight by rail instead of road generates benefits for society of around 1.45 cents per tonne kilometre. If all road freight moving between Sydney and Melbourne travelled by rail, this would generate social benefits of $111 million, including:[202]

• reduced congestion, road damage and maintenance costs
• reduced safety risk due to a decrease in number and size of heavy vehicles on the road network
• reduced emissions, noise pollution and amenity issues associated with heavy vehicle use.

Supply chain costs for bulk industries that rely on freight rail are a significant component of overall costs (accounting for around 30% and 22% of costs for grain and mineral sands respectively[203]). Investment in rail freight maintenance will contribute to the reduction of supply chain costs for key regional industries, helping them to remain internationally competitive.

Which regions does this recommendation assist?

The recommendation for funding an ongoing periodic maintenance program for Victoria's regional rail freight network will support bulk industries that rely on rail freight across regional Victoria. Freight rail is of particular importance for the regions, facilitating a significant proportion of agricultural and mining exports by moving commodities from regional areas to coastal ports. In addition, a majority of freight rail workers are based in regional areas.[204]

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[197] National Rail Safety Regulator, *Rail safety report 2018/19*, p. 21, available at
https://www.onrsr.com.au/__data/assets/pdf_file/0004/25663/ONRSR-Safety-Report-2018-2019.pdf

[198] Transport for Victoria (2018) *Victorian freight plan: delivering the goods*, p. 44

[199] Australian Government (2018) *Inquiry into national freight and supply chain priorities: supporting paper no.3, road and rail freight*, p. 4, available at https://www.infrastructure.gov.au/transport/freight/freight-supply-chain-priorities/supporting-papers/files/Supporting_Paper_No3_Road_and_Rail.pdf

[200] Deloitte Access Economics (2017) *The contribution of rail in Australia*, p. iv, available at
https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economics-value-rail-contribution-australia-161117.pdf

[201] Ibid, pp. 31-32

[202] Ibid, p. iv

[203] Department of Economic Development, Jobs, Transport and Resources (2015) *Murray Basin Rail Project business case: final business case*, p. 6, available at https://s3-ap-southeast-2.amazonaws.com/ptvic/Murray-Basin-Rail-Project-Business-Case.pdf

[204] Deloitte Access Economics (2017) *The contribution of rail in Australia*, p. 16

A reliable and safe freight rail network has been cited as a critical infrastructure need for agriculture, manufacturing and mining industries in Wimmera Southern Mallee, Central Highlands, Great South Coast, Barwon, Loddon Campaspe and Mallee.

How does this align with the frameworks?

This recommendation aligns with the *Comparative advantage framework*, and responds to the outcomes *Deliver greater productivity and efficiency* and *Provide better access to markets*.

The proposed infrastructure response will help reduce supply chain costs for key regional industries, responding to an identified constraint on potential industry growth in regional areas.[205] It will enable more efficient access to key input and output markets and improve utilisation of key regional ports at Geelong and Portland.

An efficient, competitive freight network helps keep regional producers viable, especially when faced with competition from low wage emerging economies. Investment in maintenance has not kept pace with requirements, leading to a significant and ongoing decline in the rail network's performance in regional Victoria. A continued decline could lead to freight rail becoming uncompetitive compared to road, even for commodities ideally suited to rail.

Victorian Government support for an ongoing freight rail maintenance program will signal a long-term commitment to this strategically important infrastructure, providing certainty for industry and operators and helping to ensure long-term viability. Without a clear commitment from government on regional freight rail, industry will continue shift away from rail and onto road, making the rail freight sector less and less viable into the future.

How does this recommendation work with others?

This recommendation will complement the recommendation *Revise the Murray Basin Rail project plan* in ensuring Victoria has an efficient, reliable and competitive rail freight network to support commodity exports from the regions.

Deficiencies in the rail freight network maintenance program have had an impact on rail freight upgrades in Victoria, including the Murray Basin Rail project. The project is currently on hold to allow for a review of the business case and to determine next steps. One of the key factors behind the cost overruns and delay in completing the project is the need for repair works in certain sections of the network to make up for the maintenance backlog.

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[205] Acil Allen (2019) *Regional industry profiles*

Recommendation 03: Revise the Murray Basin Rail project plan

Industry: Agriculture, mining

Framework: Comparative advantage framework

Outcome: Deliver greater productivity and efficiency; Provide better access to markets

What is the recommendation?

The Victorian Government should immediately develop and publish a revised Murray Basin Rail project plan, informed by the project's business case review, to provide certainty and confidence to investors and producers. Final funding sources for the project should be negotiated between the Victorian and Australian Governments.

Why is this needed?

Victoria is Australia's largest food and fibre exporting state. Victorian farmers produce 27% of the country's food and fibre exports, with a value of $14.2 billion in 2018-19.[206] The Murray Basin region is a nationally important producer of grain, fruit, vegetables and wine. As well as producing 70% of Victoria's grain, the region has a large, and growing, horticulture industry, particularly grapes and citrus fruits.[207] Given production in the region is largely bulk materials destined for distant processors and markets, shipment is ideally suited to rail freight.[208]

Supply chain costs are a significant proportion of total production costs for many industries, accounting for up to 30%.[209] With grain operations generally considered to be highly efficient, supply chain costs are one area where further efficiencies are possible and which need to be enhanced if producers are to remain internationally competitive.[210]

To improve freight outcomes for Victoria's north and west, the Victorian and Australian Governments invested $440 million in the Murray Basin Rail project. The project planned to standardise and upgrade over 1000km of rail track, along freight corridors in Victoria's north west, including lines from Mildura, Sea Lake, Manangatang and Hopetoun. This would improve transport efficiency for the Murray Basin, boosting logistical flexibility with improved connectivity to ports, and private sector co-investment was sought.[211]

To date, V/Line and the Department of Transport have delivered about half of the approved project and expended around 90% of the approved budget.[212] Later stages have been placed on hold,[213] and the business case has been reviewed.[214]

The review found that further standardisation of the network cannot be justified as costs are significantly greater than forecast in the original business case, and benefits can be largely achieved by enhancing the existing standard and broad-gauge network. Future work should therefore focus on optimising the current network to improve capacity and provide additional network resilience. The review proposes a package of works which require an additional $244 million, taking overall investment in the project to $814 million. Next steps include development of an updated project plan informed by the business case review.[215]

What will be the impact?

The Murray Basin Rail project was expected to have the following benefits:

- reduced transport costs for industry and reduced burden for government, in terms of limiting growth in long-haul road freight movements and associated maintenance costs
- increased private investment, as the project will provide an environment for increased investment in supply chain infrastructure (e.g. port infrastructure, rail-related infrastructure)

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[206] Agriculture Victoria (2019) *Victorian food and fibre export performance report 2018-19*, p. 3, available at https://agriculture.vic.gov.au/__data/assets/pdf_file/0006/533553/Food-and-fibre-export-performance-report-2018-2019.pdf

[207] Aither (2019) *Water supply and demand in the southern Murray-Darling Basin*, p. 1, available at https://waterregister.vic.gov.au/images/documents/Water-Supply-and-Demand-Report_Aither_FINAL.pdf

[208] Infrastructure Australia (2016) *Murray Basin Rail Project business case evaluation*, pp. 1-2, available at https://www.infrastructureaustralia.gov.au/sites/default/files/2019-06/Murray_Basin_Rail_Project_Evaluation_Summary_0.pdf

[209] Transport for Victoria (2018) *Delivering the goods – Victorian freight plan*, p. 8, available at https://transport.vic.gov.au/-/media/tfv-documents/ports-and-freight/delivering-the-goods.pdf?la=en&hash=3AE9573B325C4886DD60408E190F55E8

[210] Department of Economic Development, Jobs, Transport and Resources (2015) *Murray Basin Rail Project business case: final business case*, p. 6, available at https://s3-ap-southeast-2.amazonaws.com/ptvic/Murray-Basin-Rail-Project-Business-Case.pdf

[211] VAGO (2020) *Freight outcomes from regional rail upgrades*, pp. 20-21, available at https://www.audit.vic.gov.au/sites/default/files/2020-03/20200318-Freight-Outcomes-report.pdf

[212] Ibid, p. 8

[213] Ibid, p. 35

[214] Department of Transport, *Key freight projects: Murray Basin Rail Project*, available at https://transport.vic.gov.au/ports-and-freight/key-freight-projects#sts=Murray%20Basin%20Rail%20Project

- improved efficiency and safety of the road network.[216]

Investment in significant rail upgrades such as the Murray Basin Rail project will contribute to the reduction of supply chain costs for significant regional industries dependent on rail freight such as agriculture, manufacturing and mining. A revised Murray Basin Rail project plan, informed by the business case review, will provide certainty for regional industries about future intentions for this strategically important asset.

Which regions does this recommendation assist?

The Murray Basin Rail project will reduce supply chain costs for key industries across western Victoria – including the Mallee, Central Highlands, Barwon and Great South Coast, Wimmera Southern Mallee and Loddon Campaspe regions. It will ensure more efficient access to key input and output markets and improve utilisation of key regional ports.

How does this align with the frameworks?

This recommendation aligns with the *Comparative advantage framework*, and responds to the outcomes *Deliver greater productivity and efficiency* and *Provide better access to markets*.

To cope with current and future expected demand, a reliable and safe rail freight network has been flagged as a critical infrastructure need for agriculture, manufacturing and mining industries.[217] This is reinforced by strong stakeholder support for the Murray Basin Rail project, to achieve economic, social and environment benefits for industries in Victoria's west.[218,219] Without a clear commitment from government on regional rail freight, industry will continue shift away from rail and onto road, which will make the rail freight less viable into the future.

How does this recommendation work with others?

This recommendation, along with the recommendation *Fund an ongoing regional rail freight maintenance program*, will help keep Victoria's regional rail freight network efficient and competitive and support significant regional exports. Regular maintenance of rail assets will assist in the completion of rail freight upgrades such as the Murray Basin Rail project.

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[216] Ibid

[217] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[218] Victorian Farmers Federation (2019) *Murray Basin Rail Project must be completed as promised*, available at https://www.vff.org.au/vff/Media_Centre/Media2019/Murray-Basin-Rail-Project-must-be-completed-as-promised.aspx

[219] Rail Freight Alliance (2019) *Save our tracks*, available at https://railfreightalliance.com/wp-content/uploads/2019/07/Media-Release-Save-Our-Tracks-10-July-2019.pdf

Recommendation 04: Continue to address regional Victoria's digital connectivity gaps

Industry: Various – including agriculture, finance and insurance, manufacturing

Framework: Comparative advantage framework; Addressing regional disadvantage framework

Outcome: Deliver greater productivity and efficiency; Provide better access to markets; Improve economic outcomes for individuals; Improve education and health outcomes; Improve social inclusion outcomes

What is the recommendation?

In the next five years, continue delivering regional digital connectivity improvements, and review the need for further government investment following the roll-out of the Digital Future Now initiative.

The Victorian Government's $626 million Digital Future Now initiative aims to improve mobile coverage and broadband access in regional areas.[220] It includes $250 million for business-grade broadband connectivity for Victorian suburbs and regional towns through the Gigabit State program, to address gaps in the availability of reliable high speed fibre optic and wireless broadband services for business users. It also incorporates a six-year, $300 million program to eradicate mobile black spots in populated areas of regional Victoria. Both initiatives are to be co-funded by the Australian Government.

When Digital Future Now approaches completion, the Victorian Government should review the state of digital connectivity across regional Victoria to determine whether continued government support is required. The review should consider broadband and mobile coverage, speed, and reliability, and whether they meet local business and community needs. It should evaluate the impact of Digital Future Now in areas which have received service upgrades, as well as focus on localities which did not benefit from this initiative. A review is merited given the critical role of digital infrastructure in breaking down the barriers of cost and distance for regional businesses, and the vital need to keep communities safe in times of emergency.

Why is this needed?

Digital access is increasingly an alternative to direct contact and the primary means of conducting business and delivering services, especially in rural areas. The COVID-19 pandemic has clearly demonstrated the need for reliable, high speed internet connections in contemporary society, accelerating the use of digital substitutes for work, education, service delivery and social connections.

The communities that have the most to gain from reliable digital connectivity, because of their distance from Melbourne and major centres, currently have the worst connections. Mobile coverage is a significant problem throughout regional Victoria.[221] This affects community safety, liveability and business productivity.[222] All Victoria's regional partnerships have identified that poor mobile coverage is a problem in their regions.[223]

The lived experience of mobile reception can vary widely from the official coverage maps produced by mobile carriers, which can be too high level and low resolution to enable identification of localised areas where coverage is unreliable.[224] Mobile phone users in regional areas frequently report weak signals and call drop-outs in areas that are claimed to have good coverage. However, the maps do show that mobile coverage has the most significant supply shortfall in transport corridors, tourist locations and agricultural locations. Regional mobile reception can be complicated by factors such as:

- networks are constantly evolving, and new sites are commissioned
- connectivity depends on the quality of antenna in the receiving device
- device reception can be enhanced by use of an external antenna
- environmental factors, including local complex topography blocking signals, vegetation along the path and adverse weather such as rain, fog or dust
- signal strength can vary widely as users move around nearby areas.[225]

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[220] Victorian Government (2020) *Turning digital demand into online opportunity*, available at https://www.budget.vic.gov.au/turning-digital-demand-into-online-opportunity

[221] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 6, available at https://djpr.vic.gov.au/__data/assets/pdf_file/0005/1729760/12172-DJPR-RDV-Connecting-Victoria_overview-brochure-A4-revised_v3_FINAL.pdf

[222] Infrastructure Australia, *Australian infrastructure audit*, p. 570, available at www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Australian%20Infrastructure%20Audit%202019.pdf

[223] For example, Gippsland Regional Partnership (2019) *Gippsland regional digital plan*, p. 14, available at www.rdv.vic.gov.au/__data/assets/pdf_file/0010/1872946/Gippsland-Digital-Plan-Final-25-September.pdf; Central Highlands Regional Partnership (2019) *Central Highlands regional digital plan*, p.42, available at www.rdv.vic.gov.au/__data/assets/pdf_file/0005/1861052/Central-Highlands-Full-Digital-Plan-FINAL-22-Aug_WEB.pdf; Great South Coast Regional Partnership (2019) *Great South Coast regional digital plan*, p. 50, available at www.rdv.vic.gov.au/__data/assets/pdf_file/0006/1885911/Great-South-Coast-Digital-Plan-web.pdf

[224] Gippsland Regional Partnership (2019) *Gippsland regional digital plan*, p. 8

[225] Gippsland Regional Partnership (2019) *Gippsland regional digital plan supporting document*, p. 16, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0008/1872971/Gippsland-Supporting-Information-Document-FINAL-23-August-2019-web.pdf

Parts of many regional Victorian cities, towns and localities also cannot get NBN high speed internet services, which have speeds of at least 100 megabytes per second.[226] NBNCo's Enterprise Ethernet business grade service meets these requirements, but is not uniformly supported due to the predominance of fibre to the node (FTTN) technology in the NBN rollout. FTTN technology uses long copper loops to connect premises to an exchange. Longer copper loops can degrade service quality, meaning Enterprise Ethernet may not be supported for users who are not close to the exchange.[227]

The NBN rollout has resulted in a digital divide – not just between metropolitan and regional areas, as might be expected, but also within regional cities, towns and localities. Where NBN infrastructure cuts over from fixed line to fixed wireless technology, or from high quality fibre to the premises technology to fibre to the node, businesses on either side of the technology boundary experience very different service quality.[228]

The constraints facing regional businesses due to low grade NBN technology are compounded by market failures which are unique to regional areas. While businesses are able to purchase fibre network extensions from the NBN to their premises, these can be costly. In some locations there are other options for bringing broadband to the site that allow non-NBN provision of the network, but these either require a large collection of users or are once again expensive. In addition, a business bringing high speed internet infrastructure to its premises would likely open access to lower cost, high speed internet connections to surrounding businesses. This is an example of first mover disadvantage, as well as the coordination problem.

First mover disadvantage refers to a situation where one business's investment improves the surrounding businesses' situation through greater access to information or, in this case, a cheaper broadband connection. In regional business precincts that aren't served by a fast broadband connection, the first business that seeks to improve internet connectivity is likely to face high upfront costs. The first mover will end up subsidising other businesses in the precinct, benefitting them through lower costs. The likely outcome is that the business will not invest, and everyone will miss out. As a simple example, three businesses located 1km from a fibre connection would each face the full cost of 1km of fibre installation to bring them fast internet. However, once one of them has paid for this, the remaining two businesses can pay only for the connection costs to the now close-by fibre. Similarly, those businesses a further 1km down the road have had the potential cost of connecting to the fibre networked halved.

While businesses could work together to bring the improved network to their location, in most cases this will not succeed due to the many incentives for people to put the burden of cost onto those who are perceived to need it more. This typically results in an outcome where everyone is worse off. Many economic real world and game-theory examples exist that show while everyone would be better off if they co-operated, due to the incentives they are unlikely to do so.[229]

In some cases there would be many people who could benefit from an improved network, meaning organic coordination becomes simply impractical to achieve. This would be the case for all the surrounding households, who are also likely to gain access to higher speed internet services through the investment. Providing a financial incentive through the audit process is likely to bring people together to coordinate, in a way in which they would not have done otherwise.

There is also likely to be an incomplete information issue regarding enhanced broadband access for regional businesses. There is sometimes a disconnect between telecommunications providers and potential business customers, with the providers unable to get enough information on local regional markets to decide whether to invest, and potential customers not knowing what possibilities are available from the range of services that could be on offer. The proposed audit process may reveal information that was previously unknown to both potential clients and suppliers, increasing the case for investment.

Finally, there are issues with demand and supply analysis in which supply is not viable due to a lack of demand, and demand is constrained because of a lack of supply. Put simply, suppliers will be unwilling to invest in a network where there is limited demand, but businesses are unwilling to set up in locations where high speed broadband is unavailable.

What will be the impact?

Digital technologies can help businesses to succeed not only in their home market but to operate and compete anywhere.[230] Digital skills and connectivity are becoming increasingly important for regional businesses to adapt and thrive in a more competitive marketplace and become more resilient in times of crisis. Similarly, regionally communities are becoming increasingly reliant on digital technologies to access essential services and supports.

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[226] Telstra, *nbn speeds explained for businesses*, available at https://www.telstra.com.au/small-business/internet/nbn/nbn-speeds-explained

[227] Central Highlands Regional Partnership (2019) *Central Highlands regional digital plan*, p. 45

[228] Ibid, p. 19

[229] Bartolini (2012) *Coordination failures: a game-theoretic approach*, available at https://www.oecd.org/cfe/regional-policy/presentation_coordination_failures_a_game_theoretic_approach.pdf

[230] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 12, available at https://djpr.vic.gov.au/__data/assets/pdf_file/0005/1729760/12172-DJPR-RDV-Connecting-Victoria_overview-brochure-A4-revised_v3_FINAL.pdf

A variety of studies show that high speed internet can improve business efficiency, increase productivity, drive business location and improve local economic performance.[231,232] Better broadband can create extra regional jobs through telework,[233] allow businesses to expand beyond their local market,[234] prevent them having to move elsewhere and help business resilience during crises.

Enhanced broadband in the regions would also ensure that regional businesses and communities are in a better position to weather any future pandemic or similar crisis, as well as to take advantage of potential opportunities created by any longer-term shift to remote working.[235]

The Victorian Government, through the Digital Future Now initiative,[236] has recognised that existing telecommunications infrastructure is not consistently meeting regional demand. This initiative can leverage the experience gained through the Connecting Regional Communities Program,[237] which aims to address digital connectivity issues in regional Victoria and has allocated funding for regional enhanced broadband projects in Morwell, North Geelong and Horsham (see Case study[238,239,240,241]).

Case study: Enhanced broadband for Horsham

The Victorian Government has invested $1.7 million, partnering with Spirit Telecom, to better connect Horsham businesses with high speed broadband, to deliver internet access 10 times faster than consumer services currently available in Horsham.

Spirit Telecom was awarded the contract to deliver five towers across five districts in Horsham following a successful tender process. Each tower transmits fixed wireless broadband at 5G standard with speeds up to one gigabit per second in both directions. The services cover all of Horsham, including the CBD, enterprise park, aerodrome and freight terminal. In addition, the network may be capable of providing services to businesses outside Horsham in locations such as Longerenong, Dooen and Haven. The increased speeds are also available to homes across Horsham, giving the entire community the opportunity to experience internet services on a par with Melbourne.

Horsham-based farm equipment machinery franchise Emmetts has been one of the first to sign up for the program, serving as an 'anchor tenant' for the project. The business operates across Horsham, Swan Hill, Rupanyup, Warracknabeal and parts of South Australia, and now has dramatically faster broadband speeds with fewer dropouts, boosting their business across regional Victoria and beyond.

The purpose of the pilot is to demonstrate new models for delivering high speed broadband into regional areas which generally have limited availability of business grade internet services. At this early stage the trial shows that the projects may be able to provide broad community benefits, helping to bridge the digital divide and improve connectivity for people living and working in the regions.

Which regions does this recommendation assist?

This recommendation is applicable across regional Victoria. While fixed broadband access is generally comparable to Melbourne in larger city centres, connectivity is impacted in the city fringe and beyond.[242] Smaller towns and localities

231 Department for Digital, Culture, Media and Sport (2018) *Evaluation of the economic impact and public value of the superfast broadband programme*, pp. 6-8, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/734855/Superfast_Integrated_Report.pdf

232 Pantelis Koutroumpis for Ofcom (2018) *The economic impact of broadband: evidence from OECD countries*, pp. 8-13, available at https://www.ofcom.org.uk/__data/assets/pdf_file/0025/113299/economic-broadband-oecd-countries.pdf

233 Deloitte Access Economics (2012) *Creating jobs through NBN-enabled telework*, p. i, available at https://www2.deloitte.com/au/en/pages/economics/articles/creating-jobs-through-nbn-enabled-telework.html

234 Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 14

235 The Australian (2020) *Regions will be the winners after the coronavirus lockdown*, available at https://www.theaustralian.com.au/inquirer/regions-will-be-the-winners-after-the-coronavirus-lockdown/news-story/9c9ddffb12bafd663655b764e698f248

236 Victorian Government (2020) *Turning digital demand into online opportunity*

237 Department of Jobs, Precincts and Regions (2018) *Connecting Regional Communities Program*, available at https://djpr.vic.gov.au/connecting-victoria/connecting-regional-communities-program

238 Horsham Rural City Council (2019) *Faster broadband a boost for Horsham businesses*, available at https://www.hrcc.vic.gov.au/Our-Council/News-and-Media/Faster-broadband-a-boost-for-Horsham-businesses

239 Victorian Government (2019) *Faster broadband speeding into Horsham*, available at https://www.premier.vic.gov.au/faster-broadband-speeding-into-horsham-0

240 Victorian Government (2018) *Gigabit broadband a game changer for Horsham*, available at https://www.premier.vic.gov.au/gigabit-broadband-game-changer-horsham/

241 Spirit Telecom (2018) *We're lighting up Horsham with 5G tech and a sky-speed internet ring*, available at https://spirit.com.au/were-lighting-up-horsham/

242 Aither (2019) *Regional profiles*, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/

are generally less well provisioned, as are primary production and tourist areas. Large geographic areas of Victoria are limited to satellite for fixed broadband services. Mobile networks can provide a valuable supplement, fallback or alternative to fixed broadband, but gaps in mobile coverage, or mobile black spots, are a further concern across regional Victoria. More than 90% of Victoria's mobile black spots are recorded in regional Victoria (2463 compared with 146 in Melbourne).[243]

Slow and unreliable digital connections have been identified as a constraint for agricultural and tourism businesses across Victoria's regions.[244] Other industries identifying poor digital access as a barrier to growth include manufacturing in Ovens Murray[245] and financial services in the Barwon[246] and Loddon Campaspe[247] regions. Victoria's nine Regional Partnerships have identified multiple digital connectivity issues affecting their regions, including access to effective business grade NBN services and ongoing concerns with mobile coverage and service quality.[248]

How does this align with the frameworks?

This recommendation aligns with both the *Comparative advantage framework* and the *Addressing regional disadvantage framework*, and responds to the outcomes *Deliver greater productivity and efficiency*, *Provide better access to markets*, *Improve economic outcomes for individuals*, *Improve education and health outcomes* and *Improve social inclusion outcomes*.

The need for reliable, effective digital connectivity is ubiquitous, highlighted by the number of Infrastructure Priorities for the Regions' outcomes this recommendation supports. At its most fundamental, reliable telecommunications services are a critical requirement for the protection of life and property during emergencies (see *Recommendation 13: Improve the resilience of regional telecommunications infrastructure*). Further, they connect businesses to markets and communities to vital services. Improved connectivity in the regions will provide businesses both with productivity benefits and the opportunity to connect staff, customers and markets beyond their immediate locality. It will respond to tourists' expectations and support the implementation of productivity-enhancing on-farm technologies in agriculture. Inadequate communications infrastructure has been identified as compounding regional Victoria's challenges in accessing the employment, education and human services opportunities and supports which alleviate disadvantage.[249]

The Victorian Government has recognised the importance of digital connectivity in the regions, committing $626 million in the Victorian Budget 2020-21 to improve mobile coverage and broadband access in regional areas.[250] There is a need to ensure this focus is sustained to ensure that regional businesses and communities can fully benefit from digital technologies.

How does this recommendation work with others?

This recommendation aligns with those to enhance freight road and rail transport networks in better connecting businesses with customers and markets. Further, the recommendation supports the *Improve resilience of regional telecommunications infrastructure* and *Fund regional libraries to provide better internet access* recommendations to bring reliable and effective digital infrastructure to Victorian communities to support remote access to essential services.

It also aligns with the recommendation to *Upgrade power supply for agriculture and regional manufacturing* in removing constraints to future business growth and investment in Victoria's regions.

[243] Australian Government (Oct 2018) *Mobile black spot database*, available at https://data.gov.au/data/dataset/community-reports-of-poor-or-no-mobile-coverage/resource/c6b211ad-3aa2-4f53-8427-01b52a6433a7

[244] Acil Allen (2019) *Regional industry profiles*

[245] Acil Allen (2019) *Ovens Murray industry profile*, p. v, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Comparative-Advantage_Ovens-Murray-Profile.pdf

[246] Acil Allen (2019) *Barwon industry profile*, p. 5, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Comparative-Advantage_Barwon-Profile.pdf

[247] Acil Allen (2019) *Loddon Campaspe industry profile*, p. vi, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Comparative-Advantage_Loddon-Campaspe-Profile.pdf

[248] Department of Jobs, Precincts and Regions (2019) *Fixing the digital divide: connecting communities in regional Victoria*, p. 3

[249] Parliament of Victoria (2010) *Inquiry into the extent and nature of disadvantage and inequity in rural and regional Victoria*, available at https://www.parliament.vic.gov.au/images/stories/committees/rrc/disadvantage_and_inequality/report/20101014_for_web.pdf

[250] Victorian Government (2020) *Turning digital demand into online opportunity*, available at https://www.budget.vic.gov.au/turning-digital-demand-into-online-opportunity

Recommendation 05: Strengthen agricultural water security by modernising irrigation

Industry: Agriculture

Framework: Comparative advantage framework

Outcome: Support industries to be more resilient to economic shocks and climate change; Deliver greater productivity and efficiency

What is the recommendation?

In the next 30 years, contribute funding toward planning and delivery of irrigation and other water system upgrades across Victoria's regions, in order to reduce water wastage and safeguard water supply for the agriculture industry. This encompasses:

1. **Modernisation of existing irrigation infrastructure**

   For example, rationalisation, automation or upgrade of open channels, replacement of channels with pipeline, rationalisation or upgrade of water delivery outlets.

2. **Planning for delivery of new water infrastructure projects**

   Early stage support for potential water and irrigation projects through development of feasibility studies or business cases.

This recommendation applies across Victoria's regions and aims to enhance water security in response to the potential impacts of climate change. Projects should be investigated to build on regional Victoria's agricultural strengths, including fertile soils in some areas and existing access to markets. In the context of climate change, water infrastructure, such as irrigation, needs a continuous and long-term focus.

This recommendation builds on the Victorian Government's Building Works package, to provide long-term support for projects to modernise and replace essential water infrastructure.[251]

Why is this needed?

Victorian agriculture makes a significant contribution to Australia's economy. In 2017–18, the state's temperate climate, high quality soil and clean water helped the industry produce $14.9 billion worth of agricultural product from 11 million hectares. This makes Victoria Australia's largest agricultural producer.[252] Victoria is also the largest food and fibre exporting state, accounting for over 27% of the nation's food and fibre exports.[253]

Water is an integral and essential input in agriculture, making it possible to grow fresh produce and raise livestock.[254] Water scarcity is a persistent issue given Australia's relatively dry and variable climate and the emergence of climate change. Water is therefore a valuable commodity within the agriculture industry, which accounts for around three quarters of total water use in Australia.[255]

Irrigation to supplement the water available from rainfall began in Victoria in the late 1800s, and much of the original infrastructure is now outdated and unable to cope with modern demands.[256] Investments to modernise irrigation systems and to plan for new water infrastructure are essential to ensure the future of Victoria's agriculture and horticulture sectors. These investments will also enable the industry to be more resilient in dealing with the effects of climate change and reduced water availability.

Climate change is predicted to progressively reduce water availability across Victoria, with projections indicating declining rainfall across each of Victoria's regions combined with an increase in daily maximum temperature by the 2030s.[257] The impacts are already being detected, disrupting traditional growing patterns as cool season rainfall totals

[251] Civil Contractors Federation Victoria (2020) *Delivering $48 million of water infrastructure projects*, available at https://www.ccfvic.com.au/media-release-delivering-48-million-of-water-infrastructure-projects/

[252] Agriculture Victoria (2019) *Agriculture in Victoria*, available at https://agriculture.vic.gov.au/about/agriculture-in-victoria

[253] Agriculture Victoria (2019) *Food and fibre export performance report 2018-19*, p. 3, available at https://agriculture.vic.gov.au/__data/assets/pdf_file/0006/533553/Food-and-fibre-export-performance-report-2018-2019.pdf

[254] Centres for Disease Control and Prevention (2016) *Agricultural water*, available at https://www.cdc.gov/healthywater/other/agricultural/index.html

[255] Australian Bureau of Agricultural and Resource Economics and Sciences (2020) *Research topics – water*, available at https://www.agriculture.gov.au/abares/research-topics/water#irrigated-agriculture

[256] Department of Environment, Land, Water and Planning (2019) *Investment in irrigation efficiency*, available at https://www.water.vic.gov.au/water-for-agriculture/investment-in-irrigation-efficiency

[257] Department of Environment, Land, Water and Planning (2019) *Victorian climate projections 2019*, available at https://www.climatechange.vic.gov.au/adapting-to-climate-change-impacts/victorian-climate-projections-2019

decrease.[258] Climate change is also driving an increase in the intensity and frequency of hot days and heatwaves, exacerbating drought conditions. Time spent in drought is projected to increase in the future across southern Australia.[259]

Rural water infrastructure is vital to support the future sustainability of the agriculture industry. Climate change will increase the need for existing infrastructure to be more efficient and for new infrastructure that gives communities access to the water grid.

What will be the impact?

Security in water supply is essential in agriculture. Irrigation development initiatives, whether upgrades or maintenance of existing infrastructure, are essential in ensuring the growth prospects of Victoria's agriculture sector, particularly the sub-sectors that are highly dependent on water supply.

Water savings generated from irrigation and water infrastructure projects will support agricultural productivity in the regions and enhance environmental outcomes. This recommendation responds to an identified need for enhanced water and irrigation infrastructure to support agriculture across each of Victoria's regions.

The Victorian Government has undertaken significant work to modernise irrigation and water infrastructure, including recent funding for phase two of the Macalister Irrigation District modernisation project[260] and a feasibility study to examine potential infrastructure options for expanding irrigation development in Central Gippsland.[261] These projects will support Gippsland's agricultural industry to adapt to the impacts of a drying climate.

In the context of ongoing climate change, water security will continue to be a significant, and growing, issue for farmers across Victoria's regions. Infrastructure Victoria welcomes the Victorian Government's focus on modernising irrigation systems and seeking opportunities to expand the water grid. This recommendation aims to maintain this focus as a long-term priority.

Which regions does this recommendation assist?

Various sub-sectors of agriculture have been identified as areas of comparative advantage across regional Victoria – for example, irrigated agriculture in the Mallee, dairy in Gippsland, Goulburn and Great South Coast, and poultry in Central Highlands and Loddon Campaspe.[262]

The need for enhanced water and irrigation infrastructure to support the long-term future of the agriculture industry as it adjusts to changing climate conditions has been flagged across regional Victoria.[263] This recommendation responds to that need, with an emphasis on long-term planning and support.

How does this align with the frameworks?

The recommendation aligns with the *Comparative advantage framework*, and responds to the outcomes *Support industries to be more resilient to economic shocks and climate change* and *Deliver greater productivity and efficiency*.

The food and fibre sector is an important economic driver for Victoria, and is particularly exposed to the potential impacts of climate change. In addition to enhancing the industry's resilience and productivity, this recommendation aligns to the framework's investment principles in that:

- It supports the infrastructure needs of the agriculture industry, identified as an industry of comparative advantage in each of Victoria's regions.
- Investments in irrigation and water infrastructure will not only support the continuing viability of the agriculture industry, but will also benefit regional communities dependent on agriculture.
- It responds to the need to support the agriculture industry to adjust and become more resilient to the potential impacts of climate change and worsening drought conditions.
- Government investment in infrastructure is an appropriate response to enhance Victoria's drought preparedness.

How does this recommendation work with others?

This complements the *Upgrade Victoria's emergency water network* recommendation in improving water security and drought preparedness for farms and related businesses across regional Victoria.

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[258] Goulburn Murray Water (2016) *Briefing paper: water availability – climate change*, available at https://www.g-mwater.com.au/downloads/gmw/FSP_-_workshop_1/20161109__4285431_FSP_PAPER_CLIMATE_CHANGE-3.pdf

[259] Climate Council (2018) *Fact sheet: climate change and drought*, p. 9, available at https://www.climatecouncil.org.au/wp-content/uploads/2018/06/CC_MVSA0146-Fact-Sheet-Drought_V2-FA_High-Res_Single-Pages.pdf

[260] Civil Contractors Federation Victoria (2020) *Delivering $48 million of water infrastructure projects*

[261] Victorian Government (2020) *Central Gippsland irrigation funding*, available at https://www.premier.vic.gov.au/central-gippsland-irrigation-funding/

[262] Acil Allen (2019) *Regional industry profiles*

[263] Ibid

Recommendation 06: Upgrade Victoria's emergency water network

Industry: Agriculture

Framework: Comparative advantage framework

Outcome: Support industries to be more resilient to economic shocks and climate change

What is the recommendation?

Victoria has a network of around 300 emergency water supply points (EWSPs) which provide water for emergency stock and domestic purposes during severe dry seasonal conditions, surface water scarcity and bushfires.

An opportunity exists to determine whether the current network of EWSPs remains fit for purpose, and whether there is a need for upgrades or maintenance work in the medium to long term. The infrastructure response could include new EWSPs, new tanks connected to EWSPs, upgrades to existing facilities and improved road access for water cartage trucks.[264]

The scope of this recommendation includes a full audit of the EWSP network to identify any functionality improvements or upgrades needed, and to determine the need for any replacement points. It also covers implementation of audit findings, to ensure identified improvements are rolled out across regional Victoria.

The Department of Environment, Land, Water and Planning oversees the network of EWSPs, while the points are managed by various state agencies, including local councils and urban and rural water corporations.

Why is this needed?

The food and fibre sector is an important economic driver for Victoria, contributing an estimated 5.9% to Victoria's gross state product and employing 6.4% of the workforce. Agriculture is particularly important in regional Victoria, which accounts for 87% of total industry employment.[265]

Climate change has been identified as a potential threat to the agriculture sector across all regions of Victoria.[266] Climate change has contributed to a southward shift in weather systems that typically bring cool season rainfall to southern Australia. Since the 1970s, late autumn and early winter rainfall has decreased by 15% in southeast Australia. Climate change is also driving an increase in the intensity and frequency of hot days and heatwaves, exacerbating drought conditions.[267] Current climate projections for Victoria anticipate continued declines in rainfall over winter and spring.[268]

EWSPs provide water for emergency stock and domestic purposes during severe dry seasonal conditions, surface water scarcity and bush fires. This infrastructure can assist agricultural industries (mainly dairy and irrigated agriculture) to adapt and become more resilient to prolonged drought and dry seasonal conditions.

What will be the impact?

The recommendation will assist local government to invest in emergency water resources and manage these assets. Improved access to domestic and stock water will have indirect benefits to economic growth and community resilience.

Funding for improved access to EWSPs in areas where there is a high incidence of water carting is part of a range of measures being implemented by the Victorian Government to assist regional communities experiencing drought.[269] This recommendation will expand the existing initiative beyond current drought-affected areas, to contribute to future drought preparedness across Victoria. It will further build on the Victorian Government's Building Works funding for projects to modernise irrigation and replace essential water infrastructure.[270]

Which regions does this recommendation assist?

The recommendation will be delivered across Victoria's regions, based on assessment of need. The infrastructure will be targeted towards those communities experiencing drought and/or dry seasonal conditions, where the existing EWSP network is not fit for purpose.

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[264] Agriculture Victoria, *Dry seasons support - regional support*, available at http://agriculture.vic.gov.au/agriculture/farm-management/drought/dry-seasons-support/regional-support

[265] Agriculture Victoria, *Victoria's export performance*, available at http://agriculture.vic.gov.au/agriculture/accessing-international-markets/victoria-export-performance

[266] Acil Allen (2019) *Regional industry profiles*

[267] Climate Council (2018) *Fact sheet: climate change and drought*, available at https://www.climatecouncil.org.au/wp-content/uploads/2018/06/CC_MVSA0146-Fact-Sheet-Drought_V2-FA_High-Res_Single-Pages.pdf

[268] Department of Environment, Land, Water and Planning (2019) *Victorian climate projections 2019 technical report*, p. 51, available at https://www.climatechange.vic.gov.au/__data/assets/pdf_file/0016/435121/Vic-Climate-Projections-2019-Technical-Report_20200218.pdf

[269] Agriculture Victoria, *Dry seasons support - regional support*

[270] Civil Contractors Federation Victoria (2020) *Delivering $48 million of water infrastructure projects*, available at https://www.ccfvic.com.au/media-release-delivering-48-million-of-water-infrastructure-projects/

How does this align with the frameworks?

The recommendation aligns with the *Comparative advantage framework*, and responds to the outcome *Support industries to be more resilient to economic shocks and climate change*. It aligns to the framework's investment principles in that:

- It supports the infrastructure needs of the agriculture industry, identified as an industry of comparative advantage in each of Victoria's regions.
- It responds to the need to support the agriculture industry to adjust to the potential impacts of worsening drought conditions.
- Government investment in infrastructure is an appropriate response to enhance Victoria's drought preparedness.

How does this recommendation work with others?

This complements the *Strengthen agricultural water security by modernising irrigation* recommendation in improving water security and drought preparedness for farms and related businesses across regional Victoria.

Recommendation 07: Invest in protecting Victoria's coasts

Industry: Tourism

Framework: Comparative advantage framework

Outcome: Support industries to be more resilient to economic shocks and climate change

What is the recommendation?

Invest in upgrades and maintenance for coastal protection management assets, to preserve Victoria's coastline as a tourist destination and mitigate the impacts of further climate change.

The recommendation comprises capital investment to address critical erosion and flood risk challenges and provides for the strategic management of coastal protection assets, continuing progress made under the existing Coastal Protection Infrastructure and Upgrade Program which is due to lapse at the end of the 2019-20 financial year. Continuing this program by committing an extra $30 million over the next eight years would provide the long-term funding security and stability needed to safeguard coasts, homes, tourism and infrastructure.

Investments include infrastructure for beach and dune protection and rehabilitation, as well as storm surge protection, designed to protect key coastal tourism assets in the Barwon, Great South Coast and Gippsland regions.

This recommendation addresses the findings of the Victorian Auditor-General's Office (VAGO) report on Victoria's coastal assets, which found that agencies are not managing assets adequately to protect them from current and future hazards, a situation compounded by the short-term nature of funding for maintenance and improvements to coastal protection assets.[271]

Why is this needed?

Victoria's coast is a key economic asset which contributes to the state through port and trade activity as well as tourism and related services. Many Victorians live, work and play close to the coast. It is home to almost one million people – 14% of the state's population[272] – and four out of five Victorians visit the coast every year.[273] There are around 70 million recreational visits across some 2000 kilometres of coastline each year.[274] The coast is also the destination for a growing domestic, national and international tourist market, with nature-based tourism one of Victoria's key growth industries and a major contributor to our economy.[275]

Built and natural coastal assets provide valuable services and add value to the environment, the economy and the community. When natural and built structures, such as sea walls, beaches and dunes are intact, they protect against coastal inundation and erosion hazards, and provide natural attractions for tourism.

This protection is important for land and water based coastal assets, including critical infrastructure such as telecommunications, drainage and sewerage networks. Managing and, where needed, safeguarding these protective structures is as important as managing and protecting the water and land based coastal assets they shield. While protecting our coastal assets is important now, it will become even more so with the predicted effects of climate change and population growth.[276]

Many of Victoria's coastal assets are deteriorating or are approaching the end of their life. A recent audit suggests that between 20% and 30% of coastal assets are in poor condition, and between 30% and 50% have less than 10 years' useful life remaining.[277]

Increased coastal inundation and erosion from rising sea levels and increased storm intensity is expected to have widespread impacts across the coast in the medium to long term.[278] Mapping of the most vulnerable coastal areas estimates that by 2040, a significant majority of Victoria's coastline and assets will be at high risk from coastal inundation and erosion.[279]

Inadequate funding combined with ineffective targeting of available funds is preventing relevant Victorian Government agencies from practising effective risk-based asset protection and management. A lack of long-term funding security

271 VAGO (2018) *Protecting Victoria's coastal assets*, p. 8, available at https://www.audit.vic.gov.au/sites/default/files/2018-03/20180329-Coastal-Assets.pdf

272 Department of Environment, Land, Water and Planning (2020) *Coastal demographics in Victoria*, p. 11, available at https://www.marineandcoastalcouncil.vic.gov.au/__data/assets/pdf_file/0027/455904/Coastal-Demographics-in-Victoria.pdf

273 VAGO (2018) *Protecting Victoria's coastal assets*, p. 21

274 Department of Environment, Land, Water and Planning, *The coast and planning in Victoria*, available at https://www.planning.vic.gov.au/policy-and-strategy/coastal-planning-in-victoria

275 VAGO (2018) *Protecting Victoria's coastal assets*, p. 21

276 Ibid

277 Ibid, p. 11

278 Ibid, p. 54

279 Ibid, p. 55

means the relevant agencies have a short-term, reactive – rather than a preventative – approach.[280] Most funding requires annual reapplication, which limits agencies' capacity to undertake long-term planning and contributes to maintenance backlogs.[281] As an example, Parks Victoria costed its maritime asset maintenance backlog program at over $5 million for each of the last three years.[282]

Lack of future investment will result in increasing degradation of coastal infrastructure, which will ultimately increase upgrade costs and require further unplanned and emergency works to restore coastal assets and environments.

This recommendation complements one-off Victorian Government funding commitments for coastal protection announced in the Victorian Budget 2020-21[283] and the Building Works package to support jobs following the COVID-19 pandemic,[284] to provide longer term funding certainty for agencies involved in coastal protection.

What will be the impact?

Critical coastal protection assets will be replaced to increase resilience against storms, flooding and erosion. This will reduce economic losses for coastal communities that are dealing with the effects of climate change.

Increased numbers of visitors and permanent residents along Victoria's coast are adding to demand for buildings and structures to support safe, equitable and sustainable recreational and tourist activities.[285] This recommendation will help address climate-related issues faced by Victoria's prime coastal assets such as the Great Ocean Road.

Coastal areas are currently subject to the following problems:

- Severe erosion is occurring across the state, including along the Great Ocean Road and Gippsland.
- Coastal protection assets that mitigate the impact of coastal hazards are in poor condition. Coastal asset management systems are reactive and often delayed, resulting poor returns on investment.[286]
- The economy of the coastline is compromised, including the ports, fisheries and tourism industries. Erosion is visibly threatening the Great Ocean Road's $1.1 billion visitor economy,[287] with erosion only metres from the road itself. Phillip Island and Inverloch are also witnessing the loss of popular beaches.[288]

Sustained investment in coastal protection assets, together with investments in nature-based tourism infrastructure, will ensure that regional Victoria is well placed to capitalise on the growing nature-based tourism industry. It will also provide confidence to tourists that Victoria's coastal tourism assets are safe and secure.

Which regions does this recommendation assist?

This recommendation will benefit Victoria's coastal regions – Barwon, Gippsland and the Great South Coast. Tourism is a significant industry in these regions, contributing over $3 billion to their collective economies in 2018-19 and supporting almost 40,000 jobs.[289]

It will support medium to long-term planning and investment in high profile and priority coastal locations, responding to an identified need for enhanced infrastructure to protect the Great Ocean Road, particularly in Apollo Bay.[290] However, this recommendation will also be important for coastal destinations in Gippsland, such as Lakes Entrance, Mallacoota and Bass Coast.

How does this align with the frameworks?

The recommendation aligns with the *Comparative advantage framework*, and responds to the outcome *Support industries to be more resilient to economic shocks and climate change*.

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[280] Ibid, p. 69

[281] Ibid, p. 73

[282] Ibid, p. 41

[283] Department of Treasury and Finance (2020) *Victorian budget 2020/21: service delivery budget paper no. 3*, pp. 50, 60, available at https://s3-ap-southeast-2.amazonaws.com/budgetfiles202021.budget.vic.gov.au/2020-21+State+Budget+-+Service+Delivery.pdf

[284] Victorian Government (2020) *Protecting Victoria's unique coastline*, available at https://www.premier.vic.gov.au/protecting-victorias-unique-coastline/

[285] Department of Environment, Land, Water and Planning (2020) *Marine and coastal policy*, p. 48, available at https://www.marineandcoasts.vic.gov.au/__data/assets/pdf_file/0027/456534/Marine-and-Coastal-Policy_Full.pdf

[286] VAGO (2018) *Protecting Victoria's coastal assets*, p. 69

[287] ABC (2018) Great *Ocean Road erosion prompts call for plan to preserve tourist destination's future*, available at https://www.abc.net.au/news/2018-08-26/erosion-threatening-great-ocean-road/10147918

[288] ABC (2019) *Inverloch loses more than 30 metres of tourist hotspot beachfront to coastal erosion*, available at https://www.abc.net.au/news/2019-04-30/inverloch-loses-33-metres-of-beachfront-to-erosion/11054240

[289] Department of Jobs, Precincts and Regions (2020) *Regional tourism summaries, Geelong and the Bellarine, Gippsland, Great Ocean Road, Phillip Island*, available at https://www.business.vic.gov.au/tourism-industry-resources/research/regional-visitation

[290] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

Tourism is an industry of competitive strength in Victoria's regions, supporting future growth by allowing rural economies to diversify from their traditional agricultural base. With attractions such as the Great Ocean Road and Phillip Island, Victoria's coastline is a significant drawcard for visitors.

This recommendation will help protect Victoria's coastal assets into the future, ensuring that coastal communities and economies are supported in the context of climate change. It will benefit not only the visitor economy, but also support industries such as ports and fisheries in becoming more resilient to climate change.

Long-term investment in coastal protection infrastructure responds to the deficiencies identified in VAGO's *Protecting Victoria's coastal assets audit*.[291] An eight-year funding period will provide certainty for the agencies responsible for coastal protection, allowing them to better manage assets for the long term.

The recommendation aligns with the Victorian Government's statewide Marine and Coastal Policy, which guides long-term planning and management of Victoria's marine environment in an integrated and coordinated way.[292] It will build on coastal protection funding announced in the Victorian Budget 2020-21[293] and the Building Works package,[294] by providing the funding security to allow for a preventative planning approach in the longer term.

How does this recommendation work with others?

This recommendation complements those aimed at improving water security in supporting regional Victorian industries and communities to adapt and prepare for the potential impacts of climate change.

It also aligns with tourism-focussed recommendations, for example *Plan for future investment in regional nature-based tourism infrastructure*, in building on regional Victoria's natural assets to provide an economic stimulus to the regions.

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[291] VAGO (2018) *Protecting Victoria's coastal assets*

[292] Department of Environment, Land, Water and Planning (2020) *Marine and coastal policy*

[293] Department of Treasury and Finance (2020) *Victorian budget 2020/21: service delivery budget paper no. 3*, pp. 50, 60

[294] Victorian Government (2020) *Protecting Victoria's unique coastline*

Recommendation 08: Plan for future investment in regional nature-based tourism infrastructure

Industry: Tourism

Framework: Comparative advantage framework

Outcome: Unlock new industry growth opportunities

What is the recommendation?

Future investments in nature-based tourism infrastructure should be guided by a statewide nature-based tourism strategy. This strategy will set the long-term vision for nature-based tourism, guiding industry development and prioritising future investments.

A nature-based tourism strategy should contain directions around infrastructure investments, supporting and working with Traditional Owners,[295] to include:

- consideration of the Victorian Marine and Coastal Policy,[296] which sets out how tourism and development is to be balanced with its environmental impact
- consideration and mitigation of place-based risks associated with nature-based tourism assets, such as bushfires
- consideration of access requirements, to ensure destinations can be accessible to all[297]
- reform of planning controls for appropriate regulation and streamlined approval processes.

Nature-based tourism infrastructure investments could include upgrades to existing assets (e.g. visitor experiences in state and national parks), or infrastructure to support access and increased visitation – for example, rail trails or walks, lake or riverfront infrastructure, visitor information, access facilities such as roads and parking, or visitor amenities.

Why is this needed?

Tourism is a key contributor to Victoria's regional economy, representing 9.4% of gross regional product (direct and indirect) and 11.6% of total regional employment in 2018-19.[298] It has been identified as a potential growth industry in each of Victoria's nine regions.[299] However, regional Victoria's tourist industry has been disrupted by bushfires, closely followed by COVID-19. Investment is needed to support regions in realising the industry's growth potential in the medium and longer term while managing adaptation to climate change.

Prior to 2020 global tourism had seen continuous growth over the past six decades and was one of the largest and fastest growing economic sectors.[300] Nature-based tourism has been an area of particularly strong growth and is a key competitive advantage for regional Victoria.

There are opportunities to grow tourism in regional Victoria. Only 36% of Victoria's tourism expenditure occurs in regional areas, compared to the national average of 43%.[301] Visitor expenditure in the regions also trails Melbourne – almost half of tourism consumption in Melbourne is by international overnight visitors compared with just 7% in the regions.[302]

The high proportion of day trip visitors from Melbourne is a key challenge facing tourism in regional Victoria.[303] Contributing factors include:[304]

- Limited development of compelling visitor-focussed products and experiences in Victoria's regional areas, such as cultural tours, museums, unique accommodation, walking trails or food and wine experiences.
- Supporting services and facilities (for example, accommodation, visitor amenities, transport access or digital connectivity) which do not meet visitor needs and expectations.

[295] Parks Victoria, *Managing Country together*, available at https://parkweb.vic.gov.au/park-management/aboriginal-joint-management

[296] Victorian Government (2020) *Marine and coastal policy*, available at https://www.marineandcoasts.vic.gov.au/__data/assets/pdf_file/0027/456534/Marine-and-Coastal-Policy_Full.pdf

[297] People living with a disability spend $8 billion a year on Australian tourism, accounting for 11% of total tourism expenditure (source: Business Victoria, *Accessible tourism*, available at https://www.business.vic.gov.au/tourism-industry-resources/Business-Tools-and-Support/accessible-tourism/accessible-tourism). Infrastructure can be used to improve accessibility in regional Victoria, removing existing barriers to diverse and high quality experiences.

[298] Department of Jobs, Precincts and Regions (2020) *The economic contribution of tourism to Victoria's regions 2018-19*, p. 3, available at https://www.business.vic.gov.au/__data/assets/pdf_file/0007/1679551/Victorian-regional-tourism-satellite-accounts-summary-2018-19.pdf

[299] Acil Allen (2019) *Regional industry reports*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[300] World Bank (2019) *International tourism - number of arrivals*, available at https://data.worldbank.org/indicator/st.int.arvl

[301] Department of Jobs, Precincts and Regions (2019) *Regional Tourism Review discussion paper*, p. 15, available at https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/4915/6592/7431/Regional_Tourism_Review_Paper_-_Discussion_Paper.pdf

[302] Department of Jobs, Precincts and Regions (2020) *The economic contribution of tourism to Victoria's regions 2018-19*, p. 4

[303] Department of Jobs, Precincts and Regions (2019) *Regional Tourism Review discussion paper*, p. 11

[304] Acil Allen (2019) *Regional industry profiles*

Regions with compelling tourism products can attract visitors, encourage them to stay longer and spend money locally. Nature-based tourism leverages the regions' natural attributes. Visitors are seeking nature-based experiences in increasing numbers and regional Victoria has a wide diversity of natural experiences such as alpine forests, deserts, rain forests and marine parks. Already, nature-based experiences draw 22% of visitors to regional Victoria.[305]

That said, Victoria lags other states in creating compelling nature-based experiences, despite the state's unique regional landscapes.[306] Victoria is the only state in Australia without a current nature-based tourism plan or similar strategy. The lack of specific experiences and related services and facilities are preventing regional destinations from maximising their natural assets, limiting the potential of the Victorian destination brand.

Victoria's Inquiry into Heritage Tourism and Ecotourism found that tourism is constrained by inadequate infrastructure. As an example, the Inquiry found that one of Victoria's iconic tourism drawcards, the Twelve Apostles (Shipwreck Coast) and the supporting Great Ocean Walk, did not have adequate services, facilities or infrastructure to create a meaningful visitor experience in many cases, resulting in limited visitor expenditure.[307]

Other jurisdictions in Australia have both invested and facilitated private sector investment in nature-based tourism, for example iconic walking trails and sustainable commercial developments near national parks. Investment in public infrastructure, accommodation, transport and technology is needed in regional Victoria to help realise the opportunities presented by the tourism sector.

The Victorian Government has recognised the key role of the tourism industry in regional economic development. As part of the Building Works response to the COVID-19 crisis, $382 million has been earmarked for upgrades, maintenance and new experiences at tourism destinations across the state.[308] The Victorian Government has also announced a $465 million Victorian Tourism Recovery Package to help attract more visitors to regional Victoria, which includes a $150 million regional Tourism Investment Fund focussed priority areas identified in Victoria's Regional Tourism Review.[309] This recommendation will leverage these investments to provide longer term support and direction for nature-based tourism.

What will be the impact?

A statewide nature-based tourism strategy will set the long-term vision for nature-based tourism, ensuring that regional Victoria is well placed to capitalise on its natural assets. Improvements to infrastructure will contribute to enhancing the general visitor experience across the state and help to support a recovery in the tourism industry.

Visitor spending in regional Victoria is lower than the national average (36% of total visitor spending compared with 43%). If this gap was closed through growth, visitors would have spent $3.8 billion more in regional Victoria in 2018.[310]

With significant Victorian Government investment in nature-based tourism and infrastructure to support the tourism industry's recovery from the combined impact of bushfires and COVID-19, a nature-based tourism strategy can build on these stimulus measures to provide a framework for longer term industry growth and development.

Which regions does this recommendation assist?

The implementation of a nature-based tourism strategy is expected to drive Victorian Government investments across the state.

These investments provide the opportunity to increase visitor numbers and tourism expenditure, supporting local jobs and the wider regional economy. Investments in nature-based tourism infrastructure have the potential to provide both short-term and long-term economic benefits to the regions. As an example, the Grampians Peaks Trail is forecast to generate an estimated $6.39 million in visitor spending by 2025, an increase from the $2.55 million estimated in 2015, and support 45 direct and 70 indirect full-time jobs.[311]

[305] Business Victoria (2020) *Visitor experiences in Victoria, results for the year ending December 2019*, p. 1, available at https://www.business.vic.gov.au/__data/assets/pdf_file/0004/1865164/Visitor-Experiences-in-Victoria-year-ending-December-2019.pdf

[306] Victorian Tourism Industry Council (2019) *Victorian Tourism Infrastructure Council submission to the Regional Tourism Review*, p. 15, available at https://www.vtic.com.au/wp-content/uploads/2019/09/VTIC-Submission-to-the-Victorian-Regional-Tourism-Review-FINAL-30-August-2019.pdf

[307] Parliament of Victoria Environment and Natural Resources Committee (2014) *Inquiry into heritage tourism and ecotourism in Victoria*, pp. 56, 62-63, 169, available at https://www.parliament.vic.gov.au/images/stories/Ecotourism/ENRC_-_Inquiry_into_Heritage_Tourism_and_Ecotourism_-_Final_Report.pdf

[308] Victorian Government (2020) *Building Works: more jobs for Victorians*, available at https://www.premier.vic.gov.au/building-works-more-jobs-victorians/

[309] Victorian Government (2020) *Visit Victoria: experiencing the best at home*, available at https://www.premier.vic.gov.au/visit-victoria-experiencing-best-home

[310] Department of Jobs, Precincts and Regions (2019) *Regional Tourism Review discussion paper*, p. 15

[311] Parks Victoria (2014) *Grampians Peaks Trail master plan*, p. 3, available at https://www.ngshire.vic.gov.au/files/assets/public/document-resources/engaging/halls-gap-village-development-plan/grampians-peaks-trail-master-plan.pdf

How does this align with the frameworks?

The recommendation aligns with the *Comparative advantage framework*, and responds to the outcome *Unlock new industry growth opportunities*.

The tourism industry is an important economic driver for regional Victoria. The recommendation will guide future investment in nature-based tourism, levering one of regional Victoria's key competitive strengths. In addition, the recommendation aligns to the framework's investment principles in that:

- It will support future growth in nature-based tourism, identified as a potential growth opportunity in each of Victoria's regions. Growth in tourism has the potential to support future employment and economic growth.
- The recommendation responds to an identified gap, namely a strategy to guide nature-based tourism development and grow regional tourism.
- It will build on Victorian Government investment aimed at supporting a recovery in regional tourism by providing a framework for industry investment and growth in the longer term.

How does this recommendation work with others?

This complements the *Boost tourism infrastructure by allowing more national parks to grant long leases* and *Develop a Victorian Aboriginal tourism strategy* recommendations in building on regional Victoria's natural assets to provide an economic stimulus to the regions and help foster a strong recovery in local tourism.

Recommendation 09: Boost tourism infrastructure by allowing more national parks to grant long leases

Industry: Tourism

Framework: Comparative advantage framework

Outcome: Supporting industry resilience

What is the recommendation?

Attract investment in Victoria's regional tourism industry by immediately extending exemptions to allow more national parks to grant lease periods for up to 49 years for infrastructure proposals that meet specific criteria and complement environmental and heritage values.

So only suitable developments are granted long leases, the Victorian Government should evaluate each proposal against specific criteria to determine that:[312]

- The proposed use, development, improvements or works that are specified in the lease are of a substantial nature and of a value which justifies a longer-term lease.
- The development of the land is in the public interest, which includes assessing benefits to the community, economy and environment.
- The proposal has support from Traditional Owners, as well as broad community support.
- The proposed development responds to directions stipulated under the Victorian Government's Protecting Victoria's Environment – Biodiversity 2037 plan, in that the proposal:[313]
  - responds to the challenge of climate change
  - maintains and restores our natural assets
  - provides opportunities for Victorians to connect with nature
  - uses resources more efficiently
  - reduces biodiversity and environmental impacts.
- The proposed development considers and mitigates associated place-based risks (e.g. bushfire risks).
- The proposed development is accessible and adheres to universal design principles.[314,315]

The Victorian Government can also investigate use of other public land near national parks for this purpose, such as forestry land.

The recommendation applies across Victoria's regions and aims to ensure that future commercial investments are viable and support continued growth in the regional tourism industry.

Why is this needed?

Tourism is a key industry for Victoria, and for regional Victoria in particular. Tourism in regional Victoria contributed $9.4 billion towards Victoria's gross state product in 2018-19 and supported approximately 110,000 jobs.[316]

Regional Victoria's nature-based attractions and assets are its key tourism strength. With nature-based tourism emerging as one of the fastest growing sectors of the global tourism industry and one of the main motivators for travel,[317] regional Victoria should be well placed to take advantage of this opportunity.

However, tourism in regional Victoria faces key challenges, including difficulty in increasing the number of domestic and international visitors and a high proportion of daytrips compared with overnight stays, leading to relatively low levels of visitor expenditure.[318] Contributing factors include:

- Limited development of compelling visitor-focussed products and experiences in Victoria's regional areas, such as cultural tours, museums, unique accommodation, walking trails or food and wine experiences.

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[312] First two points are consistent with Parliament of Victoria (2018) *Crown Land (Reserves) Act 1978* (Vic), s.17CA, available at http://extwprlegs1.fao.org/docs/pdf/vic45857.pdf

[313] Department of Environment, Land, Water and Planning (2018) *Leasing policy for Victorian Crown land*, May, p. 14, available at https://www.forestsandreserves.vic.gov.au/__data/assets/pdf_file/0015/331503/Leasing-policy-for-Victorian-Crown-land-2018.pdf

[314] Universal design is a way of thinking about design to eliminate barriers and make things easier to use. It is the best approach to designing things, experiences and places that are accessible and user-friendly for the entire population

[315] Queensland Government (2017) *Inclusive tourism*, p. 47, available at http://www.publications.qld.gov.au/dataset/17b42867-6d17-4e5a-9d63-b17e33271fc2/resource/6edc79fe-36ff-4cb1-a8e2-6ca2658d0be7/fs_download/inclusive-tourism.pdf

[316] Department of Jobs, Precincts and Regions (2020) *Regional Victoria tourism summary*, p. 1, available at https://www.business.vic.gov.au/__data/assets/pdf_file/0011/1943525/Regional_Victoria_Regional_Summary_year_ending_June_2020.pdf

[317] Ecotourism Australia, *Nature based tourism manifesto*, p. 4, available at https://www.ecotourism.org.au/assets/Uploads/Manifesto-v5.0.pdf

[318] Department of Jobs, Precincts and Regions (2019) *Regional Tourism Review discussion paper*, p. 11, available at https://s3.ap-southeast-2.amazonaws.com/hdp.au.prod.app.vic-engage.files/4915/6592/7431/Regional_Tourism_Review_Paper_-_Discussion_Paper.pdf

- Supporting services and facilities (for example, accommodation, visitor amenities, transport access and/or digital connectivity) which do not meet visitor needs and expectations.[319]

Many of Victoria's key nature-based tourism assets are national parks. Investors seeking to establish a tourist experience on national park land are currently limited to a maximum lease period of 21 years (with some exceptions[320]). This is shorter than lease periods offered in other states, and investors say this period isn't long enough to realise a financial return.[321]

What will be the impact?

The extension of exemptions to allow more national parks to grant lease period for up to 49 years would encourage private sector interest and potential investment in nature-based tourism assets and infrastructure. It would ensure continued commercial investment in maintaining and upgrading assets to a high standard, which may not occur with shorter lease terms.

A previous inquiry found allowing private tourist facilities in national parks where they complement environmental and heritage values can generate a net public benefit.[322] Improvements to infrastructure will contribute to improving products and experiences by Parks Victoria's licensed tour operators, helping to enhance the visitor experience for tourists.

Tourism can play a key role in driving sustainable economic activity and employment in regional areas. Investments in nature-based tourism infrastructure are typically forecast to lead to increased visitor numbers, as well as providing economic benefits. As an example, increased visitor numbers associated with the Grampians Peaks Trail development are forecast to generate an estimated $6.39 million in spending by 2025, an increase from the $2.55 million estimated in 2015, and support 45 direct and 70 indirect full-time jobs.[323]

Which regions does this recommendation assist?

Victoria has more than 40 national parks located across Victoria's regions.[324] Nature-based tourism is key competitive advantage for regional Victoria, and all of Victoria's regions identify the need for better facilities, amenities and other tourism infrastructure.[325] This recommendation will encourage private investment in national parks' tourist facilities, improving the investment climate for new tourism developments across the state.

How does this align with the frameworks?

This recommendation aligns with the *Comparative advantage framework*, and responds to the outcome *Unlock new industry growth opportunities*.

The tourism industry is an important economic driver for regional Victoria. The recommendation will support new investment and growth opportunities for the industry. In addition, the recommendation aligns to the framework's investment principles in that:

- It supports the infrastructure needs of tourism, identified as an industry of comparative advantage in each of Victoria's regions.
- Investments in tourism have the potential to support employment and economic growth in the regions.
- The recommendation responds to an identified barrier to private sector investment in tourism infrastructure.
- Government controls the legislation governing national park land leases and can therefore act to revise lease terms as appropriate.

How does this recommendation work with others?

This complements the *Plan for future investment in regional nature-based tourism infrastructure* and *Develop a Victorian Aboriginal tourism strategy* recommendations in building on regional Victoria's natural assets to provide an economic stimulus to the regions and help foster a strong recovery in local tourism.

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[319] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[320] The *National Parks Act 1975* contains provisions to continue previous longer leases and allow new leases in certain circumstances, including leases up to 50 years in Point Nepean National Park (s.30AAAC) and Mount Buffalo National Park (s.31AABB)

[321] Victorian Tourism Industry Council (2019) *Victorian Tourism Infrastructure Council submission to the Regional Tourism Review*, pp. 31-32, available at https://www.vtic.com.au/wp-content/uploads/2019/09/VTIC-Submission-to-the-Victorian-Regional-Tourism-Review-FINAL-30-August-2019.pdf

[322] Victorian Competition and Efficiency Commission (2011) *Unlocking Victorian tourism: an inquiry into Victoria's tourism industry*, pp.127-130, available at https://www.dtf.vic.gov.au/sites/default/files/2018-02/unlocking-victorian-tourism-summary-report-pdf.pdf

[323] Parks Victoria (2014) *Grampians Peaks Trail master plan*, p. 3, available at https://www.ngshire.vic.gov.au/files/assets/public/document-resources/engaging/halls-gap-village-development-plan/grampians-peaks-trail-master-plan.pdf

[324] Parks Victoria, *Explore Victoria's national parks*, available at https://www.parks.vic.gov.au/places-to-see/inspiration-and-ideas

[325] Acil Allen (2019) *Regional industry profiles*

Recommendation 10: Develop a Victorian Aboriginal tourism strategy

Industry: Tourism

Framework: Comparative advantage framework

Outcome: Unlock new industry growth opportunities

What is the recommendation?

Joint management recognises the ongoing connection of Traditional Owners to the land, enabling their knowledge and culture to be recognised. Joint Management Plans guide the partnership between the Traditional Owner group of the appointed land and the Victorian Government in the joint management of that land. They provide a framework for investment in Aboriginal tourism infrastructure. Infrastructure Victoria recommends that the Victorian Government continue to develop Joint Management Plans with Traditional Owners.

The Victorian Government should further partner with Traditional Owners and Aboriginal Victorians to develop a statewide Aboriginal tourism strategy in the next five years. This can guide future investments in Aboriginal tourism infrastructure, to meet Aboriginal cultural and economic development needs.

The strategy should align with approved Joint Management Plans and give consideration to:

*   mitigation of the place-based risks associated with the assets, such as bushfires
*   access requirements, to ensure destinations can be accessible to all
*   reform of planning controls for appropriate regulation and streamlined approval processes.

Why is this needed?

Tourism is a key industry for Victoria, and for regional Victoria in particular. The tourism industry can play a key role in driving sustainable economic activity and employment in regional areas. The disruption to regional Victoria's tourist industry caused by the 2019-20 bushfires and COVID-19 has added to the existing challenge of competition from interstate and overseas destinations.

Aboriginal people have lived here for more than a thousand generations, maintaining complex societies with many languages, kinship systems, laws, polities and spiritualities.[326] The number of people seeking Aboriginal cultural and tourist experiences is increasing. International tourists taking part in Aboriginal tourism activities, such as visiting an Aboriginal site or community, experiencing an Aboriginal art, craft or cultural display, or attending an Aboriginal performance, have increased by over 40% since 2013. In 2013, 679,000 visitors participated in an Aboriginal cultural or tourist experience. In 2018, this number had grown to 963,000.[327]

Aboriginal tourism is also an important component of the domestic tourism industry. Not only do Aboriginal tourism visitors spend more per trip and per night and travel on average for longer periods than other domestic visitors, but tourism can provide a means for economic development for Indigenous Australians while celebrating their country and culture.[328]

Regions with compelling tourism products can attract visitors, encourage them to stay longer and spend money locally. Regional Victoria has several significant Aboriginal sites which can support Aboriginal tourism. Aside from the World Heritage listed Budj Bim Cultural Landscape, other significant sites include Tower Hill Reserve and Brambuk – the National Park and Cultural Centre. Investing in these and other cultural heritage sites would give regional Victoria a more diverse tourism offering, support Aboriginal businesses, generate more jobs for Aboriginal people and build prosperity for Aboriginal Victorians.

Traditional Owners have legal rights to practice their culture and interact with Country as landowners and managers. The Victorian Government's handback of these lands to Traditional Owners, together with the establishment of Traditional Owner Land Management Boards, are one means of achieving practical reconciliation and land justice. Such developments provide new opportunities for contemporary expression of Aboriginal culture and rights, which are becoming more broadly understood and celebrated throughout the Victorian community.[329]

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[326] Parks Victoria, *Managing Country together*, available at https://www.parks.vic.gov.au/managing-country-together

[327] Department of Foreign Affairs and Trade (2019) *Indigenous tourism surge*, available at https://dfat.gov.au/about-us/publications/trade-investment/business-envoy/Pages/january-2019/indigenous-tourism-surge.aspx

[328] Tourism Research Australia (2010) *Indigenous tourism in Australia: profiling the domestic market*, p. 19, available at https://sustain.pata.org/wp-content/uploads/2014/12/TRA-Indigenous-Tourism-in-Australia1.pdf

[329] Parks Victoria, *Managing Country together*

Joint management involves a formal partnership between the Traditional Owners of land and the state, where both share their knowledge to manage specific areas.[330] The goal of joint management is to enable Traditional Owner knowledge and connection to Country to be expressed in the planning and management of their landscapes.[331]

In Victoria, joint management is established under the terms of the *Traditional Owners Settlement Act 2010* (Vic) and the *Conservation, Forests and Lands Act 1987* (Vic). The *Traditional Owners Settlement Act 2010* (Vic) establishes a framework that recognises Traditional Owner rights on public land in an agreement area. The Act allows for parks and reserves to be returned to Aboriginal ownership under a form of land title called Aboriginal Title. Land under this title will continue to be managed as public in accordance with a Joint Management Plan.[332] The *Conservation, Forests and Lands Act 1987* (Vic) provides for the establishment of Traditional Owner Land Management Boards and the preparation of Joint Management Plans by these Boards in partnership with land management agencies.

Existing Joint Management Plans include those between the Gunaikurnai people and the Victorian Government,[333] for the Dja Dja Wurrung Parks[334] and for Barmah National Park in Yorta Yorta Country.[335]

Victorian Government investment in Aboriginal tourism infrastructure is essential, given the increasing demand for Aboriginal experiences as well as the need to preserve and promote Aboriginal cultural histories and heritage sites.

What will be the impact?

A Victorian Aboriginal tourism strategy can drive sustainable economic activity and employment in regional areas, as well as help preserve and promote Aboriginal cultural histories and heritage sites and improve regional tourism growth.

From a strategic point of view, this recommendation builds on the existing Victorian Government reforms towards improving social, cultural and economic outcomes for Aboriginal Victorians. The government's commitment to closing the gap for Aboriginal Victorians is outlined in three key strategies:

*   *Victorian Aboriginal affairs framework 2018-2023* - the Victorian Government's overarching framework for working with Aboriginal Victorians, organisations and the wider community to drive action and improve outcomes.[336]
*   *Self-determination reform framework* - guides public service action to enable Aboriginal self-determination in line with government's commitment.[337]
*   *Victorian Government Aboriginal affairs report* - tracks progress against government commitments to improving outcomes for Aboriginal Victorians.[338]

The recommendation would also align with *Tharamba bugheen: Victorian Aboriginal business strategy*[339] and the *Victorian visitor economy strategy*,[340] which aim to boost Aboriginal economic development and grow Victoria's tourism sector.

A key focus of Tharamba bugheen is to increase Aboriginal labour force participation. Tourism allows Aboriginal people to earn better social and economic futures on Country or in regional areas. Tourism also provides Aboriginal people with an opportunity to invest time in connecting or re-connecting more strongly with their culture and to subsequently share their culture locally.

Which regions does this recommendation assist?

Investments in tourism infrastructure provide both short-term and long-term economic benefits across Victoria's regions, providing opportunities for local employment, and helping to build opportunity and economic prosperity for Aboriginal

[330] Ibid

[331] Dhelkunya Dja Land Management Board, *Joint Management Plan for the Dja Dja Wurrung Parks*, available at http://www.dhelkunyadja.org.au/the-plan/joint-management-plan

[332] Parks Victoria, *Managing Country together*

[333] Gunaikurnai Traditional Owner Land Management Board, *Gunaikurnai and Victorian Government Joint Management Plan*, available at https://www.gunaikurnai.com.au/assets/files/2018/Gunaikurnai_JMP-v2.pdf

[334] Dhelkunya Dja Land Management Board, *Joint Management Plan for the Dja Dja Wurrung Parks*

[335] Yorta Yorta Traditional Owner Land Management Board (2020) *Joint Management Plan for Barmah National Park*, available at https://yytolmb.com.au/wp-content/uploads/2020/04/Minister-Approved-Final-Barmah-NP-JMP.pdf

[336] Aboriginal Victoria (2018) *Victorian Aboriginal affairs framework 2018-2023*, available at https://www.aboriginalvictoria.vic.gov.au/sites/default/files/2019-09/VAAF%20FINAL.pdf

[337] Victorian Government, *Self-determination reform framework*, available at https://content.vic.gov.au/sites/default/files/2019-09/Self-Determination-Reform-Framework-August-2019.PDF

[338] Aboriginal Victoria (2019) *Victorian Government Aboriginal affairs report 2019*, available at https://www.aboriginalvictoria.vic.gov.au/victorian-government-aboriginal-affairs-report-2019

[339] Department of Economic Development, Jobs, Transport and Resources (2016) *Tharamba bugheen Victorian Aboriginal business strategy 2017-2021*, available at https://www.aboriginalvictoria.vic.gov.au/sites/default/files/2019-10/Tharamba-Bugheen-Victorian-Aboriginal-Business-Strategy-2017-2021.pdf

[340] Department of Economic Development, Jobs, Transport and Resources (2016) *Victorian visitor economy strategy*, available at https://economicdevelopment.vic.gov.au/__data/assets/pdf_file/0006/1340979/Visitor_Economy_Strategy.pdf

Victorians. Infrastructure investments, guided by an Aboriginal tourism strategy, can ensure that regional Victoria is well placed to capitalise on the growing Aboriginal tourism sector.

The existing Joint Management Plans cover lands in the Central Highlands, Gippsland, Goulburn and Loddon Campaspe regions. Infrastructure investment in the priorities outlined within these plans will broaden the tourism offering and strengthen Aboriginal tourism within these regions. Progressing and developing future Joint Management Plans across the state will ensure that Aboriginal tourism opportunities will be determined and fully realised in remaining parts of the state.

How does this align with the frameworks?

This recommendation aligns with the *Comparative advantage framework*, and responds to the outcome *Unlock new industry growth opportunities*.

The tourism industry is an important economic driver for regional Victoria, identified as a future growth opportunity in each of Victoria's regions. The recommendation will guide future investment in Aboriginal tourism, supporting growing interest in this sector. It can also support Aboriginal businesses and encourage more jobs for Aboriginal people.

The recommendation further aligns with the framework's investment principles in that:

• It responds to an identified opportunity created by growing interest in Aboriginal tourism experiences.
• It has the potential to create regional employment opportunities and increase Aboriginal economic participation.
• The recommendation would build on existing Victorian Government reforms aimed at improving social, cultural and economic outcomes for Aboriginal Victorians.

How does this recommendation work with others?

This complements the *Plan for future investment in regional nature-based tourism infrastructure* and *Boost tourism infrastructure by allowing more national parks to grant long leases* recommendations in building on regional Victoria's natural assets to provide an economic stimulus to the regions and help foster a strong recovery in local tourism.

Recommendation 11: Upgrade power supply for agriculture and regional manufacturing

Industry: Agriculture, manufacturing

Framework: Comparative advantage framework

Outcome: Unlock new industry growth opportunities; Deliver greater productivity and efficiency

What is the recommendation?

Co-fund, in partnership with power distributors, famers and businesses, strategic power supply infrastructure upgrades in regional Victoria.

These encompass network based[341] energy projects with multiple beneficiaries, delivered through a partnership approach that are scalable and replicable across other regions.[342] Upgrades should deliver wider network benefits beyond a single sector or area and be delivered under the following conditions:

- demonstrated benefit, through an independent audit, to existing and potential future users[343]
- appropriate cost sharing arrangements between government, power distributors, and farmers and businesses.

Funding could take the form of a grant program to provide support for power supply infrastructure upgrades. Previous Victorian Government programs have subsidised part of the upgrade cost that the distributor could not include as part of its regulated returns. These programs also rely on a co-contribution from grant recipients. This recommendation will complement the existing Agriculture Energy Investment Plan,[344] which helps agricultural businesses to improve energy efficiency and explore alternative energy options.

Why is this needed?

Reliable and cost-effective energy is important for productive agriculture and manufacturing in regional Victoria. A consistent need has been identified across the regions for improved access to higher powered electricity distribution networks.[345] Energy access is a particular concern for the Victorian dairy industry, which has the highest average energy use across the agriculture sector.[346]

For most of regional Victoria, particularly in rural areas, electricity network availability is mainly through single wire earth return (SWER) power lines. SWER was mostly rolled out in record time and for a record low cost in the late 1970s and 1980s and was fit for purpose during those times, when energy requirements by rural consumers were relatively low.[347]

Changes in industry practices have caused different and escalating energy demands. For example, farm consolidation has created economies of scale in production, driving investment in more energy intensive farming equipment. But voltage problems and electricity supply outages are limiting production and damaging farm equipment. For example, milking equipment allowing many more cows to be milked has much higher energy demands than older electricity networks can manage.[348] Challenges finding suitable manufacturing and food processing industrial sites meeting modern energy requirements also constrain regional agricultural and manufacturing growth.[349]

Cost is a key barrier for businesses seeking to upgrade electricity infrastructure in the regions, as costs tend to be higher than in metropolitan areas given the large amount of network infrastructure required to service a relatively smaller

[341] Network based solutions refer to those implemented by Distribution Network Service Providers, typically straightforward upgrades in the electricity network (e.g. upgrade single wire earth return connection to three phase power lines; upgrade or install three phase power connections; install grid utility scale electricity storage).

[342] Agriculture Victoria (2020) *On-farm energy tier 3 grants, 2020*, p. 4, available at http://agriculture.vic.gov.au/__data/assets/pdf_file/0003/438609/On-farm-energy-tier-3-grants-program-guidelines.pdf

[343] Audits should be similar to the assessments conducted under the *Agriculture Energy Investment Plan*, where independent experts provide detailed advice on energy efficiency and own-generation opportunities tailored to individual farm businesses. The assessment builds a road map for investing in energy improvements over time.

[344] Agriculture Victoria, *Agriculture Energy Investment Plan*, available at https://agriculture.vic.gov.au/support-andresources/funds-grants-programs/agriculture-energyinvestment-plan

[345] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[346] Agriculture Victoria (2017) *Agriculture Energy Investment Plan*, p. 3, available at http://agriculture.vic.gov.au/__data/assets/pdf_file/0003/377400/Agriculture-Energy-Investment-Plan.pdf

[347] T&D World (2017) *Storage has a vital role: Ergon Energy extends the life of its rural circuits in Australia*, available at https://www.tdworld.com/grid-innovations/distribution/article/20969753/storage-has-a-vital-role

[348] Negotiaction (2017) *New energy options for the Victorian dairy industry*, pp. 14-16, available at https://www.vff.org.au/vff/Documents/UDV/New%20Energy%20Options%20for%20the%20Victorian%20Dairy%20Industry%20Report%2020170315%20FINAL.pdf

[349] Essential Economics and EnergyConsult (2012) *Regional Electrical Access Program evaluation report*, report prepared for Regional Development Victoria, p. 7

number of customers.[350],[351] In places with fewer customers to share costs and associated risks, upgrading power supply infrastructure can mean that businesses are less willing to invest. This puts regional Victoria at a disadvantage compared with metropolitan Melbourne in attracting new business investments or facilitating existing businesses' expansion.

While businesses are currently able to pay to increase their access to electricity, in some cases there are market failures that mean the costs are prohibitively high, due in part to first mover disadvantage where one business's investment provides an improved, lower connection cost network that surrounding businesses now have access to.

As an example, a dairy farmer who pays to have three phase power extended to his farm will make it significantly cheaper for all neighbouring farms to then connect to the network, as the line has physically been moved much closer to them. Their connection costs are lowered by the first farmer's financial investment. The situation is even more pronounced in cases where a large investment is being made that results in many square kilometres having improved network access.

Figure 1: First mover disadvantage illustration – Dairy farm example
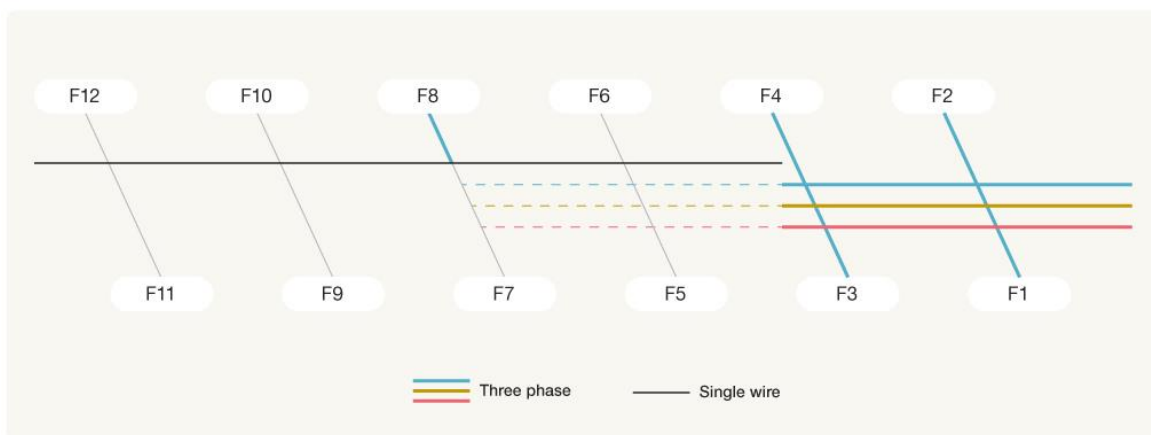
Farm 8 is proposing to bring three phase power down from farm 4. This results in farms 9-12 each being 2 units closer to the three phase power line, while farms 5 -7 now have the main line brought past their farm gate, and only require a connection.

In some cases, this results in an example of the hold-up problem in which two or more parties are best off working together to pay for a power supply improvement, but the parties choose not to work together for fear of improving the other's bargaining power. Many economic real world and game-theory examples exist that show while everyone would be better off if they co-operated, due to the incentives they are unlikely to do so.[352]

The Tyrendarra case study illustrates the timing, coordination and cost issues which can be associated with regional power upgrades. A proposal to upgrade the network awaits approval from the Australian Energy Regulator, however the example highlights the need for coordinated investment to unlock future growth and investment opportunities.[353]

[350] Australian Energy Regulator (2016) *Annual report on the performance of the retail energy market 2015-16*, p. 60, available at https://www.aer.gov.au/system/files/201516%20AER%20Annual%20Report%20on%20the%20Performance%20of%20the%20Retail%20Energy%20Market_1.PDF

[351] Australian Energy Market Commission (2019) *Final report – review of stand-alone power systems*, p. 17, available at https://www.aemc.gov.au/sites/default/files/2019-05/SAPS%20Priority%201%20Final%20Report%20-%20FOR%20PUBLICATION.pdf

[352] Bartolini (2012) *Coordination failures: a game-theoretic approach*, available at https://www.oecd.org/cfe/regional-policy/presentation_coordination_failures_a_game_theoretic_approach.pdf

[353] Information provided by Regional Development Victoria; Powercor (2019) *Powercor proposes upgrades to network to support dairy farmers*, available at https://www.powercor.com.au/news/upgrades-dairy-farmers

Case Study: Tyrendarra dairy industry

The need to intensify farming practices in order to stay competitive has outstripped the capacity of the electricity networks in many regions.

One example in Tyrendarra sees a region supplied with single wire earth return (SWER line), using approximately 1 megawatt (MW) of power in total. The SWER line can hold 0.2MW. The demand on the SWER line often exceeds 0.2MW, at which point the whole region supplied by that powerline is impacted. In addition, there are prospective business proposals in the region which would exceed 1MW of additional demand.

A solution is to upgrade the network to three phase power; however the smallest size three phase network has a 10MW capacity. This creates an economic shortfall between the 2MW the community would use versus the 10MW capacity. The economic shortfall is currently estimated at approximately $4 million. The community does not have the capacity or capability to fund a project of this size that is owned by a third party (i.e. the power distributor).

To resolve the problem, the electricity distributor is proposing an $8.7 million investment to upgrade regional power infrastructure and support future economic growth.

What will be the impact?

The benefits of better power supply can be significant. For instance, a proposal to upgrade a SWER backbone to three phase power in the Great South Coast is estimated to cost $8.7 million and deliver benefits of over $2 million each year in gross regional product.[354]

Evaluations of previous Victorian Government programs to support regional power upgrades have found that they are an important mechanism to enable Victorian dairy farmers to invest in equipment and implement new technology, thereby improving the operation and viability of their farm. Collectively, improvements resulted in greater farm efficiency and productivity and removed barriers to industry and regional growth.[355]

Economic benefits were found to be substantial, with one study indicating that every dollar of government investment generated a further $20 of private capital investment.[356] A $2.1 million Regional Electrical Access Program grant for Burra Foods to upgrade its power in 2010 allowed for increased production and created 40 full-time jobs.[357] Additional benefits have included positive environmental impacts in the form of energy and water savings and improvements to community safety.[358]

Power upgrades could also lead to wider community benefits. For example, the electricity infrastructure supported by Regional Electrical Access Program grants created an opportunity for other businesses, private and public premises located in the vicinity of the upgrade locations to also gain better access to electricity.[359]

Which regions does this recommendation assist?

This recommendation can benefit agricultural and manufacturing businesses across regional Victoria. Particular opportunities have been identified for the dairy industry in the Great South Coast.[360,361]

While the Great South Coast's dairy industry is expected to be one of the key beneficiaries from this recommendation, intensive industries such as the chicken and pig sectors could benefit as well. The recommendation will also apply to non-farm regional businesses, particularly those in manufacturing that are facing power-related constraints.

[354] Powercor (2020) *Upgrading regional supply: business case PAL 6.09, regulatory proposal 2021-2026*, p. 15 available at https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements/powercor-determination-2021-26/proposal

[355] Acil Allen (2013) *On farm energy grants: a review of the on-farm energy grant program*, report prepared for Regional Development Victoria, p. 5

[356] Essential Economics and EnergyConsult (2012) *Regional Electrical Access Program evaluation report*, report prepared for Regional Development Victoria, p. 1

[357] Regional Development Victoria (2010) *Annual report 2009-10*, p. 30 available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0005/1147622/RDV-annual_report_2009-10-Complete.pdf

[358] Acil Allen (2013) *On farm energy grants: a review of the on-farm energy grant program*, report prepared for Regional Development Victoria, p. 20

[359] Essential Economics and EnergyConsult (2012) *Regional Electrical Access Program evaluation report*, report prepared for Regional Development Victoria, p. 2

[360] Great South Coast Food and Fibre Council (2017) *Three-phase power: removing capacity constraint*, p. 2

[361] Powercor (2019) Powercor *proposes upgrades to network to support dairy farmers*

How does this align with the frameworks?

The recommendation aligns with the *Comparative advantage framework*, and responds to the outcomes *Unlock new industry growth opportunities* and *Deliver greater productivity and efficiency*.

Power infrastructure upgrades can deliver benefits to the agriculture and manufacturing sector, important industries in regional Victoria. This includes removing barriers to business expansion, increasing efficiency and productivity, encouraging investment in new technology and equipment, increasing growth rates and yield due to improved energy supply reliability and energy savings.[362] Upgrades also have the potential to deliver improvements in power supply to the wider community.

Previous Victorian Government programs, such as the Regional Electrical Access Program[363] and the On-Farm Energy Grants Program,[364] have co-funded power upgrades as a response to market failures in regional Victoria.

How does this recommendation work with others?

This complements the recommendation to *Continue to address regional Victoria's digital connectivity gaps* in removing constraints to future business growth and investment in regional areas.

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[362] Acil Allen (2013) *On farm energy grants: a review of the on-farm energy grant program*, report prepared for Regional Development Victoria, p. 5

[363] Regional Development Victoria (2008) Annual report 2007-08, p. 29, available at http://www.rdv.vic.gov.au/__data/assets/pdf_file/0007/1147624/5086-RDV-Annual-Report-2007-08_web.pdf

[364] Agriculture Victoria, *On-farm energy grants program*, available at https://agriculture.vic.gov.au/support-and-resources/funds-grants-programs/agriculture-energy-investment-plan/onfarm-energy-grants-program

4.2   Addressing regional disadvantage recommendations

Recommendation 12: Reform regional public transport to meet local needs

Framework: Addressing regional disadvantage framework

Outcome: Improve economic outcomes for individuals; Improve education and health outcomes; Improve social inclusion outcomes

What is the recommendation?

In the next five years, gradually redirect some regional transport funding to re-designed, integrated local transport services that are tailored to the needs of the transport disadvantaged population living in regional communities. This should incorporate flexible, on-demand and point to point services into the regional public transport service offering, in direct response to community needs.

The Victorian Government should work to determine local transport needs, using regional needs assessments focussing on transport disadvantaged groups, and including a common measure of accessibility to key services.[365] This will inform the design of new local transport solutions that meet the needs of the regions and help coordinate and re-shape existing transport services.

The process should be steered by integrated governance and planning arrangements, which can clarify the roles of different funding agencies, transport planners and service providers while giving the local community a voice. It should also help coordinate the existing transport system to offer integrated options covering traditional public transport bus and coach services, local community transport, on-demand services and the school bus network to deliver a flexible model that meets community needs. This should include coordination of information about service provision.

Crucially, permanent and ongoing funding will be required to support the new regional transport offerings, moving away from short-term trials to lasting transport commitments. Funding for non-commuter regional transport should also recognise the need to improve access to services for disadvantaged regional Victorians.

Integrated governance arrangements should ensure that regional transport planning integrates with government health, education and social service planning, ensuring agencies work together to provide effective public transport options to residents of both established and developing areas, ensuring more people can access the services they need.

Why is this needed?

Transport disadvantage – difficulty accessing public transport due to cost, availability of services or physical accessibility – is high in Victoria's regions. Around one third of residents in regional and remote areas report difficulty accessing services, in particular Centrelink and health services.[366] As services increasingly agglomerate in regional hubs, fit for purpose transport services which allow regional Victorians to continue to access essential services and supports are a priority.[367]

In regional and rural areas, owning a car is often the only means of transport. However, car ownership can lead to financial stress, particularly among low income households.[368] The cost of transport has a significant impact on the ability of those from disadvantaged backgrounds to use it. Those in the bottom income quintile are much more likely to experience transport difficulties compared with those in the top income quintile (9.9% and 1.3% respectively).[369] Nearly one in three regional Victorians rely on social security as their primary source of income, determining how much they can afford to spend on transport.[370]

There are links between transport disadvantage and social exclusion, where certain people cannot fully participate in social and economic life.[371] The groups most likely to be affected include young people, single parents and families with young children, older people, Aboriginal communities and people with a disability.[372]

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[365] For example, employment centres, education, health services and food shops. The output should provide travel time, origin and destination indicators based on walking, cycling, car and public transport.

[366] Australian Bureau of Statistics (2014) *General social survey: summary results, Australia*, available at https://www.abs.gov.au/statistics/people/people-and-communities/general-social-survey-summary-results-australia/2014

[367] Aither (2019) *Inter-regional assessment: an analysis of regional Victoria's strengths and challenges*, pp. 13-14, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Aither-Inter-regional-assessment-March-2019.pdf

[368] Rosier and McDonald (2011) *The relationship between transport and disadvantage in Australia*, p. 9, available at https://aifs.gov.au/cfca/publications/relationship-between-transport-and-disadvantage-austr

[369] Ibid, p. 3

[370] Betts (2007) 'Transport and social disadvantage in Victoria, a government perspective', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 12.1–12.18

[371] Stanley and Stanley (2008) 'Social policy and public transport', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 13.1–13.17

[372] Rosier and McDonald (2011) *The relationship between transport and disadvantage in Australia*, p. 5

- **Young people:**[373] Transport problems are a significant issue for young Australians, with 96% of those in regional areas indicating that they experience local transport problems – including low frequency, coverage, cost and lack of evening and weekend services. Of greatest concern is the constraint on education and employment opportunities, with research showing that young people in the regions have significantly lower participation in higher education than those in cities (23% compared with 39%). Owning a car was the single most significant factor for young people in regional areas when deciding to undertake post-secondary education.
- **Single parents and families with young children:**[374] For sole parents without a car in transport disadvantaged areas, taking their children to after school activities is often not possible. Wait times for transport connections are problematic, especially for those with young children. This can mean children miss out on opportunities for extra learning, physical activity and the health benefits that flow from sport, recreation and other co-curricular activities.
- **Older people:**[375] There is often a high proportion of older people in regional communities. Ageing or illness can lead to subsequent isolation. Managing the transition from driving requires interventions that allow the elderly to stay connected and maintain a good quality of life.
- **Indigenous communities:**[376] Indigenous communities are more commonly located in areas of low population density characterised by isolation in terms of access to facilities and services. Health issues and poor education outcomes are a concern, compounded by transport limitations. In addition, provision of culturally appropriate transport services is an issue of great importance.
- **People with a disability:**[377] People with disabilities are more reliant on public transport, taxis and others to meet their transport needs. Regional Victoria has a higher proportion of people with a disability compared with Melbourne, in areas where public transport access is limited or non-existent. Transport is vital to enabling people with disabilities to be socially and economically included, and without effective transport services access to employment, education and health services is severely restricted. The consequences of limited mobility for people with disabilities are typically more severe, as much of their quality of life is dependent upon public and community transport.

Traditional scheduled public transport services perform best when transporting large numbers of people to a shared destination. This makes it ideal in urban areas, but creates challenges in regional areas with dispersed populations, large distances and disparate travel patterns. Overall, lower density development patterns in regional Victoria have led to those most in need of public transport left with either no or poor-quality services. It is important that the transport system in regional areas is designed to better meet the needs of disadvantaged cohorts. Responding to the different accessibility needs and challenges of these cohorts will require a flexible and adaptable transport system.

Regional public transport services must be designed for regional circumstances, and not simply replicate city-style models. The existing scheduled service model alone will not meet the needs of regional Victorians. Regional examples, below, demonstrate that even when traditional public transport is provided it does not operate at the times people need, leading to poor outcomes without community-driven interventions.

What will be the impact?

Flexible, demand responsive and point to point transport services would allow disadvantaged regional Victorians to stay connected to their communities and local services. A lack of suitable transport options to meet community needs can:

- **Act as a barrier to employment** – services need to connect workers to their place of employment, covering the time span needed. The barrier could be due to no service being offered to attend an interview, or the service operation not covering the span of work.
- **Reduce access to education and training** – this can be from challenges with sole and/or young parents transporting children to early childhood services or after school activities, or young adults not being able to access tertiary education facilities to gain skills in their chosen field and that will support their transition into employment.
- **Reduce access to health care** – limited connections to access health appointments can lead to delays in treatment. This is especially detrimental to those with long-term or chronic health conditions, and older people, resulting in health inequalities for those living in regional and rural areas. Improving access to telehealth can partly address this access gap, however there will always be a need for face to face care and support from health service providers.
- **Limit access to shops and other services** – in regional and rural locations services are often shared between towns, while residents often must travel to a local centre for food shopping and other essentials. Specialist shopping or services may only be available in the regional centre. Most of services that can meet the needs of regional

[373] Currie (2007) 'Young Australians: No way to go', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 8.1–8.14

[374] Hurni (2008) 'Marginalised groups in Western Sydney: the experience of sole parents and unemployed young people', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 10.1–10.11

[375] Stanley and Stanley (2007) 'Public transport and social exclusion: an operator's perspective', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 14.1–14.11

[376] Currie and Zenbergs (2008) 'Indigenous communities: transport disadvantage and Aboriginal communities', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 9.1–9.12

[377] Currie and Allen (2007) 'Australians with disabilities: transport disadvantage and disability', in Currie, Stanley and Stanley (eds) *No way to go: transport and social disadvantage in Australian communities*, pp. 7.1–7.13

Victorians are located within the local or regional area, but transport services often do not provide these critical connections frequently or when needed.

• **Lead to social isolation** – many regional people without access to a car are disconnected from friends, family and community supports and unable to engage in social activities that foster inclusion and wellbeing.

Providing transport options to meet these needs will provide enduring benefits but requires ongoing support, funding and monitoring to ensure local transport is tailored to meet the needs of those that rely on it the most.

The complexity of providing effective public transport for those in most need means it will require integration across transport policy, funding, planning and operations.[378] It will also need to consider flexible and responsive transport options designed in response to local community needs. Service delivery mix options that can be combined or reformed for better use include traditional public transport bus services, coach services, local community transport, on-demand service delivery, the school bus network, commercial passenger vehicles and car sharing.

The four-year Flexible Local Transport Solutions Program demonstrates some of the alternative possibilities.[379] The grants program has provided one-off funding to deliver tailored, demand-responsive and point to point transport services in regional areas since 2017. However, funding is time-limited, and imposes a heavy burden on communities to demonstrate feasibility, innovation, and social, economic and sustainability benefits. Solutions need to be part of a coordinated regional transport network, with ongoing funding to provide certainty to communities and service providers.

The New South Wales Government Future Transport 2056 provides an example of a long-term mobility strategy to reform and guide transport investment across the state (see Case study).[380]

Case study: NSW transport reform

New South Wales (NSW) has a population of around 8 million but covers an area 3.5 times greater than Victoria, with 98.5% of the state classified as regional. Recognising the challenges to provide effective public transport to such a dispersed population, Transport for NSW developed a strategy to:

• recognise the role of regional cities as hubs for employment, services such as retail, health and education, and that the transport system should support this role
• create an integrated transport network spanning a range of modes, with mode dependent on demand and distance
• set minimum future service levels to be achieved base on the size of each market and a hierarchy of services.

Key to the plan was designing a system that provides the right mode for the right journey based on demand and distance. Initiatives included a hub and spoke model connecting to centres and regional cities, integrated timetables enabling better connections and day return services, increased frequencies and operating hours, flexible and demand-responsive public transport offering a mix of services, accessible services for mobility impaired and disadvantaged customers and trials of Mobility as a Service.

Several services were trialled based on input from customers including those that were previously not serviced, with many found to have positive outcomes and continued as full services. As well as trialling new connections, the plan also included consideration of alternative service types including flexible and on-demand transport.

Which regions does this recommendation assist?

This recommendation is applicable across regional Victoria. All nine Regional Partnerships flag improved transport connectivity as a priority outcome for their region,[381] with poor transport connections linked to restricted access to health, education, services and important economic and agricultural industries.[382]

The importance of public transport as a regional issue was confirmed via Infrastructure Priorities for the Regions' stakeholder consultation. Public transport was one of the most-raised issues, with over one third of total submissions identifying improved public transport as a pressing need for their region. The range of concerns identified include:

• The need for usable public transport operating from local towns to regional centres in Loddon Campaspe, to timetables which would meet employment, training and appointment requirements.[383]

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[378] Denmark (2007) 'Local and community transport: a mobility management approach', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*, pp. 15.1–15.13

[379] Department of Transport, *Local transport in Victoria*, available at https://transport.vic.gov.au/our-transport-future/our-projects/regional-victoria/regional-network-development-plan/local-transport-in-victoria#flexible

[380] Regional NSW Services and Infrastructure Plan (2018) *Future transport strategy*, available at https://future.transport.nsw.gov.au/plans/future-transport-strategy

[381] Regional Development Victoria, *Regional Partnerships*, available at https://www.rdv.vic.gov.au/regional-partnerships

[382] Central Highlands Regional Partnership (2019) *Central Highlands outcomes roadmap*, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0005/1733252/Central-Highlands-Outcomes-Roadmap_May-19.pdf

[383] Campaspe Cohuna LLEN (2020) *Submission to Infrastructure Priorities for the Regions*

- Insufficient support for people who need transport to access health care services, particularly those with special needs or mobility difficulties (Gippsland). Even when available, access to transport programs can be difficult as they are not always well-advertised and do not have the flexibility to respond when medical appointments are given at short notice.[384]
- A lack of local bus services in Bacchus March and surrounds (Central Highlands), acting as a barrier for young people in accessing employment opportunities.[385]
- Inadequate public transport between townships in Gannawarra Shire (Mallee), with community transport flagged as a potential solution.[386]
- Limited services and poor service frequency between smaller towns and regional hubs (Warrnambool, Portland, Hamilton and Horsham) in the Great South Coast, including poor coordination between bus and rail services.[387]
- Challenges in local public transport provision in Bass Coast and South Gippsland meaning that students were unable to access training opportunities. A pilot project as part of the Victorian Government's Flexible Local Transport Solutions Program has proven successful in meeting community needs, although funding is not ongoing.[388]

The following case study highlights the difficulties involved with transport disadvantage in regional Victoria, and how it impacts on different cohorts of the community.[389]

Case study: Warrnambool community transport needs

A study into the needs of groups of people at risk of social exclusion in Warrnambool, south-west Victoria, aimed to explore travel needs of transport disadvantaged groups, finding:

- **Young people** - many had considerable difficulties associated with transport, particularly in accessing education, work and entertainment. Without public transport, some were unable to look for work and had few recreational opportunities over the school holidays. Youth services officers expressed concern about the wellbeing of this rurally isolated group, which has a relatively high suicide rate.
- **Residential university students** - the location of the university campus five kilometres from the town centre meant students without a car faced difficulties getting involved in recreational pursuits or part-time employment. A possible consequence of failing to improve access is loss of overseas students, due to limited opportunities for social inclusion.
- **Seniors** - the strong car culture among many seniors led to a sudden reduction of mobility and increased loneliness when driving ceased. The group was unable to easily transfer to other forms of transport - even for some people who were resident in an aged village, which owned a community transport vehicle.
- **People with disabilities** - many in urban areas organised their mobility requirements around alternatives to driving including public transport, community transport, walking, lifts from others and taxis. As a result, they had a good level of accessibility. However, people with a disability who lived in rural settings found access to services much more difficult.
- **People on low income** - those in geographically isolated areas, together with young single mothers, were at high risk of social exclusion. A combination of scarce childcare opportunities and low frequency public transport, together with the costs of both, restricted employment and social inclusion opportunities.
- **Indigenous community** - had its own buses that were well utilised. The need for vehicles was indicative of transport disadvantage faced by those who feel uncomfortable using route buses due to the perception of racism from other passengers.

The study emphasised an order of magnitude difference between improving accessibility for those who are already socially included, and those who are socially excluded. The individual and community wellbeing benefits from enhancing the mobility of socially excluded groups are likely to be substantially greater than from initiatives which provide for those who are already socially included. Lower utilisation rates on such services should there be accepted.

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[384] Catholic Social Services Victoria (2020) *Social service and infrastructure needs in Gippsland: submission to Infrastructure Priorities for the Regions*

[385] Moorabool Shire Council (2020) *Submission to Infrastructure Priorities for the Regions*

[386] Gannawarra Shire Council (2020) *Submission to Infrastructure Priorities for the Regions*

[387] Catholic Social Services Victoria (2020) *Social service and infrastructure needs in Great South Coast: submission to Infrastructure Priorities for the Regions*

[388] Department of Transport (2020) *Submission to Infrastructure Priorities for the Regions*

[389] Stanley and Stanley (2008) 'Social policy and public transport', in Currie, Stanley and Stanley (eds), *No way to go: transport and social disadvantage in Australian communities*

How does this align with the frameworks?

This recommendation aligns with the *Addressing disadvantage framework* and responds to the outcomes *Improve economic outcomes for individuals*, *Improve education and health outcomes* and *Improve social inclusion outcomes*.

Transport plays an important role in fostering the connectivity that helps alleviate disadvantage, by connecting individuals to employment opportunities, to education and to health care services.[390] It also helps build social inclusion, by ensuring individuals can remain connected to their communities.

The Victorian Government is responsible for providing public transport infrastructure planning to improve transport connectivity in regional Victoria. It can also provide the infrastructure (vehicles, electric vehicle charging stations, car parking, etc.) that would allow private companies and not-for-profits to innovate and create door-to-door services. The alternative to public transport remains private car ownership. However, this is problematic for some vulnerable and disadvantaged cohorts. Those without a car are more likely to be over 60 years, lone person households, Aboriginal or people with a disability.[391]

A key purpose of regional public transport should be to provide access and mobility to those that rely on it – the transport disadvantaged and those suffering access-related exclusion. New technologies, community transport and deregulation alone will not bring about this change but offer opportunities if considered as part of a transport system built around measurable objectives. The proposed solution is designed to be flexible and responsive to changing demands, with governance and engagement processes inbuilt to ensure that community needs are heard and understood.

How does this recommendation work with others?

The recommendation complements other *Addressing regional disadvantage* recommendations in enhancing access to jobs, education, health and social services for regional Victorians.

In particular, this recommendation will work with *Deliver multipurpose shared social service facilities in the regions* in providing a framework for integrated transport and service delivery planning, to ensure that essential services and supports can be accessed by all those who need them.

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[390] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 19, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

[391] Ibid, pp. 20-21

Recommendation 13: Improve resilience of regional telecommunications infrastructure

Framework: Addressing regional disadvantage framework; Comparative advantage framework

Outcome: Improve economic outcomes for individuals; Improve education and health outcomes; Improve social inclusion outcomes; Deliver greater productivity and efficiency; Provide better access to markets

What is the recommendation?

In the next 10 years, the Victorian Government should co-invest with the Australian Government, telecommunications and energy providers to develop more resilient regional telecommunications infrastructure to ensure that communities can access the information and services they need to stay safe during emergencies.

A comprehensive approach is needed across fixed, mobile and Wi-Fi networks to ensure more resilient communications. This could include stronger power supply back-up systems and greater telecommunications network redundancy, potentially including third-party use of towers during emergencies. Emergency preparedness may also include educating communities on residential power back up options, including alternative charging methods or battery powered communication devices.

This recommendation is relevant across Victoria's regions. Priority locations for future investment in digital resilience should be determined with consideration to:

- areas considered high risk in terms of potential emergency (for example, bushfires and other extreme weather events), informed by Emergency Management Victoria
- road and rail transport routes
- population centres and tourist destinations
- areas of agricultural and other economic activity.

Why is this needed?

Telecommunications services are vital during emergencies to keep communities safe, connected and informed.[392] Victorians can access emergency information and warnings via VicEmergency and other online services,[393] allowing them to stay informed and take appropriate action. Telecommunications services are also essential in coordinating response efforts to get timely information to emergency personnel during natural disasters.[394]

Gaps in mobile coverage, or mobile black spots, are a significant concern for regional Victorians. Considerably more mobile black spots are recorded in regional Victoria compared with Melbourne (2463 versus 146).[395] There is a persistent and significant divide in the quality of mobile services available to regional compared to metropolitan users, with important implications for public safety, economic development and general liveability.[396] The Victorian Government has recognised the importance of improving digital connectivity for regional Victorians through its $300 million 2020-21 Budget commitment to eradicate mobile black spots in populated areas, with co-contributions from the Australian Government.[397]

The summer bushfires of 2019-20 starkly highlighted resilience issues with existing telecommunications infrastructure in regional Victoria, and the associated implications for public safety. A total of 159 communications outages were recorded in Victoria during the event, the overwhelming majority caused by power failure, rather than direct fire damage.[398] Communication loss was experienced by 38 towns, 17 of which were also isolated by disrupted road access.[399]

Emergency management organisations operate on the assumption of community access to voice and data services to be able to disseminate emergency information to the public, as well as for those in need to contact emergency services. Communities also expect they can access telecommunications during emergencies, including for emergency assistance

[392] Department of Infrastructure, Transport, Regional Development and Communications, *Improving resilience of Australia's telco networks*, www.communications.gov.au/phone/improving-resilience-australias-telco-networks

[393] VicEmergency, *About VicEmergency*, available at https://emergency.vic.gov.au/about-this-site/introduction

[394] Department of Infrastructure, Transport, Regional Development and Communications, *Improving resilience of Australia's telco networks*

[395] Australian Government (Oct 2018) *Mobile black spot database*, available at https://data.gov.au/data/dataset/community-reports-of-poor-or-no-mobile-coverage/resource/c6b211ad-3aa2-4f53-8427-01b52a6433a7

[396] Gippsland Regional Partnership (2019) *Gippsland regional digital plan*, p. 8, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0010/1872946/Gippsland-Digital-Plan-Final-25-September-web.pdf

[397] Victorian Government (2020) *Keeping us connected and working, wherever we are*, available at www.premier.vic.gov.au/keeping-us-connected-and-working-wherever-we-are

[398] Australian Communications and Media Authority (2020) *Impacts of the 2019–20 bushfires on the telecommunications network*, pp. 7-9, available at https://www.acma.gov.au/sites/default/files/2020-04/Impacts%20of%20the%202019-20%20bushfires%20on%20the%20telecommunications%20network_1.docx

[399] Indicative figures provided by Department of Jobs, Precincts and Regions, based on information received from mobile phone carriers during the 2019-20 bushfire season

calls, critical person communications, mobile apps, such as the VicEmergency App, and text-based emergency alerts. Climate change will cause bushfires risks to escalate in future.[400]

What will be the impact?

Improved telecommunications resilience in regional and remote locations can improve public safety and reduce community vulnerability during natural disasters and emergency events.

Some communities were unable to access emergency communications and information during the 2019-20 bushfires, including triple zero emergency communications, mobile safety apps and text-based emergency alerts, leaving them potentially vulnerable in rapidly changing situations. Strengthened telecommunications resilience will help ensure that communities can stay connected in times of emergency.

Which regions does this recommendation assist?

This is a regional Victoria wide recommendation. All nine Regional Partnerships identify poor mobile coverage as a problem for their region. They particularly identify poor coverage near tourist attractions,[401] along transport corridors,[402] and in smaller settlements and farming areas.[403] This confirms Infrastructure Victoria's own research into the infrastructure needs of regional areas.[404]

The 2019-20 bushfire season highlighted telecommunications weaknesses in the Gippsland, Ovens Murray and Grampians regions.[405] However, weaknesses are not limited to these regions and work on digital resilience will need to consider potential bushfire risk across Victoria. In determining priority locations for future investments in digital resilience, consideration should therefore be given to high emergency risk areas, road and rail routes, population centres, tourist attractions and areas of agriculture and other economic activity.

How does this align with the frameworks?

This recommendation aligns with both the *Addressing regional disadvantage framework* and the *Comparative advantage framework*, and responds to the outcomes *Improve economic outcomes for individuals*, *Improve education and health outcomes*, *Improve social inclusion outcomes*, *Deliver greater productivity and efficiency* and *Provide better access to markets*.

Reliable telecommunications services are a critical requirement for the protection of life and property during emergencies. Timely access to information before, during and after emergency situations is vital and telecommunications services are increasingly the means by which communities access emergency communications.

Beyond emergencies, telecommunications infrastructure connects people to vital social services. Inadequate communications infrastructure has been identified as compounding regional Victoria's challenges in accessing the employment, education and human services opportunities and supports which alleviate disadvantage.[406]

There are also benefits for regional businesses in ensuring telecommunications resilience, including two of regional Victoria's most significant industries, agriculture and tourism. Improved resilience will help maintain connections between staff, customers and markets, allowing businesses and industries to recover operations more quickly following disruption.

The Victorian Government has recognised the importance of digital connectivity in the regions, committing $626 million to the Digital Future Now initiative to improve mobile coverage and broadband access in regional areas.[407] However, there is a need for continued investment to ensure digital resilience in the regions.

How does this recommendation work with others?

This recommendation complements the *Fund regional libraries to provide better internet access* and *Continue to address regional Victoria's digital connectivity gaps* recommendations in reducing the digital divide for regional businesses and communities.

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[400] Climate Council (2019) *The facts about bushfires and climate change*, available at https://www.climatecouncil.org.au/not-normal-climate-change-bushfire-web/

[401] For example, Gippsland Regional Partnership (2019) *Gippsland regional digital plan*, p. 14

[402] For example, Central Highlands Regional Partnership (2019) *Central Highlands regional digital plan*, p. 42, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0005/1861052/Central-Highlands-Full-Digital-Plan-FINAL-22-Aug-web.pdf

[403] For example, Great South Coast Regional Partnership (2019) *Great South Coast regional digital plan*, p. 50, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0006/1885911/Great-South-Coast-Digital-Plan-FINAL-for-publication-1-Oct-web.pdf

[404] Aither (2019) *Regional profiles*, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/

[405] Australian Communications and Media Authority (2020) *Impacts of the 2019–20 bushfires on the telecommunications network*

[406] Parliament of Victoria (2010) *Inquiry into the extent and nature of disadvantage and inequity in rural and regional Victoria*, available at https://www.parliament.vic.gov.au/images/stories/committees/rrc/disadvantage_and_inequality/report/20101014_for_web.pdf

[407] Victorian Government (2020) *Turning digital demand into online opportunity*, available at https://www.budget.vic.gov.au/turning-digital-demand-into-online-opportunity

Recommendation 14: Fund regional libraries to provide better internet access

Framework: Addressing regional disadvantage framework

Outcome: Improve economic outcomes for individuals; Improve social inclusion outcomes

What is the recommendation?

Immediately provide additional funding for libraries in regional and rural areas to improve access to fast, free internet services, leveraging existing library infrastructure to provide modern digital technology that meets local needs.

A new fund should be created to target improved access to Wi-Fi and digital technology for regional and rural Victorians. Libraries are often the only source of free internet access in rural communities. Providing dedicated funding for digital facilities and infrastructure will deliver a higher standard of library facilities to more Victorian communities, ensuring libraries can meet the demand for digital infrastructure and online services.

Libraries will be invited to propose solutions to enhance internet access to meet local community needs which are appropriate to the existing library facilities and infrastructure. These may include:

- Upgrades to digital infrastructure within the library, to ensure communities have access to up-to-date technology and reliable internet connections
- Security system installation to support out-of-hours library access, in communities where unstaffed library access is considered appropriate (see, for example, the Foster Library case study, below[408])
- Upgrades to the internal layout of libraries to enable secure out-of-hours library access where appropriate
- Extending availability of library Wi-Fi to surrounding public spaces and outside normal library hours, where circumstances permit
- Installation of technology to support free Wi-Fi access in mobile library vans.

Out-of-hours or unstaffed access will not be appropriate for all libraries. The proposed fund therefore does not mandate out-of-hours library access as a condition for eligibility, though upgrades may support extended hours.

This funding should be in addition to that already provided through the Living Libraries Infrastructure Program (LLIP), which currently funds upgrades to library infrastructure and is already oversubscribed.[409] The Victorian Government could provide this funding through a new library technology fund, complementary to the LLIP. Local government would continue to be responsible for ongoing operational costs.

Why is this needed?

Digital connectivity is a significant issue in regional Victoria, affecting people's ability to engage in education and access online services. Communities that have the greatest need for digital connectivity due to their distance from major cities have lower proportions of households that are connected to the internet.[410] In regional Victoria, 22% of the population live in a household without internet access compared to 14% in Melbourne. Internet access is even lower among disadvantaged communities – 24% of regional Victorians earning less than $26,000 per annum are not connected to the internet at home, rising to 36% for those in social housing.[411]

As services shift online (banking, job search, welfare services, education, social networks, cultural resources), digital access and digital literacy become a precondition for effective civic participation.[412] The need for strong digital connections to health, education and other services has been highlighted through the COVID-19 pandemic. People with low levels of digital inclusion, either through skills or access issues, find themselves at a disadvantage in accessing these opportunities. This disadvantage will only increase as technology becomes more sophisticated.[413]

Those who don't have access to their own device, or the skills to use the internet independently – including some older Victorians, homeless people and low income families – need access to publicly-available computers and internet

408 ABC (2019) *First library in Victoria to open 24 hours a day, seven days a week has town buzzing*, available at https://www.abc.net.au/news/2019-12-27/foster-library-first-in-victoria-to-open-24-hours-a-day/11777696

409 Department of Environment, Land, Water and Planning (2019) *Living Libraries Infrastructure Program 2019: grant guidelines*, available at https://www.localgovernment.vic.gov.au/__data/assets/pdf_file/0019/47512/Living-Libraries-Infrastructure-Program-Guidelines.pdf. DELWP has advised Infrastructure Victoria that it received 23 applications in the 2019-20 LLIP funding round, with a total funding ask of $9.8 million. Using the $4.1 million in funding the program had available, DELWP agreed to 12 of these projects for a total of $4.1 million.

410 Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 19, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

411 Infrastructure Victoria analysis, based on Australian Bureau of Statistics (2016) *Australian census of population and housing* (NEDD Dwelling Internet Connection, TENLLD Tenure and Landlord Type and INCP Total Personal Income (Weekly) data by Local Government Area), available at www.abs.gov.au/census

412 Wyatt, McQuire and Butt (2015) *Public libraries in a digital culture*, p. 6, available at https://arts.unimelb.edu.au/__data/assets/pdf_file/0005/1867865/PublicLibrariesinaDigitalCulture.pdf

413 Kinney (2010) *The internet, public libraries, and the digital divide*, Public Library Quarterly, 29:2, 104-161, p. 111, available at https://www.tandfonline.com/doi/pdf/10.1080/01616841003779718

connections.[414] Libraries serve a critical purpose, broadening community access to digital infrastructure and helping develop skills to participate in digital culture.[415] Frequently, they are the only spaces providing free public access to digital resources such as computer terminals, broadband, Wi-Fi and software as well as offering the education and training necessary to navigate them.[416,417]

Libraries in small regional and rural areas are often efficient and effective in delivering a range of services to meet community needs.[418] However, libraries serving relatively small communities face greater financial and funding challenges than their metropolitan counterparts. Many regional councils, particularly in rural areas, have limited resources to invest in libraries as they have a smaller number of rate payers and need to fund multiple services to geographically dispersed towns with small, but often high need, populations.[419] Local community impact is likely greater, as public Wi-Fi is usually only available in regional areas at libraries during restrictive open hours, sometimes opening for just a few hours for five or even less days per week, while seven-day-a-week access, extended hours and other options are more common in Melbourne.

The primary reasons for restricted Wi-Fi services in libraries are cost and technical issues.[420] To continue to provide free access to digital services, libraries in rural and regional Victoria need more investment.

What will be the impact?

In an increasingly digital age, Victoria's public libraries are evolving to support lifelong learning, community engagement and wellbeing.[421] Library users, too, are shifting from 'traditional' library services such as book borrowing to newer services based on internet access, including using personal computers and mobile devices within libraries' free Wi-Fi networks.[422] In Victoria, 3.6 million library users logged 15.5 million hours of Wi-Fi across the state in 2018-19.[423] This recommendation will further enhance regional and rural public libraries' ability to offer digital connectivity.

Research suggests that for every $1 invested in public libraries there is a community benefit of $3.56.[424] Internet access can also provide economic benefits, both indirectly through development of marketable technology skills, and directly through e-commerce.[425]

Library provision of free public internet access reaches those who are digitally disadvantaged by providing access to technology and support. Members of disadvantaged groups tend to use library computers more frequently and are more likely to rely on the library as their only source of Internet access.[426] This was demonstrated in America where, during the early 2000s recession, nearly one-third of the US population over the age of 14 used library internet computers and those in poverty relied on these resources even more.[427] In addition, libraries have a role to play in times of crisis, providing connectivity for those seeking assistance and beginning to rebuild in the immediate aftermath.[428]

Examples of library innovations in reducing digital disadvantage include:

[414] Local Government Information Unit (2020) *Australian public libraries: adapting to Covid-19 lockdown*, available at https://lgiu.org/briefing/libraries-covid-australia/

[415] ABC (2018) *The role of public libraries changing to meet digital world's requirements*, available at https://www.abc.net.au/news/2018-02-25/the-future-of-public-libraries/9481540

[416] Wyatt, McQuire and Butt (2015) *Public libraries in a digital culture*, p. 12

[417] Strover, Whitacre and Rhinesmith (2019) *The digital inclusion role of rural libraries: social inequalities through space and place*, available at https://journals.sagepub.com/doi/abs/10.1177/0163443719853504

[418] VAGO (2019) *Council libraries*, p. 26, available at https://www.audit.vic.gov.au/sites/default/files/2019-11/20191113-Council-Libraries-report.pdf

[419] Towong Shire Council (2016) *Submission: inquiry into the sustainability and operational challenges of Victoria's rural and regional councils*, pp. 3-7, available at https://www.parliament.vic.gov.au/images/stories/committees/enrc/Rural_and_Regional_Councils/48._2016.09.21_Towong_Shire_Council.pdf

[420] Wyatt, McQuire and Butt (2015) *Public libraries in a digital culture*, p. 13

[421] Infrastructure Victoria (2016) *Victoria's 30-year infrastructure strategy*, p. 58, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/03/IV_30_Year_Strategy_WEB_V2.pdf; The Guardian (2010) *We still need libraries in the digital age*, available at https://www.theguardian.com/commentisfree/2010/jul/13/internet-age-still-need-libraries

[422] Wyatt, McQuire and Butt (2015) *Public libraries in a digital culture*, p. 8

[423] Victoria's Public Libraries (2019) *Libraries change lives*, p. 9, available at https://www.monlib.vic.gov.au/files/assets/library/about-us/news/lcl/public-libraries-victoria-libraries-change-lives-budget-submission_digital.pdf

[424] SGS Economics and Planning (2011) *Dollars, sense and public libraries*, p. 102, available at https://www.slv.vic.gov.au/sites/default/files/Dollars-sense-public-libraries-technical-report.pdf

[425] Kinney (2010) *The internet, public libraries, and the digital divide*, Public Library Quarterly, 29:2, 104-161, p. 112

[426] Ibid, p. 114

[427] Becker, Crandall, Fisher, Kinney, Landry, and Rocha, *Opportunity for all: how the American public benefits from internet access at U.S. libraries*, p. 1, available at https://www.imls.gov/sites/default/files//publications/documents/opportunityforall_0.pdf

[428] Bertot, Jaeger, Langa and McClure (2006) *Public access computing and internet access in public libraries: the role of public libraries in e-government and emergency situations*, available at https://firstmonday.org/article/view/1392/1310

- Foster Library, the first public library in Victoria to offer 24/7 access to library resources, partly in response to low levels of internet access among its members (see Case study for further details).[429]
- To keep people connected while buildings are locked during COVID-19, libraries across the United States have turned their parking lots and sidewalks into drive-in or walk-up internet access sites, some giving users the opportunity to park and access Wi-Fi from their cars 24/7.[430,431]
- Mobile library services are offering access to free Wi-Fi and computers for visitor use on board.[432]

Case study: Foster Library, West Gippsland

Foster, in Victoria's Gippsland region has a population of fewer than 1200 people. The town's library serves as a gathering point for the community. Foster Library is the first in Victoria to open 24 hours a day, seven days a week. From August 2019, approved library members have been able to swipe to enter the library after hours, giving them secure access to books, workspaces and free Wi-Fi (those under the age of 18 cannot enter unless accompanied by an adult with a valid family pass).

West Gippsland Libraries first envisaged the model in response to community requests for increased opening hours. During community consultation, they determined that round-the-clock access would best suit community needs because:

- over half of the community work more than 35 hours a week
- a quarter of people do not have internet access at home.

The library continues to be staffed during its normal opening hours – and staffed hours have recently been extended. Security systems, alarms and video cameras have been installed for safety and security, to enable use when the library is not staffed. This is considered to work well in a relatively small, close-knit community, although it may be less suited to metropolitan areas.

Almost 50 people signed up for round-the-clock access within the first month, responding to the appeal of more convenient, after-hours access. The facility is attracting readers of all ages. As at the end of March 2020, Foster Library has seen a 14% increase in active memberships and a 54% increase in visits compared with the prior year. Following the success of the trial in Foster, West Gippsland Regional Library Corporation plans to roll out 24/7 access to more libraries across its network.

Which regions does this recommendation assist?

This recommendation is aimed at communities across regional Victoria, in particular smaller regional and remote communities.

A place-based approach will be required to determine the specific investments needed, tailored to existing library infrastructure and the needs of the community the expanded services are intended to support.

How does this align with the frameworks?

This recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcomes *Improve economic outcomes for individuals* and *Improve social inclusion outcomes*.

It responds to an identified need to enhance internet access for disadvantaged regional communities – people without internet at home are more likely to be on low incomes, unemployed, older, migrants or living in rural areas.[433]

The most effective way of ensuring access to Wi-Fi within disadvantaged communities would be to provide affordable or subsidised Wi-Fi within peoples' homes. The recent Victorian Government partnership with Telstra to provide dongle devices and SIM cards to school students who do not have internet access at home is an important support to ensure

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[429] L. Williams, CEO West Gippsland Libraries (2020) Email to Infrastructure Victoria; ABC (2019) *First library in Victoria to open 24 hours a day, seven days a week has town buzzing*; Foster Community Online (2019) *Foster Library now open all day and night*, available at https://foster.vic.au/foster-library-now-open-all-day-and-night/; West Gippsland Libraries (2019) *Applications now open for 24 hour access at Foster Library*, available at www.wgrlc.vic.gov.au/news/applications-now-open-for-24-hour-access-at-foster-library/; The Age (2019) *Novel idea sees little Gippsland library shelve its opening hours*, available at www.theage.com.au/national/victoria/novel-idea-sees-little-gippsland-library-shelve-its-opening-hours-20190827-p52l3r.html

[430] Click2Houston.com (2020) *Need WiFi? You can drive-up and connect at most Harris County Public Library branches*, available at https://www.click2houston.com/news/local/2020/04/27/need-wifi-you-can-drive-up-and-connect-at-most-harris-county-public-library-branches/

[431] Fast Company (2020) *Closed libraries are offering parking lot Wi-Fi, e-books and Zoom story time*, available at https://www.fastcompany.com/90490585/closed-libraries-are-offering-parking-lot-wi-fi-e-books-and-zoom-story-time

[432] For example, Geelong Regional Libraries: https://www.grlc.vic.gov.au/services/wifi

[433] Pope (2019) *The role in infrastructure in addressing regional disadvantage*, p. 19

access to education during COVID-19.[434] However, this initiative is time-limited and covers only school systems and education websites.

In the absence of a program specifically targeting digital access for low income and disadvantaged households, libraries provide a reasonable alternative. They also provide support for digital literacy skills development. Currently, libraries are the only service addressing digital disadvantage across the community in the longer term. The closure of libraries during the coronavirus crisis has served to cut disadvantaged Victorians off from the digital world.[435]

Libraries are not declining in importance; rather their role is changing in the digital age.[436] There is a role for government, whether state or local, in supporting libraries to adapt and provide the best possible service to meet the needs of their local community – in both traditional and digital formats, as appropriate.

The Victorian Government has committed $18 million over four years to the Living Libraries Infrastructure Program, which supports Victorian councils and regional library corporations to deliver new or renewed library infrastructure for their communities.[437] Funding was further extended in the Victorian Budget 2020-21.[438] This recommendation would complement existing government support by focussing exclusively on digital infrastructure and internal modifications to existing libraries to provide secure areas for out-of-hours use.

How does this recommendation work with others?

This recommendation complements the *Improve resilience of regional telecommunications infrastructure* and *Continue to address regional Victoria's digital connectivity gaps* recommendations in reducing the digital divide for regional businesses and communities.

It also aligns with the recommendation *Create climate-adapted facilities for rural communities* as, in some cases, libraries may also be designated as places of refuge during high heat days and bushfire smoke events.

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[434] Department of Education and Training, *Communicating with parents and carers*, available at https://www.education.vic.gov.au/school/teachers/teachingresources/Pages/communicatingwithparentsandcarers.aspx

[435] The Guardian (2020) *Library coronavirus lockdown cuts off disadvantaged Australians from digital world*, available at https://www.theguardian.com/world/2020/apr/22/library-coronavirus-lockdown-cuts-off-disadvantaged-australians-from-digital-world

[436] The Guardian (2010) *We still need libraries in the digital age*

[437] Victorian Government (2019) *More support for Victoria's growing suburbs*, available at https://www.premier.vic.gov.au/more-support-victorias-growing-suburbs/

[438] Department of Treasury and Finance (2020) *Victorian budget 2020/21: service delivery budget paper no. 3*, p. 95, available at https://s3-ap-southeast-2.amazonaws.com/budgetfiles202021.budget.vic.gov.au/2020-21+State+Budget+-+Service+Delivery.pdf

Recommendation 15: Use rural schools for children's specialist and allied telehealth services

Framework: Addressing regional disadvantage framework

Outcome: Improve education and health outcomes

What is the recommendation?

Retrofit or better use existing technology and school infrastructure to provide a range of paediatric and allied telehealth services from selected rural schools, beginning immediately with a trial in Wimmera Southern Mallee.

The recommendation aims to improve health and development outcomes for children and young people, by improving child and family access to specialist services from a school in the local area. Government schools already have access to technology and facilities for e-learning,[439] widely available across Victoria. This existing technology can be used to deliver paediatric and allied telehealth services, with a focus on prevention and early intervention for children and young people aged 0-18 years.

Consultation and service planning will determine the exact school locations and range of services appropriate for telehealth. However, once implemented a range of paediatric and allied telehealth services would be available, such as:

- a maternal and child health nurse supporting a family as they have a video appointment with a paediatrician or speech therapist in Melbourne
- an education support worker helping a secondary school student access a youth mental health service located in Ballarat via video.

Trialling this approach in the Wimmera Southern Mallee region can demonstrate benefits and identify improvements through an evaluation, before expanding the service to other regions. The selection of appropriate sites, service offerings, resourcing and infrastructure should be informed by local service planning and consultation, as well as identifying any regulatory, transport or other barriers to effective delivery of telehealth services from school sites.

Potential models include a central service hub in the region which brings together health, social services and care teams, supported by an additional service in one selected school in each of the region's local government areas. This model could provide the opportunity to streamline services currently being delivered from a wide range of locations and develop specialised expertise accessible across the region.

Why is this needed?

Children's health and development outcomes in regional and remote areas are consistently worse than in urban areas and the paediatric health system is struggling to meet their emerging needs.[440] For example:

- Children in regional and remote areas are more likely to be developmentally vulnerable than children in metropolitan areas (27% compared with 21%).
- More than one in six (16%) children and adolescents aged 4-17 in rural areas have mental health problems compared with approximately one in eight in metropolitan areas (13%).[441]

Research suggests paediatricians are seeing increasing numbers of children with developmental or behavioural concerns and that children from disadvantaged communities make up a large proportion of paediatric presentations.[442]

Victoria's regions face a critical shortage of skilled workers. Allied health workers in rural and remote areas service a population at least five times greater than their metropolitan counterparts,[443] while specialist services such as paediatric development may not be available in the local area. While visiting specialists may provide limited services to regions, the waiting list can be up to 18 months.[444]

[439] The Department of Education and Training make Webex, a video and teleconferencing solution, available to all Government schools (see https://www.education.vic.gov.au/school/teachers/teachingresources/Pages/coronavirus-home-learning.aspx).

[440] Royal Far West (2017) *The invisible children*, p. 2, available at https://www.royalfarwest.org.au/wp-content/uploads/2018/09/invisible-children-2018-web.pdf

[441] Royal Far West (2017) *Position paper: supporting childhood development in regional, rural and remote Australia*, p. 1, available at https://www.royalfarwest.org.au/wp-content/uploads/2018/09/RFW-Policy-Paper-Supporting-childhood-development-in-regional-and-rural-Australia-July-2017.pdf

[442] Hiscock et al. (2017) *Trends in paediatric practice in Australia: 2008 and 2013 national audits from the Australian Paediatric Research Network*, Journal of Paediatric Child Health, 53(1), pp. 55-61

[443] Royal Far West (2017) *Position paper: supporting childhood development in regional, rural and remote Australia*, p. 1

[444] Wimmera Southern Mallee Regional Partnership, the Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital (2020) *Submission to Infrastructure Priorities for the Regions*

Families in rural settings face further barriers of physical and social isolation, poor access to services, limited financial resources and greater mental strain, each contributing to additional disadvantage for their children.[445],[446]

Telehealth is an option to improve access to health services for remote communities but uptake of paediatric telehealth to date has been slow. For example, between January 2017 and August 2019, only 77 out of 2315 Wimmera Southern Mallee specialist outpatient appointments at the Royal Children's Hospital were delivered by telehealth.[447]

Despite evidence showing that health outcomes for rural children are worse than for urban children and demonstrated demand for paediatric health services, current telehealth services are under-utilised indicating a system failure that needs to be rectified to obtain the outcomes required. While there has been an increase in uptake of telehealth during the COVID-19 pandemic,[448] for many families and children there will be an ongoing need both for access to telehealth infrastructure and for support to facilitate connections with skilled health professionals.

What will be the impact?

Children and families in need of paediatric and allied health services could use school technology facilities to attend telehealth appointments closer to home with specialists located in Melbourne or regional cities. By increasing the uptake of technology, schools can be a gateway for children and families to access multiple health services and supports. This would reduce their need to travel long distances to access services and bring a skilled virtual workforce to the region.

State and Australian governments fund universal and secondary health and education services, and local governments are involved in planning and delivering child and family services. Together these services can prevent, identify and intervene to deliver better outcomes but at present services vary widely in their quality and effectiveness and are often poorly coordinated. Further, families with the greatest disadvantage and the most to gain can be less likely or able to engage with health and education services.[449],[450]

Ill health and poor development in early childhood have lifelong implications and the cost of late intervention is estimated at $15.2 billion per year through high intensity and crisis services that may have been preventable.[451]

Which regions does this recommendation assist?

The recommendation aims to benefit rural communities across Victoria that meet the following criteria:

- population density is low, and absolute numbers of children are small
- the level of disadvantage is high
- the need for early intervention and support by a skilled workforce is imperative
- there are skilled and trusted local personnel such as nurse practitioners to facilitate the take up of telehealth appointments
- there are significant challenges in attracting and retaining a full range of permanent specialist health and allied health workers.

An initial trial is recommended in Wimmera Southern Mallee as, in addition to meeting these criteria, the region demonstrates strong relationships between key stakeholders and a willingness to trial a new approach.[452]

Families travel long distances from Wimmera Southern Mallee to access health care, due to local difficulties in accessing timely specialist support for children with behavioural and developmental issues. The trip takes between three and five hours one way, often requiring an overnight stay at significant social, educational and financial cost to families. Families also experience difficulties receiving the right information, education, health care support and expertise once children start school.[453]

[445] Breen et al. (2018) *Significant reductions in tertiary hospital encounters and less travel for families after implementation of Paediatric Care Coordination in Australia*, BMC Health Serv Research, 18(1), 751

[446] Bristow et al. (2018) *The rural mother's experience of caring for a child with a chronic health condition: an integrative review*, Journal of Clinical Nursing, 27(13-14), pp. 2558-2568

[447] Unpublished data collected in the Wimmera Southern Mallee Early Years Project, *BY FIVE*

[448] Department of Health (2020) *Australians embrace telehealth to save lives during COVID-19*, available at https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/australians-embrace-telehealth-to-save-lives-during-covid-19

[449] Woolfenden et al. (2016) *Prevalence and factors associated with parental concerns about development detected by the Parents' Evaluation of Developmental Status (PEDS) at 6-month, 12-month and 18-month well-child checks in a birth cohort*, pp. 1-2, available at https://bmjopen.bmj.com/content/6/9/e012144

[450] Woolfenden et al. (2015) *Equitable access to developmental surveillance and early intervention – understanding the barriers for children from culturally and linguistically diverse (CALD) backgrounds*, Health Expectations, 18(6), pp. 3286-3301.

[451] Teager, Fox and Stafford (2019) *How Australia can invest in children and return more: a new look at the $15b cost of late action*, p. 4, available at https://colab.telethonkids.org.au/siteassets/media-docs---colab/coli/how-australia-can-invest-in-children-and-return-more----final-bn-not-embargoed.pdf

[452] Wimmera Southern Mallee Regional Partnership, the Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital (2020) *Submission to Infrastructure Priorities for the Regions*

[453] Unpublished data collected in the Wimmera Southern Mallee Early Years Project, *BY FIVE*

The *Australian early development census* publishes the number and percentage of children with special needs status and the number and percentage of children identified by teachers as requiring further assessment. Across Australia, the percentage of children requiring further assessment rose from 10.5% in 2012 to 13.3% in 2018. In three of Wimmera Southern Mallee's five local government areas, the percentage of children requiring further assessment was higher than the national average.[454]

Table 1: Children identified as needing further assessment

Local Government Area	Children identified as needing further assessment 2018 % and (n)
Hindmarsh	15.4% (10)
Horsham	12.4% (31)
Northern Grampians	11.9% (13)
Yarriambiack	15.5% (8)
West Wimmera	19% (8)

However, this recommendation is not limited to the Wimmera Southern Mallee trial as other Victorian regions will meet these same criteria. The model should therefore be scaled up across the regions over time, incorporating learnings from the initial trial.

How does this align with the frameworks?

The recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcome *Improve education and health outcomes.*

This recommendation proposes to better use facilities (schools) that families can easily connect to, and have a relationship with, to deliver the specialist and allied health care needed to improve life outcomes. Better use of school facilities includes leveraging the existing technology infrastructure but also providing spaces for health and support workers to access telehealth. This is already in place in some schools where there are general practitioners or school nurses.[455]

Telehealth is a potential solution to the critical shortage of skilled workforce facing regions across Victoria. This solution should reduce barriers to accessing telehealth services and improve access to the skilled health and allied health workforce that children and their families need to improve life outcomes. There is no reason to believe that it will become any easier to retain a full health and allied health workforce in regional areas; it will only become more difficult over time.

Trialling in Wimmera Southern Mallee would be a sensible region to start. The Regional Partnership has identified the need for improved access to services and early intervention for children as a key priority,[456] and there is strong support and engagement from key regional stakeholders.[457]

Infrastructure investments that are supported by communities and which target key life stages – including the early years – are likely to have more significant impacts in reducing disadvantage.[458]

How does this recommendation work with others?

This recommendation works with the recommendations to *Fund more Youth Foyers in regional Victoria* and *Build regional residential alcohol and drug rehabilitation facilities* in improving health and education outcomes for disadvantaged and vulnerable cohorts in regional Victoria.

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[454] *Australian early development census*, available at https://www.aedc.gov.au/

[455] See Department of Education and Training, *Doctors in secondary schools*, available at https://www.education.vic.gov.au/about/programs/Pages/doctors.aspx and Department of Education and Training, *Victorian School Nursing Program*, available at https://www2.education.vic.gov.au/pal/victorian-school-nursing-program/advice

[456] Wimmera Southern Mallee Regional Partnership (2019) *Wimmera Southern Mallee outcomes roadmap*, available at https://www.rdv.vic.gov.au/__data/assets/pdf_file/0009/1733238/WSM-Roadmap_-May-19.pdf

[457] Wimmera Southern Mallee Regional Partnership, the Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital (2020) *Submission to Infrastructure Priorities for the Regions*

[458] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 5, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

It is also in line with recommendations emphasising better use of community infrastructure such as *Deliver multipurpose shared social service facilities in the regions*, *Fund regional libraries to provide better internet access* and *Support regional councils to update, repurpose or retire outdated community infrastructure*.

Further, this recommendation aligns with the *Continue to address regional Victoria's digital connectivity gaps*, *Improve resilience of regional telecommunications infrastructure* and *Fund regional libraries to provide better internet access* recommendations in seeking to better connect regional Victorians using digital technologies, helping to reduce the digital divide.

Recommendation 16: Fund more Youth Foyers in regional Victoria

Framework: Addressing regional disadvantage framework

Outcome: Improve education and health outcomes

What is the recommendation?

Youth Foyers provide affordable medium-term accommodation and wrap-around support services to vulnerable young people while they undertake education and training, in order to improve their education, employment and housing outcomes. Foyers are usually co-located with an educational institution, like a TAFE campus, acting as a nexus between homelessness and independent or semi-independent living.[459]

This recommendation seeks to expand the Youth Foyer service model in regional Victoria, to support vulnerable Victorians in navigating the important transition from school into work and help break cycles of disadvantage.

The recommendation identifies three immediate priorities for funding 40 bed facilities in Bendigo, Geelong and Wodonga by 2026. These locations have been identified based on relatively high (and rising) levels of socio-economic disadvantage, a high proportion of young people disengaged from school, relatively high rates of youth unemployment, existing TAFE infrastructure and good connections to transport and services.

Priority should be given to building the accommodation on TAFE land, leveraging existing TAFE infrastructure and supports, and enabling the building to be leased below market rates of rent (lowering Foyer establishment costs).

Why is this needed?

Many young people currently experience disadvantage in regional Victoria, and lack access to economic, human or social capital resources.[460] A study of outcomes for vulnerable young people transitioning into adulthood in New South Wales demonstrated that they are 4.3 times more likely to have alcohol and other drug related hospital admissions, 3.6 times more likely to use social housing services, and are 3.4 times more likely to interact with the justice system, compared to other young people.[461]

Successful transition from school into work is critically important for young people's chances in later life.[462] As a result, interventions that target this key life stage can have a lifelong impact in alleviating disadvantage.[463]

When compared with Melbourne, many regional areas demonstrate higher proportions of young people not finishing school and/or not engaged in work or study.[464] The labour market in regional Victoria has become particularly challenging for young people without training or qualifications, as:[465]

- entry level jobs that have traditionally employed young people have declined
- technological change has negatively affected employment opportunities and such change is expected to continue (e.g. automated processes on farms)
- there is downward pressure for tertiary students occupying entry level jobs.

Increasing labour market insecurity directly impacts these young people more acutely than the broader population.[466] This is despite growth in job vacancies in regional Australia being double that of capital cities,[467] indicating that there is demand for skills but an undersupply of workers with the skills required.

[459] Coddou, Borlagdan and Mallett (2019) *Starting a future that means something to you: outcomes from a longitudinal study of Education First Youth Foyers*, p. 9, available at http://library.bsl.org.au/jspui/bitstream/1/11369/1/Coddou_etal_Starting_a_future_Education_First_Youth_Foyers_outcomes_2019.pdf

[460] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, pp. 6-7, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

[461] Stronger Communities Investment Unit (2018) *Forecasting future outcomes – 2018 insights report*, p. 91, available at https://www.theirfuturesmatter.nsw.gov.au/__data/assets/pdf_file/0003/673284/Forecasting-Future-Outcomes-Stronger-Communities-Investment-Unit-2018-Insights-Report.pdf

[462] For example, Cuervo and Wyn (2011) *Rethinking youth transitions in Australia: a historical and multidimensional approach*, available at https://education.unimelb.edu.au/__data/assets/pdf_file/0003/2690301/2010-Rethinking-youth-transitions-in-Australia-RR33.pdf and Furlong, Cartmel, Biggart, Sweeting and West (2003) *Youth transitions: patterns of vulnerability and processes of social inclusion*, p. 1, available at https://pdfs.semanticscholar.org/dd45/a66a543a000ee0a1eab415ef49f61d26fda2.pdf

[463] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 32

[464] EY (2019) *Regional disadvantage fact sheets*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[465] Brotherhood of St Laurence (2020) *Submission to Infrastructure Priorities for the Regions*

[466] The Australia Institute, Centre for Future Work (2018) *The dimensions of insecure work: a factbook*, p. 19, available at https://www.tai.org.au/sites/default/files/Insecure_Work_Factbook.pdf

[467] Commonwealth of Australia (2019) *The workforce challenges of rural and regional Australia*, available at https://www.asbfeo.gov.au/news/news-articles/workforce-challenges-rural-and-regional-australia

Non-participation in the labour force can lead to poor access to economic resources, which can be a contributing factor to homelessness. On any given night, 6370 Victorians aged 12 to 24 are homeless.[468] There is a need to better support vulnerable young people to navigate crucial life transitions and improve outcomes in later life.

What will be the impact?

Youth Foyers enable young people transitioning into adulthood to develop and achieve education and employment pathways, exiting in a sustainable way from welfare and service dependence. While there are programs that seek to support young people experiencing disadvantage with their education or accommodation, there are almost no fully integrated service models focussed on education and employment outcomes.

Foyers aim to:

- reduce the number of young people cycling through the housing and homelessness system
- increase the number of young people completing education qualifications.
- increase the number of young people productively employed.

The key to the model lies in the provision of stable accommodation for up to two years in a supported living environment. For young people who are unable to rely on family support in this critical developmental stage, Foyers provide the time, personalised attention, mentoring, coaching and access to opportunities needed to lead fulfilling, independent and productive lives.

A Foyer is more than a supported accommodation facility, or welfare program. Foyers seek to tap into the goals and ambitions of young people and nurture their talents while building skills for life. The model is based on the proposition that the most constructive thing that can be done for young people is to ensure they become educated, employable and empowered so they can build better lives for themselves and achieve independence.[469]

A longitudinal study into outcomes for Foyer participants found a sustained impact on participants' education, employment, housing and health and wellbeing, including:[470]

- **Gains in qualifications and continued participation in education and training after exit:** the percentage who competed at least Year 12 or equivalent increased from 42% at entry to 67% at exit and 75% a year later. In total, around 70% of participants had either achieved a higher qualification or were still enrolled a year after exit.
- **Improved independence and housing conditions:** the percentage living in their own place (renting or owning) increased from 7% at entry to 43% at exit, and to 51% a year later. Meanwhile, the percentage sleeping rough or living in crisis accommodation, treatment centres or detention declined from 32% at entry to 3% at exit, and to 2% a year later.
- **Improved confidence and employability skills, with some gains in employment:** in the year after exit, about 85% of participants worked or studied. The percentage of participants employed, including in part-time or casual work, increased from 19% at entry to 31% at exit and 36% a year later. At the time of the 12-month post exit survey 40% of respondents were neither working nor studying. Of these, 80% were dissatisfied with their current circumstance and 75% had registered with job agencies.

Other Foyers in Australia have reported similar positive outcomes, for example 90% of Foyer residents in Perth went on to secure long-term accommodation. Before entering the Foyer, 60% were in emergency accommodation and a further 15% were sleeping rough or in non-conventional accommodation.[471]

Foyers have a wider economic impact as well. They demonstrate some cost efficiencies by centralising social workers and services as well as avoiding future costs to government in employment welfare, housing, health and policing.[472] One evaluation estimated a benefit-to-cost ratio over a 20-year period of 1.6, indicating that benefits far outweighed costs. All Foyer models demonstrated a higher benefit-to-cost ratio than transitional housing management services, with 40 bed Youth Foyers demonstrating lower service delivery costs when compared with other models.[473]

[468] Australian Bureau of Statistics (2016) *Census of population and housing: estimating homelessness*, available at https://www.abs.gov.au/ausstats/abs@.nsf/exnote/2049.0

[469] See Foyers Foundation, *How Foyers work*, available at https://foyer.org.au/foyers-in-australia/

[470] Coddou, Borlagdan and Mallett (2019) *Starting a future that means something to you: outcomes from a longitudinal study of Education First Youth Foyers*, pp. 6, 23

[471] See Foyer Oxford, *Results*, available at http://www.foyeroxford.org.au/about/results

[472] Steen and Mackenzie (2013) *Financial analysis of foyer and foyer-like youth housing models*, pp. 47-49, available at https://researchbank.swinburne.edu.au/file/e40b429d-b5d0-477d-9eaf-2653a41f5ee8/1/PDF%20%28Published%20version%29.pdf

[473] KPMG (2019) *Education First Youth Foyers economic evaluation*, pp. 2-3, 21

Which regions does this recommendation assist?

While the need to support vulnerable young people is statewide, there is a particular need in regional Victoria because of:

• a relatively high proportion of young people not engaged in work or education
• a relatively high proportion of young people not completing Year 12
• limited access to public transport to connect young people to tertiary education and/or employment.

This recommendation identifies three locations in regional Victoria to prioritise for Foyer locations in the first instance, namely Bendigo (Loddon Campaspe), Geelong (Barwon) and Wodonga (Ovens Murray). These locations have been selected on the basis of:

• relatively high (and rising) levels of socio-economic disadvantage
• a high proportion of young people disengaged from school and not finishing Year 12 (for example, over 30% in selected suburbs in Geelong and Bendigo compared with a Victorian average of 17%)[474]
• relatively high rates of youth unemployment when compared with the wider population
• existing public transport links, combined with easy access to commercial centres, employment, health and community services
• existing TAFE infrastructure and other tertiary education facilities.

The facilities will be used to house disadvantaged young people as they undergo tertiary education at nearby TAFEs and regional university campuses. Suitable locations exist on and around these campuses, which are located near community services, shops and public transport.

Table 1: Proposed Foyer Locations[475]

Regional City	Location
Bendigo	Bendigo Kangan Institute of TAFE
Wodonga	Goulburn Ovens Institute of TAFE — Wodonga Campus
Geelong	Gordon Institute of TAFE

Following expansion into the three priority locations, consideration should be given to expanding Youth Foyers to other regions where this service does not currently exist – namely Gippsland, Mallee and Wimmera Southern Mallee.

How does this align with the frameworks?

The recommendation aligns with the *Addressing regional disadvantage framework*, and responds to the outcome *Improve education and health outcomes.*

Infrastructure investments which target key life stages, including the transition from school to work, are likely to have bigger positive impacts.[476] Interventions which help break the cycle of deep and persistent disadvantage deliver enduring benefits for the individual, local community and state.[477]

The Youth Foyer model has demonstrated success in intervening in the transition from school to work for vulnerable young people, helping to break the cycle of disadvantage for this cohort. In providing wrap-around support services to Foyer participants, the model demonstrates the flexibility needed to respond to individual and complex needs.

The recommendation aligns with the values in Victoria's existing youth reforms, with the Home Stretch[478] and Raising Expectations[479] programs supporting education opportunities for vulnerable young Victorians.

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[474] EY (2019) *Regional disadvantage fact sheets*

[475] Brotherhood of St Laurence (2020) *Submission to Infrastructure Priorities for the Regions*

[476] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 32

[477] Productivity Commission (2013) *Deep and persistent disadvantage in Australia*, p. 16, available at https://www.pc.gov.au/research/supporting/deep-persistent-disadvantage/deep-persistent-disadvantage.pdf

[478] Department of Health and Human Services, *Home stretch*, available at https://providers.dhhs.vic.gov.au/home-stretch

[479] Centre for Excellence in Child and Family Welfare, *Raising expectations – getting more care leavers to TAFE and uni*, available at https://www.cfecfw.asn.au/raisingexpectations/

How does this recommendation work with others?

This recommendation works with the recommendations to *Build regional residential alcohol and drug rehabilitation facilities* and *Use rural schools for children's specialist and allied telehealth services* in improving health and education outcomes for disadvantaged and vulnerable cohorts in regional Victoria.

Recommendation 17: Build regional residential alcohol and drug rehabilitation facilities

Framework: Addressing regional disadvantage framework

Outcome: Improve education and health outcomes

What is the recommendation?

Within five years, residential rehabilitation and detoxification facilities should be built in regions where they are not currently available or planned, to provide equitable access to alcohol and other drug treatment facilities – including Great South Coast, Mallee, Wimmera Southern Mallee and Goulburn. As a priority, facilities are recommended in the Great South Coast and Mallee regions due to their remote distance from existing treatment facilities.

To reflect a standard of one for every 10,000 residents,[480] the Victorian Government should deliver a minimum of: 11 beds for Great South Coast, 10 for Mallee, five for Wimmera Southern Mallee and 17 for Goulburn, based on 2018 population figures.[481] Service planning should determine the optimum size of each facility, noting that larger facilities may have other efficiency and continuity benefits. New facilities should be designed and delivered in cooperation with people with lived experience of addiction and mental illness, in keeping with the recommendations of the Royal Commission into Victoria's Mental Health System.[482]

Residential rehabilitation and detoxification facilities provide 24-hour staffing and treatment programs that offer intensive, structured interventions after withdrawal from alcohol or drug dependence. Residential rehabilitation is a long-term treatment, usually eight to 12 weeks, and programs can go for up to 12 months. Most programs use a mixture of group work and include relapse prevention, living skills training, case management and counselling.

Why is this needed?

Drug abuse and alcohol addiction continues to affect the health, productivity and wellbeing of individuals and their communities across Victoria. Regional and rural areas face particular challenges, as people in the regions are more likely to use illicit drugs[483] or consume alcohol at dangerous quantities[484] than those in major cities.

Regional Victoria has had a higher rate of unintentional drug-induced deaths than Melbourne since 2008, and the gap is widening. The rate in regional Victoria has increased each year since 2012, even as Melbourne's has declined. In 2017, the rate of unintentional drug-induced deaths was 9.6 per 100,000 population in Victoria's regions compared with 5.3 in Melbourne.[485]

Figure 1 – Unintentional drug-induced deaths by regionality in Victoria, 2001-2017, as a rate per 100,000 population[486]
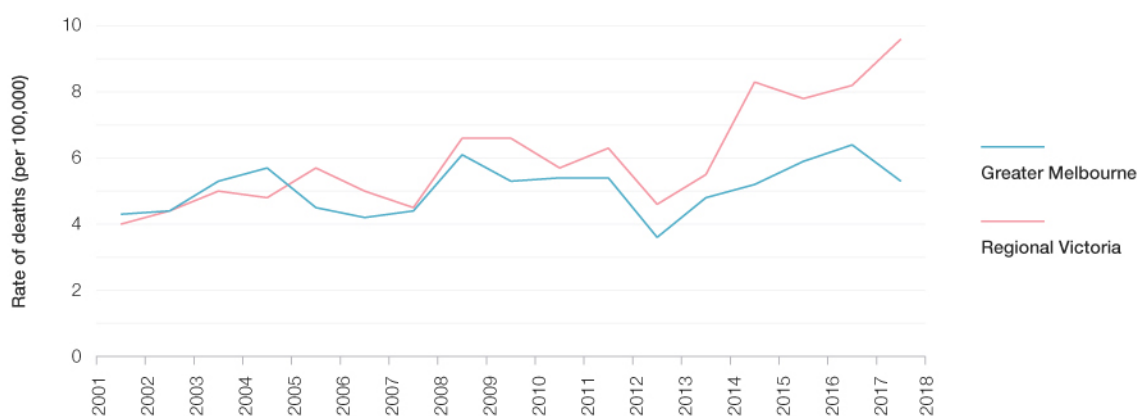
[480] Victorian Alcohol and Drug Association (VAADA) (2017) *Submission Parliamentary inquiry into drug law reform*, p. 8, available at www.parliament.vic.gov.au/images/stories/committees/lrrcsc/Drugs_/Submissions/163_2017.03.17_-_VAADA_-_submission.pdf

[481] Department of Environment, Land, Water and Planning (2019) *Victoria in future 2019*, available at https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future

[482] Royal Commission into Victoria's Mental Health System (2019) *Interim report summary*, p. 17, available at https://rcvmhs.vic.gov.au/interim-report

[483] National Rural Health Service (2015) *Illicit drug abuse in rural Australia*, p. 1, available at https://www.ruralhealth.org.au/sites/default/files/publications/nrha-factsheet-illicit-drugs-0615.pdf

[484] Australian Institute of Health and Welfare (2019) *Alcohol and other drug use in regional and remote Australia: consumption, harms and access to treatment 2016–17*, p. v, available at https://www.aihw.gov.au/getmedia/78ea0b3d-4478-4a1f-a02a-3e3b5175e5d8/aihw-hse-212.pdf.aspx

[485] Penington Institute (2019) *Australia's annual overdose report 2019*, p. 69, available at http://www.ourphn.org.au/wp-content/uploads/20190829-Australias-Annual-Overdose-Report-2019.pdf

[486] Ibid, p. 104

Ambulance callout data confirm that drug and alcohol abuse in regional Victoria is growing at a faster rate than in Melbourne. Between 2015-16 and 2018-19, alcohol ambulance attendances increased by 42% in regional Victoria compared with 28% in Melbourne. Attendances for illicit drugs increased by 37% over the same period, compared with 25% in Melbourne.[487]

Drug and alcohol-related ambulance callout rates per 100,000 population demonstrate that the issue is spread throughout regional Victoria – including in those regions which do not currently have residential treatment facilities locally available. The Wimmera Southern Mallee and Mallee regions have some of the highest rates of ambulance callouts for alcohol abuse in the state (behind Inner Melbourne and Barwon). The Horsham local government area (Wimmera Southern Mallee) has the highest alcohol callout rate of all regional Victoria's LGAs.[488]

Wait times for certain types of treatment of more than six months are common in rural and regional areas and accessing services can be complex. Travelling to Melbourne is the only option for many,[489] but the distances and costs involved can be a barrier to seeking treatment, including because many areas have no public transport.[490]

While detoxification at home is an effective option for some, for others their home life may not be stable enough to support this.[491] Private facilities have filled some of the gap, but these can be prohibitively expensive – up to $30,000 for a single stay.[492,493] The lack of access to treatment, particularly for those with severe substance dependence, means more people end up in emergency departments, hospitalised or in prison.[494]

The Victorian Alcohol and Drug Association (VAADA) has recommended that the capacity of the Victorian funded residential rehabilitation system should be increased to 1:10,000 head of population, which is approximately 300 extra beds to service an additional 1200 service users annually. This would result in Victoria having the third lowest number of residential rehabilitation beds per capita but well within the range of other jurisdictions in Australia.[495]

Table 1 illustrates the estimated number of residential rehabilitation beds required in each region to satisfy the 1:10,000 ratio, based on 2018 population figures, as well as the number of residential rehabilitation beds per region (actual or committed). Using VAADA's guidance, those regions which do not have residential rehabilitation services locally available (Great South Coast, Mallee and Wimmera Southern Mallee) have an estimated need for 43 residential rehabilitation beds which is not being met.

What will be the impact?

New South Wales research has confirmed the importance of residential rehabilitation in treating high severity patients[496] – particularly in addressing dependency on methamphetamines,[497] for which there is currently no pharmacological treatment.[498] Rates of abstinence among methamphetamine users were higher for research participants whose primary treatment was long-term residential rehabilitation (56%) compared to those using outpatient services (33%) or acute withdrawal (30%).[499]

Delaying a drug user's access to alcohol and other drug treatment services significantly undermines their chance of achieving a successful outcome from treatment. The small window of opportunity when a drug user is seeking support and treatment must be capitalised upon. Long waiting lists to access services are a major problem.[500]

[487] Infrastructure Victoria analysis of Turning Point Health, *AODstats*, available at https://aodstats.org.au/index.php?page=34

[488] Ibid

[489] VAADA (2017) *Submission Parliamentary inquiry into drug law reform*, p. 7

[490] NSW Legislative Council Portfolio Committee No. 2: Health and Community Services (2018) *Provision of drug rehabilitation services in regional, rural and remote New South Wales*, pp. 26, 32, available at https://www.parliament.nsw.gov.au/lcdocs/inquiries/2466/Final%20report%20-%20Drug%20rehabilitation%20services%20-%206%20August%202018.pdf

[491] Ibid, p. 34

[492] Parliamentary Joint Committee on Law Enforcement (2018) *Inquiry into crystal methamphetamine (ice) final report*, p. 34, available at https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Law_Enforcement/Crystalmethamphetamine45/Final_Report

[493] ABC (2016) *Four Corners: Rehab Inc*, available at https://www.abc.net.au/4corners/rehab-inc.-promo/7827128

[494] Network of Alcohol and Other Drugs Agencies (NADA) (2019) *Submission to the NSW Health Minister and NSW Ministry of Health for the provision of additional residential rehabilitation and withdrawal management beds in NSW*, p. 3, available at https://www.nada.org.au/wp-content/uploads/2019/03/NADA-Submission_-NSW-AOD-Beds_120319.pdf

[495] VAADA (2017) *Submission Parliamentary inquiry into drug law reform*, p. 8

[496] NADA (2019) *Submission to the NSW Health Minister and NSW Ministry of Health for the provision of additional residential rehabilitation and withdrawal management beds in NSW*, p. 4

[497] Turning Point (2014) *A study of patient pathways in alcohol and other drug treatment*, p. 12, available at https://www.health.gov.au/sites/default/files/study-of-patient-pathways-in-alcohol-and-other-drug-treatment.pdf

[498] Office of the Auditor General of Western Australia (2018) *Treatment services for people with methamphetamine dependence*, p. 6, available at https://audit.wa.gov.au/wp-content/uploads/2018/12/report2018_09-Meth-F-final.pdf

[499] Turning Point (2014) *A study of patient pathways in alcohol and other drug treatment*, p. 12

[500] Parliamentary Joint Committee on Law Enforcement (2018) *Inquiry into crystal methamphetamine (ice) final report*, p. 23

Table 1: Minimum residential rehabilitation beds required[501]

Region	Population (2018)	1 bed per 10,000	Number of beds (actual or committed)
Barwon	308,953	31	30
Central Highlands	199,563	20	20
Gippsland	282,966	29	50
Goulburn	165,228	17	
Great South Coast	103,689	11	
Loddon Campaspe	243,261	25	26
Mallee	93,005	10	
Ovens Murray	128,793	13	30
Wimmera Southern Mallee	47,471	5	

Which regions does this recommendation assist?

The Victorian Government has set out plans to increase the number of residential rehabilitation beds,[502] but these do not include provision for the Goulburn, Great South Coast, Mallee and Wimmera Southern Mallee regions. The recommendation is intended to benefit those regions, with priority for facilities in Mallee and Great South Coast due to their distance from other centres.

How does this align with the frameworks?

The recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcome *Improve education and health outcomes*.

The lack of residential rehabilitation services available in some parts of regional Victoria is leading to inequitable access to services which can have a significant positive impact for families and communities. While alternative treatments, such as detoxification at home, are available, these are not appropriate in all circumstances and may not be as effective.[503] A lack of access to effective treatment can contribute to entrenched social disadvantage.

Stakeholders in the two priority regions, Mallee and Great South Coast, have expressed support for local residential rehabilitation facilities.[504,505] The recommendation aligns with the Victorian Government's *Drug rehabilitation plan*[506] and continues existing plans to increase the numbers of residential rehabilitation beds in other parts of Victoria.[507]

How does this recommendation work with others?

This recommendation works with the recommendations to *Fund more Youth Foyers in regional Victoria* and *Use rural schools for children's specialist and allied telehealth services* in improving health and education outcomes for disadvantaged and vulnerable cohorts in regional Victoria.

[501] Department of Environment, Land, Water and Planning (2019) *Victoria in future 2019*; Parliament of Victoria, *Public Accounts and Estimates Committee inquiry into the 2019-20 budget estimates: questions taken on notice and further information agreed to be supplied at the hearings – mental health*, p. 7, available at www.parliament.vic.gov.au/images/stories/committees/paec/2019-20_Budget_Estimates/Quons/2019-07-25_Mental_Health_written.pdf

[502] Victorian Health and Human Services Building Authority (2019) *Site announced for Gippsland's youth residential rehabilitation facility*, available at https://www.vhhsba.vic.gov.au/news/site-announced-gippslands-youth-residential-rehabilitation-facility

[503] Turning Point (2014) *A study of patient pathways in alcohol and other drug treatment*, p. 12

[504] Infrastructure Victoria (2019) *Mallee and Great South Coast workshops*, Regional Infrastructure Needs consultation

[505] Catholic Social Services Victoria (2020) *Social service and infrastructure needs in Gippsland: submission to Infrastructure Priorities for the Regions*

[506] Department of Health and Human Services (2017) *Drug rehabilitation plan*, available at https://www2.health.vic.gov.au/alcohol-and-drugs/aod-treatment-services/drug-rehabilitation-plan

[507] Victorian Health and Human Services Building Authority (2019) *Site announced for Gippsland's youth residential rehabilitation facility*

Recommendation 18: Deliver multipurpose shared social service facilities in the regions

Framework: Addressing regional disadvantage framework

Outcome: Improve social capital outcomes; Improve education and health outcomes

What is the recommendation?

Immediately undertake collaborative inter-agency planning for regional social services to identify opportunities for multipurpose shared facilities, then deliver them in partnership with local governments and community organisations.

This will require a local area approach to social infrastructure,[508] prioritising investments which consider shared use (co-located or integrated facilities[509]) across government departments, including those involved in the delivery of education, health, justice, social services and social inclusion programs.

The first step will be for Victorian Government agencies to undertake shared area service planning to identify shared facility opportunities, whether by building new or retrofitting and upgrading existing facilities. Shared facilities will not work in all circumstances and must incorporate an appropriate mix of services. Shared service planning can highlight the facilities and services suitable for shared use, to determine the best location and collaborate in infrastructure delivery.

This will need to be supported by changes to cross-government systems and governance, to ensure effective service delivery across multiple government departments and agencies with different service and infrastructure needs. It will require the Victorian Government to facilitate shared decision-making across its agencies.[510]

The Victorian Government's *Framework for place-based approaches*[511] provides a starting point for departments and agencies to proceed. The Queensland Government has recently developed a new approach to whole of government social infrastructure planning which could be applied in the Victorian context (see Case study[512]).

Why is this needed?

Several factors across regional Victoria make delivery of and access to services particularly challenging. These include:

*   **Thin markets** – the low population density of much of regional Victoria means that government remains the key service provider as there is insufficient scale for private sector delivery (such as childcare, recreation, education and health services).[513]
*   **High demand for services spread across a wide geographical area** – the high level of services needed to meet the complex needs of regional Victorians in disadvantaged communities.[514]
*   **Dispersed populations** – disadvantage is widely dispersed across regional Victoria's cities and towns, making access to high quality services challenging.[515]
*   **Poor public transport access** – for many disadvantaged regional Victorians access to services is constrained by limited public transport.[516,517]

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[508] Social infrastructure describes facilities for the delivery of social services by governments and other service providers (see Infrastructure Australia (2019) *Australian Infrastructure Audit*, p. 388, available at https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Australian%20Infrastructure%20Audit%202019%20-%206.%20Social%20Infrastructure.pdf)

[509] Integration means organising or delivering two or more service components in a way that leads to one or more of the following outcomes: a more joined up experience for clients, improvement in service effectiveness, or increased efficiency of service operation. Co-location is the physical placement of one system element in proximity with at least one other, including within the same building, campus or precinct (see Urbis (2014) *Co-location and other integration initiatives strategic evaluation*, available at https://www.education.vic.gov.au/Documents/about/research/colocation/Co-location%20and%20Integration%20Initiatives%20Strategic%20Evaluation.pdf)

[510] Victorian Government (2020) *A framework for place-based approaches – the start of a conversation about working differently for better outcomes*, p. 2, available at https://content.vic.gov.au/sites/default/files/2020-03/Working-%20together-in%20place-Policy%20Framework.pdf

[511] Ibid

[512] Queensland Government (2019) *Strategy for social infrastructure*, available at https://www.statedevelopment.qld.gov.au/resources/strategy/strategy-for-social-infrastructure.pdf

[513] Parliament of Victoria (2018) *Inquiry into the sustainability and operational challenges of Victoria's rural and regional councils – final report*, p. 43, available at https://www.parliament.vic.gov.au/images/stories/committees/enrc/Rural_and_Regional_Councils/ENRRDC_58-06_Text_WEB.pdf

[514] KPMG (2017) *Rural and regional councils sustainability reform program stage 1 project report*, p. 8, available at https://www.localgovernment.vic.gov.au/__data/assets/pdf_file/0025/214675/Rural-and-Regional-Councils-Sustainability-Reform-Program_Phase-1-Final-Report.pdf

[515] Aither (2019) *Inter-regional assessment – an analysis of regional Victoria's strengths and challenges*, pp. 38-39, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Aither-Inter-regional-assessment-March-2019.pdf

[516] Victorian Council of Social Service (2018) *The voices of regional Victoria*, p. 3, available at https://vcoss.org.au/wp-content/uploads/2018/11/VCOSS_The-Voices-of-Regional-Victoria.pdf

[517] Infrastructure Victoria (2019) *Growing Victoria's potential*, p. 19, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Growing-Victorias-Potential-April-2019.pdf

- **Workforces shortages** – there is a significant and ongoing shortage of skilled workers to deliver high quality services to meet the needs of regional Victorians.[518]

These factors mean regional Victoria can particularly benefit from multipurpose shared facilities, which consolidate various services into a single facility.

However, multiple barriers currently prevent the planning and delivery of shared service facilities in regional Victoria which demonstrate why reform is necessary. These include a lack of clear authorising environment to enable integration across different government departments, limited alignment between budget processes across different levels of government, the influence of the political cycle on project timelines and decision-making[519] and a lack of integrated planning processes to align regional transport, social service delivery and infrastructure planning.

Case study: Queensland social infrastructure strategy

The Queensland Government has a new approach to whole of government social infrastructure planning which could be applied in the Victorian context. The strategy assumes that human services planning has already occurred before the consideration of place-based infrastructure response are developed.

The strategy provides a framework for the planning, design, location and use of Queensland's social infrastructure. It aims to achieve more integrated, accessible, well-located, multi-functional and cost-effective social infrastructure, which requires departments and agencies to:

- make better use of existing infrastructure to deliver broader services and community benefits
- use every new infrastructure investment as an opportunity to deliver more integrated outcomes for inclusive communities.

Effective cross-government systems and governance are essential to support the strategy and ensure broader outcomes can be achieved. The key components of the strategy include:

Enhanced cross-agency collaboration

A place-specific approach to social infrastructure in identified priority areas. These are areas where multiple agencies have identified infrastructure needs that may realise improved social infrastructure outcomes through strategies such as co-location, sharing facilities, or coordinating delivery.

Flexible land management

A more flexible whole-of-government approach to land acquisition and management to help maximise capital investment and foster more innovative partnerships to achieve better outcomes.

Overarching governance

Establishment of a place-specific social infrastructure champion in the Infrastructure Minister and a Social Infrastructure Ministerial Committee to drive a partnership-first approach to the provision of social infrastructure. A champion is important to rally for changes to business-as-usual approaches and call for what might otherwise be lost opportunities. Establishing a champion at the most senior level of government will help drive the understanding that change is required to drive even better social infrastructure outcomes for Queensland communities.

Early engagement in strategic planning

Adoption of a place-specific approach to social infrastructure planning further improves upon existing processes. Through early coordination of strategic planning across service providers, services are more likely to be well located in relation to transport, situated alongside aligned services, or co-located in flexible, future-focussed buildings that provide a range of human services.

What will be the impact?

Multipurpose shared facilities provide an opportunity to improve access to services for people in rural and regional areas, by consolidating various services into a single facility. Shared facilities can support improved access to services including education, health, justice, social services and social inclusion programs. This is crucial to meet the complex service needs of regional communities, helping to address disadvantage across the life course.[520]

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[518] Ibid

[519] Infrastructure Australia (2019) *Australian infrastructure audit*, p. 243, available at https://www.infrastructureaustralia.gov.au/sites/default/files/2019-08/Australian%20Infrastructure%20Audit%202019.pdf

[520] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 4, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

People with complex needs require multiple and often overlapping services and facilities. Evaluations of shared facilities have demonstrated that they can improve service delivery, providing improved infrastructure that benefits multiple service providers, and delivering better outcomes for clients and the staff delivering services. These include:[521]

- a smoother transition between services for users with complex needs
- opportunities for individuals and groups to access a wider choice of services by bundling together multiple services and activities in one location
- improved working conditions and learning opportunities for staff, which can improve productivity and help to identify new ways of delivering services.

In addition, shared facilities providing a wider mix of services can:

- reduce the professional isolation of practising in rural areas, improving employee satisfaction and workforce retention[522,523]
- simplify integrated transport planning to access services because services are concentrated in fewer transport destinations
- house a wider range of staff capability, skills, support and resources, improving opportunities for innovations in service delivery.[524]

Planning, delivery and management of shared facilities is more complex than for traditional single purpose facilities. Region-specific service planning will be required to identify suitable facilities, services and locations as each local area will have unique service needs. For example, some rural areas might identify a need to integrate facilities for delivery of children and family services, while others may need shared facilities to better support aged care alongside wellbeing services. Alternatively, some regions may identify opportunities in consolidating mental health, homelessness and youth services in a regional centre, while smaller towns may use shared facilities to continue local service delivery.

Consolidating services in a smaller number of locations provides opportunities to better integrate transport planning with service delivery. Planning for the delivery of services in shared facilities should therefore be done alongside transport planning, to ensure that essential services and supports can be accessed by those without their own transport.[525]

Which regions does this recommendation assist?

This recommendation can benefit all Victorian regions, following shared area service planning to identify specific opportunities. Regional areas are ideal for this shared approach, as they often already possess the local inter-agency networks required.

Regional areas also stand to gain most from the potential improvements associated with shared social service facilities, in terms of continued face-to-face service delivery and support for those vulnerable to disadvantage because of their distance from and reduced access to services.[526]

Infrastructure Priorities for the Regions received multiple stakeholder submissions from across Victoria which demonstrated support for the role of shared facilities in serving disadvantaged regional communities. Examples include an integrated health and wellbeing hub for Corio-Norlane,[527] an integrated health and community hub for Mitchell Shire[528] and a health and wellbeing precinct in Mount Alexander Shire.[529]

How does this align with the frameworks?

The recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcomes *Improve social inclusion outcomes* and *Improve education and health outcomes*.

Research has identified the role of infrastructure in addressing disadvantage by improving access to education, health and social capital building resources and facilities. Successful approaches need to be flexible, to respond to the unique

[521] Victorian Competition and Efficiency Commission (2009) *Getting it together: an inquiry into the sharing of government and community facilities*, pp. 52-53, available at https://www.dtf.vic.gov.au/sites/default/files/2018-02/sharing-of-government-and-community-facilities.pdf

[522] Austin (2012) *A phenomenological investigation of physician job satisfaction in rural integrated primary care*, p. 1, Antioch University of New England, Dissertation, available at https://pqdtopen.proquest.com/doc/2027374328.html?FMT=ABS

[523] Royal Far West (2018) *The invisible children: the state of country children's health and development in Australia*, p. 4, available at https://www.royalfarwest.org.au/wp-content/uploads/2018/09/invisible-children-2018-web.pdf

[524] Wimmera Southern Mallee Regional Partnership, the Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital (2020) *Submission to Infrastructure Priorities for the Regions*

[525] Infrastructure Australia (2019) *Australian infrastructure audit*, p. 394

[526] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 4

[527] G21 Regional Alliance (2020) *Submission to Infrastructure Priorities for the Regions*

[528] Mitchell Shire Council (2020) *Submission to Infrastructure Priorities for the Regions*

[529] Mount Alexander Shire Council (2020) *Submission to Infrastructure Priorities for the Regions*

nature of disadvantage in different places, and part of a package of coordinated activities which address multiple risk factors rather than focus on single issues.[530]

This recommendation aligns with this approach by encouraging government departments to plan collectively to deliver services which respond to the complex needs of disadvantaged communities, and which respond to each region's unique and changing requirements. In implementing this recommendation, it will be important to leverage community leadership, knowledge and networks to ensure the infrastructure is fit for purpose and meets local needs.[531]

The approach aligns with the Victorian Government's *Framework for place-based approaches* in supporting local approaches to addressing entrenched disadvantage.[532]

How does this recommendation work with others?

This recommendation complements the recommendation *Support regional councils to update, repurpose or retire outdated community infrastructure* in encouraging councils to consider innovative ways of using infrastructure to continue to deliver high quality and effective services in the local area. It also aligns with the recommendation *Create climate-adapted facilities for rural communities* in considering how community facilities can be adapted to serve multiple functions.

The recommendation is supported by the *Reform regional public transport to meet local needs* recommendation, in promoting integrated transport and service delivery planning to ensure that essential services and supports can be accessed by all those who need them.

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[530] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 5

[531] Ibid

[532] Victorian Government (2020) *A framework for place-based approaches – the start of a conversation about working differently for better outcomes*, p. 2

Recommendation 19: Support regional councils to update, repurpose or retire outdated community infrastructure

Framework: Addressing regional disadvantage framework

Outcome: Improve social inclusion outcomes; Improve education and health outcomes

What is the recommendation?

Fund regional councils in the next five years to update, repurpose or retire outdated community infrastructure for better service delivery.

Regional councils could apply for contributions of up to $2 million, after undertaking service planning that demonstrates existing facilities are no longer fit for purpose and limit service delivery quality. Contributions could reflect a council's budget and ability to pay, and promote co-investment, leverage other grants and encourage councils to share facilities where possible.

Separately, the fund would allow smaller contributions of up to $50,000 for smaller rural councils to develop service plans that explain their infrastructure needs (larger councils would be expected to have internal staff capacity for service planning). Service planning may not always lead to an infrastructure response: councils may best meet changing community needs by other responses, such as an outreach service, teleservices or through sharing existing assets with a neighbouring council.

Funding applications should give priority to:

- demonstrated reduction in asset maintenance costs for councils
- evidence that current infrastructure is a barrier to high quality service delivery
- consolidation or integration of different services into updated multi-purpose facilities
- ensuring access for all abilities so older Victorians and people with disability can use them
- facilities which serve disadvantaged communities
- demonstrated community capacity to manage, staff and deliver services from the facilities, and to evaluate investment outcomes.

To maintain community support, revenue from any asset sales should be directed to consolidating and upgrading local facilities.

Why is this needed?

Councils have a significant role in providing services that meet community needs, including family and children services, youth services, services for older people, health services and programs to foster social inclusion and improve wellbeing.[533] While many of these services are universal and can meet the needs of all residents, they are often targeted at the most disadvantaged.

Stakeholder submissions to Infrastructure Priorities for the Regions highlighted that many councils need to maintain older assets that no longer meet community needs. Regional councils can struggle to afford the facility upgrades required to ensure infrastructure is accessible, safe and able to support the full range of services needed by the local community. They can also find it difficult to divest assets due to limited potential purchasers, or community opposition to asset sales unless funds are reinvested in the local area.[534]

Research has highlighted pressures for rural and regional councils in managing current assets and continuing to deliver essential services, including:[535]

- relatively smaller populations and larger land areas, resulting in a higher per capita spend compared to metropolitan areas
- ageing populations which affect the scope and mix of services councils are required to provide, meaning facilities will need to adapt to meet changing community needs
- people in rural and regional communities are, on average, more likely to be disadvantaged, obese, have higher rates of tobacco smoking and higher levels of alcohol consumption, potentially indicating a higher per capita demand for services
- local governments work within a complex and changing policy environment, which can affect their capacity to plan ahead for service delivery

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[533] See *Know your council*, available at https://knowyourcouncil.vic.gov.au/guide-to-councils/what-councils-do/community-services

[534] For example, submissions from City of Bendigo, Mount Alexander Shire Council and Mitchell Shire Council

[535] KPMG (2017) *Rural and regional councils sustainability reform program stage 1 project report*, available at https://www.localgovernment.vic.gov.au/__data/assets/pdf_file/0025/214675/Rural-and-Regional-Councils-Sustainability-Reform-Program_Phase-1-Final-Report.pdf

- local factors such as remoteness and seasonal population peaks can add to the cost of infrastructure and service delivery.

Rural councils face rates bases constrained by low population growth and lower average incomes,[536] affecting their ability to maintain assets to a high enough standard to meet changing and more complex community needs. While regional cities such as Ballarat, Bendigo, Geelong and Wodonga have higher population growth and may be more financially sustainable than the smaller rural shires,[537] these councils have higher numbers of disadvantaged residents and associated demand for services.

Under growing financial pressure, regional councils increasingly rely on grants,[538] however there are few grants available to support the ongoing maintenance and renewal of ageing assets as community needs change over time.

What will be the impact?

Victoria's councils manage a significant asset base estimated to be worth over $110 billion.[539] They spend about $2.5 billion on infrastructure each year.[540] The proposed fund aims to support local governments to reduce their asset maintenance costs while continuing to deliver essential services which meet the needs of their local community.

Many existing infrastructure grants are for single types of infrastructure (for example libraries, early years facilities or sports centres). The new fund would incentivise upgrades which consolidate or integrate services into multi-purpose shared facilities, leveraging other funds as appropriate.

Communities often have a strong historical and local attachment to older facilities, even when they are no longer meeting wider community need. This can result in resistance to divesting assets or consolidating facilities even when this could enable a higher quality of service delivery.

This fund recognises this challenge, with a key objective to incentivise rather than mandate councils and community to upgrade, recycle and rationalise assets. The fund seeks to consolidate and rationalise existing infrastructure rather than add to councils' asset base. A net reduction in the number of council assets could help to ensure council financial sustainability.

Which regions does this recommendation assist?

This recommendation is relevant for all regional councils. However, given the higher proportion of disadvantaged communities in Victoria's regions, consideration will be given to facility upgrades in, or serving, disadvantaged communities.

The Victorian Auditor-General has suggested that existing regional grant funding could be better allocated, based on measurable indicators of disadvantage.[541]

How does this align with the frameworks?

The recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcomes *Improve social inclusion outcomes* and *Improve education and health outcomes*.

The recommendation seeks to respond to local government needs to upgrade, repurpose or rationalise community infrastructure as appropriate to respond to community needs. The infrastructure response also aims to support councils in managing financial sustainability. Applications for funding will be council-led, following service planning to demonstrate need. Where councils do not identify a need for, or communities do not support, asset consolidation or divestment they need not apply.

The recommendation aligns with Victorian Government objectives in identifying place-based approaches to addressing disadvantage,[542] in supporting rural council sustainability[543] and in improving social outcomes for regional Victorians.[544]

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536 Rural Councils Victoria (2019) *Federal budget submission 2019-20*, p. 9, available at https://treasury.gov.au/sites/default/files/2019-03/360985-Rural-Councils-Victoria.pdf

537 KPMG (2017) *Rural and regional councils sustainability reform program stage 1 project report*, p. 31

538 Ibid, p. 46

539 VAGO (2019) *Results of 2018-19 audits: local government*, p. 11, available at https://www.audit.vic.gov.au/sites/default/files/2019-11/20191127-Local-Government-report.pdf

540 Ibid, p. 42

541 VAGO (2019) *Outcomes of investing in regional Victoria*, p. 53, available at https://www.audit.vic.gov.au/sites/default/files/2019-05/20190502-Investing-Regional-Victoria.pdf

542 Premier of Victoria (2018) *Partnering with communities for better services*, available at https://www.premier.vic.gov.au/partnering-communities-better-services/

543 Department of Environment, Land, Water and Planning, *Sustainable and effective local governments*, available at https://www2.delwp.vic.gov.au/corporate-plan/sustainable-and-effective-local-governments

544 Regional Development Victoria, *Stronger Regional Communities Program*, available at https://www.rdv.vic.gov.au/grants-and-programs/stronger-regional-communities-program

How does this recommendation work with others?

This recommendation complements the recommendation to *Deliver multipurpose shared social service facilities in the regions* in encouraging councils to consider better ways of using infrastructure to continue to deliver high quality and effective services.

It could also support the recommendation to *Create climate-adapted facilities for rural communities*, in providing additional funds to adapt community facilities to deal the impacts of climate change.

Recommendation 20: Create climate-adapted facilities for rural communities

Framework: Addressing regional disadvantage framework

Outcome: Improve education and health outcomes; Improve social capital outcomes

What is the recommendation?

In the next five years, fund local governments to plan and help deliver a network of designated, accessible climate-adapted community facilities – cool and cleaner air facilities to manage the health impacts of exposure to extreme heat and bushfire smoke.

Climate-adapted community facilities refer to places which at-risk people can visit to remain cool during days of extreme heat when their homes are no longer cool, or to access filtered cleaner air for respite from exposure to harmful fine particles in smoke, particularly from large-scale or prolonged bushfires.[545]

Existing community facilities can be upgraded or retrofitted to be climate-adapted and fit for purpose. In most instances, these are likely to be existing local government facilities in the main rural centres, such as libraries, community centres, neighbourhood houses, and town halls. In some places, facilities owned or managed by others may also be considered, for example Victorian Government facilities, not-for-profit health or aged care centres.

The first step will be for the Victorian Government to determine the criteria for climate-adapted community infrastructure, to inform an audit of existing structures that may be suitable to upgrade or retrofit. These could include consideration of the following:[546]

- capacity to accommodate relatively large numbers of people
- universal design principles, to ensure facilities can be accessed by everyone
- appropriately located with respect to bushfire risk (i.e. not on the edge of a township or adjacent to areas with large fuel loads)
- appropriate internal facilities, such as air conditioning, Wi-Fi, kitchenette, accessible toilets, compliant with child safety requirements
- renewable energy sources such as solar panels to reduce running costs and to provide backup power in the event of power outage
- safety - air filters, security monitoring, parking, tightly sealed doors and windows
- proximity to an emergency relief centre.[547]

Councils should conduct audits of existing infrastructure to identify the most appropriate buildings, along with the required upgrades. It will not be feasible for every town in rural Victoria to be included, so councils should lead the identification of priority places with their communities. While larger councils are likely to have in-house resources and expertise to conduct the audit, smaller councils may need additional funding to purchase expertise and services. Once appropriate facilities and upgrades have been determined, councils can apply for funding to undertake the upgrades.

Why is this needed?

Regional Victoria is exposed to the impacts of climate change, with higher temperatures, more days of extreme heat, and a decline in rainfall forecast across the regions.[548] Unlike cities, in many rural areas there are relatively few privately provided places to escape the heat on hot days, such as shopping centres or cinemas.

The impacts of days of extreme heat and heatwaves can be significant, increasing the incidence of illness and death, particularly among at-risk and vulnerable groups. This can include heat stroke, exhaustion, cardiac conditions, respiratory illnesses, and falls due to dehydration.

Heatwaves are responsible for more deaths each year than any other type of disaster, including bushfires. For example, the 2014 Victorian heatwave resulted in 167 excess estimated deaths, and resulted in a fivefold increase in heat-related public hospital emergency department presentations compared with what was expected.[549] Research has indicated that,

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[545] Walter, Schneider-Futschik, Knibbs, Irving, *Health impacts of bushfire smoke exposure in Australia*, Respirology, May 2020, 25(5), pp. 495-501

[546] Central Victorian Primary Care Partnership (2020) *Cool community spaces: adapting to climate change*, submission to Infrastructure Priorities for the Regions

[547] Emergency relief centres provide basic support services such as food, clothing, emergency shelter, etc.

[548] Department of Environment, Land, Water and Planning (2019) *Victorian climate change projections 2019*, available at https://www.climatechange.vic.gov.au/adapting-to-climate-change-impacts/victorian-climate-projections-2019

[549] Department of Health and Human Services (2014) *The health impacts of the January 2014 heatwave in Victoria*, pp. 1-2, available at https://www2.health.vic.gov.au/about/publications/researchandreports/health-impacts-january-2014-heatwave

without adaptation efforts, there could be 400 additional deaths a year by 2050 due to heatwaves caused by climate change.[550]

Smoke is a health risk in many situations, including emergencies. Bushfire smoke can result in broad-scale impacts on air quality, including in areas well away from the actual fires. This was clearly demonstrated during the recent 2019-20 bushfire period.

Large scale and extended smoke events due to bushfires commonly occur after drier conditions – including drought – and occur on or close to days of extreme heat or during heatwaves. For example, in the 2019-20 summer period Victoria experienced mixed weather conditions including days of extreme heat, interspersed by rain, storms, dust storms and extended smoke impacts particularly in North East Victoria and East Gippsland.[551]

While extreme heat and exposure to smoke can affect anyone, the risks are higher for certain cohorts, for example people of a certain age or life stage (those over 65, pregnant women or young children), those with health conditions such as heart disease, asthma or obesity, people with low socio-economic status, smokers.[552]

Regional Victoria has an older, more disadvantaged population which is more exposed to impacts of extreme heat, heatwaves and bushfires. For example:

- one fifth (19%) of regional Victorians are aged 65 and over compared with 14% in Melbourne[553]
- an estimated 15% of regional Victorians have asthma compared with 11% in Melbourne[554]
- a higher proportion of regional Victorian adults smoke (19% compared with 14% in Melbourne)[555]
- an estimated 37% of regional Victorian adults are obese compared with 29% in Melbourne.[556]

What will be the impact?

The impact of extreme heat and heatwaves on Victoria's health services is significant. The 2009 Victorian heatwave resulted in a 25% increase in emergency ambulance callouts, a 12% increase in emergency department presentations and an almost four-fold increase in locum GP attendances for heat-related conditions.[557]

A network of accessible community facilities that help communities adapt to impacts of climate change has the potential to reduce the health impacts of exposure to heat from days of extreme heat or heatwaves, and large area or prolonged impacts of smoke from bushfires on air quality. This is particularly important for those who do not have air conditioners or air filters in their own homes.

Retrofitting existing rural council infrastructure to be climate-adapted facilities is an effective short-term measure to ensure that at-risk cohorts can visit cool community places during days of extreme heat or heatwaves and have access to clean air when it is particularly smoky outside due to bushfires.

Which regions does this recommendation assist?

This recommendation is intended to benefit rural communities across Victoria's regions because:

- unlike cities, many rural areas have relatively few privately provided places to escape the heat on hot days or access respite from smoky outdoor conditions, such as shopping centres or cinemas
- the impacts of climate change are magnified in inland areas where temperatures are higher and the land is dryer[558]
- people living in regional and rural Victoria do not always have the same level of health and wellbeing as other Victorians[559]
- rural Victorians are more likely to be exposed to poor air quality due to dust storms or large-scale or extended bushfire activity.

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[550] Department of Environment, Land, Water and Planning (2016) *Victoria's climate change adaptation plan 2017-2020*, p. 35, available at https://www.climatechange.vic.gov.au/__data/assets/pdf_file/0024/60729/Victorias-Climate-Change-Adaptation-Plan-2017-2020.pdf

[551] Bureau of Meteorology, *Victoria in summer 2019-20*, available at http://www.bom.gov.au/climate/current/season/vic/archive/202002.summary.shtml

[552] Department of Health and Human Services (2019) *Heat health plan for Victoria*, pp. 19-20, available at https://www2.health.vic.gov.au/about/publications/policiesandguidelines/heat-health-plan-for-victoria

[553] Department of Environment, Land, Water and Planning, *Victoria in future 2019*, available at https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future

[554] Torrens University Australia (2019) *Social health atlas*, Estimated number of people with asthma, age standardised rate per 100, available at http://phidu.torrens.edu.au/social-health-atlases

[555] Ibid, Estimated number of people aged 18 years and over who were current smokers (modelled estimates), age standardised rate per 100

[556] Ibid, Estimated number of people aged 18 years and over who were obese (modelled estimates), age standardised rate per 100

[557] Department of Health and Human Services (2012) *January 2009 heatwave in Victoria: an assessment of health impacts*, p. iv, available at https://www2.health.vic.gov.au/about/publications/researchandreports/January-2009-Heatwave-in-Victoria-an-Assessment-of-Health-Impacts

[558] Department of Environment, Land, Water and Planning and CSIRO, *Victorian climate change projections 2019*

[559] Department of Health and Human Services (2019) *Victorian health and wellbeing plan 2019-2023*, p. 39, available at https://www2.health.vic.gov.au/about/publications/policiesandguidelines/victorian-public-health-wellbeing-plan-2019-2023

A place-based approach is required as demographics and structural assets will vary between each local government area. Macedon Ranges, Central Goldfields and Mount Alexander Shires in the Loddon Campaspe region are prime candidates for early funding, having already identified areas with populations vulnerable to future climate change impacts and in need of upgraded community facilities.[560]

How does this align with the frameworks?

This recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcomes *Improve education and health outcomes* and *Improve social inclusion outcomes*.

Climate change is one driver of potential disadvantage, and there is a role for infrastructure in supporting communities to adapt to the associated challenges.[561] While the most effective solution to this issue is for every dwelling to be climate-adapted, to ensure people can live more comfortably and reduce power bills,[562] upgrading all rural housing to become more resilient to impacts of climate change will take many years. Retrofitting existing rural council infrastructure to be climate-adapted facilities is therefore an effective short-term measure.

Local governments will be required to lead this process with the initial infrastructure audit, ensuring funding is only accessed when there is recognition of need, supported by the wider community.

How does this recommendation work with others?

This recommendation complements the recommendation *Support regional councils to update, repurpose or retire outdated community infrastructure*. However, the purpose of the two recommendations is different. While the former seeks to help local governments to rationalise their portfolio of assets, this recommendation aims to enhance community safety, health and wellbeing often under extended or harsh climatic conditions.

It also complements the recommendation *Make social housing suitable for changing local climates* in supporting disadvantaged and low income households to deal with the impacts of extreme heat and climate change. While retrofitting social housing is a more effective long-term solution to supporting households to live more comfortably during extreme heat, this recommendation is a practical short-term measure with benefits extending beyond social housing residents.

Finally, the recommendation aligns with the *Deliver multipurpose shared social service facilities in the regions* recommendation in considering how community facilities can be adapted to serve multiple functions.

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[560] Central Victorian Primary Care Partnership (2020) *Cool community spaces: adapting to climate change*, submission to Infrastructure Priorities for the Regions

[561] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 14, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

[562] Environment Victoria, *Victoria, heatwaves and climate change*, available at https://environmentvictoria.org.au/our-campaigns/safe-climate/victoria-heatwaves-climate-change/

Recommendation 21: Expand social housing in regional centres, in locations with good access

Framework: Addressing regional disadvantage framework

Outcome: Improve economic outcomes for individuals; Improve social inclusion outcomes

What is the recommendation?

Focus social housing investment in regional centres to contribute to a target of 4.5 social housing dwellings for every 100 Victorian households by 2031. To achieve 4.5 dwellings for every 100 households will require provisioning an estimated 9000 additional dwellings (or 6400 with slower population growth) whilst also maintaining or replacing existing stock.[563] This recommendation is in line with the statewide target of 4.5 social housing dwellings for every 100 households recommended in Infrastructure Victoria's draft *30-year infrastructure strategy* update.

New social housing stock in the regions should focus primarily on the regional centres, with those centres with strong forecast population growth an immediate priority (for example, Geelong, Ballarat and Bendigo). These centres are best situated to provide access to transport and services, which are increasingly concentrated in regional hubs.

Specific sites for social housing development should be selected based on proximity to public transport and ready access to services. Access to a range of services and supports is critical for vulnerable or disadvantaged social housing residents. In addition, consideration should be given to avoiding high concentrations of social housing in suburbs that become neighbourhoods of entrenched disadvantage.

Future investment in social housing should seek to address the imbalance between demand for social housing and available supply, in terms of dwelling size. Based on existing patterns of demand in the regions, increased provision of one and two-bedroom accommodation should be an immediate priority.

The Victorian Government has made a significant investment in social housing as part of its $5.3 billion Big Housing Build program. This will provide more than 9300 new social housing dwellings over the next four years, of which an estimated 2300 will be in regional Victoria.[564] This is a significant new investment which will advance the social housing needs of regional Victorians. The extra investment will need to be further supplemented to achieve a statewide target of 4.5 social housing dwellings for every 100 households.

Why is this needed?

Social housing infrastructure meets a basic need for secure, affordable and appropriate housing among low income and vulnerable Victorians. This is not being supplied by the private market.[565] Social housing is effective at preventing homelessness[566] and its income-linked rents prevent housing stress.

Victoria had an estimated 3.3 social housing dwellings for every 100 households in June 2019, compared with a national average of 4.5.[567] Prior to its Big Housing Build investment,[568] Victorian Government spending per person on social housing was less than 60% of the national average.[569] Additions to public housing stock had significantly decreased over the past decades, due to decreased funding from Australian and Victorian Governments and increasing maintenance

[563] Infrastructure Victoria calculations using *Victoria in future 2019* forecasts and Department of Health and Human Services, *Housing assistance, additional service delivery data 2018-19*, available at https://www.dhhs.vic.gov.au/housing-assistance-additional-service-delivery-data-2018-19. To estimate slower population growth, IV used the 2026 household projection.

[564] Homes Victoria (2020) *Victoria's Big Housing Build*, p. 2, available at www.vic.gov.au/sites/default/files/2020-11/hv_more_homes_for_more_Victorians_0.pdf

[565] Hulse, Reynolds Nygaard, Parkinson and Yates (2019) *The supply of affordable private rental housing in Australian cities: short-term and longer-term changes*, AHURI Final Report 323, p. 43, available at https://www.ahuri.edu.au/__data/assets/pdf_file/0024/53619/AHURI-Final-Report-323-The-supply-of-affordable-private-rental-housing-in-Australian-cities-short-term-and-longer-term-changes.pdf

[566] Prentice and Scutella (2018) *What are the impacts of living in social housing?*, Infrastructure Victoria Technical Paper, pp. 24-25, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/04/Infrastructure-Victoria-Technical-Paper-%E2%80%93-What-are-the-impacts-of-living-in-social-housing-May-2018.pdf

[567] Infrastructure Victoria calculations based on: Steering Committee for the Review of Commonwealth/State Service Provision, *Report on government services 2020, part g: housing and homelessness*, housing data tables, table 18A.3, available at www.pc.gov.au/research/ongoing/report-on-government-services/2020/housing-and-homelessness/housing/rogs-2020-partg-section18-data-tables.xlsx and Australian Bureau of Statistics, *Household and family projections*, 2016 to 2041, data cube: projected number of households, household type – 2016 to 2041, available at https://www.abs.gov.au/ausstats/subscriber.nsf/log?openagent&3236ds01_2016-2041_projected_households.xls&3236.0&Data%20Cubes&1BCD402824FE0BAECA2583BC0016C4AE&0&2016%20to%202041&14.03.2019&Latest. Note: Data may include some non-private dwellings and dwellings used for housing programs other than long-term social housing. Using the more restrictive definitions imposed by the Productivity Commission would yield a Victorian estimate of 2.9%, found in: *Steering Committee for the Review of Commonwealth/State Service Provision, Report on government services 2020, part g: housing and homelessness, housing data tables, table 18A.3*, https://www.pc.gov.au/research/ongoing/report-on-government-services/2020/housing-and-homelessness/housing/rogs-2020-partg-section18-data-tables.xlsx

[568] Homes Victoria (2020) *Victoria's Big Housing Build*

[569] Infrastructure Victoria calculations of 5-year averages based on: *Steering Committee for the Review of Commonwealth/State Service Provision, Report on government services 2020, part g: housing and homelessness, housing data tables, table 18A.1*

costs.[570] Victorian social housing properties have averaged 0.8% annual growth since 2010[571] compared with 2.1% annual population growth.[572] In total, 60% of Victoria's public housing portfolio is over 30 years old.[573]

While regional Victoria appears to be relatively well supplied with social housing compared with Melbourne (an estimated 4.1% of total households compared with 3.1% in Melbourne[574]), the prevalence of disadvantage which contributes to demand for social housing is higher in regional Victoria.[575]

Demand for social housing is driven by a range of factors, including family violence, physical disability (where there may be limited suitable rental options available), financial stress and mental or physical illness.[576] Within regional Victoria, at least three of these indicators are significantly higher when compared to Melbourne: family violence, physical disability and rental stress.

- **Family violence:** Regional Victorians are over-represented in instances of family violence, with an average of 1.9 incidents per 100 people compared with 1.1 in Melbourne. Notably, family violence is three times as high as the Melbourne average in East Gippsland, Latrobe and Mildura. The five local government areas with the highest incidence rates for family violence are all in regional Victoria.[577]
- **Physical disability:** An estimated 6.4% of regional Victorians have a profound or severe disability compared with 5.1% in Melbourne. The five local government areas with the highest proportion of residents with a profound or severe disability are all in regional Victoria, ranging from 9.4% to 8.1% of the population.[578]
- **Rental stress:** Rates of rental stress are high in regional Victoria, where 30.4% of renting households experience rental stress compared with 26.3% in Melbourne.[579]

Without ready access to social housing, these vulnerable cohorts are exposed to an increased risk of homelessness. Homelessness is a growing problem in Victoria's regions, increasing 4% between 2011 and 2016 to an estimated 4389 people. Barwon and the Great South Coast have seen the largest increases over this period, 23% and 24% respectively.[580]

Along with continuing lower investment and increasing age of stock, there is a significant mismatch between the existing social housing stock in each region and the needs of current and future tenants. Victoria's housing portfolio is not configured to meet the growing demand for one- and two-bedroom dwellings, which accounts for approximately 80% of applicants. There are more three-bedroom dwellings than any other type of accommodation. Research has estimated that the number of one-bedroom dwellings would have to nearly double to meet demand, based on 2015 data.[581]

What will be the impact?

Increasing social housing provision in regional Victoria allows more people to access secure housing. With rents typically set at 25% to 30% of weekly income, social housing affects the affordability of housing for disadvantaged individuals who otherwise would not have access.[582]

As well as help to prevent housing stress and future homelessness,[583] living in social housing can reduce health service use. West Australian research has indicated that supporting formerly homeless people and those at risk of

[570] Groenhart and Burke (2014) *Thirty years of public housing supply and consumption: 1981–2011*, AHURI Final Report No.231, pp. 1-3 https://www.ahuri.edu.au/research/final-reports/231

[571] Infrastructure Victoria calculations based on: Steering Committee for the Review of Commonwealth/State Service Provision, *Report on government services 2020, part g: housing and homelessness, housing data tables, table 18A.3*

[572] Australian Bureau of Statistics (Jun 2019) *Australian demographic statistics, table 4: estimated resident population, states and territories*, available at https://www.abs.gov.au/AUSSTATS/ABS@Archive.nsf/log?openagent&310104.xls&3101.0&Time%20Series%20Spreadsheet&002114231 FCBA18CCA2584D4001C2B85&0&Jun%202019&19.12.2019&Latest

[573] VAGO (2017) *Managing Victoria's public housing*, p. 14, available at https://www.audit.vic.gov.au/sites/default/files/20170621-Public-Housing.pdf

[574] Infrastructure Victoria calculations using *Victoria in future 2019* forecasts and Department of Health and Human Services, *Housing assistance, additional service delivery data 2018-19*

[575] EY (2019) *Regional disadvantage fact sheets*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[576] Australian Institute of Health and Welfare (2019) *Housing assistance in Australia*, available at https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia-2019/contents/housing-and-housing-assistance-in-australia#hou3

[577] Crime Statistics Agency (2019) *Family incidents recorded by police region and local government area*, available at https://www.crimestatistics.vic.gov.au/crime-statistics/latest-victorian-crime-data/family-incidents

[578] Torrens University Australia (2019) *Social health atlas*, Persons with a profound of severe disability (all ages), available at http://phidu.torrens.edu.au/social-health-atlases

[579] Ibid, Low income households (households in bottom 40% of income distribution) with rental stress

[580] Australian Bureau of Statistics (2016) *Census of population and housing: estimating homelessness*, available to https://www.abs.gov.au/ausstats/abs@.nsf/exnote/2049.0

[581] VAGO (2017) *Managing Victoria's public housing*, p. 20

[582] HousingVic, *Community housing*, available at https://www.housing.vic.gov.au/community-housing

[583] Prentice and Scutella (2018) *What are the impacts of living in social housing?*, Infrastructure Victoria Technical Paper, pp. 24-25

homelessness into social housing reduced overall use of health services and frequency of use, particularly for hospital stays and psychiatric care. Associated government savings were estimated at $16.4 million a year.[584]

Which regions does this recommendation assist?

This recommendation will benefit all Victorian regions in increasing the supply of social housing stock to support disadvantaged communities. However, future provision of new social housing stock in the regions should focus primarily on regional centres, with those centres with strong forecast population growth an immediate priority (for example, Ballarat, Bendigo and Geelong, which are forecast to experience population growth between 2020 and 2031 of 21%, 19% and 25% respectively[585]). These centres are best situated to provide access to transport and services, which are increasingly concentrated in regional hubs.

Population projections indicate that regional Victoria's population will have grown to almost 1.9 million by 2031, across approximately 800,000 households. To achieve a target of 4.5 properties for every 100 households will require provisioning an estimated 9000 additional dwellings (or 6400 with slower population growth) whilst also maintaining existing stock numbers.[586] The Victorian Government's Big Housing Build will contribute an estimated 2300 new social housing dwellings to this total over the next four years.[587]

How does this align with the frameworks?

The recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcomes *Improve economic outcomes for individuals* and *Improve social inclusion outcomes.*

Access to affordable housing has a key role to play in helping to reduce disadvantage. This is particularly relevant in regional Victoria, which has a higher proportion of disadvantaged residents when compared with Melbourne.[588] Increasing the supply of social housing within Victoria's regions is an effective infrastructure solution to respond to existing high levels of demand and increasing risk of homelessness across regional Victoria.

Stakeholder engagement throughout Infrastructure Priorities for the Regions has demonstrated high levels of stakeholder support for improved access to social housing,[589] while councils in regional cities such as Geelong, Shepparton, Bendigo and Ballarat are committed to developing their own housing plans.[590]

The proposed investment in social housing will build on Victorian Government's Big Housing Build, to increase and renew public housing and address homelessness. The government has also committed to developing a 10-year strategy for social and affordable housing and introducing reforms to deliver the strategy.[591]

How does this recommendation work with others?

This recommendation aligns with the recommendation *Make social housing suitable for changing local climates* in improving provision of affordable, fit for purpose housing in places with good access to transport and services.

[584] Wood, Flatau, Zaretzky, Foster, Vallesi and Miscenko (2016) *What are the health, social and economic benefits of providing public housing and support to formerly homeless people?*, AHURI Final Report No.265, p. 2, available at http://www.ahuri.edu.au/research/final-reports/265

[585] Department of Environment, Land, Water and Planning, *Victoria in future 2019, data tables, data for Local Government Areas*, available at https://www.planning.vic.gov.au/land-use-and-population-research/victoria-in-future

[586] Infrastructure Victoria calculations using *Victoria in future 2019* forecasts and Department of Health and Human Services, *Housing assistance, additional service delivery data 2018-19.* To estimate slower population growth, IV used the 2026 household projection.

[587] Homes Victoria (2020) *Victoria's Big Housing Build*, p. 2

[588] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, pp. 7-8, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

[589] See, for example, Central Victorian Primary Care Partnership (2020) *Submission to Infrastructure Priorities for the Regions* and Catholic Social Services Victoria (2020) *Social service and infrastructure needs in Great South Coast: submission to Infrastructure Priorities for the Regions*

[590] As outlined in Council submissions to Infrastructure Priorities for the Regions

[591] Homes Victoria (2020) *Victoria's Big Housing Build*, p. 12

Recommendation 22: Make social housing suitable for changing local climates

Framework: Addressing regional disadvantage framework

Outcome: Improve economic outcomes for individuals

What is the recommendation?

Continue to deliver a long-term program of modifying social housing to be climate resilient by improving the energy efficiency and energy affordability of residences. The program should include the option of installing:

- split system air conditioning (including reverse cycle where appropriate), to allow tenants to maintain air temperature at a bearable level within their homes
- energy efficiency improvements, for example insulation, draft proofing, ceiling fans, external blinds, more energy efficient appliances or painting roofs a lighter colour to reflect light)
- solar photovoltaic panels, to allow social housing tenants to offset the additional costs associated with running split system air conditioning.[592]

Not all modifications will be necessary or possible in all dwellings (e.g. it may not be possible to install solar photovoltaic panels on dwellings with shared roofs, while some older dwellings may have limited capacity for energy efficiency improvements). Dwellings should therefore be audited to determine the appropriate solution to generate the best value for money.

This recommendation is intended to be rolled out across Victoria's regions over time, with immediate priority given to addressing the already high temperatures in northern Victoria – the Mallee region and northern parts of Wimmera Southern Mallee, Ovens Murray, Loddon Campaspe and Goulburn.

Why is this needed?

Climate change is causing temperatures across regional Victoria to increase, meaning Victorian towns could experience around double the number of very hot days each year by the 2050s.[593] The northern regions of Victoria already experience a high frequency of extreme heat.

Heatwaves are responsible for more deaths than any natural disaster,[594] yet they receive far less public attention, often harming those who are vulnerable and isolated the most. The risk of extreme heat to vulnerable populations in regional Victoria is particularly high as some regions have hotter climates, and community and medical services are less accessible than in metropolitan Melbourne.[595]

Heat stroke, exhaustion, cardiac conditions, respiratory illnesses, and falls due to dehydration place an immense strain on our emergency services. The 2009 Victorian heatwave resulted in a 25% increase in emergency ambulance callouts, a 12% increase in emergency department presentations and an almost four-fold increase in locum GP attendances for heat-related conditions.[596]

Extreme heat can affect anyone, but some people are more vulnerable than others – for example people of a certain age or life stage (those over 65, pregnant women or young children), those with health conditions such as heart disease, mental illness or obesity, people taking medications that may affect the way the body reacts to heat, or those with low socio-economic status.[597] Regional Victoria's older, more disadvantaged population is particularly exposed to impacts of extreme heat.

Poor build quality and increased frequency of extreme heat mean the inside temperatures of dwellings are higher for prolonged periods of time. Most social housing is poorly equipped to handle extreme weather events, meaning that residents' heat related discomfort can be higher inside the house than if they were outdoors. Houses with high thermal mass also take longer to cool down once outside temperatures fall, causing prolonged exposure to heat.[598]

592 Australian Council of Social Services (ACOSS) (2019) *Affordable, clean energy for people on low incomes*, p. 5, available at https://www.acoss.org.au/wp-content/uploads/2019/02/FINAL-Report-Affordable-clean-energy-for-people-on-low-incomes_web.pdf

593 Department of Environment, Land, Water and Planning (2019) *Victoria's climate science report*, p. 8, available at https://www.climatechange.vic.gov.au/__data/assets/pdf_file/0029/442964/Victorias-Climate-Science-Report-2019.pdf

594 Environment Victoria, *Victoria, heatwaves and climate change*, available at https://environmentvictoria.org.au/our-campaigns/safe-climate/victoria-heatwaves-climate-change/

595 Steffen, Hughes and Perkins (2014) *Heatwaves: hotter, longer, more often*, Climate Council of Australia, p. 26, available at https://www.climatecouncil.org.au/uploads/9901f6614a2cac7b2b888f55b4dff9cc.pdf

596 Department of Health and Human Services (2012) *January 2009 heatwave in Victoria: an assessment of health impacts*, p. iv, available at https://www2.health.vic.gov.au/about/publications/researchandreports/January-2009-Heatwave-in-Victoria-an-Assessment-of-Health-Impacts

597 Department of Health and Human Services (2019) *Heat health plan for Victoria*, pp. 19-20, available at https://www2.health.vic.gov.au/about/publications/policiesandguidelines/heat-health-plan-for-victoria

598 Barnett, Beaty, Chen, McFallan, Meyers, Nguyen, Ren, Spinks and Wang (2013) Pat*hways to climate adapted and healthy low income housing*, p. 44, available at https://www.nccarf.edu.au/sites/default/files/attached_files_publications/Barnett_2013_Climate_adapted_low_income_housing.pdf

Social housing residents are often unable to retrofit dwellings themselves as many lack the financial resources to do so, and they must navigate a highly cumbersome approval process to make any changes to their home.[599] Those who do have air conditioners still face the significant barrier of increased energy costs, likely to be particularly high given the generally poor quality of social housing stock, as well as ongoing maintenance costs.[600]

What will be the impact?

Research has demonstrated significant negative impacts of prolonged exposure to extreme heat on the physical, mental and social health of public housing residents. This includes impacts on schooling and education, for example:

- children are tired during heatwaves from being up all night due to extreme heat
- lack of sleep can mean children do not come to school – in particular those who have to walk or catch public transport
- low attendance combined with poor levels of attention in turn impact on learning and social integration, potentially leaving children more vulnerable to mental illness.[601]

In addition, some people roam the streets at night as it is too hot within their homes, or congregate in cooler places within the community to escape the heat. This can result in antisocial behaviour, which often spikes during periods of prolonged heat, and interaction with law enforcement.[602] This recommendation will contribute significantly to reducing heat stress for social housing tenants, alleviating some of these negative health, wellbeing and social impacts associated with prolonged exposure to heat.

By providing access to renewable energy, this recommendation will help low income and disadvantaged households to manage the impact of rising energy prices. Vulnerable households can go to extreme measures to ration and afford energy costs, including skipping meals, delaying health treatment, not using hot water or going to bed early to save energy.[603] Social housing residents stand to benefit from reduced energy costs and financial stress, further improving anticipated health and wellbeing outcomes.[604] The proposed modifications largely represent beneficial investments at a relatively low cost, dependent on the homes' build quality and orientation.[605] Some of these adaptions can take as little as three years to pay back their costs in energy savings.[606]

More energy efficient social housing will help to achieve progress on Victoria's 2050 zero emissions target under the *Climate Change Act 2017* (Vic) while additionally supporting Victorians experiencing disadvantage, who have most to benefit from energy efficiency measures but are unable to afford upgrades themselves,[607] to make the transition.

Which regions does this recommendation assist?

With Victoria's climate warming and the need to transition to a more energy efficient future, social housing stock throughout Victoria's regions should be retrofitted over time. The northern parts of the state – the Mallee region and northern parts of Wimmera Southern Mallee, Ovens Murray, Loddon Campaspe and Goulburn – are a particular priority given existing high temperatures during summer months.

However, low income earners and people experiencing disadvantage throughout in all regions stand to benefit from the potential reductions in energy costs associated with this recommendation.

How does this align with the frameworks?

This recommendation aligns with the *Addressing regional disadvantage framework* and responds to the outcome *Improve economic outcomes for individuals.*

599 Lander, Breth-Petersen, Moait, Forbes, Stephens and Dickson (2019) *Extreme heat driven by the climate emergency: impacts on the health and wellbeing of public housing tenants in Mildura, Victoria*, Report prepared for Mallee Family Care, p. 23, available at https://www.malleefamilycare.org.au/MFCSite/media/PDFDocuments/PublicHousing/2019/MalleeFamilyCare_PublicHousing_Report_2019.pdf

600 Barnett, Beaty, Chen, McFallan, Meyers, Nguyen, Ren, Spinks and Wang (2013) Pat*hways to climate adapted and healthy low income housing*, p. 78

601 Lander, Breth-Petersen, Moait, Forbes, Stephens and Dickson (2019) *Extreme heat driven by the climate emergency: impacts on the health and wellbeing of public housing tenants in Mildura, Victoria*, Report prepared for Mallee Family Care, pp. 9-10, 15

602 Ibid, pp. 13-14

603 NSW Council of Social Services (2017) *Turning off the lights: the cost of living in NSW*, p. 2, available at https://www.ncoss.org.au/wp-content/uploads/2017/06/Cost-of-Living-Report-16-06-2017-FINAL.pdf

604 ACOSS (2019) *Affordable, clean energy for people on low incomes*, p. 15

605 Sustainability Victoria (2019) Comprehensive energy efficiency retrofits to existing Victorian homes, available at https://www.sustainability.vic.gov.au/-/media/SV/Publications/About-us/Research/Household-retrofit-technical-reports/Comprehensive-Energy-Efficiency-Retrofits-to-Existing-Victorian-Houses-PDF.pdf

606 Ibid, p. 11

607 ACOSS (2017) *Factsheet: empowering disadvantaged households to access affordable, clean energy*, available at https://www.acoss.org.au/wp-content/uploads/2017/12/Factsheet_empowering-disadvantaged-households-Final.pdf

Infrastructure has a key role to play in alleviating disadvantage by improving access to economic resources through reduced living costs.[608] This recommendation has the dual benefit of helping low income and disadvantaged households manage cost of living pressures associated with energy use while also supporting them to adapt to the impact of climate change (itself a potential driver of disadvantage).[609]

These infrastructure solutions will provide enduring benefits for social housing tenants. The proposed solutions will contribute significantly to reducing both financial stress and heat stress, a need which will only increase as the climate continues to change.

The Victorian Government budgeted $1.3 billion over 10 years through the Solar Homes Program, which subsidises home installation of solar panels, solar hot water systems, and home battery storage.[610] The 2020-21 Victorian Budget has further supplemented the Solar Homes program, and provided $112 million for targeted energy efficiency upgrades for social housing properties.[611] This recommendation will leverage these commitments, to help ensure that affordable energy and fit for purpose housing is readily available for those who need it.

How does this recommendation work with others?

This recommendation aligns with the recommendation *Expand social housing in regional centres, in locations with good access* to support low income and disadvantaged households to access affordable housing in places with good access to transport and services.

In addition, this recommendation complements *Create climate-adapted facilities for rural communities* in supporting disadvantaged and low income households to deal with the impacts of extreme heat and climate change, by ensuring social housing residents can live comfortably during times of extreme heat while helping to manage the impact on power bills.

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[608] Pope (2019) *The role of infrastructure in addressing regional disadvantage*, p. 21 available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

[609] Ibid, p. 14

[610] Department of Treasury and Finance (2019) *Victorian budget 2019/20 overview*, available at https://www.budget.vic.gov.au/putting-power-back-hands-victorians

[611] Victorian Government (2020) *Making Victoria a renewable energy powerhouse*, available at https://www.premier.vic.gov.au/making-victoria-renewable-energy-powerhouse

5. Appendix A

Worked examples

Infrastructure Victoria has developed two worked examples demonstrating how we applied the *Comparative advantage* and *Addressing regional disadvantage* frameworks to develop recommendations for Infrastructure Priorities for the Regions.

The evidence base we have drawn on in developing recommendations for Industry Priorities for the Regions is available on our website.[612] In particular, our *Regional industry profiles* outline in detail the analysis undertaken during for the first three stages of the *Comparative advantage framework* in each of Victoria's nine regions.

Comparative advantage framework

Recommendation 05: Strengthen agricultural water security by modernising irrigation

During the next 30 years, contribute funding toward planning and delivery of irrigation modernisation projects across regional Victoria.

The recommendation aims to reduce water wastage and safeguard water supply for agriculture, in response to the potential impacts of climate change.

The output of Stages 1-3 of the *Comparative advantage framework* is outlined in the series of nine *Regional industry profiles*, available on our website.[613] These profiles were used to inform targeted consultation with central government and regionally-based government agencies and a public submissions process, aiming to solicit potential recommendations for Infrastructure Priorities for the Regions. Extracts from these profiles are included in the worked example below.

Stage 1: build the evidence base

Undertake consultation, data collection and profiling (including review of plans, strategies, reports and other data).

We profiled each region to understand the key natural and man-made assets capable of impacting the performance of the regional economy. This included population and geographic information, key assets and infrastructure, and information on the sub-regions. We enhanced this information though consultation with industry and regional groups, to identify local issues relevant to the objectives embedded in the frameworks. Findings are presented in our Regional Industry Needs profiles and the *Regional industry profiles*.[614]

Our analysis at this stage confirmed Victoria as Australia's largest agriculture producer. The industry is valued at approximately $15 billion[615] and employs almost 200,000 people in production and related manufacturing roles. Many of these businesses and jobs are concentrated in Victoria's regions.[616]

Agriculture is the largest industry by gross value added in six of Victoria's nine regions. In the remaining three regions (Barwon, Loddon Campaspe and Ovens Murray), agriculture is a significant industry at the sub-regional level. However, the contribution of the different agricultural sectors (e.g. dairy, horticulture, sheep) to the local economy varies considerably across the regions.

[612] See Regional Infrastructure Needs, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/ and Infrastructure Priorities for the Regions, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[613] Acil Allen (2019) *Regional industry profiles*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[614] See Regional Infrastructure Needs, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/ and Infrastructure Priorities for the Regions, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

[615] Agriculture Victoria, *Agriculture in Victoria*, available at https://agriculture.vic.gov.au/about/agriculture-in-victoria

[616] Agriculture Victoria, *Victoria export performance*, available at http://agriculture.vic.gov.au/agriculture/accessing-international-markets/victoria-export-performance

Stage 2: revealed comparative advantage analysis

Develop comparative advantage index to identify sectors which can drive wider regional economic growth.
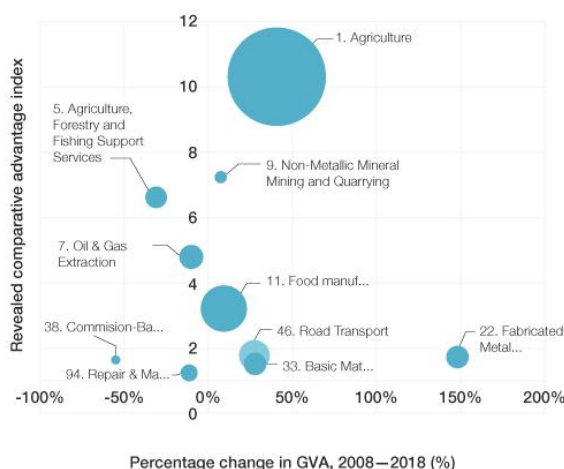
The revealed comparative advantage analysis is informed by sub-regional (i.e. local government area) economic data. Sample data is provided in figure 1. Industry sectors are segmented into four categories (quadrants): industries with comparative advantage and growth, industries with comparative advantage and no growth, industries with growth but no comparative advantage, and industries with no growth or comparative advantage.

Figure 1: Sample comparative advantage analysis for Gippsland (South Gippsland)[617]

Table 1 Top 20 highest revealed comparative advantage by LGA, Gippsland

Industry (Level 2 ANZSIC)	LGA	CAI (Victorian comparison)	CAI (National comparison)	10 year growth	% of LGA GVA	Quadrant
6. Coal Mining	Latrobe (C)*	60.1	6.9	-42%	17.4%	Top left
7. Oil and Gas Extraction	Wellington (S)	41.3	7.6	35%	15.1%	Top right
3. Forestry and Logging	East Gippsland (S)	19.4	10.9	51%	1.9%	Top right
15. Pulp, Paper and Converted Paper Product Manufacturing	Latrobe (C)	15.4	17.3	74%	3.7%	Top right
3. Forestry and Logging	Latrobe (C)	14.5	8.3	59%	1.4%	Top right
4. Fishing, Hunting and Trapping	East Gippsland (S)	14.5	6.1	20%	0.7%	Top right
3. Forestry and Logging	Wellington (S)	13.6	7.6	75%	1.3%	Top right
1. Agriculture	South Gippsland (S)	13.1	13.3	41%	32.2%	Top right
4. Fishing, Hunting and Trapping	East Gippsland (S)	14.5	6.1	20%	0.7%	Top right
5. Agriculture, Forestry and Fishing Support Services	Wellington (S)	6.9	6.4	14%	1.5%	Top right
5. Agriculture, Forestry and Fishing Support Services	South Gippsland (S)	6.6	6.0	-31%	1.5%	Top left

Figure 2.6 Comparative advantage index for South Gippsland, 2017-18, Level 2 ANZSIC

Given the strength of the agricultural industry identified in Stage 1, it is not surprising that the revealed comparative advantage analysis confirmed agriculture as an industry of comparative advantage and growth in each of Victoria's regions. Key sectors that were highlighted in the analysis include:

- dairy and beef (Gippsland, Barwon, Great South Coast, Ovens Murray)
- sheep/lamb (Loddon Campaspe, Wimmera Southern Mallee, Ovens Murray, Great South Coast)
- horticulture (Goulburn, Mallee, Gippsland, Central Highlands)
- broadacre crops (Central Highlands, Mallee, Wimmera Southern Mallee)
- poultry (Central Highlands, Loddon Campaspe).

Stage 3: strengths, weaknesses, opportunities and threats (SWOT) and needs analysis

Undertake SWOT and needs analysis for revealed industries to identify investment opportunities and constraints.

Identifying the priority industries by region reveals where government might invest, but not potential infrastructure to invest in over the longer term. We used a SWOT analysis to identify what infrastructure opportunities would propel a region or industry forward, and what constraints are holding a region or industry back. The SWOT analysis draws on the evidence base collected in Stage 1, feedback from stakeholders, and the comparative advantage industries identified at Stage 2.

Through the SWOT and needs analysis for agriculture, we identified reliable irrigation water supply as one of the industry's key concerns. Security in water supply is essential in agriculture. Irrigation development initiatives, whether upgrades or maintenance of existing infrastructure, are essential to ensure the growth prospects of Victoria's agriculture sector, particularly sub-sectors that are highly dependent on water supply.

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[617] Acil Allen (2019) *Gippsland industry profile*, available https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Comparative-Advantage_Gippsland-Profile.pdf

This was identified as a specific need for the horticulture and dairy sectors, particularly in Central Highlands and Gippsland, given the high water use for these industries. We identified a reduction in water availability for agriculture as a potential threat in all nine regions.

Figure 2: Sample SWOT analysis for Central Highlands[618]

Industry	Revealed sectors	Relevant LGAs	Identified needs
Agriculture, Forestry and Fisheries	Agriculture (poultry and horticulture)	Golden Plains Moorabool	Reliable irrigation water supply for intensive agriculture, such as poultry farms

Opportunities to address needs	Constraints to economic development of the sector
Infrastructure investment to achieve greater water security in these LGAs will become critical to ensure the ongoing viability or further development of intensive agriculture in a changing climate	Availability of irrigation water, which is a function of availability and quality of irrigation infrastructure, such as the Bacchus Marsh Irrigation District

Stage 4: prioritisation

Prioritise investment opportunities and constraints within and across regions using multi-criteria analysis.

After identifying the need for reliable water supply, we developed a recommendation focussing on irrigation and water infrastructure upgrades in consultation with the Department of Environment, Land, Water and Planning, drawing on stakeholder submissions to confirm need and opportunity.[619] The recommendation was put through the framework's prioritisation process, which uses a multi-criteria analysis approach. This showed that the recommendation meets the following framework criteria:

- **It aligns with one or more of the framework outcomes.**
    - *Support industries to be more resilient to economic shocks and climate change*: The recommendation responds to the need to support the agriculture industry to adjust and become more resilient to the potential impacts of climate change and worsening drought conditions. Climate change is exacerbating drought conditions, with time spent in drought projected to increase in the future across southern Australia.[620] Climate change will result in more variability in rainfall and increase the need for existing irrigation infrastructure to be more efficient.
    - *Deliver greater productivity and efficiency*: Rural water infrastructure is vital to support agriculture and its future growth. Successive governments have invested in irrigation districts; the focus has been on reducing the amount of water required to operate the irrigation systems and enabling increased value of agricultural production. Greater water efficiency means less wastage, increased supply and lower costs. Investment in more efficient irrigation will enable more production from less water, as less water is lost through storage and transport.
- **The recommendation can deliver economic benefit beyond a single LGA and region.** Investments in irrigation and water infrastructure will benefit regional communities dependent on agriculture and provide flow on benefits to the broader supply chain (retail, processing, transport, etc). The size of modernisation projects can vary, but the recommendation covers a range of local government areas across the state.
- **It can support industry or regional growth that will be sustained over time.** Investments in irrigation and water infrastructure will support the continuing viability of the agriculture industry in regional Victoria.

The recommendation also aligns with the investment principles set out as part of the framework:

- It leverages the comparative advantages of industries operating in the regions – namely agriculture.
- It addresses an identified need for the industries operating in a region (i.e. improved water security for agriculture).
- Government should intervene where there is evidence of market or policy failure that requires remediation through infrastructure investment. Water is a classic case of a public good which needs to be well managed and regulated by government to ensure that the scarce supply is able to benefit all Victorians and is used responsibly. The Victorian Government's plan for a future in which water availability is impacted by climate change is outlined in *Water for Victoria*.[621] Public investment, guided by the principles of long-term viability, net public benefit and value for money,

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[618] Acil Allen (2019) *Central Highlands industry profile*, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Comparative-Advantage_Central-Highlands-Profile.pdf

[619] For example, Southern Rural Water and Moorabool Shire Council

[620] Climate Council (June 2018) *Fact sheet: climate change and drought*, p. 9, available at https://www.climatecouncil.org.au/wp-content/uploads/2018/06/CC_MVSA0146-Fact-Sheet-Drought_V2-FA_High-Res_Single-Pages.pdf

[621] Department of Environment, Land, Water and Planning (2016) *Water for Victoria*, available at https://www.water.vic.gov.au/__data/assets/pdf_file/0030/58827/Water-Plan-strategy2.pdf

may be required for significant infrastructure works on an irrigation district scale that generate benefits to the broader community and environment. The Victorian Government continues to encourage water corporations to modernise and rationalise water and irrigation infrastructure.

Addressing regional disadvantage framework

> **Recommendation 16: Fund more Youth Foyers in regional Victoria**
>
> Fund more Youth Foyers in regional Victoria, beginning with Geelong (Barwon), Wodonga (Ovens Murray) and Bendigo (Loddon Campaspe) by 2026, to build on existing education infrastructure and support vulnerable young people.
>
> Youth Foyers offer affordable accommodation and support services to improve education, employment and housing outcomes as young people transition into adulthood.

Stage 1: problem identification and definition

Use existing evidence, combined with consultation, to identify the challenges arising from disadvantage within a region.

Using evidence gathered in our Regional Infrastructure Needs research,[622] *Regional disadvantage fact sheets*,[623] consultations with stakeholders and expert advice, we identified the issue of disadvantage among young people as a regional issue meriting further exploration.

The transition from school to work is critically important for the future life chances of young people. However, each of Victoria's nine regions demonstrated above average proportions of young people not finishing school and/or not engaged in work or study. Youth unemployment was consistently above the Victorian average, reaching a high of 11% in Central Goldfields (Loddon Campaspe) compared with an average of 3%.[624]

Consultation highlighted barriers in achieving educational results for those from disadvantaged background in the Barwon region, challenges in providing transport solutions to allow young people to access tertiary education in Gippsland, youth mental health issues contributing to low educational participation and completion in Loddon Campaspe, and difficulties accessing education services in Goulburn, perpetuating family cycles of lower engagement with education.[625]

Research has indicated that successful transition from school into work is critically important for young people's chances in later life.[626] As a result, interventions that target this key life stage can have a lifelong impact in alleviating disadvantage.[627]

Stage 2: establish a robust relationship between significant challenges and an infrastructure solution

Determine whether an identified problem is amendable to an infrastructure solution and whether the community has the willingness and capacity to support it. In addition, determine whether the solution delivers enduring benefits, and whether it aligns with the region's comparative advantages and with government's broader objectives.

A stakeholder submission from Brotherhood of St Laurence[628] highlighted an existing infrastructure solution to the issue of engagement and participation for disadvantaged young people in the form of the Youth Foyer model. Youth Foyers provide affordable medium-term accommodation and wrap-around support services for vulnerable young people in order to improve their education, employment and housing outcomes.[629] There are currently three Youth Foyers in regional Victoria, in the Central Highlands, Goulburn and Great South Coast regions.

Having established a strong link between the policy challenge and a potential infrastructure solution, we considered whether the community has the willingness and capacity to support the potential solution. The Youth Foyer model is well established and has been evaluated favourably. The three priority locations selected for Youth Foyers have existing TAFE infrastructure and other tertiary education facilities which can be leveraged. There is also evidence of wider community support - for example, Barwon Regional Partnership's submission to Infrastructure Priorities for the Regions indicated that support for vulnerable young people is a primary focus of the partnership and identified Youth Foyers as a potential solution.[630]

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622 See Regional Infrastructure Needs, available at https://www.infrastructurevictoria.com.au/project/research-regional-infrastructure-needs/

623 EY (2019) *Regional disadvantage fact sheets*, available at https://www.infrastructurevictoria.com.au/project/research-infrastructure-priorities-for-the-regions/

624 Ibid

625 Regional workshops conducted during Infrastructure Victoria's Regional Infrastructure Needs program

626 For example, Cuervo and Wyn (2011) *Rethinking youth transitions in Australia: a historical and multidimensional approach*, available at https://education.unimelb.edu.au/__data/assets/pdf_file/0003/2690301/2010-Rethinking-youth-transitions-in-Australia-RR33.pdf and Furlong, Cartmel, Biggart, Sweeting and West, *Youth Transitions: Patterns of Vulnerability and Processes of Social Inclusion*, 2003

627 Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, available at https://www.infrastructurevictoria.com.au/wp-content/uploads/2019/11/Background-paper_The-role-of-infrastructure-in-addressing-regional-disadvantage.pdf

628 Brotherhood of St Laurence (2020) *Submission to Infrastructure Priorities for the Regions*

629 KPMG (2019) *Education First Youth Foyers economic evaluation*, available at http://library.bsl.org.au/jspui/bitstream/1/11370/1/KPMG_Education_First_Youth_Foyers_economic_evaluation_Jun2019.pdf

630 Barwon Regional Partnership (2020) *Submission to Infrastructure Priorities for the Regions*

We further considered whether the solution delivers long-term benefits, aligns with the region's economic and industry advantages, and aligns with government's broader regional and social objectives. The potential solution met each of these criteria:

- **It delivers long-term benefits to those it is intended to support.** Evaluations of Youth Foyers indicate that they have a sustained positive impact on participants' education, employment, housing and health and wellbeing. These include:
  - gains in qualifications, continued participation in education and training and improved housing conditions after exit
  - improved confidence and employability skills, with some gains in employment.[631]
- **It aligns with the region's economic advantages.** As well as the improved individual economic outcomes for participants, Youth Foyers demonstrate some cost efficiencies by centralising social workers and services[632] as well as avoiding future costs to government in employment welfare, housing, health and policing.[633]
- **It aligns with the Victorian Government's broader regional and social objectives.** The recommendation is consistent with the values in Victoria's existing youth reforms, with the Home Stretch[634] and Raising Expectations[635] programs supporting education opportunities for vulnerable young Victorians.

Stage 3: prioritisation

Prioritise the identified infrastructure solutions within and across regions using multi-criteria analysis.

We drafted a potential recommendation to expand Youth Foyer services to the Barwon, Loddon Campaspe and Ovens Murray regions due to relatively high (and rising) levels of socio-economic disadvantage, high rates of youth disengagement and unemployment and existing transport, education and social services infrastructure. The recommendation was put through the framework's prioritisation process, which uses a multi-criteria analysis approach. This showed that the recommendation meets the following framework criteria:

- **It aligns with one or more of the framework outcomes**, namely *Improve education and health outcomes*. Youth Foyers increase access to life-long learning for disadvantaged young people. Interventions which target the transition from school to work are likely to have bigger positive impacts.[636]
- **It can reduce the future likelihood or impact of disadvantage.** The Youth Foyer model has demonstrated success in intervening in the transition from school to work for vulnerable young people, helping to break the cycle of disadvantage. In providing wrap-around support services to Foyer participants, the model demonstrates the flexibility needed to respond to individual and complex needs. Interventions which help break the cycle of deep and persistent disadvantage deliver enduring benefits for the individual, local community and state.[637]
- **Local communities have the willingness, capability and capacity to access, use and support the infrastructure solution over the longer term.** As indicated above, there is evidence of community willingness and capacity to support the infrastructure solution over the longer term. The Youth Foyer model is well established, and there is evidence of community support in the proposed priority locations.

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[631] Coddou, Borlagdan and Mallett (2019) *Starting a future that means something to you: outcomes from a longitudinal study of Education First Youth Foyers*

[632] Steen and Mackenzie (2013) *Financial analysis of foyer and foyer-like youth housing models*, available at https://researchbank.swinburne.edu.au/file/e40b429d-b5d0-477d-9eaf-2653a41f5ee8/1/PDF%20%28Published%20version%29.pdf

[633] KPMG (2019) *Education First Youth Foyers economic evaluation*

[634] Department of Health and Human Services, *Home Stretch*, available at https://providers.dhhs.vic.gov.au/home-stretch

[635] Centre for Excellence in Child and Family Welfare, *Raising expectations – getting more care leavers to TAFE and uni*, available at https://www.cfecfw.asn.au/raisingexpectations/

[636] Pope (2019) *The role of infrastructure in addressing regional disadvantage in Victoria*, p. 32

[637] Productivity Commission (2013) *Deep and persistent disadvantage in Australia*, available at https://www.pc.gov.au/research/supporting/deep-persistent-disadvantage/deep-persistent-disadvantage.pdf

6. Appendix B

List of stakeholder submissions

We received 47 formal submissions from a broad range of stakeholders, as listed below. Thank you to all those who made a submission and who otherwise contributed via feedback and consultation over the course of the project.

- Barwon Regional Partnership
- Barwon Water
- Baw Baw Shire Council
- Brotherhood of St Laurence
- Campaspe Cohuna Local Learning and Employment Network
- Catholic Social Services Victoria
- Central Victorian Greenhouse Alliance
- Central Victorian Primary Care Partnership
- Centre Against Violence
- Centre for Excellence in Child and Family Welfare
- City of Ballarat
- City of Greater Bendigo
- City of Greater Geelong
- Creative Victoria
- Department of Transport – Gippsland
- G21 – Geelong Regional Alliance
- Gannawarra Shire Council
- Goulburn Broken Greenhouse Alliance
- Goulburn Murray Water
- Grampians New Energy Taskforce
- Greater Shepparton City Council
- Horsham Rural City Council
- Jesuit Social Services
- Latrobe City Council
- Loddon Mallee Aboriginal Reference Group
- Loddon Mallee Housing Services – Haven; Home, Safe
- Mildura Rural City Council
- Mitchell Shire Council
- Moorabool Shire Council
- Mount Alexander Shire Council
- National Timber Councils Association
- Njernda Aboriginal Corporation
- Ouyen Inc
- Peri Urban Group of Rural Councils
- Public Galleries Association Victoria
- Public Libraries Victoria
- Rail Futures Institute
- RMIT University
- Rural Councils Victoria
- South West Community Foundation
- Southern Rural Water

- Victorian Aboriginal Children and Young People's Alliance
- Victorian Aboriginal Community Controlled Health Organisation
- Wimmera Southern Mallee Regional Partnership
- Wimmera Southern Mallee Regional Partnership, Centre for Community Child Health at Murdoch Children's Research Institute and the Royal Children's Hospital, with support from Wimmera Health Care Group

About us

Infrastructure Victoria is an independent advisory body, which began operating on 1 October 2015 under the *Infrastructure Victoria Act 2015*.

Infrastructure Victoria has three main functions:

- preparing a 30-year infrastructure strategy for Victoria, which is refreshed every three to five years
- providing written advice to government on specific infrastructure matters
- publishing original research on infrastructure-related issues

Infrastructure Victoria also supports the development of sectoral infrastructure plans by government departments and agencies.

The aim of Infrastructure Victoria is to take a long-term, evidence-based view of infrastructure planning and raise the level of community debate about infrastructure provision.

Infrastructure Victoria does not directly oversee or fund infrastructure projects.