Regional Strengths and Infrastructure Gaps

Appendices

Tennant Creek, Northern Territory

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Appendix A: Methodology

The findings contained in this report have been reached through application of a robust research methodology inclusive of both desktop research and stakeholder consultation. The outputs from this process were used to identify key Regional Strengths and Infrastructure Gaps in Australia's regions, with the latter further analysed using a built-for-purpose Regional Infrastructure Gaps Prioritisation Framework.

This chapter provides an overview of the project methodology.

Phase 1: Research and surveys

Phase 1 involved conducting desktop research into each of the 48 RDA regions within the scope of this report. This research sought to identify, analyse and consolidate a wealth of existing information to develop a deeper understanding of the strengths, challenges and opportunities facing Australia's regions. Key sources consulted included:

- Local, state and federal government plans and strategies, including existing Infrastructure Australia documents as well as state and territory infrastructure body outputs

- Reports produced by public and private infrastructure advisory bodies, industry groups or regulatory bodies

- Submissions made to government infrastructure inquiries

- Strategy and planning documents produced or commissioned by RDA Committees

- Survey responses provided by RDA Committee representatives

- Data obtained through REMPLAN, forecast.id or the ABS.

In addition, a survey was distributed directly to each RDA Committee to provide opportunity to give insight into the most significant assets, industries and Infrastructure Gaps facing their region. An industry survey was also hosted on Infrastructure Australia's website which allowed industry to provide comments on assets, industries and Infrastructure Gaps for their applicable region(s) or provide general feedback on Infrastructure Gaps relating to their sector. Infrastructure Australia received 92 submissions from a range of stakeholders such as industry associations, peak bodies, academia, private business, local and state government.

Information assessed and collated in the initial desktop research and surveys was summarised into the following outputs for each region:

- A regional character statement, which distilled the key strengths of a region into a succinct statement;

- Key existing assets in the region, that is, the most significant existing economic, social and natural assets which contribute to each region's unique strengths

- Key regional growth industries, namely those which demonstrate an existing significant presence in the region as well as potential for growth

- A 'long list' of regional Infrastructure Gaps, that is, eight to ten of the most pressing infrastructure challenges and opportunities facing each region.

Phase 2: Regional workshops

The outputs of the research and survey results acted as the input for Consultation through the regional workshops.

The regional workshops were designed to ensure local stakeholder knowledge and lived experience was applied to the desktop research. This resulted in over 100 hours of consultation conducted over an eight-week period between April to June 2021. During this period, 735 stakeholders participated in 51 workshops to provide local expertise and diverse perspectives on their local RDA region.

The aim of these workshops was to work with local stakeholders to identify Key Strengths and Infrastructure Gaps facing Australia's regions, to enable the identification of priority areas for future

planning and analysis. Key stakeholders were nominated by local RDA Committees, who were able to draw on a well-developed network of stakeholders across their region. Groups from which attendees were drawn included:

- the local RDA Committee
- local council employees
- regional organisations of councils
- the state infrastructure body
- planning body/ regional development representatives
- First Nations leaders and land councils
- peak organisations
- community organisations
- infrastructure and planning experts.

A majority of the workshops were conducted via video conferencing using the Zoom video conferencing program. The facilitator used both verbal discussion, chat functions, and an interactive platform, Mentimeter, to gather comments, rank priority criteria and Infrastructure Gaps.

Online workshops were supplemented with a series of hybrid (in-person and online) workshops in partnership with RDA Tropical North, RDA Townsville and North West, RDA Northern Territory and RDA Kimberley. In RDA Kimberley, RDA Northern Territory and RDA Tropical North, an additional workshop which specifically consulted with First Nations stakeholders was conducted for each region. These workshops presented the same research material to participants as in the broader RDA stakeholder workshop for the region, however the format of proceedings was more flexible, with a focus on facilitating open discussion to derive the greatest value from the knowledge and lived experience of First Nations stakeholders.

Attendees at these First Nations stakeholder workshops were drawn from the following key groups:

- Land Council representatives
- Community groups with a focus on delivering outcomes for First Nations communities
- Government stakeholders involved in development or delivery of policy relating to First Nations communities
- Industry or business leaders from within First Nations communities
- Representatives from health, justice and community services, education or other services with a focus on or considerable involvement in First Nations communities.

Every stakeholder workshop across Australia consisted of discussion around key past and anticipated changes in the region, future infrastructure needs, perspective on the relative importance of economic, social and environmental outcomes, as well as stakeholder feedback on research outcomes and Infrastructure Gaps.

At the end of the workshop, the outputs were analysed and summarised in a Consultation Summary Report. The summary of each workshop was distributed back to the RDA chairs to confirm that the summary reflects the perspectives of stakeholders provided in these workshops.

Phase 3: Identifying Regional Strengths

The Regional Strengths of each region are considered to be their key existing assets and key industries. A list of key assets and key industries were selected for each region for the consultation.

Key existing assets

Key existing assets were identified through the course of regional research, with sources including:

- Regional plans and strategies
- Local government plans and strategies
- State and federal government plans and strategies
- Industry body publications
- RDA Committee surveys
- Industry surveys.

Assets selected on this basis were presented to stakeholders at each regional workshop. Based on the feedback received, the initial key asset list was amended or added to, in order to better reflect the perspectives of local stakeholders on what matters to their region. To provide for reporting consistency, key assets for all regions have been categorised under the following headings:

- Educational and research institutions
- Gateway ports
- Natural environments
- Natural resources
- Strategic location
- Transport infrastructure
- Health infrastructure
- Cultural heritage
- Water infrastructure

- Climate and topography
- Defence assets
- Specialised precincts
- Energy infrastructure
- Community infrastructure
- Tourism brand
- Major attractions.

Key regional growth industries

Key regional growth industries were identified through the course of regional research, with key criteria including:

- Significant representation in existing employment or economic output figures across the region, with figures drawn from the most recently available REMPLAN, Forecast.id or ABS data.
- Significant representation in projected employment or economic output across the region.
- Strong emphasis on growth potential and strategic intent in research material, including regional plans and strategies, local government plans and strategies, and state or federal government plans and strategies. Where this is the case, research materials must demonstrate that the industry also has an existing presence in the region, or sufficient enabling infrastructure to allow for the industry to establish itself within the region.

- Strong emphasis on growth potential in regional consultations, including RDA Committee surveys, industry surveys and stakeholder workshops. Where this is the basis for consideration of an industry, abovementioned research materials must have supported its inclusion.

Based on review of this research, key industries have been identified for each region. A brief explanation has been provided as rationale for the inclusion of each industry. To provide for reporting consistency, key assets for all regions have been categorised under the following headings:

- Healthcare and social assistance
- Manufacturing
- Agriculture, forestry and fishing
- Energy
- Aerospace
- Defence
- Tourism
- Mining
- Knowledge sector
- Transport.

It is noted that the categorisation of the key regional growth industries aligns in part with the Australian and New Zealand Standard Industrial Classification (ANZSIC) division categories used by the Australian Bureau of Statistics (ABS), due to categories delivering separate purposes. Alignments is outlined in **Table 11**.

Table 11: Comparison with ANZSIC categories

ANZSIC division	Alignment with key regional growth industry category
Agriculture, forestry and fishing	Aligned with key regional growth industry categories
Mining	
Health care and social assistance	
Manufacturing	
Electricity, gas, water and waste services	Incorporated in the Energy category
Construction	Not included due to large contributions across Australia, crossover with other categories and lack of strong presence in research material and consultations for strategic future intent
Wholesale trade	Not included due to lack of strong presence in research material and consultations for strategic future intent

ANZSIC division	Alignment with key regional growth industry category
Retail trade	Partially incorporated into Tourism category, noting that this varies between regions. Retail, accommodation, food services, arts and recreation services by themselves were not included due to lack of strong presence in research material and consultations for strategic future intent
Accommodation and food services	
Arts and recreation services	
Transport, postal and warehousing	Partially incorporated into Transport category. Postal and warehousing not strongly emphasised in in research material and consultations for strategic future intent.
Information media and telecommunications	Incorporated into the Knowledge sector category
Rental, hiring and real estate services	
Professional, scientific and technical services	
Administrative and support services	
Education and training	
Public administration and safety	Incorporated in both the Knowledge sector and Defence category. Defence has been drawn out as a separately due to key strategic focus in some regions.

Phase 4: Regional Infrastructure Gaps Prioritisation Framework

To prioritise Infrastructure Gaps for each region, a bespoke *Regional Infrastructure Gaps Prioritisation Framework* was developed. This framework was applied across three stages, culminating in identification of 3-4 priority Infrastructure Gaps for each region.

Stage 1: Initial gap identification and selection

As noted above, Infrastructure Gaps in each region were initially identified through a combination of desktop research and consultation with key stakeholders. Key inputs in the Infrastructure Gap identification process included:

- Publicly available documentation relating to the challenges and opportunities within each region, inclusive of reports and strategic documents.

- Analysis of documentation provided by RDA Committees relating to research and evaluation of their region.

- Review of industry submissions.

Whilst not exhaustive, the list of Infrastructure Gaps developed through this process is considered to represent the most significant Infrastructure Gaps in terms of the challenge or opportunity that they present to the region, based upon available information.

Stage 2: Identification and prioritisation with local stakeholders

The initial Infrastructure Gaps identified through desktop research and surveys were further tested and expanded upon in local workshops. As noted, these were conducted with key industry, government and community stakeholders in each region. The process for developing Infrastructure Gaps through each workshop included:

- Presentation of Infrastructure Gaps based on Stage 1, with a brief summary provided for each gap based on research outcomes.

- Feedback from stakeholders was used to amend or add to the list of Infrastructure Gaps for each region.

- Stakeholder prioritisation of Infrastructure Gaps, whereby workshop participants identified their first, second and third most important Infrastructure Gaps from the amended list.
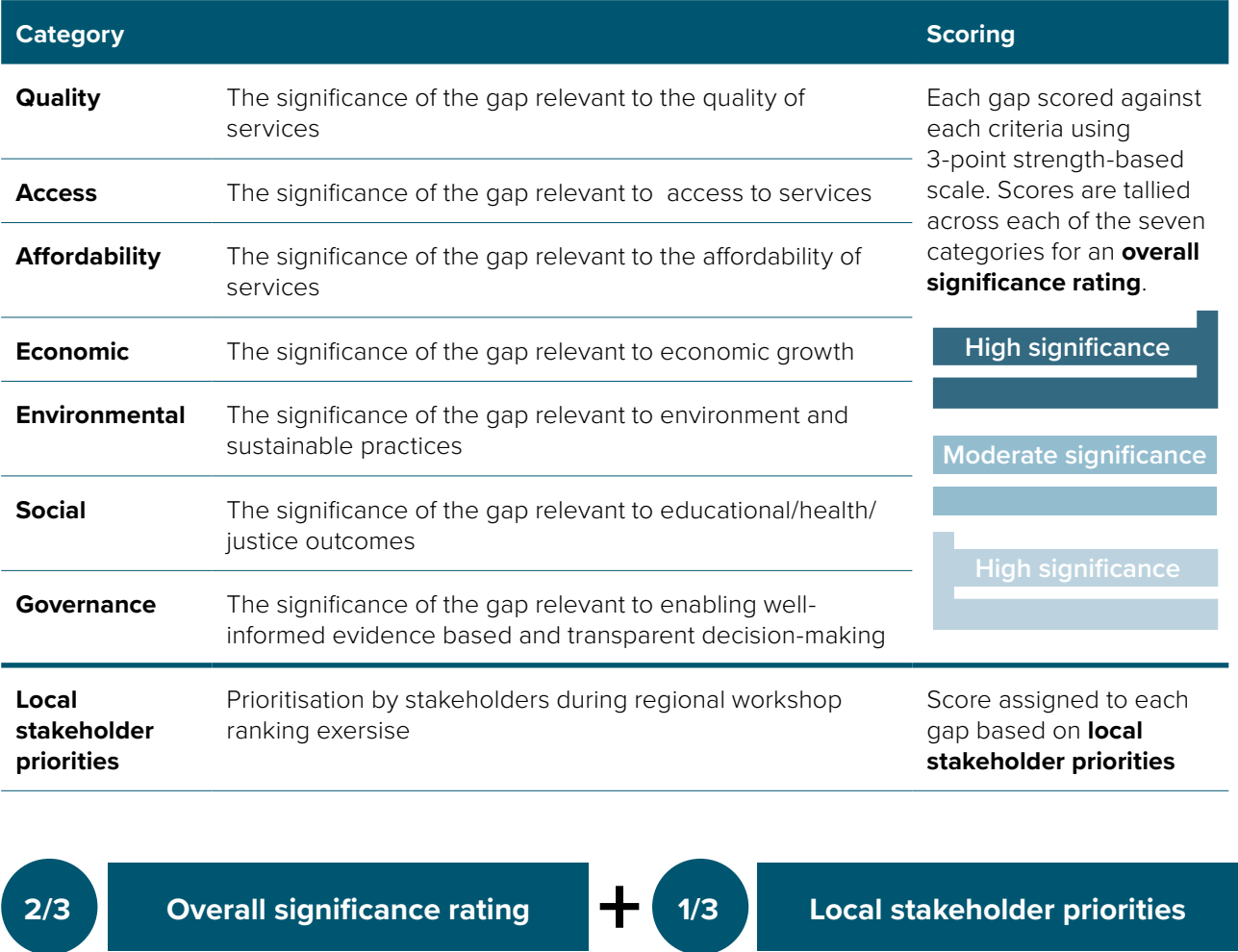
Stage 3: Regional Infrastructure gap significance assessment

Stage 3 commenced with a standardisation of Infrastructure Gap sectors and titles across all regions to allow for common trends to be identified. The key descriptive elements of each Infrastructure Gap were retained during this process to ensure a regional lens was maintained.

The list of Infrastructure Gaps for each region produced through this research, consultation and standardisation process was then subject to further analysis through a multi-criteria analysis (MCA) framework. This framework drew upon the existing Infrastructure Australia MCA tool, which was developed for the *2021 Australian Infrastructure Plan*, however with reframed criteria to ensure that the local impact of the gap was considered.

Infrastructure Australia, with our independent assessors, scored the Infrastructure Gaps against seven categories based upon how significant each gap is to a region. **Figure 6** outlines the categories and weighted scoring methodology applied to determine the highest priority Infrastructure Gaps for each region.

Figure 6: Multi-Criteria Analysis scoring approach

Category		Scoring
Quality	The significance of the gap relevant to the quality of services	Each gap scored against each criteria using 3-point strength-based scale. Scores are tallied across each of the seven categories for an **overall significance rating**.
Access	The significance of the gap relevant to access to services	
Affordability	The significance of the gap relevant to the affordability of services	
Economic	The significance of the gap relevant to economic growth	High significance
Environmental	The significance of the gap relevant to environment and sustainable practices	Moderate significance
Social	The significance of the gap relevant to educational/health/ justice outcomes	
Governance	The significance of the gap relevant to enabling well-informed evidence based and transparent decision-making	High significance
Local stakeholder priorities	Prioritisation by stakeholders during regional workshop ranking exersise	Score assigned to each gap based on **local stakeholder priorities**

2/3	**Overall significance rating**	**+**	1/3	**Local stakeholder priorities**

Overall significance rating

Infrastructure Gaps were scored against each of the seven criteria using a 3-point strength-based scale. Scores tallied across each of the seven categories for an overall significance rating.

The significance of Infrastructure Gaps was assessed relatively within the region, with significance scores allocated for each gap in each category as follows:

- High significance for the scoring category being assessed (3 points). This score indicated that the Infrastructure Gap impacts across the entirety of the region and the severity of its impact on this population is high, for instance, a region with widespread mobile blackspots impeding on access to services and economic opportunity.

- Moderate significance for the scoring category being assessed (2 points). This score indicated that:

  - The Infrastructure Gap impacts across the entirety of the region and the severity of its impact on each of the scoring categories for this population is low to moderate, for example a region where air transport access is limited across the region, but access via other means of transport is sufficient for the majority of residents.

  - That the impact of the Infrastructure Gap is localised to a partial area of the region and the severity of its impact on each of the scoring categories for this population is high, for example where remote areas of a region lacks access to health infrastructure.

- Low significance for the scoring category being assessed (1 point). This score indicated that the impact of the Infrastructure Gap is localised to a partial area of the region and the severity of its

impact on each of the scoring categories for this population is relatively low, for example where a centre would benefit from improved precinct-planning to enable industry growth but enabling infrastructure is already in-place to support development more broadly throughout the region.

Local stakeholder priorities

A score was given to each Infrastructure Gap based upon workshop stakeholder prioritisation rankings, with the lowest-priority gap receiving a score of one (1) and remaining Infrastructure Gaps designated a progressively higher score corresponding to their increasing priority according to the stakeholder prioritisation.

Priority Infrastructure Gaps

To select 3-4 priority Infrastructure Gaps for each region, the overall significance rating and local stakeholder priorities weighted scores were combined. The overall significance rating was weighted at two-thirds value and the local stakeholder priorities score was weighted at one-third value. This approach allowed for a balance between placing emphasis on the research through the criteria assessment and valuing the stakeholder views captured in regional workshops.

Appendix B: Infrastructure Gaps

This Appendix describes Infrastructure Gaps identified for each region drawing on research, surveys, submissions received from a range of stakeholders and feedback from stakeholders participating in regional workshops. This list is not exhaustive and is further expanded through a short description of each Infrastructure Gap identified, synthesising insights, reflections and perspectives gained through the research and consultation phases of this project.

Infrastructure Gaps for Indian Ocean Territories, Norfolk Island and Lord Howe Island are contained within Section 6 of the report.

Australian Capital Territory

Australian Capital Territory	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Accommodating growth, particularly in new land release areas at the city fringe, requires appropriate public and active transport connections to be in place to ensure accessibility for new residents and reduce dependency on personal vehicles. More broadly, delivery of more frequent, reliable and efficient passenger services between Canberra and other centres has the potential to provide a viable alternative to air or road travel for passengers.
Availability, diversity and affordability of housing	Less than 5% of accommodation in Canberra is classed as affordable and rental vacancies are at an all-time low. Improving housing availability and affordability is vital to avoid the development of socioeconomic divides between communities and enable liveability for diverse groups in the region.
Provision of high-quality green, blue and recreation infrastructure	As suburban areas at the city fringe grow, there is a need to provide healthy streetscapes with adequate urban canopy and local community facilities. Stakeholders identified these growing suburbs were lacking community infrastructure which could lead to socioeconomic disparity and opportunity gaps between the urban centre and the fringing suburbs.
Natural disaster resilience	The region is susceptible to the impacts of bushfires and severe storms, hence resilient and robust infrastructure is important for risk mitigation, as well as maintain functionality in disaster situations for residents and emergency response services. Examples include ensuring alternate routes during emergencies and the accommodation of overland and drainage flows during storm and flooding events.

Australian Capital Territory	
Infrastructure gap	**Insights & perspectives**
Access to and capacity of health and aged care infrastructure	ACT residents face long wait times for some specialist healthcare services, especially for specialised paediatric care. Attracting paediatricians and healthcare specialists to work in the region, along with providing appropriate treatment facilities, may improve health and wellbeing outcomes for local families.
Access to further education and skills training	The ACT has a highly skilled workforce, particularly in knowledge-based sectors. The ACT labour market lost some momentum in the first half of 2021, in part due to the impact of COVID-19. Skill shortages are reported across several industries such as high growth knowledge-based sectors (cyber, space and high-tech manufacturing) and the construction sector. Industries such as hospitality, tourism and accommodation are also concerned about challenges in re-engaging workers.
Distribution, transmission and generation of energy	There is a need to improve the security of the region's energy supply and to ensure energy efficiency is not lost during the transition process to renewables. Renewable energy infrastructure will be key to further supporting a zero emissions strategy in the region. Future needs also include vehicle charging infrastructure to meet demands for the expected transition to electric vehicles.
Capacity, connectivity and quality of freight infrastructure	The ACT region has a history of collaboration with neighbouring regions, through the Canberra Region Joint Organisation. Furthering this work to improve inter-regional freight connectivity may assist in allowing local industry to connect with national and international markets.
Capacity, connectivity and quality of air transport	Direct international connections to the region remain underserved, resulting in visitors needing to change in Sydney or another state capital city. Enhancing direct international connectivity through Canberra airport may open the region to international tourism and become a prospect to attract new residents to the region.

New South Wales

Central Coast	
Infrastructure gap	**Insights & perspectives**
Access to further education and skills training	To meet the region's current and desired industry growth profile, gaps in education and skills training need to be addressed. Provision of local skills training facilities and policies which incentivise engagement with training in in-need sectors may assist in addressing the issue. Collaboration with and upgrades to existing training infrastructure in the region may assist in this area.
Capacity, connectivity and quality of public transport	Proactive policy and planning mechanisms is critical to cater for the current population and projected growth. This will ensure that expanding urban and suburban areas deliver accessible and well-connected communities which can be efficiently serviced by public transport routes. Improved rail connections to the region has also been identified as a potential opportunity to improve connectivity for residents.
Availability, diversity and affordability of housing	The Real Estate Institute of New South Wales reports that rental vacancy rates on the Central Coast were at 0.7% in February 2021. This is reflective of the existing shortage which has been worsened with internal migration associated with the COVID-19 pandemic. Waiting lists for social housing are over 10-years for some housing types in Gosford and Wyong. Housing affordability and housing choice is an issue across the region.
Provision and quality of arts and culture infrastructure	New community infrastructure, namely arts and cultural facilities, are needed to attract and retain a productive population including young workers and families. Cultural centres and significant site mapping initiatives are also essential in preserving and celebrating the unique cultural heritage of local First Nations groups.
Capacity, connectivity and quality of road infrastructure	Road networks in the region are subject to increasing congestion and susceptible to large-scale interruptions where incidents such as accidents or bushfires occur. There is a need to enhance the capacity and resilience of these road networks, particularly given the region's position between the major centres of Newcastle and Sydney.
Natural disaster resilience	Climate-related issues such as flooding, coastal inundation, coastal erosion, drought and bushfires are a threat to the region. In addition, urban heat island effect in urbanised areas may be worsened by increasing pressure on developing open and peri-urban spaces. Resilient infrastructure which proactively mitigates these risks, as well as appropriate planning for restoring functionality after major natural disaster events is required.
Industry enabling infrastructure to support growth and innovation	Continuing and strengthening collaborations which leverage the region's strengths in education and research may create greater value and outputs for industries such as advanced manufacturing or food production. This would also allow for the potential creation of education, health or innovation hubs and assist in the containment of jobs within the region. Cohesive digital, transport and essential services infrastructure, alongside suitable skills training facilities, are necessary to enable this industry development.

Central Coast	
Infrastructure gap	**Insights & perspectives**
Waste management and resource recovery	Waste management and resource recovery infrastructure is needed to support the move away from a linear model of waste management. This is a key issue for the region as it faces population growth and increased migration which will result in more waste being generated and disposed of.

Central West	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	The region's road transport links could be optimised to better support freight capacity for agriculture and manufacturing industries. There are minimal efficient and safe links between the region, Sydney, Newcastle and Canberra, leading to increasing conflicts between passenger and freight vehicles.
Water security	The region would benefit from improved water security to support agriculture, manufacturing growth and urban water usages. Water resources are being put on pressure particularly in the face of future climate uncertainties.
Access to further education and skills training	Tradespeople, healthcare, hospitality and community services workers are lacking in many locations across the region. There is a need to offer and develop appropriate training and upskilling opportunities to residents as currently relevant local skills training and further education facilities are not sufficiently provided for in the region.
Broadband and mobile connectivity	The region lacks reliable and high-quality mobile and digital coverage in some areas. A lack of reliable internet and mobile connectivity can hamper the competitiveness of local businesses, the ability to attract and retain residents and access telehealth or other digital services. These challenges are highlighted in the RDA Central West's submission to the 2021 Regional Telecommunications Review.
Distribution, transmission and generation of energy	A lack of basic energy security for communities in the region is an issue that hinders liveability. There is a need to improve the electricity grid to ensure it can adapt to renewable sources and to ensure the region can deliver and access competitively priced sustainable energy to support businesses and residents. The region will benefit from the Central-West Orana Renewable Energy Zone (REZ), with existing generation and transmission infrastructure in Lithgow area to support renewable investment across the region.
Industry enabling infrastructure to support growth and innovation	The manufacturing industry is lacking the appropriate and necessary infrastructure to facilitate growth in coordinated digital, transport and high-capacity essential services. There is the opportunity to expand manufacturing capabilities of the region into sectors such as electric vehicle production and value-added manufacturing capabilities. Tourism in the region is also increasing however tourism assets and infrastructure to support access to the region are still lacking. Improved connective infrastructure, both digital and physical, as well as appropriate wayfinding infrastructure is necessary for industry development.

Central West	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	There is an acute shortage of social and affordable housing in the region which has been a long-standing issue that is currently further exacerbated by reduced housing availability following regional migration due to the COVID-19 pandemic. There is also a lack of accommodation for seasonal workers.
Capacity, quality and accessibility of early, primary and secondary education	The region currently lacks sufficient access to education at all levels, from early childhood education and care to primary and high schools. As a result, families are relocating to access education infrastructure. In some major centres, schools are reaching or already at capacity.
Provision of high-quality green, blue and recreation infrastructure	Upgrading existing and providing additional community infrastructure, including sports and recreational facilities, not only offers the potential to attract and retain skilled workers and families but can also serve to support the wellbeing of existing residents. Opportunities for place-making and tourism also exist in recreation infrastructure for riverfront activation.
Access to and capacity of health and aged care infrastructure	A lack of local health infrastructure in the region brings about long wait times and can necessitate significant travel time to access health services, particularly specialist care. This also places significant pressure on health infrastructure in key service centres such as Orange which must also meet regional demand.

Far South Coast	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	There is a need for fast and reliable internet access and improved mobile reception across the region to support businesses and economic activity. Strong telecommunication infrastructure will also improve equitable reliable access to education, healthcare and emergency services.
Capacity, connectivity and quality of road infrastructure	There is a need for improved road connectivity to the region. The region is well-located relative to Canberra, Sydney, Melbourne and surrounding high-productivity regions, however, the increasing strain on existing road assets is impeding connectivity, efficiency and safely for road users.
Capacity, connectivity and quality of freight infrastructure	The region would benefit from improved rail freight infrastructure and intermodal facilities which connect to existing gateway ports and major road links. This would enhance market access and support economic activity for key industries such as dairy and defence sector manufacturing.
Availability, diversity and affordability of housing	The Real Estate Institute of New South Wales has stated that the South Coast has the lowest rental vacancy rate in NSW (2021). Social housing waitlist times are also significant and increasing. An influx of COVID sea-changers has placed additional pressures on an already undersupplied housing market. In combination these issues present significant challenges to social housing availability in the region.

Far South Coast	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	The region is rich in coastal environments and First Nations culture, as well as small communities with artisanal and localised offerings. With appropriate investment into infrastructure for arts, cultural, events and protective infrastructure for natural environments, the region could strengthen its foothold in cultural or agritourism markets, as well as derive greater value from existing tourism assets.
Natural disaster resilience	Whilst coastal environments face the threat of increased sea levels and storm surges, inland environments may be subject to the impacts of drought and fire. Proactive planning to address these issues and prepare for climate-related emergencies is needed to secure the safety and wellbeing of communities. Infrastructure will play a critical role in both planning for and responding to these challenges.
Access to and capacity of health and aged care infrastructure	Additional health infrastructure, particularly outside of major service centres, and additional skilled healthcare workers will be required to sustain future growth and demand for the delivery and access to quality health and aged care services in the region.
Access to further education and skills training	There is a need for improved access to training in skilled trades and essential services as there is insufficient relevant skills training facilities provided locally. There is scope to better align the region's skills training offering with its desired future growth profile. Delivering improved local training may assist in attracting and retaining skilled workers to the region.
Capacity, connectivity and quality of public transport	The public transport network coverage and reliability of rail and bus connections is lacking for much of the region and impedes upon liveability outcomes. Public transport is vital in providing residents access to services and employment.
Water security	The region would benefit from long-term water security planning and infrastructure which is a pressure point due to the uncertainties of climate change. Recycled water which is fit for purpose for industry and households alike may assist in securing a reliable and sustainable supply.
Provision of high-quality green, blue and recreation infrastructure	Improvements to the quality and capacity of the region's existing sporting and recreational infrastructure will be required to service a growing population and ensure the region remains a desirable place to visit and live in.
Waste management and resource recovery	The region's growing population is placing increased pressure on ageing waste disposal and storage infrastructure. Dealing with the waste generated by major natural disaster events such as the recent bushfires has emphasised the lacking infrastructure and concerns for the capacity of landfills in the region.

Far West

Infrastructure gap	Insights & perspectives
Broadband and mobile connectivity	The region suffers from black spots in telecommunications and poor-quality digital connectivity. This impedes upon business operations, productivity and feasibility in addition to acting as a barrier for residents to access education, healthcare, employment and emergency services. Central Darling Shire Council's submission to the 2021 Regional Telecommunications Review highlights the digital connectivity challenges in that local government area.
Water security	There is a need for improvements in water supply and management in the region to support mining and agriculture industries, as well as household water usage. For many communities, running out of water is a key concern. Water access and supply is an even more challenging and problematic issue for unincorporated communities in this region.
Access to further education and skills training	Delivering access to adequate training and further education facilities which provide courses that match the region's industry profile will assist in building economic resilience. In particular innovation and knowledge-sector input may be required to address impacts of climate change on significant industry sectors.
Capacity, connectivity and quality of air transport	Reliable and affordable air transport access is paramount to increasing liveability and attracting more skilled workers to the region. Without air transport connection, residents are unable to access relevant health services or visit friends and family. Existing air links are insufficient to support this desire for connection and impede upon the ability of local businesses to attract skilled workers.
Availability, diversity and affordability of housing	There is a lack of housing in the region to support population growth and to house skilled workers, particularly in some of the more remote parts of the region. The housing stock within the region is also ageing and often in poor condition with little maintenance and upkeep.
Distribution, transmission and generation of energy	The landscape and climate of the region can be utilised to diversify the region's economy and support more sustainable energy generation. However, efforts are necessary to ensure energy infrastructure is fit-for-use to enable this transition, as current single-wire earth return lines are difficult to scale-up and limits capacity back into the grid.
Capacity, connectivity and quality of road infrastructure	The sealing of roads in the region is expected to improve the safety and access of roads for local agricultural businesses and producers who are vulnerable to poor road conditions and wet weather. Opportunities identified by stakeholders included sealing of key tourist routes and upgrades to facilitate the volume of heavy transport.

Far West	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	There is considerable opportunity to take advantage of the region's wild natural kangaroo endowments which is currently constrained due to a lack of cohesive management and limited value-adding facilities such as meat processing and packaging, refrigerated warehousing and transport and air freight. There is also a lack infrastructure to manage natural landscapes which are home to these potential assets. In addition, the unique geography and heritage of the regions can enable development of high-value tourism offerings in areas such as astrotourism, geotourism, agritourism, ecotourism and cultural tourism. There is currently no peak tourism body in the industry and a lack of infrastructure to expand these sectors, including connectivity challenges for main tourist routes. There is also opportunities for enhancing mining and energy linkages, from production to processing of raw materials and support of 'green' processing.
Access to and capacity of health and aged care infrastructure	Attracting and retaining skilled healthcare workers, as well as providing local health infrastructure service capacity, are areas that need to be improved for remote areas of the region. Adequate health infrastructure to support service delivery along with policy measures which encourage skilled healthcare workers to relocate to the region, may assist in improving capacity.

Hunter	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Public transport options within the region are insufficient with a heavy reliance on personal vehicles for intra-regional travel. In particular, there is a need for better network connectivity between the Upper and Lower Hunter.
Availability, diversity and affordability of housing	Low rental vacancies, a long-standing social and affordable housing shortfall, as well as population growth which has been accelerated by the COVID-19 pandemic migration has created housing shortages across the region. This has led to the rise of inequities and decrease of social and economic inclusion.
Access to further education and skills training	The region is experiencing skills shortages across all industries. Investments into existing vocational education and training institutions such as Technical and Further Education (TAFE) and agricultural colleges may be needed in the region. Micro-credentials also offer the potential assist to accelerate upskilling.
Broadband and mobile connectivity	Telecommunications infrastructure, both fixed line and mobile, can be a barrier to growth outside of major centres. Improvements to this infrastructure could enhance interstate and international business opportunities as well as improve operational capacity of emergency services, particularly during major disaster events.
Capacity, connectivity and quality of road infrastructure	The region would benefit from roads which better connect key assets in the region. Furthermore, current major road infrastructure lacks forward planning to alleviate the projected future congestion and to accommodate expected growth in freight and road passengers.

Hunter	
Infrastructure gap	**Insights & perspectives**
Water security	The Hunter is the largest coastal water catchment in NSW and provides a relatively stable supply of water. However, when droughts occur, they can be severe, affecting the region's water security, especially for the Upper Hunter. Improved capacity of water storage infrastructure in the region is needed to support the region's water security in times of need.
Industry enabling infrastructure to support growth and innovation	The region has a significant number of small and medium sized enterprises across the region in diverse sectors. Delivering policies to support business development and the development of precinct-based employment land planning would enable growth and could assist in delivering increased employment opportunities and economic diversification and empowerment.
Distribution, transmission and generation of energy	Through leveraging existing work in renewable energy generation with geographic, climatic and industry strengths and industry-research collaboration, the region has potential to grow and become exporters in areas such as solar, wind, biofuels and hydrogen. This opportunity would require the development of enabling infrastructure to support the production, storage, transmission and export in these areas.
Provision of high-quality green, blue and recreation infrastructure	To attract and retain the working population, continuing to upgrade the region's public spaces and the provision of community facilities will help to support social cohesion and engagement to enable 'healthy places', where neighbourhood environments are designed to encourage and provide health and wellbeing.
Capacity, connectivity and quality of freight infrastructure	Improved rail connectivity and capacity could improve freight efficiency and productivity. The current rail freight infrastructure is an impediment to the growth of new industries and expanding employment opportunities.
Access to and capacity of health and aged care infrastructure	Attracting skilled healthcare workers and improving the capacity of existing health infrastructure to deliver specialised services (particularly geriatric care in the face of an ageing population) in areas outside of major centres will be key to supporting population growth and an ageing population.

Illawarra	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Reliable and efficient public transport connections is vital, especially given the large commuter pool within the region. Enhancing these connections could also serve to benefit tourism growth by providing quicker and easier routes of access to and between major tourist attractions.
Availability, diversity and affordability of housing	Rising demand for housing is already placing upward pressures on housing prices in the region which has been exacerbated by relocation of urban residents as a result of the COVID-19 pandemic. There is a need to consider more housing options and types in the social, affordable and private rental housing market.

Illawarra	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	Improving freight connections to the port and key transport corridors and hubs via road or rail could serve to improve freight connectivity and export capacity for the region.
Access to and capacity of health and aged care infrastructure	The capacity of local health infrastructure, particularly in specialised and aged care, is currently stretched. Additional facilities and resources are needed to support the recent and expected population increase. This issue is exacerbated by the role of the region as a service centre for southern and south eastern areas of the state. The region also has an increasing population of those aged over 65 years, which increases pressure on health infrastructure and demand for aged-care facilities or community care infrastructure. The region has an average resident population greater than the NSW average. Within the region, both Kiama and Shellharbour LGAs have a level of workers per capita lower than the NSW average.
Industry enabling infrastructure to support growth and innovation	The region has a strong 90-year history in manufacturing which would benefit from diversification and investment in advanced manufacturing capabilities. This will require coordinated enabling infrastructure to be in place, including fit-for use digital and physical connective infrastructure. Significant potential also exists to drive tourism beyond seasonal demand and encourage longer overnight stays by engaging with new markets or product offerings, such as enabling cultural or event-based tourism through improved arts and culture infrastructure.
	Illawarra's large base of small-to-medium enterprises could benefit from appropriate digital, physical and social infrastructure for growth and development. A well-connected and well-defined tourism network can be enabled through appropriate wayfinding and basic enabling infrastructure.
Waste management and resource recovery	Capacity of waste management infrastructure in the region is a significant issue. An increasing population in the region, as well as the growth of Western Sydney, will lead to increased levels of consumption and waste production, putting pressure on already diminishing local landfill spaces.
Access to further education and skills training	Relevant local skills training facilities are not sufficiently provided for in the region. The region currently has a job deficit, with Wollongong providing the largest source of jobs. Skills shortages in certain industries are also problematic, with Illawarra businesses experiencing skills shortages in trades, impacting the productivity of these businesses. It is noted that Shellharbour has the need of greater access in the region.
Water security	During periods of extended drought and with growing population, planning for the security of future water supplies in the region is needed.

Mid North Coast	
Infrastructure gap	**Insights & perspectives**
Access to further education and skills training	High unemployment and skills shortages exists in the region, particularly in the areas of Nambucca, Kempsey and Taree. There is a need to offer skills training and further education facilities across the region which match the current and desired industry profile of the area and support young people in securing jobs.
Capacity, connectivity and quality of road infrastructure	Key road corridors in the region are often of poor quality, making access and safety challenging, particularly after heavy rain. Congestion in major centres is also a pressing challenge with population growth and seasonal influxes, putting pressure on urban road assets.
Broadband and mobile connectivity	Blackspots in mobile and digital connectivity still exist in the region, particularly in the rural hinterland area. This impedes business productivity and can restrict access to emergency services and communications in times of need, such as fire or flooding. Digital connectivity challenges across the region are highlighted in the RDA Mid North Coast's submission to the 2021 Regional Telecommunications Review.
Availability, diversity and affordability of housing	The region suffers from a housing shortage which has led to detrimental impacts of restricting population and business growth. Low wages also put increased financial stress on residents. The waitlists for social housing in the region also continue to lengthen.
Industry enabling infrastructure to support growth and innovation	The region lacks research facilities that enable collaboration and innovation to support the growth of SMEs and engine industries such as agribusiness, aquiculture and manufacturing. Innovation and entrepreneurship as a core addition to secondary education is also likely to further the innovation capabilities of the region. Transport infrastructure is critical to growth; however, this and will need to be coordinated with enhanced digital connectivity, sufficient access to essential services and appropriate land use planning strategies. Accommodation and tourism assets are ageing, reducing the appeal of the region. Diversification of the region's tourism offering through businesses that focus on high-value markets, such as ecotourism, agritourism or adventure tourism will allow for resilience in the face of seasonality which is traditionally associated with the region. Connective infrastructure, basic amenity infrastructure and infrastructure to support natural environment protection is key to achieving this goal.
Access to and capacity of health and aged care infrastructure	There is a lack of access to health infrastructure outside of major centres and service hubs face increasing strain on health infrastructure as the population grows across the region. Access to affordable mental health services, particularly targeted at the younger population, is highly competitive and can necessitate long wait times and travel to service centres. Improved local infrastructure capacity would enable improved wellbeing outcomes for residents across the region. The region also has an ageing population, driven by its popularity as a retirement destination. Provision of adequate healthcare, social services and appropriate housing is integral to supporting this segment of the population.

Mid North Coast	
Infrastructure gap	**Insights & perspectives**
Natural disaster resilience	The region's significant natural assets and infrastructure may be subject to climactic impacts such as drought, fire, flooding, rising temperatures or increasing storm surges. Planning and designing infrastructure which can withstand these pressures is critical to the resilience and sustainability of the region.
Capacity, connectivity and quality of public transport	Public transport services across the region are poor, with a reliance on personal vehicles. This also acts as a barrier to employment and the access of services and education, particularly for disadvantaged segments of the community who lack reliable access to a private vehicle.

Murray	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in many areas. Improved internet connectivity is needed to enable business as well as access to remote work, education and healthcare services. Stakeholders observed that the inability to make phone calls or access internet from their property places constraints on business operations, from difficulties banking, paying staff to working remotely. Local governments within the region such as Albury City Council, Murray River Council, Berrigan Shire Council and Edward River Council, have identified some of the digital connectivity challenges through submissions to the 2021 Regional Telecommunications Review.
Access to further education and skills training	Job growth is outpacing the supply of skilled workers and those with a university or technical education. The lack of skilled workers is problematic in health services, as well as areas such as renewable energy and advanced manufacturing. Currently, relevant local skills training and further education facilities are not sufficiently provided for in the region.
Availability, diversity and affordability of housing	There are significant and growing proportions of single person, couple only and single parent households. However, variation within the region in dwelling type and bedroom mix does not match this demand. In addition, demand from low-income renters has consistently increased over the past decade and particularly in centres. Combined with COVID-19 pandemic related migration, increased competition for affordable rental properties is expected to continue.
Water security	Water security is of critical importance to the region. The resilience of the Murray River system may be challenged by climate change, particularly if faced with periods of drought or decreased rainfall. Variations in water supply in the Murray Darling Basin, as well as changing approaches to management of this resource, have disrupted irrigation patterns and focused attention on water security.
Capacity, connectivity and quality of freight infrastructure	The upgrade, servicing and sealing of roads and connectivity pathways of major transport and logistics corridors throughout the region has the potential to improve freight accessibility and connectivity. Additionally, there is a need for maintenance of regional bridges to improve heavy vehicle access.

Murray	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	To attract a diverse population to the region, services must be provided to encourage new business and innovation. Delivering infrastructure which can support the development of innovation precincts, including transport, digital and sufficient capacity of essential services, may assist in developing business growth in the region and thus aid economic growth and diversification. The agriculture industry is also a significant economic contributor to the region. The ability of the industry to maintain output will be led by integrating AgTech and other new farming methods. This may require coordinated enabling infrastructure to be in place, including fit-for use digital and physical connective infrastructure.
Provision and quality of arts and culture infrastructure	There is currently an under representation of arts and culture infrastructure in the region. This would serve to benefit amenity and liveability for residents, as well as provide potential co-benefits to the tourism industry through enabling cultural and event tourism.
Access to and capacity of health and aged care infrastructure	Berrigan, Federation and Murray River have a higher proportion of people over 65 than the rest of NSW, with a significant increase projected for this demographic in the coming decade. Appropriate aged care infrastructure, including community care driven by a strong preference to 'age in place', will be necessary. Important considerations for the Murray Region also include addressing inequity between the First Nations and non-First Nations population. The local Public Health Network (PHN) noted increased prevalence of chronic disease and lifestyle disease amongst the local First Nations population. Improved access to culturally appropriate health services and infrastructure may assist in closing this gap.

Northern Inland	
Infrastructure gap	**Insights & perspectives**
Water security	A secure water supply for the region is critical to the local agriculture, mining, food processing and manufacturing industries. It is also vital in meeting household water demands of a growing population.
Access to further education and skills training	The region is currently suffering from workforce shortages. Training and education have been identified as crucial to creating a skilled workforce. Despite this, training facilities in the region are currently not provided at a level suitable to meet local needs.
Broadband and mobile connectivity	Digital connectivity issues within the region are hindering economic growth. Good telecommunication and digital services will provide opportunities for a wide-scale adoption of digital technologies and improve access to employment, business opportunities, services and education. Glen Innes Severn Council has identified challenges in mobile coverage in the local government area through a submission to the 2021 Regional Telecommunications Review.

Northern Inland	
Infrastructure gap	**Insights & perspectives**
Access to and capacity of health and aged care infrastructure	The region has a growing population of people living with chronic illness as well as a growing ageing population. There is a need to improve local infrastructure capacity in these areas, including community-based care. Infrastructure capacity in specialised care areas that address the growing needs in the region, including mental health, drugs and alcohol treatment, is also key to servicing the health needs of the region.
Industry enabling infrastructure to support growth and innovation	Agriculture is a significant industry for the region in terms of both employment and output. Through enabling innovation and value-adding activities in the sector, through agritourism or co-location of food manufacturing and supply chain facilities, these sectors may be leveraged to strengthen the region's economy. Transport infrastructure is critical to this growth and will need to be coordinated with enhanced digital connectivity and appropriate land use planning strategies.
Capacity, connectivity and quality of freight infrastructure	Ageing road and rail assets and the prevalence of load-limited bridges on key transport routes adversely impact the region's productivity and profitability. Improvements to widen the transport network capacity is expected to improve general accessibility to and within the region, increase road safety, and support agricultural productivity. Further connectivity for the Narrabri and Moree Special Activation Precincts and Inland Rail could be supported.
Distribution, transmission and generation of energy	The region is an optimal location for large-scale renewable energy projects. Improvements and upgrades to energy infrastructure could allow for existing solar and wind-farming operations to be expanded and new operations to be added. Additional renewable energy opportunities and bio-hubs could also be explored.
Availability, diversity and affordability of housing	Affordable and available housing is essential to ensure skilled and seasonal workers can be brought into the region to support the economy. Housing is also essential towards supporting any future population growth, with housing availability and affordability being key in attracting and retaining skilled workers in regional areas.
Capacity, connectivity and quality of public transport	Reliable and efficient public transport is essential to provide for access to employment, healthcare and services. Many smaller rural communities in the region have a lower proportion of access to personal vehicles as well as poor public transport connections, limiting their access to services and employment.

Northern Rivers	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	The area is a hub for tourism and there are opportunities to enhance niche offerings, such as those in the eco, food, wellbeing and cultural tourism sector, so as to diversify the region's offering and increase industry resilience. Integrating these offerings into a regional identity may also assist in deriving maximum value from visitors through maximising length of stay and visitor spend. Basic tourism amenity infrastructure as well as wayfinding infrastructure and high-quality tourism transport corridors are key to enabling industry growth.

Northern Rivers

Infrastructure gap	Insights & perspectives
Water security	Industrial and residential land in the region faces development limitations due to the lack of water and wastewater infrastructure to these areas. Furthermore, water security is a major concern as agribusiness and manufacturing in the region who require a secure water supply.
Broadband and mobile connectivity	Some parts of the region do not have access to reliable, high-quality digital coverage. This impedes upon uptake of technology across many sectors, including AgTech and professional services, as well as impeding access to services for residents.
Capacity, connectivity and quality of road infrastructure	Rising congestion undermines amenity, access and productivity for passengers, tourists and freight alike. Increasing conflict of use between passenger and freight vehicles in the region also threatens the safety of all road users.
Natural disaster resilience	As the region is highly susceptible to coastal erosion and floods, there is a need to invest in infrastructure to mitigate these risks and ensure climate resilience. There is also a need to invest in renewables to aid the transition towards a greener and more sustainable economy.
Capacity, connectivity and quality of freight infrastructure	There is a need to further integrate and improve current freight connectivity to key cross-border assets such as Inland rail, Toowoomba Wellcamp facilities and the Port of Brisbane. This is expected to deliver greater freight efficiencies and increase access to new markets. There are also opportunities of growth in the freight capacity by leveraging the Gold Coast Airport.
Availability, diversity and affordability of housing	The region has seen significant increases in the cost of housing in recent years, alongside reduced availability due to an influx of sea or tree changers, exacerbated by COVID-19 pandemic related migration. This not only impacts upon liveability, amenity and access to service centres for locals, but also impedes upon the ability of local businesses to attract skilled workers to the region.
Waste management and resource recovery	Waste production is expected to grow alongside population and industry growth. As a result, sustainable waste disposal facilities and creating economic opportunities around recycling and circular economy will be vital to building a sustainable economy.
Access to further education and skills training	The region has a need increase the number of healthcare and social services workers to bolster the capacity of the local healthcare system in the face of a growing population. However, there is limited capacity of existing healthcare training infrastructure in the region.
Capacity, connectivity and quality of public transport	The region has potential to improve access to reliable, regular and affordable public transport services within and between service and employment centres. The current lack of transport services means the communities, precincts and places of the region are not as integrated and productive as they could be.

Orana	
Infrastructure gap	**Insights & perspectives**
Access to further education and skills training	The region has a growing socioeconomic disparity between the employed and unemployed population. The impacts of the COVID-19 pandemic have created a shortfall in skilled migrants in the region, leaving a skills gap across Orana. There is a need to enhance access to local training and upskilling opportunities. Delivery of additional further education and training facilities may assist in building the local skills base.
Provision of high-quality green, blue and recreation infrastructure	Provision of public spaces and community facilities can assist in social connectivity and liveability, productive engagement with local young people, as well as support creativity and innovation. This was recognised as a key local need by many stakeholders. Opportunities for place-making and tourism also exist in recreation infrastructure for riverfront activation.
Water security	Improved water security to increase the reliability of supply and reduce inefficiencies in the system is particularly significant facing the uncertainties of climate change.
Capacity, connectivity and quality of freight infrastructure	Freight corridors to service the region and to more efficiently link the multitude of goods being produced to buyers in Sydney, Newcastle and Canberra, would build local economics and help grow local industries.
Distribution, transmission and generation of energy	The region has favourable conditions for solar and wind energy generation; however, it currently lacks the transmission network capacity to host large renewable energy projects.
Industry enabling infrastructure to support growth and innovation	Leveraging existing manufacturing capacity to enable high-value and advanced manufacturing may stimulate new professional, scientific and technical employment opportunities in the region. High-quality digital connectivity, transport and high-capacity essential services infrastructure will be key in such industry developments.
Capacity, connectivity and quality of road infrastructure	Maintenance and improvement of key local roads is vital in capitalising and improving the efficiency of the movement of freight, workers, residents and tourists.
Access to and capacity of health and aged care infrastructure	Reliable access to health infrastructure outside of major centres is a significant challenge for the region, with a lack of health infrastructure and skilled medical professionals servicing remote communities in the area.
Broadband and mobile connectivity	Mobile and broadband coverage is poor in some areas and non-existent in others, with a considerable number of mobile blackspots in the region. Investing in telecommunications and digital infrastructure is a crucial step towards supporting the growth of businesses, AgTech and the ability to respond during emergency events. Submissions to the 2021 Regional Telecommunications Review by Warren Shire Council, Narromine Shire Council and Dubbo Regional Council identifies digital connectivity challenges.
Availability, diversity and affordability of housing	Currently, accommodation is limited in offerings and quality which reduces the attractiveness of the area to tourists or new residents. A lack of available and affordable housing also impedes on the capacity of local businesses and industry to attract and retain skilled workers.

Riverina	
Infrastructure gap	**Insights & perspectives**
Access to further education and skills training	The Riverina region is suffering from severe workforce shortages across all industries. Improved local access to skills training and further education facilities which provide courses matching the region's desired industry profile are necessary to support this growth.
Availability, diversity and affordability of housing	Major centres such as Wagga Wagga, as well as in-demand 'tree change' destinations throughout the region, have faced increased housing demand as a result of the COVID-19 pandemic. Locals and potential new residents have been unable to enter the private housing market as a result. This inhibits the attraction of workers to the region and places further pressure on an existing shortage of social and affordable housing throughout the region as the private market becomes more inaccessible.
Water security	Improved water supply and storage infrastructure is crucial to support the continuing and projected swell of the local population, businesses in growing urban centres, and the continued development of the agribusiness sector.
	The Murray River, which supports regional agriculture and horticulture is expected to face deliveribility issues under forecast dry conditions going forward, and stakeholders stressed that infrastructure to ensure water security is critical to these regions which continue to expand with horticultural plantings despite the shortfall risks.
Access to and capacity of health and aged care infrastructure	Investment in health infrastructure and policies will help to attract skilled healthcare workers. This will enable greater availability and reliability of healthcare services outside of major centres. Aged care infrastructure is also a priority to meet the demand of a growing and ageing population.
Broadband and mobile connectivity	Mobile blackspots still exist across the region and broadband services can be unreliable outside of major centres. This causes concerns for work health and safety, business management and impedes the uptake of new digital technologies to drive industry productivity. For example, stakeholders from the agribusiness sector observed that coordinating freight logistics and communicating with transport providers can be impossible at times, with limited connectivity. Fast and reliable internet access and improved mobile reception in rural areas will enable improved efficiency and competitiveness of businesses in the region, as well as more reliable access to emergency services. Submissions to the 2021 Regional Telecommunications Review by Bland Shire Council, Murrumbidgee Council and Coolamon Shire Council identifies digital connectivity challenges.
Capacity, connectivity and quality of freight infrastructure	Improvements to high-use transport and logistics routes throughout the region are needed to support greater freight efficiency. Stakeholders noted that the region's agribusiness sector is facing issues with growers and packinghouses being unable to book transport for produce as trucks prefer not to lose time leaving the highway to travel to the Riverina for smaller loads, when passing between Melbourne, Sydney, and Brisbane. Freight connections within the region are also inhibited by intermodal connectivity. Feedback through consultation reinforced that the region needs support in accessing road freight options so produce can arrive to market promptly and in the best condition. There are also likely to be co-benefits associated with ease of movement for commuters and tourists.

Riverina	
Infrastructure gap	**Insights & perspectives**
Natural disaster resilience	Climate change is placing pressure on communities and infrastructure and has heightened the importance of climate resilience for the region. Challenges include periods of drought, increased periods of intense heat and increased severity of bushfire seasons. Infrastructure will play a critical role in both planning for and responding to these challenges.
Provision of high-quality green, blue and recreation infrastructure	Enhanced community infrastructure, including public spaces for community gatherings and events, in the region's growing service centres will assist in improving the liveability of the region and attracting new residents and visitors.
Industry enabling infrastructure to support growth and innovation	Enabling opportunities for growth of local businesses through supportive infrastructure to develop innovation precincts and improved access to training infrastructure in strategic hubs could allow for the growth of skilled and knowledge sector employment, as well as retain and attract young residents.
	By building on existing work in AgTech, AgriFood and advanced manufacturing through collaboration between government, industry and researchers, the region has potential to increase value-added for the agribusiness and manufacturing industries and become a world-leader in the sectors. Connective infrastructure, including both digital and transport, is critical to supporting this industry development.
Distribution, transmission and generation of energy	The region has significant potential to expand upon and add to existing solar and other renewable energy generation projects. Additional enabling infrastructure to support production, storage, transmission and or export in these areas is needed to facilitate this opportunity. This will serve to secure energy reliability throughout the region, as well as offer potential to transmit externally.

Southern Inland	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	Housing affordability is being eroded due to limited housing stock, a shortage of rental accommodation and a shortage of zoned land, which subsequently puts pressure on rental costs for local residents.
Water security	Water security through better water management and storage capabilities is needed in the region to support a growing population.
Waste management and resource recovery	Existing waste management infrastructure provides insufficient capacity to meet current and projected demand. Meeting this need will be key to achieving sustainable growth in the region, especially if circular economy principles are embedded in the approach.

Southern Inland	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Mobile blackspots still exist across the region and broadband services can be unreliable outside of major centres. Fast and reliable internet access as well as mobile reception is required to support existing business growth, foster community connections, and facilitate the uptake of innovative technologies. RDA Southern Inland's submission to the 2021 Regional Telecommunication's Review highlighted digital connectivity challenges in the region, alongside identifying the importance of telecommunications to farming communities and other industries such as water and energy management, education, manufacturing and mining.
Provision of high-quality green, blue and recreation infrastructure	Enhancing liveability in the region through investment in community facilities, particularly multi-use communal spaces, has been identified as one means of attracting and retaining a productive, skilled population, as well as improving visitor experience.
Industry enabling infrastructure to support growth and innovation	The region has a large number of small-to-medium sized businesses and potential for growth in specialised sectors such as advanced manufacturing. Infrastructure interventions to support this growth could enable diversification and strengthening of the economy. Transport infrastructure is critical to this growth and will need to be coordinated with enhanced digital connectivity and appropriate land use planning strategies.
Capacity, connectivity and quality of freight infrastructure	Upgrades to highways and secondary roads will improve the competitiveness of several regional industries, increase the cost efficiency of freight and decrease the long-term cost profile for enterprises in the region.
Distribution, transmission and generation of energy	There is the potential for renewable energy growth in the region to service metropolitan centres and microgrids to support energy security and to aid a transition to net-zero. Additional enabling infrastructure to support production, storage and transmission in these areas may be required to support this opportunity.
Capacity, connectivity and quality of public transport	More regular and efficient connections to Sydney and Canberra will provide residents with additional opportunities for employment and enhance physical connectivity. The unique regulatory environment between the region and ACT complicates delivery of effective public transport services.
Access to further education and skills training	The region lacks sufficient tertiary or skills training infrastructure for job seekers to pursue career pathways aligned with the region's capabilities. This leads to young people travelling outside of the region to seek further opportunities.
Access to and capacity of health and aged care infrastructure	At present, health infrastructure outside of major centres is insufficient to meet the needs of rural populations, bringing about the need for residents to travel long distances and face significant wait times to access services. Improved access to local health infrastructure outside of major centres may assist in addressing this issue.

Northern Territory

Northern Territory	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of road infrastructure	Some roads in remote areas are unsealed or poorly maintained, including access routes to cultural sites, lore grounds and access to First Nations communities. This not only inhibits passenger and tourist access, but also limits freight efficiency and productivity.
Broadband and mobile connectivity	There are several areas of the region with significant black spots and poor and unreliable digital connectivity. This is exacerbated in parts through socioeconomic disadvantage and poor digital literacy which can impact access to this infrastructure. RDA Northern Territory's submission to the 2021 Regional Telecommunications Review highlights the digital connectivity challenges across the state.
Availability, diversity and affordability of housing	Overcrowding in remote communities is an issue, as is supply of affordable, quality housing. Land tenure arrangements, particularly around crown land and Native Title restrictions, can make provision of new residential land challenging. Demands on housing are also present in regional centres.
Industry enabling infrastructure to support growth and innovation	The region has significant potential in mining and gas exploration, as well as development of renewable energy generation infrastructure including solar farming. In planning and delivering this infrastructure, there needs to be consideration of impacts on infrastructure in remote communities regarding impacts on energy or water supply, as well as encroachment upon or degradation of Traditional Lands. Deficits in processing, storage and distribution infrastructure in the Northern Territory also impacts on logistics, food security and economic development. The region also possesses both significant industry and research capacity. Collaboration between these assets along with public services to deliver health, education or innovation precincts may assist in enhancing the region's knowledge-sector and service delivery. High-quality digital connectivity, transport and high-capacity essential services infrastructure are key in such industry development.
Water security	Water supply, storage and quality control, particularly for remote communities and agricultural lands, is susceptible to variations in rainfall and an ageing system infrastructure. There is a need for collaboration with communities to deliver bespoke infrastructure solutions in these challenging geographies.
Capacity, connectivity and quality of freight infrastructure	Biosecurity measures relating to freight, such as wash-down stations for high-powered vehicles as well as marine vessels entering fragile ecosystems are lacking in the region.
Distribution, transmission and generation of energy	The region has an ideal climate and geography for solar generation, as well as offering potential in hydrogen production. Expanding on generation and transmission infrastructure offers the potential to improve energy security, particularly for remote communities.

Northern Territory	
Infrastructure gap	**Insights & perspectives**
Natural disaster resilience	The region is already highly susceptible to climate impacts in its distinct wet and dry seasons. Infrastructure damage brought about by major natural events are common and should be proactively planned for. These remote communities will face amplified impacts of heating and rainfall implications. Infrastructure which can withstand these impacts without jeopardising accessibility and connectivity is needed.
Access to and capacity of health and aged care infrastructure	Many residents in remote communities and centres outside of Darwin face long travel times to access health infrastructure, particularly when accessing specialised or mental health services. There is a need to enhance the capacity of localised health infrastructure. This disproportionately impacts First Nations people as a high proportion of Territorians reside in remote communities.
Provision of high-quality green, blue and recreation infrastructure	There is scope for improved provision of community infrastructure in rural communities, including libraries and multi-use community centres and spaces. This may assist in improving liveability and wellbeing outcomes for residents, alongside assisting in the attraction and retention of skilled workers.
Capacity, quality and accessibility of early, primary and secondary education	Ensuring that school infrastructure and curriculum delivery quality in remote communities is of a high standard may assist with promoting engagement in education in remote communities, where school attendance rates, particularly amongst majority First Nations peoples, are significantly lower than the state or national average. Childcare availability and secondary school pathways are also key priorities for Territory regional communities of all types.

Tasmania

Tasmania	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	Current access and affordability challenges will be exacerbated by increasing populations, particularly in densifying major centres. Social housing waitlists in the region have been lengthening and affordable housing stock is undersupplied. As the market for private housing stock continues to become more competitive and expensive, additional pressure will be placed on already under-stressed public housing supply by those priced out of the private market. The ability of the region to attract and retain workers may also be impacted by poor housing availability and affordability, potentially jeopardising deliverability of large-scale infrastructure projects or ongoing service delivery associated with these assets.
Access to and capacity of health and aged care infrastructure	There is a lack of access to health infrastructure at a local level outside of major centres. Tasmania also has the oldest population and the highest proportion of people aged 65 in the country, with the demand for services from this group likely to grow in coming years. Current aged care capacity, including community-based health infrastructure, will not be able to meet projected demand.
Capacity, quality and accessibility of early, primary and secondary education	Tasmania has some of the lowest levels of literacy and school retention in the country. This has far reaching implications which can lead to higher levels of unemployment and socio-economic disadvantage within the region.
Provision of high-quality green, blue and recreation infrastructure	Regional land use strategies could improve in the availability and proximity of some components of community infrastructure, particularly in growth areas and planned precincts. Place-based planning which ensures access to community facilities which provide for social connection and engagement in these growth areas will support amenity, wellbeing and liveability.
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and non-existent in others, with mobile blackspots commonplace. Poor quality connections or poor access to telecommunications and digital infrastructure inhibits both access to services and industry growth. According to the 2021 Australian Digital Inclusion Index, every area of Tasmania scored below the national average (except central Hobart), and Tasmania was the least digitally included state overall. The Premier's Economic and Social Recovery Council's Final report identified digital infrastructure and digital inclusion as priority areas for action to address the digital divide in Tasmania.
Distribution, transmission and generation of energy	Significant water and wind resources and an established export industry provide immense potential. Hydrogen, bioenergy and gas decarbonisation are also significant opportunities. Additional enabling infrastructure to support production, storage, transmission and/or export in these areas is required.
Capacity, connectivity and quality of freight infrastructure	Maintenance and upgrade of ageing freight infrastructure assets is need in order to further support key export markets. Being an island state, freight capacity issues are also present in relation to domestic shipping terminal, with many other priorities depending on the successful resolution of this.

Tasmania	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Cars will have an ongoing and major role in Tasmania's transport system, however it is important to be proactive in encouraging mode shift through delivery of improved access to public transport to enhance efficiency, reduce congestion and achieve a level of sustainability.
Water security	Improved irrigation infrastructure for areas of key agricultural land across the region is needed to enable improved water security for industry, particularly in light of a changing climate.

Queensland

Central and Western Queensland	
Infrastructure gap	**Insights & perspectives**
Water security	Three of the region's key industries: manufacturing, agriculture and mining, require significant water inputs. Alongside a growing population, there is an increasing pressure being placed on water supply. There is a need to ensure the region is well-prepared for potential future instances of drought or reduced water supply.
Capacity, connectivity and quality of freight infrastructure	An extensive road network provides challenges. Unsealed and/or lower order outback roads inhibit tourist, freight and resident accessibility. Freight efficiency is lost in restricted weight and truck type areas. Enhancing efficiency of intermodal connections also has potential to improve export capacity, particularly in the agribusiness sector. Unsealed or poorly maintained outback roads inhibit tourist, freight and resident accessibility.
Distribution, transmission and generation of energy	The region has potential to become a leader in biodiesel and hydrogen production. This may support growth of agribusiness and manufacturing through supply of reliable, affordable, sustainable energy as well as offer potential for the region to develop as a clean energy exporter. Additional enabling infrastructure to support production, storage, transmission and or export in these areas will be required.
Industry enabling infrastructure to support growth and innovation	Supporting the uptake of technology in traditional industries, including AgTech and advanced manufacturing technologies, has a significant potential to increase the value and output of these industries. Initiatives such as Gladstone State Development Area and The Rockhampton Hub offer opportunity for collaboration and innovation in the space. Cohesive digital, transport and essential services infrastructure is needed to enable this industry development. The region also has significant potential to leverage existing manufacturing expertise to enable value-add activities for agriculture, particularly in growth markets such as organic beef._x000D_

The region is expansive and unique in the diversity of its offering, from the Great Barrier Reef to dinosaur fossils to the outback. Collaboration in delivering a coordinated regional tourism strategy, as well as developing businesses which leverage the region's assets in delivering niche products such as outback tourism, ecotourism or astrotourism, could support industry growth and diversification of the region's economy. Basic tourism amenity infrastructure is needed to support this industry development. |
| **Access to further education and skills training** | There are currently skills shortages in the region for essential community service jobs, such as doctors, nurses and teachers, and particularly in more remote areas. Communities must be supported to deliver appropriate local skills training as well as attracting new skilled workers to enable the availability of essential services across the region. An additional consideration is supporting communities traditionally reliant upon mining in the transition to a green economy through appropriate retraining and upskilling. |
| **Broadband and mobile connectivity** | There remain to be some areas of the region with low-quality digital connectivity. Enhancing this would enable business growth, as well as innovation in key sectors such as agribusiness and manufacturing. |

Central and Western Queensland	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of air transport	Remote areas of the region are relatively inaccessible due to long distances between major centres and roads being in poor condition. Stakeholders identified that the frequency and reliability of existing air links do not allow for these to service as a feasible alternative and require improvement.
Access to and capacity of health and aged care infrastructure	Those living in the region's more remote communities are often faced with long travel times to major centres to access specialist care services. Attracting skilled and specialised healthcare workers, as well as enabling delivery of reliable and affordable healthcare services to rural communities, is a key priority in ensuring community wellbeing.
Waste management and resource recovery	Waste management infrastructure in the region requires upgrades to meet current demand levels, as well as cater for any future population growth. There is also potential to leverage improvements in waste management to create value through developing an economically productive circular economy.
Availability, diversity and affordability of housing*	Housing challenges vary across the region and housing spectrum, including availability and affordability, and is closely linked to regional liveability and ability to attract and retain population, particularly in rural and remote areas of the region. The Western Queensland Alliance of Councils (WQAC) Housing Solutions Study, released in 2021, unpacks this infrastructure gap in more detail for outback areas.

Darling Downs and South West	
Infrastructure gap	**Insights & perspectives**
Water security	Although there have been recent funding commitments, there is still a need for regional water resource planning to deliver on improved water security for industry and town water. This includes securing supply and storage capacity and the maintenance or upgrading of ageing assets.
Availability, diversity and affordability of housing	Stakeholders identified housing availability to be a crucial factor in the success of the region. With population increases, large centres such as Toowoomba are struggling to provide available and affordable housing. This is limiting the capacity of local businesses to attract skilled workers and is also having negative implications for the tourism industry, which is unable to provide visitors with sufficient accommodation capacity.
Broadband and mobile connectivity	Black spots and poor digital connectivity still exist in some parts of the region, whilst some remote communities still have a relatively high number of households without internet access. Poor quality connections or poor access to telecommunications and digital infrastructure inhibits both access to services and industry growth. Submissions to the 2021 Regional Telecommunications Review by Western Downs Regional Council, Paroo Shire Council, Maranoa Regional Council and Goondiwindi Regional Council highlights the digital connectivity challenges experienced in these local government areas in the region.

Darling Downs and South West

Infrastructure gap	Insights & perspectives
Access to and capacity of health and aged care infrastructure	Access to health infrastructure in rural communities, including specialist services and mental healthcare, is significantly impeded by the distances required to travel to facilities. Delivering accessible and affordable local healthcare in rural areas is key to improving health and wellbeing outcomes for these communities.
Natural disaster resilience	The area is susceptible to the effects of climate change, with droughts, extreme heat and floods having had significant impacts on agricultural production. Flooding also has significant impacts on infrastructure in urban settlements. The likely increasing occurrence of severe weather events requires a strategic and collaborative planning approach to infrastructure system resilience.
Industry enabling infrastructure to support growth and innovation	The region has significant existing expertise and capacity in manufacturing and agriculture. Enabling and supporting improvements in areas such as AgTech and advanced manufacturing will allow the region to leverage these strengths to optimise productivity and output, alongside offering potential to bring skilled employment to the region. Cohesive digital, transport and essential services infrastructure, alongside suitable skills training facilities, are needed to enable this industry development. The region also has significant assets which may enable increased yield from the visitor economy, from paddock-to-plate gourmet food and wine tourism, ecotourism, or more niche offerings such as agritourism or astrotourism. Cohesive digital, transport and essential services infrastructure, alongside suitable skills training facilities, are needed to enable this industry development.
Distribution, transmission and generation of energy	The Toowoomba and Surat Basin region already has major solar projects underway, with recent developments in wind power generation also showing promise. The geography, topography and climate of the region alongside existing transmission infrastructure (if adapted) provide significant opportunity to develop as a renewable energy source for the state and beyond. Additional enabling infrastructure to support production, storage, transmission and or export in these areas is needed.
Capacity, connectivity and quality of road infrastructure	Remote areas of the region suffer from poor quality connections to major roads and service hubs. Connecting these communities to major roads and service centres is essential for liveability, economic opportunity and wellbeing. Improved north-south links would offer significant potential for improved accessibility and connectivity.
Capacity, quality and accessibility of early, primary and secondary education	This region has had a higher rate of the population who did not complete high school and low rates of higher degree attainment. This inhibits access to higher-income employment opportunities and can contribute to generational inequality. Ageing school infrastructure with maintenance backlogs does not support the delivery of new technologies and teaching models and this impacts educational engagement and attainment.

Gold Coast	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Although the region has public transport options, poor connectivity and accessibility means there is still a heavy reliance on cars. Active modes of transport are also rarely used due to the lack of walkable environments. Public transport accessibility, connectivity and frequency can be improved to deliver improved transport connectivity between the workforce populations and economic centres and precincts.
Broadband and mobile connectivity	The growth in flexible working arrangements, technological adoption and importance of smart cities demands for faster and more reliable digital connectivity. Digital connectivity is also key to enabling the region's small and medium sized enterprises in emerging industries such as advanced manufacturing, space, health and medical and technological to innovate and grow.
Capacity, connectivity and quality of road infrastructure	The region's road network is subject to increasing congestion, with projected population growth and underutilised public transport connections likely to exacerbate this issue. Ongoing road network maintenance and upgrades are needed to ensure the competing needs of locals, commuters, tourists and freight users can be met. Increase in bridge infrastructure is also crucial considering the number of waterways in the region.
Industry enabling infrastructure to support growth and innovation	The region shows immense potential in high-value sectors such as advanced manufacturing, health and medical technology, space and aerospace, textiles, additive manufacturing, food technology and the marine industry. Supporting innovation in these areas through digital, transport and essential services infrastructure, coupled with enabling infrastructure to encourage, seed and foster ideas (new technology) generation, alongside suitable skills training facilities will assist in diversifying and strengthening the region's economy. Tourism is also a significant economic driver for the region. Improving tourism amenity infrastructure and physical connectivity to destinations will enable the region to take full advantage of the area's strengths and assets, including growth in niche offerings such as ecotourism, health and wellness tourism, or sports tourism may assist in improving industry resilience. Facilitating collaboration within the industry and with government and research entities may also assist in building a more robust tourism industry.
Availability, diversity and affordability of housing	The region is subject to property development constraints because of its geography creating challenges in delivering sufficient housing for the existing and rapidly growing population. Recent property market growth and low vacancy rates has further added to this problem with many unable to find housing they can afford.
Provision of high-quality green, blue and recreation infrastructure	There is an identified need in the region for strategic coastal management to protect its natural assets. Major developments close to the shore, increasing pressure brought about by tourism and population growth, as well as increasing inundation and storm surges present risks to coastal environments. The region may benefit from infrastructure to protect and manage these environments.

Gold Coast

Infrastructure gap	Insights & perspectives
Waste management and resource recovery	With the region set to see significant population growth, household waste and demolition and construction waste will also increase. There are opportunities to build a circular economy and proactively work towards recycling and waste reduction programs, diverting waste from landfill (especially organic) and providing more recycling options in public places, for medium to high density housing, business premises and at major events.
Capacity, quality and accessibility of early, primary and secondary education	Some of the region's primary and secondary schools are already at or near-to capacity. Ensuring there are sufficient places to cater for projected growth - and desired future populations - will be key to attracting and retaining a diverse and productive population.

Ipswich and West Moreton

Infrastructure gap	Insights & perspectives
Industry enabling infrastructure to support growth and innovation	The area has a significant agricultural output, with an emerging food processing sector and export capacity, alongside capabilities in AgTech services and equipment manufacturing. Significant opportunities exist in leveraging these strengths and promoting industry collaboration to further develop value-add food processing, packaging, transport, storage facilities. Digital, transport and high-capacity essential services infrastructure is key in developing potential in this industry. Another challenge lies in domestic day visitors representing the majority of visitor types across the region but have the lowest daily spend. Diversifying the region's tourism market through developing unique offerings including in agritourism and sustainable tourism may assist in strengthening the tourism industry in the region. Furthermore, the region would benefit from a regional approach to marketing tourism. A well-connected and well-defined tourism network can be enabled through appropriate wayfinding and basic tourism amenity infrastructure.
Capacity, connectivity and quality of public transport	The region is lacking an integrated mass public transit system that services growth corridors. Better public transport connectivity is expected to reduce congestion on roads and assist in the transition to a low carbon economy.
Water security	The region's key industry of agriculture requires significant water usage, with scope to further develop the region's irrigation network to secure the industry's future in the face of an uncertain climate. Significant projected population growth in the region will also place pressure on town water supplies and water infrastructure investment may be needed to secure this supply.
Access to further education and skills training	The region is forecast for significant population growth, however, there are concerns around workforce skills being misaligned with emerging industries and future expected job growth.
Distribution, transmission and generation of energy	The region houses solar, hydro and waste-to-energy facilities, including key projects such as the Harlin Solar Farm. The region has opportunity to improve and expand upon this existing renewable energy production and storage infrastructure, as well as existing advanced manufacturing capacity, to enhance energy security for the region and offer potential revenue through transmission.

Ipswich and West Moreton

Infrastructure gap	Insights & perspectives
Provision of high-quality green, blue and recreation infrastructure	With the region facing significant population growth, as well as the emergence and expansion of significant growth areas, particularly bordering the Brisbane region, there is a need to account for the delivery of sufficient community infrastructure to ensure the wellbeing of current and future residents, as well as attract skilled workers for high-value industry growth.
Capacity, connectivity and quality of freight infrastructure	Poor quality roads and limited capacity bridges add time and cost to the transportation of regional goods and affects industry competitiveness. Roads which are not fit-for-purpose for freight can also exacerbate safety risks from the competing use between freight and passenger vehicles.
Availability, diversity and affordability of housing	The region is experiencing accommodation shortages with centres are facing issues around how to effectively recycle commercial and housing stock to meet future demand. There is opportunity for housing policy and planning to provide improved access to affordable housing in renewing these ageing housing assets.
Broadband and mobile connectivity	Improved digital connectivity and connection quality is needed to support business growth and create opportunities in high-value industries, including through enabling expansion of AgTech and advanced manufacturing in this region. In Somerset Regional Council's submission to the 2021 Regional Telecommunications Review, it was noted that the local government area still has multiple locations, including along highways, with poor mobile coverage that poses as significant disincentives in regional growth and investment.
Access to and capacity of health and aged care infrastructure	The region's Public Health Network has identified maternal and infant care as being a key priority, with upgraded infrastructure needed most acutely in areas of socioeconomic disadvantage. In addition, the lack of social support services which address health and wellbeing for the region's young population have scope for improvement. Improving health infrastructure which is targeted and appropriate for this demographic may assist in improving overall health and wellbeing.

Logan and Redlands

Infrastructure gap	Insights & perspectives
Capacity, connectivity and quality of public transport	As the region continues to grow, the increasingly dispersed nature of urban settlement requires a strategic approach to providing suitable access to public transport services. Delivering active transport infrastructure, including cycleways, as well as ensuring road capacity is adequate to support areas of planned population and industry growth is also important.
Access to further education and skills training	Improving skills training infrastructure and higher education access, as well as strategically aligning this with the desired future industry profile of the region, will enable economic growth on a household and regional level. The Logan area has a lower-skilled workforce as compared to the state average in terms of formal training and further education, whilst the Redlands area has a higher proportion of unqualified or non-degree qualified local workers.

Logan and Redlands	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	The region has a high proportion of small and medium sized enterprises, many of whom have been detrimentally impacted by the COVID-19 pandemic related restrictions. Enabling business growth in food precincts, creative arts, manufacturing and logistics, and retail and commercial districts could deliver a diverse, resilient economy. Digital connectivity is lacking in some areas of the region, with this infrastructure necessary to support existing and future capability requirements of the city's businesses and residents. Transport infrastructure for land suitable for industrial development in Logan has also been identified as a priority to catalyse new development. The region also boasts natural assets but lacks tourism infrastructure to capitalise on these assets, particularly infrastructure to manage visitation and related impacts in coastal environments.
Provision of high-quality green, blue and recreation infrastructure	The region would benefit from further enhancements to community infrastructure, including useable and functional open spaces, as well as community spaces and programs. Protection of key waterway systems in the face of rising urbanisation is also critical to supporting growth of the region's population and industry. Work is being done in this area seen through the Resilient Rivers initiative, however freshwater health across both regions has been deemed to be poor and stream bank vegetation has declined in recent years. Monitoring and restorative infrastructure can be implemented to assist in addressing this challenge.
Capacity, connectivity and quality of road infrastructure	The region has seen reliance on particular thoroughfares through major centres, giving few alternative roadway options. Most services and travel routes rely on the same roadways, with other areas not serviced to the same extent. Particularly as populations grow, there is a much greater demand for better quality and diverse road networks.
Waste management and resource recovery	The region has taken steps toward exploring potential for a more sustainable circular economy in addressing a need for greater waste management capacity in the region. Ongoing collaboration, innovation and investment, alongside drawing upon local entrepreneurship in the recycling space, offers potential to deliver further improvements.
Broadband and mobile connectivity	In Logan City Council's submission to the 2021 Regional Telecommunications Review, challenges identified included a reliance on copper technology in more densely populated areas, pre-dominance of satellite and wireless technology in semi-rural and rural areas and a potential mobile coverage gap in the southern and south-western parts of the local government area, due to lack of mobile network infrastructure. Redlands City Council also identifies advocating for improved digital infrastructure to enhance capacity to attract business investment, growth and improve connectivity in Our Future Redlands: A Corporate Plan to 2026 and Beyond.

Greater Whitsundays	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	There is potential to leverage the region's significant primary agricultural and horticultural outputs to produce additional food and beverage products for the domestic and international markets. The region also has significant existing manufacturing capacity, particularly related to the Mining Equipment, Technology and Services (METS) sector. Investing in value-add and technology infrastructure may enable more productive industries. Digital, transport and high-capacity essential services infrastructure is also key in developing potential in this industry. Growing and nurturing local businesses and entrepreneurship can also create new economic activity, product development and support young people staying in the region. It can also assist in diversification of the economy to improve the resilience of the region. Digital, transport and high-capacity essential services infrastructure is key in developing potential in this industry. Furthermore, the region has the potential to take a collaborative whole-of-region approach to developing as a tourism destination. Agritourism, ecotourism and arts and cultural events offer potential to encourage longer stays from visitors to the region's iconic destinations and diversify the economic base of communities traditionally reliant on the agriculture or mining sector. Basic tourism amenity infrastructure is needed to support this industry development.
Distribution, transmission and generation of energy	Participants identified the importance of renewable energy for the region and the need for renewable energy infrastructure. Creating a diverse and capable energy mix is just as important, if not more important that a sole supply source for the region.
Availability, diversity and affordability of housing	The region has faced rising rental prices and reduced vacancy rates for several years, which has been exacerbated by COVID-19 pandemic related migration. Strategies to deliver increased affordable housing stock have at times been hampered by the impact of the mining sector, such as distorted regional income metrics and a large proportion of workers from in out of region, both of which can create difficulties in understanding and meeting demand for housing affordability.
Water security	Water security for not only storage but delivery to users is of crucial importance to the region. Connectivity between existing storage systems and ageing water infrastructure assets have also been identified. The Mackay, Isaac and Whitsunday Regional Water Strategy (The Greater Whitsunday Alliance) identifies the desired outcomes and water needs of the region, in addition a range of infrastructure and non-infrastructure solutions that could meet those needs. Challenges and opportunities in supplying water at the right time and scale to meet new demand in the region are identified, including to support high value irrigated cropping, agricultural jobs, aquaculture production and mining.
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and non-existent in others, with mobile blackspots still remaining. High-quality digital infrastructure is needed to support key future growth industries, including automation and robotics for agriculture. RDA Greater Whitsundays and the Greater Whitsundays Alliance's joint submission to the 2021 Regional Telecommunications Review identifies the digital connectivity challenges in the region.

Greater Whitsundays	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of road infrastructure	Several roads within the region may benefit from upgrades to achieve their intended freight function. Improved connections to emerging industrial estates could also deliver efficiency benefits and help alleviate the increasing conflicts between freight and passenger vehicles where major routes pass through townships and urban areas. Industry growth in the region is strongly aligned to increasing export of product, the ability to get to market quality and delivery of high-quality products. Connecting freight infrastructure in the region may assist this, including containerisation via sea ports and minimising reload processes.
Capacity, connectivity and quality of air transport	Whilst the region serviced by a few regional airports, there is potential to expand operations and optimise infrastructure to improve air freight capacity. Limited air freight infrastructure often means food product is trucked for repacking and supply. Enhancing port precincts also offers potential for improving the region's export capacity. Improvements in this area could also add value in terms of enabling co-location of ancillary service and industrial precinct, whilst improved access can have co-benefits in terms of enabling new industry expansion in aerospace as well as improving the region's competitiveness as a tourism destination.
Natural disaster resilience	The region is susceptible to storm surges and increasing extreme weather events. Developing infrastructure which can withstand these occurrences is critical to protecting the region's natural assets, as well as the safety and wellbeing of its communities.
Access to and capacity of health and aged care infrastructure	Considering the region's projected growth and ageing population, there is a need to attract skilled workers in specialised healthcare services which are currently unavailable or limited in the region, particularly in remote areas, as well as improve availability of local health infrastructure in the region. Provision of infrastructure which supports delivery of culturally appropriate First Nations people's health and wellbeing services, as well as specialist healthcare services, in rural communities also stands to be improved.
Capacity, connectivity and quality of public transport	Passenger travel within the region is very limited to private transport. Impacts of this include workforce retention and attraction and limited ability for unemployed to access employment opportunities. Stakeholders noted that the mining industry has developed solutions via regional bus for workers and needs for similar solutions for other sectors.
Waste management and resource recovery	There is growing interest and early investment toward waste to energy solutions and benefits of circular economies in the region, although it varies depending on the specific areas of focus and sector. Future avenues to value-add existing products and waste products could allow existing producers to expand.

Moreton Bay	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of road infrastructure	Road infrastructure and networks could benefit from upgrades and new works to ensure they are fit-for-purpose in enabling efficient freight movements and catering to increased passenger use whilst dealing with a growing population. Enhanced intermodal connectivity may also assist in optimising the efficiency of the network.
Industry enabling infrastructure to support growth and innovation	The region's tourism offering has grown substantially in the past decade, but there is potential for growth in a more integrated product offering which capitalises on the diverse offerings of the region to maximise visitor stay and spend in the region. Basic tourism amenity infrastructure as well as wayfinding infrastructure and high-quality tourism transport corridors are key to enabling industry growth. The region also has potential for growth in advanced manufacturing and agribusiness sectors, as well as a need to deliver greater diversity of employment opportunities within the region. To deliver on these opportunities, there is a need to take a strategic, long-term approach to land use planning of industrial, employment and residential land as well as protecting transport corridors and connections. High-quality digital connectivity, transport and high-capacity essential services infrastructure are also key in developing potential in this industry.
Capacity, connectivity and quality of public transport	There is significant opportunity to develop public transport connections within the region, as well as improve walking and cycling infrastructure to enable these as viable transport alternatives of private vehicles. This is particularly significant in the face of a growing population, with a need to mitigate the risks of increased congestion and reduce impacts of private car trip generation.
Provision of high-quality green, blue and recreation infrastructure	Stakeholders identified a need to protect and enhance the region's unique green, blue and recreation infrastructure – including parks, outdoor spaces and sporting facilities – in response to growth pressures, the need to maintain the region's quality of life and priorities relating to sustainability.
Broadband and mobile connectivity	Improvements to provide high-quality digital connectivity across the region is needed to facilitate the growth of sectors such as advanced manufacturing or agriculture (through uptake of AgTech) which are reliant on this connectivity to enable improved productivity and efficiency. Moreton Bay Regional Council's submission to the 2021 Regional Telecommunications Review highlights the digital connectivity challenges. This includes ensuring communications during adverse weather events.
Access to further education and skills training	Historically, the Moreton Bay region has had comparatively lower levels of university qualified residents compared to the state average, which may impede on growth of high-value knowledge-sector industries. There is an opportunity to leverage existing and planned tertiary education infrastructure in the region to develop skills and further education pathways.
Waste management and resource recovery	The projected growth of the region, alongside its adjacency to high-population areas, brings about a need to deliver proactive planning for waste management and circular economy capacity. Initiatives such as the Advisory System for Processing, Innovation and Resource Exchange (ASPIRE) take a step in the right direction in establishing this capacity, however there is room for further optimisation.

Moreton Bay	
Infrastructure gap	**Insights & perspectives**
Natural disaster resilience	Moreton Bay Regional Council's Local Disaster Management Plan notes the region is at risk to bushfires, coastal inundation and severe weather events.
	Climate change and associated adverse flooding impacts on existing infrastructure require ongoing planning and mitigation.
Water security	Moreton Bay Regional Council's Water Strategy 2012-2031 notes that predicted population growth, climate change and competing interests for water supplies have highlighted the importance of water security. The strategy notes that adequate planning is required to ensure the region's region's water resources are used efficiently and are able to cater for the needs of the community both now and into the future. It also highlighted the importance of investigating other potential sources of potable water in the region (such as recycled water and stormwater harvesting) so that reliance on the current, largely catchment runoff-based sources is diversified.
	Moreton Bay Regional Council's Advocacy Plan 2021-24 also highlights improving water security for Dayboro and surrounds as a priority, to improve access to reliable source of frinking water.

Sunshine Coast	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Arterial routes connecting the region internally and to Brisbane and beyond have scope for improvement. Congestion issues are increasing on these routes with growing populations and conflicts of use are a growing issue. Improved public transport linkages offer potential to mediate these challenges if services are affordable, efficient and reliable. Present system capacity will not cater to projected population growth over the next decades. Enabling easy modal shift is also important to make services useable.
Industry enabling infrastructure to support growth and innovation	The region has a significant mass of small and medium sized enterprises across diverse industries. Supporting the growth of these businesses may assist in supporting containment of employment within the region as well as attract new innovative and entrepreneurial businesses. Strengths such as the planned Digital Trade Hub and local research capacity may also be leveraged to support growth in new, emerging tech-industries. High-quality and capacity digital and essential services infrastructure is required to support this industry development.
Access to further education and skills training	The region possesses significant potential in knowledge-sector employment and innovation. Providing targeted and collaborative education, training and skills development facilities will assist in retaining skilled workers and boosting the local economy, as well as assist in combatting high rates of youth unemployment.

Sunshine Coast	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	The region has seen significant rises in rental and housing costs over the past decade, an issue further exacerbated by COVID-19 pandemic related migration. Ensuring sufficient supply of affordable housing stock is necessary in not only housing future population growth, but in providing for the existing surplus in demand. Increased availability of adequate public social and affordable housing and private market housing may assist in delivering improved housing security for residents on low to medium incomes unable to access the private market.
Broadband and mobile connectivity	As the region moves toward diversifying its industries, digital connectivity and technology will become increasingly pertinent. To provide efficient services, digital economy drivers need reliable fast internet as well as the capacity and technology to support sustainable living, work and home life. Sunshine Coast Council's submission to the 2021 Regional Telecommunications Review identifies digital connectivity challenges in the local government area.
Distribution, transmission and generation of energy	The region has already seen investment in significant solar generation and could benefit from further investment in infrastructure to support production, storage, transmission and/or export of renewable energy which takes advantage of favourable climactic conditions.
Natural disaster resilience	The region is susceptible to increasing storm surges and inundation. Ensuring infrastructure, including recreational assets at the foreshore, can withstand these increased pressures will be important in ensuring the region's amenity and attractiveness for future residents and visitors.
Provision of high-quality green, blue and recreation infrastructure	The region holds significant natural assets, including beaches and national parks, which attract tourists and offer significant amenity benefits for residents. Population growth has already started to place pressure on these assets, both in terms of balancing land use and protection and ensuring the environments remain healthy with increased patronage. Proactive work is needed to ensure these assets remain in good condition. Infrastructure to protect these environments and manage visitation is key to achieving this. Further, as urban sprawl and density increases throughout the region, there is a renewed focus on open green spaces and recreational facilities. This infrastructure is of importance in attracting families and a productive, young population.
Access to and capacity of health and aged care infrastructure	The Sunshine Coast region has an ageing population, with this trend expected to continue. This population shift will require additional capacity for aged care infrastructure, as well as community-based care infrastructure.

Townsville and North West	
Infrastructure gap	**Insights & perspectives**
Distribution, transmission and generation of energy	The Townsville and North West Qld region has immense potential to support renewable energy generation (wind, solar, hydrogen). Renewable generation has emerged as a viable solution to reducing the comparable high cost of electricity in the region. However, there is limited energy transmission infrastructure to support new generation.

Townsville and North West	
Infrastructure gap	**Insights & perspectives**
Access to further education and skills training	The region's growth will be constrained by the availability of skilled workers in key growth industries. Improving liveability to attract these workers, particularly in remote areas, as well as providing appropriate training and education facilities to enable upskilling of local workers, is of significant importance to the future growth and prosperity of the region.
Water security	Current capacity of water capture and storage infrastructure inhibits growth of the agricultural sector. There are significant projects in the works in the region to improve water security, however, there remains to be a need for enhancements more equitable infrastructure development across the region more broadly.
Capacity, connectivity and quality of freight infrastructure	Key freight connections between Mount Isa to Townsville – and more broadly throughout the region - remain susceptible to damage and transport bottlenecks, particularly in periods of high market demand. There is also a need to ensure port infrastructure is more regularly maintained and upgraded to optimise export capacity. These works may also assist in catalysing investment in new industrial precincts.
Broadband and mobile connectivity	Telecommunications infrastructure in this region is still not universally reliable and affordable. To ensure digital inclusion for the region, access to reliable and affordable internet is essential to access other education, health and social services. Carpentaria Shire Council (within the RDA region)highlighted the digital connectivity challenges experienced through their submission to the 2021 Regional Telecommunications Review. This included limited and/or slow internet speeds and limited to no mobile coverage in parts of the local government area.
Availability, diversity and affordability of housing	Housing shortages across the region are a major challenge impeding the attraction of skilled workers and population growth. Policy and infrastructure delivery mechanisms must be used cohesively to deliver additional housing which caters to the needs of communities. In parts of the region, lack of quality housing is limiting population, employment and business growth. The Western Queensland Alliance of Councils released a paper in October 2021 which highlighted housing challenges in the greater region.
Capacity, quality and accessibility of early, primary and secondary education	Significant work is needed in providing improved access to, and quality of, educational opportunities for the region's First-Nation's communities. Delivering infrastructure to support skills training and growth of First Nations-led, culturally appropriate training facilities and programs may assist in developing employment opportunities.
Natural disaster resilience	The region is prone to natural disaster events, particularly cyclones and major flooding. These have brought to the fore the need to provide resilient physical infrastructure and address capacity for resilience for a policy perspective, particularly relating to the flow-on effects brought about by high property insurance costs.
Capacity, connectivity and quality of road infrastructure	Road infrastructure in remote areas which helps the community access to communities. This is a key issue in remote First Nations communities where poor quality roads impede access to country, Lore Grounds or cultural sites is underdeveloped damaged.

Townsville and North West	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Reliable, efficient and affordable public transport, as well as well-integrated active transport connections, are lacking in much of the region. This is a major concern for First Nations communities, with poor access to public transport contributing to poorer health and wellbeing outcomes for this portion of the community.
Industry enabling infrastructure to support growth and innovation	Tourism infrastructure needs development to increase visitations and length of stays, which will facilitate increased tourism revenue for the region. Improved supportive infrastructure, including basic amenity infrastructure and infrastructure to manage visitation in natural environments, for tourism has the potential to create direct and indirect employment opportunities, as well as offering potential co-benefits in terms of amenity and accessibility benefits for residents.
Access to and capacity of health and aged care infrastructure	More rural areas of the region suffer from less accessible health infrastructure, particularly that which supports provision of specialist care and mental health services. This can result in long wait times and travel times to access these services, or poor engagement with health and wellbeing services. First Nations communities in regional areas have less accessibility to health infrastructure which supports delivery of specialist care, mental health, sexual health and oral health services.

Tropical North	
Infrastructure gap	**Insights & perspectives**
Water security	The sparseness of the region's population and distances between communities has resulted in limited water infrastructure in remote area, with a reliance on on-site water capture or storage systems in many areas. Improving the security and reliability of community water supplies in the region and their preparedness for future industry and population growth should be prioritised.
Capacity, connectivity and quality of freight infrastructure	Many of the region's industries, including agribusiness and construction, rely on efficient and safe transport routes to deliver high-quality products and services. Some key access roads in the region are subject to seasonal flooding and surface saturation, with road access from the south cut for months at a time. Efficient and fit-for-use intermodal links to ports is also a key concern for the region.
Distribution, transmission and generation of energy	The cost associated with supplying electricity and maintaining the required electricity infrastructure to the region is higher than in less remote and sparsely populated regions, with these costs further exacerbated by regular maintenance to infrastructure resulting from cyclones and the wet season. Localising energy generation and or investigating new alternative energy sources may assist in providing secure, affordable access to energy for the region.

Tropical North

Infrastructure gap	Insights & perspectives
Broadband and mobile connectivity	Telecommunication blackspots still exist across the region, whilst some areas have a large proportion of households without internet access. Quality and reliability of digital connectivity is also an issue for much of the region. Enhancing telecommunication and digital infrastructure can improve amenity and access to services as well as support innovation and growth across many industries. This was highlighted by stakeholders who noted impacts to the management of businesses for horticultural farms in the region who are without adequate broadband and mobile coverage.
Access to and capacity of health and aged care infrastructure	Access to health infrastructure in remote areas, including specialised care and First Nations health services, is lacking. Attracting and retaining skilled healthcare workers in remote communities is challenging, as is operating traditional healthcare facilities in small and dispersed communities.
Availability, diversity and affordability of housing	Housing shortages across the region are a major challenge impeding the attraction of skilled workers and is also contributing to socio-economic inequality within the region. There is need for more social and affordable housing to contribute to better health outcomes, school engagement and attendance and workforce stability. Stakeholders also highlighted the impact of limited housing options for seasonal harvest jobs, with growers reporting an increase in homelessness in their communities in the Tropical North, with some workers living in tents, caravans and motels.
Industry enabling infrastructure to support growth and innovation	The region has a higher rate of sole operator businesses or businesses with less than 20 employees, as compared to the rest of Qld. Enabling growth of these operations can provide increased employment opportunities as well as encourage innovation. High-quality and capacity digital and essential services infrastructure is required to support this industry development.
Natural disaster resilience	The region is prone to natural disaster events, particularly cyclones and major flooding. These have brought to the fore the need to provide resilient physical infrastructure, address capacity for resilience for a policy perspective, particularly relating to the flow-on effects and the need to enhance the resilience capacity of local communities. This is particularly important for climate change effects to the Torres Strait Islands. Stakeholders also highlighted a lack of flood immunity for the road network when the wet season arrives, with hold ups to fresh produce. Transit times and coast are also increased in the absence of reliable connections to Cairns.
Access to further education and skills training	Percentage of residents with tertiary degree attainment is lower in all local government areas across the region compared to the Qld average. Addressing this gap may assist in reducing high unemployment as well as intergenerational inequality. Upgrading existing, and improving access to, skills and further education infrastructure in the region may assist in upskilling the local population and enable economic growth. Stakeholders noted that there are some education opportunities involving horticulture industry in the region, but no strong pathways. This was seen as impacting the ability to provide a stable and skills workforce for the citrus industry.

Wide Bay Burnett	
Infrastructure gap	**Insights & perspectives**
Water security	Water security is vital to the stability and growth of key industries such as agriculture and manufacturing. Furthermore, water storage solutions to build climate resilience and water infrastructure to support greater urban and rural usages will be key to accommodating population growth. The region's wastewater infrastructure is also ageing and outdated with a reliance on septic systems which are inefficient and not suitable for environmentally sensitive areas.
Broadband and mobile connectivity	Mobile blackspots still exist with unused dark fibre within the region. In addition, digital connectivity stands to be optimised by QCN fibre in many areas. Addressing these issues offers potential to deliver enhanced amenity and access to services for residents and tourists, as well as improved business efficiency. Submissions from Bundaberg Regional Council and Fraser Coast Council to the 2021 Regional Telecommunications Review identify digital connectivity challenges in those local government areas in the region.
Capacity, connectivity and quality of freight infrastructure	Enabling cost and time efficient export capacity for producers in the region will allow for further growth in high-value agriculture and manufacturing. This necessitates ensuring port and critical road route assets are maintained and upgraded, as well as identifying and supporting access to new markets.
Availability, diversity and affordability of housing	The entire region is experiencing housing availability issues as current supply is unable to meet demand. The region also has insufficient housing affordability and some of the state's lowest vacancy rates which create a highly inaccessible housing market.
Capacity, quality and accessibility of early, primary and secondary education	Equitable access to early childhood education and care across the region is lacking, with the absence of this infrastructure in some smaller towns acting as a hinderance to business functions, with many owner-operators in the region reducing operation hours to provide care to young children.
Access to further education and skills training	Many employers in the region are unable to source suitable workers for both skilled and unskilled employment despite the high rates of unemployment. Improving access to further education and skills training infrastructure which improves workforce capacity in potential growth areas such as advanced manufacturing, value-adding services for agribusiness or renewable energy production. Stakeholders also highlighted the importance of accessing education opportunities in agriculture, particularly in areas within the region where this is the primary industry.
Industry enabling infrastructure to support growth and innovation	The COVID-19 pandemic has highlighted the need for the region to develop a resilient and diverse tourism offering. Supporting the development of new products in niche markets such as agritourism and cultural tourism may assist in ensuring greater industry resilience. Delivering skills training to ensure high-quality offerings, as well as ensuring tourism assets are appropriately maintained, may also support growth in the sector.
Distribution, transmission and generation of energy	The region's location and abundant solar and wind resources create opportunity for the region to significantly contribute to a transition from a coal powered economy to renewables. Additional enabling infrastructure to support production, storage, transmission and/or export in these areas is required.

Wide Bay Burnett	
Infrastructure gap	**Insights & perspectives**
Access to and capacity of health and aged care infrastructure	The proportion of population aged over 70 is expected to increase over the next decade which highlights the importance of health and aged care infrastructure which can support service delivery for this segment of the population.
Capacity, connectivity and quality of public transport	An integrated public transport network to allow for improved physical connectivity across the region, alongside infrastructure to support and promote active transport could enable more efficient, sustainable and liveable communities.
Natural disaster resilience	Coastal communities in the region are susceptible to storms and inundation, whilst bushfires and rising sea temperatures could threaten ecosystems, and future droughts impact agriculture output. There is a need to develop infrastructure interventions which protect natural environments from potential climactic impacts, as well as utilise technological advancements and appropriate land use planning to secure the sustainability of communities and industries. Stakeholders also highlighted that areas such as Gayndah and Mundubbera currently face isolation during heavy rain periods, noting the importance of resilience of inland routes such as those which frequently deliver freight.

Victoria

Barwon South West	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and non-existent in others, with mobile blackspots commonplace. Better mobile coverage and access to business-grade broadband will support region the in remaining economically competitive during the recovery from the COVID-19 pandemic. Digital connectivity impacts are highlighted in a joint submission from RDA Barwon South West, RDA Grampians and RDA Hume to the 2021 Regional Telecommunications Review.
Availability, diversity and affordability of housing	Communities across the region are facing a shortage of rental housing stock and housing to support the workforce, particularly following regional migration during the COVID-19 pandemic. Access to adequate housing is key to skilled worker attraction and retention in regional areas.
Industry enabling infrastructure to support growth and innovation	The tourism industry in the region is reliant upon high-use assets, including transport and natural assets, which require maintenance and protective infrastructure to ensure industry viability into the future. In addition, the region has existing manufacturing capacity, as well as proximity to large populations, import/export capacity and favourable geographic/climatic conditions. Appropriate infrastructure could maximise these opportunities through delivery of fit-for-use connective infrastructure as well as access to sufficient water and energy supply.
Capacity, connectivity and quality of public transport	Greater and more frequent connections between regional centres and towns is required for the region including improved bus routes and train and bus timetabling. Rail connection between key transport hubs could make the region more attractive for investment and skilled commuter populations.
Natural disaster resilience	Coastal erosion has been a key impact of climate change on the region. Coastal protection including coastal infrastructure through mitigation strategies is critical. Connections for coastal communities to evacuate in periods of high bushfire risks are also needed.
Access to further education and skills training	Skills training for workforce shortages, attraction and retention of skilled workers, youth retention present a challenge in matching the region's future desired industry profiles with the skills of the local labour force. Sufficient local skills training and further education facilities are not sufficiently provided for in the region.
Capacity, connectivity and quality of freight infrastructure	Optimising ageing infrastructure across port, road and rail assets can enable growth in agribusiness and manufacturing.
Water security	As the region becomes warmer and drier, the agriculture industry – particularly pasture-based – will face challenges in providing for a high demand for water. This will be exacerbated by increased household water demands of a growing population.

Barwon South West	
Infrastructure gap	**Insights & perspectives**
Capacity, quality and accessibility of early, primary and secondary education	Improved supply of early childhood education and care facilities would enable greater workforce participation by providing this growing portion of the local population - disproportionately women - opportunity to engage with employment. There is also a considerable number of people who provided unpaid early childhood education and care for their own and/or other people's children in the region.

Gippsland	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	The region has seen significant upgrades to transport infrastructure over the past 20 years, however it has not been able to maintain pace with industry development. Improved freight network infrastructure is needed throughout the region, particularly in southern and eastern areas. Improving rail access would not only increase efficiency but also take trucks off the roads and ease congestion. Stakeholders highlighted that Gippsland is a freight driven region, noting the importance for producers to bring their products closer to market, enhance competitiveness, in addition to the need for intermodal facilities.
Broadband and mobile connectivity	The region has mid-ranked digital inclusion scores compared with the rest Vic, with over 400 blackspots across the region. Improved digital access, including digital skills training and improved business-grade internet connections, would enable growth across industry, including in high-value sectors such as agribusiness and advanced manufacturing. East Gippsland Council's submission to the 2021 Regional Telecommunications Review identified digital connectivity challenges in that local government area in the region.
Natural disaster resilience	The region has faced bushfires and flooding in the past and issues such as coastal erosion or drought may impact liveability and productivity. Whilst community planning for disasters has progressed, opportunities for potential improvement in this space include infrastructure interventions to proactively manage environmental assets.
Distribution, transmission and generation of energy	The region has existing renewable investment, including wind farms, but more extensive investigation into the potential for renewable energy production in the region is needed. Given the strengths of Gippsland's renewable energy resources, the supply chain and skills capability that exists locally the region is well positioned to support further development, deployment and commercialisation of the Australian hydrogen industry. Additional enabling infrastructure to support production, storage, transmission and/or export in these areas is required.

Gippsland

Infrastructure gap	Insights & perspectives
Availability, diversity and affordability of housing	Significant population growth in the region has increased demand on housing and land development. Three or more-bedroom homes comprise the largest housing type across the region, with this also being the fastest-growing housing type available. This is despite average household size being under 3 people in many parts of the region and decreasing, as well as the most significant affordable housing need coming from single person households. This has brought about a pressing need for improved access to affordable housing in the region, as well as careful planning to ensure appropriate housing stock to accommodate future populations.
Capacity, connectivity and quality of public transport	In some parts of the region, poor public transport connections exist - including efficient and reliable services as well as intermodal connectivity - which leaves communities facing long travel times or relying on private motor vehicles. This can inhibit access to employment opportunities and services, especially for those for whom the cost of having a car is prohibitive. Stakeholders highlighted challenges in the region's rail passenger services, relating to overall quality, frequency and reliability.
Access to further education and skills training	Participation rates in tertiary education in Gippsland are below state averages. Infrastructure interventions to deliver additional further education facilities and upgrade capacity of existing facilities to develop skills training for employment. Stakeholders also highlighted the importance of education providers to grow and retain their students numbers and to match skills with demand, particularly in sectors such as health.
Access to and capacity of health and aged care infrastructure	The region faces an ageing population and there are variations in existing health service levels across the region, including in mental healthcare. There is a need to deliver health infrastructure which provides capacity for delivery of services of equitable quality across such specialisations, particularly in more rural areas.
Provision of high-quality green, blue and recreation infrastructure	Gippsland's population growth to 2036 is forecast to be above the state average, driven by the western shires' proximity to Melbourne. However sufficient infrastructure is not yet in-place to ensure the region's unprotected environmental assets are sustained in the face of this growth.
Capacity, connectivity and quality of air transport	The region is currently reliant on air access from Melbourne, however is constrained by its geographical distance. Stakeholders identified that enhanced airport infrastructure which allows for higher volume air access to the region, both in terms of passenger and freight, could assist in improving attraction and retention of workers to more remote areas, as well as provide capacity for air freight. Uncertainties in aviation demand generated by the COVID-19 pandemic, alongside Victoria's two international airports not projected to be at capacity in the short term, was also noted.

Gippsland	
Infrastructure gap	**Insights & perspectives**
Waste management and resource recovery	Stakeholders highlighted opportunities in resource recovery and materials re-processing to improve product quality and quantity, attract new markets, job creation and regional investment. These opportunities are supported in a range of policies and strategies, including Recycling Victoria – A New Economy, State-wide Waste and Resource Recovery Infrastructure Plan (SWIRRP), Gippsland Waste and Resource Recovery Implementation Plan 2017, Gippsland Regional Plan (2020-2025), Latrobe Planning Scheme - Clause 21.07-8, Latrobe City Council's Industrial and Employment Strategy (2019) and by Infrastructure Victoria.
Industry enabling infrastructure to support growth and innovation	Stakeholders from Latrobe City noted that despite sufficient zoned industrial land available to meet future needs, not all available land is suitable for development or is investment ready. A key challenge to enabling new investment and jobs growth was identified as an absence of enabling infrastructure, such as roads, sewer, gas and electricity. Industrial precincts and residential growth fronts have stalled, in some instances over a number of decades, due to the lack of sewer infrastructure. The realisation of growth opportunities is being constrained by the capacity and extent of utility services and infrastructure.

Grampians	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	The Grampian region is experiencing a shortfall of diverse, affordable and quality housing to accommodate the population. Housing prices in the region have risen substantially, further driven by people moving to regional Vic during the COVID-19 pandemic. Housing and accommodation unaffordability is also limiting the region's ability to attract and retain necessary labour to support the local economy and improve regional liveability.
Capacity, connectivity and quality of public transport	The region lacks efficient and reliable public transport connections between service centres and surrounding rural communities. Enhancing these connections will assist in enabling improves access to services for existing residents, as well as improving amenity and accessibility, which may help to attract new workers to the region.
Distribution, transmission and generation of energy	The region is growing as a renewable energy hub in the state. Further development of supply infrastructure, as well as upgrades to energy transmission infrastructure to support the shift to renewables, will enable more rapid growth in this sector, with benefits in environmental sustainability and employment opportunities.
Access to further education and skills training	Businesses and services in the region are constrained in growth prospects as a result of a shortage of appropriately skilled workers. Providing skills training infrastructure and policies/programs and further education infrastructure in the region may assist in developing a pipeline of skilled workers to enable economic growth in the region, as well as avoid youth flight.

Grampians	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of road infrastructure	The region's road network is facing increasing safety and access issues brought about by a need for improved maintenance and conflicts of use between passenger and freight vehicles. Upgrades to key transport routes, as well as arterial roads servicing these routes, are needed.
Capacity, connectivity and quality of freight infrastructure	Export capacity in the region is currently constrained by the limited integration of differing modes of transport infrastructure to serve the freight network.
Broadband and mobile connectivity	Mobile blackspots and slower ADSL speeds are common across the region. Some smaller towns do not yet have reliable access to 3G and 4G. This is significant not only for individuals but will also be critical to enabling smart farming and digital health in remote areas. Digital connectivity impacts are highlighted in a joint submission from RDA Grampians, Barwon South West and RDA Hume to the 2021 Regional Telecommunications Review.
Water security	The region would benefit from improvements to both water supply and storage capacity for both industry and town water. Currently, communities remain throughout the region without accesses to reliable reticulated water services, whilst the agricultural industry is susceptible to future drought impacts if appropriate proactive steps are not taken.
Access to and capacity of health and aged care infrastructure	The region would benefit from increased healthcare facilities across primary, secondary and tertiary care. This will become an issue of increasing significance as the population grows and ages, with current infrastructure unlikely to have capacity to cope with increased demand.
Waste management and resource recovery	The region has demonstrated significant growth in recovery of materials which have the potential to deliver commercial value to the region. Household waste generation in the region was projected to increase by around 16% from 2017-27, demonstrating an opportunity to leverage existing work in this area and emerge as a state leader in circular economy capacity.
Industry enabling infrastructure to support growth and innovation	The region has a wealth of natural attractions, however, is lacking in required basic services and infrastructure to cater to visitor needs, such as wayfinding, public restroom facilities, track and trail maintenance, or information services. Enhancing these elements will enable growth of the industry through improving integration of existing offerings and making development of new offerings more feasible.
Natural disaster resilience	The region may face warmer temperatures, more frequent downpours, more hot days, less overall rain, and longer fire seasons in the future. Taking proactive policy and planning steps to ensure infrastructure is resilient in light of these risks is important for the sustainable growth of the region.

Hume	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Telecommunication and digital infrastructure in the region are inadequate with a lack of network coverage and broadband speed reliability. Improvements to digital connectivity are crucial to supporting further population growth, technological adoption for industries and business innovation. Digital connectivity impacts are highlighted in a joint submission from RDA Grampians, Barwon South West and RDA Hume to the 2021 Regional Telecommunications Review.
Availability, diversity and affordability of housing	Regional towns are experiencing accommodation shortages and growing population centres are faced with issues around how to effectively recycle commercial and housing stock to meet future demand. The affordability of rental housing in the region is also expected to become a key issue as owners in the region turn into investors.
Capacity, connectivity and quality of public transport	There is a lack of public transport connectivity throughout the region. This impacts not only upon access to services and opportunity for residents, as well as a reliance on private vehicles, but also limits capacity of visitors to combine the varied tourism offering across the region during their stay. Improved efficiency and affordability of connections between towns, services centres and tourist attractions may assist in enhancing liveability for residents, as well as form a more cohesive regional tourism offering which optimises visitor spend.
Water security	Some areas of the region are not connected to reticulated supply, with water quality in these areas poorer than larger population centres. Ensuring water infrastructure is connected, maintained and upgraded across the region will assist in improving access to high-quality water for residents. In addition, the region's significant manufacturing and agricultural outputs are reliant upon consistent and reliable water supply. Availability of reliable, high quality water resources will likely become more important under the influence of climate change and innovative approaches to water conservation are required to ensure a sustainable water supply for the region.
Provision of high-quality green, blue and recreation infrastructure	Community infrastructure is currently lacking and was recognised by key stakeholders as contributing to social inequality. Sufficient community infrastructure is vital to promoting social capital and delivering liveability outcomes to attract and retain workers.
Natural disaster resilience	With increasing development underway in peri-urban areas, residential development in bushfire-prone areas is becoming an increasing issue. There is a need to ensure the safety and sustainability of these communities through appropriate land use planning and proactive land management. Further, potential future climate impacts ranging from droughts to decreased snowfall have potential to detrimentally impact upon the region and infrastructure must be in place to proactively manage these risks.

Hume	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	The region has significant opportunity to leverage its strengths in agriculture sector expertise and transport/logistics infrastructure to grow in high-value agribusiness sectors, such as food and fibre production and value-add manufacturing. Digital, transport and high-capacity essential services infrastructure is key in developing potential in this industry. The region's tourism industry has been impacted by bushfires and COVID-19 pandemic restrictions, creating difficulties for some operators. However, in a post-pandemic domestic-centric visitor market, the region has potential to encourage growth of niche tourism product offerings such as agribusiness, or food and wine tourism. Integration of the regional offering may also assist in extracting greater value from tourism spend by maximising length of stay in the region. High-quality transport and tourism amenity infrastructure are necessary to develop the industry.
Access to and capacity of health and aged care infrastructure	The First Nations population of the region demonstrates notably lower health and wellbeing outcomes as compared to non-First Nations residents, including in child development and prevalence of chronic disease. There is a need to continue work to improve access to culturally appropriate health and community support services for this segment of the population.
Capacity, connectivity and quality of freight infrastructure	Quality freight networks are needed to connect the region's agriculture, food processing and manufacturing industries with processors and markets. Stakeholders observed that current freight volumes are placing pressure on road networks and in some areas freight connectivity and movement is still being limited by 'last mile' challenges, including challenges related to port access.
Capacity, connectivity and quality of road infrastructure	The region has opportunities to maintain and upgrade road networks to better support labour force mobility and the needs of local industries and businesses. Stakeholders noted that some roads are not designed for current freight and passenger volumes and require sealing. Bridge infrastructure is also ageing with stakeholders desiring more bypasses to divert heavy vehicle traffic. The local defence sector has also highlighted concerns about the ability of arterial road networks to support transport loads and heavy vehicle movements.

Loddon Mallee	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	Congestion is a growing issue in urban centres and freight efficiency is inhibited by increasing conflict of use. Where connections by road and rail are enhanced, there is potential to gain greater value from freight.
Broadband and mobile connectivity	Digital connection quality is an inhibitor for business growth and productivity in some parts of the region. Optimising digital connectivity has the potential to enable growth in high-technology sectors such as AgTech and advanced manufacturing, as well as attract new and innovative businesses which may diversify the economy and create local jobs.

Loddon Mallee

Infrastructure gap	Insights & perspectives
Access to further education and skills training	There is a need to develop a more highly skilled workforce to meet current shortages, including certain trades and tertiary-qualified engineers. This will enable growth of high-value growth industries such as advanced manufacturing, water resource management and food manufacturing. There is a need to improve access to further education and skills training infrastructure which improves workforce capacity in these areas.
Water security	The region's horticultural industry has significant existing and potential value, however work is required to ensure sustainable water supply for irrigation, particularly is the region faces drought or decreased rainfall. Growth in manufacturing and food processing may also be limited where a secure future water supply cannot be guaranteed. Further still, town water supplies in growing centres, as well as smaller communities with underdeveloped water infrastructure, may be threatened in times of low rainfall.
Provision of high-quality green, blue and recreation infrastructure	Population growth has led to increased expectations around service delivery with a need for more community infrastructure. Much of the community infrastructure in the region is reaching its end-of-life and requires upgrades. Infrastructure must also better enable Aboriginal Community Controlled Organisations (ACCOs) to deliver culturally appropriate services and infrastructure to First Nations persons across the region.
Distribution, transmission and generation of energy	The region's location and natural assets mean that it is well-placed to become a renewable energy powerhouse, with significant opportunities in solar and hydrogen which could deliver for supply chain benefits and employment in construction and delivery. The region's electricity grid requires upgrades to be fit-for-use in the transition to a renewable energy base.
Industry enabling infrastructure to support growth and innovation	The region plays a significant role in the state's agricultural and horticultural supply, however significant leakage of expenditure by the industry exists and there is room for expansion of value-adding infrastructure in the region. Further, enabling uptake of AgTech and improved collaboration amongst the industry may enable growth and increased productivity in the sector. High-quality and capacity digital and essential services infrastructure is required to support this industry development. The region is home to research institutions (La Trobe University, Bendigo Health Research and Innovation) which offer potential to enable innovation and industry growth where collaborative partnerships with local industry and government are facilitated. Supporting such initiatives has the potential to deliver economic and wellbeing benefits for the region. High-quality digital infrastructure and appropriate skills training facilities are required to support this industry development.
Access to and capacity of health and aged care infrastructure	Mental health is a challenge across the region, with relatively high numbers of mental health clients in all areas except Macedon Ranges. Mental health metrics of the region's young people is of particular concern, with social isolation increasing during the COVID-19 pandemic. Providing improved access to mental health infrastructure is key to delivering inmoved mental wellbeing across the population. Stakeholders also identified the need for health infrastructure upgrades in Swan Hill, noting the area services both sides of the river.

Loddon Mallee	
Infrastructure gap	**Insights & perspectives**
Waste management and resource recovery	There are untapped opportunities to reduce landfill and increase recovery and reprocessing of materials by improving the circular economy within the region. Many of the recyclables that are produced within the region are transported to Melbourne and the cost of transporting them back is prohibitive to their use within the region.
Availability, diversity and affordability of housing	Stakeholders highlighted a lack of housing within the region, including different types of housing. Housing affordability and availability of housing is a major impediment to attracting and retaining workforces. Seasonal workers were also noted as often forced into overcrowded conditions.

South Australia

Adelaide Hills, Fleurieu and Kangaroo Island	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of public transport	Improved public transport services and connections can help to alleviate the growing congestion on the region's road network, especially in and close-to the Adelaide Central Business District. Public transport also has potential to ease the tension between passenger and freight on the freeways. As the only transport option to Kangaroo Island, capacity and affordability of the ferry service is also a point of major concern for that part of the region.
Availability, diversity and affordability of housing	The region faces housing challenges in terms of both availability and affordability. A lack of suitable housing across the income spectrum acts as a constraint to local businesses, who are unable to attract and retain workers needed to operate and grow.
Capacity, connectivity and quality of freight infrastructure	Congestion and competing use between freight and personal transport is problematic on main roads. This impedes upon freight network productivity. There is also a lack of intermodal facilities to enable a more efficient and greater volume freight network. As the key means of freight transport to Kangaroo Island, capacity and affordability of the ferry service is also a point of major concern for that part of the region.
Natural disaster resilience	According to Goyder Institute of Water Research Project, average annual rainfall in the region could decline by 7.8-17.4% by the end of this century. Readiness of the agriculture industry must be accounted for. In addition, coastal ecosystems and communities vulnerable to sea level rises and storm surges needs to be addressed, as well as preparedness for fire events. Infrastructure must be planned, designed, built and operated in a way that anticipates, prepares for, and adapts to these changing climate conditions.
Provision of high-quality green, blue and recreation infrastructure	Stakeholders identified that there is a need for upgraded and new community infrastructure, particularly sports and recreation assets which are currently lacking in the region, given the importance of this infrastructure in promoting liveability and supporting a growing population. The region's natural environments also make a significant contribution to quality of life and regional character. Infrastructure policy, planning and delivery can play a role in preserving and maintaining these environments in the face of increasing population growth, which may place development pressure on these areas.
Capacity, connectivity and quality of road infrastructure	There is a need to upgrade and improve connections to and from the south-east of the region. Current road infrastructure does not provide sufficient capacity for competing freight and passenger uses, with population growth expected to further exacerbate the issue.
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and mobile blackspots still existing in more rural areas. Addressing black spots and improving digital connectivity and broadband speeds across the region can support new business opportunities, health services, training and education. A submission from Adelaide Hills Council to the 2021 Regional Telecommunications Review outlines digital connectivity challenges in that local government area in the region.

Adelaide Hills, Fleurieu and Kangaroo Island

Infrastructure gap	Insights & perspectives
Water security	Ensuring the quality of surface water in the Mount Lofty Ranges watershed is of high importance and may be complicated by high private land ownership increasing the demand for surface water and increasing risks to water quality.
Access to further education and skills training	The availability of agricultural skills and succession planning is an issue which could potentially constrain the future of farming in the district. For the tourism industry, there are key challenges around service quality as a result of skills shortages. Relevant skills training facilities are not sufficiently provided for in the region.
Industry enabling infrastructure to support growth and innovation	Balancing environmental protection with tourism development and the income and employment it generates can present a significant challenge. Tourism infrastructure in national parks and conservation areas has a significant role to play in achieving this balance.

Adelaide Metropolitan

Infrastructure gap	Insights & perspectives
Capacity, connectivity and quality of public transport	There are identified inefficiencies in the region's public transport system and a lack of services on some routes. Facilitating integration of mode switching with active transport connections could also be improved. With Adelaide seeking to increase work trips made by active transport modes by residents of Inner, Middle and Outer Adelaide, this will require improved accessibility and quality of pedestrian and cycling routes throughout the region.
Water security	Adelaide Metropolitan's water infrastructure is ageing and inadequate to cater for further population growth and density. This poses water security issues, as the city was designed with a small supply pipework. This region will need to ensure water infrastructure can meet future demands where there will be a need for greater bulk water inputs from the Murray River and reticulation to end users.
Capacity, connectivity and quality of road infrastructure	The region's major roads are facing increasing congestion, particularly those at the periphery of the metropolitan area which is seeing increasing population growth. This results in inefficient and costly freight movements, reduced performance of the public transport system (bus and tram), longer travel times and decreased safety for motorists and pedestrians.
Broadband and mobile connectivity	High-quality digital connectivity is critical to enabling productivity for both business and a growing professional services and knowledge sector. Increased remote working arrangements will add to the need for high-quality home connections.
Industry enabling infrastructure to support growth and innovation	Further development of infrastructure to support and develop innovation precincts, as well as implementation of policy levers to encourage growth of innovative businesses has the potential to be a key driver of growth for the region, as well as assist in retaining skilled young people.

Adelaide Metropolitan

Infrastructure gap	Insights & perspectives
Availability, diversity and affordability of housing	Currently there is a low supply of properties in Adelaide's rental market suitable for households living on the minimum wage without placing them in housing stress. This places increased pressure on social and affordable housing provision as a means of supplying a growing shortage of appropriate housing for low income households.
Natural disaster resilience	Adelaide in the past decade has experienced a rising number of average days with extreme temperatures. This brings about considerable challenges in maintaining liveability, amenity and wellbeing for users of public streets and spaces in the face of Urban Heat Island (UHI) effects. There are also challenges in ensuring community, transport, energy and social infrastructure is equipped to deal with increasing heat impacts.
Capacity, connectivity and quality of freight infrastructure	Freight rail capacity along the Melbourne to Adelaide freight rail corridor is constrained by built form which impedes clearances. This limits the volume and efficiency of freight movements to and from the region, impacting export capacity as well as placing increased pressure on roads.
Capacity, connectivity and quality of air transport links	Airport links are critical for both the interstate and international tourist market. Enhanced air access has the capacity to accommodate expanded route offerings, both internationally and nationally, and assist in growing the region's tourism market and allowing for improved connectivity for residents for regional SA and interstate travel.
Provision of high-quality green, blue and recreation infrastructure	Infrastructure delivery needs to support long-term benefits for the north western suburbs and areas surrounding Port Adelaide so that they are attractive places to live for the future workforce. Many of these areas perform below average on access to community infrastructure which inhibits social connection and wellbeing.
Access to and capacity of health and aged care infrastructure	The region faces an ageing population and an identified need to increase supply of both aged care and retirement living facility spaces, as well as in-home care capacity which allows for ageing in place. Existing health infrastructure in this area is not sufficient to meet projected demand.

Barossa Gawler Light Adelaide Plains

Infrastructure gap	Insights & perspectives
Water security	Additional irrigation infrastructure is needed to support horticulture, livestock and wine industry, particularly facing climate change uncertainties, with potential for water recycling to be fit for purpose for use in viticulture and agriculture. There is a further need for urban water to cool towns and cities.

Barossa Gawler Light Adelaide Plains	
Infrastructure gap	**Insights & perspectives**
Access to and capacity of health and aged care infrastructure	A significant increase in population is projected over the next decade and increased health and aged care capacity beyond current infrastructure capabilities will be needed. A notable proportion of residents reported having provided unpaid care, help or assistance to family members or others because of a disability, a long-term illness or problems related to ageing, may indicate a need for improvements in disability services and aged care infrastructure in the region. A lack of available services can inhibit labour force participation. The rate of residents accessing community mental health service was also much higher than the metropolitan average.
Industry enabling infrastructure to support growth and innovation	With appropriate infrastructure provision, including tourism amenity infrastructure, information and cultural centres and enabling infrastructure such as quality connectivity (digital and transport), the region has the potential to further target high-value markets such as Meetings Incentives, Conferences and Exhibitions (MICE), weddings and events, and upscale tourism through leveraging wine and brand reputation. In addition, improving enabling infrastructure which supports development of entrepreneurship and innovation, including connective infrastructure for innovation precincts, can enable new and improved products, services, and technology, as well as provide employment opportunities and assist in retaining young people.
Capacity, connectivity and quality of freight infrastructure	Maintenance and upgrades of heavily utilised freight routes has the potential to improve last mile access and industry productivity, as well as mitigate risks associated with conflict of uses with tourists, industry and residents.
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and non-existent in others, with mobile blackspots commonplace. Improved digital connectivity throughout the region can enliven high productivity AgTech and increase the value and output of the industry, as well as enable less labour-intensive, more sustainable practices.
Capacity, connectivity and quality of public transport	Public transport links is particularly important in ensuring accessibility and connectivity in the region, as well as alleviating isolation and car dependency.
Availability, diversity and affordability of housing	Regional migration as a result of the COVID-19 pandemic and resultant remote working opportunities have placed increased demand on housing in high-demand regions such as Barossa Gawler Light and Adelaide Plains. There is also a need to consider housing diversity in terms of population needs, with more single-person households and greater demand for emergency and affordable housing. Stakeholders have underscored the urgency of addressing social housing and worker housing in the region.
Distribution, transmission and generation of energy	The region has an ideal climate for solar production, as well as potential to leverage organic waste to energy production given high yield from agriculture activities. Additional enabling infrastructure to support production, storage, transmission and/or export in these areas is required.

Barossa Gawler Light Adelaide Plains

Infrastructure gap	Insights & perspectives
Capacity, quality and accessibility of early, primary and secondary education	There is a need to offer a diversity of secondary and tertiary education and employment pathways that keeps young people engaged and retained in the region. Currently, the region has higher rates of over-16s not in full-time secondary school. There is need to ensure government schools have capacity for projected population growth to attract a diverse population growth across demographics. Supporting infrastructure, such as the Barossa Campus study hub play an important role in making further education more accessible for students in the region.

Far North

Infrastructure gap	Insights & perspectives
Capacity, connectivity and quality of freight infrastructure	Unsealed outback roads negatively impact freight productivity and operating costs, inhibiting industry capacity and growth potential. There are also implications around general accessibility and connectivity of road networks.
Water security	The region lacks sufficient water infrastructure to secure supply and storage capacity which supports industry productivity and growth.
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and non-existent in others, with mobile blackspots commonplace. Addressing blackspot and introducing advanced communications connectivity and digital access across the region could support new business opportunities, health services, training and education.
Industry enabling infrastructure to support growth and innovation	There are significant opportunities to improve the visitor economy through investing in new opportunities such as geotourism. Basic tourism infrastructure improvements are required to enable this, including public toilets, waste collection and higher quality accommodation. Austrade notes that tourism infrastructure and investment remain a priority of the federal government. In addition, the region's reliance on the resources industry exposes the Far North to severe implications from climate issues such as drought, as well as a changing regulatory environment as a result of emerging climate policies. Economic diversification through enabling innovation in new industries - which will require high-quality digital, transport and high-capacity essential services, particularly in potential innovation precincts - may assist in this industry development.
Distribution, transmission and generation of energy	Energy security and reliability is critical in supporting the mining and tourism industries. Current supply and transmission capabilities act as a constraint to productivity and growth in these key industries. Renewable energy supplies may relieve pressure on existing infrastructure and reduce the cost of essential services for business and residents. Additional enabling infrastructure to support production, storage and transmission in these areas is required.

Far North	
Infrastructure gap	**Insights & perspectives**
Provision of high-quality green, blue and recreation infrastructure	Stakeholders identified a lack of community facilities in the region, which is contributing to difficulties in attracting and retaining skilled workers. Improved community facilities are critical in attracting new residents and sustaining a growing population through improving liveability and social connection. The high cost of maintaining and replacing assets is another challenge identified by stakeholders which contributes to the shortage of social infrastructure in the region.
Waste management and resource recovery	Capacity of local waste management infrastructure capacity in the region is not adequate to meet projected demand. This issue has been exacerbated by local waste facilities closing and being converted into transfer facilities.
Access to and capacity of health and aged care infrastructure	Access to reliable basic healthcare services and attracting medical professionals in remote communities is a significant challenge. Improvements to existing infrastructure may assist in attracting workers given improved service delivery capabilities. Provision of additional health infrastructure in more remote areas will improve access to care for residents.
Access to further education and skills training	Skills training offerings in the region are centralised to major centres, excluding those in remote areas from access. When accompanied by a lack of physical and digital connectivity in these areas, an absence of local infrastructure can be particularly detrimental to accessibility.

Limestone Coast	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	Housing accessibility and affordability has emerged as a critical challenge for the region over the last few years, particularly during the COVID-19 pandemic. There is lack of housing across population segmentations, including workers in the area and older people.
Access to further education and skills training	The region is undergoing a structural change in terms of employment share moving away from traditional industries towards more service-based jobs, particularly in healthcare. Ensuring the right type of skills and capabilities is accessible is critical to supporting industry growth and attraction. Relevant local skills training and further education facilities are not sufficiently provided for in the region.
Capacity, connectivity and quality of freight infrastructure	The large amount of food and related products produced in the region present an opportunity for economic diversification and growth. Improved intermodal freight linkages may improve freight productivity, as well as increase opportunities to enter new markets. Improved access for High Productivity Vehicles (HPVs) could also substantially improve the productivity and competitiveness of industry. At present, transport infrastructure is not fit-for-use for HPVs in many areas.

Limestone Coast	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	The quality of mobile and broadband coverage is poor in some areas and non-existent in others, with mobile blackspots commonplace. Improvements in new digital and telecommunications technologies can assist in enhancing productivity and improve competitiveness in global markets.
Distribution, transmission and generation of energy	The issue of access to suitable and reliable power across the region has been raised by industry as being a major constraint to growth and investment. The main areas of concern relate to reliability, the general lack of availability of 3-phase power and capacity constraints to some areas including Bordertown.
Provision of high-quality green, blue and recreation infrastructure	Improving the liveability of the region including through improving amenity with infrastructure interventions such as libraries, communal spaces and organised activities will be critical is supporting and retaining a growing population.
Industry enabling infrastructure to support growth and innovation	The influence of tourism on local employment is highly localised in Robe while in Tatiara it only represents a very low proportion of jobs. Visitors are predominantly day visitors or domestic overnight visitors with lower levels of expenditure and yields. A more coordinated and regional approach will support growth of the industry. A well-connected and well-defined tourism network can be enabled through appropriate wayfinding and basic tourism amenity infrastructure. Also, across the region, there are comparatively fewer new business entries and limited knowledge-intensive business services (KIBS) in LGAs other than in Mount Gambier. This profile suggests low levels of entrepreneurial activity and business support services which underpin business growth. Delivering infrastructure which can support development of innovation precincts, including transport, digital and sufficient capacity of essential services, may assist in developing business growth in the region and thus aid economic growth and diversification.
Waste management and resource recovery	Additional waste infrastructure, including recycling and reuse facilities, are needed to leverage existing work in developing a circular economy in the region and reduce waste and pollution, as well as enhance the health of communities and the health of the environment. The region also has significant potential to leverage biomass outputs to contribute to waste-to-energy production.

Murraylands and Riverland	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	Road and rail network assets are ageing and not fit-for-purpose in some areas of the region. Many freight assets are in need of an upgrade to support export capacity.
Availability, diversity and affordability of housing	Affordability and accessibility of housing and accommodation needs to be improved to house essential skilled workers in the region and support a growing economy. A current lack of housing availability and affordability is constraining the capacity of the region's businesses and industry to attract and retain workers.

Murraylands and Riverland	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Mobile and broadband coverage is poor quality in some areas and non-existent in others, with mobile blackspots commonplace. Poor quality connections or poor access to telecommunications and digital infrastructure inhibits both access to services and industry growth.
Water security	Increased water demand and climate change impacts will place stress on the already under-pressure Murray River. There is a need to ensure water infrastructure is upgraded and efficient to ensure town and industry water security. This will require both policy reform and built infrastructure interventions.
Waste management and resource recovery	Infrastructure is needed to support a move away from a linear model of waste management, particularly in the face of population growth and increased migration to the regions.
Distribution, transmission and generation of energy	Supply of energy throughout the region needs to be improved. Current capacity will not support projected population growth.
Industry enabling infrastructure to support growth and innovation	Additional local tourism-supportive infrastructure is needed to support industry growth, including basic enabling infrastructure. The tourism industry has the potential to influence social infrastructure policy frameworks which support economic prosperity and quality of life in regional areas. Further, Austrade notes that tourism infrastructure and investment remain a priority of the Australian Government. Research and development capabilities will enable innovation in the region and help build value add capacity of local industry. To seize this opportunity, enabling infrastructure is required ranging from improved energy and digital infrastructure to suitable transport links and policy frameworks which enable innovation precinct.
Access to further education and skills training	Stakeholders highlighted that the expansion of commercial horticulture in the region is expected to require additional skilled workers. Given the importance of horticulture to the regional economy, stakeholders noted the importance of building interest and capabilities in horticulture and food production, as well as strengthening local capabilities in related sectors such as science, engineering, agronomy and robotics. A greater selection of education and training opportunities and career pathways would also enable young people to pursue their education locally.

The potential to increase advanced manufacturing and renewable energy production is hampered by lack of skilled workers. Relevant skills training facilities are not sufficiently provided for in the region. |
| **Access to further education and skills training** | Lower year 12 completion and tertiary education rates in the region precipitate a growing local skills gap. Access to high-quality education infrastructure, including targeted TAFE and training offerings, as well as education policy which encourages engagement with schooling, may assist in addressing this gap. |
| **Access to and capacity of health and aged care infrastructure** | Access to specialised health infrastructure, particularly to enable appropriate care for people with disabilities and adequate capacity for transport to healthcare facilities, is needed throughout the region, especially in more rural areas. |

Murraylands and Riverland

Infrastructure gap	Insights & perspectives
Capacity, connectivity and quality of public transport	More efficient and higher-capacity public transport services and connection is required to support the population and to alleviate pressure on the region's road networks.

Eyre Peninsula

Infrastructure gap	Insights & perspectives
Capacity, connectivity and quality of freight infrastructure	Improved and integrated road, rail and port infrastructure offers the potential to improve road safety and regional accessibility as well as enable greater exports and support growth in major production industries in the region.
Water security	Water security is a pressing, current issue, with water supply expected to be insufficient for the region in the near future. Current water infrastructure is ageing and not suitable to meet existing demand.
Access to and capacity of health and aged care infrastructure	Access to primary and allied healthcare infrastructure, including disability care and rehabilitation, needs to be improved within the region.
Distribution, transmission and generation of energy	Energy supply and reliability is currently deficient, in particular in areas at the tip of the peninsula and the west coast. Renewable energy may provide improved energy supply mix and security if enabling infrastructure is improved.
Broadband and mobile connectivity	Black spots remain throughout the region, limiting access to business opportunities, health services, training and education. Poor quality connections or poor access to telecommunications and digital infrastructure inhibits both access to services and industry growth.
Capacity, quality and accessibility of early, primary and secondary education	Early childhood education and care facilities in the region are currently not sufficient to meet demand and will not be adequate to support future population growth. Access to early childhood education and care is critical in supporting a growing population and improving regional liveability.
Industry enabling infrastructure to support growth and innovation	AgTech and advanced manufacturing capacity is vital to enhance the region's economic resilience. To seize this opportunity, enabling infrastructure is required ranging from improved energy and digital infrastructure to suitable transport links and policy frameworks which enable innovation precinct. Further, wayfinding infrastructure, basic tourism amenity infrastructure such as information centres or public facilities, as well as tourist accommodation including public campgrounds require maintenance and upgrade to enhance tourism industry capacity.
Access to further education and skills training	Eyre's First Nations population has lower labour force participation and higher rates of unemployment. Offering culturally appropriate training and education facilities and programs for this segment of the population may assist in closing this gap.

Yorke and Mid North

Infrastructure gap	Insights & perspectives
Water security	The region's current reliance on limited water sources will place the security of town and industry water supply in jeopardy should the region face another drought or period of reduced flows.
Broadband and mobile connectivity	There are over 100 mobile blackspots in the region, limiting local connectivity as well as accessibility for businesses and tourism. Poor quality connections or poor access to telecommunications and digital infrastructure inhibits both access to services and industry growth.
Capacity, connectivity and quality of freight infrastructure	Upgraded road, rail and air freight infrastructure and improved port access would enable greater export capacity for the region. Road networks would benefit from upgrades to be fit-for-purpose for High Productivity Vehicles (HPVs).
Availability, diversity and affordability of housing	Current access and affordability challenges will be exacerbated by a projected increase in demand for housing in the region. As the market for private housing stock continues to become more competitive and expensive, additional pressure may be placed on public housing supply by those priced out of the private market. The ability of the region to attract and retain workers may also be impacted by poor housing availability and affordability, potentially jeopardising deliverability of large-scale infrastructure projects or ongoing service delivery associated with these assets.
Access to and capacity of health and aged care infrastructure	Healthcare infrastructure is less accessible within the region compared to the South Australian average, particularly outside of major centres. Demand is expected to continue to grow according to regional migration projections. Specialist independent and aged care facilities are also undersupplied in the region, with demand expected to grow as the population ages.
Industry enabling infrastructure to support growth and innovation	Basic supportive infrastructure for tourism, such as public washrooms or wayfinding, is lacking outside of major centres.
Capacity, connectivity and quality of road infrastructure	Conflicts of uses on the region's roads between locals, tourists and freight, alongside fragmented transport links, need to be addressed to improve network efficiency and safety.
Capacity, quality and accessibility of early, primary and secondary education	Access to early childhood education and care is critical in supporting a growing population and improving regional liveability. Early childhood education and care facilities in the region are currently not sufficient to meet demand and will not be adequate to support future population growth.
Access to further education and skills training	The region shows immense potential to expand in knowledge-sector and services industries based upon current assets and infrastructure. However, there is an existing skills gap in these areas. Relevant skills training and further education facilities are not sufficiently provided for in the region.

Western Australia

Goldfields Esperance	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	The region has a shortage of housing and temporary worker accommodation, with increased supply difficult to facilitate under current land release policies. Tourism growth is also limited by availability of suitable visitor accommodation. Other challenges relating to housing in the region include quality concerns, affordability, public housing demand, planning regulations, access to finance, high costs of construction and availability of labour.
Industry enabling infrastructure to support growth and innovation	The region's tourism industry is a significant employer and benefits from opportunities for unique offerings including outback tourism, ecotourism and astrotourism. Providing basic tourism infrastructure to enable ease of movement through and navigation of the region will support operators in developing these offerings, as well as assist in creating an integrated regional tourism offering which maximised visitor stay and spend. Further, Currently, 60% of the region's economic output is derived from the mining sector. However, reliance on the mining industry poses a significant risk to the regional economy. Further support for METS is identified as an opportunity. Developing value-adding infrastructure for the agribusiness sector may allow the region to take advantage of its strategic location and develop capacity in agricultural, horticultural and aquaculture exports. Digital, transport and high-capacity essential services infrastructure is key in developing potential in this industry.
Access to further education and skills training	Further education opportunities are lacking in the Goldfields-Esperance region. A demand for tertiary education exists however access to requisite local infrastructure is a challenge, as well as course offerings aligning with industry need. Curtin University have recently developed the Rural Health Campus on the Kalgoorlie site and are actively looking to use the large facility for greater engagement. The rate of early school leavers is recorded to be higher than the Australian average, with some areas outside of large towns or service centres only offering schooling up until Year 10. Engagement in trades and TAFE pathways is very strong, with stakeholders noting that there is demand for further facility development, even with recent State Government investment.
Capacity, connectivity and quality of road infrastructure	Existing road infrastructure will be inadequate to service future demand and economic growth, especially with continuing mining and construction activities. As industries continue to grow and more tourists and communities use these roads, there will be a build-up of congestion and faster decline of road quality. Investment is needed to expand and maintain the road networks to cater for demands and improve the safety of regional road infrastructure.
Distribution, transmission and generation of energy	Currently, energy supplies are unreliable and limited throughout some parts of the region. However, as home to Australia's first commercial wind farm, the region has significant potential in harnessing wind and solar energy as sources of renewable energy. A key challenge is delivering efficient technologies that can store renewable energy to provide reliable sources of power to the community. There is a strong local appetite for renewables and decarbonised industry.

Goldfields Esperance	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Digital infrastructure is lacking and requires significant uplift to support improved liveability, as well as opportunities for improved industry productivity and business growth. Telecommunications services and internet connectivity has been identified to be slow, unreliable or inaccessible in many parts of the region. Gaps in telecommunications connectivity impact on emergency management in more remote areas. The Goldfields Voluntary Regional Organisation of Council's submission to the 2021 Regional Telecommunications Review identifies digital connectivity challenges in the region.
Water security	Currently, agricultural and horticultural industries are constrained due to limited water supplies and some towns in the region risk shortages in times of low rainfall. Major initiatives such as increasing fit-for-purpose water recycling and further investigation of new water sources is needed to ensure the long-term sustainability of both regional industries and communities.
Access to and capacity of health and aged care infrastructure	The quality of public health services and their accessibility have been identified as a challenge for the region. While major centres have established hospitals and medical services, more remote communities often have inferior facilities. There is also limited aged care facilities in the region to meet projected demand. Demand for mental health services is also increasing.
Capacity, connectivity and quality of public transport	Public transport connectivity levels throughout the region vary significantly, with more remote and isolated areas having more limited access to adequate transport services. The low level of transport accessibility has flow-on effects on education and employment participation. Passenger rail service only connects Perth and Kalgoorlie and does not serve a wider catchment outside of this route. The available passenger rail infrastructure offers a relatively low level of service with long travel times between Perth and Kalgoorlie or Perth and Esperance.
Capacity, connectivity and quality of freight infrastructure	Current trends in the Region's minerals industry have a number of implications for its shared infrastructure including a likely increase in the number of heavy vehicles on the region's road networks, increased rail freight congestion, congestion at Esperance Port and increased throughput at aviation facilities From a minerals product transport perspective, at current volumes the existing rail infrastructure is generally considered to be adequate and the Region's grain sector is not a major user of rail transport. However volumes of nickel, rare earths and iron ore transported on various lines that comprise the network may increase in the future. Current projections and development plans for developments in the nickel, rare earths, spodumene concentrate and iron ore sectors will see increased volumes of mineral product through Esperance Port. This may place pressure on berth occupancy rates, ship-loading and other cargo handling infrastructure, storage and laydown capacity at the Port.
Waste management and resource recovery	The Shire of Coolgardie's approach to the circular economy was highlighted as showing leadership in teh region, with respect to the development of a Class 3 Regional Waste Facility. This includes rubber and plastics recycling. Developing similiar regional waste facilities was seen to be an opportunity to protect the region's health, environment and liveability, in addition to addressing waste reduction and recovery targets.

Goldfields Esperance	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of air transport	Stakeholders raised needs to address maintenance, expansion and other upgrades for LGA controlled airports within the region.

Great Southern	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	Freight transport infrastructure in the region, including road and rail, can be further developed to connect the Great Southern region to other major economic centres. Port capacities are also a potential constraint to exporting activities. There is also growing demand for airlinks. Infrastructure improvements are critical to making sure the Great Southern remains competitive in the primary market industry.
Water security	A decline in winter rainfall in the past decades has resulted in reduced water flows into dams. Water demand is expected to increase in the Great Southern region due to population and economic growth. This will put pressure on existing water resources, as well as present potential demand conflicts with the region's major industries (agriculture and viticulture) which are reliant on adequate water supply.
Availability, diversity and affordability of housing	Housing affordability and diversity of housing options are challenges. There is an increasing demand for smaller affordable properties due to the ageing population. This element is also crucial for attracting and retaining skilled labour.
Access to and capacity of health and aged care infrastructure	Insufficient specialised health infrastructure to support delivery of paediatric healthcare has been identified to be a significant issue for the region. Further, health infrastructure, including aged care, in rural and remote communities is limited, with retention of medical practitioners being a major challenge.
Broadband and mobile connectivity	Further efforts will need to be made to 'future proof' the Great Southern region, particularly for more remote areas. Technologically advanced business and employment in ICT are constrained by the quality of digital connection. RDA Great Southern's submission to the 2021 Regional Telecommunications Review outlines digital connectivity challenges in the region.
Distribution, transmission and generation of energy	Renewable energy generation is a key opportunity for the region. Wind power generation is already well underway in the Great Southern, with four towns already equipped with wind farms. Wave, biomass and solar energy are all areas of potential investment for the future, especially to achieve sustainable energy generation and meet growing demands. A major asset in this space is the Wave Energy Research Centre. Additional enabling infrastructure to support production, storage, transmission and/or export in these areas is required.
Natural disaster resilience	The region is heavily impacted by climate change, with reduced rainfall, rising sea levels affecting coastal towns, and extreme events (e.g. bushfires and storms). There is scope for more proactive infrastructure planning and improved integration of digital monitoring capabilities into this infrastructure.

Great Southern	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	The region has experienced an influx of sea and tree changers in addition to greater visitation and tourism numbers. Tourism infrastructure in the region, including wayfinding infrastructure and basic tourism amenity infrastructure would allow for enhanced attractiveness for visitors, alongside providing co-benefits in terms of improved amenity for residents.
Capacity, connectivity and quality of public transport	The region would benefit from improved passenger rail connectivity. Current reliance on travel by car is problematic in terms of environmental impacts and equitable access, as well as basic accessibility implications brought about by poor quality roads in some areas.
Capacity, connectivity and quality of road infrastructure	Some roads in the region, particularly outside of major service centres, are in poor condition, which inhibits both efficiency and safety for road users. This also acts as an impediment to attracting visitors to the region.
Access to further education and skills training	Businesses in the region suffer from worker shortages, constraining growth potential. Providing skills training infrastructure and policies/programs and further education infrastructure in the region may assist in developing a pipeline of skilled workers to enable economic growth in the region, as well as avoid youth flight.

Kimberley	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	The region does not currently have sufficient housing to support its population, with additional pressures brought about by peak tourist season and the return of seasonal workers following the COVID-19 pandemic is likely to exacerbate the issue. Further, the quality of housing and over-crowding in remote communities can be poor, impacting liveability and wellbeing for residents as well as attractiveness for visitors. Housing challenges also impacts on town-based reserves, which are adjacent to towns across the Kimberley.
Broadband and mobile connectivity	There remain to be parts of the region with significant black spots and poor-quality digital connectivity. This is exacerbated in parts through socioeconomic disadvantage which can impact access to this infrastructure – especially in related to access to healthcare over the internet or telephone. Gaps in telecommunications connectivity impact on emergency management in more remote areas. Stakeholders also noted that lack of telecommunications service, domestic mobile roaming and telecommunication infrastructure power backups, alongside with the risk associated with only one main optic cable to the region.

Kimberley	
Infrastructure gap	**Insights & perspectives**
Provision of high-quality green, blue and recreation infrastructure	Equitable access to community infrastructure has been identified as a pressing need in addressing growing gaps between social advantage and disadvantage and improving liveability/amenity in communities. Aboriginal Community Controlled Organisations have a significant role to play in delivering social and community infrastructure and services for remote First Nations communities. There is a need to grow the support services available, such as healthcare, justice and employment services, and to empower First Nation communities to drive their own economic development.
Industry enabling infrastructure to support growth and innovation	The region is well-known for its natural landscapes, however infrastructure to support growth of small operators outside of major centres is limited. Providing basic tourist facilities and visitor management infrastructure may assist in supporting a more diverse regional offering including specialised products such as astrotourism, cultural tourism or agritourism. Opportunities include collaboration on tourism offerings to promote the exclusivity of the Kimberley and maximising value add opportunities for products produced in the region by other groups that have processing capability in the region.

In addition to tourism, stakeholders noted supply chain integration and logistics (including airports), value-add processing capability (including cold storage), and land assembly infrastructure for agriculture, pastoral diversification, resources, logistics, and emerging industries. |
Capacity, connectivity and quality of road infrastructure	Road infrastructure in the region is critical to connectivity, as roads are the main transportation method for both passenger and freight. Roads to remote communities are often not owned by any entity, with no assigned responsibility for maintenance or upgrades. As a result, many of these roads get closed, which inhibits passenger and tourist access and limits freight efficiency and productivity. Significant freight routes accessing the region's ports or delivering key supplies to the region need to be sealed and upgraded to allow for High-Powered Vehicle capacity. Great Northern Highway as the only access in and out of the region is vulnerable to shocks and stresses, with road access often cut off during wet seasons, and during and after extreme weather events.
Distribution, transmission and generation of energy	There is scope for advancement in the renewable energy sector in the region, including solar, wind and hydrogen, if production and transmission capacity is improved. This may assist in improving energy security, particularly in remote communities where interventions such as closed-system solar may improve local energy capacity.
Water security	The region has a significant proportion of WA's total divertible water resources; however, some measures indicate that less than 1% is currently being utilised. There is an opportunity to derive greater value from water resources and improve water security through enhancing water reticulation and irrigation infrastructure. Much of the region's water resource and catchment areas are culturally significant to First Nations people and sit within finalised native title determinations. Any additional use needs to be subject to genuine, open and collaborative negotiations with Traditional Owners, Custodians and their communities.
Provision and quality of arts and culture infrastructure	Current facilities are not sufficient, fit-for-purpose and suffer from poor maintenance. Further, there is a need to improve access to and quality of cultural facilities in the region more broadly to improve opportunities for the arts.

Kimberley	
Infrastructure gap	**Insights & perspectives**
Natural disaster resilience	The region's coastal communities are subject to climate risks including increased inundation and erosion. In interior communities, potential drought or increasing temperatures will impact liveability and wellbeing. Disasters in other regions (e.g. Pilbara and Mid West) can also often impact the Kimberley region.
	Stakeholders also noted that the complex land tenure in the region can impact on community preparedness and recovery from disasters or significant weather events. Transport infrastructure risks also include the road network, with one highway access and single lane bridges. Evacuation centre facilities across the region were also identified as not purpose built or unsuitable.
	There is an ongoing need for infrastructure assets to be planned, designed, built and operated to account for the climate changes that occur over their lifetimes.
Capacity, quality and accessibility of early, primary and secondary education	Stakeholders note that there is a need to prioritise appropriate education models and enabling infrastructure for the Kimberley. While provision of physical buildings may not be the issue, low school attendance over many years has led to low employment participation, high welfare dependence and increased anti-social behaviour with community safety concerns.

Mid West Gascoyne	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	The region suffers from a shortage of available housing, particularly for low- and medium-income households. Vacancy rates are low, and businesses are unable to attract and retain skilled workers as they are not able to source suitable housing. Housing provision will be critical to delivering liveability outcomes and enabling population growth.
Capacity, connectivity and quality of road infrastructure	The region's road network, particularly in the east, is of poor or deteriorating quality in parts. This inhibits passenger and freight efficiency, as well as creating safety risks.
Broadband and mobile connectivity	More remote areas of the region have limited access to stable telecommunications services. This impacts upon access to services and business opportunities. High-quality, reliable digital connectivity is also lacking in some parts of the region. If optimised, this could support industry growth in areas such as AgTech and advanced manufacturing.
Industry enabling infrastructure to support growth and innovation	The region offers significant natural assets which provide opportunity for growth in the tourism sector, however tourism infrastructure including interpretive and wayfinding infrastructure, as well as tourist services and accommodation, are lacking. Investment in supporting infrastructure, such as mobile phone network upgrades has also been identified as a priority for helping to grow the local visitor market and increasing the length of stay. The area also has scope for significant growth in value-adding practices for its agriculture sector, particularly in food production. Transport and high-capacity essential services infrastructure is key in developing potential in this industry.

Mid West Gascoyne	
Infrastructure gap	**Insights & perspectives**
Distribution, transmission and generation of energy	The region's geography and climate provide significant potential for renewable energy generation, particularly solar and wind power. Investment in appropriate production and transmission infrastructure and upgrades can help the region to reach its full potential as a renewable energy producer, securing local energy supply and creating new employment opportunities and investment in the region.
Water security	The region is highly dependent on water-intensive mining and agriculture industries, making it imperative that water resources are properly managed. Growth in value-add food production and supporting desired population growth will also require significant water inputs and secure water resources. The region needs sustainable access to potable water in the long term, while balancing reliance on groundwater sources. Stakeholders also highlighted falling recharge rates on groundwater.
Natural disaster resilience	Weather variability and changing climates are a major concern for the agricultural and pastoral industries supporting the local economy. Potential inundation or erosion impacts to the coast will also affect communities and the growing tourism industry. Infrastructure must be able to cope with these challenges, whilst proactive planning approaches to land use should account for these risks. Stakeholders noted recovery efforts post Cyclone Seroja and the ongoing challenges to restore the large number of communities affected.
Access to and capacity of health and aged care infrastructure	There is a shortage of aged care facilities in the region, which will be needed to support an ageing population and enabling ageing in place. This is particularly problematic for remote communities, where accessing health infrastructure can require travelling great distances.
Access to further education and skills training	There is a need to deliver increased skills training in science, technology, engineering and mathematics programs (STEM) and community services to provide a local skills base to address skills gaps and enable sustainable economic and social growth in the region.
Capacity, connectivity and quality of freight infrastructure	Supply chain infrastructure in the region demonstrates room for enhancement. Existing port infrastructure does not maximise export capacity and most of the freight from out of the region is being transported via the road network, which is not fit-for-purpose in some sections. There is significant opportunity for improved freight rail connectivity in the region.

Peel	
Infrastructure gap	**Insights & perspectives**
Water security	Improving the security of water supply is available to cater for both population growth and growth in water-intensive industries such as agriculture is critical to the future success of the region.
Access to further education and skills training	Upskilling opportunities and access to tertiary education is lacking across the region, resulting in many looking to the neighbouring region of Perth for advancement in skills, depleting the region's skilled worker base.

Peel

Infrastructure gap	Insights & perspectives
Capacity, connectivity and quality of freight infrastructure	The region's road network is not optimised for use by High Productivity Vehicles and population growth has seen increasing conflicts of use, which impact freight productivity and efficiency. Stakeholders also noted challenges in access to neighbouring ports.
Capacity, connectivity and quality of public transport	The region has undergone considerable growth in recent years and is expected to continue. As this expansion of existing urban areas and communities continues, alongside development of new residential and employment lands in peri-urban areas, there is a need to ensure public and active transport connections are expended so as to facilitate viable alternative transport methods.
Natural disaster resilience	The region's coastline, inland waterways and extensive system of nationally and internationally significant wetlands provide significant amenity and liveability outcomes for residents and visitors alike. However, they are also susceptible to the risks of climate change. Infrastructure that can withstand and prevent sever impacts from events such as inundation, flooding, drought and increase Urban Heating Island effects should be in-place.
Industry enabling infrastructure to support growth and innovation	The region's peri-urban setting and well-developed agriculture and horticulture industries provide opportunity for growth in food manufacturing and production, including enabling precinct development and enabling infrastructure for advanced manufacturing processes. High-quality digital connectivity, transport and high-capacity essential services infrastructure are key in such industry development. Containment of jobs in the region is also a key challenge for Peel, with a significant proportion of residents travelling outside of the region for work. Providing enabling infrastructure for innovation and entrepreneurship, for instance high-capacity essential services and digital infrastructure to enable knowledge-centre hubs or policy to entice entrepreneurs to the region, may assist in the growth of small business and increased employment opportunities. The Peel region is also ideally-situated to take advantage of short and long-stay visitors from Metropolitan Perth. Its diverse natural assets and peri-urban setting provide opportunities in ecotourism and adventure tourism should infrastructure such as trail development and greater diversity of visitor accommodation - which may have implications on housing availability - be enabled.
Access to and capacity of health and aged care infrastructure	The region has an ageing population, which will require planning and delivery of targeted infrastructure including aged care, specialist housing, and supportive community infrastructure. There is particular need to develop aged infrastructure availability outside of Mandurah.
Availability, diversity and affordability of housing	The region faces an existing undersupply of housing for low- and medium-income workers, a problem which will only be exacerbated by considerable projected population growth. This not only impacts upon amenity and liveability for the region, but also on the ability of businesses to attract workers.
Provision and quality of arts and culture infrastructure	There is significant growth projected in the region and with a tendency toward an ageing and historically higher rates of dependency within the population, there is a need to attract young, skilled workers as part of this growth. Delivering improved community infrastructure in the region, including arts, cultural and event spaces, will assist in attracting this demographic.

Peel	
Infrastructure gap	**Insights & perspectives**
Capacity, quality and accessibility of early, primary and secondary education	The region requires additional early childhood education and care places, including long day care, to cater to its growing population. An undersupply of early childhood education and care in parts of the region may impact upon the attraction and retention of a diverse and skilled demographic, as well as cause workforce disengagement to take-up early childhood education and care duties (particularly among women) due to caring responsibilities.

Pilbara	
Infrastructure gap	**Insights & perspectives**
Availability, diversity and affordability of housing	Housing affordability is a major challenge for the region and prices have been identified to be extremely volatile. The Karratha and Port Hedland areas of Pilbara have experienced significant increases to housing prices. This can increase demand for affordable and social housing stock, as well as present a potential barrier to attracting workers.
Access to further education and skills training	Attracting skilled workers in key industries such as healthcare, as well as potential growth industries which will support economic diversification, will be key in ensuring the region's future growth and prosperity. There is a need to deliver infrastructure to support skills training and growth of First Nations-led, culturally appropriate training facilities and programs to support employment opportunities within First Nations communities.
Distribution, transmission and generation of energy	The region is capable of significantly growing their alternate energy production by making use of their natural assets. Strong tidal movements, long daylight hours and accessible geothermal energy deposits present opportunities for the region to address rising energy demands through renewable energy sources. The AREH offers one significant example of infrastructure interventions which can seize upon these opportunities. In 2021, new reforms came into operation that established a fit for purpose, light-handed regulatory scheme and an Independent System Operator to facilitate increased competition and drive greater coordination between the Pilbara networks.
Access to and capacity of health and aged care infrastructure	Increased investment in social infrastructure and services has improved healthcare and liveability outcomes in the region, through gaps remain particularly outside of major centres. This is a particularly significant issue for more remote and isolated areas such as East Pilbara, where individuals must travel long distances to access the limited specialised health infrastructure which supports delivery of aged care services and mental health services.
Industry enabling infrastructure to support growth and innovation	The resources sector is the main driver of Pilbara's regional economy and contributes to 73% of the regional output. Reliance on the mining industry presents major constraints to future population growth, labour force skills and employment opportunities. A significant opportunity has been identified to develop infrastructure that can support advanced manufacturing technology practices and add to the existing industry strengths of the region. High-quality digital connectivity, transport and high-capacity essential services infrastructure are key in such industry development.

Pilbara	
Infrastructure gap	**Insights & perspectives**
Capacity, connectivity and quality of freight infrastructure	The Western Australian Government is currently analysing potential investment options for increasing capacity at Pilbara ports, due to growing demand for renewable energy, lithium and other metals which is expected to drive cargo demand, as well as forecast export growth in the beef and agribusiness industries.
Water security	Water is a significant issue for the region, both in terms of ensuring a secure town water supply and in supporting water-intensive industries such as mining. Use or reuse of mining water so it is not wasted is significant issue for the region.
Capacity, connectivity and quality of road infrastructure	The capacity of the region's road network is not optimised for freight efficiency. Improvements to road quality would not only improve export capacity in the region, but also benefit passenger movement efficiency for residents and improve accessibility for tourists to and within the region.
Broadband and mobile connectivity	Some parts of the region have limited or poor-quality digital connectivity, alongside telecommunications blackspots. Improving this infrastructure could enable improved access to services and economic opportunity, as well as enable uptake of advanced technology in potential growth industries.

South West	
Infrastructure gap	**Insights & perspectives**
Industry enabling infrastructure to support growth and innovation	Technological innovation and value-adding processes for the mining and agricultural industries are a key focus for the region. Lithium mines provide opportunities for future value adding activities downstream of the supply chain. There are significant opportunities also to build upon the strong foundations of existing manufacturing practices by engaging in advanced manufacturing of products and services and investing in supporting infrastructure. High-quality digital connectivity, transport and high-capacity essential services infrastructure are key in such industry development.
Water security	Water security for both domestic and industrial uses will require considerable investment as the region is considered one of the most water challenged areas in Australia. The agricultural and viticultural industry as well as other industrial water uses are liable to experience increasing productivity risks due to issues affecting the security, quality and quantity of water. Water resilience strategies and infrastructure needs to be in place to ensure these challenges can be addressed.
Capacity, connectivity and quality of public transport	Increasing population and economic growth will put additional pressure onto existing transport infrastructure. More efficient and integrated public transport systems may need to be established, especially to connect passengers to Perth. There is a lack of inter-modal hubs across the region and a need for public transport options to service the population. Options to provide faster passenger rail services from Perth to Bunbury are currently being investigated as part of a strategic business case jointly funded by the Federal Government and the Western Australian Government.

South West	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	The region could benefit from enhancing digital capabilities to support liveability, access to services and business growth. High-quality digital connectivity is also required to support development in areas such as AgTech, advanced manufacturing and health services and initiatives.
Access to and capacity of health and aged care infrastructure	Although there are many hospital services located in the region, infrastructure to support health services for specialist needs such as mental health and geriatric care are currently lacking. These capabilities need to be developed to help meet the needs of population growth and demographic change locally and avoid the need for travel. Current capacity of aged care infrastructure in the region is also insufficient to service and ageing population.
Distribution, transmission and generation of energy	Renewable energy generation and storage is a priority for the region as constraints emerge from increasing energy demands. The South West and Bunbury region which has long been a key contributor to the South West Interconnected System, is undergoing structural change in its economy and moving away from being solely dependent on coal-fired power as it adapts and attracts new industries. The region has capacity to explore renewable energy options through biomass, wind, solar and hydrogen to provide more sustainable alternatives to energy supplies. Additional enabling infrastructure to support production, storage, transmission and/or export in these areas is required.
Waste management and resource recovery	Waste management is a growing issue for the region as available land for landfills are rapidly decreasing. The region needs better infrastructure to support efficient waste disposal, and innovative methods of diverting waste.
Capacity, connectivity and quality of freight infrastructure	Bunbury Port services the resources sector which contributes significantly to the region's output. Fulfilling the port's potential and enhancing its capacity will help the port to meet regional and state import and export needs and connect the South West to world markets.
Provision of high-quality green, blue and recreation infrastructure	Infrastructure needs to be designed and delivered to support the region's desired future population growth. Providing quality community infrastructure will improve amenity and wellbeing outcomes for existing residents, as well as support attraction of young, productive workers and families.
Availability, diversity and affordability of housing	Competing demand for accommodation between visitors and residents has brought about a low supply of affordable housing for workers. Housing supply needs to be increased and managed to provide for sufficient affordable housing for local workers.

Wheatbelt	
Infrastructure gap	**Insights & perspectives**
Broadband and mobile connectivity	Digital connectivity will need to be improved to drive future investment and opportunities in the Wheatbelt region. Unreliable network and variable mobile coverage are major gaps within the region, that are discouraging business investment in the area and preventing higher workforce retention. Currently, some areas of the Wheatbelt region do not have internet access from their dwellings. Stakeholders have noted that recent investment into digital infrastructure has helped improve access to health services. Increased coverage would allow better communication for freight logistics, increased safety in road emergencies, greater ability to use mobile technology.
Water security	Currently, water security is a major concern for the region and is slowing horticulture industry growth. Additional industries in the region are highly dependent on water resources. Economic and population growth are forecast to put more pressure on existing and ageing water infrastructure. These constraints have major implications for the region's liveability, agricultural industry and natural disaster and emergency response units.
Distribution, transmission and generation of energy	The Wheatbelt region's energy is supplied by the SWIS but is susceptible to reliability and capacity constraint issues. The region's energy supplies are further limited by expensive connection and development costs. Renewable energy presents a key opportunity for the Wheatbelt region to develop innovative solutions to energy supply and attract more business investment into the area.
Access to and capacity of health and aged care infrastructure	Aged care and disability services are placing pressure on the region's healthcare services, especially with an ageing population. Despite a high number of services per head, better integration and connection of health services is needed as well as the ability to train people for service delivery, and to support access to specialised services and allied health professionals.
Availability, diversity and affordability of housing	A shortage of housing stock is partially due to the lack of available residential land that is ready for construction, and high cost of development. The housing shortage, particularly for workers, impedes on the region's aim of attracting and retaining appropriate labour.
Capacity, connectivity and quality of freight infrastructure	High-capacity road infrastructure is integral to keeping the region's key industries competitive and efficient. Closure of freight rail lines in 2014 heightened demand for road infrastructure and inadequate capacity has meant greater levels of congestion and faster deterioration of already ageing roads. Stakeholders also noted capacity constraints in existing port infrastructure.
Access to further education and skills training	The region is experiencing a skills shortage and struggling to fulfil the needs of growing sectors. Key challenges include ensuring that education and training are matched to current and future labour needs, the out-migration of youths between 15-29 years and limited opportunities for education and training beyond school. Skills development is a key focus that can be addressed through improving access to education and training infrastructure in the region, and ensuring these skills are transferrable to adapt to the changing needs of the market.
Capacity, connectivity and quality of public transport	Public transport networks for passengers are currently lacking in the Wheatbelt region. Regional bus and rail services do exist but are unreliable, infrequent and poorly integrated with other services. The limited accessibility to public transport presents a major issue for the Wheatbelt community that do not own vehicles or drivers' licenses.

Appendix C: Key terms

	Definition
AgTech	AgTech refers to the use of digital technologies which provides the agriculture, horticulture, viticulture or aquaculture industry with the data and knowledge to make more informed and timelier decisions to improve yield, efficiency, productivity and sustainability.
Australian Digital Inclusion Index (ADII)	The Australian Digital Inclusion Index (ADII) measures the level of digital inclusion across the Australian population and monitors this level over time. This index takes into consideration access and affordability as well as an individual's digital engagement measured in digital ability (attitudes, skills and activities); whether a person can see potential benefits of engagement, and motivation and attitude, including concerns about safety and security.
Blue infrastructure	Blue infrastructure refers to beaches and waterways, such as harbours and rivers, and the facilities that support them, including foreshores, surf lifesaving and water recreation clubs, jetties and wharves.
Co-benefit	An additional benefit from an action that is undertaken to achieve a particular purpose which is not directly related to that purpose.
First Nations peoples	First Nations peoples refers to the Aboriginal and Torres Strait Islander people.
Fly-in-fly-out (FIFO)	Refers to people who fly to their workplace (usually for a week or two at a time), then fly back home. This type of work schedule is common in some Australian industries, especially in mining companies as the mine site is often quite remote.
Green infrastructure	Green infrastructure refers to the range of natural and built landscape assets which incorporate natural vegetation. It includes areas of public and private land such as parks, fields, verges, rooftop gardens, green facades, walking and cycling tracks, street trees and backyards.
Gross Regional Product	Gross Regional Product is a measure of the total size or net wealth generated by a local economy.
Industry 4.0	A contemporary industrial revolution concept affecting almost every industry globally. Industry 4.0 considers transformative technologies to connect the physical world with the digital world. Current trends include advanced automation and robotics, machine-to-machine and human-to-machine communication, artificial intelligence (AI) and machine learning, sensor technology and data analytics.
Internet of Things (IoT)	The Internet of Things describes a network of physical objects that are embedded with sensors, software, and other technologies for the purpose of connecting and exchanging data with other devices and systems over the internet.

	Definition
Local government area (LGA)	Local Government Areas cover incorporated areas of Australia. Incorporated areas are legally designated parts of a State or Territory over which incorporated local governing bodies have responsibility.
Multi-criteria Analysis (MCA)	A systematic tool used to assist in decision-making where the impact of an initiative is assessed across a range of criteria.
National Broadband Network (NBN)	The National Broadband Network (NBN) is a major upgrade to Australia's national telecommunications infrastructure which delivers fast broadband to all Australian homes and businesses.
Priority Development Area (PDA)	Priority Development Areas (PDAs) are parcels of land within Qld identified for development to deliver significant benefits to the community.
Regional Development Australia (RDA)	Regional Development Australia (RDA) is an Australian Government initiative that brings together all levels of government to enhance the development of Australia's regions. A national network of RDA committees has been established to achieve this objective.
Regional Development Organisation (RDO)	A Regional Development Organisation (RDO) is made up of local leaders in a region or territory. The role of this group is to work with all levels of government, business and community groups to support the economic development of this beautiful region.
Regionalisation	Regionalisation refers to the growth in the importance of metro regions and larger regions, as changing technologies and sociologies reduce the relevance of existing state and national political boundaries.
Renewable Energy Zone (REZ)	REZs are modern-day power stations. They combine renewable energy generation such as wind and solar, storage such as batteries, and high-voltage poles and wires to deliver energy to the homes, businesses and industries that need it.
Sea-changers and tree-changers	Sea-changers refer to individuals who leave a city lifestyle to live in a coastal community. Tree-changers leave the city to live in an inland rural or remote area with access to mountains and green landscapes.
Small-to-medium enterprise (SME)	A small-to-medium enterprise (SME) refers to a business employing fewer than 20 peoples and maintaining revenues below a certain threshold, generally under $10 million annual turnover.
Socio-Economic Indexes for Areas (SEIFA)	Socio-Economic Indexes for Areas (SEIFA) is a product developed by the ABS that ranks areas in Australia according to relative socio-economic advantage and disadvantage.
Special Activation Precinct (SAP)	Unique to regional NSW and bring together planning and investment to focus on growing jobs and economic activity in an area. SAPs will support industries in line with the competitive advantages and economic strengths of each area.
Technical and Further Education (TAFE)	TAFE refers to Australia's college system which offers tertiary education offerings and training mainly in technical and vocational subjects.

	Definition
Killed or seriously injured (KSI)	Killed or seriously injured is a standard metric for road safety, commonly used in WA to identify all crashes where people were either killed or seriously injured.
High voltage direct current (HVDC)	High voltage direct current power systems use direct current for transmission of bulk power over long distances. In a regional setting, this decreases costs, reduces losses and could allow for the integration of renewable energy.
Mining equipment, technology and services (METS)	The mining equipment, technology and services sector is responsible for driving innovation for a productive and sustainable mining industry in Australia.

Infrastructure Australia is an independent statutory body that is the key source of research and advice for governments, industry and the community on nationally significant infrastructure needs.

It leads reform on key issues including the means of financing, delivering and operating infrastructure and how to better plan and utilise infrastructure networks. Infrastructure Australia has responsibility to strategically audit Australia's nationally significant infrastructure, and develop 15-year rolling infrastructure plans that specify national and state-level priorities.

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