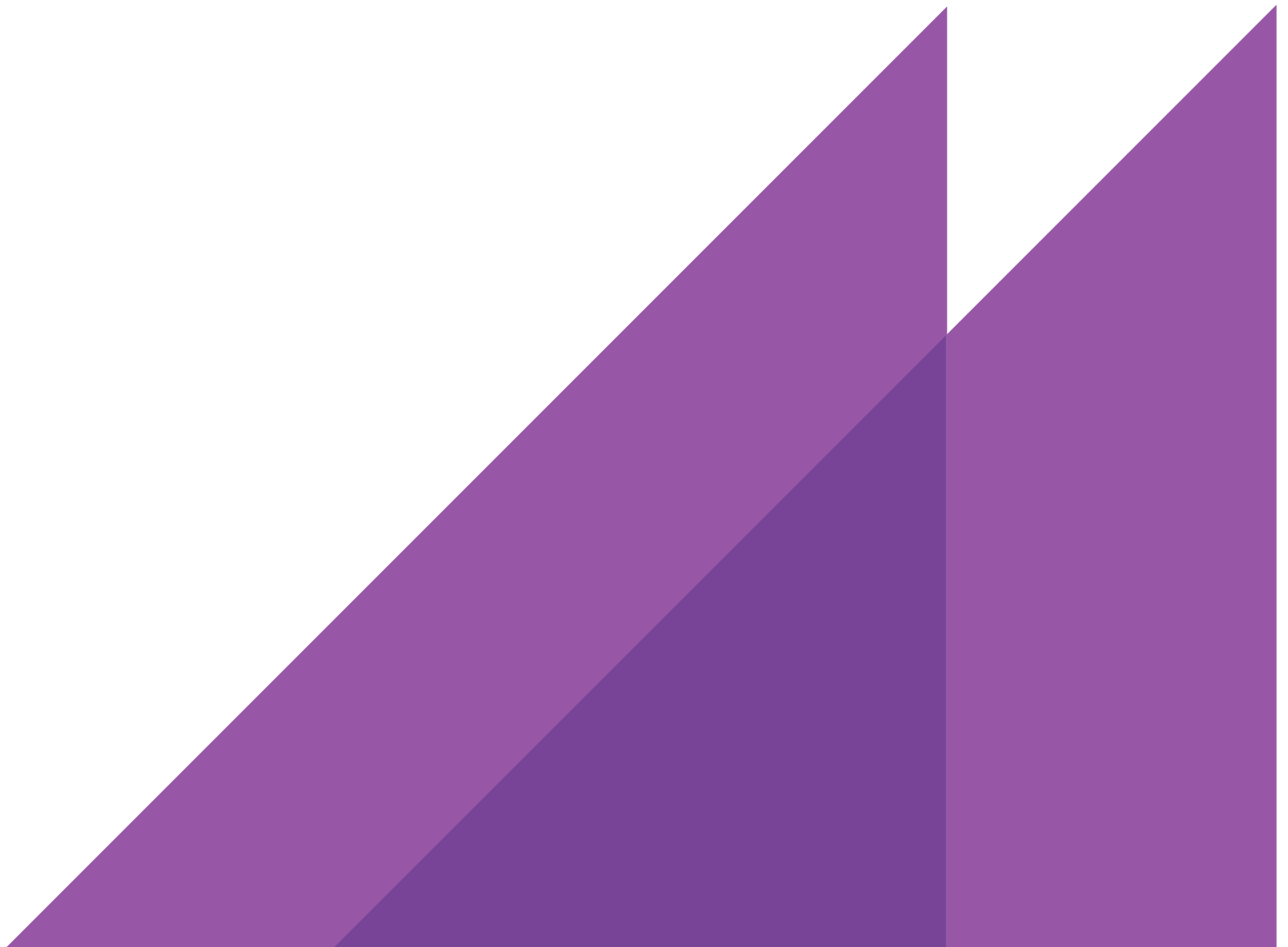


REPORT TO
INFRASTRUCTURE VICTORIA
2 OCTOBER 2019

ADDRESSING REGIONAL DISADVANTAGE



THROUGH INFRASTRUCTURE
FINAL ASSESSMENT FRAMEWORK REPORT





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EXECUTIVE SUMMARY

Context

This report presents an infrastructure Assessment Framework developed by ACIL Allen Consulting (ACIL Allen) for Infrastructure Victoria (IV). The report and Framework support IV's work on updating its 30-year Infrastructure Strategy. The updated strategy will recommend infrastructure which supports the reduction of place-based economic and social disadvantage in regional Victoria.

To ensure the Infrastructure Strategy accounts for the unique and diverse character of Victoria's regions, IV is seeking to develop frameworks and evidence that help determine infrastructure priorities for the State. One framework will identify investment priorities that build on regions' economic strengths (the Regional Comparative Advantage Framework), while the other (this assessment framework) will address regional disadvantage. IV will use these frameworks to assess and prioritise regionally specific infrastructure recommendations for the updated Strategy.

Assessment Framework

This Assessment Framework outlines an approach that identifies and then assesses infrastructure aimed at reducing place-based disadvantage in regional areas. The research and evidence base used to develop the Framework was derived from a companion document prepared by Jeanette Pope (titled: *The role of infrastructure in addressing regional disadvantage in Victoria (2019)*) specifically for IV. This research paper provides the rationale and conceptual arguments as to why a place-based and a highly targeted infrastructure approach are suitable ways of addressing social disadvantage under certain circumstances/conditions.

The essence of the Assessment Framework is a filtering process in which a possibly large number of policy challenges and potential infrastructure solutions (which target priority cohorts at certain stages of life) are narrowed down to a small number that can proceed to individual assessment (e.g. a Business Case) where they can be assessed in depth.

The Assessment Framework assumes that the resources available to government are limited and therefore a rigorous process is needed to establish where it can achieve maximum benefit from infrastructure. The other important point is that disadvantage is complex, multi-faceted, multi-causal and constantly changing. In some cases, infrastructure might be able to assist, but it is only going to be part, perhaps just a small part, of the solution. Often, other forms of government intervention are likely to be more effective than an infrastructure solution.

The Assessment Framework's objectives are derived from the outcome statements (presented in **Figure 1.1** of the report). The Framework's objectives focus on reducing disadvantage by:

- Improving economic outcomes through:
 - Increasing access to jobs and enterprise

- Reducing the costs of living
- Improving education and health outcomes through:
 - Increasing access to life-long learning (this sub-objective is also relevant to the objective above)
 - Increasing access to health and social services
- Improving social inclusion outcomes through:
 - Increasing access to social and civic infrastructure that builds social capital.

The Assessment Framework's objectives are also consistent with several objectives identified in IV's 30-year strategy, as shown below:

- Objective 2: Foster healthy, safe and inclusive communities
- Objective 3: Reduce disadvantage
- Objective 4: Enable workforce participation
- Objective 10: Build resilience to shocks.

A feature of the Assessment Framework is that it draws on a first principles approach to determine the appropriate role of government in the infrastructure decision-making process. These principles should be used to drive decisions under the Assessment Framework and are applied at various stages of it. There are five principles used. A detailed description of each principle is provided in Chapter 3.

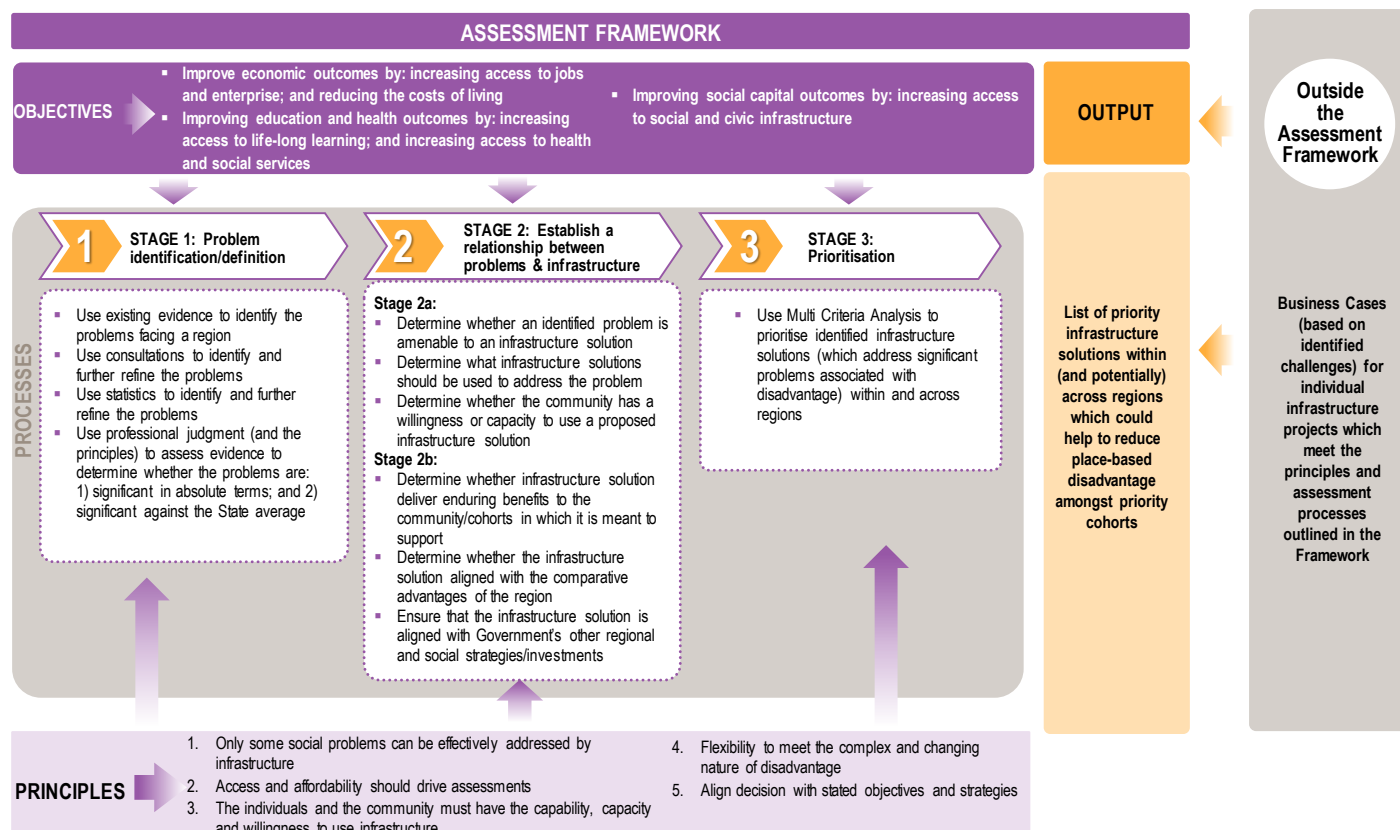
- Principle 1: Only some social problems can be effectively addressed by infrastructure. Moreover, infrastructure prioritised on the basis of disadvantage must show a strong link/evidence-base to disadvantage.
- Principle 2: Accessibility and affordability are key variables in the assessment process.
- Principle 3: Individuals and the community must have the capacity, capability and willingness to access/support the infrastructure.
- Principle 4: Flexibility to meet the complex and changing nature of disadvantage.
- Principle 5: Fit-for-purpose.

Assessment under the Framework is undertaken through a sequential process divided into three key stages. The stages are:

- A problem definition stage (Stage 1). The objective of this stage is to identify the place-based challenges associated with disadvantage.
- A stage which considers the relationship between place-based policy challenges (in the form of disadvantage) and potential infrastructure solutions (Stage 2). The objective of this stage is to understand the relationship between identified problems and infrastructure solutions.
- A prioritisation stage (Stage 3). The objective of this stage is to prioritise the infrastructure solutions that are identified as suitable for alleviating place-based disadvantage and warrant government investment.

Figure ES.1 shows the Assessment Framework's overarching logic.

FIGURE ES 1 ASSESSMENT FRAMEWORK



SOURCE: ACIL ALLEN

If a proposed infrastructure solution is justified on the basis of the Assessment Framework, then individual assessment is required to support investment decision making. All business cases should meet the practice guidance as promulgated by IV, the Victorian Governance and other independent infrastructure assessment bodies.



1.1 Purpose

This report presents a regionally focused socio-economic infrastructure Assessment Framework developed by ACIL Allen Consulting (ACIL Allen) for Infrastructure Victoria (IV). The Framework will be used by IV to assess and prioritise infrastructure investment opportunities which address disadvantage in Regional Victoria. These opportunities will be incorporated into the upcoming update of the 30-year Infrastructure Strategy.

The Framework supports infrastructure assessment that is grounded in the principles of good public policy, social policy and economics. The Framework builds upon outcomes statements developed primarily for this report. The Framework is also underpinned by the key concepts of disadvantage within a regional context. These concepts are defined in the next chapter.

1.2 Strategic policy context

1.2.1 30 Year Infrastructure Strategy

IV was established in 2015 as an independent advisory body tasked to develop Victoria's first ever state-wide, all sector, 30-year infrastructure strategy. The 30-year strategy, released in December 2016, is anchored by a vision of a thriving, connected and sustainable Victoria where everyone can access good jobs, education and services.¹

The strategy's purpose is to outline a pipeline of priority infrastructure projects that deliver against guiding principles and objectives, whilst meeting some clearly defined needs for Victoria for the coming decades. Essentially, all recommended projects aim to deliver against the stated objectives (see **Table 1.1**).

¹ Infrastructure Victoria 2016, 'Victoria's 30-Year Infrastructure Strategy', Accessed 3 April 2019, <http://www.infrastructurevictoria.com.au/30-year-strategy>.

TABLE 1.1 VICTORIA'S 30-YEAR INFRASTRUCTURE STRATEGY

Guiding principles	Objectives
– Consult and collaborate	1. Prepare for population change
– Drive improved outcomes	2. Foster healthy, safe and inclusive communities
– Integrate land use and infrastructure planning	3. Reduce disadvantage
– Draw on compelling evidence	4. Enable workforce participation
– Consider non-build solutions first	5. Lift productivity
– Promote responsible funding and financing	6. Drive Victoria's changing, globally integrated economy
– Be open to change	7. Promote sustainable production and consumption
	8. Protect and enhance natural environments
	9. Advance climate change mitigation and adaptation
	10. Build resilience to shocks

SOURCE: INFRASTRUCTURE VICTORIA 2016, 'VICTORIA'S 30-YEAR INFRASTRUCTURE STRATEGY', ACCESSED 4 APRIL 2019, ([HTTP://YOURSAY.INFRASTRUCTUREVICTORIA.COM.AU/30-YEAR-STRATEGY/](http://yoursay.infrastructurevictoria.com.au/30-year-strategy/))

The strategy provided 137 recommendations for future infrastructure investments across the State. Whilst most recommendations were applicable to both metropolitan and regional Victoria, the strategy lacked the kind of evidence required to undertake a bottom-up assessment of future regional infrastructure needs.

1.2.2 Infrastructure Strategy Update

IV has begun work on an updated 30-year infrastructure strategy and expects to release a draft Strategy in 2020.

IV will also identify infrastructure priorities for each of Victoria's regions to reduce disadvantage and build on economic strengths.

To develop the infrastructure priorities for the regions, IV will draw on the findings of its research programs – Regional Infrastructure Needs (RIN) and Infrastructure Priorities for the Regions (IPR).

Through the RIN project, IV developed profiles on each of Victoria's nine regions which outline the unique strengths and challenges in different parts of Victoria. These profiles were published on the IV website in April 2019 along with the discussion paper *Growing Victoria's Potential*. The profiles are the result of a year-long process of gathering data and working with stakeholders right across the state to ensure they included local insights. A key finding from the research is that regional investments should be targeted towards building on a region's competitive strengths or reducing place-based disadvantage.

The IPR project will build on the regional profiles to develop complementary frameworks for determining potential infrastructure priorities. One framework will identify investment priorities that build on regions' economic strengths (the Comparative Advantage (CA) Stream), while the other will address regional disadvantage (the Addressing Regional Disadvantage (ARD) Stream).

This Framework is being developed for the ARD stream. IV will use these frameworks to assess and prioritise regionally specific infrastructure recommendations for the updated strategy.

This Framework helps IV to identify what regional disadvantage is, where regional disadvantage occurs, and how infrastructure can be used to make progress against the key the outcomes IV is seeking from the State's investment decisions.

1.2.3 The Victorian Government's Regional Statement and the Regional Partnerships

Victoria's Regional Statement (2015) acknowledges the contribution of regional Victoria to the State's economic strengths and way of life. The Statement focuses on job creation, providing a better start for young people and supporting a brighter future for families and communities. It is built on the Government's recognition that every region is different. The Statement also set a new approach around involving regional communities in government decision-making across all areas of policy and service delivery. The centrepiece of the Statement was the establishment of **nine Regional Partnerships** that will direct the regional priorities of government.

Regional Partnerships (established in 2016) recognise that local communities and towns are in the best position to understand the challenges and opportunities faced by their region. Victoria's nine

Regional Partnerships consult and engage with their communities year-round to identify priorities for their regions and develop collaborative solutions to local problems. The Partnerships provide advice directly to the Victorian Government about these regional priorities so they can be incorporated into government policies, programs and planning. This provides an opportunity for local communities to have their voices heard and acted on.

Each Regional Partnership is made up of community and business leaders who are passionate about regional Victoria. They are joined on the Partnership by the CEOs of local councils, a representative of Regional Development Australia and a Victorian Government representative, so that all levels of government are represented.

The nine Regional Partnership regions² are:

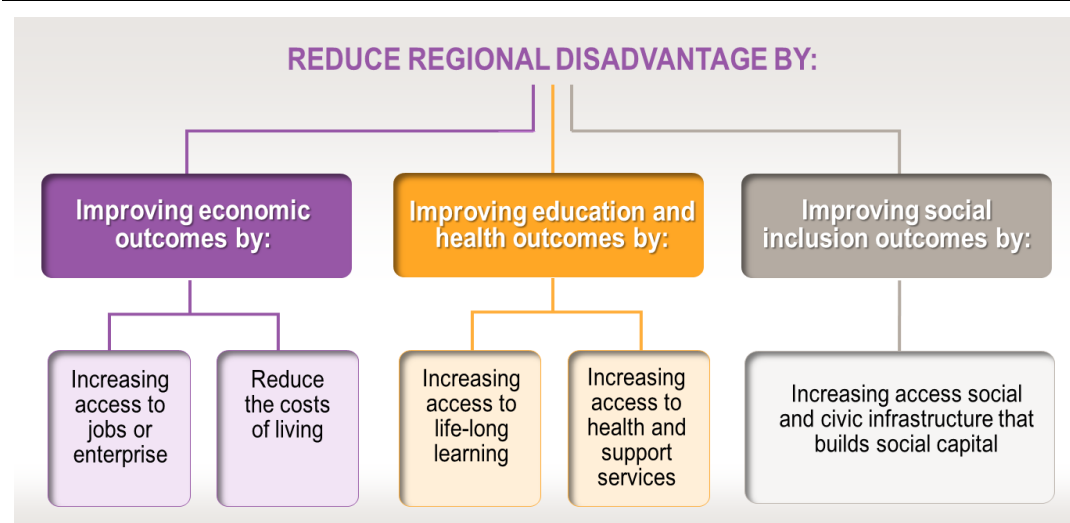
- Barwon
- Central Highlands
- Gippsland
- Goulburn
- Great South Coast
- Loddon Campaspe
- Mallee
- Ovens Murray
- Wimmera Southern Mallee.

1.2.4 Outcome statements for IV's Infrastructure Priorities for the Regions – Addressing Regional Disadvantage

The IPR ARD project has developed outcome statements on what the project aims to achieve in regional Victoria. These outcomes are designed to guide the project's direction and are presented as a hierarchy in **Figure 1.1** below.

It is important to note the linkages between outcomes in the hierarchy. Each outcome has both an economic and a social dimension. For example, there are clear linkages between life-long learning outcomes (e.g. skills development) and the economic outcomes of a region. However, for the purposes of the Assessment Framework each outcome is presented individually in the figure below.

FIGURE 1.1 OUTCOMES HIERARCHY FOR THE ASSESSMENT FRAMEWORK



SOURCE: INFRASTRUCTURE VICTORIA

² The Victorian Government has also established Metropolitan Partnerships.

Table 2.1 identifies what areas are being explored under each outcome identified in **Figure 1.1**.

TABLE 1.2 OUTCOMES STATEMENTS FOR FRAMEWORK

Outcomes	What is being explored in each outcome
Improved economic outcomes	<ul style="list-style-type: none"> – Increasing the availability of social housing – Opportunities to improve access to transport – Opportunities to improve access to jobs and labour markets (through improved access to transport, digital connectivity, education, training etc.). – Greater energy efficiency for social housing
Improved education and health outcomes	<ul style="list-style-type: none"> – Improved access for transport disadvantaged groups to life-long learning opportunities – Improved access to life-long learning through improved digital connectivity – Improved access to life-long learning through the provision of integrated facilities – Improved life-long learning through new and upgraded facilities to make them fit-for-purpose – Improved access to for transport disadvantaged groups to health and social services – Improved digital access to health and social services for people living in regional and rural areas – Improved access to health and social services through the provision of integrated facilities – Improved access to health and social services through making existing facilities fit-for-purpose
Improved social inclusion outcomes	<ul style="list-style-type: none"> – Opportunities to improve and support local participation and leadership through the provision of infrastructure that supports local networks and provides accessible wrap around services – Opportunities to engage priority cohorts with participation pathways to improve life outcomes

SOURCE: INFRASTRUCTURE VICTORIA

1.3 Report structure

The remaining chapters of this report are as follows:

- *Chapter 2* defines the key concepts that are important to the assessment framework's design
- *Chapter 3* outlines the assessment framework (based on the key concepts discussed in Chapter 2), presenting its objectives, assessment principles and assessment processes.



This chapter outlines the key concepts that have underpinned the Assessment Framework’s design. These concepts are grounded in the traditions of evidence-based policy analysis. These traditions include:³

- The use of a problem-oriented framework. Quite explicitly, the policy sciences have addressed public policy issues and posed recommendations for their resolution. The social or political question—so what?—has always been pivotal in public policy. Likewise, policy problems are always seen to occur within a *specific context* (i.e. a place), a context that must be carefully considered in terms of the methodology, analysis and recommendations offered to address a policy problem. In addressing a problem, it is natural to consider the strengths (as well as the weaknesses) of the context/region/community to gain a full understanding of the problem at hand. However, by starting with a problem-based approach, the Assessment Framework is well-aligned with the core dimensions of disadvantage which themselves relate to a range of socio-economic conditions that are unfavourable or undesirable and need addressing.
- The use of a multi-disciplinary based framework. Every social or policy problem has components closely linked to the various academic disciplines (such as, sociology, social psychology, history, demography, economics and politics) without falling clearly into any one discipline’s exclusive domain – and regional disadvantage is no different in this respect. To gain a complete appreciation of regional disadvantage, many disciplines must be used and integrated.
- The use of normative or value-oriented thinking. In many cases, public policy deals with the ‘democratic ethos’ and elements of ‘human dignity’. This value orientation is largely in recognition that no social problem nor methodological approach is value free and a decision to address a problem is a clear articulation that it is something that Government should pursue for the benefit of its citizens.

In addition, this chapter draws heavily on the material presented in a discussion paper written by Jeanette Pope for IV, titled: *The role of infrastructure in addressing regional disadvantage in Victoria (2019)*. The paper was developed specifically to support IV’s work on the ARD project by providing a summary of the key literature and an analysis of the relationship between place-based disadvantage and government infrastructure. This paper should be read as a companion document to the Assessment Framework.

2.1 Definition of disadvantage

Pope’s paper defines community/social disadvantage as the ‘populations who experience a low standard of living due to a lack of resources (economic, human or social capital⁴), or a lack of access

³ DeLeon, P. and D. Vogenbeck (2006), ‘The Policy Sciences at the Crossroads’, in F. Fischer, G. Miller and M. Sidney (eds) *Handbook on Public Policy Analysis: Theory, Politics and Methods*, CRC Press, New York.

to the opportunities to generate those resources'. This definition recognises the duality of disadvantage; first, that it reflects the relative lack of resources a population actually has; and second, the lack of opportunities a population has to generate the resources required to address disadvantage.

The Productivity Commission's (PC) 2013 report titled *Deep and Persistent Disadvantage in Australia* focuses on individual interpretations of disadvantage. In this report, the PC blends traditional notions of poverty (as inadequate resources or low income) with richer conceptualisations of disadvantage that encompass broader concepts such as deprivation, capabilities and social exclusion (and inclusion) as shown in **Table 2.1** below.

TABLE 2.1 CONCEPTS UNDERPINNING THE ASSESSMENT FRAMEWORK'S DEFINITION OF DISADVANTAGE

Concept	Description
Low-income status	Identifying 'who' is living in poverty requires a measure that uses a threshold that separates the disadvantaged from the rest of the population. The relative income poverty approach considers that people are living in poverty if their income is below a certain percentage of middle-level (or median) household income. The main threshold used by the Organisation for Economic Cooperation and Development (OECD) is 50 per cent of median equivalised household income (that is, household income adjusted for the size and composition of the household). The European Union countries most commonly use a poverty line set at 60 per cent of median income. For this report, a person is said to be in relative income poverty if their household equivalised income is less than 50 per cent of the median household equivalised income.
Deprivation	Deprivation can be understood as exclusion from the minimum acceptable standard of living in one's own society. Deprivation measures look at which essential items, activities and services people do not have, or are not able to access, because they cannot afford them, and/or do not live in a location where the activities and services are provided/accessible.
Capability and capacity	Poverty can be defined in terms of an individual's low levels of capability. Capability is defined as what people are effectively able to do. Low capabilities can translate into outcomes such as inadequate income or education, poor health, low self-confidence, or a sense of powerlessness. This notion of capability is important because it goes to the core of a person's ability to access infrastructure if it is provided by government. The concept of capability can also be transferred to the community and community groups which deliver services and other interventions aimed at reducing disadvantage. If the local community does not have the capacity and capability to support service delivery and other interventions (such as infrastructure provision) evidence suggests these interventions are less likely to be successful.
Social inclusion or exclusion	While there is no generally accepted definition of what constitutes 'social exclusion', a common theme is the need to recognise the multi-dimensional nature of disadvantage. Social exclusion includes more traditional concepts such as income and financial poverty and material deprivation, but it extends to a wider range of life domains with a focus on participation and social connections.

SOURCE: PRODUCTIVITY COMMISSION (2013) DEEP AND PERSISTENT DISADVANTAGE IN AUSTRALIA

⁴ The term 'social capital' is derived from two basic concepts: factors which 'bond' communities together; and factors which create 'bridges' of understanding amongst community members. The difference between bonding and bridging social capital relates to the nature of the relationships or associations in the social group or community. Bonding social capital is within a group or community whereas bridging social capital is between social groups, social class, race, religion or other important sociodemographic or socioeconomic characteristics (<https://www.socialcapitalresearch.com/difference-bonding-bridging-social-capital/>). Social capital relates to the way relationships are formed between groups, organisations and individuals within a community. These relationships have dimensions of disadvantage which is why social capital has been used throughout this report as a key concept. However, they can mean more than just disadvantage, and it is important to note that distinction in this report.

These concepts, when combined, underpin the working definition of disadvantage used for the Assessment framework:

Social disadvantage relates to populations which experience a low standard of living due to a lack of resources (economic, human or social capital⁵), or a lack of access to the opportunities to generate those resources. These populations are made up of individuals who may experience temporary or prolonged disadvantage due to their low-income status, their ability to afford life's essentials, their capabilities and capacities, and their level of exclusion from the societies in which they live in.

2.2 Understanding disadvantage and where it occurs

Based on the definition provided above, the following types of disadvantage have been identified as relevant to regional Victoria.

2.2.1 Poverty and precariousness

Pope's paper describes poverty as people living in circumstances where they have severely restricted resources and opportunities. The paper presents analysis by the National Centre for Social and Economic Modelling showing that poverty exists in every Victorian community, and that it affects a diverse range of people – i.e. poverty is not just isolated to specific areas, age cohorts or ethnographic groups. From this analysis, it is reasonable to conclude that the composition of poverty in regional Victoria varies significantly. The Assessment Framework must therefore be designed to accommodate this variation and support the selection of infrastructure investments that reflect the diverse composition of factors which cause poverty.

Duration is another important dimension of poverty. A report by the PC in 2018 identified that spells of poverty (in the main) last less than three years.⁶ This duration is likely to increase, that is become entrenched, the longer someone is in it, because being in poverty limits a person's 'potential to seize economic opportunities' as they emerge. This typically means that it is harder for people to move out of poverty, and if they do, they typically face an increased risk of falling back into it.⁷

Also, Pope's paper recognises that there is a 'broader group that is not in, but at risk of, poverty'. The people in this group are described in the literature as being in a precarious situation. By precarious, we mean people have 'less restricted access to resources and opportunities than those in poverty but are vulnerable to severe disadvantage'.⁸ People who are in precarious situations may experience one or more of the concepts of disadvantage identified in **Table 2.1**.

According to the PC (2018), many Australians experience economic disadvantage at some stages of their lives due to the key events (such as the transition from education to work, job loss, pregnancy/having children, divorce/relationship breakdown, illness, disability, or retirement). For most people, this type of disadvantage is temporary.

The PC report provides ample quantitative evidence and analysis about the movement of individuals between income deciles which shows that the top and bottom income deciles are stickier and in particular, there is less movement of these people from the bottom two deciles.

Based on the PC's analysis, it is clear that the Assessment Framework must have the capability to support government investments which can address disadvantage *at a point in peoples' lives when they are most at risk* of becoming disadvantaged or have experienced disadvantage for only a short time. In particular, the PC report suggests there are critical times for building capabilities across a person's life, which include:

⁵ The term 'social capital' is derived from two basic concepts: factors which 'bond' communities together; and factors which create 'bridges' of understanding amongst community members. The difference between bonding and bridging social capital relates to the nature of the relationships or associations in the social group or community. Bonding social capital is within a group or community whereas bridging social capital is between social groups, social class, race, religion or other important sociodemographic or socioeconomic characteristics (<https://www.socialcapitalresearch.com/difference-bonding-bridging-social-capital/>). Social capital relates to the way relationships are formed between groups, organisations and individuals within a community. These relationships have dimensions of disadvantage which is why social capital has been used throughout this report as a key concept. However they can mean more than just disadvantage, and it is important to note that distinction in this report.

⁶ PC (2018), 'Rising inequality? A stocktake of the evidence', Australian Government, Canberra.

⁷ Pope J. (2019), Discussion paper.

⁸ Pope J. (2019), Discussion paper.

- the early years — these lay the foundation for children’s future learning and lifetime outcomes, including the ability to form trusting and caring relationships
- the school years — success at school is a key determinant of whether children go on to further education and training and employment
- beyond compulsory schooling and the transition between education and work

PC (2013), *Deep and Persistent Disadvantage in Australia*.

The PC’s view is informed by the concept of a cycle of disadvantage (see **Figure 2.1** below). At birth, a child starts life with a set of personal resources or endowments (the evidence points to the importance of the antenatal period for shaping future development pathways for children).

The quality of family and domestic life, and experiences at various stages of development, are crucial for building capabilities and avoiding disadvantage. Families which experience problems such as poverty, poor mental health, substance abuse and domestic violence, are typically under greater stress and may more likely expose a child to disadvantage.

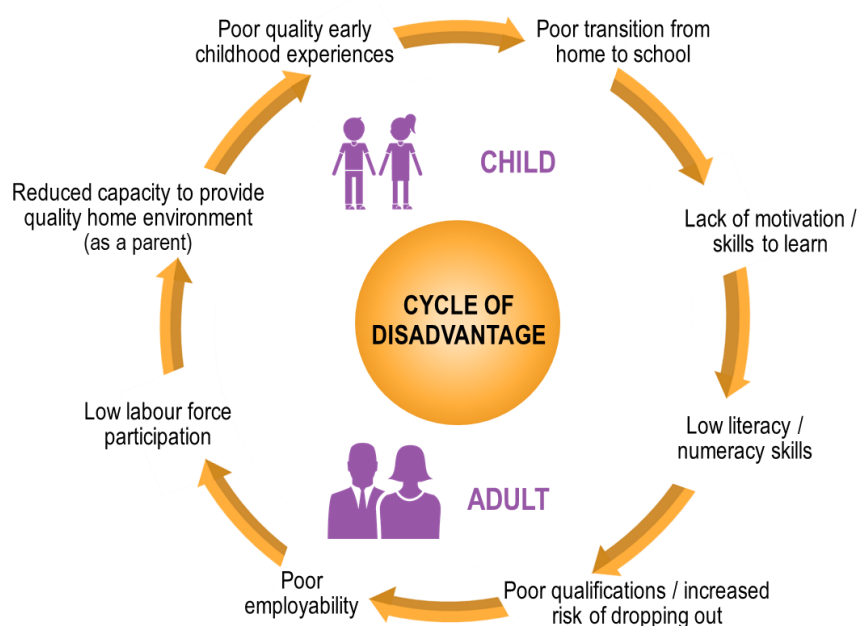
The PC suggests that children who ‘experience abuse or neglect and persistent stress in their early years are more likely to experience ongoing behavioural and learning problems, engage in violent behaviour and substance abuse and suffer poor mental and physical health’.

It also suggests that gaps in children’s development are evident early in life and lead to gaps in capabilities between children from disadvantaged households and their more advantaged peers appear early in life.

Childcare and the health and community care systems can shape children’s development and help them to realise their future potential when the family environment is unsupportive. Early childhood education can provide models of positive adult-child interactions and social networks for families.

According to the PC, starting school in a disadvantaged position can be the beginning of a cycle of disadvantage for children that sets a trajectory for ‘poorer outcomes later in life’. Because learning is a dynamic process, early learning sets the conditions for the next stage of learning. If a child is not ‘school ready’ this can lead to disengagement in learning, which can lead to behavioural problems and poor educational achievement. Well targeted intervention at certain times in people’s lives, be it through infrastructure or services, can make a substantive difference to their socioeconomic outcomes and quality of life.

FIGURE 2.1 CYCLE OF DISADVANTAGE



SOURCE: PC (2013), *DEEP AND PERSISTENT DISADVANTAGE IN AUSTRALIA*

2.2.2 Geographic and place-based considerations of disadvantage

Geography is another type of disadvantage that is relevant to the design of the Assessment Framework. People living in regional Victoria often lack access to service resources because of *distance*. While, the actual distances between Victoria's regional communities and its metropolitan are short relative to some other states and territories, 'being geographically remote from education and human services, compounds poor outcomes for those in poverty, and affects others living across regional areas'.⁹

According to Pope (2011), this includes people living in agricultural areas, in small declining towns distant from larger service centres, where services are no longer viable. But it may also be an issue in towns closer to large centres that lack certain types of services locally (for example GPs), or even in new developments on the outskirts of regional cities with no local services and poor transport access.¹⁰

The important point to note for the Framework is that geography in of itself generates potential for disadvantage due to the natural barriers it places on communities which require access to social support/services and economic opportunities.

The Assessment Framework has explicitly used place-based considerations of disadvantage for one simple reason. While disadvantage is potentially everywhere, infrastructure is not. Physical infrastructure is, by definition, place-based. This then raises the question about which places or locations display the characteristics of disadvantage (as identified above).

A 2019 report by the Victorian Auditor General's Office (VAGO) identified the significant role of regional areas in Victoria's economy; however, it also acknowledged the challenges (compared with metropolitan Melbourne) facing improved economic growth and social outcomes in some areas. As part of the report, VAGO identified the importance of using the Socio Economic Indexes for Areas (SEIFA) index to help governments 'direct funding and services where they are most needed'.¹¹ The SEIFA index refers to people's access to material and social resources and their ability to take part in society. The indicators used to calculate the index include income, education, employment, occupation and housing. A key point about SEIFA is it correlates a series of sub-indicators to identify which regions demonstrate characteristics that are consistent with the definition of disadvantage provided above and reflect the 'types of disadvantage' identified in this chapter.

SEIFA has the added benefit that it is based on ABS census data, so it can be broken down to a Local Government Area level (LGA or SA 2 level) and analysis of individual location can be undertaken as a result. SEIFA can also be integrated with other indicators/variables (such as the Jesuit Social Services (2015), 'Dropping off the edge') to show where disadvantage is concentrated in certain geographic areas (see **Table 2.2** below).¹²

TABLE 2.2 INDEXES OF PLACE-BASED DISADVANTAGE AND THEIR KEY INDICATORS

The census-based SEIFA index	Dropping off the edge (variables in addition to SEIFA)
Low income	Readiness for school
Low labour force participation (inc. low levels education, unemployment and unskilled workers)	Literacy/numeracy
Low resources: poor housing (low rent, overcrowded dwellings), no internet connection at home and no car	Criminal convictions
Vulnerable population groups (inc. single parent families, people with a disability or poor English)	Domestic violence
	Psychiatric admissions
	Electricity bill defaults

⁹ Pope J. (2019), Discussion paper.

¹⁰ Pope J. (2011) 'Change and disadvantage in Regional Victoria: an overview', Victorian Government, Melbourne.

¹¹ VAGO (2019), 'Outcomes of Investing in Regional Victoria', Independent Audit Report to Parliament, May.

¹² Jesuit Social Services (2015), 'Dropping off the edge', JSS, Sydney.

The census-based SEIFA index

Dropping off the edge (variables in addition to SEIFA)

SOURCE: POPE (2019)

Although the distribution of disadvantage is wide-spread, Pope's (2019) analysis (using these indicators /indexes) suggests that disadvantage is concentrated in certain areas. For example, analysis of the top 40 postcodes using these indexes shows that disadvantage is highest in three types of places: 1) regional cities; 2) peri urban fringe areas; and 3) rural production areas.

2.2.3 Potential indicators of place-based disadvantage

Based on the concepts identified above, it is possible to assemble an index of variables which allow the identification of disadvantaged groups in specific areas or places. **Table 2.3** provides a list of indicators that have been chosen by IV as representative of disadvantage across a person's life-cycle. They include a range of access related indicators, economic and social participation related indicators and economic and social wellbeing related indicators.

TABLE 2.3 INDEX OF REGIONAL DISADVANTAGE

Indicator	Description – full indicator	Justification
SEIFA	Socio economic indicator (index of relative disadvantage)	Overall indicator of place-based disadvantage
Digital connectivity		
No internet access	% of households with no access to the internet	Access indicator. Digital connectivity provides an individual with opportunities to participate in local economies (i.e. to look, search and apply for jobs which are posted online). It also provides opportunities to gain access to information about government service offerings, community events and allows participation in local communities. It is an important factor in reducing the isolation individuals may feel living in regional areas which are geographically isolated by building social connection
Transport		
Public transport access	% of population that has access to public transport. Objective counts and proximity to trains/bus/ferry	Access indicator. Access to public transport provides opportunities to participate in local economies, education and training, and the cultural and civic activities of local communities. It also provides access to individuals' seeking social assistance and welfare. Public transport offers a cost-effective way for people who experience poverty to gain access to the economic and social opportunities offered by local communities
No car	% of households with no car	Access indicator. In areas where public transport is not offered or it is unreasonable to provide transport in a cost-effective way (such as low-density rural areas), access to a car is critical to the participation of individual's in local economies and communities
Early years, children and education		
Kindergarten enrolment	% 4-year-olds enrolled in kindergarten	Access and participation indicator. The Victorian Government's kindergarten fee subsidy allows children to access up to 15 hours of kindergarten delivered by a qualified early childhood teacher in the year before school for free or at low cost. This subsidy incentivises parents of three-and four-year olds to commence a child's formal education before the years of compulsory schooling. Enrolment in a kindergarten is an indicator that very young children have access to and are able to participate in formal education
Developmentally vulnerable children	% of children developmentally vulnerable in two or more domains	Economic, health and social access/participation/wellbeing indicators. How a family and household's function, and their socio-demographic

Indicator	Description – full indicator	Justification
Children in jobless families	% of children aged less than 15 years in jobless families	characteristics, can play a critical role in the health and wellbeing of all its members. For children and youth, their family relationships and interactions—along with how they perform at school, their social interactions, and whether they are safe from harm—are among a multitude of factors that can have lifelong effects on households ^{13,14}
School leavers not in labour force, training or education	% of school leavers not in labour force, training or education	
Early school leavers	% people who left school at year 10 or below or did not go to school	
Health		
GP per 100 population	Number of General Practitioners per 1,000 population	Access indicators. This indicator measures geographic and place-based considerations of disadvantage
Life expectancy (male & female)	Life expectancy (male & female)	
Poor dental health	% of people living with poor dental health	
ACSC per 1,000 population	Ambulatory Care Sensitive Consultation (Potentially Preventable Hospitalisation) separation for all conditions per 1,000 per population	Health and wellbeing indicator. This indicator is a general measure of disadvantage (across all age cohorts) within a geographic location
Mental health clients	Mental health (registered clients per 1,000 population)	
Households		
Mortgage stress	% of households with mortgage stress in the bottom 40% of income distribution that spend more than 30% of income on mortgage payments	An indicator of economic and social precariousness. Mortgage and rental stress are the feeling people experience when their home loan or rent payments are so high that they struggle to pay the bills/maintain the household. While there's no official threshold, the consensus is that people begin to suffer from mortgage and rental stress when their mortgage repayments and rent exceed 30% of their household income
Rental stress	% of households with rent payments greater than or equal to 30% of household income	
Social housing	% of social housing (of total dwellings)	Economic, health and social access / participation / wellbeing indicator. This indicator is a general measure of disadvantage (across all age cohorts) within a geographic location
Homelessness	% of homeless people (estimated) per 1,000 population	Poverty indicator – potentially demonstrating elements of social and economic exclusion
Crime rate		
Crime rate	% of offence rate per 100,000 population; objective crimes against a person or property (total crime rate)	Economic, health and social access / participation / wellbeing indicator. This indicator is a general measure of disadvantage (across all age cohorts) within a geographic location
Economic & financial		
Government support as main income source	Estimated number of people aged 18 years and over who had government support as their main source of income in the last 2 years	Poverty indicator – demonstrating low-income status, deprivation, capability and social and economic exclusion
Unemployment rate	Unemployment rate	
Labour force participation rate	Labour force participation rate	

¹³ AIHW (2017), 'Australia's welfare 2017: in brief', <https://www.aihw.gov.au/reports/australias-welfare/australias-welfare-2017-in-brief/contents/children-youth-and-families>.

¹⁴ Research by the Mitchell Institute has shown the high cost per year of young people not participating in formal education until year 12 (<http://www.mitchellinstitute.org.au/reports/costs-of-lost-opportunity/>)

Indicator	Description – full indicator	Justification
Individual income under \$400 per week	Individual income	
Young people receiving unemployment benefit	Young people aged 16 to 24 receiving an unemployment benefit	Poverty and precariousness indicator – demonstrating low-income status, deprivation, capability and social and economic exclusion
People receiving unemployment benefit long term	People receiving unemployment benefit long term	Poverty indicator – demonstrating low-income status, deprivation, capability and social and economic exclusion

SOURCE: ACIL ALLEN BASED ON IV'S REGIONAL FACTSHEETS

Assessment against each indicator can be taken against the Victorian average to identify locations where different types of disadvantage occur. A measure of one or two deciles from the state average (for example) can indicate a higher relative level of disadvantage for a specific location, an LGA or an entire region. Analysis against select indicators at the LGA and SA 2 level for each region is provided in IV's fact sheets that were developed to support this Assessment Framework.

2.3 The relationship between disadvantage and infrastructure

Pope's paper (2019, p. 14) establishes a limited role for infrastructure in the alleviation of disadvantage:

Infrastructure has a limited but important role in alleviating disadvantage by creating opportunities for people to develop their economic, human and social capital resources. Specifically, it can do this by:

- increasing transport and digital connectivity to jobs and services
- increasing access to opportunities to learn skills across the life course
- reducing the cost of living
- increasing access to health, human and emergency services
- support the development of local participation and leadership.

It is important to ask *why* infrastructure only plays a limited role in alleviating disadvantage. Principally, it is because infrastructure can be viewed as a factor which alleviates but does not and cannot remove the fundamental causes of disadvantage.

A lack of infrastructure can make disadvantage worse. For example, the absence of an affordable and reliable internet connection for a school leaver who is seeking employment and requires good internet access to do so can increase the person's risk of becoming unemployed and experiencing some form of poverty (even if only temporary).

More infrastructure can make things better for this person (i.e. it provides opportunities to submit online job applications and answer emails from potential employers), but it is not a core driver of reducing disadvantage in this circumstance. The same young person will need to have the capabilities and capacities to get a job and maintain employment over time. If the same person cannot use a computer, or lacks the technical skills or qualifications to do the job, or suffers from health conditions or other social constraints which prevent employment, then investment in a higher quality internet connection would not materially reduce this person's risk of experiencing unemployment and thus disadvantage. In this circumstance, investment in digital connectivity infrastructure, therefore, would not address the policy challenge that the investment is seeking to remedy.

For these reasons, infrastructure should only ever be a public investment which supports (as opposed to drives) the services provided to address disadvantage. Like effective service provision, infrastructure should be targeted towards need and carefully considered. This need, according to the PC (2013), is most profound at certain points within a person's lifetime when they are at risk of experiencing disadvantage, or when a well targeted service intervention can be used to break the cycle of disadvantage.

Using the PC's concept of the 'cycle of disadvantage', Pope's paper identifies three overlapping infrastructure investments (or domains) that are suitable for addressing regional disadvantage by

supporting access to and participation in economic and social opportunities. These domains are outlined in **Table 2.4** and linked to the outcome statements in **Figure 1.1**.

TABLE 2.4 INFRASTRUCTURE INVESTMENTS THAT ARE SUITABLE FOR ADDRESSING REGIONAL DISADVANTAGE

Domain	Potential infrastructure solutions identified for each domain (examples only)	Link to relevant outcome statement
Increased access to economic resources: through participation in jobs and/or enterprise, and a reduction in the cost of living	<i>Jobs or enterprise:</i> transport and digital connectivity to jobs, childcare and innovation/enterprise hubs <i>Reduced cost of living:</i> lower cost housing, energy, transport, digital connectivity, climate proofed homes and public spaces	Increasing economic outcomes
Increased access to education and health (human capital) resources through participation in life-long learning and access to health and support services	<i>Life-long learning:</i> transport and digital connectivity to services, childcare, flexible facilities for education services and libraries <i>Health and support services:</i> transport and digital connectivity to services, flexible facilities for health and support services	Improving education and health outcomes
Increased access to social capital building resources through participation in cultural activities and local governance	<i>Participation cultures:</i> parks, recreation facilities, education and community facilities that encourage participation and connection, and house volunteer associates and clubs <i>Governance capabilities:</i> civic buildings, innovation places	Improving social inclusion outcomes

SOURCE: POPE (2019)

2.3.1 Infrastructure that increases access to economic opportunities

An inquiry by the Victorian Parliament identified that ‘inadequate communications infrastructure and limited transport options’ are challenges facing regional Victorians who are seeking to access employment, as well as education, training and other support services (which also relate to the human capital building domain).¹⁵

Digital connectivity

Infrastructure Australia (IA) suggests there are opportunities to improve the quantity and/or quality of services for the digitally disadvantaged, and for rural and remote communities and businesses. IA notes that income, age, disability, education and Aboriginal and Torres Strait Islander status are all factors that influence levels of digital inclusion or exclusion.¹⁶ IA further notes that geography also matters. In rural and remote settings, the cost of providing telecommunications infrastructure increases and the returns reduce as population densities decline. This also impacts the decisions of education and health providers (which provide e-learning and e-health service offerings to people living in metropolitan areas), but do not provide the same levels of service in regional areas (due to the cost and complexity of regional provision).

It has been reported that approximately 22 per cent of people living in regional Victoria live in a household without the internet (14 per cent of people living in a household in Melbourne do not have the internet).^{17,18} In particular, a lack of digital connectivity is likely to affect:

- Low income households and families with children
- The unemployed
- The elderly
- People from non-English speaking countries
- People in regional areas.

For these groups, the challenge is how to increase digital literacy where infrastructure already exists, and to make access more affordable.

¹⁵ Victorian Parliament (2010), ‘Inquiry into community energy projects’, Economic, Education, Jobs and Skills Committee, Victorian Government, Melbourne.

¹⁶ Infrastructure Australia (2019), ‘An assessment of Australia’s future infrastructure needs: the Australian Infrastructure Audit 2019’, Infrastructure Australia, Canberra.

¹⁷ ABS (2016-17) ‘Use of Information Technology Survey 2016-17’, Cat 8146.0.

¹⁸ The ABS defines household internet access as ‘a household connected to the internet via a computer, mobile phone or other device’.

IA further suggests that the specific needs of rural and remote users are often overlooked in upgrades to national infrastructure. The presence of small populations also limits the scope for universal coverage by commercially-focused private sector operators, without government intervention. As such, it may be argued that the Victorian Government has a role in providing the infrastructure required to improve digital connectivity of those people living in the regions.¹⁹

Transport

IA identifies the need for transport networks to do more to address ‘social disadvantage’, which is typically in the form of financial disadvantage (i.e. people who cannot afford to access transport), physical and cognitive disadvantage (i.e. the disabled or elderly who cannot access transport due to impairment) or geographic disadvantage (i.e. anybody who lacks access to transport because of where they live or work).²⁰

Public transport plays a critical role in promoting social equity. Disadvantaged groups with limited access to public transport are at risk of economic and social exclusion and are more likely to experience periods of poverty. People living in regional areas also tend to have poor access to public transport and will rely on private cars for access to jobs, education, services and community activities.

The transport requirements and patterns within each region vary. However, there are common problems when delivering services to regional areas. Lower residential and employment densities, combined with long distances and dispersed trip patterns, mean that public transport has traditionally struggled to provide adequate service levels to compete with the private vehicle.

According to IA, there are three common challenges that regional communities face when seeking to use public transport:²¹

- Access to public transport is lower. Smaller settlement densities mean people are less likely to live within walking distance of a public transport stop or station.
- Service frequencies are lower. Operators can provide higher frequencies when there is adequate demand. Demand is normally lower in regional areas leading to lower frequencies. This means people wait longer for services and cannot interchange between services easily.
- Travel distances are longer. People living in the regions tend to live further away from work, education, services and entertainment.

These challenges may be overcome through localised, innovative and tailored solutions. For example, community transport can go ‘door-to-door’, and many communities have used idle transport to create tailored local services. Some communities have used school buses to get remote nursing clients to services when not taking students to and from school. These communities have used a combination of local government and volunteer initiatives to address local access challenges.²²

That said, there is still a clear role for the Victorian Government to provide public and other transport infrastructure which improves the connectivity of regional Victorians to jobs, services and community. It can also provide the infrastructure (i.e. vehicles, charging stations and parking facilities) which allow private providers and no-to-for-profits to provide innovative, local and tailored solutions to the transport access challenges identified by IA.

The cost of living and housing

One way of increasing household income for disadvantage groups is to decrease the cost of living, especially housing. Pope’s paper identifies that housing is the biggest cost to disadvantaged groups, as most do not own their own home. It identifies that energy bills are the second biggest pressure facing disadvantaged households. Research has also shown that reduced housing, energy costs and internet costs increase the disposable income of disadvantaged households, therefore alleviating the incidence of poverty and precariousness in some households.

The paper suggests that the provision of public housing, and ‘retrofitting of stock to improve the energy efficiency’ as the primary infrastructure levers to reducing the costs of housing. It also

¹⁹ Infrastructure Australia (2019).

²⁰ Infrastructure Australia (2019).

²¹ Infrastructure Australia (2019).

²² Pope J. (2019), Discussion paper.

recognises that in areas where public housing is absent, 'new models of community housing (such as co-housing with mixes of public and private dwellings which share common spaces) are being explored as ways of increasing access to lower cost housing option.'²³

2.3.2 Infrastructure that increases access to human capital development opportunities

It is widely understood that providing access to education, health and other critical services is essential to the development of human capital that helps to alleviate the incidence of disadvantage (namely, poverty) in regional areas. This includes access to effective transport arrangements so people living in disadvantaged situations have access to these services and support, as well as access to the digital world so that they can participate in e-health and e-learning opportunities (as described in the transport and digital connectivity sections above).

Education

A large and well-established body of research shows that education enables the most important route out of disadvantage, employment.²⁴ Work provides a pathway to financial security, mental and physical health and meaning. Developing skills to gain and maintain employment (and be successful) happens over a lifetime.

The research, presented in Pope's paper, has also shown that early intervention delivers the best results to reducing disadvantage. This research indicates that approximately 20 per cent of Victorian children were assessed as developmentally vulnerable (i.e. children at risk of experiencing social and educational development issues) in the first year of school in 2018. Rates were found to be higher in regional areas and some socio-economic cohorts (i.e. Indigenous and non-English speaking households). This research indicates that children who are developmentally vulnerable in the first year of school are likely to experience lower quality education services and schools.²⁵

The Victorian Government funds early learning places and programs for children aged three and four year's old to deliver 15 hours of education per week. The Government provides infrastructure grants, often as a co-investor, for centres and facilities. Pope's paper argues that currently the 'quality and accessibility of facilities vary substantially across the regions'.

The point of transition between school and the workforce provides another point within a person's life when they are at risk of experiencing disadvantage. By the age of 16, 17 per cent of young people living in regional Victoria have left high school. By the age of 24, a third of people living in regional areas are not in education or employment.²⁶

Research, presented in Pope's paper, clearly shows early school leaving contributes to significant social costs, such as social disobedience (i.e. crime) and lost earnings. This research has also shown that while post-school labour market interventions are important, they do not fully compensate individuals and communities for the costs associated with early school leaving. It is therefore important to engage disadvantage young people in school or formal training.

The Victorian Government is responsible for the provision of campuses, facilities, equipment, and technology platforms from which effective education can be delivered. School-based infrastructure is one of the most significant policy levers the State Government has to deal with the challenges of disadvantage. However, in some regional areas, shrinking populations are also creating challenges in providing full-service offerings, maintaining school-based infrastructure and keeping schools open.²⁷

By the age of 25, a person who is not in formal education/training or the workforce is at high risk of experiencing long-term unemployment (some form of poverty) and ultimately disadvantage. Free adult education offerings are widely used by disadvantaged Victorians. These offerings commonly include, TAFE and public libraries. The Victorian Government is responsible for the provision of campuses, facilities, equipment and technology for adult education. This is another significant policy lever State

²³ Pope J. (2019), Discussion paper.

²⁴ See Pope J. (2019), Discussion paper.

²⁵ Pope J. (2019), Discussion paper.

²⁶ AIHW (2017), 'Australia's welfare 2017: in brief', <https://www.aihw.gov.au/reports/australias-welfare/australias-welfare-2017-in-brief/contents/children-youth-and-families>.

²⁷ Pope J. (2019), Discussion paper.

Government can use to support the delivery of education services to disadvantaged people living in the regions.²⁸

Health, human and emergency services

The complexity underpinning disadvantage make health, human, justice and emergency services vital for alleviating disadvantage. Of all the services provided by Government, primary services play the most critical role in the prevention of disadvantage. These include services provided by GPs, nurses allied health professionals, midwives, pharmacists, dentists and health workers. Other services are also important including hospitals, justice, police, emergency services, aged care and disability services. Pope's paper argues that all of these services are 'stretched' by population growth, rising costs, domestic migration, settlement patterns and demographic change.²⁹

The Victorian Government is responsible for the provision of public primary and other health care facilities. This includes 85 community health centres that deliver a range of integrated medical and social services, specifically to disadvantaged people. The Government provides technology and digital infrastructure to these facilities to ensure they are efficient and effective. In some, circumstances this can extend to workforce accommodation. Support for these facilities and services is another important policy lever that Government can use to address disadvantage in the regions.³⁰

2.3.3 Infrastructure that supports the development of social capital

The final type of public infrastructure that is important for the well-being of communities is the social infrastructure that supports participation (in the form of bonding and bridging of individuals and groups) within the local community. This includes infrastructure which allows people to develop social relationships and encourages personal interactions that influence the culture and fabric of communities. They include: town halls; swimming pools; parks; sporting grounds and facilities; playgrounds; community facilities for education, health and community activities; volunteer emergency service facilities and civic infrastructure (i.e. council chambers).³¹

Most of the infrastructure mentioned requires local leaders and community networks to deliver impact. Facilities that are co-designed by local communities are usually multi-purpose and typically deliver greater impact because they are used and maintained by community leaders who value them. It may be the case that regional areas exhibit greater social capital-related behaviour through local volunteering and a greater sense of community. This behaviour is important in helping to ensure the infrastructure implemented in regional areas is effectively supported and maintained.

The Victorian Government can provide funding for infrastructure to support local participation in disadvantage communities, but the literature and practice clearly indicates that Government support must also attract co-investment with local government/organisations to ensure facilities are effectively designed and used.³²

2.4 Determining place-based infrastructure priorities that address disadvantage

Pope's paper, and the literature examined in it, show the complex nature of disadvantage. This complexity has implications for the design of the Assessment Framework and the infrastructure investments priorities are revealed through IV's analysis against it.

The Framework must acknowledge that disadvantage has a different 'character in different places'. This means that disadvantage occurs within a range of contexts and locations which each have their own characteristics. For example, disadvantage occurs in small and declining rural towns, growth suburbs in regional cities, public housing estates, and holiday designations with large non-resident

²⁸ Pope J. (2019), Discussion paper.

²⁹ Pope J. (2019), Discussion paper.

³⁰ Pope J. (2019), Discussion paper.

³¹ Pope J. (2019), Discussion paper.

³² Pope J. (2019), Discussion paper.

populations. Infrastructure interventions must be able to meet the needs of a specific location/context.³³

Next, the Assessment Framework must acknowledge that disadvantage is multi-factorial. The complex nature of disadvantage means that to be effective infrastructure needs to be part of a 'targeted package of coordinated investment across government that address multiple risks (of people becoming disadvantaged or remaining in disadvantaged situations) simultaneously, rather than focusing on single issues.³⁴ Practice shows that it can be difficult to build infrastructure that addresses multiple, interrelated policy challenges.

Third, the Assessment Framework must acknowledge that disadvantage, while often a persistent feature of regional Victoria, can change over time. The changing nature of work, communities, society and even the environment can influence the location and nature of disadvantage. Disadvantage is a dynamic concept (even when entrenched) and it is important to note that cohorts within areas who present as disadvantaged now, can change over time. This represents a challenge for the Assessment Framework because while disadvantage can change over time, physical infrastructure typically does not change to the same degree once it has been built/implemented. All physical infrastructure development must have the flexibility to adapt to changing circumstances of local communities.

The Assessment Framework must also reflect the appropriate role of infrastructure in alleviating disadvantage. The relationship between infrastructure and disadvantage needs to be shaped by an understanding of:³⁵

- The life stages where targeted interventions in peoples' lives can have a greater impact. Infrastructure interventions that support service provision at key moments when an individual is at risk of 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.
- The models which underpin infrastructure provision. Non-traditional infrastructure models (such as technology enabled platforms), as well as integrated, flexible and mixed-use facilities can avoid the instance of stranded assets and white elephants in the regions.
- The role that local communities (networks and leaders) place in making infrastructure investments a success. An infrastructure solution will only be as good as the level of support and leverage it receives from the community who will use it. Even the best infrastructure solution will fail if it is not valued by the local community.

These points lead to a conclusion about Assessment Framework's design being underpinned by place-based considerations. These considerations recognise that Government must consider a combination of actions to improve economic, human and social capital assets in order to reduce disadvantage. Also, it must consider strengthening local and regional institutions and the input received from community leaders and entrepreneurs to ensure infrastructure solutions are targeted towards the specific needs of locations and their populations.³⁶

³³ Pope J. (2019), Discussion paper.

³⁴ Pope J. (2019), Discussion paper.

³⁵ Pope J. (2019), Discussion paper.

³⁶ Pope J. (2019), Discussion paper.



3.1 Overview

This chapter describes the Assessment Framework that is used to identify and then assess infrastructure which reduces place-based disadvantage. The essence of the Assessment Framework is a filtering process in which a possibly large number of policy challenges and potential infrastructure solutions are narrowed down to a small number that can proceed to an individual assessment (e.g. Business Case) where they can be assessed in depth.

The Assessment Framework assumes that the resources available to Government are limited and therefore a rigorous process is needed to establish where it can achieve maximum benefit from infrastructure. The other important point is that disadvantage is complex, multi-faceted, multi-causal and constantly changing. In some cases, infrastructure might be able to assist, but it is only going to be part, perhaps just a small part, of the solution, and often other forms of government intervention are likely to be more effective.

The Assessment Framework's objectives are derived from the outcome statements (presented in **Figure 1.1**). The Framework's objectives focus on reducing disadvantage by:

- Improving economic outcomes through;
 - Increasing access to jobs and enterprise
 - Reducing the costs of living
- Improving education and health outcomes through;
 - Increasing access to life-long learning (this sub-objective is also relevant to the objective above)
 - Increasing access to health and social support services
- Improving social inclusion outcomes through;
 - Increasing access to social and civic infrastructure that builds social capital.

The Assessment Framework's objectives are also consistent with several objectives identified in IV's 30-year strategy (presented at **Table 1.1**), as shown below:

- Objective 2: Foster healthy, safe and inclusive communities
- Objective 3: Reduce disadvantage
- Objective 4: Enable workforce participation
- Objective 10: Build resilience to shocks.

A feature of the Assessment Framework is that draws on a first principles approach to understand the appropriate role of government in infrastructure provision which helps to address place-based disadvantage. These principles should be used to drive decision-making under the Assessment Framework and are applied at various stages of it. There are five principles used.

Principle 1: Only some social problems can be effectively addressed by infrastructure. Moreover, infrastructure prioritised on the basis of disadvantage must show a strong link/evidence-base to disadvantage.

The Assessment Framework should recognise that some types of disadvantage are more amenable than others to being effectively addressed by infrastructure. This is so for several reasons. For example, a critical challenge facing some Victorian regions is family violence. The Victorian Government devotes resources (funding and other support) to address this challenge, and while it spends some money on associated infrastructure, such as court refurbishments that better serve family violence cases, much of the Government's expenditure on addressing family violence is not infrastructure related.

Another challenge (in the regions) is poor health outcomes. In some cases, people with poor health have good access to health facilities, and building more infrastructure will not be of much help to them because their poor health is caused by fundamental factors like inability to afford treatment for chronic illness, bad diet, smoking, excessive alcohol consumption, and so on.³⁷ Lack of health professionals with the right skills in the region may also be a factor. In other cases, poor health outcomes may be caused by poor access to health facilities and infrastructure provision will assist them.

Another way of making the same point is that the drivers of disadvantage are complex and so infrastructure prioritised on the basis of disadvantage must show a strong link/evidence base to disadvantage.

Principle 2: Accessibility and affordability are key variables in the assessment process.

In asking whether a region would benefit from the provision of infrastructure, the Assessment Framework asks will it improve *accessibility* to key services, and will it make key services more *affordable*. The important premise here is that infrastructure is a means to an end, where that end is the service made possible by the infrastructure. For example, a key service might be maternal health with a dedicated facility enabling that service. Or a key service might be communications, with internet infrastructure enabling that service. For these services to help in alleviating disadvantage, first they must be accessible. They must be within the reach of people who need them. Usually, this means they must be in close enough geographic proximity to the people who need them. Second, they must be affordable. There is no point in providing services to people if they cannot afford to use them.

Principle 3: Individuals and the community must have the capacity, capability and willingness to access/support infrastructure.

Separate from the existence of the infrastructure, is the capacity and willingness of the target population (i.e.; priority cohorts) to access/use it, and the capability of community organisations to manage/support/operate it. Without this capacity, capability and willingness, the infrastructure will sit idle and building it will be a waste of scarce resources. Capacity here includes the availability of a qualified workforce to operate the infrastructure.

Principle 4: Flexibility to meet the complex and changing nature of disadvantage.

The Assessment Framework is sufficiently flexible that it can deliver assessment outcomes which adapt to the changing nature of disadvantage. If more funding is available, then the Assessment Framework should allow for more projects to proceed through the decision-making framework. Ultimately, a poorly conceived project (in the sense it does not represent value for money) will not be assessed as worth doing in the Framework regardless of how much funding is available, but the more funding that is available, the easier it will be for marginally good infrastructure projects to be recommended. Also, if disadvantage in one location changes significantly over time (i.e. it is reduced, shifts to another location, evolves, etc.), then the Assessment Framework must provide IV with the flexibility to re-prioritise infrastructure investments.

³⁷ A famous example of wasteful expenditure on health infrastructure comes from the Philippines in the 1980s during the Marcos regime. President Ferdinand Marcos' wife Imelda decided that what the Quezon City, needed was a world-class facility for cardiac surgery. This was obtained at huge expense (estimated to be half of the Country's health budget for a year. There were two problems. First, only a tiny number of people could afford the services provided by the facility. Second, more fundamentally, this was in a country when most people didn't (and still don't) live long enough to get heart disease. https://en.wikipedia.org/wiki/Philippine_Heart_Center

Principle 5: Fit-for-purpose.

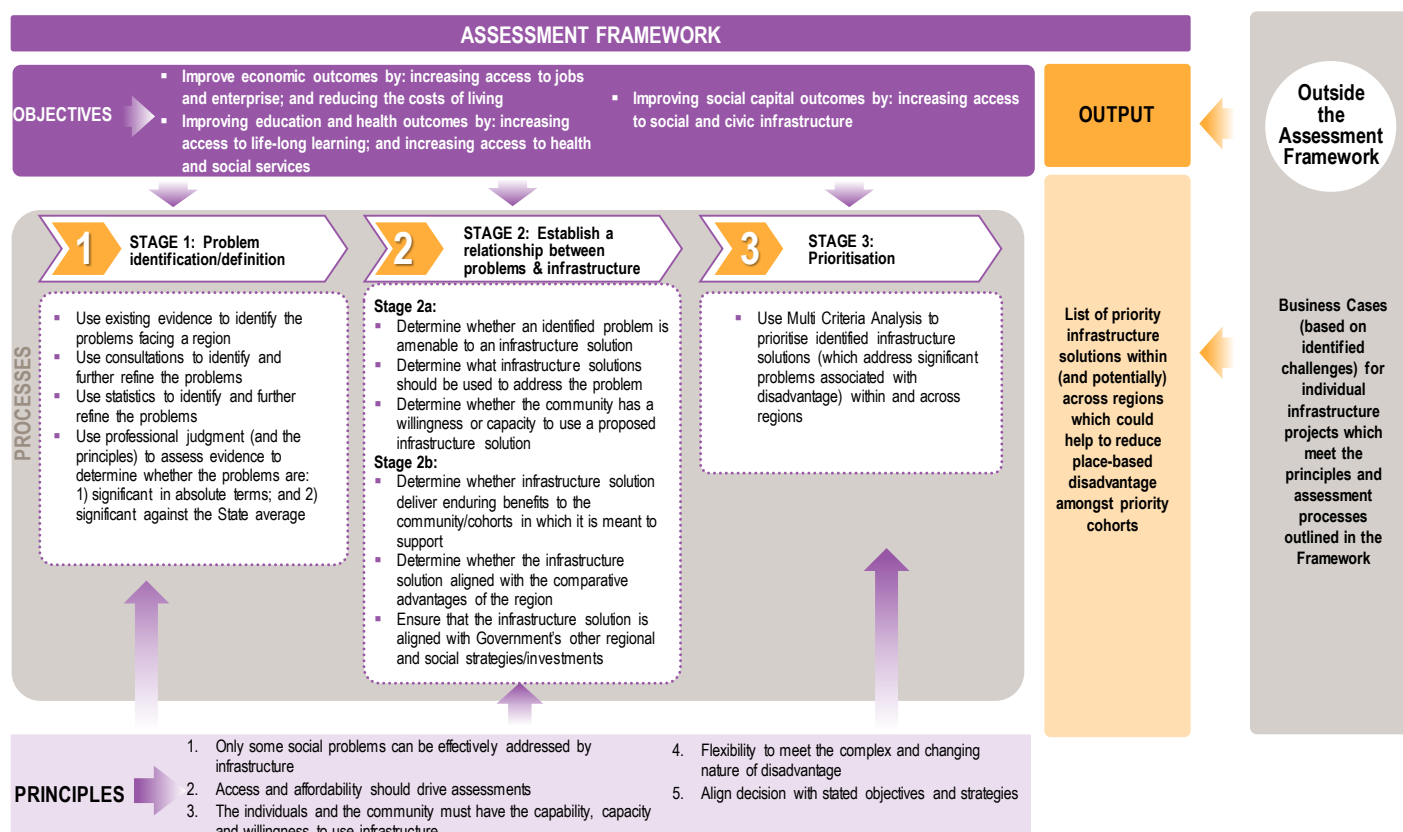
The Assessment Framework asks whether proposed infrastructure is fit-for-purpose and addresses the requirements of place-based disadvantage. In this sense, the Assessment Framework has a spatial dimension. In other words, a proposed infrastructure solution should be appropriate to the place (location) where it will be built.

Assessment under the Framework is undertaken through a sequential process divided into three key stages. The stages are:

- A problem definition stage (Stage 1). The objective of this stage is to identify the place-based challenges associated with disadvantage.
- A stage which considers the relationship between place-based policy challenges (in the form of disadvantage) and potential infrastructure solutions (Stage 2). The objective of this stage is to understand the relationship between identified challenges and infrastructure solutions.
- A prioritisation stage (Stage 3). The objective of this stage is to prioritise the infrastructure solutions that are identified as suitable for alleviating place-based disadvantage and warrant government investment.

Figure 3.1 shows the assessment framework’s overarching logic.

FIGURE 3.1 ASSESSMENT FRAMEWORK



SOURCE: ACIL ALLEN

3.2 Stage 1: Problem identification and definition

The purpose of this stage is to identify the policy challenges (or problems) arising from disadvantage within a region. This stage is important for three reasons. First, disadvantage is everywhere but infrastructure is place-based, so understanding where disadvantage is located will help to determine where an infrastructure solution can be implemented. Second, government only has finite resources and cannot fund all proposals aimed at addressing disadvantage; no matter how worthy some proposals may be. Third, aspects of disadvantage, if not addressed can lead to the incidence of entrenched poverty. This means addressing some problems (such as those presented at an early life-stage) will do more to prevent future disadvantage than other investments.

Understanding where disadvantage is most profoundly experienced involves the collection and assessment of different sources of data to determine where different types of disadvantage occur within a region. This means that the Assessment Framework's logic is contained in a multi-step process that uses a variety of sources of evidence and data to identify the problems faced by each region. In identifying problems, it may also be prudent to identify local strengths which can be used to leverage and develop solutions to the problem.

For a specific problem to be a *candidate* for a *possible* infrastructure solution, it must pass two tests. First, the problem must be significant in absolute terms. Second, the problem must be big relative to the size of the problem in Victoria (as a whole).

This is quite a stringent set of criteria for a problem just to qualify for *consideration* for an infrastructure solution (i.e. to proceed to the next stage in the framework). But stringency is inevitable and necessary in this context. There are many problems of disadvantage in Victoria's regions and in practice, resources to address them with infrastructure are available only for a relatively small number of them.

It is envisaged that three classes of evidence will be used in making this assessment: existing documentary evidence, stakeholder consultations and statistical evidence. No class of evidence should be privileged over the others and it will be a question of *informed professional judgement* as to the weight given to each piece of evidence. There is no simple mechanical answer to the question of which disadvantage problem in which region is a candidate for an infrastructure solution.

3.2.1 Use documentary evidence to identify challenges

Each region is characterised by a series of demographic, economic, environmental, geographic features which influence the location, type and severity of disadvantage. Some of these features have already been analysed and documented by IV, the Victorian Government, local governments and other organisations, and characterised as problems requiring policy intervention. These documentary sources should be used as a starting point in the problem identification stage.

The Regional Partnership Priorities for 2018-19 documents are useful in identifying the challenges facing a region. These priority documents have emerged following detailed consultation (and submission) processes with regional stakeholders and provide an up to date interpretation of the problems facing regions. The problems identified in these documents can be considered against the types of disadvantage (poverty, precariousness and geography), the life-cycle of disadvantage considerations and the outcomes of the ARD project identified in **Section 2.2**.

Also, the documents can be added to and/or amended with other sources of information held by IV (such as, AITHER's regional profile documents, regional and local area plans and strategies), where required.

Table 3.1 shows how the information from these sources can be assembled, using the example of the Central Highlands region, to start the process of problem identification.

TABLE 3.1 HOW EXISTING INFORMATION CAN BE USED TO IDENTIFY AND DEFINE PROBLEMS (EXAMPLE – CENTRAL HIGHLANDS REGION)

Challenge identified for the Central Highlands region	Type of disadvantage it relates to	Life-cycle consideration (where the problem is having greatest impact)	Link to relevant outcome statement	Is the challenge taken forward Stage 2?
Regional Partnerships Priorities documents				
Without innovation, industries can falter and cease to exist. In our region, innovation has been siloed and we have not connected our advanced manufacturing eco-system in a way that encourages joined-up innovation and capitalises on the creativity and talent of our industry workforce	None – explicitly	Not clear	None – explicitly	No
Food and agriculture are critical pillars of our local culture and economy, a lack of evidence to inform a planned and cohesive investment strategy means we haven't maximised our full economic potential. We risk losing our status as a hub for outstanding food production and agriculture if we don't act	None – explicitly	Not clear	None – explicitly	No
Digital connectivity is fundamental to people's lives, however many communities in our region are disadvantaged when it comes to accessing quality digital infrastructure and services. We also have a gap in knowledge about how digital technologies can be harnessed to increase our economic and social participation, and support new and existing businesses	Precariousness Geographic disadvantage	School years Transition between education and work	Improving economic outcomes by: – Increasing access to jobs and enterprise Improving education and health outcomes by: – Increasing access to life-long learning	Potentially
Youth unemployment in our region has more than doubled in the last two years, and our region is among the highest in rates of youth unemployment state-wide – and we don't have a clear picture as to why this happening. Without solutions, we will drive new generations away from our region as they search for opportunities further afield	Poverty Precariousness Geographic disadvantage	Transition between education and work	Improving economic outcomes by: – Increasing access to jobs and enterprise Improving education and health outcomes by: – Increasing access to life-long learning	Potentially
AITHER regional profile for Central Highlands (2019)				
Youth disengagement contributes to disadvantage in all LGAs except Ballarat, where there is a large proportion of 15-19 years old employed fulltime compared to the Victorian average. Ararat and Pyrenees LGAs have a smaller proportion of people aged 20-24 with Year 12 or higher qualifications. These two LGAs also have a larger proportion of people aged 15-19 years not engaged at all in work or study than other LGAs in the region. Hepburn demonstrates similar characteristics. This presents a challenge for the region – particularly Ararat and Pyrenees LGAs – as the economic profile for the region and the drivers change suggest that there will be an increasing demand for higher skill work in the future as the agricultural sector (the main employer for the Ararat and Pyrenees) continues to face adverse impacts from changes to the economy and climate change. Those with lower qualifications are at risk of being left behind in the future workforce	Precariousness Geographic disadvantage	School years Transition between education and work	Improving economic outcomes by: – Increasing access to jobs and enterprise Improving education and health outcomes by: – Increasing access to life-long learning	Potentially – The challenge is similar to the one identified in the Regional Partnership Priorities document for Central Highlands (identified in the rows above)
Other sources where challenges have been documented				
Include other sources where relevant				
SOURCE: ACIL ALLEN BASED ON VARIOUS SOURCES				

3.2.2 Use consultations to identify and further refine the problems

In the design of the Assessment Framework ACIL Allen examined the infrastructure frameworks of other Australian jurisdictions.³⁸ Consultation is a prominent aspect of many framework documents published by jurisdictions.

Consultation is typically used as a tool for supporting infrastructure decisions in as much as it seeks the views of people who have a deep understanding of the social issues of a region or regions.³⁹ Consultation is often cited as a core principle of infrastructure decision making as promulgated by IA:

Governments and proponents should undertake meaningful stakeholder engagement at each stage, from problem identification and option development to project delivery. This engagement should seek early input and feedback from a range of stakeholders, including local communities, businesses and industry groups, infrastructure users, private infrastructure owners and operators, and, where public funding is required, taxpayers.

Infrastructure Australia 2018, 'Infrastructure decision making principles', July.

Consultation gives stakeholders opportunities to identify local area challenges that are unlikely to be identified through a desktop review of existing data sets and published information. The consultation process should seek to capture the views of representatives from State and local governments, the non-government sector, the private sector and communities should be engaged.

The consultation themes and questions used to generate a strong understanding of the challenges facing a region need to be targeted so they identify challenges that, if addressed, will deliver significant benefits to communities. Here, guidance provided by IA is useful in shaping the questions asked of stakeholders (see **Box 3.1** below) within the context of the outcomes IV is seeking from the ARD project (see **Figure 1.1**):

³⁸ To support the framework's design, ACIL Allen considered the infrastructure assessment frameworks and plans/strategies of other Australian jurisdictions. This included a review of:

- The ACT Government's 'Infrastructure Plan 2017-18'
- Infrastructure NSW's 'Building Momentum – State Infrastructure Strategy 2018-2038'
- The Queensland Government's;
- 'State Infrastructure Plan'
- 'Project Assessment Framework – Strategic Assessment of Service Requirement'
- The WA Government's 'State Planning Strategy 2050' (prepared by the WA Planning Commission)
- Infrastructure Australia's 'Assessment Framework: For Initiatives and Project to be included in the Infrastructure Priority List'
- The Tasmanian Government's 'Tasmanian Infrastructure Project Pipeline 2018'
- The NT Government's;
- 'Infrastructure Strategy 2017'
- '10 Year Infrastructure Plan 2017-2026'
- The SA Government's 'Overview of Infrastructure Planning and Delivery in South Australia 2014'.

³⁹ See for instance the South Australian Government's 2014 'Overview of Infrastructure Planning and Delivery in South Australia', which articulates the important role of consultation in the infrastructure planning and assessment process.

BOX 3.1 CONSULTATION THEMES TO DETERMINE POLICY PROBLEMS

1. What is the size of the problem (in terms of the cohorts or community members affected by the challenge)? Is there any evidence of the monetary or financial cost of the problem to the community?
2. When is the problem likely to be experienced? Is it being experienced now, or will it be experienced at some time in the future if not addressed in the short-term? How does it change over time?
3. What are the root causes of the challenge? This should clearly distinguish causes of the challenge, as opposed to the symptoms. For example, Pope's paper identifies three key drivers (1: the increase of precarious (insecure) work; 2: growing wealth inequality; and 3: the impacts of extreme weather events) that will continue to shape the distribution of disadvantage over the next 30 years. These and other drivers need to be explored with stakeholders during consultations.
4. What are the uncertainties around future projections of the problem? Will the problem apply across many future areas or remain in one location?
5. How is addressing the problem aligned with local, regional or other priorities and/or strengths?
6. What inter-relationships does the problem have with other challenges, programs and projects being implemented by communities and governments? Are there any other wider, strategic impacts that the problem creates?
7. Which stakeholders are impacted by the problem?
8. What is the geographical reach of the problem? Are other surrounding locations experiencing the same challenge? Does the problem need an integrated solution?

SOURCE: ADAPTED FROM IA (2018), 'ASSESSMENT FRAMEWORK', MARCH.

3.2.3 Use statistical sources to identify and further refine the problems

This step uses key indicators (built off ABS and other government data) and statistics to identify and further refine the problems identified during the documentary review and consultations steps. The socio-demographic fact sheets developed as companion documents to this Assessment Framework provide the basis for determining whether a challenge (in a location) is significant and warrants further consideration. These indicators straddle eight key domains (access to ICT; transport; early years/children; young people; health; households; crime; and economic and financial) which broadly follow the life-cycle of disadvantage as outlined in **Figure 2.1** and explained **Table 2.3**. They also offer an overall indicator of relative disadvantage (SEIFA IRSD) which can be used to further validate whether a location faces significant issues associated with disadvantage.

These indicators are assembled for towns and suburbs using SA 2 and LGA level data. Consideration can be given to the deviation that each location demonstrates from the Victorian average, as shown in **Figure 3.2**, for each indicator. A combination of one and two standard deviations from the state average suggests that a location has higher levels of disadvantage. In the example of Central Highlands:

- Areas within the Ballarat LGA indicate a greater level of disadvantage amongst children and young people, with the exception of Ararat, with indicators demonstrating two standard deviations from the state average
- Avoca within the Pyrenees LGA which demonstrates two standard deviations from the state average with respect to internet access
- Ararat which demonstrates two standard deviations from the state average with respect to the percentage of its population who are developmentally vulnerable children, and the number of mental health clients living in the area.

Other indicators of disadvantage for the Central Highlands region include no access to the internet, limited access to public transport, a higher proportion of school leavers not in employment/further education, lower life expectancy or poorer health outcomes, rental stress, higher need for public housing, and lower income, higher unemployment and greater levels of welfare dependency, than the state average.

FIGURE 3.2 INDEX OF PLACE-BASED DISADVANTAGE (CENTRAL HIGHLANDS)

SA2 [UCL town]	Ballarat South [Sebastopol, Mount Clear]	Delacombe [Delacombe, Smythes Creek]	Wendouree - Miners Rest [Wendouree, Miners Rest]	Avoca [Avoca]	Ararat [Ararat]	Victoria
Place-based disadvantage						
SEIFA IRSD Decile	2	3	2	2	2	5
ICT Indicator						
No internet access	23%	17%	27%	32%	29%	17%
Transport						
Public transport access*		67%		8%	48%	51%
No car*		6%		3%	5%	5%
Early Years/Children						
Kindergarten enrolment ^{2A}		96%		92%	103%	93%
Developmentally vulnerable children	9%	15%	23%	6%	24%	10%
Children in jobless families*		14%		12%	13%	11%
Young people						
Early school leavers (15–24 years old) not in labour force/training/education	4%	4%	7%	3%	5%	3%
Early school leavers (20–30 years old) not finishing year 12	25%	29%	35%	31%	33%	17%
Health						
GP per 1000 population*		1.5		0.9	1	1.2
Life expectancy – male*		77.7		77.3	76.8	79
Life expectancy – female*		82.7		82.9	82	84
Poor dental health*		4%		7%	6%	5%
Satisfaction with health*		82%		79%	82%	84%
Preventable hospitalisations per 1000 population*		25.5		32	32.4	28.45
Mental health clients per 1,000*		18.5		15	26.7	14.52
Households						
Rental stress	16%	7%	13%	4%	8%	9%
Homelessness per 1,000*		4.1		1.5	2.5	3.3
Crime						
Offence rate per 100,000		10,660		5,725	10,861	7,422
Economic & Financial						
Government support as main income source*		33%		41%	32%	26%
Unemployment rate	9%	6%	9%	7%	6%	7%
Labour participation rate	55%	62%	51%	47%	49%	60%
Individual income under \$400/week	26%	25%	26%	31%	23%	25%
Young people receiving unemployment benefit*		5%		4%	7%	3%
People receiving unemployment benefit long term*		6%		7%	6%	4%

Note: Red boxes = 2 standard deviations from state average; and orange boxes = 1 standard deviation from state average

SOURCE: EY

Table 3.2 shows how the problems identified in **Table 3.1** (which for the purposes of this discussion have been hypothetically informed by consultations as well) can be considered against the statistical information provided in **Figure 3.2**. The information in **Table 3.2** can be used to help determine whether the problems identified from documentary sources and consultations are significant and, therefore, suitable for progression to the next stage of the Assessment Framework.

TABLE 3.2 USING STATISTICAL SOURCES TO IDENTIFY, REFINE OR ANALYSE PROBLEMS (EXAMPLE ONLY)

Challenge identified for the Central Highlands region	Relevant indicator	Location(s) where challenge are identified as being 1 or 2 standard deviations from the state average		Is the challenge taken forward to Stage 2?
		1 standard deviation	2 standard deviations	
Digital connectivity is fundamental to people's lives, however many communities in our region are disadvantaged when it comes to accessing quality digital infrastructure and services. We also have a gap in knowledge about how digital technologies can be harnessed to increase our economic and social participation, and support new and existing businesses	No internet access	Ballarat LGA (Wendouree – Miners Rest) Golden Plains LGA (North Geelong – Bell Park) Pyrenees LGA (Avoca)	Ararat LGA (Ararat)	Potentially important challenge impacting 4 locations across the region. One of these locations the challenge is potentially significant at 2 standard deviations from the State average (however, more information is required to make a more informed decision about) Potentially – take the challenge forward to the next step in the assessment process
Youth unemployment in our region has more than doubled in the last two years, and our region is among the highest in rates of youth unemployment state-wide – and we don't have a clear picture as to why this happening. Without solutions, we will drive new generations away from our region as they search for opportunities further afield	School leavers (15-24 years old)	Ballarat LGA (Ballarat South) Ararat LGA (Ararat)	Ballarat LGA (Wendouree – Miners Rest)	Challenge is present in a number of locations and reflected in 4 key indicators of disadvantage for the region. Some locations (i.e. Ballarat South) demonstrate higher levels of disadvantage across a number of indicators suggesting the challenge is multi-faceted Potentially – take the challenge forward to the next stage of assessment
	Government support as main income source	Ballarat LGA (Ballarat South) Ballarat LGA (Delacombe) Ballarat LGA (Wendouree – Miners Rest) Pyrenees LGA (Avoca)	N/A	
	Unemployment rate	Ballarat LGA (Ballarat South) Ballarat LGA (Wendouree – Miners Rest)	N/A	
	Young people receive unemployment benefit	Ballarat LGA (Ballarat South) Ballarat LGA (Delacombe) Ballarat LGA (Wendouree – Miners Rest) Pyrenees LGA (Avoca) Ararat LGA (Ararat)	N/A	
Other challenges	Assess as required	Assess as required	Assess as required	Potentially – take the challenge forward to the next stage of assessment as required

SOURCE: ACIL ALLEN BASED ON INFORMATION AND DATA HELD BY IV

3.2.4 Final Stage 1 filters

The final step in Stage 1 is to apply informed professional judgement to the problems identified through documentary sources, consultations and statistical evidence to determine whether they should be taken through to Stage 2. Here the Assessment Framework's principles and outcomes provide important guideposts for the application of professional judgement to the evidence at Stage 1. Any judgements which contradict the principles/outcomes should be critically reviewed and amended before they progress through the assessment process.

In addition, it will be important to apply the following two filters (as outlined above) to each problem identified:

1. Is the problem a significant contributor (in absolute terms) to disadvantage?⁴⁰
2. Is the problem significant relative to the size of the problem in Victoria as a whole?⁴¹

If the answer to both questions is 'yes' then the problem progresses to the next stage of analysis.

3.3 Stage 2: Establish a robust relationship between significant challenges and an infrastructure solution

The key output of Stage 1 is a clearly articulated set of place-based problems which are significant in both absolute and relative terms. The next Stage of the assessment seeks to establish whether there is a robust and defensible *in principle* relationship between these problems and an infrastructure solution. This Stage also seeks to identify what infrastructure solution(s) are the most appropriate for the problems identified at Stage 1. The first part of this stage (Stage 2a) seeks to establish whether there is a *prima facie* case for an infrastructure solution to a problem of disadvantage, i.e. is it amenable to an infrastructure solution, in the manner articulated below. If so, then the possible infrastructure solution is put through a series of tests at Stage 2b. If it passes these tests, the solution goes to Stage 3, which is prioritisation (whereby infrastructure solutions that have passed all the tests are ranked according to criteria such as alignment with objectives/outcomes).

To ensure a robust assessment, it is important to reiterate the weak relationship between infrastructure and reducing disadvantage, relative to other forms of government/community provision. It is likely that most policy challenges which progress from Stage 1 and through Stage 2 will be filtered out (due to the difficulty in establishing this relationship) by Stage 3. It is intended that only significant problems, with a clear relationship to the outcome statements and a suitable infrastructure solution, are prioritised in Stage 3.

3.3.1 Stage 2a considerations

Is a problem amenable to an infrastructure solution?

This Stage considers whether a problem should be addressed by an infrastructure solution. To unpack this consideration, the relationship between a policy problem and infrastructure provision must be established. Ideally, this relationship should be established using examples/evidence/research of what infrastructure solutions have and have not worked in the past to address place-based disadvantage.

As mentioned in **Section 2.3**, there are three overlapping infrastructure investments (or domains) that are suitable for addressing disadvantage. These investments support increased access to *economic* and *human capital building* opportunities as well as *social capital and community building* opportunities. These domains closely relate to the outcome statements in **Table 2.4**.

It is critical to consider the essential elements of each problem and ask whether an infrastructure solution will increase access to jobs, reduce the cost of living, improve access to education, and emergency services, improve the quality, quantity, consistency, timeliness or affordability of services delivered, or improve the social capital generated amongst and within community members/groups.

⁴⁰ Given the aim of this Assessment Framework is to identify physical infrastructure solutions that will address disadvantage, it is important that the problems identified at Stage 1 are significant for a significant group of people (who may represent a priority cohort) living within a location.

⁴¹ For example, using the regional fact sheets on disadvantaged, does the identified problem have a result significantly below the state average.

It is also critical to establish whether the problem can be more effectively addressed by other policy levers. This can be done by considering the key questions outlined in **Table 3.3**, and providing evidence/justification for the answer to each question. Where the answers to these questions are consistently ‘no’, then the problem is likely to exit the assessment process. Decisions will once again, rely on the ability of IV to make an evidence-based and balanced determination about the relationship between a problem and a potential infrastructure solution using the Assessment Framework principles and outcomes as guidance.

TABLE 3.3 IS A PROBLEM AMENABLE TO AN INFRASTRUCTURE SOLUTION?

Key questions that should be considered for each problem:

Is there an access dimension to the problem that is best solved by an infrastructure solution?
Will an infrastructure solution to the problem improve the quality, quantity, consistency, timeliness and affordability of education, health and other social services provided to people living in disadvantaged situations/locations?
Will an infrastructure solution reduce the cost of living for priority cohorts living within a location?
Will an infrastructure solution to the problem generate the social capital that a community requires or is seeking (in a way that would not occur otherwise)?
Are there other (non-infrastructure) policy levers that could more effectively address the problem?

SOURCE: ACIL ALLEN

What infrastructure solution could be used to address the problem?

If the problem is amenable to an infrastructure solution, it is important to then determine what type of infrastructure are suitable to address a challenge. Here it is prudent to consider whether there are alternative policy solutions which deliver greater impacts against the objectives government or regional stakeholders are seeking. It is also prudent to revisit the literature, statistical information and findings from consultations to understand the level of unmet demand driving the problem and potential role of infrastructure in helping local communities to meet this demand.

Table 3.4 outlines the basis for undertaking this assessment. It adapts Figure 7 in Pope’s paper which shows the potential infrastructure investments that are suitable for addressing regional disadvantage and points to potential solutions as well.

TABLE 3.4 WHAT INFRASTRUCTURE SOLUTIONS COULD BE USED TO ADDRESS THE PROBLEM? (EXAMPLE ONLY)

Problem	Outcome achieved by addressing the problem	Examples of infrastructure investments which are suitable (refer to Table 2.4)	Potentially relevant solution to be take forward
Digital connectivity is fundamental to people’s lives, however many communities in our region are disadvantaged when it comes to accessing quality digital infrastructure and services. We also have a gap in knowledge about how digital technologies can be harnessed to increase our economic and social participation, and support new and existing businesses	Economic outcomes by improving opportunities to increase access to; 1) jobs and/or enterprise; and 2) reduce the costs of living	Transport solutions Digital connectivity solutions Childcare solutions Innovation/enterprise Hubs Lower cost housing solutions Energy cost reduction solutions Digital connectivity solutions Climate proofed homes solutions Public space solutions	Digital connectivity solutions

Problem	Outcome achieved by addressing the problem	Examples of infrastructure investments which are suitable (refer to Table 2.4)	Potentially relevant solution to be take forward
	Education and health outcomes by improving opportunities to increase access to; 1) life-long learning; and health and support services	Transport solutions Digital connectivity to services solutions Childcare solutions Flexible facilities for education Early years, school, higher education and adult learning facilities solutions Libraries Flexible facilities for health and support services	Digital connectivity to services solutions Libraries
	Social inclusion outcomes by increasing opportunities to increase; participation in local communities/cultures	Parks and recreational facilities solutions Education and community facilities that encourage participation and connection Facilities for volunteers, clubs and community groups	Education and community facilities that encourage participation and connection
Assess other challenges that have progressed through the framework in the same way	Identify relevant outcome	Identify relevant examples	Identify potential solutions

SOURCE: ACIL ALLEN

The information provided in **Table 3.4**, while hypothetical, shows how potential infrastructure solutions can emerge from considering a problem against the outcomes achieved by addressing the problem and existing evidence/literature about the infrastructure solutions which are suitable for addressing a problem. The Framework principles should be used to shape the assessment process, where relevant. The table shows, for example, that digital connectivity solutions, in the forms of e-learning, libraries and community facilities that encourage participation and connection are some of the infrastructure suitable for addressing the challenges which have been identified in the research undertaken by Pope. There may be a need to undertake additional and more targeted research (as problems emerge from Stage 1 and examined in Stage 2a) to ensure the considerations of relationship are evidence based/robust. This research will be required as most problems that emerge are likely to be unique to the circumstances in which they occur and understanding the nuances of each problem will be critical in making an informed (expert) judgment about the potential infrastructure solution that is suitable for addressing it.

To further ensure the solutions identified in **Table 3.4** are robust, the Assessment Framework then asks two fundamental questions:

- Do the identified infrastructure solutions already exist in suitable quantities, quality or availability to address the challenge?
- Even if the problem is amenable to an infrastructure solution, is there an alternative non-infrastructure solution which would address the challenge in a more effective and efficient way?

If the answer to these questions is 'yes' (using the available research and local intelligence of stakeholders) then the problem-proposed solutions exit the Assessment Framework. If the answers are 'no' then the problem-proposed solutions (now presented as potential infrastructure solutions) progress to the next step in the assessment process.

Does the community have the willingness or capacity to use the infrastructure?

The Assessment Framework, after asking whether infrastructure could potentially help address challenge, considers whether the intended beneficiaries and stakeholders of an infrastructure solution have the capacities, capabilities and willingness to access and support it. This is a fundamental question of infrastructure sustainability which has been identified and exemplified in the research on disadvantage.

While an identified problem might be amendable to an infrastructure solution, that alone may not be justification to make an investment. For the infrastructure to address an identified problem, the community must have the capacity and capability to support it, and individuals must have a willingness to use it. This capacity, capability and willingness must be sustained over time. An obvious measure of capacity is the ability to pay for it (if the infrastructure is provided on a user-pays basis). But there are other relevant measures of capacity (e.g. digital infrastructure can be provided, but people need the skills to use it). In other cases, willingness to use infrastructure could be impacted by cultural factors.

Another consideration is the ability of a location to attract and maintain the skills/workforce required to support some types of infrastructure (especially, health, education and high technology digital infrastructure). Significant analysis and planning are required to ensure that the proposed infrastructure solution has access to the staff and skills necessary to manage and maintain the infrastructure (such as community health care facilities) over the longer term.

If the community does not have the capacity, capability and willingness to support the infrastructure, then the question must be asked if these can be built, and can they be sustained over the medium to long term. Infrastructure which does not pass these tests will be unused or underused, and the money spent building it, will have been wasted.

If the questions of community capacity, capability and willingness can be answered in an evidence-based way then the solutions progress to the next step of the Assessment Framework.

3.3.2 Stage 2b considerations

By now a policy challenge has been through several filters (and potential exit points in the Assessment Framework) and there is a strong link between the challenge and a potential infrastructure solution. To ensure the solutions which emerge from the Assessment Framework are suitable for investment it is important to ask two final questions, which are not explicitly focused on disadvantage but relate more to questions of sound public policy.

First, *will the infrastructure solution deliver enduring benefits to the community/cohorts which it is meant to support?* If the answer to this question is 'no' then the solution (given it is infrastructure-focused and, by definition, a longer-term *physical* investment that needs to be used over time to generate community returns on investment) needs to be reconsidered/amended/reshaped before it proceeds to the next step in the assessment process. If the answer is 'yes' then it progresses to the next question.

Second, *is the infrastructure solution aligned with the comparative economic and industry advantages of the region?* If the answer to this question is 'yes' then it is likely there are synergies between the infrastructure solutions proposed under the ARD and the Comparative Advantage projects which should be leveraged. If the answer is 'no' then it is important to ensure there is no fundamental conflicts between the proposed solution and other solutions that are being considered by IV for investment.

A third, and related point, is the need to ensure that the infrastructure solution is aligned with Government's other regional and social strategies/investments. Where alignment is strong, the solution should be explored further. Where alignment is weak, the solution may need to be recast or revised to ensure it is not in conflict with Government's other investments or broader policy agendas. Where alignment is weak, but there is strong evidence to support an infrastructure solution, it may progress to Stage 3 without amendment.

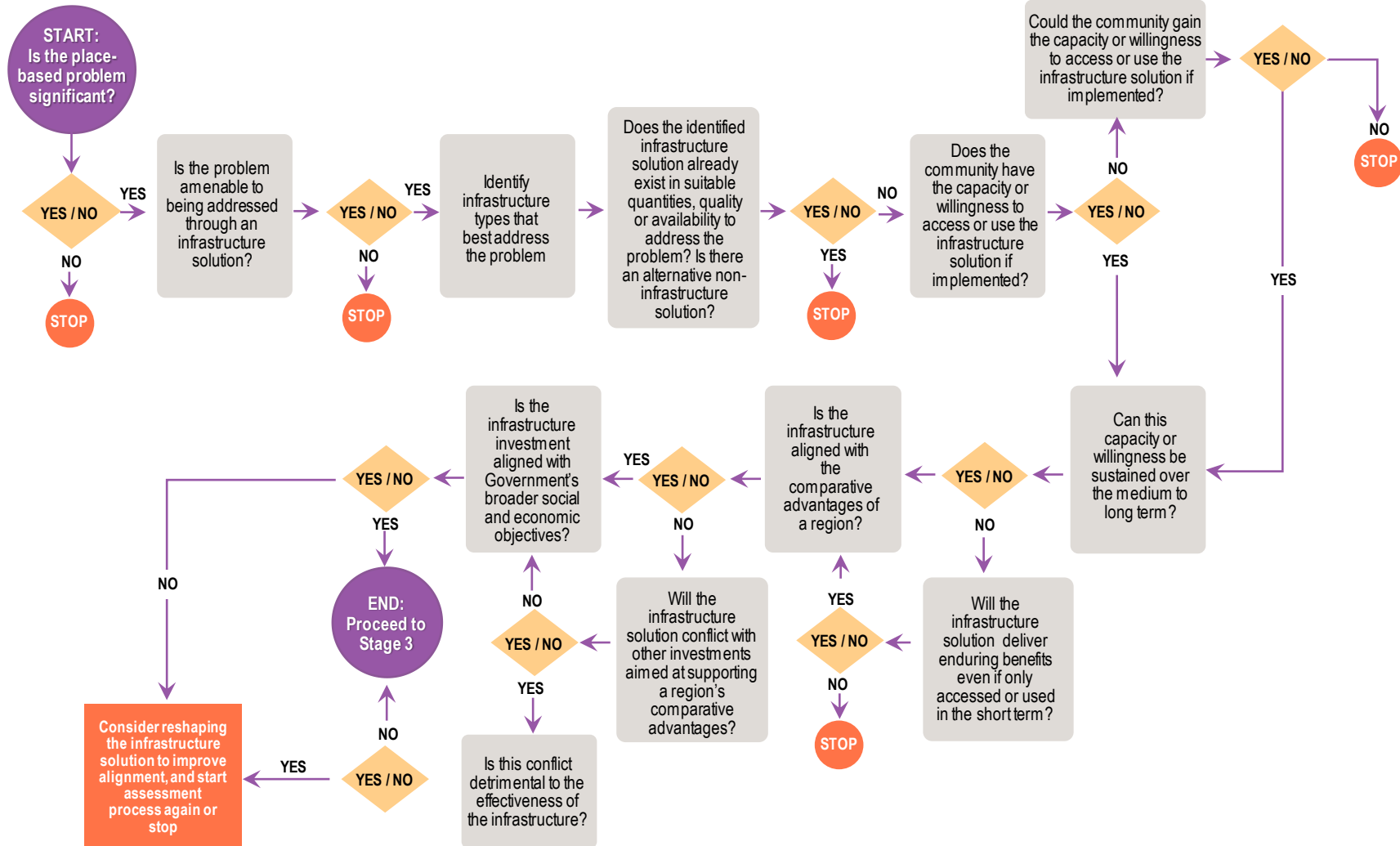
3.3.3 Summary of decision points in Stage 2

Figure 3.3 shows how the assessment approach and key questions of Stage 2 provide a method for assessing identified problems and arriving at infrastructure solutions suitable for addressing them.

The Figure contains a decision tree which uses a series of high-level questions that transform a policy challenge into an infrastructure solution suitable for prioritisation.

These questions and their logical flow have been developed from the key concepts outlined in Chapter 2.

FIGURE 3.3 STAGE 2 DECISION TREE AND ASSESSMENT PROCESS



SOURCE: ACIL ALLEN CONSULTING

3.4 Stage 3: Prioritisation

Multi-criteria analysis (MCA) is an evaluation approach used to structure and solve decision-making problems involving multiple criteria. MCA differentiates and evaluates potential infrastructure solutions 'using a set of identified assessment criteria with weights assigned to each criterion. The analysis involves subjectively scoring each option against criteria and calculating a weighted score'.⁴²

MCA techniques are ideal for ranking proposed infrastructure solutions within each region and between the regions, and for selecting areas more worthy than others for investment. This is important because governments have finite resources (including financial, expertise and time-based resources) and it is simply not possible to fund all infrastructure solutions identified through an assessment process like this one.

MCA techniques essentially give each opportunity/constraint identified a score against criteria which are weighted towards aspects of IV's decision-making/role as an independent advisor.

At a minimum, all MCA's should evaluate solutions against the key objectives or outcomes a government/organisation is seeking to achieve (in this instance, the framework's objectives/outcomes as outlined in **Section 3.1** and **Figure 1.1**). This is a requirement of most guidance material governments publish about the use of MCA techniques in public policy decision-making.⁴³

In addition, there are insights from the PC's (2013) research which suggest life-cycle considerations and community support dimensions that are important to the prioritisation process.

Each criterion will be weighted to reflect their relative importance (see **Table 3.5** below).

The criteria used for the MCA and the justification for using them are provided in **Table 3.5**. Assessment against the criteria should be largely qualitative and based on the informed (expert) judgement of the individual/persons making the assessment. This judgement should be applied within the context of the Assessment Framework's principles. Judgments that contradict the principles should be reviewed and refined accordingly.

TABLE 3.5 CRITERIA USED TO PRIORITISE PROPOSED INFRASTRUCTURE SOLUTIONS

Category	Key criteria	How assessed
Improving economic outcomes	1. The proposed infrastructure solution increases the access that people (who experience disadvantage) have to a job or enterprise	The infrastructure solution will receive a rating for each criterion which broadly aligns with the outcomes/objectives IV is seeking from the ARD project. The more that an infrastructure solution contributes to an outcome/objective the greater score it will receive in the MCA
	2. The proposed infrastructure solution reduces the costs of living for people who experience disadvantage	
Improving education and health outcomes	3. The proposed infrastructure solution increases the access that people (who experience disadvantage) have to life-long learning	
	4. The proposed infrastructure solution increases the access that people (who experience disadvantage) have to health and social services	
Improving social inclusion outcomes	5. The proposed infrastructure solution increases the access that people (who experience disadvantage) have to social and civic infrastructure which builds social capital	

⁴² Infrastructure Australia 2018, 'Assessment framework for initiatives and projects to be included in the Infrastructure Priority List'.

⁴³ Commissioner for Better Regulation 2014, 'Guidance Note for Multi-Criteria Analysis', www.betterregulation.vic.gov.au/.../Guidance-note-Multi-Criteria-Analysis-MCA.pdf

Category	Key criteria	How assessed
Reducing the future likelihood or impact of disadvantage	6. The proposed infrastructure solution targets a life stage of a priority cohort that prevents or significantly reduces the likelihood that disadvantage (in the form of poverty or precariousness) will occur in the future	The infrastructure solution will receive a higher rating for each criterion if it can demonstrate that the solution reduces the incidence or likelihood of disadvantage occurring in the future
	7. The intended recipients of the proposed infrastructure solution have the skills, capabilities and/or ability to access the solution if implemented	
Willingness, capabilities and capacities	8. The intended recipients of the proposed infrastructure solution will use the solution if implemented	The infrastructure solution will receive a higher rating if it can demonstrate that the solution will be accessed, used and supported by local communities/workforces
	9. The local communities (or authorities, organisations) which are critical in supporting, repairing, maintaining, funding, staffing, etc. the infrastructure solution demonstrate <i>commitment</i> to the solution over the longer term	

SOURCE: ACIL ALLEN

The criteria should be assessed using an intensity scale (as outlined in the table below) that requires a consideration of an infrastructure solution's contribution (or impact) to/on a particular criterion (which in some cases relate to a specific outcome associated with addressing disadvantage). While MCA's often have negative values (such as -1), it will not be important to have these values in the Assessment Framework. This is because infrastructure solutions which attract a negative value will be filtered out during stages 1 and 2.

TABLE 3.6 INTENSITY SCALE OF IMPORTANCE

Scale	Definition	Explanation
0	N/A	Not applicable or does not meet any aspects of the criterion
1	Low	Addressing this opportunity meets few aspects of the criterion, or meets all aspects of the criterion to a low level of impact
2	Medium	Addressing this opportunity meets most but not all aspect of the criterion, or meets all aspects of the criterion to a medium level of impact
3	High	Addressing this opportunity meets all aspects of the criterion to a high-level impact

SOURCE: ACIL ALLEN

The suggested weighting for each criterion is shown in the table below.

ACIL Allen reviewed other infrastructure plans, strategies and assessment frameworks to determine how the criteria should be weighted. However, there was limited guidance on this aspect in the infrastructure plans, strategies and assessment framework reviewed. One exception related to the 'objectives criteria' included in the MCA. Most guidance material on MCAs suggests that these criteria should be weighted more heavily than the other criteria used in an MCA. As such, ACIL Allen has given the five framework objectives equal weightings and has subsequently allocated 75 per cent of the MCA's total weightings to these criteria. This means that infrastructure solutions which make a significant contribution to more than one outcome aimed at reducing place-based disadvantage will be a higher priority than other solutions which progress through Stage 2.

The other criteria used in the MCA were weighted to reflect two key lessons from the literature and practice regarding place-based disadvantage. First, policy interventions which target a point in the life-cycle of disadvantage, if well designed, can have a significant impact on reducing (even preventing) the incidence of disadvantage occurring in the future. Second, an infrastructure solution will only be effective if it is accessed, used and appropriately supported by local communities. Where this

willingness, capability, capacity does not exist, other policy (non-infrastructure) solutions maybe warranted to ensure that communities do not become further disadvantaged or have the ability to effectively support an infrastructure solution funded by Government.

It is important to note that the weights were determined using professional judgement and are essentially subjective in nature. It is acknowledged that a different interpretation of each criterion's relative importance would result in a change to these weightings.

TABLE 3.7 WEIGHTING OF CRITERIA

Criteria	Weight	Justification
Alignment with ARD project outcomes/objectives (Criteria 1-5)	75% of total weight (or 15% of the total weighted value for each outcome/objective contributed to)	Contribution to stated outcomes/objectives is a critical component of any potential investment as it relates to the use of public moneys
Reducing the future likelihood or impact of disadvantage (Criterion 6)	10% of the total weight	The ability of an infrastructure solution to prevent disadvantage, reduce the risk of disadvantage occurring, or reduce the incidence of disadvantage in a location in the future will deliver significant benefits to individuals, communities and governments in the form of increased economic and social-wellbeing and a reduction in future government expenditure on policy interventions. This criterion has been given a smaller weighting than criteria 1-5 given the uncertain nature of these impacts of the future incidence of disadvantage
Willingness, capabilities and capacities (Criteria 7-9)	15% of the total weight (or 5% of the total weight for each criterion identified for this category)	It is critical that individuals, local communities, organisations and other key stakeholders to the infrastructure solution have the willingness, capacity and capabilities to access, use, maintain and support an infrastructure solution. Without this willingness, capacity and capability the infrastructure solution risks becoming a 'white elephant' infrastructure project. Here, it is assumed that threshold capacity test discussed in the prioritisation stages has been passed; the scoring is in respect of the extent of the relevant and necessary capacities.

SOURCE: ACIL ALLEN

3.5 Closing remarks

The Assessment Framework provides a principles and evidence-based way of identifying instances where place-based disadvantage is significant and justifiably requires an infrastructure solution. The Framework does this through a three-stage process consisting of a:

1. Problem identification/definition stage. This stage assembles available evidence to identify where place-based disadvantage is occurring in the regions.
2. Relationship assessment stage. This stage considers whether a strong relationship between the problem of disadvantage and an infrastructure solution can be established.
3. Prioritisation stage. This stage ranks the problem-based infrastructure solutions identified for a region.

If a proposed infrastructure solution is justified on the basis of the Assessment Framework, then an individual assessment is required to support the investment decision making process. All business cases should meet the practice guidance as promulgated by IV, the Victorian Governance and IA.

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