

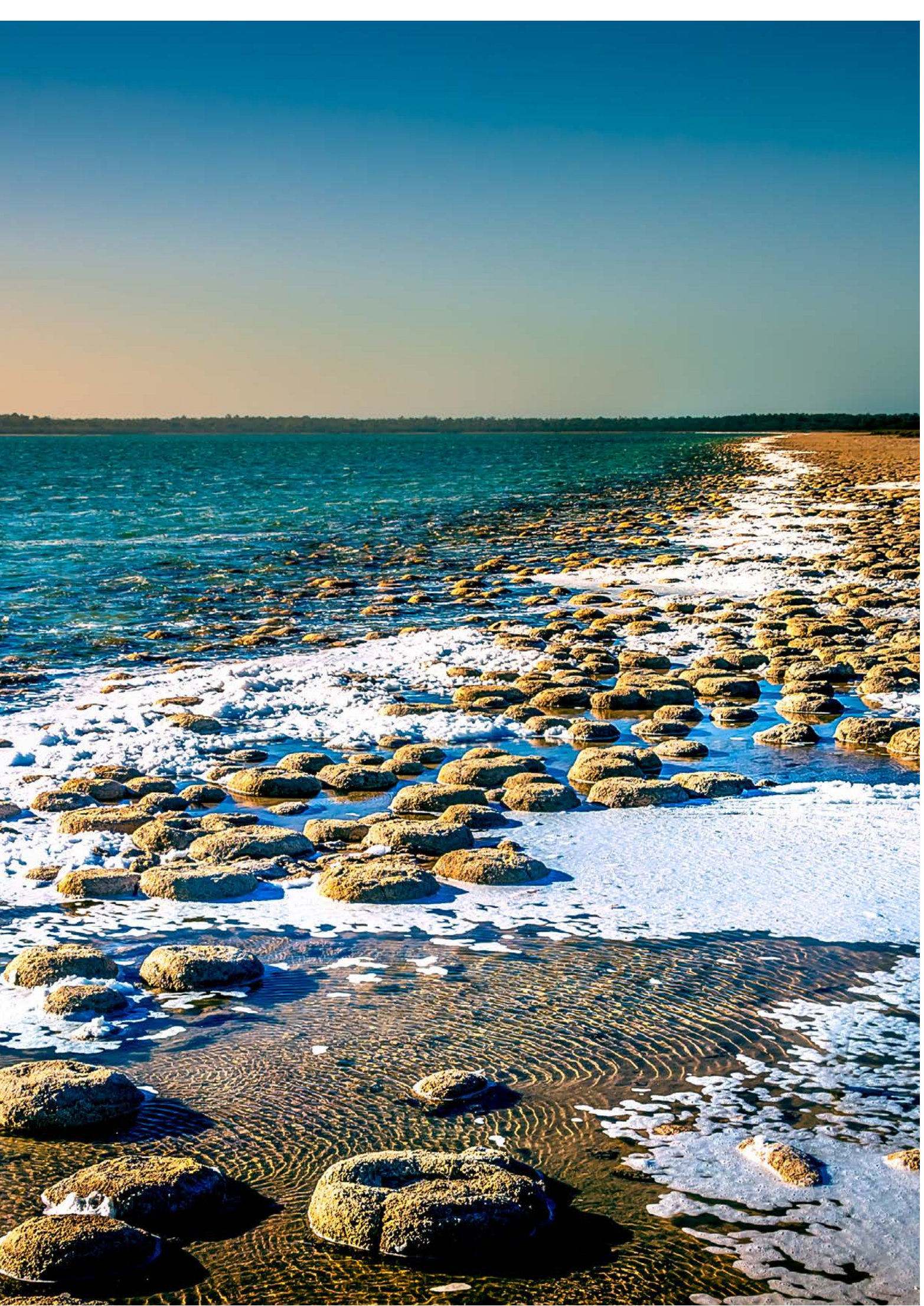


Transform Mandurah Stage 2
Mandurah's Economic Opportunities

City of Mandurah
June 2022

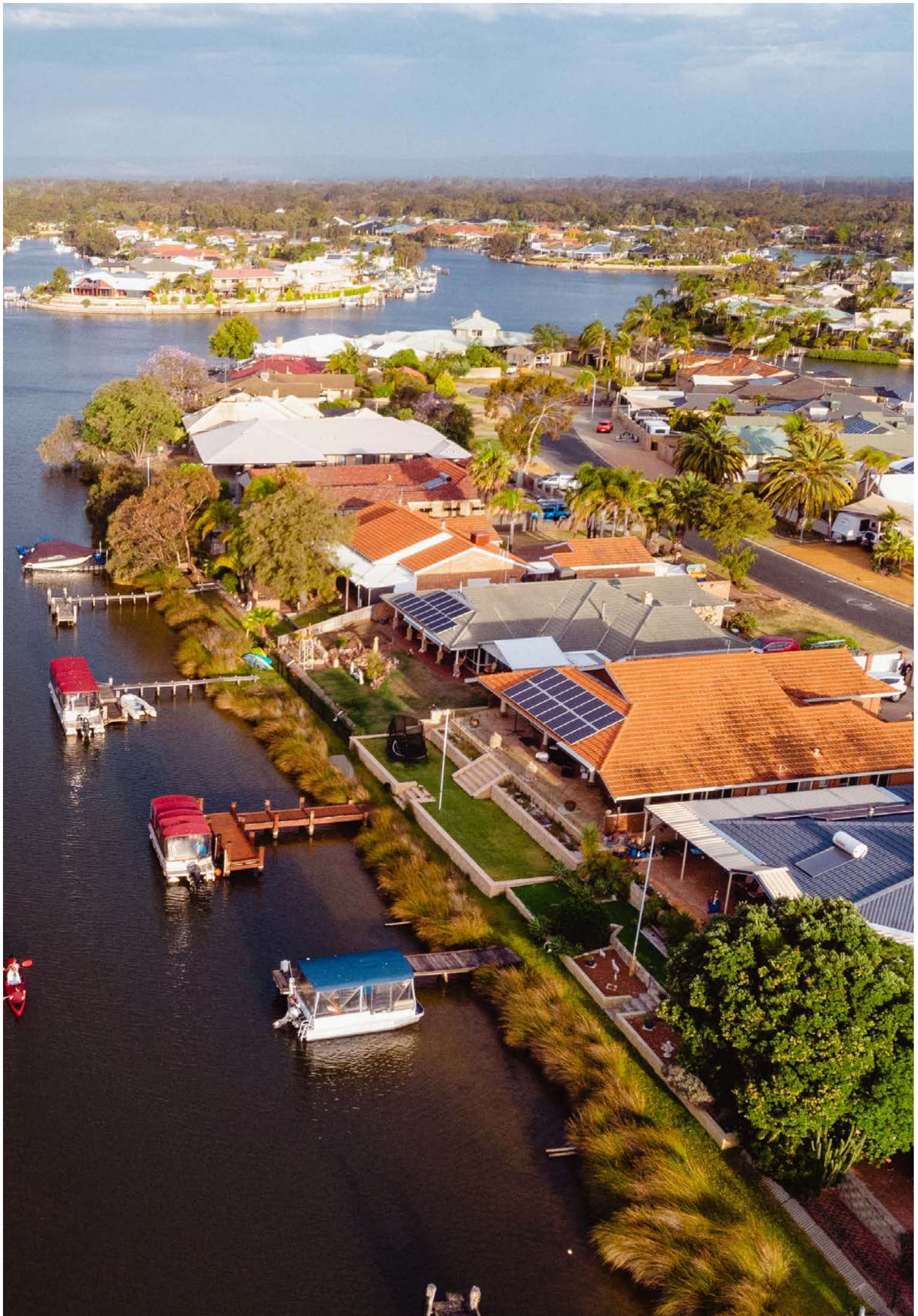
Deloitte
Access **Economics**





Glossary

Abbreviation	Definition
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ATAR	Australian Tertiary Admission Rank
CBD	Central business district
CGE	Computable general equilibrium
FTE	Full-time equivalent
GDP	Gross domestic product
GFC	Global financial crisis
GRP	Gross regional product
GSP	Gross state product
IT	Information technology
LGA	Local government area
NDSDS	National Drug Strategy Household Survey
NPS	Net promoter score
PDC	Peel Development Commission
RTO	Registered training organisation
SA2	Statistical area level 2 in the ABS system of statistical geography
SA3	Statistical area level 3 in the ABS system of statistical geography
SA4	Statistical area level 4 in the ABS system of statistical geography
STEEP	Social, technological, economic, environmental, and political
TAFE	Technical and further education; refers to WA TAFE system
VET	Vocational education and training
WA	Western Australia



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Executive summary



Transform Mandurah

The Transform Mandurah initiative was launched in 2020 as part of a suite of responses by the City of Mandurah ('the City') to mitigate the adverse economic impacts of the COVID-19 pandemic. Transform Mandurah is a strategy focusing on medium- to long-term projects and opportunities for economic diversification in the Mandurah region, aligned with the City's broader 20-year strategic objectives and in partnership with the Peel Development Commission (PDC) as funding co-contributor.

The first stage of Transform Mandurah centred on repositioning the Mandurah regional economy around its water assets and included potential projects such as a centre of excellence and data array to support research water research activity; the redevelopment of the Mandurah city centre; and the redevelopment of the City's own office site into a new conference centre and tourism precinct.

The second stage of Transform Mandurah will expand the set of potential economic opportunities for the region, including initiatives designed to address long-term, structural economic imbalances between Mandurah and the Greater Perth region.

Deloitte Access Economics was engaged by the City to undertake economic analysis to support the identification of opportunities to pursue, challenges to address, and actions to undertake as part of Stage 2 of the Transform Mandurah strategy.

This report outlines the approach to identifying opportunities, estimates of the modelled impact of realising the opportunities, and provides a longlist of potential actions that put Mandurah on the path to achieving the objectives of each opportunity in the future.

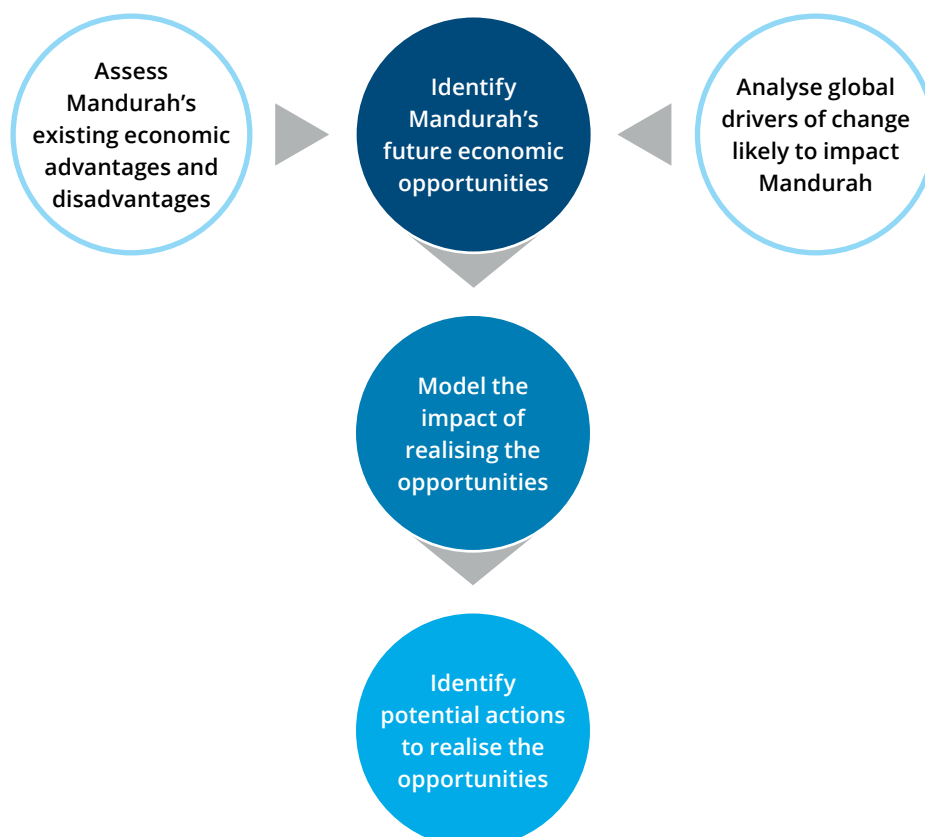
Deloitte's analysis was undertaken in close consultation with the Transform Mandurah working group, which included representatives from the City and the PDC.

Approach to identifying economic opportunities

Deloitte's analysis was undertaken across the following five steps (shown in Figure i), each of which is summarised in the sections that follow and outlined in further detail in the chapters noted below:

- Assess Mandurah's **existing economic advantages and disadvantages** (Chapter 2)
- Analyse **global drivers of change** likely to impact Mandurah (Chapter 3)
- Identify Mandurah's **future economic opportunities** (Chapter 4)
- **Model the impact** of realising the opportunities (Chapter 5)
- Identify **potential actions** to realise the opportunities (Chapter 6).

Figure i: Approach used to identify Mandurah's future economic opportunities



Mandurah's economic advantages and disadvantages

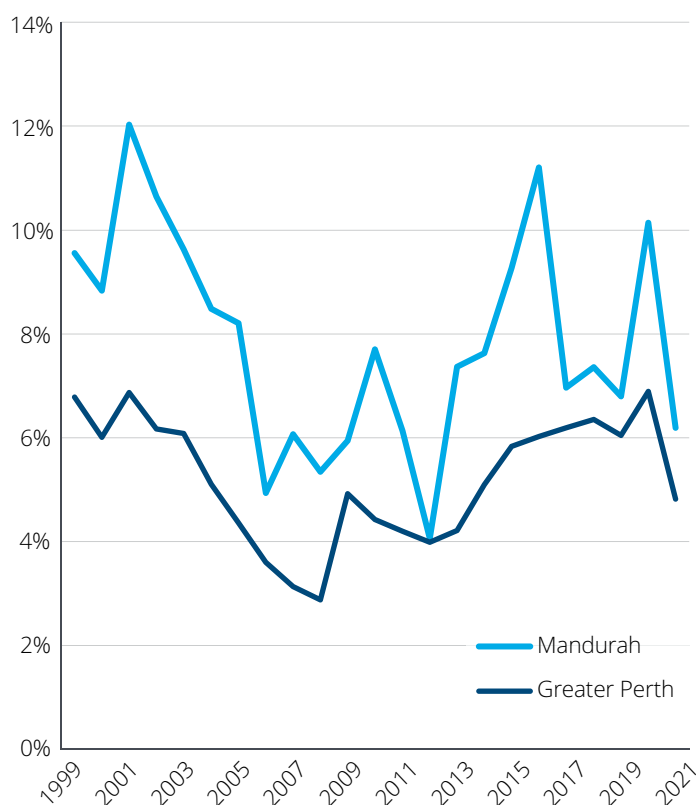
Over the last two decades, Mandurah has experienced a rapid expansion in the size of its residential population, with annual growth of more than 3 per cent per annum between 2000 and 2020. However, employment growth has failed to keep pace over the latter half of that period, and the level of employment in Mandurah has exhibited significant fluctuations, in particular, in the post-Global Financial Crisis period after 2008-09, during the Western Australian mining industry slowdown after 2011-12, and in the wake of the COVID-19 pandemic.

That is reflected in a regional unemployment rate that is both stubbornly higher than that of the Greater Perth area, and highly volatile (Figure ii, left panel). Mandurah also has a significantly lower rate of participation in the labour force than the rest of Greater Perth, attributable to its older population (including early retirees) and low rates of workforce engagement among females and young people.

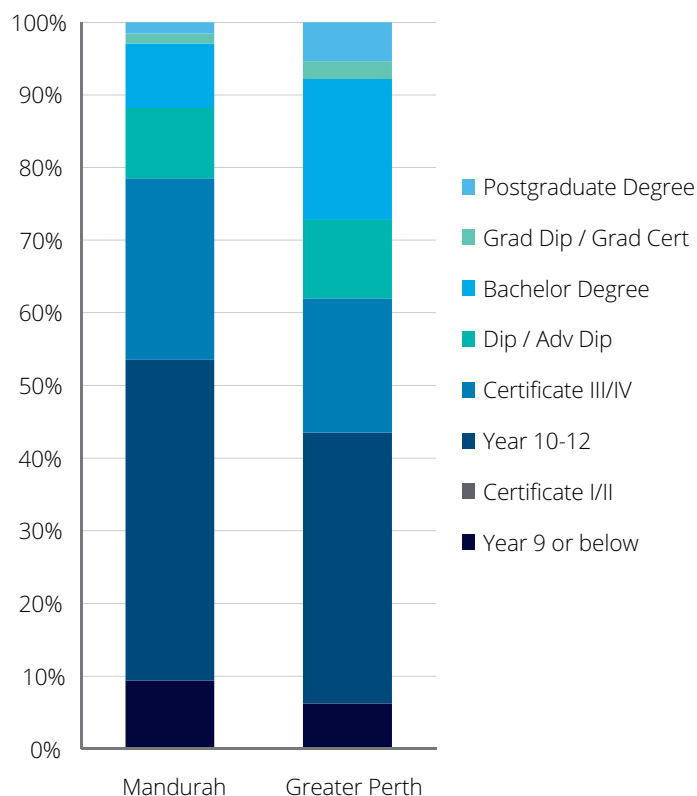
Mandurah's labour force challenges do not begin at the point of looking for work – rather, they have their roots in a series of other social and economic disadvantages. Relative to other parts of Perth and WA, Mandurah exhibits high rates of development vulnerability in early childhood education, below-average participation in secondary school pathways leading to further training, and limited access to both university and other post-secondary education.

Consequently, Mandurah's working-age population has a notably lower proportion of people with post-secondary education relative to Greater Perth (Figure ii, right panel). This is reflected in low proportions of workers in highly skilled occupations and in high value-adding industries, and a disproportionate dependence on industries that are exposed to cyclicalities (such as mining and construction) and cater to predominantly low-skilled workers (such as retail and tourism).

Figure ii: Mandurah vs Greater Perth average annual unemployment rate (left panel) and share of population aged 15+ by level of highest education attainment in 2016 (right panel)



Source: ABS Labour Force Survey



Source: ABS Census of Population and Housing

Mandurah's economic challenges have social and community implications of significance to the State. Correlated with high rates of unemployment and low rates of labour force participation, the region exhibits relatively high levels of crime, illicit substance abuse, and people living with mental health conditions.

These problems are compounded by limited availability of key services, such as specialist medical care, that are predominantly delivered out of locations closer to the Perth CBD, which Mandurah residents – especially those in insecure work, on low incomes, or without independent means of transport – may have difficulty accessing.

While significant, Mandurah's challenges are not insurmountable. Its rapid population growth has been driven by the fact that it offers an appealing coastal lifestyle, with the advantage of its location both being within commuting distance of the Perth CBD, but distant enough that it offers affordable land and residential property close to undisturbed natural assets like parks and waterways.

Mandurah is also WA's largest regional city, and the social and economic challenges outlined above are highly geographically diverse within the region – that is, there are pockets of acute disadvantage, but also areas where most social and economic outcomes are like other parts of Greater Perth. This makes it an ideal location to test interventions in an environment both where

the outcomes can be measured, and materially improve statistics at the regional level – for example, as of December 2021, only around 1,400 jobless residents in Mandurah would need to find employment for its unemployment rate to approach parity with that of Greater Perth.

Global drivers of change

When developing opportunities for economic development at the local government level, it can be tempting to start by thinking about sources of change and uncertainty at the local level too. But this approach risks failing to consider where sources of change will come from global drivers – 'global' in the context of Mandurah, meaning trends occurring at the state, national, or international level.

There are many potential drivers of future change at the global level, many of which are closely related. A structured approach is to focus on a selection of drivers categorised according to whether their root causes are **social, technological, environmental, economic, or political** in nature. This framework is known as '**STEEP**'.

The initial identification of potential future drivers was undertaken by examining recent research, thought leadership, and insights from Deloitte and other sources that canvassed issues in the STEEP framework. Ultimately, 45 drivers of change were identified, which are summarised according to their classification in the STEEP framework in Figure iii.

Figure iii: Drivers of future change



Source: Deloitte

Not all drivers are of equal significance to Mandurah's future economic development. Following the identification of the 45 drivers, a prioritisation exercise was undertaken to classify each driver according to the likelihood of its impacts occurring, and the magnitude of those impacts on Mandurah. These two dimensions resulted in four classifications:

- **Must Act** – High probability, high impact
- **Disruptors** – Low probability, high impact
- **Watch and Act** – High probability, low impact
- **Sleepers** – Low probability, low impact.

The prioritisation was undertaken based on both desktop analysis of the relevance of each driver to the current composition of Mandurah's economy, and through consultation with the Transform Mandurah working group. The outcome of the prioritisation identified 12 'must act' drivers with the greatest significance for Mandurah's future economic opportunities. The prioritisation of drivers is summarised in Figure iv.

Figure iv: Prioritisation of 45 drivers of change



Social

Technological

Economic

Environmental

Political

Mandurah's future economic opportunities

The key economic opportunities for Mandurah's future economic development lie at the intersection of its existing economic advantages and disadvantages and the global drivers of change that are both likely to occur and likely to have a significant impact. Opportunities were initially developed based on the synthesis of these two sets of findings, and subsequently refined and consolidated through consultation with the Transform Mandurah working group and other stakeholders from the City of Mandurah and Peel Development Commission.

A total of eight opportunities were identified, each of which represents a potential area of focus to guide future policy decisions, objectives, and investment decisions for the Mandurah region. The opportunities also consider existing programs and infrastructure currently in place, to ensure that they build from the current state.



The eight opportunities are summarised below:

- 1 Make Mandurah the lifestyle capital of Western Australia:** Mandurah offers highly appealing lifestyle opportunities, combining proximity to the coast and waterways, open and green spaces, and relatively affordable living. Under this opportunity, Mandurah becomes the location of choice within Western Australia for people determining their place of residence and work based on lifestyle factors. Already a popular location for older cohorts to retire to, this opportunity would involve appealing to a wider demographic – including professionals and working families.
- 2 Develop Mandurah into a world-class Hospitality Education Precinct:** Almost nine-in-10 of the next billion middle-class consumers across the globe are forecast to reside in China, India, and the remainder of south and south-east Asia. The Australian hospitality industry is set to reap the benefits. Under this opportunity, Mandurah becomes home to a hub of world-class training and education providers in the hospitality sector, leveraging the new South Metropolitan TAFE Hospitality facility, its existing workforce and tourism assets to train locally as well as coordinating applied learning and skills development across the hospitality sectors of the Peel, Perth, and South West regions.
- 3 Build the capacity of the aged-care workforce:** Nearly 27 per cent of Australia's population (8.1 million people) are expected to be aged over 60 years by 2040, representing a rise of 46 per cent from 2020 – or 2.6 million more people. Under this opportunity, Mandurah takes a leading role in expanded training to address significant forecast shortages of skilled labour in the aged care sector, both within the region but also elsewhere in WA and across Australia.
- 4 Make Mandurah a hub for 'Blue Collar Tech' training and industries:** As the resources sector accelerates its adoption of technology, there is a growing need for 'Blue Collar Tech' or Digital Trades workers and related service providers. Under this opportunity, Mandurah positions itself as a hub for 'Blue Collar Tech' businesses and training opportunities, leveraging both its large existing labour pool of technicians, trades workers, and machinery operators and the significant presence of engineering and manufacturing businesses in the Mandurah region.
- 5 Innovation in healthcare delivery:** The digitisation of healthcare is revolutionising the healthcare industry, enabling lower cost of service, improved diagnostics, and greater choice in treatment. Under this opportunity, Mandurah becomes the centre of innovation in healthcare service delivery in Western Australia, capitalising on improvements in technology (such as telehealth) or alternative care models that allow services to be delivered more effectively in the community.
- 6 Innovative social interventions:** Inequality of wealth, power, and opportunity – and the effects these have on community, economy, and politics – is highly prevalent in society today. Innovative social interventions can be utilised in Mandurah to improve employment and life outcomes for disadvantaged residents. Under this opportunity, Mandurah would be a sandbox for testing alternative and more holistic social interventions aimed at tackling the root causes of social and economic disadvantage while aiming to create cost efficiencies for Government.
- 7 A hub to lead industry decarbonisation and climate resilience and adaption strategies:** As climate change continues, natural disasters and abnormal weather patterns will increasingly have unprecedented effects on all aspects of our economy and everyday lives. Under this opportunity, Mandurah takes on the role of regional leader in the effort to decarbonise heavy industry in Western Australia and to make industry and infrastructure more resilient to future impacts of climate change.
- 8 Develop a strong base of professional workers in Mandurah:** COVID-19 has caused policy makers and businesses alike to re-think the traditional CBD commuter model of work, as well as the future of urbanisation and broader knowledge worker trend. Under this opportunity, Mandurah could capitalise on transitioning ways of work to increase the number of professional workers in the region, which has typically been concentrated in trade, manufacturing, and agriculture jobs. This includes the co-location of government workers within Mandurah and the possible relocation of agencies from the Perth metropolitan area in future.

Modelling the impact of realising the eight opportunities

The approach to quantifying the impact of realising the eight opportunities involves comparative analysis between two alternative futures:

- A **baseline** in which Mandurah's economy grows in line with current population and employment projections, but current challenges – such as its stubbornly high unemployment rate and low share of professional and other highly-skilled workers – remain unchanged
- A **policy scenario** in which the eight opportunities are fully realised, resulting in different outcomes for the size of Mandurah's regional economy and the composition of employment.

This analysis was undertaken in a computable general equilibrium (CGE) framework using Deloitte Access Economics' in-house regional general equilibrium model (DAE-RGEM – see Appendix B for more information). The impacts of the eight opportunities modelled in the CGE framework can be best understood through two measures:

- **Gross regional product** (GRP), a measure of the value of economic output in Mandurah that reflects the 'size' of the regional economy
- **Employment**, specifically the number of full-time equivalent (FTE) employees who work in Mandurah.

Because each of the opportunities are high-level themes that may entail many interventions, rather than discrete projects or programs, the policy scenario was developed by setting benchmarks for population growth, industrial employment growth, and capital investment based on analysis of comparable jurisdictions across Australia and a review of case studies.

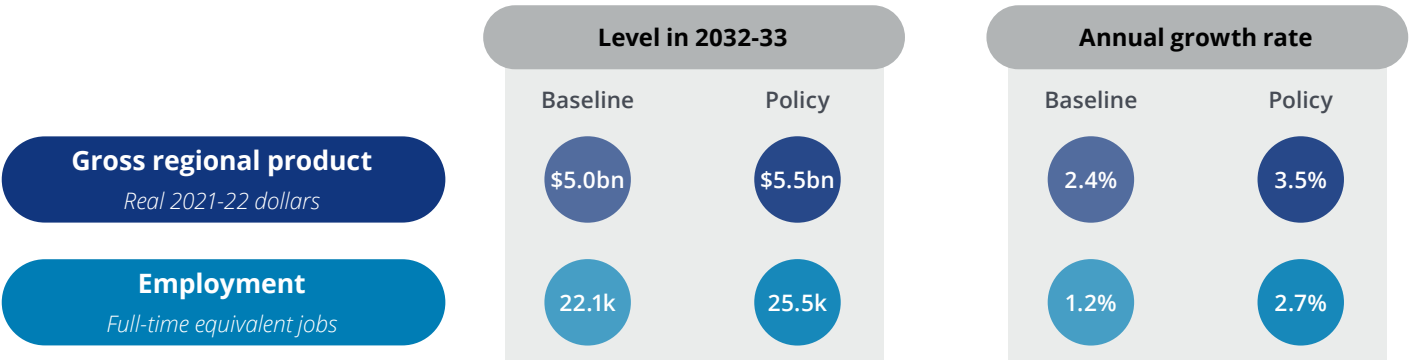
Consequently, the CGE modelling results can be best thought of as 'targets' for the future state of Mandurah's economy, which can be achieved through the full realisation of the eight opportunities.

The full realisation of the opportunities is estimated to result in Mandurah's real GRP increasing to \$5.5 billion by 2032-33, which is 10 years after the implementation of the opportunities is expected to commence. This equates to a compound annual growth rate (CAGR) of 3.5 per cent per annum, compared to 2.4 per cent under the baseline scenario (Figure v). In real present value terms, the opportunities are projected to add \$1.5 billion to Mandurah's economy over the 10-year period.

The accelerated growth in the Mandurah economy is expected to translate to faster growth in employment, of around 2.7 per cent per annum over the 10 years to 2032-33, compared to 1.2 per cent under the baseline scenario. That equates to an additional 3,400 full-time equivalent (FTE) jobs in Mandurah in 2032-33.

The industry impacts reflect the nature of the opportunities and the current composition of Mandurah's workforce – for example, the largest impacts are projected to occur in the health and aged care sector, based on the impacts of Opportunities 3 and 5 above. Business services (which captures professional employment in the private sector) and recreational services (which includes tourism, hospitality, and retail) are also expected to experience substantial growth as a result of the opportunities being fully realised.

Figure v: Summary of CGE modelling results



Source: Deloitte

Actions to realise the opportunities

The final step in Deloitte's analysis involves translating the 'what' to the 'how': the eight opportunities represent high-level objectives for Mandurah's future economic development, but the realisation of each opportunity is dependent on the implementation of many different policy, infrastructure, and investment activities across future years.

These actions were developed based on a review of case studies from other jurisdictions across WA, the rest of Australia, and overseas. Each action is mapped to the opportunity with which it is most closely associated, and where an opportunity has many potential interventions, these are grouped into high-level themes sharing common objectives, resources, and outcomes – for example, there are six potential actions identified all relating to the enhancement of 'sport and recreation' assets and programs that may drive the realisation of Opportunity 1.

Each intervention is broad-based but actionable. They may require input or assistance from multiple parties including the State and Federal government, and the private and not-for-profit sectors. Where possible, and where publicly available data was accessible, potential costs, benefits, and means of implementation are documented for each action.

The longlist of actions should serve as a point of reference for policymakers – including the City of Mandurah, Peel Development Commission, WA, and Federal Government agencies – to evaluate future proposals for policy change, regional investment attraction and private sector partnerships/collaboration, and/or infrastructure projects in Mandurah for their alignment to the eight opportunities.

It also serves to provide ideas for novel interventions that have been trialled or shown to be effective at addressing similar challenges in other jurisdictions, which can be implemented as part of the Transform Mandurah strategy in the future.

Next steps after this report

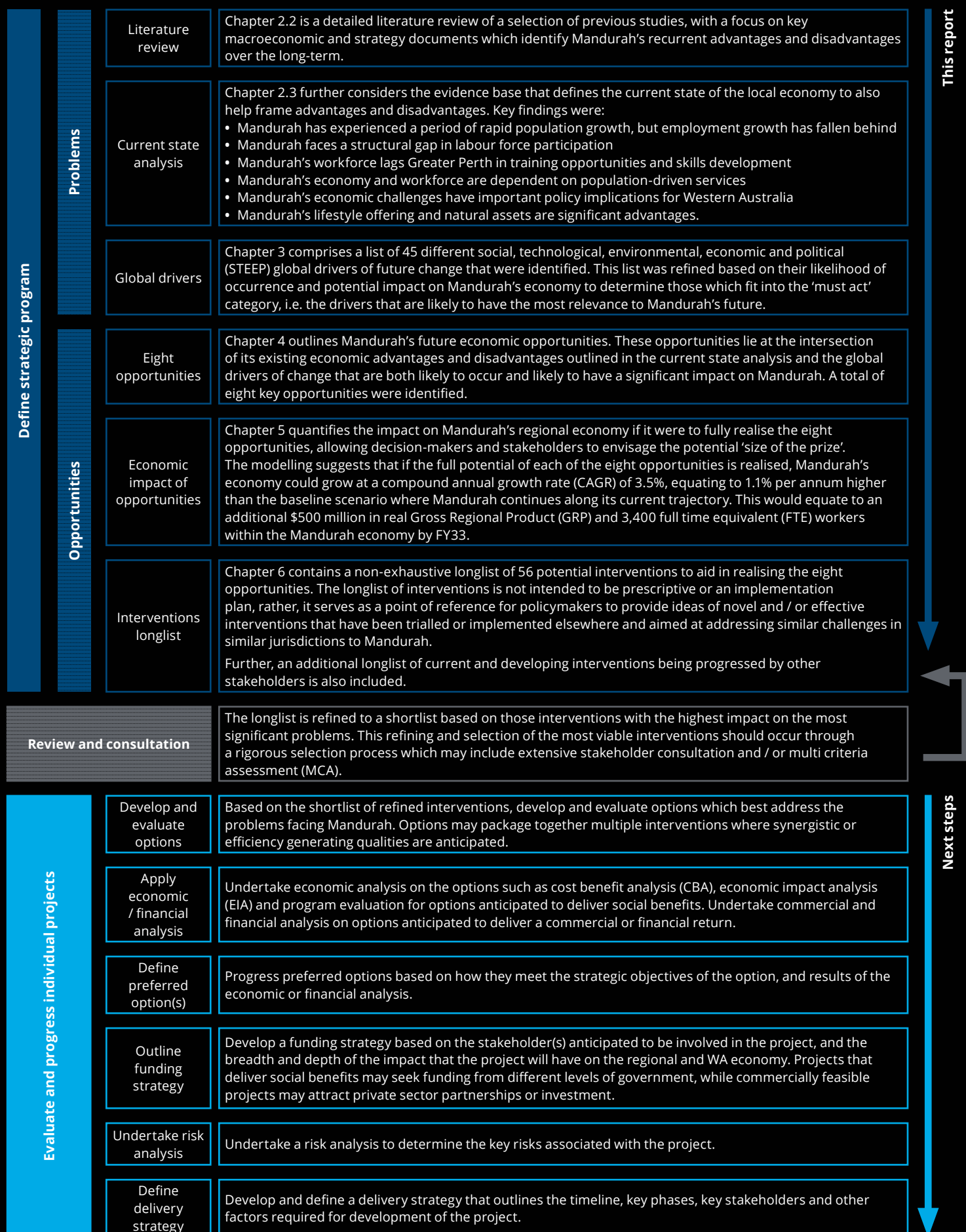
This report represents the first phase in the process of realising future economic opportunities for Mandurah. Figure vi outlines a 'logic map' of steps undertaken in this report, and next steps that the City of Mandurah and PDC could take to progress Transform Mandurah to implementation.

The steps undertaken in this report are summarised under the *Define strategic program* phase in Figure vi, with reference to relevant sections within the report where each step is explored in detail.

Under the *Review and consultation* phase, it is anticipated that a high-level prioritisation process will be undertaken to identify which of the problems and opportunities explored in this report should be addressed in the short term. Subsequently, a more detailed process to identify the most viable intervention(s) to address each problem or opportunity will follow in the *Evaluate and progress individual projects* phase. The level of detail and precise stages within this process can be tailored to each project based on the scale of the impact that the project is expected to have on the Mandurah and broader WA economy, the level of funding required, and the partners and stakeholders expected to be involved.



Figure vi: Outline of steps undertaken in this report and anticipated next steps





1 Background



1.1 Context

1.1.1 Restart Mandurah

Like many jurisdictions in Australia, the regional economy in Mandurah faced the prospect of a significant contraction in 2020 because of the COVID-19 pandemic. In response, in May 2020 the City of Mandurah ("the City") launched *Restart Mandurah*, a series of initiatives to provide short-term relief to Mandurah residents and businesses and mitigate the adverse economic impacts of the pandemic.¹ Restart Mandurah initiatives included:

- Rates and fee relief worth \$4.48 million, including no increase for residential rates and other fees and charges, a decrease in business rates, and some other fees waived
- The launch of a \$15 million COVID Restart Fund, including accelerating City projects to provide a pipeline of work for local businesses
- The creation of an Economic Taskforce to promote local investment opportunities and visitation, and support for local businesses to adjust operating models to manage pandemic impacts.

1.1.2 Transform Mandurah

While the focus of the Restart Mandurah initiatives above was on short-term mitigation of pandemic impacts, the City, in partnership with the Peel Development Commission (PDC) also launched the *Transform Mandurah* initiative as part of its COVID-19 response. *Transform Mandurah* focuses on medium- to long-term projects and opportunities for economic diversification in the Mandurah region, aligned with the City's *Mandurah Matters: Strategic Community Plan 2020 – 2040*.² It is also aligned with the objectives of the Transform Peel initiatives led by the PDC.

The first stage of Transform Mandurah centred on repositioning the Mandurah regional economy around its water assets and included potential projects such as a Water Ways centre of excellence and data array to support water research activity; the redevelopment of the Mandurah city centre; and the redevelopment of the City's own office site into a new conference centre and tourism precinct.

The motivation for repositioning Mandurah's regional economy aligns with other initiatives undertaken in the broader Peel region, including Transform Peel projects: the Peel Food Zone, Peel Business Park, WA Agri-Innovation Precinct and Peel Integrated Water Initiative.

Stage 2 of Transform Mandurah aims to expand the set of potential economic opportunities for the region, including initiatives designed to address long-term, structural economic and social imbalances between Mandurah and the Greater Perth region.

1.2 About this report

Deloitte Access Economics ("Deloitte") was engaged by the City to undertake economic analysis to support the identification of opportunities to pursue, challenges to address, and actions to undertake as part of Stage 2 of the Transform Mandurah strategy.

Deloitte's analysis was undertaken in close consultation with the Transform Mandurah working group, which included representatives from the City and the Peel Development Commission (PDC). The PDC is a partner in the Transform Mandurah program and is responsible for the promotion of economic opportunities across the broader Peel region, of which Mandurah is a critical part.

The scope of the analysis included:

- Review and assessment of Mandurah's existing economic advantages and disadvantages, to identify challenges to be addressed and areas of strength to support future economic opportunities (Chapter 2)
- Analysis of global drivers of change likely to impact the Mandurah regional economy over the medium- to long-term (Chapter 3)
- Identification of opportunities that lie at the intersection of Mandurah's existing advantages and key global drivers of change (Chapter 4)
- Modelling the impact on Mandurah's regional economy of realising the identified opportunities, using Deloitte Access Economics' in-house regional computable general equilibrium (CGE) model (Chapter 5)
- Identifying a longlist of potential actions and interventions to support the realisation of the opportunities (Chapter 6).

A stylised representation of this approach is shown in Figure 1.1. In addition, Chapter 7 outlines 'next steps' and the role that the findings of this study could play in progressing Transform Mandurah.

It is anticipated that actions identified will form the basis of future prioritisation and business case development for projects and programs that will put Mandurah on the pathway to realising the full potential of the identified opportunities, raising long term rates of growth. The actions identified will also support the implementation of other initiatives identified through the Transform Mandurah strategy that align with the opportunities.

Figure 1.1: Approach used to identify Mandurah's future economic opportunities





2 Mandurah's economic advantages and disadvantages



2.1 Introduction

Mandurah's future economic opportunities lie at the intersection of two key factors: its existing areas of strength and weakness, which define its comparative advantages and disadvantages; and global drivers of change, which define how Mandurah can use its advantages and address its disadvantages relative to these expected trends. This chapter addresses the former (Figure 2.1), by providing an overview of Mandurah's current and historical economic strengths and challenges.

2.2 Literature review

A significant body of work has been completed over the last two decades examining the challenges facing Mandurah's regional economy and recommending industries, projects, and strategies for potential prioritisation to address these challenges.

This chapter reviews a selection of previous studies to identify recurrent advantages and disadvantages through time. This aids in separating Mandurah's long-term economic strengths and challenges, which are likely to persist in the future, from short-term factors that may, for example, be associated primarily with the COVID-19 pandemic and be less significant for Mandurah's longer-term economic development.

Table 2.1 summarises the documents reviewed, key findings of each study, and areas of economic advantage and disadvantage relevant for Transform Mandurah.

Figure 2.1: Approach – Assess Mandurah's existing economic advantages and disadvantages

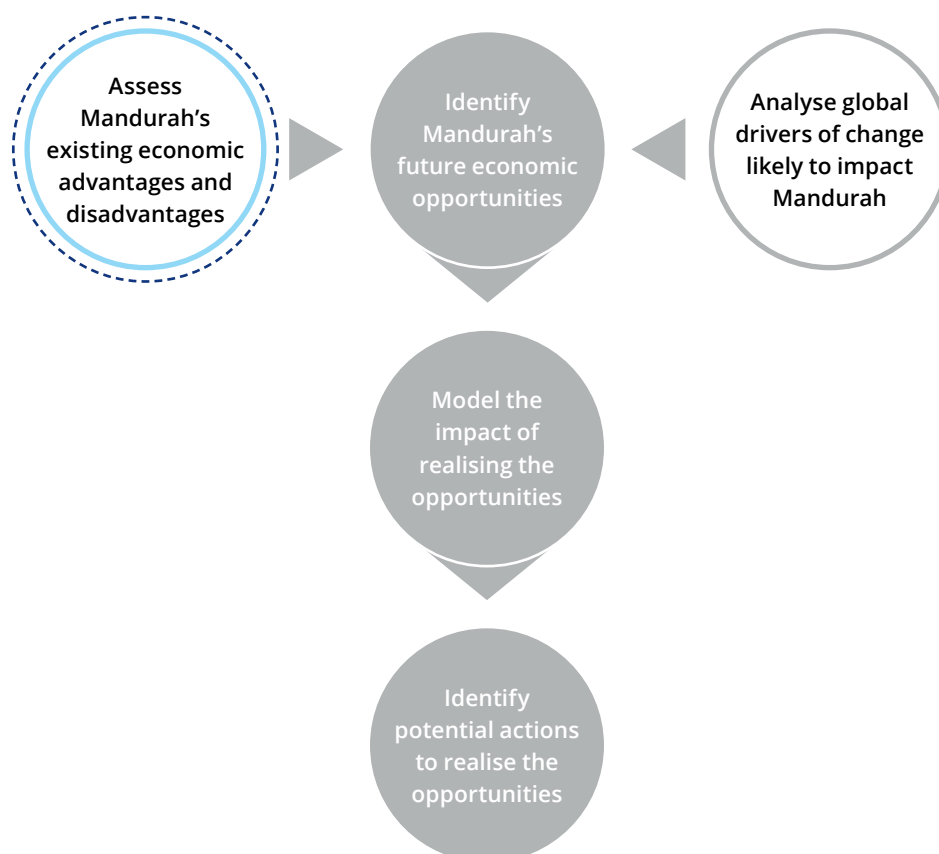


Table 2.1: Summary of findings from literature review

Document reviewed	Summary of findings	Insights for Transform Mandurah
Transform Mandurah: CBD Revitalisation Plan City of Mandurah, 2019 ³	<p>This paper identified three major programs to support the revitalisation of the Mandurah CBD:</p> <ul style="list-style-type: none"> • The water economy, supported by the proposed Australian Waterways Centre of Excellence and Waterways Data Array • City centre redevelopment, including the relocation of civic services into the city centre • Conference centre precinct anchored by the redevelopment of the City of Mandurah's 3ha site into a new conference centre and tourism precinct. <p>The paper also identified four key metrics of success for a revitalised Mandurah CBD:</p> <ul style="list-style-type: none"> • Increasing the level of pedestrian and professional activation in the CBD, and creating a coordinated set of visitor attractions • Focusing the water economy into a cluster of industry activity, providing for job growth • Improving the standard of commercial and retail buildings to enhance the visitor and workforce experience • Building on the success of the City's events attraction campaign with increased accommodation supply and a conference centre. 	<p>The paper identified Mandurah's key regional economic strengths as being associated with water industries (given its natural water assets), tourism, environment, and agriculture. In addition, the paper identified several key economic disadvantages which support the need for CBD revitalisation, including:</p> <ul style="list-style-type: none"> • Substantial jobs growth required to meet the City's employment self-sufficiency target (79 per cent) based on population projections to 2050 • A deficit of local jobs held by workers with a tertiary qualification • Declining employment self-sufficiency • Socioeconomic disadvantage, evident in the City of Mandurah recording very low socioeconomic indexes for areas (SEIFA) indexes relative to other WA local government areas • Poor public form in the CBD away from the foreshore, associated with poor connectivity and public transport access, dispersed and low-quality office space and a lack of major commercial anchor tenants • Uneven periods of historical development, resulting in population having grown faster than employment and supporting infrastructure (such as transport).
Mandurah and Murray: A Shared Economic Future – Regional Economic Development Strategy City of Mandurah and Shire of Murray, 2018 ⁴	<p>The strategy identified the importance of increasing the role of local decision-making in economic development and investment opportunities in both local government areas.</p> <p>Key areas for potential opportunities identified included:</p> <ul style="list-style-type: none"> • Leveraging the water economy • Positioning Mandurah and Murray as the 'daytrip capital' of WA, oriented toward intrastate daytrip tourism from the Greater Perth area • Revitalising Mandurah's city centre, to support the broader objective of positioning Mandurah as the Peel regional capital city • Further development of industries required to attract visitors, such as the arts, culture, and sport • Further investment in export-oriented industries, including food and agribusiness, resources, and energy. 	<p>The strategy found that the Mandurah and Murray regions faced economic challenges characterised by:</p> <ul style="list-style-type: none"> • Declining employment self-sufficiency, requiring a substantial acceleration in jobs growth to meet local government self-sufficiency targets • A shortage of 'population-driven' employment, such as in the health and education sectors • A shortfall in export-oriented employment, particularly in tourism and mining, relative to other comparable regions in WA.

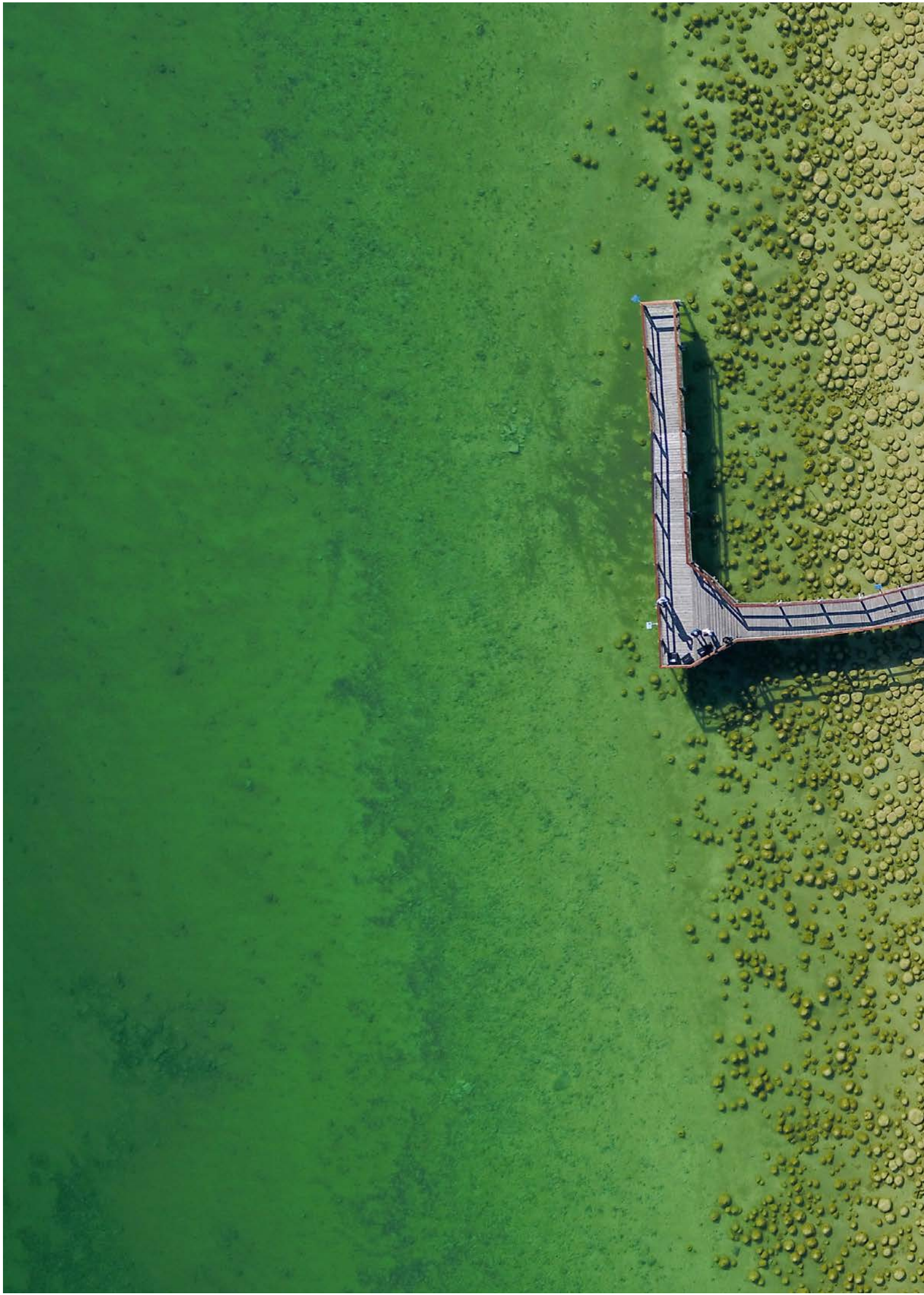
Document reviewed	Summary of findings	Insights for Transform Mandurah
Emerging Industries for the Peel Region: An Initial Overview Syme Marmion & Co, 2020 ⁵	<p>The scope of this study was the whole of the Peel region, for which it identified the following areas of strength:</p> <ul style="list-style-type: none"> • Large potential for industrial land development • Direct access to electricity and gas grids • Good solar and wind energy resources • Access to treated wastewater and potential for desalination • Large potential labour pool, albeit offset by skills challenges, including from the Greater Perth region via transport connections • Strong projected population growth • Proximity to ports, airports, and export terminal infrastructure • Established tourism, horticulture, and livestock industries. <p>The study specifically examined the Peel region's potential to support emerging industries at the State level, and found that:</p> <ul style="list-style-type: none"> • The Peel has no competitive advantage to engage in the emerging battery supply chain, given established capacity at Kwinana and Kemerton and no direct access to raw materials • The Peel could play a role in the emerging hydrogen sector. 	<p>The study identified several potential opportunities for emerging industries in the Peel region, including:</p> <ul style="list-style-type: none"> • Hydrogen: Potential to utilise methane from treated wastewater to produce hydrogen by electrolysis. The region has direct access to the South West Interconnected System for feed-in supply, and good solar and wind resources for renewable hydrogen production. • Advanced manufacturing of prefabricated housing: The region's significant projected population growth will necessitate a rapid increase in housing supply. Prefabricated housing could potentially provide a low-cost, more efficient means of delivering this additional housing capacity. The manufacture of prefabricated housing materials also caters to skills available in the Peel labour pool outside of traditional construction roles.
Mandurah Matters Strategic Community Plan 2020-2040 City of Mandurah, 2020 ⁶	<p>The strategic plan examined a series of historical and persistent economic challenges facing the Mandurah region, relative to the rest of Greater Perth:</p> <ul style="list-style-type: none"> • High rates of unemployment and underemployment • Low labour force participation rates • Lack of employment self-sufficiency (less than 50 per cent of resident employees work in Mandurah) • Entrenched social disadvantage evidenced in high rates of multi-generational unemployment • Limited ability to attract and retain young people • Lack of affordable housing • Older population distribution • Low percentage of people aged 15+ either attending tertiary training, or with a tertiary qualification • Low percentage of people having completed secondary school. 	<p>Based on consideration of the economic challenges identified, the strategic plan proposed several indicators of successful transformation and economic revitalisation:</p> <ul style="list-style-type: none"> • A net increase in the number of businesses in Mandurah • Bring Mandurah's unemployment rate closer to that of Greater Perth and the rest of WA • Improve access to education, training and employment opportunities in the Mandurah region • Increase the size of Mandurah's regional economy as measured through gross regional product (GRP) • Increase the percentage of Mandurah's population with a university or other tertiary qualification.

Document reviewed	Summary of findings	Insights for Transform Mandurah
'Southern City' Strategy and Action Plan Syme Marmion & Co, 2008 ⁷	<p>This study identified the following economic strengths and advantages for Mandurah:</p> <ul style="list-style-type: none"> • Significant natural and environment assets, giving rise to a high quality of life that drives both population growth and tourism • An older and ageing demographic, providing the demand base for services to the aged • A rapidly growing property sector, catering to a high rate of population growth • Access to a large labour pool within commuting distance, both from Perth and neighbouring Peel LGAs. <p>However, the study found that the ability to leverage these strengths was constrained by several economic challenges:</p> <ul style="list-style-type: none"> • A low proportion of high-end knowledge workers in the local workforce • Lack of access to education and training opportunities • Negative perceptions of community safety and security • A low proportion of working age people (15 to 64) relative to Greater Perth • Declining employment self-sufficiency. 	<p>The key risk identified in the study was 'the danger of Mandurah becoming part of Greater Perth rather than maintaining a separate identity'. To some degree, this has progressed since the publication of this study in 2008 – particularly through the completion of the Mandurah Line rail connection and continued urban development in suburbs between Perth and Mandurah.</p> <p>The study observed that Mandurah risked becoming a 'dormitory town' characterised by very low employment self-sufficiency, with an increasing share of residents commuting to work in Perth rather than working locally.</p> <p>The study recommended exploring opportunities in the following areas to avoid this scenario by sustaining local employment:</p> <ul style="list-style-type: none"> • University research, including potential development of a full university campus in Mandurah • Sports and culture, to drive greater growth in Mandurah's visitor economy • Health and wellbeing, including services to the aged • Creative industries • Sustainable living • Green industries, including renewable energy.
Peel Away the Mask: A Study of the Social Condition of the Peel Region Peel Development Commission, 2001 ⁸	<p>This study reviewed a range of measures of socioeconomic conditions in the Peel region, finding that:</p> <ul style="list-style-type: none"> • Regional unemployment was significantly higher (~2.5 percentage points) than the WA average, and this disparity was much greater for youth unemployment • Peel households had lower average weekly income than the WA and Australian average • The region's workforce was characterised by lower skill levels and more limited educational outcomes • Adverse economic conditions flowed through to negative social impacts. For example, rates of crime – especially drug-related crime – were higher than elsewhere in WA, as were rates of youth homelessness. 	<p>The study suggests addressing underlying economic challenges at the root as a means of improving social outcomes for Peel residents, for example:</p> <ul style="list-style-type: none"> • Improved job readiness for new entrants to the workforce • Attracting a larger professional workforce and investing in post-secondary education locally • Prioritising development of skills catering to future demand in the services industry, through both school and post-school education, such as IT, finance, innovation, and communications • Diversifying the industry distribution of jobs and businesses within the region.

Document reviewed	Summary of findings	Insights for Transform Mandurah
Peel Away the Mask II Peel Community Development Group, 2012 ⁹	<p>This study was an update to the original Peel Away the Mask study (2001) and found that many of the economic challenges and disadvantages identified in the original paper were still prevalent in the Peel region. In addition, it highlighted that:</p> <ul style="list-style-type: none"> • Rapid population growth had led to the number of people and dwellings in the region outpacing the availability of local jobs and the supply of adequate supporting infrastructure, such as transport • A lack of access to youth sporting and cultural infrastructure had led to a worsening of youth unemployment and crime conditions • The region faced a lack of specialised health and community service skills locally, with these services either provided by generalists or residents being required to travel to Perth to access them. 	<p>The study recommended a series of remedial actions, most notably in the health and community services sectors, to address the identified challenges including:</p> <ul style="list-style-type: none"> • Investment in building local capacity to deliver these services, including specialised services to address acute problems • Research to understand future services likely to be required to cater to the region's ageing population • Additional financial support to maintain and extend Indigenous health services in the region • Greater coordination and formalisation of links between existing service providers, including services delivered by different levels of government and between public and private sectors • Greater emphasis on early intervention and education in areas such as domestic violence, discrimination, household finance, and parenting support.
Peel Regional Investment Blueprint Peel Development Commission, 2015 ¹⁰	<p>The blueprint identified four key focus areas for future investment in the Peel region:</p> <ul style="list-style-type: none"> • Agriculture and food innovation: Position Peel as the region of choice for premium agrifood business, including for exports • Tourism: Grow the Peel tourism economy by diversifying attractions on offer, attracting additional visitors and increasing their average length of stay • People: Increase access to vocational training and higher education, and provide greater access to advanced skills and experience • Strong and resilient communities: Invest in community development through secure housing, employment support services, early childhood services, and greater sport, leisure, and cultural infrastructure. 	<p>The blueprint set several targets for the Peel regional economy by 2050 as indicators of success, including:</p> <ul style="list-style-type: none"> • Grow the Peel regional economy to be 10 per cent of WA's gross state product (GSP) • Exceed WA average employment self-sufficiency targets in Peel LGAs • Increase Peel international exports • Triple the size of the Peel tourism economy • Increase the number of 'significant events' hosted in the Peel • Increase labour force participation and educational attainment rates to match or exceed WA averages • Reduce Peel LGAs' indexes of relative social disadvantage (IRSD) below the national average.

Document reviewed	Summary of findings	Insights for Transform Mandurah
Peel Workforce Skills Analysis (summary report) Peel Development Commission, 2017 ¹¹	<p>This paper analysed skills among the Peel region's resident workforce, and identified several gaps, challenges, and opportunities for skills development and diversification. Key challenges identified include:</p> <ul style="list-style-type: none"> • Persistently high unemployment relative to Greater Perth, particularly among young people • A significant share of the labour pool lacking the basic skills for work readiness, such as a willingness to learn, work ethic, resilience, initiative, understanding of basic workplace health and safety, basic finance and technology skills, cultural sensitivity, or the ability to work in a team • Limited secondary education pathways, with many Peel high schools not offering a comprehensive set of ATAR subjects • Limited post-secondary education offerings, with students largely required to travel to Perth for advanced TAFE courses and university • Even in the region's areas of strength, such as agribusiness, there was a negative perception of jobs available – for example, a perception that jobs in agribusiness were too manual, low paid, and with few opportunities for development – leading to these jobs being filled by migrants, backpackers, and/or businesses being unable to scale up beyond the family owner-operator level. 	<p>The study recommended establishing an innovative primary industries hub in the Peel region, comprising three initiatives:</p> <ul style="list-style-type: none"> • Peel Food Zone • Peel Business Park • Peel Integrated Water Initiative. <p>Four scenarios were developed for the focus of the innovation hub:</p> <ul style="list-style-type: none"> • Scenario A: Mixed industry with focus on food • Scenario B: Specialised food-based cluster • Scenario C: Technology cluster • Scenario D: Alternative specialist hub. <p>Scenario B was found to be the most closely linked with other initiatives in the region and the Peel's existing areas of strength. Successfully realising scenario B would require investment in developing more advanced skills in food manufacturing and processing, food production, and waste-to-energy technology among Peel workers. To achieve this, the study recommended:</p> <ul style="list-style-type: none"> • School-based work readiness programs • Initiatives to stimulate entrepreneurship • Work-matching services to link employers with skilled employees, with employee mentoring • Investment in training infrastructure including common user facilities and increased TAFE and university capacity.

Document reviewed	Summary of findings	Insights for Transform Mandurah
Peel Tourism Infrastructure Strategy Peel Development Commission, 2016 ¹²	<p>This study analysed the current provision of tourism offerings in the Peel region and identified gaps in infrastructure and services that constrained the growth of the regional tourism economy.</p> <p>It found that the Peel region competed with other short- and medium-haul destinations for visitors using Perth as a base (such as the Swan Valley, Lancelin, and Margaret River). However, it noted key strengths for the Peel as a tourism destination, including:</p> <ul style="list-style-type: none"> • Diverse waterways and conservation reserves appealing to outdoor adventure, nature, and marine experiences • Most Peel region destinations are a relatively short distance from Perth with multiple means of travel • Peel destinations and offerings cater to spontaneity (i.e., do not require critical pre-planning) and many destinations are in close proximity to one another, providing for a diverse mix of experiences in a single trip. <p>The study noted issues in the existing tourism workforce, including recruitment and retention difficulty, prevalence of small and micro-businesses without the ability to invest in upskilling staff, and employer hesitation in investing in training because of high turnover and transient nature of the workforce.</p>	<p>The study identified several key initiatives to expand the Peel region's tourism offering, including a trails and adventure hub in Dwellingup, investment in national parks infrastructure, and marine and waterways adventure offerings. In addition, the strategy outlined several high-level aspirations for the Peel tourism economy by 2020, including:</p> <ul style="list-style-type: none"> • Increase overnight visitation by 25 per cent • Increase international visitation by 40 per cent • Increase daytrips by 30 per cent • Increase visitor expenditure by almost 50 per cent • Create approximately 1,200 new permanent jobs in the tourism sector, with 300 additional construction jobs during the investment phase to achieve the above targets. <p>The study identified several opportunities specific to Mandurah:</p> <ul style="list-style-type: none"> • Eco- and nature-based facilities • Hospitality, events, and tourism training and development • Fine dining and cuisine • Increased public transport accessibility • Backpacker accommodation • Short stay camping and caravan facilities • Sites, amenities, and tours leveraging the Mandurah waterfront.
Peel Tourism Investment Framework Peel Development Commission, 2019 ¹³	<p>This study noted five key drivers of tourism activity:</p> <ul style="list-style-type: none"> • Investment in infrastructure, attractions, and accommodation • Enhanced, consistent, and high-quality services for visitors across the Peel region • Effective destination marketing to increase the number of visitors to the region • Supplementing natural advantages with enticing new events and experiences • Alliances, partnerships, and collaboration with organisations and stakeholders. <p>This paper focused on the investment driver, for which it identified two focus areas:</p> <ul style="list-style-type: none"> • Adopt an 'open for business' model, adopting processes, culture, and technology to maximise investment • Develop a shared investment attraction plan aligning stakeholder across different levels of government, tourism operators, suppliers and other businesses. 	<p>While the framework considers the entire Peel region, most recommendations apply to all LGAs including Mandurah, such as:</p> <ul style="list-style-type: none"> • Reducing time for decisions around tourism investment, including local government approvals, to be made • Monitoring the status of State planning reform to ensure local tourism investment initiatives are not adversely affected • Developing investment collateral to market the region to investors and developers • Developing supporting material for potential investors and developers, providing guidance regulatory approval pathways • Identifying zones for specialist attractions, and associated infrastructure needs (such as caravan parks, aquatic attractions, trails, etc.)





2.2.1 Key findings from the literature review

Though the literature review includes a wide range of studies over two decades, there are several key themes that emerge consistently, including:

- Mandurah's natural environmental assets hold potential advantage for the regional economy, notably the tourism, lifestyle, and research value of its waterways. Capitalising on these natural assets is critical to tourism industry objectives for Mandurah and the broader Peel region.
- Mandurah has maintained a persistently higher unemployment rate than the rest of the Perth metropolitan area over the long term, which is acutely high in some parts of central and southern Mandurah. These pockets of particularly high unemployment correspond to high levels of socioeconomic disadvantage, demonstrated through lower household income and less desirable school education outcomes.
- Mandurah's resident workforce is concentrated in retail, hospitality, and other population-driven services industries, complemented by high dependence on cyclical construction and mining activity. The workforce exhibits lower levels of post-secondary educational attainment, with a large proportion of workers in roles requiring low or no skills. Several papers reviewed identified industry development in the surrounding Peel region – such as in agri-food – as opportunities to attract more skilled workers to live in Mandurah.
- Mandurah's workforce challenges are partly explained by limited access to education opportunities locally, which results in those seeking tertiary education or advanced vocational education to travel outside of Mandurah.

These findings are complemented by analysis of the current state of Mandurah's economy and workforce, outlined in the next section.

2.3 Mandurah's economic advantages and disadvantages

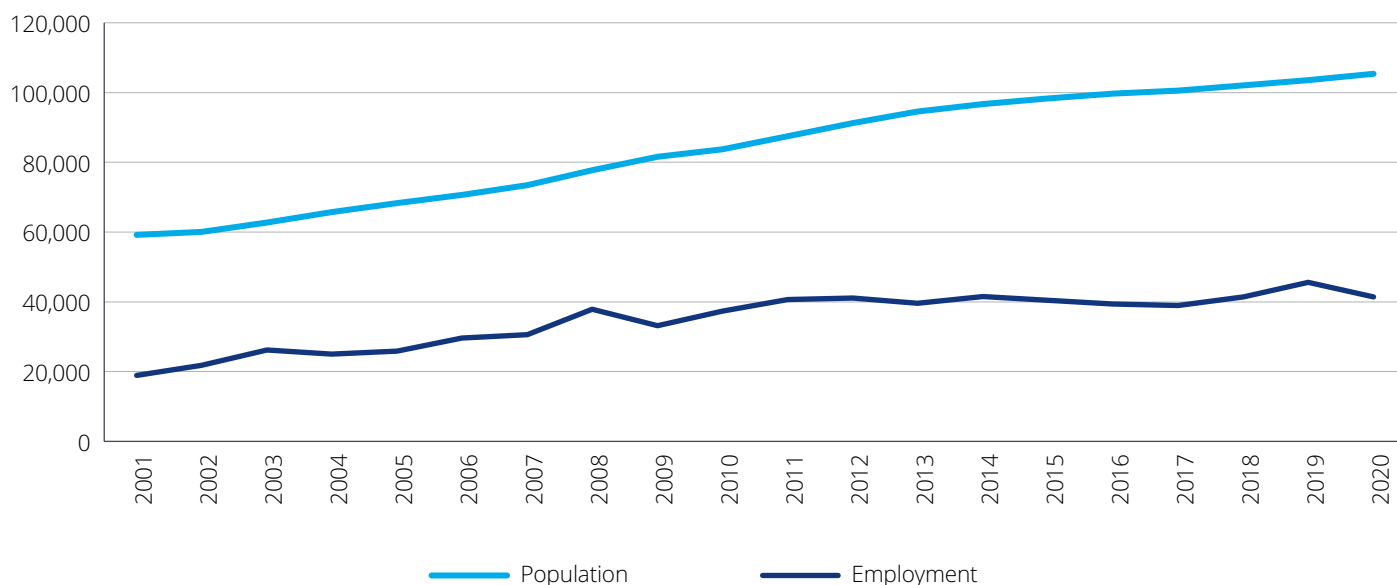
While Chapter 2.2 explores recurring themes in the economic development of Mandurah across literature to consider advantages and disadvantages, and areas of previously identified opportunity, this chapter considers the evidence base that defines the current state of the local economy to also help frame advantages and disadvantages. Given the limited availability of data at a local level, the analysis in this chapter focusses on five key areas to investigate and establish the evidence base which frames Mandurah's economic advantages and disadvantages:

- Population and labour force
- Skills development and educational attainment
- Industry mix
- Social and health community outcomes
- Lifestyle and natural assets.

2.3.1 Mandurah has experienced a period of rapid population growth, but employment growth has fallen behind

The population of the Mandurah SA4ⁱ has increased from 59,400 in 2001 to 105,300 people in 2020, an average annual increase of 3.1 per cent (Figure 2.2). This average annual growth is high when compared to other regional coastal areas at SA4 level across Australia including Bunbury (1.8 per cent), the Sunshine Coast (2.6 per cent), and Illawarra (0.9 per cent) over the same period.

Figure 2.2: Population and employment, Mandurah SA4



Source: ABS Estimated Resident Population; ABS Labour Force Survey

ⁱ An SA4 is a 'statistical area level 4' in the Australian Bureau of Statistics' (ABS) Australian Statistical Geography Standard (ASGS). SA4s represent broad regions with similar characteristics, in particular labour market characteristics. The Mandurah SA4 consists of the whole of the City of Mandurah, as well as the western part of the Shire of Murray covering the localities of Barragup, Birchmont, Blythewood, Coolup, Fairbridge, Furnissdale, Meelon, Nambelup, Nirimba, North Dandalup, North Yunderup, Pinjarra, Ravenswood, South Yunderup, Stake Hill, West Coolup, and West Pinjarra. In population terms, the City of Mandurah represents 85 per cent of the Mandurah SA4.

This strong and sustained population growth was matched by employment growth until 2011. From the period 1998 to 2011, employment in the Mandurah SA4 increased from 20,200 to 40,600, an average annual growth rate of 5.2 per cent. However, in the post-GFC and post-mining boom period from 2011 to 2020 employment increased to just 41,300, an average annual increase of only 0.2 per cent.

A similar slowdown occurred across the rest of the Greater Perth region, with average annual employment growth slowing from 2.8 per cent between 1998 and 2011 to 1.2 per cent from 2011 to 2020. This reflects state-wide effects of macroeconomic conditions, but also demonstrates the volatility in Mandurah's local labour market – its highs are higher during periods of growth, but its lows are lower during periods of decline.

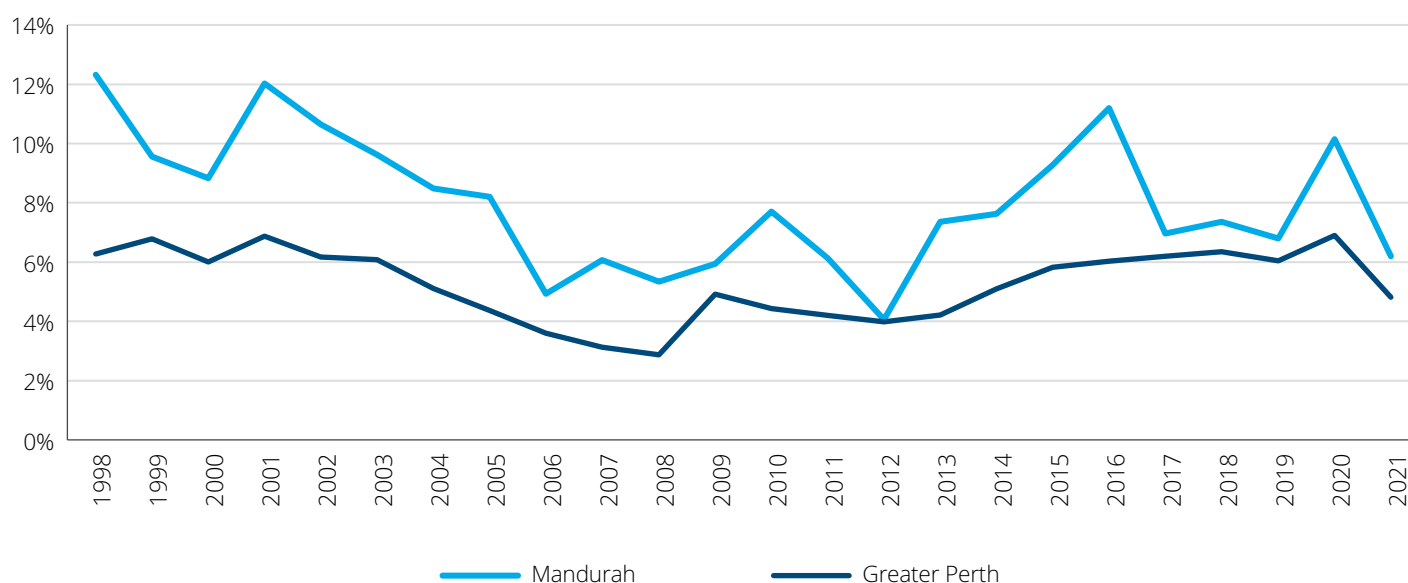
Employment growth has also experienced more cyclical effects relative to population growth, with periods of growth regularly offset by subsequent periods of decline, most notably as a result of the COVID-19 pandemic in 2020. The average level of employment in Mandurah was around 9.5 per cent lower in 2020 than in 2019.

The scale of decrease to the Mandurah workforce is comparable to other jurisdictions around Australia amidst the uncertainty of the pandemic.

Importantly however, employment in the Mandurah region did not recover in 2021 in line with the broader economic recovery across most other jurisdictions in Australia. Across the rest of Greater Perth, the level of employment in 2021 was, on average, 5.4 per cent higher than in 2020. In Mandurah, employment in 2021 was 2 per cent lower than in 2020.

Most regional areas in Australia have a higher unemployment rate than the capital cities, and this is true for Mandurah when compared to Greater Perth.ⁱⁱ While Mandurah's unemployment rate fell from pandemic highs exceeding 10 per cent in 2020 to around 6.2 per cent in 2021, it remained stubbornly higher than the 4.8 per cent average unemployment rate across Greater Perth (Figure 2.3).

Figure 2.3: Mandurah and Greater Perth unemployment rate, annual averages



Source: ABS Labour Force Survey

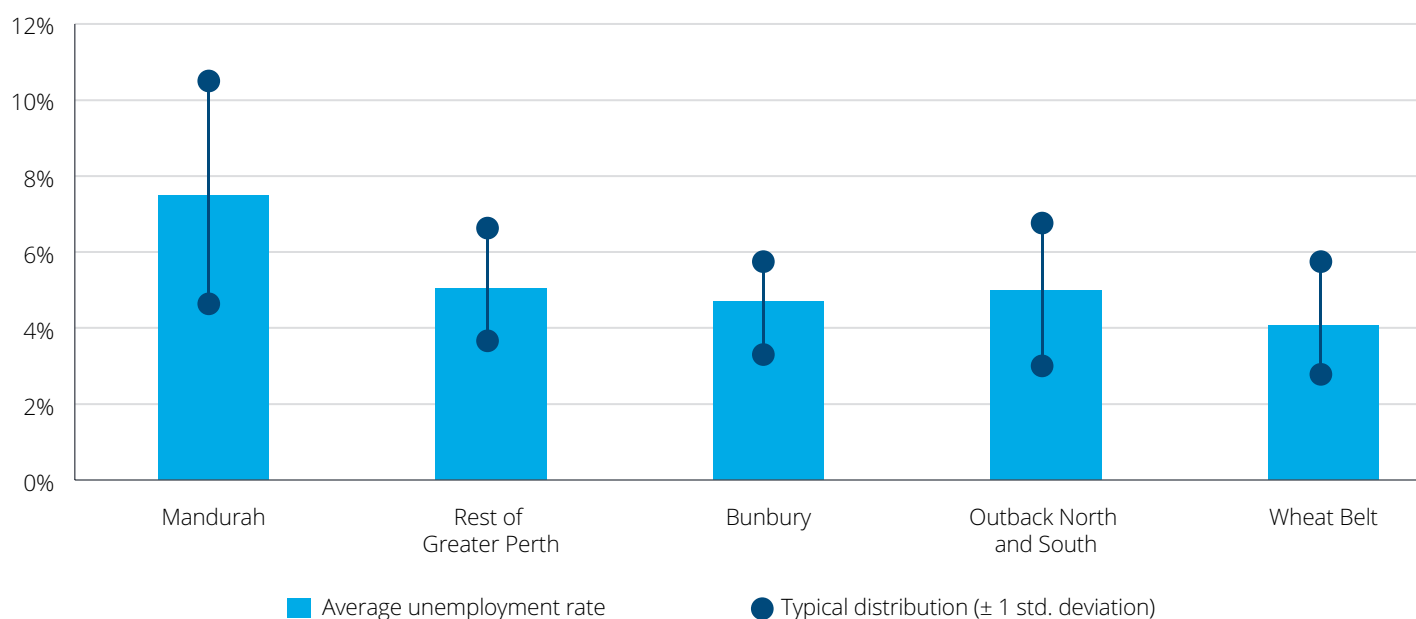
ⁱⁱ Greater Perthⁱⁱ refers here to the greater capital city statistical area (GCCSA) defined in the ASGS, which includes the Mandurah SA4 and five Perth SA4s. References to the 'rest of Greater Perth' should be interpreted as the Greater Perth region minus Mandurah.

While the gap between Mandurah's unemployment rate and that of Greater Perth is significant, addressing this gap is not insurmountable. In December 2021, Mandurah's unemployment rate of 7.5 per cent represented approximately 3,600 people unemployed. Of these, around 1,400 people would need to find employment for Mandurah to have the same unemployment rate as Greater Perth.

Mandurah's unemployment gap is also significant relative to other parts of regional Western Australia. The average monthly unemployment rate for the Mandurah SA4 over the last two decades was approximately 7.9 per cent, substantially higher than average rates of between 4.2 and 5.2 per cent over the same period in other SA4s (Figure 2.4). In addition, the volatility in Mandurah's unemployment rate was higher, with the standard deviation in Mandurah's monthly unemployment rate being almost double those in other SA4s.

Employment growth has lagged partly due to Mandurah's age profile. Mandurah has an older population, with a greater proportion of people aged 65 years and over and an acutely lower proportion of people aged 25 to 44 (Figure 2.5). An older population profile can influence employment and the unemployment rate in two ways. First, older people attempting to re-enter the workforce or switch jobs generally face a greater degree of difficulty in obtaining employment relative to younger workers, leading to a higher rate of unemployment among this cohort. Secondly, older people have greater capacity to be financially independent by way of access to the aged pension and superannuation. Consequently, voluntary withdrawal from the labour force is more common among older people of 'working age', leading to lower rates of labour force participationⁱⁱⁱ and therefore lower employment.

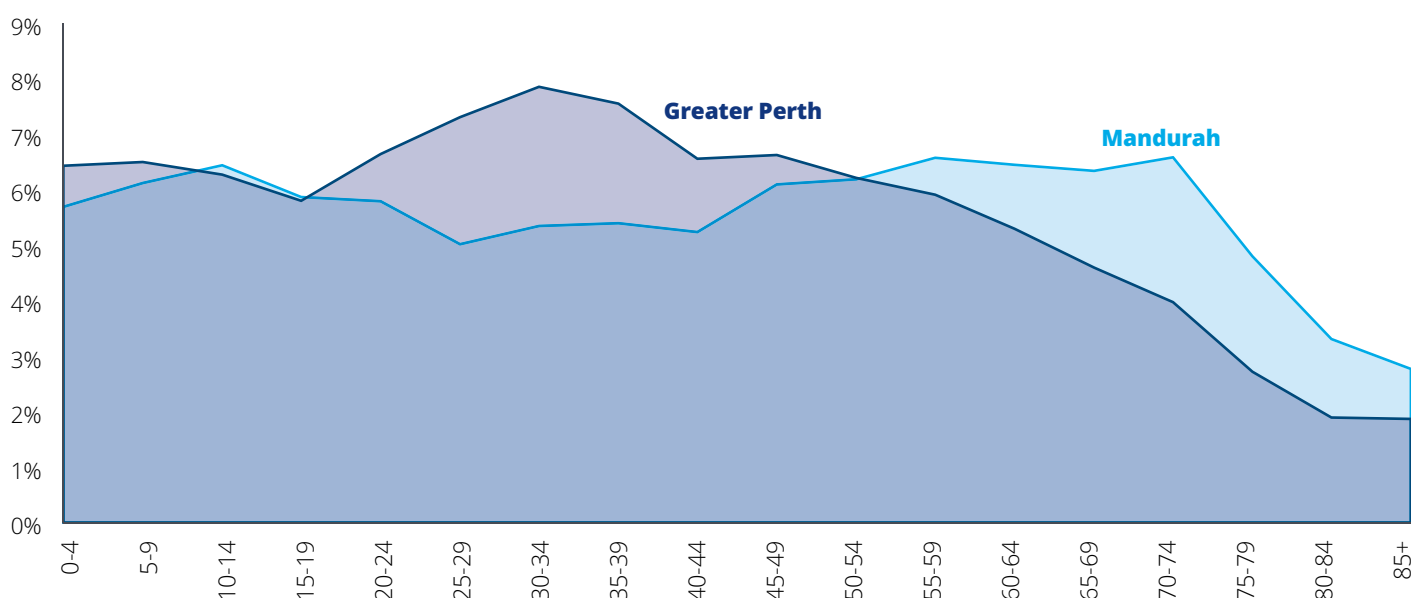
Figure 2.4: Distribution of monthly unemployment rates by WA SA4, Dec 2001 to Dec 2021



Source: ABS Labour Force Survey. Note: 'Outback North and South' SA4s include Pilbara, Kimberley, Mid West, Gascoyne, and Goldfields-Esperance.

ⁱⁱⁱ The labour force participation rate represents the ratio of people in the labour force to the working-age (15 years and over) civilian population. People 'in the labour force' include those who are employed and unemployed; to be classified as 'unemployed', a person must be actively looking for work. People who are not in the labour force include retirees, full-time students, people unable to work due to disability or long-term health conditions, those providing care or performing home duties, etc.

Figure 2.5: Mandurah SA4 and Greater Perth population by age group, 2020



Source: ABS Estimated Resident Population; ABS Labour Force Survey

2.3.2 Mandurah faces a structural gap in labour force participation

Mandurah's labour force participation rate has remained lower than Greater Perth over time. In 1998, Greater Perth's labour force participation rate was 66 per cent, compared to Mandurah's 55 per cent. Over the two decades to 2020, Perth's labour force participation rate grew to 68 per cent, while Mandurah's participation rate declined to 53 per cent. Additionally, Mandurah's labour force participation rate has experienced greater volatility than Greater Perth (Figure 2.6, first panel).

The substantial gap in labour force participation between Greater Perth and Mandurah is partly explained by the high proportion of early retirees who reside in Mandurah, being those aged 55 to 64 who voluntarily withdraw from the labour force. Consequently, the participation rate is closer to parity with the rest of the metropolitan area among those aged 15 to 54 (Figure 2.6, second panel). This is especially the case among males (Figure 2.6, third panel), while a more marked gap in participation exists among females aged 15 to 54 (Figure 2.6, fourth panel).

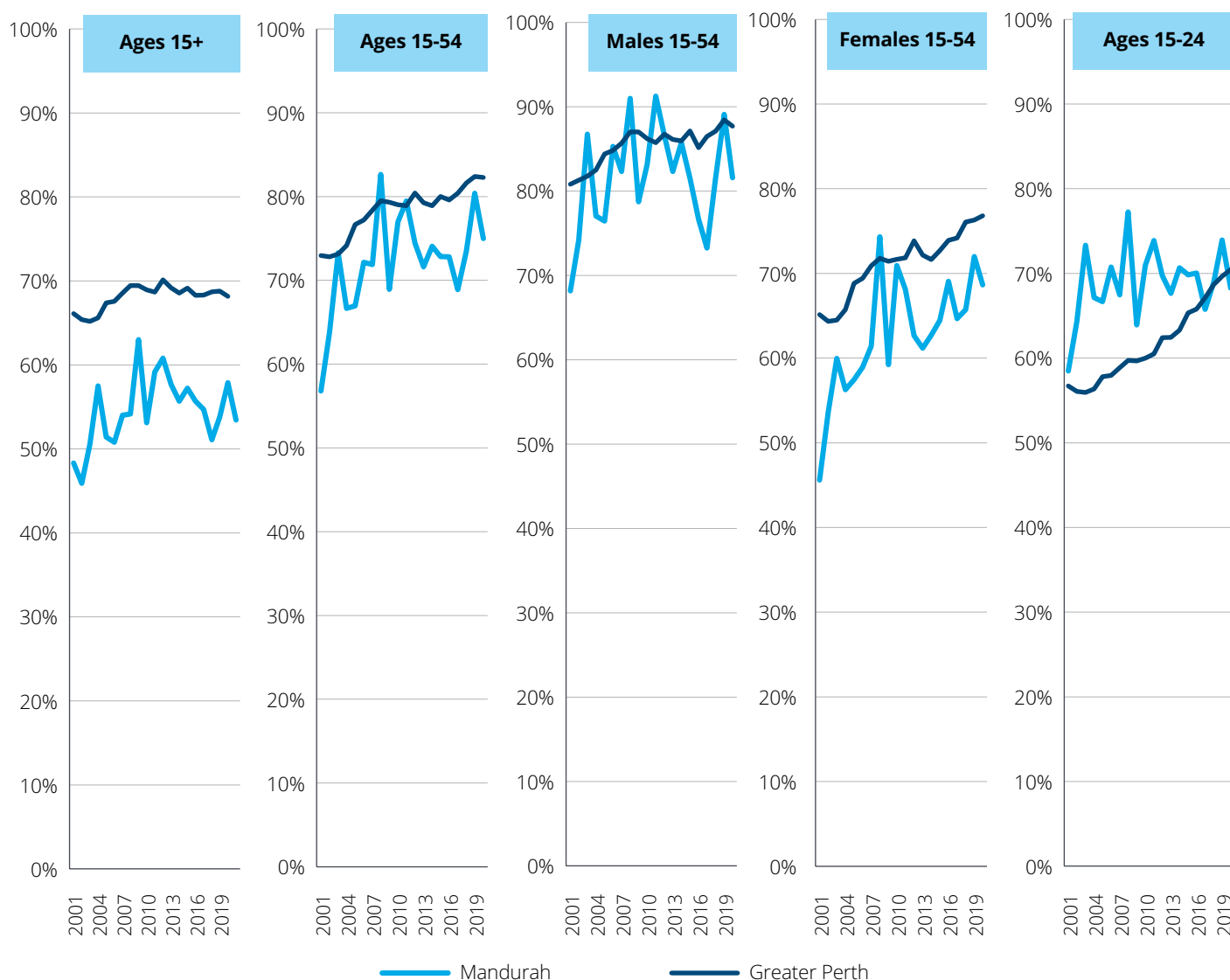
Labour force participation among young people (those aged 15 to 24) has generally been higher in Mandurah than in Greater Perth over the last two decades (Figure 2.6, left panel). This could be linked to the different composition of Mandurah's workforce in terms of occupations relative to Greater Perth.

The Mandurah workforce is more highly concentrated in roles such as technicians and trades workers, machinery operators and drivers, and labourers, which may offer opportunities for young people to enter the workforce at an earlier age. Of concern to the future potential growth in Mandurah's workforce is that the labour force participation rate among young people has largely remained flat over the last 20 years, notwithstanding significant volatility, and has not experienced the same upward trend as that of Greater Perth.

Labour force participation can also be affected by cyclical economic activity. During times of strong economic performance, labour force participation typically rises as people feel more optimistic about finding work and may return to the labour force. In contrast, during economic downturns, labour force participation generally declines as jobseekers grow more pessimistic about their employment prospects and some leave the labour force altogether. The occupations and industries in which Mandurah workers are concentrated (such as hospitality, retail, and mining – see Chapter 2.3.4) make the region more acutely exposed to these fluctuations than Greater Perth, evidenced in greater volatility in labour force participation.

While some disparities in labour market outcomes between Mandurah and Greater Perth may require more significant redress, others are potentially more achievable when considering the scale of the problem in absolute terms. For example, in December 2021, around 4,000 young people aged 15 to 24 years across Mandurah were not participating in the labour force. Of these, only an additional 300 young people would need to enter the labour force and seek employment for Mandurah to have the same youth participation rate as Greater Perth.

Figure 2.6: Mandurah and Greater Perth labour force participation rates

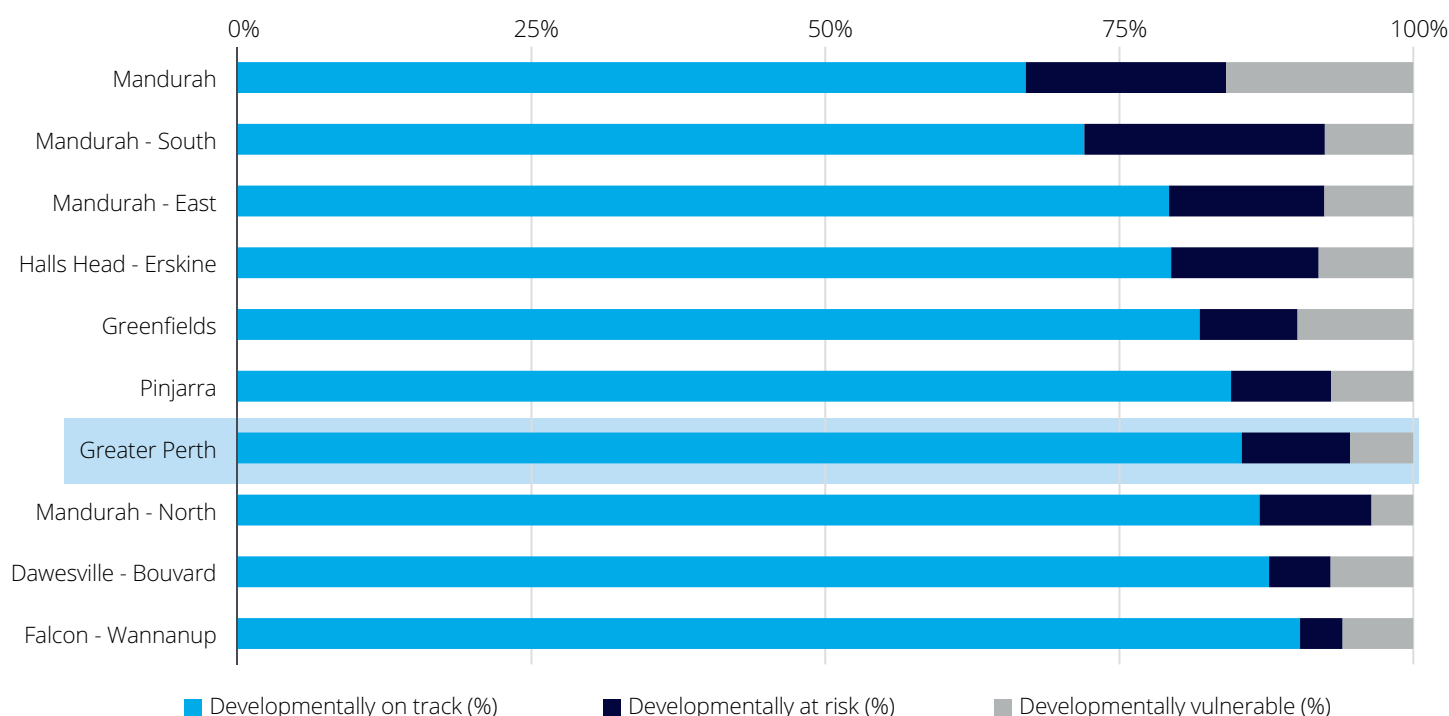


Source: ABS Estimated Resident Population; ABS Labour Force Survey; Deloitte estimates

2.3.3 Mandurah's workforce lags Greater Perth in training opportunities and skills development

Mandurah's population size and location mean that it faces more limited education and training opportunities for residents relative to Greater Perth. Additionally, higher socioeconomic disadvantage in several Mandurah suburbs appears to correlate with poorer educational outcomes for children. A 2018 study of early childhood development status found that only 67 per cent of students in central Mandurah and 72 per cent of students in the Mandurah South SA2 were considered developmentally on-track in terms of language and cognitive skills, compared to an average of 85 per cent across Greater Perth.¹⁴

These outcomes were not consistent across the entire Mandurah region; for example, 90 per cent of students residing in the Falcon-Wannanup SA2 were considered developmentally on-track (Figure 2.7). Concerningly, the study found that 17 per cent of children in the central Mandurah SA2 were developmentally 'at-risk' and 15 per cent developmentally 'vulnerable'.

Figure 2.7: Language and cognitive skills (schools-based) within Mandurah SA2s and Greater Perth, 2018

Source: Australian Early Development Census

Educational 'aspiration' is one way in which social disadvantage impacts developmental outcomes from an early age. Evidence from the Australian Council for Education Research shows that, in general, students who indicate that they enjoy mathematics or science were both confident in learning the subjects and hence scored higher on average in assessments relative to students who did not. Disadvantaged students tended to enjoy mathematics and science less, were less confident learning these subjects, and valued mathematics and science to a lesser extent than did their advantaged peers.¹⁵

The literature suggests that lower educational aspiration among disadvantaged students is likely to reflect the reality of lower achievement levels and poorer attitudes towards maths and science. Positive attitudes have been shown to be important not only for achievement, but also in students' decisions to continue studying these subjects.¹⁶

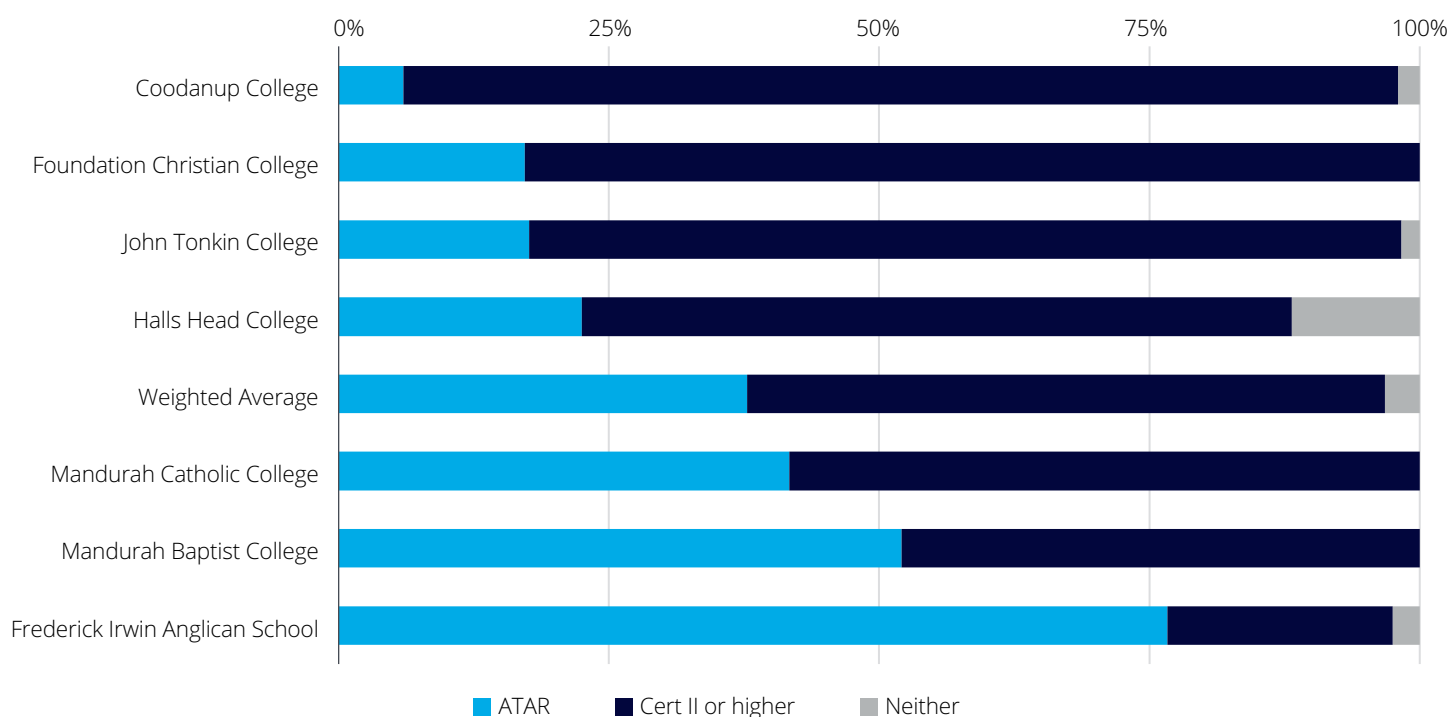
Additionally, students facing socio-economic disadvantage also tend to encounter a range of additional barriers which affect their educational aspiration.¹⁷ These other barriers include unstable housing situations (often resulting in changing schools regularly), family breakdown, intergenerational poverty, and lack of access to resources required for effective participation in education such as access to uniforms, internet, books, and stationery. These barriers are closely correlated with household indicators like unemployment and low household income.

There are also significant differences in secondary school outcomes in Mandurah. In 2020, only around one-third of Mandurah students in their final year of secondary school undertook a pathway to obtain an Australian Tertiary Admission Rank (ATAR) that would enable them to seek admission to tertiary education, while around 60 per cent of final year students undertook a vocational education and training (VET) pathway to obtain a Certificate II or higher qualification (Figure 2.8).

Notably, the proportion of students undertaking an ATAR pathway was greater (between 40 and 80 per cent) at three of Mandurah's independent schools, while its public high schools tended to have a much lower proportion of ATAR take-up (an average of around 20 per cent).

The limited number of students completing an ATAR pathway at local secondary schools creates a risk for the future Mandurah workforce. This would result in fewer local students obtaining a tertiary qualification, and therefore fewer local graduates ultimately finding work in a professional occupation or other role requiring a university degree. It also has potentially self-enforcing adverse outcomes for secondary education offerings in Mandurah itself: fewer students choosing an ATAR pathway will likely reduce the ability of Mandurah schools to fund and resource a greater range of ATAR subjects, forcing students seeking a certain combination of ATAR subjects to attend school elsewhere in the metropolitan area.

Figure 2.8: Year 12 students by ATAR and VET pathway to Mandurah schools, 2020



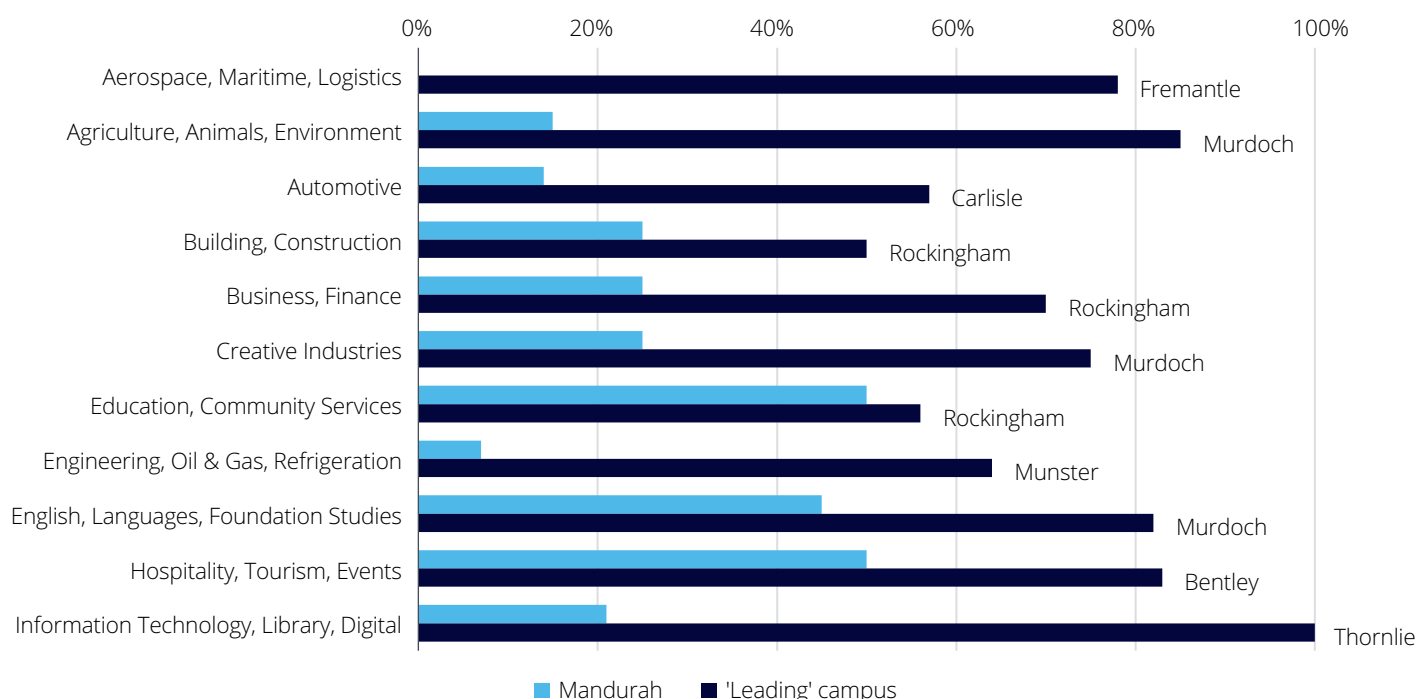
Source: School Curriculum and Standards Authority, Year 12 Student Achievement Data

However, a high proportion of Year 12 students pursuing a VET pathway is not a negative for Mandurah – however, it does require sufficient local opportunities for further post-secondary education and training to maximise the benefit to the region of training and retaining a skilled technical workforce.

Mandurah is home to a South Metropolitan TAFE campus that offers many courses and qualifications across a range of disciplines and industry areas. However, there appears to be a trade-off between the range of courses available at Mandurah TAFE and the number of qualifications attainable within each industry area. This is demonstrated in Figure 2.9, which compares the proportion of courses within an industry offered at Mandurah TAFE relative to the total number of courses offered within that industry area across all South Metropolitan TAFE campuses. It also compares Mandurah to the 'leading' South Metropolitan TAFE campus, where 'leading' is defined as the campus that offers the highest proportion of courses.

For example, around 50 per cent of all South Metropolitan TAFE courses in hospitality, tourism, and events are offered at the Mandurah campus, compared to more than 80 per cent at the Bentley campus. This suggests that students seeking specialised or advanced training in hospitality, tourism, and events may be best-served studying at Bentley because it offers the greatest range of courses in this area.

Figure 2.9: Courses offered by Southern Metropolitan TAFE campus by industry area (per cent of total available courses within industry area)



Source: South Metropolitan TAFE, Semester 2 2021 Course List

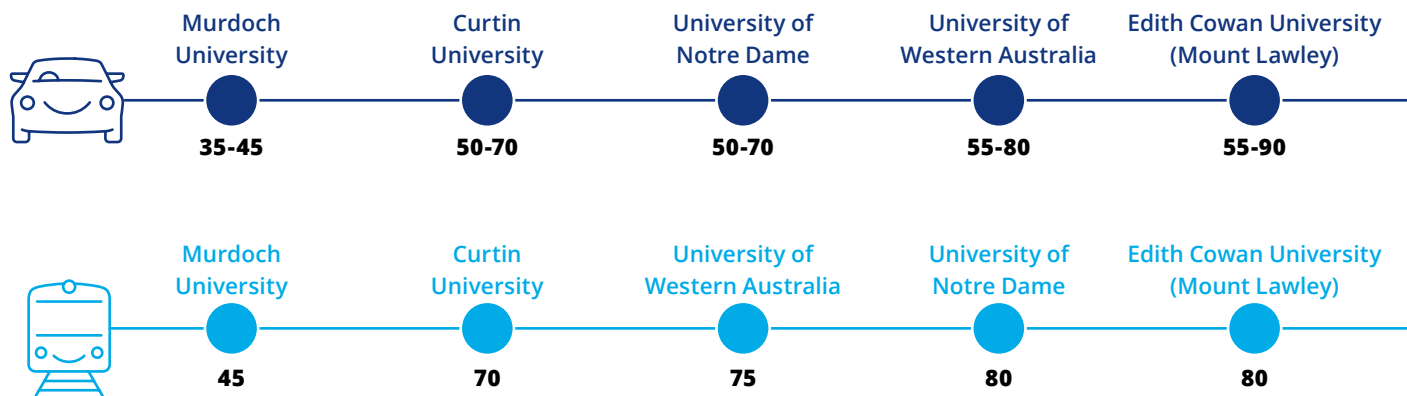
Figure 2.9 demonstrates that, while Mandurah students have access to courses across almost all industry areas at the local TAFE campus, they are not able to study a similar depth of courses offered by other campuses (except for Education and Community Services, which includes qualifications in the aged care sector).

This may result in fewer students taking up study at Mandurah TAFE in the first instance, and/or students who complete a lower-level qualification (e.g., Certificate I or II) qualification at Mandurah being required to attend another campus to continue their studies to more advanced qualifications (such as Certificate III or IV). This is a potential risk to developing a pipeline of skilled employees to work locally in Mandurah, as students may need to relocate out of the region for training, find employment through another campus, and therefore, commence their career outside Mandurah.

This is compounded by relatively low access to tertiary education in Mandurah. The Murdoch University campus in Mandurah has limited course offerings, including an enabling course for students with an alternative pathway to university other than ATAR (OnTrack), undergraduate nursing, and postgraduate diploma in creative art therapies counselling.

Students seeking tertiary education in alternative fields, but who wish to continue residing in Mandurah, face a significant disadvantage in the form of long commute times, relative to students residing in other parts of Greater Perth. Average weekday journey times in the morning peak period for one-way travel from Mandurah to selected Perth university campuses is presented in Figure 2.10. For many students, daily journey times of between 45 and 90 minutes may be prohibitive, either discouraging them from pursuing university studies altogether or causing them to seek accommodation closer to Perth.

Figure 2.10: Weekday morning peak period one-way travel times from Mandurah to selected university campuses by car and public transport (minutes)



Source: Google Maps

Similarly, Mandurah residents face barriers to accessing skilled trade occupations and apprenticeships within the region. For example, commuting to Henderson – a key regional industrial area which also hosts a South Metropolitan TAFE campus – via public transport requires travel times of roughly 50 minutes in peak periods, involving a rail trip to Rockingham followed by a bus trip to Henderson. The same trip via car also requires a 40 to 55-minute commute during the peak period.¹⁸

The future pipeline of local skilled workers in Mandurah therefore faces a series of challenges, including:

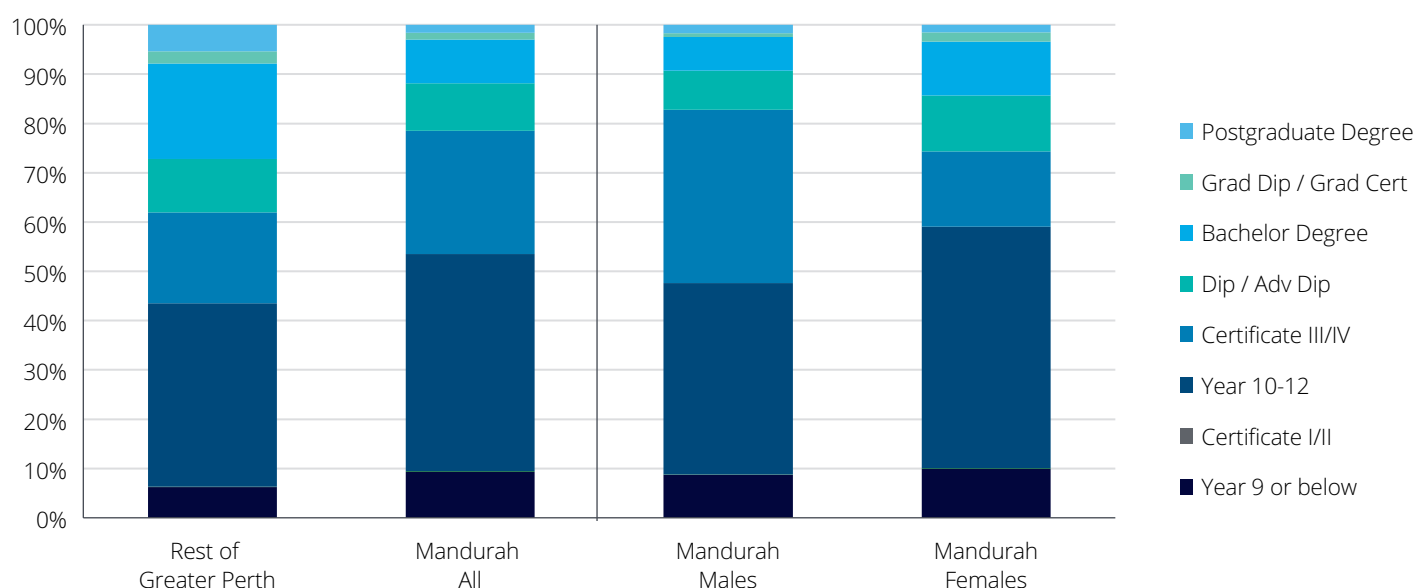
- Poor early childhood development outcomes in pre-primary and primary education in some pockets of the city
- Low proportion of students pursuing ATAR pathways in secondary schools, particularly public schools
- Limited access to tertiary education
- Lack of specialisation and advanced training offerings at the local TAFE campus.

Over time, these challenges have resulted in Mandurah's working age population (those aged 15 years and over) having a generally lower level of educational attainment than Greater Perth. At the 2016 Census, only 12 per cent of working-age Mandurah residents had attained, as their highest level of education, a bachelor's degree or above. This compares to 26 per cent of the population of Greater Perth holding such qualifications (Figure 2.11).

While Mandurah had a greater proportion of workers with VET qualifications, this did not completely offset the gap in skilled labour, with close to 55 per cent of working-age residents having Year 12 as their highest level of educational attainment compared to less than 45 per cent in Greater Perth. The gap in educational attainment drives other outcomes for Mandurah's labour force, including lower average income and higher volatility in employment, as workers with higher qualifications are both more likely to earn higher incomes and less likely to experience unemployment during economic downturns.

Levels of educational attainment may also explain the significant gap between male and female participation rates in Mandurah. Almost 50 per cent of working-age females in Mandurah have education levels at or below the equivalent of Year 12 level, 10 percentage points higher than among males. This gap is larger than the gap between males and females with post-secondary qualifications across the rest of Greater Perth (six percentage points).

Figure 2.11: Share of population aged 15+ by highest level of educational attainment and sex, 2016



Source: ABS Census of Population and Housing, 2016

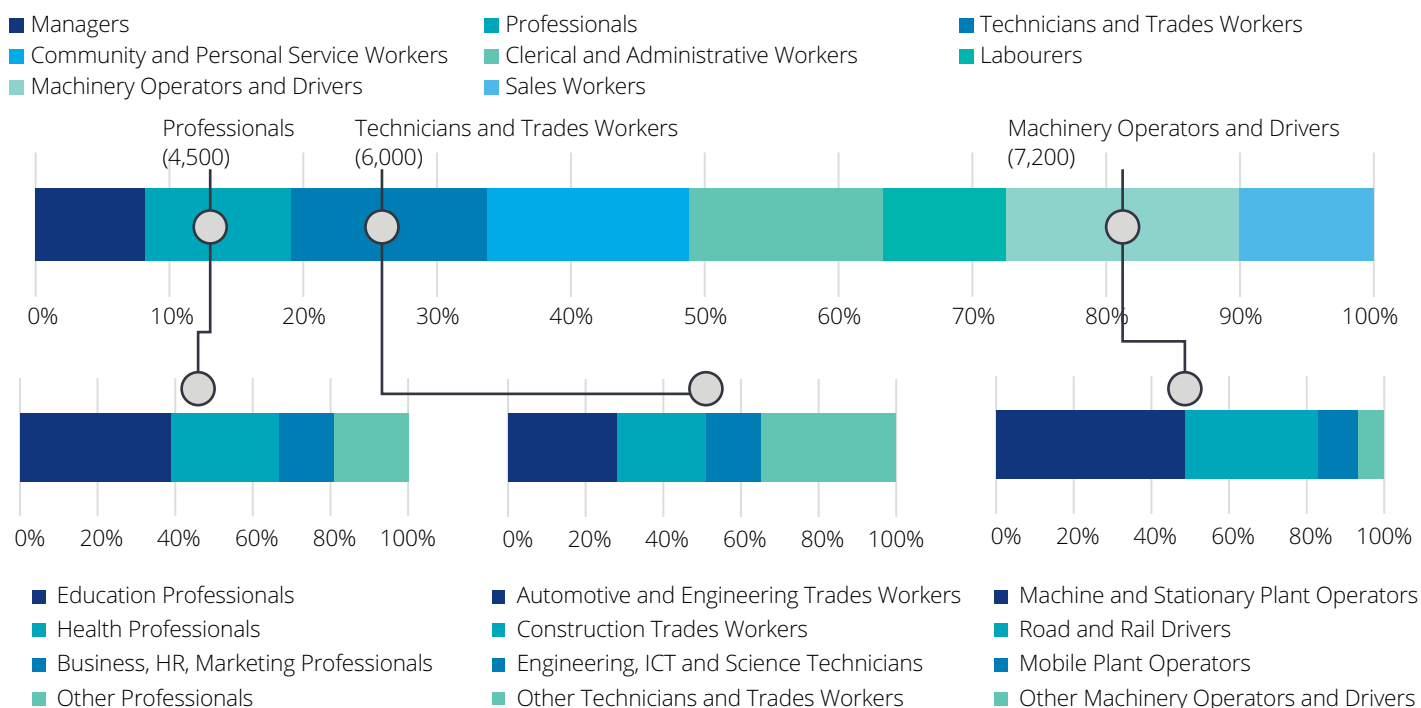
Notably, females make up a significantly higher share of the Mandurah workforce with a diploma or higher level of educational attainment; around 26 per cent of females are in this category, compared to 17 per cent of males. This is offset by a much higher share of males having a certificate III or IV trade qualification (35 per cent, compared to 15 per cent of females) and reflects a distribution of males and females among trade roles that is found in most Australian regions.

However, the higher proportion of females with a university qualification does indicate there is upside potential for attracting additional professional jobs to the region; there are more females than males in the local workforce likely to be able to fill these roles, meaning that an increase in the share of professional jobs could aid in lifting the rate of female labour force participation and reducing female unemployment in Mandurah.

2.3.4 Mandurah's economy and workforce are dependent on population-driven services

The occupation mix in Mandurah's local workforce reflects the outcomes of its education pathways and major industries in the regional economy. Mandurah has a substantially lower share of professionals and a higher share of machinery operators and drivers, and sales workers (Figure 2.12) relative to Greater Perth. Professionals make up 10.8 per cent of the total workforce, and these are largely concentrated in population-driven industries like education and health. In contrast, technicians and trade workers form 14.7 per cent of total employment, dominated by automotive, engineering and construction trades. A large share of the workforce also consists of machinery operators and drivers (around 17.6 per cent) including truck drivers and operators of mobile plant; this includes a significant number of workers in the mining industry who are either fly-in-fly-out (FIFO) or drive-in-drive-out (DIDO) to sites outside of the region.

Figure 2.12: Mandurah employment by occupation, November 2021



Source: ABS Labour Force Survey; ABS Census of Population and Housing; Deloitte estimates

Mandurah's workforce is also more heavily skewed toward lower-skilled occupations than parts of regional WA, in addition to Greater Perth. At the 2016 Census, around 12.7 per cent of workers living in the City of Mandurah were classified as 'low skill community' or 'personal service workers', compared to around 9.8 per cent of workers across regional WA.

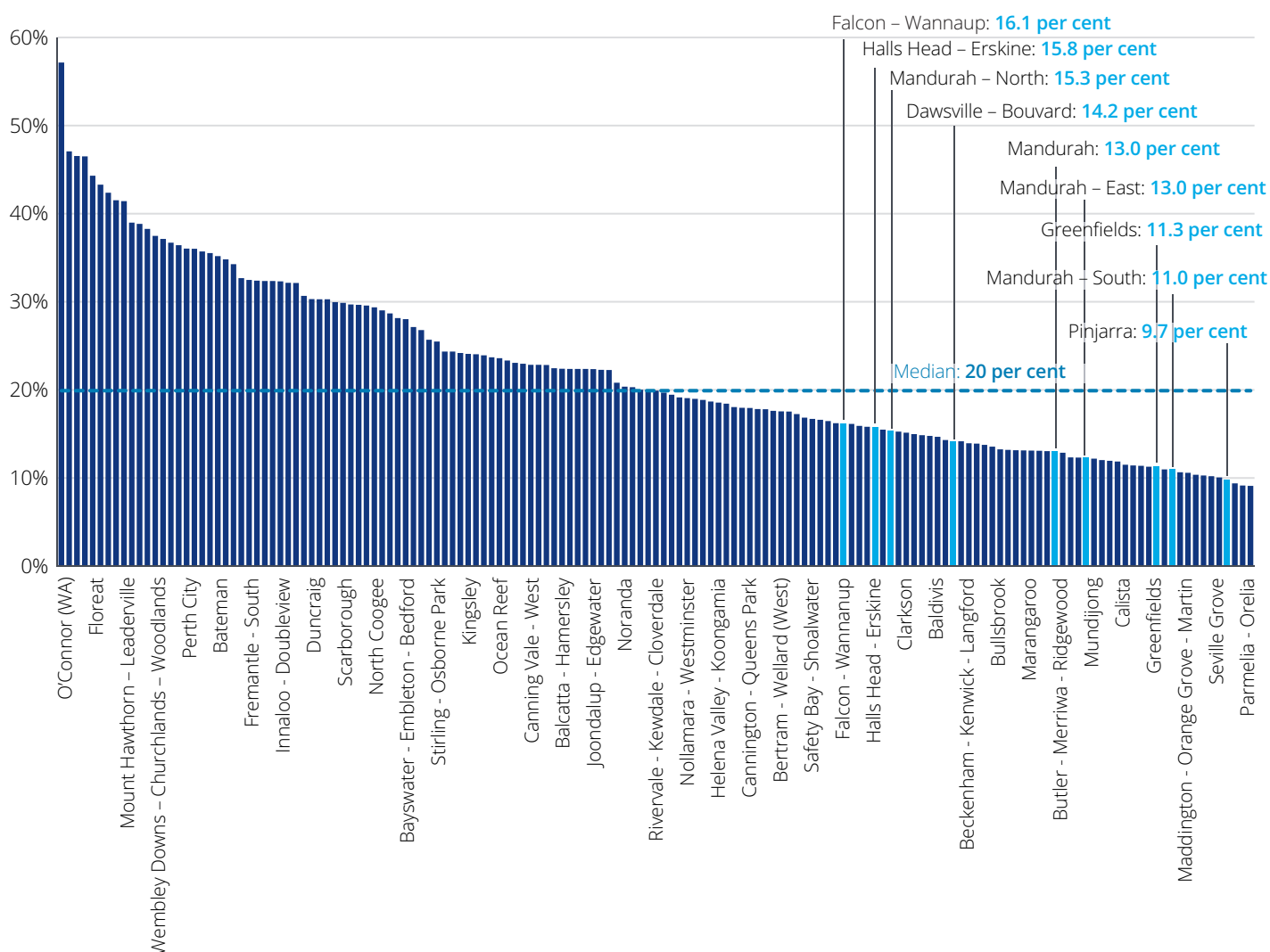
A similar disparity was observed for those classified as 'low skill sales' workers (8.1 per cent in the City of Mandurah, versus 6.5 per cent across regional WA). The reverse was true for those at the opposite end of the skills spectrum; the City of Mandurah recorded 23.9 per cent of its resident workforce employed as either 'managers' or 'professionals' at the 2016 Census, compared to 27.8 per cent across regional WA.

The share of professional workers is lower in every SA2 in the Mandurah region than the median share across Greater Perth of around 20 per cent (Figure 2.13). The share of professional workers within the Mandurah region ranges from less than 10 per cent in Pinjarra to 16 per cent in Falcon-Wannanup, with particularly low shares in central Mandurah and Mandurah South; these latter regions correlate with areas of acutely high unemployment.

The industry composition of Mandurah's resident workforce is largely determined by the concentration of businesses within the region; however, it also reflects low attainment of tertiary education and a relatively low share of professional workers.

Mandurah has higher levels of employment in the mining, construction, and retail industries than the Greater Perth region. Mining employment is dominated by trades workers and machinery operators and drivers working in FIFO and DIDO roles, rather than professional mining roles in office settings (which are concentrated in the Perth CBD). Mandurah's local construction industry has benefited from a sustained period of rapid residential property development to cater to high rates of population growth, while high proportions of employment in the retail, accommodation and food services industries reflect the dependence of the regional economy on population-driven services.

Figure 2.13: Share of professional workers of total employed, Greater Perth SA2s, 2016



Source: ABS Census of Population and Housing

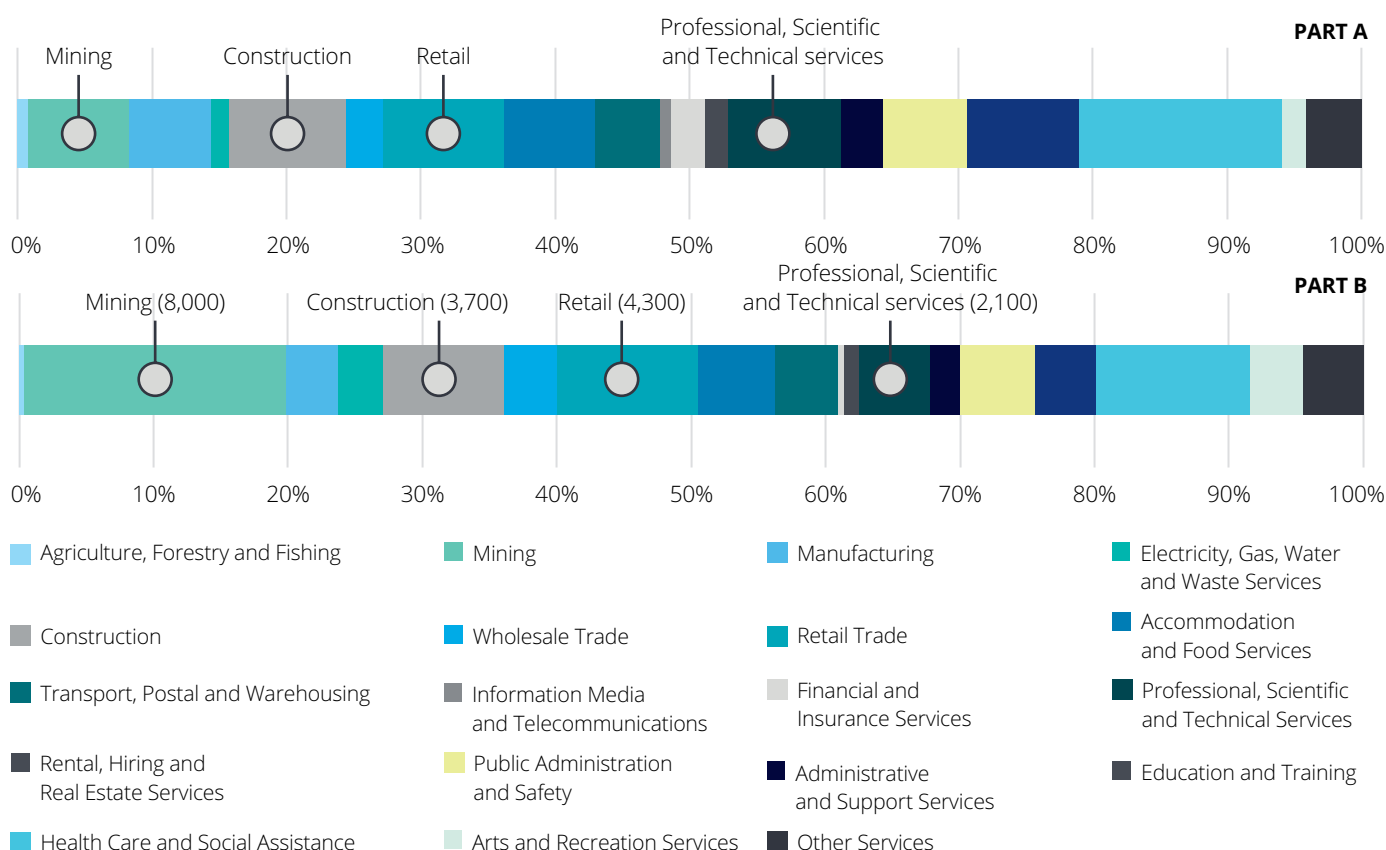
In contrast, Mandurah has significantly lower proportions of employment in the professional, scientific, and technical services and financial services industries (Figure 2.14) than Greater Perth. This is consistent with a lower proportion of employees in professional occupations and lower rates of attainment of tertiary education among Mandurah residents. It likely also reflects the commute distance from Mandurah to the Perth CBD, where most jobs in this industry are located; professionals are less likely to choose to live in Mandurah if their employer or nature of their role requires them to be based in the Perth CBD. The significance of the commute distance is likely to be diminished if more professional employers based their operations in Mandurah, and/or enabled employees to work remotely.

The industry composition of Mandurah's workforce makes its economy relatively more exposed to volatility in highly cyclical industries like mining and construction, while its dependence on retail, accommodation and food services is a risk if the consumer base for these industries is limited to Mandurah's own ageing population.

However, the established presence of businesses and employees in these consumer-facing industries could be an advantage for Mandurah's economy if it is successfully able to brand and market itself to intrastate, interstate, and international tourists (creating an external injection of spending into the local economy).

With 'knowledge workers' and related intellectual capital rising in value compared to physical labour and financial capital, the premium on the creation and application of knowledge to gain competitive advantage is rising. Unlike other factors of production, intellectual capital does not suffer from scarcity, and its relationship with productivity is likely to continue to experience rapid change as technology disrupts how knowledge workers participate in the economy. Chapter 3.3 further describes why the 'knowledge worker' trend is key for Mandurah.

Figure 2.14: Greater Perth (Part A) and Mandurah (Part B) resident employment by industry, November 2021



Source: ABS Labour Force Survey

2.3.5 Mandurah's economic challenges have important policy implications for Western Australia

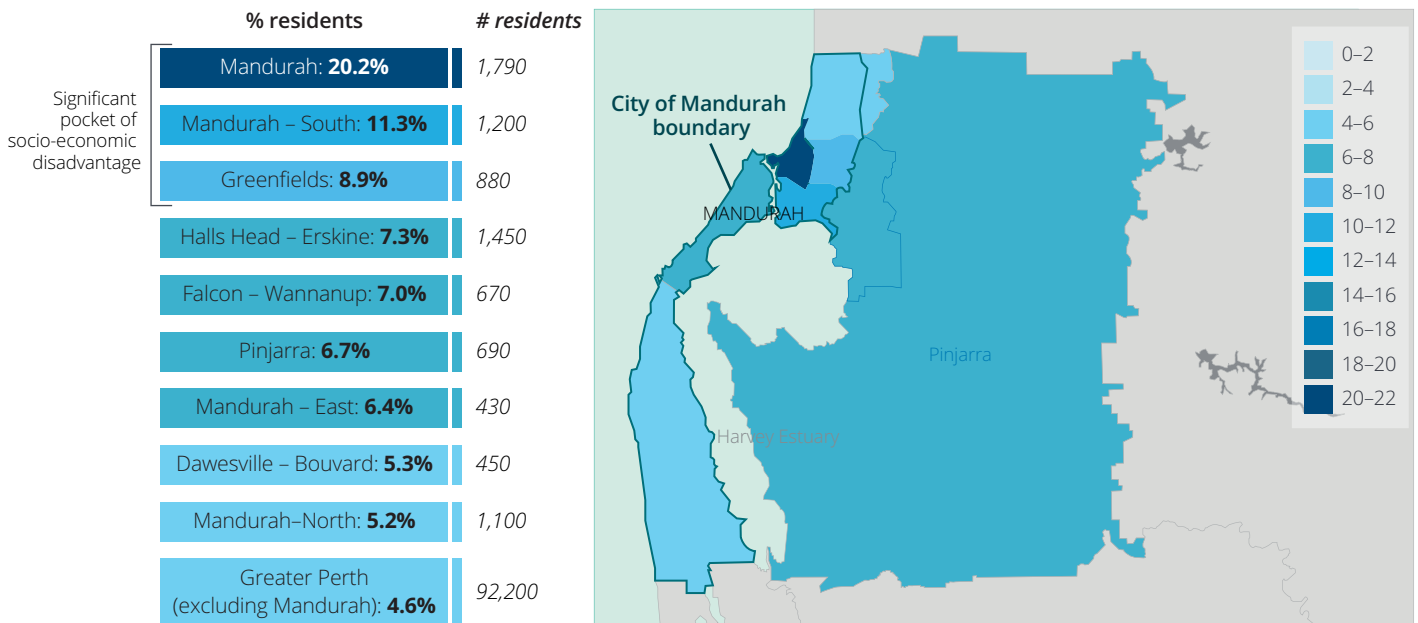
A high proportion of residents in Mandurah are highly dependent on social payments to meet basic living costs such as rent, food, and other essential expenses. The Commonwealth rent assistance payment is a useful proxy of dependence on social payments, as it is often received by people who are recipients of a wide range of other support payments.¹⁹

In the Mandurah SA4, 8.2 per cent of residents receive Commonwealth rent assistance, substantially higher than the average 4.6 per cent of residents elsewhere in Greater Perth. Notably, one-in-five residents in the central Mandurah SA2 receive rent assistance payments, with significant pockets of dependence in Mandurah South and Greenfields (Figure 2.15). This represents a nationally significant level of dependence on rent assistance within these areas.

Pockets of high unemployment and low socioeconomic status can contribute to negative social outcomes. Rates of criminal offending across suburbs within the City of Mandurah correlate to areas of low socioeconomic status, high unemployment, and high levels of dependence on social support payments.

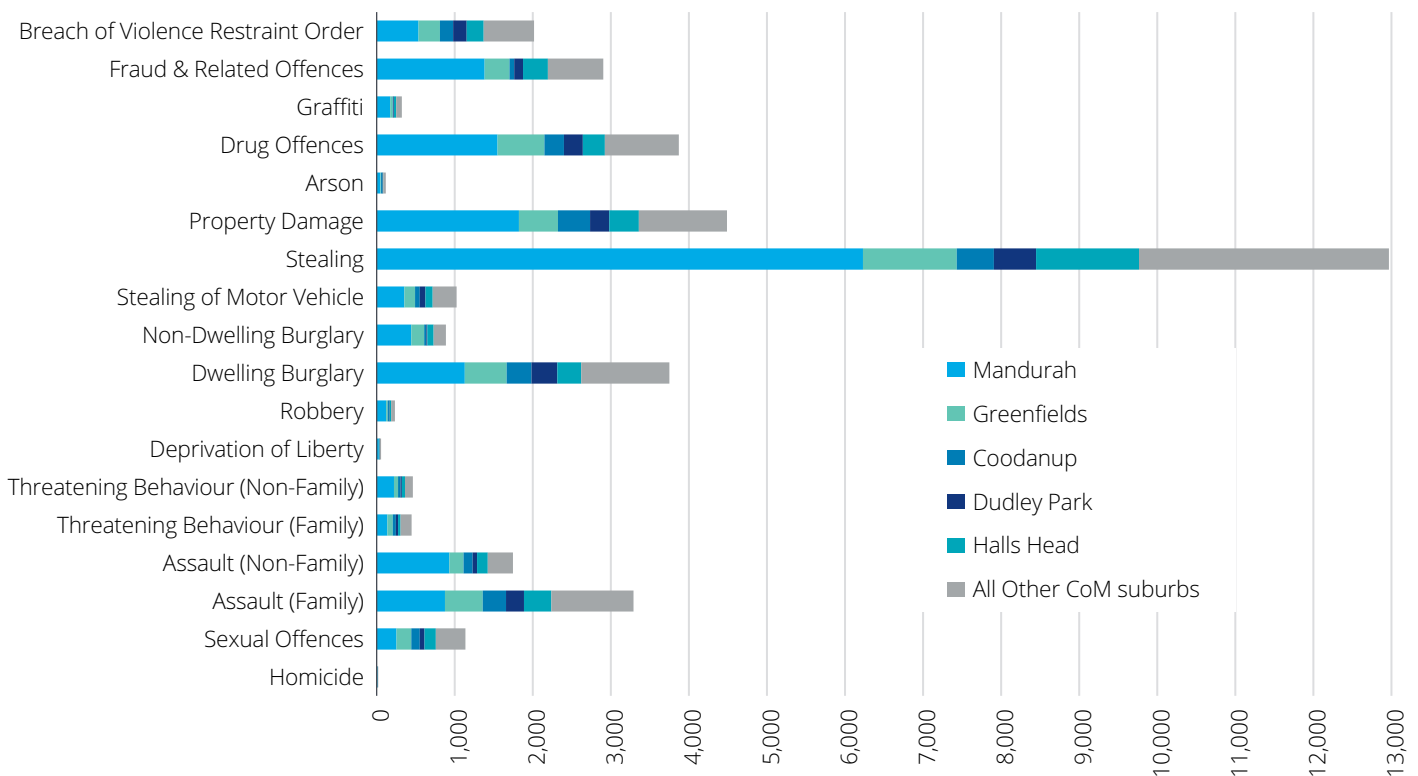
For example, almost 74 per cent of all crimes in the City of Mandurah between 2017 and 2021 occurred in five suburbs alone – Mandurah, Greenfields, Coodanup, Dudley Park, and Halls Head. These same suburbs experience relatively high unemployment and high rates of welfare dependency (Figure 2.16). Stealing was the most common crime in the City of Mandurah over the past five years, accounting for nearly 33 per cent of total criminal activity, followed by property damage at 11 per cent. It is estimated that these five suburbs alone have generated police and criminal justice system costs of approximately \$90 million in the past five years.²⁰

Figure 2.15: Share of residents receiving Commonwealth rent assistance payment, September 2021



Source: Department of Social Services

Figure 2.16: Incidence of crime in the City of Mandurah by number of offences (2017-2021)



Source: WA Police

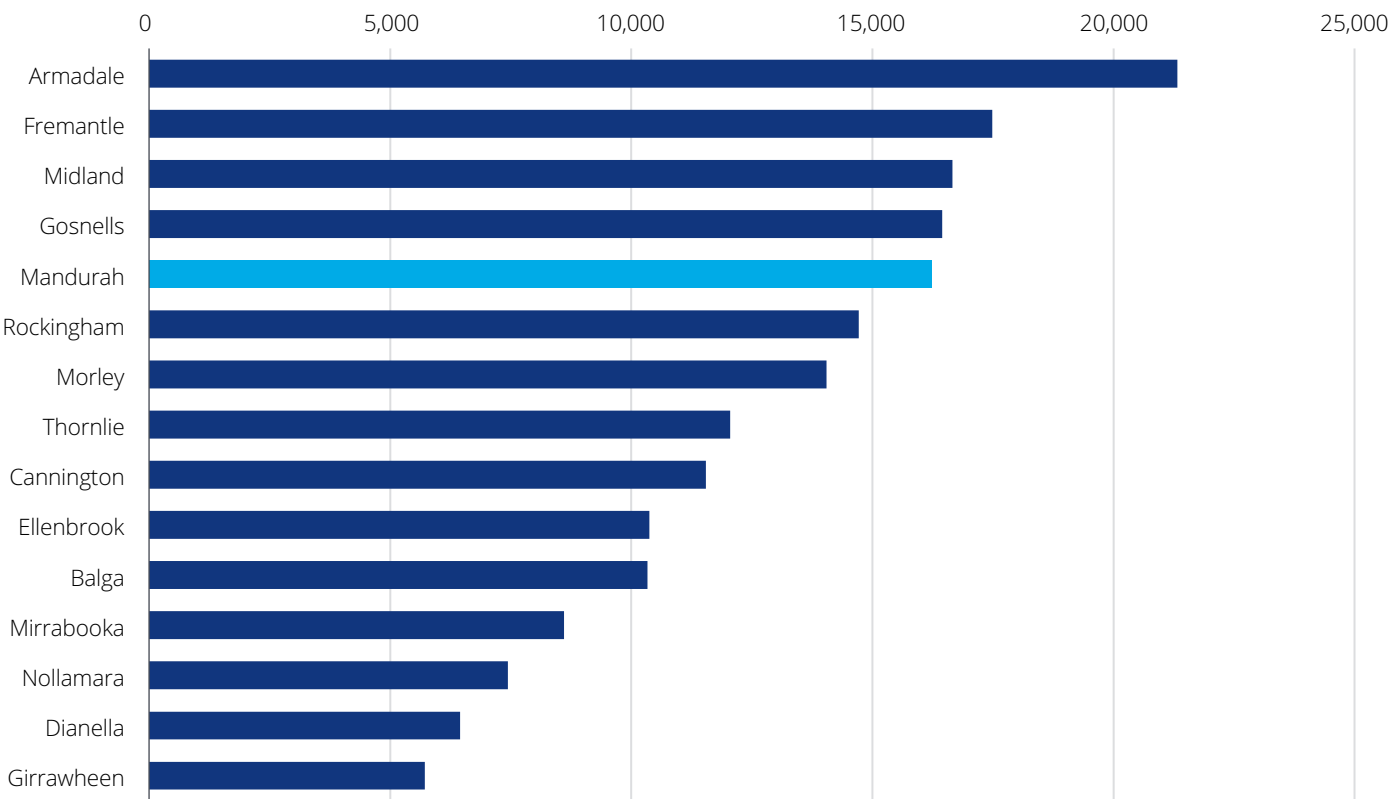
The incidence of crime in the suburb of Mandurah (which accounted for 40 per cent of total criminal activity within the City of Mandurah between 2017 and 2021) is significant from a State perspective. Over the five years to 2021, the suburb of Mandurah had the fifth highest number of criminal offences of any suburb in the Perth metropolitan area at more than 16,000 offences (Figure 2.17).

High rates of criminal offending have direct adverse implications for community safety and represent a cost that must be met by government for policing and the judicial system. In addition, there are longer-term adverse effects on perceptions of liveability that could impact decisions to live and work in Mandurah, and related social problems that are closely correlated with criminal offending, including illicit substance abuse.

Studies demonstrate that structurally high unemployment can correlate with major social issues such as substance abuse. In 2019, the Australian Institute of Health and Welfare (AIHW) found that illicit drug use was around 1.3 times more frequent among the unemployed relative to the employed, and that this was especially significant for (meth)amphetamine use at around 2.3 times.²¹

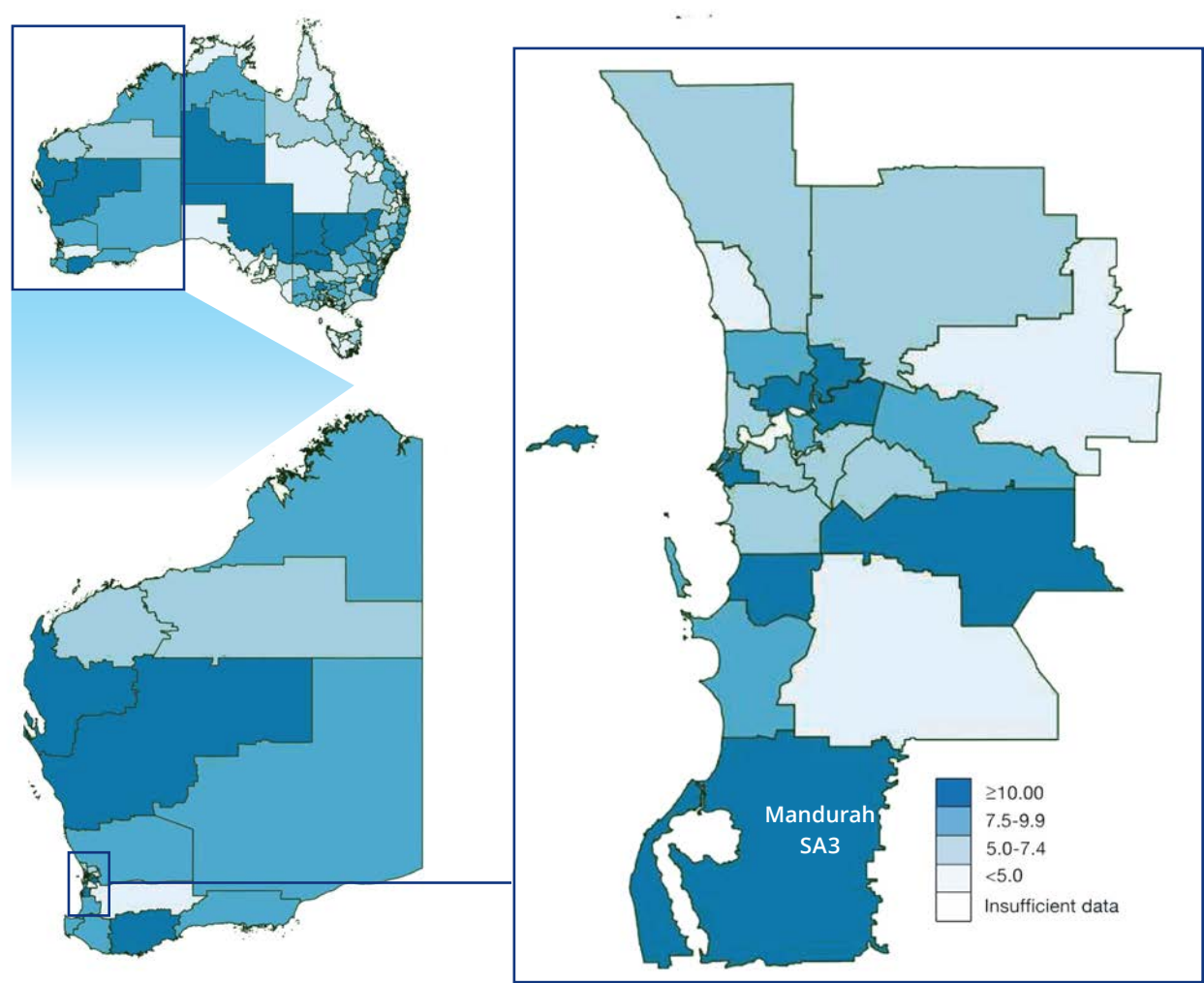
Illicit substance abuse can have a significant human toll that impacts families, communities, and public safety in regions of high incidence. Between 2014 and 2018, 66 people died from an unintentional overdose in the Mandurah SA3 (Figure 2.18). This represents an increase of over 44 people compared to the previous five-year period and a 53-person increase on the five-year period from 2004-2008. It is estimated unintentional drug-related deaths in Mandurah between 2014 and 2018 carried a total social cost of over \$60 million per annum.²²

Figure 2.17: Top 15 Perth metropolitan suburbs for criminal offences, five years to 2021, number of offences



Source: WA Police

Figure 2.18: Unintentional drug-induced deaths 2014-2018 by SA3, rate per 100,000 population



Source: Penington Institute, Australia's Annual Overdose Report 2020

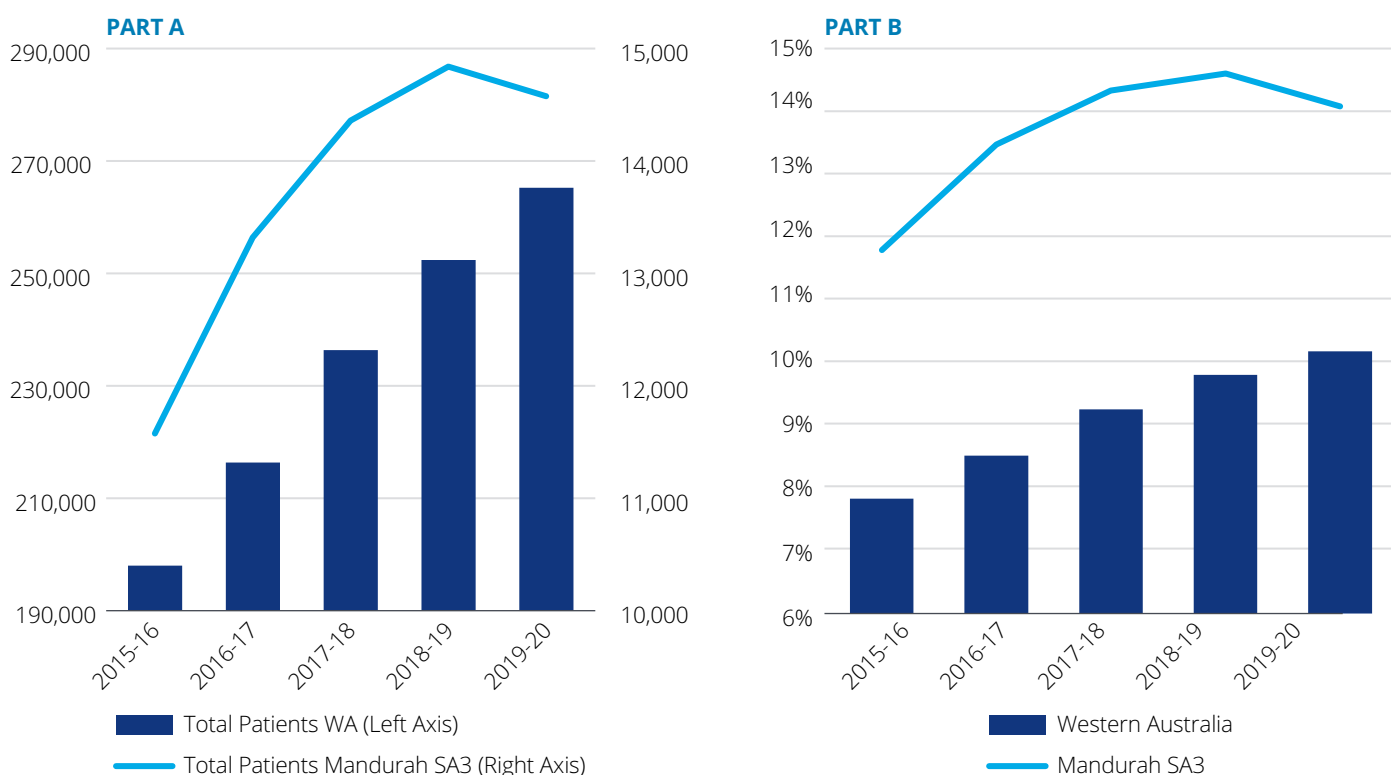
Negative mental health outcomes and substance abuse are often related and present challenges to individuals and communities. According to the AIHW, people with mental health conditions are 1.7 times more likely to have recently used an illicit drug compared with people without such conditions. Again, this disparity is higher for use of (meth)amphetamines, which is about 2.2 times greater among those with mental health conditions.

These findings are significant for Mandurah, which has a consistently higher share of residents accessing Medicare-subsidised mental health specific services than the average across Western Australia. In 2018-19, the number of Mandurah residents seeking support through mental health services peaked at almost 15,000, before falling marginally to around 14,600 in 2019-20, representing 14.3 per cent and 13.8 per cent of the local population, respectively (Figure 2.19). This contrasts with the State average of around 10.1 per cent in 2019-20, a slight increase on 9.7 per cent in 2018-19.

Despite the slight decline in the share of residents accessing mental health specific services in 2019-20, Mandurah has still exceeded the State average consistently for at least the last five years. This disproportionately high rate of demand for mental health services is important because it carries a financial cost to government for the indirect provision of these services, which are Medicare-subsidised; it is estimated approximately \$18.5m of Medicare expenditure was incurred over this period to service mental health patients in the Mandurah region²³.

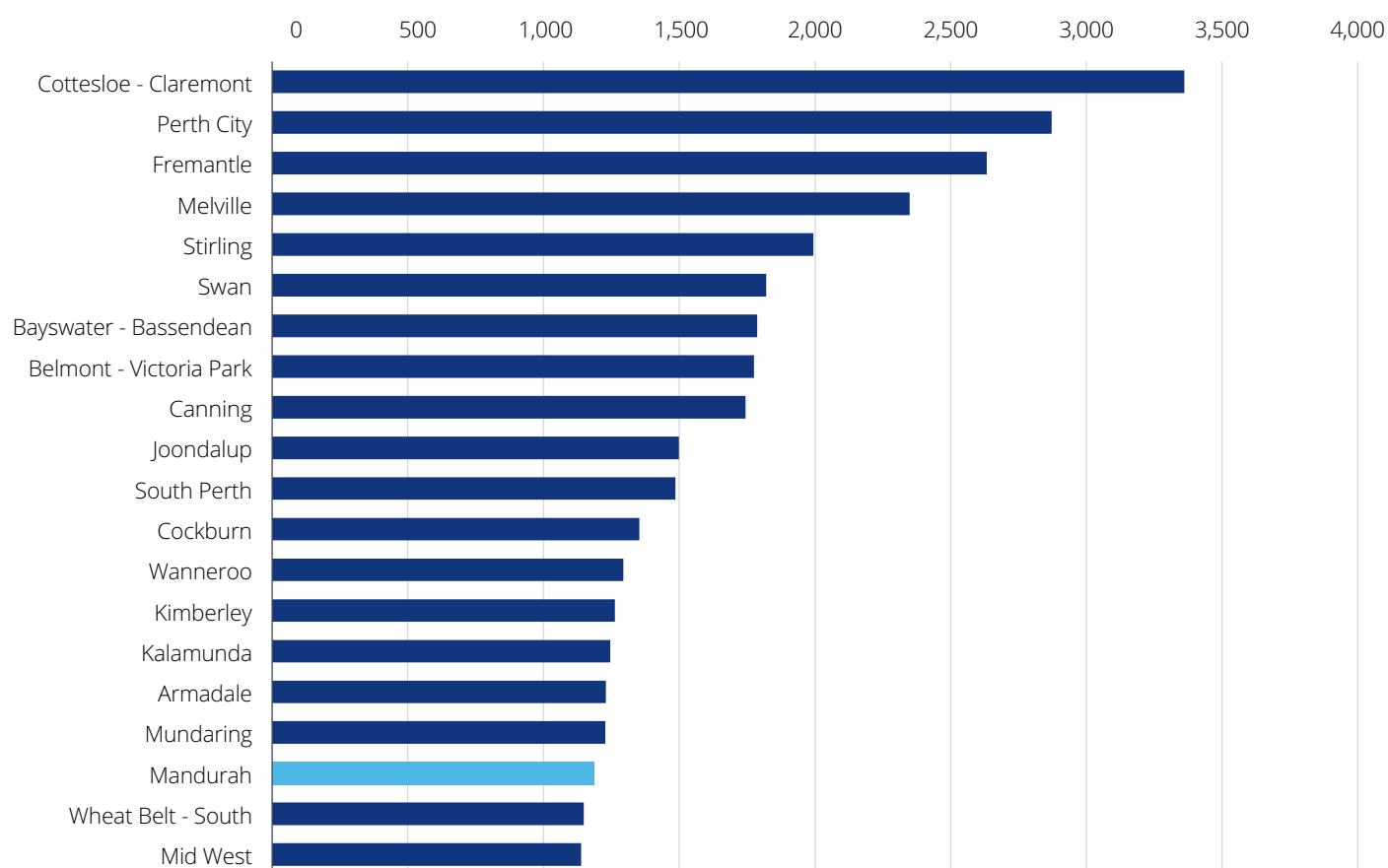
A measure of more acute mental healthcare issues is the number of overnight hospital admissions for mental health-related causes. On this metric, Mandurah is in the top 20 areas across Western Australia for overnight hospital admissions as a share of its population (Figure 2.20). This may indicate a need for greater delivery of mental healthcare services in the community and through local primary health networks, to reduce hospital presentations requiring admission.

Figure 2.19: Persons receiving Medicare-subsidised mental health-specific services- number (Part A) and as a per cent of the population (Part B)



Source: WA Police

Figure 2.20: Overnight admitted mental health-related bed days per 10,000 population, with and without specialised psychiatric care, top 20 by usual residence of patients (SA3), 2018-19



Source: The Australian Institute of Health and Welfare

The social and economic wellbeing of an area is determined by a range of factors, including those outlined in this chapter: limited access to education and employment, entrenched high rates of unemployment and low rates of labour force participation, high occurrence of mental health conditions, substance abuse, and criminal activity, among others. Each of these factors also impacts household incomes, and therefore households' ability to meet basic living expenses.

This is manifest in relatively high shares of household income used for rent and mortgage repayments among Mandurah residents. While residential property in Mandurah is relatively affordable to purchase relative to the rest of Greater Perth, renting or servicing a mortgage in Mandurah requires a relatively high proportion of average household income.

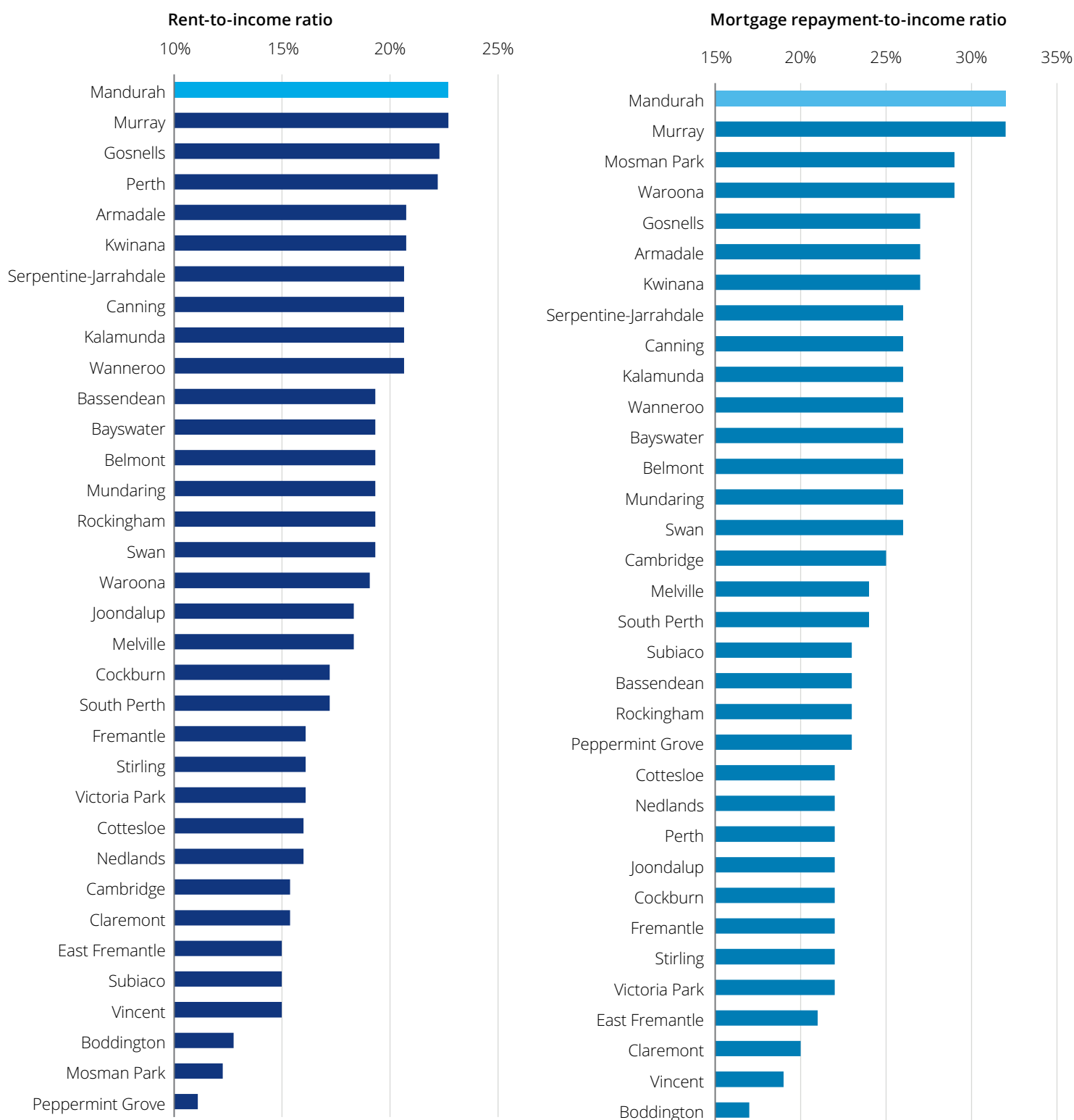
Of the 34 LGAs in the Perth and Peel regions, the City of Mandurah had the highest average rent-to-income and mortgage repayment-to-income ratios as at the 2016 Census (Figure 2.21).

This analysis indicates that residents in lower socioeconomic metropolitan LGAs including Gosnells, Armadale, Murray, and Kwinana must allocate significantly more of their income (20 per cent or more) to rent when compared to higher socioeconomic metropolitan LGAs such as Peppermint Grove, Mosman Park, and Subiaco (less than 15 per cent).

This distinction is less pronounced in the mortgage repayment-to-income ratio and skewed by areas with especially high average property prices (such as Mosman Park) but lower socioeconomic LGAs, like Mandurah, are still strongly represented at the upper end of the scale.

Mandurah's high median rent-to-income and mortgage repayment-to-income ratios suggest that a significant proportion of Mandurah residents are likely experiencing 'housing stress', defined where those earning incomes in the lowest 40 per cent are spending more than 30 per cent of their income on housing costs.²⁴ Housing stress is a predictor of other serious adverse social and economic outcomes, as households may regularly find themselves being required to trade off other essentials – including food and medical costs – to cover housing expenses.

Figure 2.21: Median rent-to-income and mortgage repayment-to-income ratios, Perth and Peel LGAs, 2016



Source: ABS Census of Population and Housing

2.3.6 Mandurah's lifestyle offering and natural assets are significant advantages

Despite its challenges, Mandurah has a positive foundation for change relative to other areas with similar socio-economic characteristics and challenges. Indeed, many of its perceived challenges can be the basis for advantages and opportunities if managed well – for example, while its older population could be considered a challenge insofar as it contributes to lower labour force participation, it also means that Mandurah is home to a relatively large base of people in need of aged care services, and therefore is a prime location for organisations specialising in delivering those services. Similarly, Mandurah's large base of retired residents may include many individuals with deep personal and career experiences who still seek to give back to the community – presenting an opportunity to coordinate business, female and / or youth mentor programs.

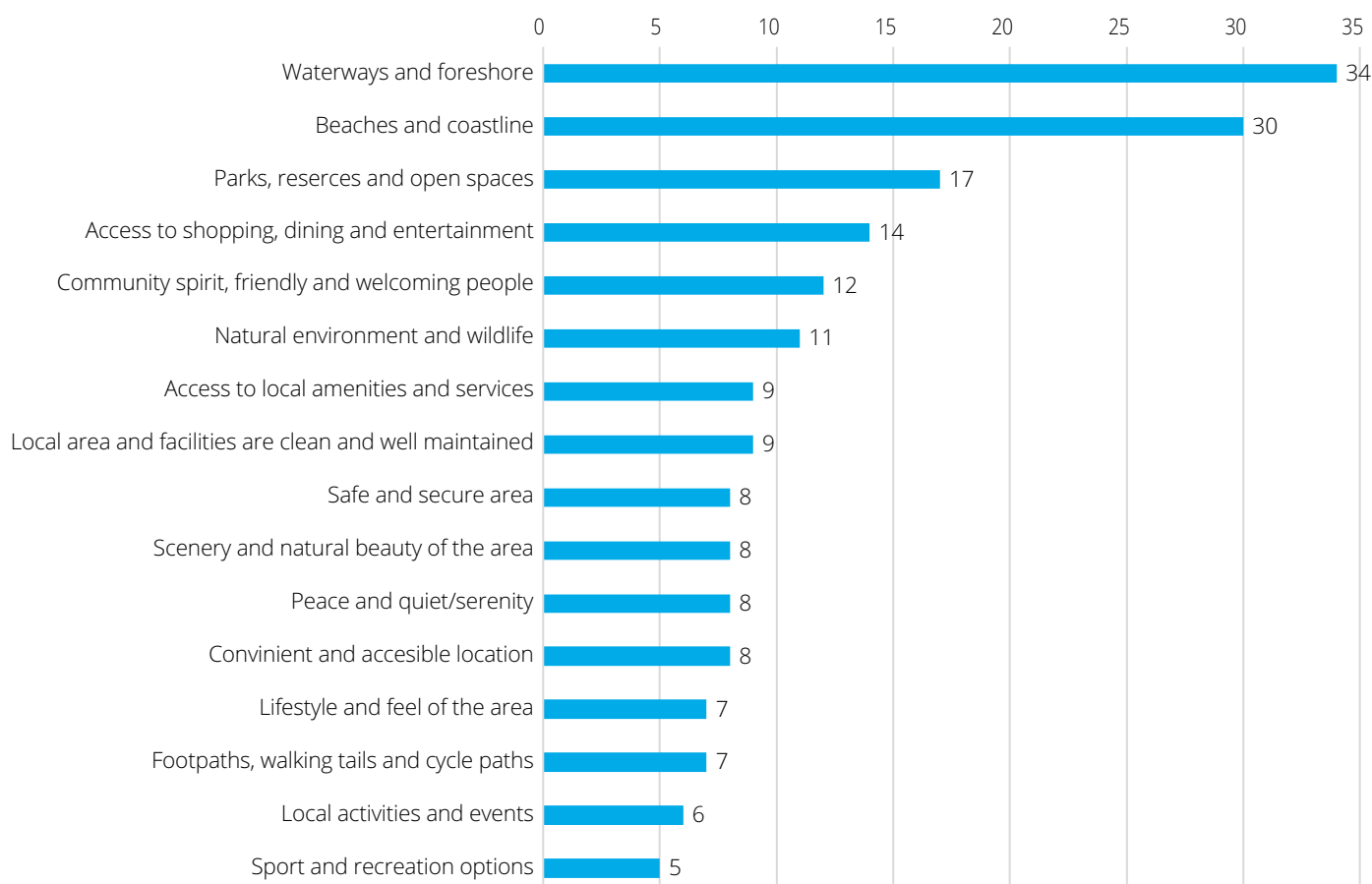
One of Mandurah's strongest advantages is its consistent ability to attract inbound internal migration from other parts of WA, driving its historically high rates of population growth. This is supported by both low-cost residential land and property and coastal lifestyle attraction. This is also reflected in Mandurah residents' own assessment of the features of their community that they value.

In a 2020 survey, Mandurah residents were found to highly value the region's natural amenity and proximity to the coast and waterways (Figure 2.22). Additionally, residents listed access to shopping, dining and entertainment, and community spirit, as major drawcards to Mandurah.

The value that Mandurah residents place on their community, notwithstanding the social and economic challenges discussed in this chapter, is reflected in a net promoter score (NPS) that measures the difference between respondents with a high likelihood of recommending the City of Mandurah as a place to live (promoters) less those with a low likelihood (detractors).

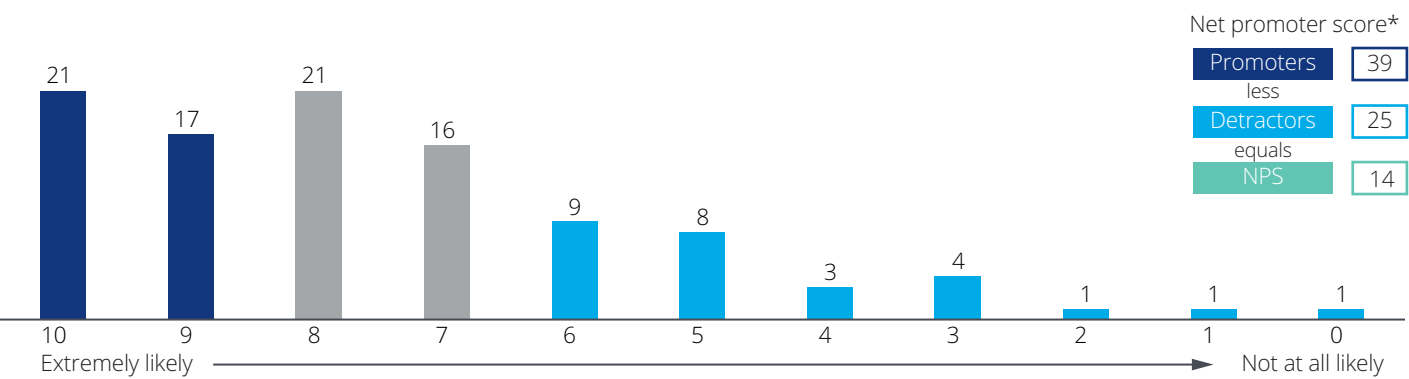
A 2020 survey found that the NPS for Mandurah residents was 14 (Figure 2.23) and had increased from a value of 9 in 2018 – reflecting an increase in residents' net likelihood of recommending the City as a place to live. This score compares favourably to an 'industry average' NPS of -17. Mandurah's NPS was highest among females and people with children aged between 6 and 12 years, reflecting the region's particularly strong appeal for young families.

Figure 2.22: Most valued aspects of the local area (City of Mandurah), per cent of respondents to Community Scorecard, November 2020



Source: City of Mandurah, Markyt

Figure 2.23: Net Promoter Score – likelihood of recommending the City of Mandurah as a place to live (per cent of respondents, 2020)



Source: City of Mandurah, Markyt

2.4 Mandurah’s economic challenges are significant but not insurmountable

The review of past studies and strategies in Chapter 2.2 and analysis of the current state of the Mandurah regional economy in Chapter 2.3 reveals several key economic strengths and weaknesses:

- Mandurah has adverse labour force conditions including high unemployment and low labour force participation
- These conditions are partly driven by rapid population growth having outpaced the creation of local jobs, exacerbated by an ageing population
- The pipeline for developing Mandurah’s future workforce is hampered by limited access to education, resulting in relatively low levels of post-secondary educational attainment and a high proportion of resident employees with low or limited skills
- Mandurah’s resident workforce is concentrated in highly cyclical industries like mining and construction, while its local economy is dependent on population-driven services like retail, accommodation, and food services
- Mandurah’s high rate of unemployment is closely correlated with a range of adverse social impacts, including high rates of crime, illicit substance abuse, and mental health conditions
- Notwithstanding these challenges, Mandurah continues to attract population growth through internal migration from elsewhere in WA, driven by its appealing lifestyle offering and natural environmental assets.

As the urban centre of the Peel region, Mandurah is Western Australia’s largest regional city with a population of close to 90,000 people within the City of Mandurah boundary and more than 105,000 across the broader Mandurah region. This makes Mandurah an ideal location to test new initiatives both for their effectiveness when applied at the local level and their ability to be scaled to a larger regional population.

Mandurah’s proximity to Perth means that its residents are often assumed to have access to State services through a delivery model oriented around key nodes in the metropolitan area – for example, tertiary education and specialist medical services based out of tertiary hospitals. The social and economic disadvantages explored in this chapter appear to suggest that this assumption has failed to provide adequate service levels and outcomes for Mandurah residents.

Mandurah faces a unique challenge in this context: it is close enough to Perth to be considered part of the metropolitan region for key decision-making and the delivery of some services, but distant enough that its residents with other barriers present are unable to take full advantage of these services. It does not, for example, enjoy the same level of local decision-making around public service delivery as occurs in the South West or Pilbara regions.

Mandurah’s socioeconomic challenges are of a long-term, slow burn nature, rather than arising from acute events. This contrasts to other regional areas of WA that are heavily affected from time to time by rapid economic movements triggered, for example, by the commencement or closure of a single megaproject (though Mandurah is sensitive to broader fluctuations in the resources sector due to its high proportion of FIFO and DIDO workers). Furthermore, unlike some parts of regional WA, entrenched poverty and intergenerational disadvantage in Mandurah are not linked to a population with a large Indigenous cohort.



3 Global drivers of change



3.1 Introduction

This study is concerned with identifying opportunities to accelerate economic growth in Mandurah over the long term, anticipating a future that – given the pace of change in the global economy – is unlikely to look like the world today. For Mandurah’s economic opportunities to be resilient and relevant for that future, they must respond to the likely sources and drivers of potential change.

These drivers are almost always global in nature, but their impacts can be highly localised. For example, the underlying factors that drove the rapid expansion of Western Australia’s iron ore industry in the early 2000s had their origins in decisions, events, and trends far from Mandurah. But the ramifications were felt locally as a significant share of Mandurah’s workforce pivoted to fly-in-fly-out mining employment and the local unemployment rate fell below 4 per cent in 2006-07. Likewise, Mandurah felt the sting as the resources sector sharply contracted almost a decade later, and the local unemployment rate climbed into the double digits.

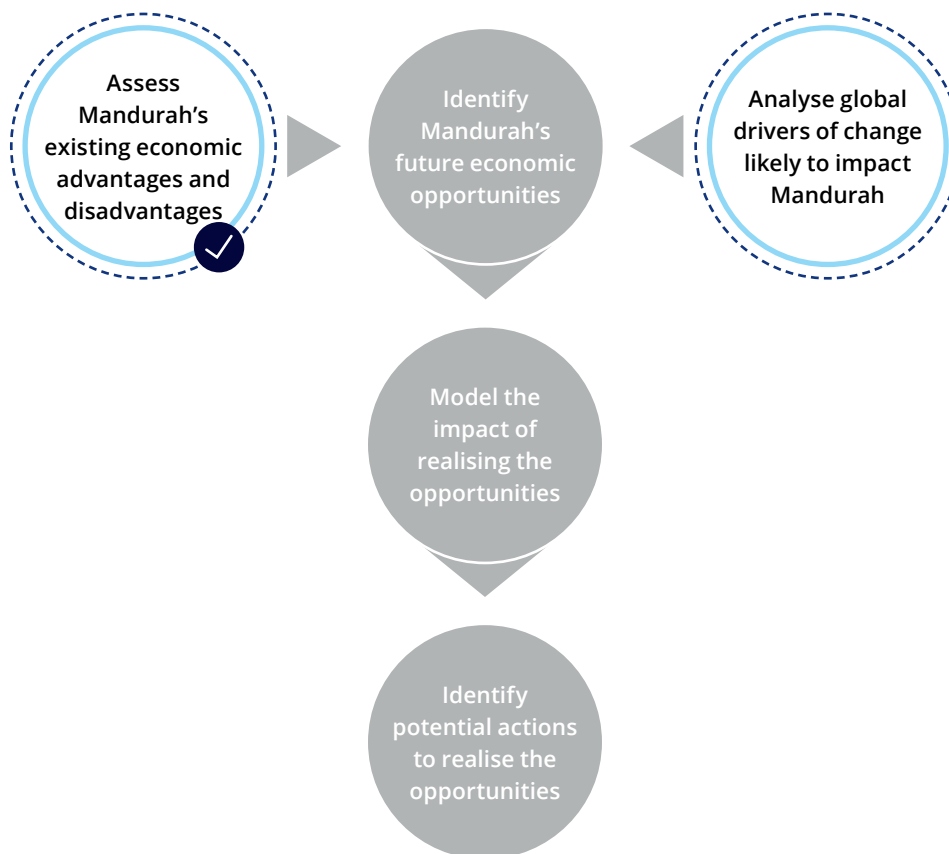
While local decision-makers cannot change the course of global megatrends, understanding the drivers of change can aid them in planning accordingly to maximise the benefits of positive trends and maximise resilience to negative trends. This is especially important for Mandurah; as the example above illustrates, Mandurah is closely integrated with the cyclical aspects of the Western Australian economy.

It is important to note that the drivers analysed in this chapter are ‘global’ in regard to Mandurah and include trends at the State and national level within Australia, as well as those prevalent overseas.

Not all drivers will affect Mandurah directly or acutely, but they are likely to indirectly contribute to the changing demand for goods and services, industrial activity, and employment globally. This will influence change in Western Australia as the most internationally exposed economy in Australia, and therefore, have consequences for the future population and workforce of Mandurah.

This chapter summarises the full set of global drivers identified, and the process for distilling their relevance for the development of future economic opportunities for Mandurah (Figure 3.1).

Figure 3.1: Approach – Analyse global drivers of change



3.2 Drivers of future change

There are many potential drivers of future change at the global level, many of which are closely related. A structured approach is to focus on a selection of drivers categorised according to whether their root causes are social, technological, environmental, economic, or political in nature. This framework is known as 'STEEP'.

The initial identification of potential future drivers was undertaken by examining recent research, thought leadership, and insights from Deloitte and other sources that canvassed issues in the STEEP framework. A principal source of information was Deloitte Access Economics' *State Infrastructure Strategy Scenario Planning* paper completed in early 2021,²⁵ which supported the development of Western Australia's inaugural 20-year State Infrastructure Strategy. In addition to being contemporary, this paper also contextualised drivers of change relevant to WA, which streamlined the task of considering drivers relevant to the Mandurah region.

Deloitte supplemented this principal source with a review of other thought leadership on megatrends and reviewed the initial list of drivers in the context of information drawn from our engagement with clients on these issues and internal expertise of Deloitte's staff and Partners.

This resulted in the identification of 45 drivers of change, summarised according to their classification in the STEEP framework in Figure 3.2. These drivers were subsequently tested with stakeholders from the Transform Mandurah internal working group, to confirm their appropriateness as global sources of change, uncertainty, and opportunity. Note that at this point in the process, the relevance of each driver to Mandurah was not considered; this occurred at a later stage.

A summary of each of the 45 drivers is provided in Appendix A.

Figure 3.2: Drivers of future change



Source: Deloitte

3.3 Distilling the impact of the 45 drivers of change

To determine which of the 45 global drivers are likely to have the most relevance to Mandurah's future, each driver is analysed according to two criteria:

- **Likelihood of occurrence** – The probability that the impacts of the driver come to pass
- **Potential impact on Mandurah's economy** – The extent to which the eventuation of the driver will sustain or threaten one of Mandurah's local economic advantages or entrench or resolve one of its disadvantages.

Based on these two criteria, each driver is placed in one of four categories:

- **Must Act** – both high likelihood of occurrence and potential impact on Mandurah
- **Disruptors** – low to moderate likelihood of occurrence, but high potential impact on Mandurah
- **Watch and Act** – high likelihood of occurrence, but low to moderate potential impact on Mandurah
- **Sleepers** – both low likelihood of occurrence and potential impact on Mandurah.

A stylised representation of these four categories, together with their definition, is shown in Figure 3.2.

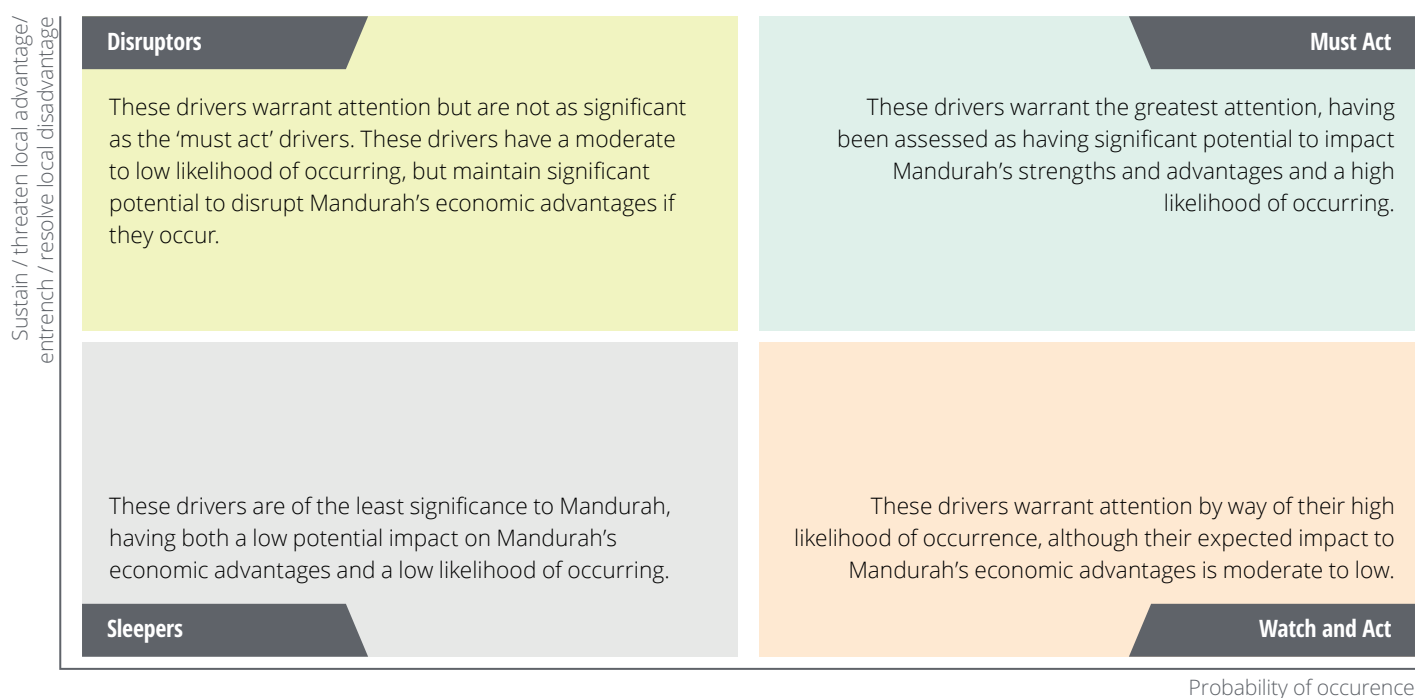
Each of the 45 drivers of change identified in Chapter 3.2 was considered in the context of its probability of occurrence and likely impact on the Mandurah regional economy.

The drivers categorised as '**must act**' for Mandurah are largely centred on population, labour market, and skills challenges. Other '**must act**' drivers relate to the importance of Mandurah's natural environment and the role it can play in the broader decarbonisation of the economy, and the role of federal, state, and local government in addressing Mandurah's economic and social challenges.

The '**must act**' drivers have the greatest significance for identifying future economic opportunities for Mandurah. These include:

- **Remote working:** The demarcation between Mandurah as a regional city and the growing suburban footprint of the Perth metropolitan area has become blurred in recent years, accelerated by rapid transport infrastructure reducing the cost of travelling between Mandurah and Perth. This has adversely impacted Mandurah's employment self-sufficiency, as an increasing share of workers who live in Mandurah have their place of work elsewhere in the metropolitan region. The rise of remote working, greatly accelerated by the COVID-19 pandemic, offers Mandurah an opportunity to 'reset' its employment self-sufficiency challenges, for example, through capitalising on greater numbers of professionals seeking to work from home in lifestyle locations, and by repurposing commercial space in the Mandurah CBD for temporary and shared office and co-working space.

Figure 3.3: Categorisation of drivers



Source: Deloitte

- **Knowledge worker:** A large proportion of Mandurah's resident workforce work in manual occupations ('jobs of the hand') with lower qualifications relative to the workforce of Greater Perth. The rise of the knowledge worker and increasing importance of 'jobs of the head' (e.g. professionals) and 'jobs of the heart' (e.g. support workers and care-givers) means that it is imperative for Mandurah to address its skills imbalances, to ensure its residents are adequately prepared to meet future labour demand.
- **Ageing population:** Mandurah's population is substantially older than that of Greater Perth, while its lifestyle offering and natural environment make it an attractive place for retirees to relocate. As the share of over-65s in the population increases, Mandurah has both the need to provide services to a larger group of older residents, and an opportunity to capitalise on the skills and infrastructure required to deliver these services to growing numbers across the country.
- **Next-gen workforce:** Mandurah has more limited secondary and post-secondary education opportunities than other parts of Greater Perth, which puts it at risk of 'brain drain' as top students, in particular those pursuing a university pathway, may relocate away from Mandurah to undertake higher education and employment. This could exacerbate Mandurah's labour force challenges as its older, existing workforce retires.
- **Resumption of travel:** Mandurah benefits from significant daytrip tourism from the Perth metropolitan area and is well-positioned to cater to tourists as the accommodation and catering hub of the broader Peel region. As pandemic border and travel restrictions ease, Mandurah will need to consider its tourism offering as inbound interstate and international tourism resumes, and Western Australians are again able to travel out of the State.
- **Competition for talent:** Closely related to 'remote working', 'knowledge worker', and 'next-gen workforce', Mandurah will need to address the availability of jobs to attract higher-skilled workers to both live and work in the region. Risks of failing to do so include increased dependence on employment in industries with limited growth potential, increased concentration of resident workers in low-skilled and/or low-income occupations, and a continued decline in employment self-sufficiency.
- **Urbanisation:** The expansion of the Perth metropolitan region to Mandurah's boundaries has threatened its status as a regional city. Sustaining a separate identity and growing local economy will require Mandurah to attract a pipeline of investment, jobs, and skilled workers who work locally, in addition to residential population growth.
- **Growing middle class:** Many Australian jurisdictions are well-positioned to capitalise on Asia's rapidly growing middle-class population through the production and export of consumer goods. For businesses and workers in the Mandurah region, benefiting from the growing middle class requires investment in expanding capacity in areas of existing advantage, such as food, manufacturing, and tourism.
- **Climate change:** As a coastal city situated on a network of estuarine waterways, adjacent to a significant food and agriculture industry in the Peel region, the impacts of climate change on extreme weather events, water, and soil conditions have potentially serious implications for the future of Mandurah's regional economy. Investing in climate resilience is necessary for the long-term sustainability of the region.
- **Environmental awareness:** Mandurah's natural environmental assets are important contributors to its appeal as a place to live and to key industries in the region including tourism, hospitality, and agriculture. Preservation of these assets is critical for Mandurah's future economic development. Positioning itself as an environmentally conscious destination will also aid in appealing to growing global eco-tourism demand.
- **Renewable energy:** While other parts of Western Australia have considerable renewable energy resources, Mandurah benefits both from a combination of resources – including good wind and solar potential, and access to treated wastewater – and from existing connectivity to the SWIS electricity network. Mandurah could play a leading role in decarbonisation and a shift to greater renewable energy production at the regional level, including in energy production to support heavy industry elsewhere in the Peel region.
- **Role of government:** Mandurah residents are adversely affected by having to travel sometimes great distances to other parts of the Perth metropolitan area to access key services, including specialist medical care and post-secondary education opportunities. In both the literature review and consultation with stakeholders, this was attributed to a disconnect between decisions made at State and Federal Government levels relative to the local needs within the Mandurah region. Mandurah could benefit from more decentralised decision-making in the evolving role of government, including through collaboration between community groups, the City of Mandurah, Peel Development Commission, and other tiers of government.

The categorisation of all 45 drivers is shown in Figure 3.4. As noted above, 'must act' drivers form the most important basis of future economic opportunities for Mandurah. 'Disruptors' and 'watch and act' drivers are considered in the identification of opportunities, while 'sleepers' are not considered significant in the context of Mandurah's future economic development. The process of categorisation was a collaborative effort between Deloitte, the Transform Mandurah working group and the Peel Development Commission. The process did not follow a scientific approach, but rather sought to blend considerations from the analysis and outcomes contained in Chapter 2 and Chapter 3.2 above, with local knowledge, aspirations and insights from the Transform Mandurah working group and the Peel Development Commission.

Figure 3.4: Prioritisation of 45 drivers of change



Source: Deloitte, City of Mandurah, and Peel Development Commission



4 Defining future opportunities



4.1 Introduction

Mandurah's future economic opportunities lie at the intersection of its existing economic advantages and disadvantages outlined in Chapter 2 and the global drivers of change that are both likely to occur and likely to have a significant impact on Mandurah, as discussed in Chapter 3. This approach is shown in Figure 4.1.

The opportunities were initially developed based on the synthesis of findings from the previous two steps, and subsequently refined and consolidated through consultation with the Transform Mandurah working group and other stakeholders from the City of Mandurah and Peel Development Commission.

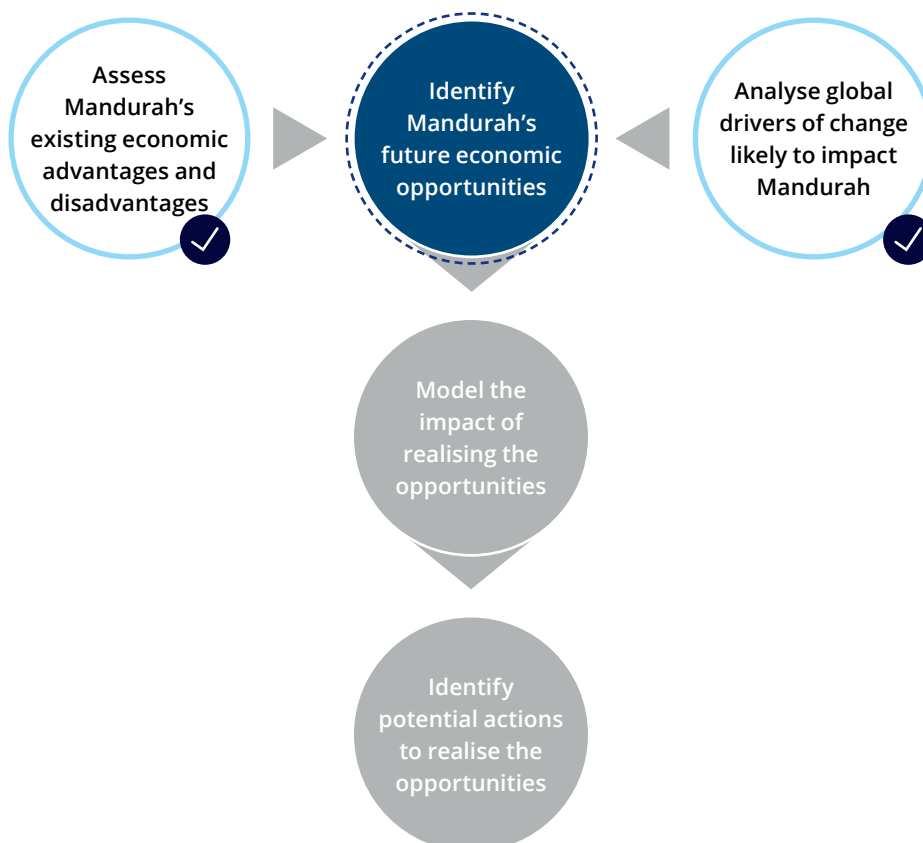
A total of **eight opportunities** were identified, each of which represents a potential area of focus to guide future policy decisions, objectives, and investment decisions for the Mandurah region. The opportunities also consider existing programs and infrastructure currently in place, to ensure that they build from the current state.

Importantly, the opportunities are intended to be high-level, thematic areas that address a pressing challenge and/or a promising area of growth for Mandurah. They are not discrete projects, programs, or policies – rather, the full realisation of each opportunity is likely to require the implementation of a wide array of interventions.

Further, it is not intended that the opportunities identified be funded and driven by government. Private sector investment can help catalyse and drive many of the opportunities. However, it is anticipated that initial support is likely to be required from governments to help catalyse and / or de-risk the opportunities. Some opportunities are unlikely to generate a commercial return but present an opportunity for government to partner with the not-for-profit (NFP) sector and other relevant community-based stakeholders.

This chapter provides an overview of each opportunity and discusses its relationship to Mandurah's existing economic advantages and disadvantages and relevant global drivers of change. The impact of, and potential interventions that could contribute to, realising the opportunities are discussed in Chapters 5 and 6, respectively.

Figure 4.1: Approach – Identify Mandurah's future economic opportunities



4.2 Eight economic opportunities for Mandurah

4.2.1 Opportunity 1: Make Mandurah the lifestyle capital of Western Australia

Mandurah offers highly appealing lifestyle opportunities, combining proximity to the coast and waterways, open and green spaces, and relatively affordable living.

Opportunity description

Under this opportunity, Mandurah becomes the location of choice within Western Australia for people determining their place of residence and work based on lifestyle factors. Already a popular location for older cohorts for retirement, this opportunity would involve appealing to a wider demographic – including young professionals and working families.

Successfully positioning Mandurah as the lifestyle capital of Western Australia may entail both capital investment in enabling infrastructure and program/policy development to improve liveability. This could include enhanced community and leisure infrastructure such as sporting facilities, waterfront amenities, improved school education offerings, and a revitalisation of the Mandurah city centre to cater to commercial, retail and hospitality spaces of a similar quality to the Perth CBD.

Mandurah's natural assets and affordable living are key drawcards but relative to metropolitan Perth it faces challenges in providing other features that define liveability. This was a consistent theme that emerged from the literature review (see Chapter 2.2), which identified constraints such as: poor public form in the Mandurah CBD away from the foreshore, poor connectivity and public transport access within the region and to key employment hubs, dispersed and low-quality commercial spaces, lack of access to youth sporting and cultural infrastructure, and lack of specialised healthcare and community services locally.

In 2020, the Australian Urban Observatory published a 'scorecard' for liveability in Perth and Mandurah.²⁶ The report, based largely on research from RMIT University into liveability indicators, found Mandurah's suburbs were concentrated in the lower deciles of the liveability index comparative to west, north-west and inner Perth. The liveability index measures factors including, but not limited to, access to leisure, childcare, public schooling, health services, sport, and public open space, housing affordability and employment opportunities. Additionally, Mandurah was in the lower deciles for walkability, social infrastructure, public transport access and food environment indices. These indices comprise a list of some key factors that if improved, could increase residents' quality of life.

Realising this opportunity requires social interventions and addressing challenges to liveability, but also offers the potential for a higher rate of economic growth and benefits that align with broader strategic objectives for the tourism industry in the Peel, which includes maintaining the appeal of Mandurah as the 'daytrip capital' of Western Australia and promoting overnight stays across the Peel region.

Correlation with Drivers (see Chapter 3.2)

-  Growing middle-class
-  COVID-19 restrictions
-  Ageing population
-  Remote working
-  Urbanisation
-  Mass migration

COVID-19 lockdowns and the rise in flexible working have increased the importance of lifestyle factors in choosing where to live. In addition, the ageing population is driving demand for retirement destinations with plentiful amenities and urbanisation means regional centres are becoming increasingly populated.

These drivers, coupled with a growing middle class both locally and globally, can create a platform for Mandurah to leverage its lifestyle credentials to both boost population growth through attracting migration (including internally within WA). This will also support its established consumer-facing industries by attracting additional tourism and assist strategic industries to grow through migration of skilled workers.

Mandurah's strengths and weaknesses

The appeal of Mandurah's lifestyle has been the major driver of its population growth – through internal migration from other parts of WA and Australia – for the last two decades. Its reputation as a desirable retirement and holiday destination can be leveraged, with the aid of suitable infrastructure and programs, to attract permanent migration.

Existing developments within the City of Mandurah and Peel Region, including the City Centre Revitalisation and Foreshore Redevelopment as well as the proposed Peel Yalgorup-Wetlands eco-tourism opportunity, are taking steps to improve Mandurah's appeal. These, coupled with other measures to improve liveability more holistically, may assist in forging greater population growth.

Purpose

Positioning Mandurah as WA's lifestyle capital could amplify the benefits of other economic opportunities, helping to attract a larger professional resident workforce; provide the accommodation, food and retail supply to grow its tourism footprint; and attracting a younger working-age cohort linked to new training opportunities and more diverse employment opportunities in a revitalised city centre.

Achieving progress within Opportunity 1 would be supported by progress in the other seven opportunities, in turn supporting their achievement, as each is connected by a fundamental aim to improve Mandurah as a place to live, work and invest.

4.2.2 Opportunity 2: Develop Mandurah into a world-class Hospitality Education Precinct

Almost nine-in-10 of the next billion middle-class consumers across the globe are forecast to reside in China, India, and the remainder of south and south-east Asia. The Australian hospitality industry is set to reap the benefits, and Mandurah could be an important training ground for the future workforce.

Opportunity description

The hospitality sector is often viewed as a stepping-stone to a career rather than a career in itself. This creates a transient national hospitality workforce which, in WA, often manifests in skills and labour shortages. These shortages are acute at the higher-skilled end of the hospitality services spectrum, where labour gaps are more difficult to fill with short-term or unskilled labour.

Under this opportunity, Mandurah becomes home to a collaborative hub of world-class training and education providers in the hospitality sector, leveraging on its existing workforce and tourism assets to train locally as well as coordinating applied learning and skills development across the hospitality sectors of the Perth, Peel and South West regions.





The vision is to educate and train a workforce with specialisations in hospitality including executive chefs, sommeliers, concierges, hotel managers and other management staff, as well as emerging roles such as VIP event management, and luxury brand design and management. These skills are expected to exceed entry-level requirements in the industry, where training opportunities already exist both in Mandurah and elsewhere in the Greater Perth region. Targeting gaps at the higher-skilled end of the hospitality workforce helps to build the identity of the Mandurah region as a premium place of training and education for these careers, and will result in a more employable workforce into the future and a higher level of service delivery in the region. Importantly, it also attracts young people and students to the region, to help build vibrancy and support activation in the Mandurah CBD.

The opportunity to attract a private sector partner to be a part of the hub, providing on-the-job training for students, is a potentially beneficial avenue for this opportunity. This model was successful in the Gordon Culinary School at Gordon TAFE in Victoria, which redeveloped an existing hospitality site and continues to operate a restaurant as part of its training program.²⁷

Mandurah's strengths and weaknesses

Mandurah has an existing presence in the hospitality industry, with a significant share of local businesses and resident employment concentrated in this sector. This provides both the capacity for hospitality training (which requires highly skilled hospitality professionals and facilities for practical education) and a potential pool for trainees, being a large existing workforce.

Correlation with Drivers (see Chapter 3.2)

-  Growing middle-class
-  Return of the consumer
-  Competition for talent
-  Next-gen workforce
-  COVID-19 restrictions

The growing purchasing power of the middle class in developing countries will create significant opportunities for the national tourism and hospitality sector in particular.

Supporting the hospitality industry post the COVID-19 pandemic, and providing highly skilled employment opportunities in hospitality for the youth and female workforce in Mandurah (both under-represented in labour force participation), are also key drivers behind this opportunity.

Additionally, the return of travel post-pandemic should lead to an increase in tourism to Australia, with opportunities for Mandurah to help build a pipeline of quality hospitality workers to capitalise on future consumer demand.

For example, there is potential to leverage the \$9.17 million South Metropolitan TAFE expansion for tourism and hospitality training announced by the State Government in mid-2020 by partnering with, or supporting, the TAFE to deliver further specialised training.²⁸ The key differentiators between existing planned investment and this opportunity are:

- The scale of the training provided: The objective of this opportunity is to produce a large skilled workforce that will meet the demands of the hospitality industry beyond Mandurah. Exporting graduates from this training precinct is critical to building its reputation, and consequently, attracting top-quality students from other jurisdictions to live and train in Mandurah.
- The level of skills provided: This opportunity principally targets training hospitality professionals at the upper end of the skills spectrum, rather than competing with less complex training that could be undertaken by hospitality businesses without the involvement of the specialist training precinct.

Purpose

Establishing Mandurah as a Centre of Excellence in hospitality training could assist in attracting students, building Mandurah's brand as an elite training hub for hospitality skills, as well as developing world-class hospitality services for visitors and residents.

This brings with it potential economic benefits, including increased spend in the region due to a growing population and more jobs to cater to expanding hospitality demand.

4.2.3 Opportunity 3: Build the capacity of the aged-care workforce

Nearly 27 per cent of Australia's population (8.1 million people) are expected to be aged over 60 years by 2040, representing a rise of 46 per cent from 2020 – or 2.6 million more people. However, significant gaps in the national aged care workforce are expected in future.

Opportunity description

Mandurah's lifestyle attraction means it has one of the oldest populations in WA. This creates a significant aged-care need in the region, highlighted by the large prevalence of cardiovascular diseases, which is driven almost exclusively by the population aged 55 years and over.

Under this opportunity, Mandurah takes a leading role in expanded training to address significant forecast shortages of skilled labour in the aged care sector, both within the region but also elsewhere in WA and across Australia. The focus of the opportunity is on leveraging the existing presence of a significant aged population and aged care providers in Mandurah to train aged care workers.

Mandurah's unique position as a regional centre with a growing over-55 population also gives it the opportunity to be an ideal pilot site for creative and innovative models of care. As the global population ages, increasing amounts of research are being undertaken to understand more efficient and effective holistic care. Examples of new models include South Australia's dementia care village at the Repat Health Precinct which will provide for 70 residents at completion in 2023.

The need to combine technical skill with greater compassion and resilience among staff also fuels the need for better models of training. Mandurah has the ability to establish itself as a nation-leading provider of innovative aged-care services through the piloting of creative models of care and in equipping the aged care workforce of the future through cutting-edge training and development.

Mandurah's strengths and weaknesses

Mandurah can capitalise on its older population, its existing presence of aged care services providers and aged care training specialism at the Mandurah TAFE campus to train the aged-care workforce of the future. There is strong alignment with the hospitality centre of excellence in terms of possible co-location of a central training hub, with the potential for any such education and training precinct dedicated to future roles requiring 'work of the heart'.

Purpose

This opportunity could achieve two separate socially beneficial outcomes in Mandurah. In the first instance, greater opportunities to train and upskill in a fast-growing industry can support residents to retain meaningful employment, supporting economic growth in the region.

Correlation with Drivers (see Chapter 3.2)

-  Ageing population
-  Competition for talent
-  Next-gen workforce
-  Regulatory landscape
-  Role of government

A growing ageing population means aged care demand is set to boom. But if the aged-care workforce continues expanding at its current pace, CEDA estimates that within the next decade there will be a shortage of 110,000 direct aged-care workers, and by 2050, a shortage of more than 400,000 workers nationally.²⁹ This requires action to ensure adequate numbers of aged care workers are available to cater for changing demographics.

The evolving role of government policy and regulation in the aged care sector is also likely to add to, rather than solve, shortages of skilled labour in the industry. For example, the recommendations that arose from the 2018 Royal Commission into Aged Care Safety and Quality resulted in immediate action from the Commonwealth Government to create new Medicare Benefits Schedule items for allied and mental health services in aged care facilities. But expanded availability of these services will require a larger skilled workforce to deliver them.³⁰

The evolving policy and regulatory landscape in aged care was further disrupted by the impacts of the COVID-19 pandemic, which disproportionately affected aged care facilities and residents in terms of case numbers, serious illness, and death. An increased regulatory burden associated with mitigating impacts from diseases like COVID-19 in the future – for example, stricter rules around visitation – again will have impacts on the future demand for skilled workers in the sector.

Furthermore, a highly skilled aged care workforce allows for the provision of better care for Mandurah's older residents.

This supports Mandurah's appeal as a retirement and lifestyle destination and could provide improved quality of life for its ageing population. This opportunity should be explored with thought given to how to best leverage existing aged care services, facilities, and training, as well as how the supporting supply chain for a new or updated facility may make best use of the region's resources.

4.2.4 Opportunity 4: Make Mandurah a hub for 'Blue Collar Tech' training and industries

The WA resources sector is adept at developing and adapting the latest innovation and technology to operations. As the sector accelerates its adoption of technology, there is a growing need for 'Blue Collar Tech' or Digital Trades workers and related service providers.

Opportunity description

WA's mining and petroleum equipment, technology, and services (METS and PETS, respectively) sectors are key drivers and enablers of innovation in the resources sector, giving the State an advanced technology base in mining and oil and gas. WA hosts almost a quarter of all national METS businesses operating in Australia.

But the future mining technology workforce is not all about STEM-qualified professionals. As resource sector operations come to increasingly rely on remotely operated and networked machinery and technology, there is a growing need for skilled workers in 'Blue Collar Tech' roles – also called 'Digital Trades'. These are defined as technology-intensive jobs requiring sub-degree level qualifications.

Examples of such roles include cyber security, data analytics, software development, data visualisation, automation and 3D printing.³¹ A 2018 Deloitte Access Economics Digital Pulse report produced for the Australian Computer Society estimated the Australian economy requires 200,000 skilled technology workers by 2023 to keep pace with international competitors – though university graduates in ICT number less than 5,000 per year.³² While some of these roles will necessarily have to be filled by additional university graduates, there is an opportunity for skilled technology jobs to be filled through vocational training, which has advantages such as shorter durations of study and benefit of practical training rather than in a university environment.³³

Under this opportunity, Mandurah positions itself as a hub for 'Blue Tech' businesses, leveraging both its large existing labour pool of technicians, trades workers, and machinery operators and the significant presence of engineering and manufacturing businesses in the Mandurah region.

Importantly, the different aspects of this opportunity will be realised over different time horizons. In the short to medium term, the focus should be on developing capacity for training. Only once Mandurah has developed a reputation for producing highly skilled digital trades workers will businesses see value in relocating their operations to the region; therefore, developing Blue Collar Tech industries should be an objective for the medium to long term.

Mandurah's strengths and weaknesses

Mandurah has a potential advantage in producing the next generation of Blue Collar Tech workers because of its high proportion of technical and trades workers who operate in the manufacturing and resource sectors. These workers are prime candidates to be upskilled to perform more digitised tasks, while vocational training offered in the region can also be augmented to help develop this future workforce.

Correlation with Drivers (see Chapter 3.2)

-  Knowledge worker
-  Automation
-  Competition for talent
-  Additive manufacturing
-  Artificial intelligence
-  Acceleration of productivity

The rapidly evolving technology landscape has led to increased pressures on traditional manufacturing skills as the industry moves to automation and artificial intelligence to improve productivity.

To remain competitive in such a market, workers need relevant upskilling, while employers require this upskilling to meet the expected gaps in their future workforce.

Collaborating with industry to develop into a training hub for digital trades (similar to Rio Tinto's partnership with South Metropolitan TAFE to develop VET qualifications in automation) will allow Mandurah to help fill a key gap in the 'Industry 4.0' revolution – the trade skills that enable innovation. Mandurah's proximity to businesses innovating in agriculture and defence provides opportunities for digital employment outside of manufacturing as well.

Purpose

Mandurah is well-placed to capitalise on the need for technology skilled workers: a large proportion of Mandurah's workforce is employed in the resources sector and consists of traditional technicians and trade workers. Private investment often follows the availability of skills and innovation. Therefore, a broader plan to leverage a hub of training and skills for Blue Collar Tech roles may also include strategies to attract industries that employ digital trades (e.g., component parts manufacture) to locate within the region. Pivoting the workforce to technology-based skills may help to reduce structural unemployment in the future, as well as providing increased capacity for industry in Mandurah to adopt innovation and technology in operations.

Positioning Mandurah as a Blue Tech hub – as opposed to an advanced manufacturing hub specifically – is distinctly different to the advanced manufacturing development in the Bunbury Geopraphe region. With a focus on workforce development in digital skills, Mandurah is better equipped to attract industry and capital investment to the area with the possibility of creating an industry hub, such as the Bell Bay Advanced Manufacturing Zone in Tasmania.

4.2.5 Opportunity 5: Innovation in healthcare delivery

Digitisation is revolutionising the healthcare industry, enabling lower cost of service, improved diagnostics, and greater choice in treatment.

Opportunity description

Telehealth presents an opportunity for better medical service of disadvantaged and remote groups. For example, the US Health Resources and Services Administration funds a designated Centre of Excellence in Telehealth at the University of Mississippi Medical Centre (UMMC). This designation enables the centre to explore innovative ways to advance the modern practice of telemedicine and serve as national clearinghouse for telehealth research and resources. The centre was chosen not because of large geographic distance to patients, but because it had an established program that provided telehealth services in medically underserved areas with high chronic disease prevalence and high poverty rates.

Under this opportunity, Mandurah becomes a hub of innovation in healthcare service delivery to underserved groups in Western Australia. This is distinct from medical research and innovation in an academic sense – here the focus is on innovation in delivering services by capitalising on improvements in technology (such as telehealth) or alternative care models that allow services to be delivered more effectively in the community.

Importantly, the use of technology and emphasis on digital innovation means that practitioners based in Mandurah are not limited to servicing patients in the region. Under this opportunity, Mandurah could also play a critical role in delivering digitally enabled healthcare services to patients across the Perth metropolitan region and the rest of Western Australia.

Other innovative healthcare delivery methods in the integrated care and mental health fields could also allow for improved quality of health services in the region.

Mandurah's strengths and weaknesses

Mandurah comprises many lower-socio economic, aged, and at-risk groups – many of whom lack access to healthcare. Regions with these characteristics can be fertile ground for testing new healthcare delivery models and for deploying technology to reach a larger cohort of patients via telehealth. Furthermore, other innovative programs can be built on existing work conducted by the Peel Mental Health Taskforce and Peel Health Hub.

Correlation with Drivers (see Chapter 3.2)

-  Extended Reality
-  Digitisation of Healthcare
-  Ageing population
-  Knowledge worker
-  5G / enhanced connectivity
-  COVID-19 Restrictions

Telehealth has played an important part in providing continuity in healthcare delivery through the COVID-19 pandemic – for example, by allowing patients to refresh prescriptions or undertake consultations while conforming with lockdown and self-isolation rules.

While this appeared to be a temporary spike in the prominence of telehealth, its ongoing relevance to Australia's health system was confirmed in late 2021 with \$106 million in federal funding allocated to give telehealth permanency.³⁴ This eventuated after 86 million telehealth consultations were recorded since early 2020 and a growing variety of services moved to online offerings.

The ageing global population also presents an array of challenges to models of service delivery in healthcare, as well as a need for more skilled workers to provide such care.

Purpose

The use of telemedicine enabled e-visits, mHealth, and tele-mentoring may take pressure off the healthcare system, while creating opportunities to improve the quality of care and employment opportunities within the health field.

Further innovative health measures may help to improve the wellbeing of community members more effectively than traditional methods, as well as potentially drawing research and pilot programs to Mandurah.

4.2.6 Opportunity 6: Innovative social interventions

Inequality of wealth, power, and opportunity – and the effects these have on community, education, economy, and politics – is highly prevalent in Central and Eastern Mandurah. These trends can lead to entrenched, structural unemployment and socio-economic disadvantage that require tailored programs to address.

Opportunity description

Innovative social interventions can be utilised in Mandurah to improve education and employment outcomes for disadvantaged residents. While employment may be the focus, it is important to note that interventions focused on employment alone may not be successful.

Holistically addressing barriers to education and employment including substance abuse, female disempowerment, skill gaps, housing security, and transport disadvantage will also allow for better social and employment outcomes.

Indeed, Australian research has determined active labour market programs (ALMPs) – comprising work experience, job search assistance and training – reduce in effectiveness as the disadvantage of the participant rises.³⁶ Better outcomes are seen when ALMPs are undertaken in conjunction with social support and addressing of skill gaps through education and career counselling, particularly for unemployed youth.

Under this opportunity, Mandurah would be a 'sandbox' for testing alternative and more holistic social interventions aimed at tackling the root causes of social and economic disadvantage.

Implementing such programs rests largely with State and Commonwealth governments, and hence there is a key role for advocacy to demonstrate the value of trialling these measures in Mandurah. Coordination of interventions may therefore form a key challenge for this opportunity, requiring significant cooperation across local, State and Commonwealth governments, the private sector, and not-for-profit organisations.

There are examples of this level of coordination occurring successfully overseas. In Sacramento County in California, a Human Services Coordinating Council has been established which brings together members from alcohol/drug advisory, mental health, public health, the aging commission, children and family services and disability services to advise the County Board of Supervisors on health and social policy.³⁷ In the WA context, an analogous solution might involve local authorities and organisations, including the City of Mandurah, playing an advisory role or being granted devolved authority to deploy State resources to address areas of significant social and economic disadvantage.

Mandurah's strengths and weaknesses

Mandurah has a significant group of unemployed and welfare-dependent individuals, who suffer inequality in wealth and opportunity.

Correlation with Drivers (see Chapter 3.2)

-  Empowered minorities
-  Concentration of wealth
-  Social unrest
-  Empowered women

The richest 1 per cent in the world now own 45 per cent of the world's wealth, and 50 per cent of adults hold less than one per cent of global wealth.³⁵

Extreme differences in wealth have been accelerated by the COVID-19 pandemic, both directly (for example, through inequitable access to effective vaccines) and indirectly (through the significant increase in asset prices that has followed extraordinary fiscal and monetary pandemic-related policy measures).

Policymakers are acutely aware of the need to ensure that recovery from COVID-19 benefits the majority, not just a few, particularly as social unrest and division regarding inequality increases. It is vital to ensure minority groups are empowered in society and the workplace.

This group appears to extend along lines of gender (women), age (youth), and health status (those suffering mental health issues, people with a disability and those with a history of substance abuse). These individuals also appear to be geographically centred in the central and eastern parts of the City of Mandurah.

There is an opportunity to attract State, Commonwealth and/or private funding to trial innovative social intervention programs aimed at supporting these individuals. This could be led by the private sector (e.g., through basing a Social Enterprise Network in Mandurah); or by the State Government, by bringing together relevant agencies to develop a cross-agency solution that is fit-for-purpose for Mandurah's social challenges; and thereby developing a model to deploy in other low socio-economic regions of the State.

Purpose

Mandurah's unemployment rate is higher than the broader Perth region, and therefore this opportunity seeks to directly address issues of structural unemployment in the region via holistic and innovative social interventions. Importantly, these interventions need to address the root causes of entrenched socioeconomic disadvantage, rather than superficial measures that may temporarily shift people into short-term employment without equipping them with the means to maintain a job. This opportunity aims to reduce disadvantage in the community and promote economic opportunity for residents.

4.2.7 Opportunity 7: A hub to lead industry decarbonisation and climate resilience and adaptation strategies

As climate change continues, natural disasters and abnormal weather patterns will increasingly have unprecedented effects on all aspects of our economy and everyday lives.

Opportunity description

Both globally and locally, a technological and innovation push will be necessary to help industry decarbonise and meet government climate targets, as well as meet market and customer expectations. However, action on climate change also requires adaptation on multiple fronts to adjust to climate extremes in order to protect communities and strengthen the resilience of the economy.

Under this opportunity, Mandurah takes on a greater role in efforts to decarbonise heavy industry within the region, and to make industry and infrastructure more resilient to future impacts of climate change.

Mandurah's strengths and weaknesses

The Mandurah and the Peel region more broadly, has strong climate credentials. The region has significant wind resources and access to treated wastewater. The Peel Business Park in Nambelup hosts a renewable energy industrial microgrid. A previous study identified the potential for these resources to be used to develop hydrogen production capacity on a regional scale and contribute to the decarbonisation of manufacturing and transport activity in the Peel region.³⁸

The Bushfire Centre of Excellence also in the Peel Business Park is also helping the State to centrally manage and build capacity to deal with the rising bushfire risk posed by climate extremes. However, multiple other strands exist to help the economy to adapt and build resilience to climate change – from infrastructure and materials design to urban planning, land care and water innovation.

There are several global examples of interdisciplinary research centres committed to developing a suite of novel methods, tools, and analyses needed to incorporate climate change impacts into social and physical systems, and decision-making. The region's Bush Fire Centre of Excellence could be used as the cornerstone of attracting industries that help design a future way of life that adapts to extreme weather conditions and events across multiple disciplines.

Peel's natural resources also create opportunities for renewable projects, such as the proposed South Energy Waroona Solar Farm which is expected to be operational by 2024. Mandurah's proximity to renewable projects and carbon-intensive mining and resources sector further its potential as a decarbonisation hub.

While the Pilbara region is the current focus for State Government green hydrogen production efforts, the Mandurah region could be an excellent site for utilisation trials. An existing example is the Hazer Group-led project which is seeking to establish hydrogen refuelling infrastructure, within Mandurah.⁴⁰ The need to trial end-use applications of hydrogen is growing, and Mandurah could become a key pilot site.

Correlation with Drivers (see chapter 3.2)

-  Climate change
-  Environmental awareness
-  Renewable energy
-  Knowledge worker
-  Evolving supply chains

Telehealth has played an important part in providing continuity in healthcare delivery through the COVID-19 pandemic – for example, by allowing patients to refresh prescriptions or undertake consultations while conforming with lockdown and self-isolation rules.

While this appeared to be a temporary spike in the prominence of telehealth, its ongoing relevance to Australia's health system was confirmed in late 2021 with \$106 million in federal funding allocated to give telehealth permanency. This eventuated after 86 million telehealth consultations were recorded since early 2020 and a growing variety of services moved to online offerings.

The ageing global population also presents an array of challenges to models of service delivery in healthcare, as well as a need for more skilled workers to provide such care.

Mandurah's hydrogen industry potential is already being explored through the Perth and Peel Hydrogen Cluster, a joint initiative between the City of Mandurah, Peel Development Commission, Murdoch University, and the hydrogen industry.⁴¹

Purpose

Centralising research into decarbonisation technologies in Mandurah may bring significant capital investment and assist climate change mitigation efforts in the region. A significant benefit to the region would materialise through the attraction of professional and technical workers key to these research efforts, supporting the outcomes of Opportunity 8.

There are examples in other jurisdictions that demonstrate the extent of the opportunity, such as the Heavy Industry Low-Carbon Transition (HILT) cooperative research centre (CRC) announced in 2021. HILT is a private-public collaboration developing regional decarbonisation hubs across Australia with partners including Alcoa.⁴²

Creating a HILT CRC-style or similar hub in Mandurah could help to support local industries to move to low-carbon models while remaining commercially viable. A differentiated offering for Mandurah could focus on the region's natural assets that might cater to specialised research in climate resilience – for example, Mandurah's estuarine water system.

4.2.8 Opportunity 8: Develop a strong base of professional workers in Mandurah

COVID-19 has caused policy makers and businesses alike to re-think the traditional CBD commuter model of work, as well as the future of urbanisation.

Opportunity description

There is an opportunity for Mandurah to capitalise on transitioning ways of working to increase the number of professional workers in the region, which has typically been concentrated in trade, manufacturing, and agriculture jobs.

The Peel region currently hosts several government agencies and institutions at the local, State and Commonwealth levels. With Mandurah the focal population centre for the region, an opportunity exists to initially co-locate existing public sector staff working in the region, rationalising multiple separate leases into one central precinct, perhaps integrated into the proposed centres of excellence and training hub for aged care and hospitality (see Opportunities 2 and 3). Obvious synergies exist in co-location to help revitalise the Mandurah CBD and complement existing investment. Importantly, the availability of high-quality commercial premises could also serve to attract the private sector to locate offices in the region.

Increasing the base of professional workers also corresponds closely to Opportunity 1. Understanding, and providing for, factors that attract professional workers to live and work in the region – such as childcare access, quality schooling, and leisure – should increase the success of interventions within this opportunity.

Mandurah's strengths and weaknesses

As multiple government agencies maintain offices in Mandurah, the existing public sector workforce could act as an anchor tenant in a revitalised commercial precinct in the Mandurah city centre. Such a co-location within the CBD presents an opportunity to provide a step-change in the size and quality of office space in CBD as well as the potential to grow the future base of professional employment in the region by attracting private firms to locate in the area.

A high-quality central office hub might also benefit the proposed Australian Waterways Centre of Excellence innovation hub, which could feature a science or technology-based agency or university department; while the Peel Agri Food Study also identified the region as having the capacity for a range of high-value intensive rural and food production activities. The WA Agri-Innovation Precinct currently under construction at the Peel Business Park in the Shire of Murray offers an opportunity for Mandurah to support advanced manufacturing of food and fibre in the broader region, with Mandurah's role an administrative hub, centralising the logistics for supporting businesses and training to further support the growth of the scientific workforce required for these two endeavours.

Correlation with Drivers (see Chapter 3.2)

-  Competition for talent
-  Remote Working
-  Ageing population
-  Knowledge worker
-  Urbanisation

Across Australia and the world, a 'tree-change' is occurring with thousands shifting from metropolitan to regional and outer-urban areas. ABS data showed regional Australia experienced a net inflow of 43,000 people from the capital cities in 2020 – the highest number since reporting began two decades ago.⁴³

The COVID-19 pandemic has accelerated this trend due to the increasing prevalence of remote working, especially among professional workers who were able to transition more easily online.

As the pandemic extends into its third year, expectations that there will be a return to the traditional office model are diminishing and some employers are adapting by reconsidering floorplan requirements and encouraging employees to work remotely for certain proportions of the week.⁴⁴

There are parallels to Gippsland in Victoria, where food and fibre industries including dairy, meat, horticulture, and vegetable production are all significant strengths. There, the Morwell Innovation Centre is co-located with TAFE Gippsland and Gippsland Tech School. The Innovation Centre enables innovation-focused food and fibre industries to build on the international reputation of the sector in the region, with Morwell the administrative hub.

Purpose

Strengthening the base of professional workers in Mandurah allows for diversification of the employment base, while a larger pool of professional workers also tends to attract knowledge industries to the region. In addition, benefits to Mandurah's regional economy will flow from a larger number of professional and technical workers based locally. These workers tend to have higher average incomes and different profiles of demand for services – for example, proportionally greater demand for private schooling and/or private health service delivery.

There are also benefits for Mandurah's established consumer-facing industries such as retail and hospitality, catering to a higher proportion of professionals working in the Mandurah city centre.





5 Economic impact of future opportunities



5.1 Introduction

Having identified potential future economic opportunities for Mandurah based on the intersection of its existing economic advantages and disadvantages and the global drivers of change, this chapter quantifies the impact on Mandurah's regional economy if it were to fully realise the eight opportunities. This step in the overall approach is shown in Figure 5.1.

Quantifying the impact of realising the opportunities is a valuable step in developing an economic strategy. It quantifies for decision-makers and stakeholders the potential 'size of the prize' in pursuing growth opportunities and galvanises support around priority actions.

Developing the detail of the future potential payoff involves building a stylised scenario in which the composition of Mandurah's regional economy and workforce has changed to reflect the impacts of each opportunity outlined in Chapter 4. This alternative future is compared to a baseline future in which Mandurah's economy evolves in line with current projections of population and employment growth, but the industrial structure of the economy, occupational structure of the workforce, and current structural challenges – such as high rates of unemployment and low rates of labour force participation – remain unchanged.

The chapters that follow outline the methodology used to develop this alternative future and quantify the impacts of realising the opportunities and provide a summary of these quantified impacts.

Figure 5.1: Approach – Model the impact of realising the opportunities

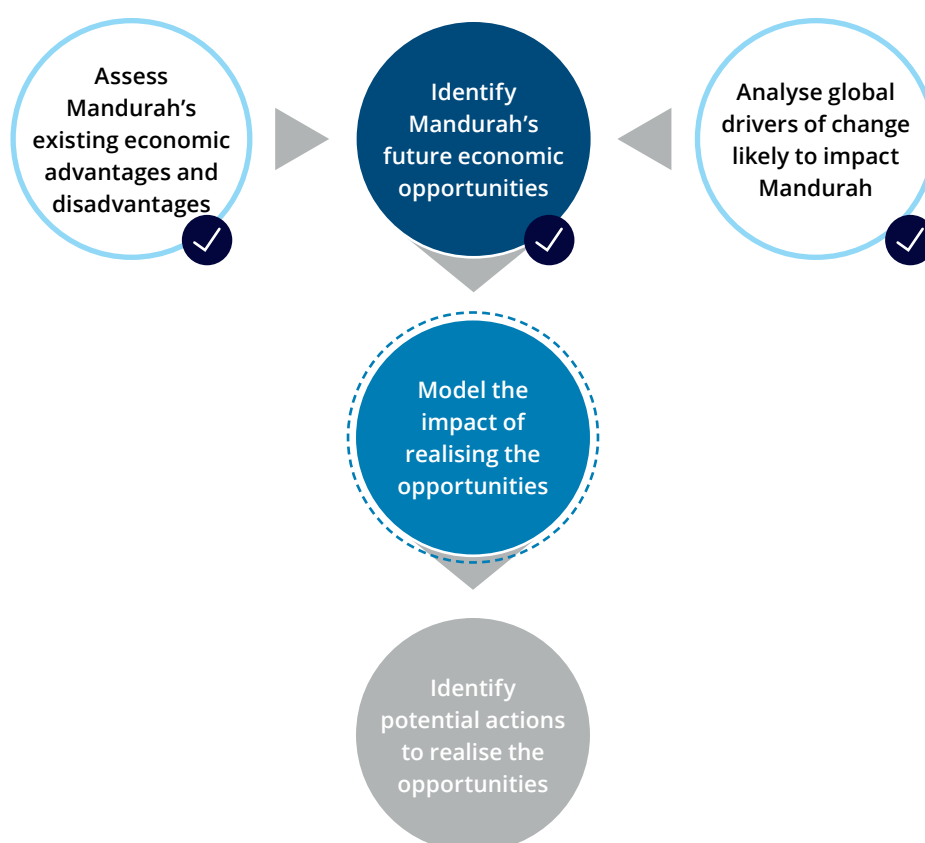
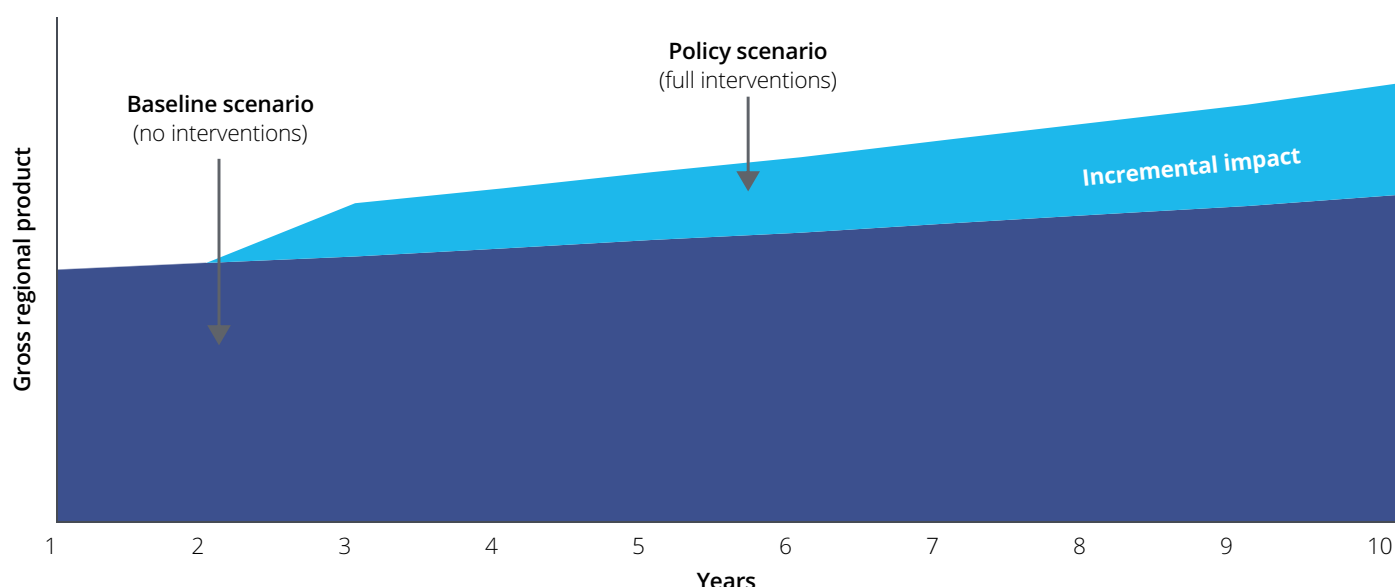


Figure 5.2: Stylised representation of economic impact modelling using a CGE framework



5.2 Estimating economic impacts using a Computable General Equilibrium framework

Deloitte's in-house Computable General Equilibrium (CGE) model was deployed to quantify the impact of realising the eight future opportunities. CGE frameworks are preferred because they can explicitly account for a range of impacts that are otherwise omitted in alternative static modelling frameworks. Importantly, CGE analysis incorporates:

- **Resource constraints:** The use of labour or capital by one activity, or industry, comes at the expense of uses elsewhere
- The possibility of **changes in the mix of inputs** used in production due to changes in relative prices or technology
- **Responsiveness of prices** and other variables to policy changes affecting such things as tariffs on imported goods, budgetary support to industry, industry productivity, and workforce participation.

These assumptions allow for second-round impacts – where agents respond to changes in price signals – and enable CGE models to account for impacts of a policy change or program across the entire economy.⁴⁵ Other economic modelling techniques (such as input-output modelling) are unable to address the above issues and are therefore not considered as fit for purpose for these types of scenario-based modelling tasks.

Further details on Deloitte's in-house CGE model, the Deloitte Access Economics Regional General Equilibrium Model (DAE-RGEM) are provided in Appendix A.

CGE models estimate the economic impacts by comparing a policy scenario against a baseline. Here, the baseline refers to a future scenario in which the economy continues along a 'business as usual' trajectory (Figure 5.2).

The policy scenario is developed by applying changes (known as 'shocks') to the baseline scenario which reflect the nature of the interventions. In the Transform Mandurah context, a single 'shock' to the baseline scenario was applied reflecting the cumulative impact of the effects of the eight opportunities, described in chapter 5.3.

The CGE model then solves for the market-clearing (equilibrium) levels of demand and supply across all specified goods and factor markets in the economy. This effectively creates a new path for the economy over time. This new path describes the policy scenario where the full impact of the opportunities is realised according to the stylised shocks set out in chapter 5.3. Comparing this new path to that of the baseline (where the shocks do not occur), illustrates the incremental economic impact of the opportunities.

5.3 Modelling the Transform Mandurah opportunities

To develop the policy scenario for Mandurah, the expected impact of each of the eight opportunities outlined in chapter 4.2 were developed through a series of assumptions and applied in the CGE model. The assumptions were based on three 'levers' by which the opportunities could impact economic growth in Mandurah:

- **Capital expenditure (CAPEX):** for some opportunities, infrastructure is assumed to be developed within Mandurah, with possible CAPEX values based on case studies of similar facilities / actions elsewhere. The development of this infrastructure is applied in the CGE model through a 'capital expenditure shock' which represents the construction phase of the infrastructure development.
- **Additional employment and changing skills mix:** Additional employment is assumed to accumulate in a particular industry or occupation over time, incremental to the baseline projection. The scale of growth is based on a benchmarking exercise, whereby relevant jurisdictions were considered throughout Australia to develop a benchmark for the likely proportion of employment in a particular industry or occupation, such as professional workers or those employed in the manufacturing industry. The difference between the benchmark proportion and Mandurah's current proportion was then applied to the applicable workforce size in Mandurah, to determine the total additional workers likely to be added to the economy to reflect the expected outcome of executing an opportunity. These total additional workers are added to the Mandurah economy gradually over time based on a target final year for the full realisation of Mandurah achieving parity with the benchmark.

- **Additional population:** Relative to the baseline, additional population is also added to the Mandurah economy over time to model some opportunities. Like the employment shock described above, the scale of growth is based on a benchmarking exercise, whereby a relevant jurisdiction within Australia is used to develop a benchmark for the target population growth rate. The difference between the target population growth rate and the baseline population growth rate is then modelled as additional population added to the Mandurah economy as a result of the opportunity.

These stylised shocks were developed to best represent a scenario in which the full potential of each of the eight opportunities is realised. However, these are not directly linked to any specific project or program. They are aspirational targets for Mandurah's future economic development that are broadly taken to correspond to the full realisation of all eight opportunities. These shocks should not be interpreted as the discrete impacts of undertaking one or two individual projects.

Seven jurisdictions were drawn on to inform the benchmarking exercise used for the employment and population growth shocks (these are further detailed in Appendix B.2.1). These jurisdictions were selected through desktop research based on two key criteria:

- **Shared context:** The jurisdictions shared similar contextual characteristics with Mandurah, such as population size, and distance from a capital city or major metropolitan area
- **Aspirational quality:** The jurisdictions had some key competitive advantage or strength that made them an aspirational comparison for benchmarking. These included aspects such as appealing lifestyle factors, skilled workforce etc.

The stylised shocks developed for each of the eight opportunities are shown in Table 5.1 below.

Table 5.1: Opportunity shock definitions

	Opportunity	Stylised shock	Baseline	Shock benchmark
1	Make Mandurah the lifestyle capital of WA	Shock type: Population growth Shock sectors: whole economy	Baseline amount: 2.2 per cent growth p.a. Baseline source: WA Tomorrow central forecast	Shock amount: 2.8 per cent growth p.a. Shock timing: Growth from FY2024 to FY2033 Benchmark source: 10-year historical average population growth rate of Caloundra (Sunshine Coast, QLD)
2	Develop Mandurah into a world-class Hospitality Education Precinct	Shock type: CAPEX Shock sectors: Recreation and Education	N/A	Shock amount: \$23.5m CAPEX Shock timing: FY2024 to FY2025 Benchmark source: Gordon TAFE Culinary School in Geelong (VIC)

3	Build the capacity of the aged-care workforce	Shock type: CAPEX Shock sectors: Health and Education	N/A	Shock amount: \$50.4m CAPEX Shock timing: FY2024 to FY2025 Benchmark source: Bulli Hospital Aged Centre in Bulli (NSW)
4	Make Mandurah a hub for 'Blue Tech' training and industries	Shock type: Employment growth Shock sectors: Heavy and light manufacturing	Baseline amount: 4.5 per cent of total employment Baseline source: Manufacturing share of total employment (Mandurah, 2021)	Shock amount: 7.1 per cent of total employment Shock timing: Benchmark achieved by FY2043 Benchmark source: Manufacturing share of total employment (comparison jurisdictions average, 2021)
5	Innovation in healthcare delivery	Shock type: Employment growth Shock sectors: Health and aged care	Baseline amount: 9.2 per cent of total employment Baseline source: Health share of total employment (Mandurah, 2021)	Shock amount: 16.7 per cent of total employment Shock timing: Benchmark achieved by FY2033 Benchmark source: Health share of total employment (comparison jurisdictions average, 2021)
6	Innovative social interventions	Shock type: Employment growth Shock sectors: Recreation and education	Baseline amount: 8.3 per cent unemployment rate Baseline source: Unemployment rate (Mandurah, 2021)	Shock amount: 4.2 per cent unemployment rate Shock timing: Benchmark achieved by FY2033 Benchmark source: Unemployment rate (comparison jurisdictions average, 2021)
7	A hub to lead industry decarbonisation and climate resilience and adaption strategies	Shock type: Employment growth Shock sectors: Government and business services	Baseline amount: 12.4 per cent of total employment Baseline source: Share of professional workers of total employed (Mandurah, 2021)	Shock amount: 22.9 per cent of total employment Shock timing: Benchmark achieved by FY2043 Benchmark source: Share of professional workers of total employed (comparison jurisdictions average, 2021)

Source: Deloitte

5.4 Economic impact analysis

5.4.1 Economic impact

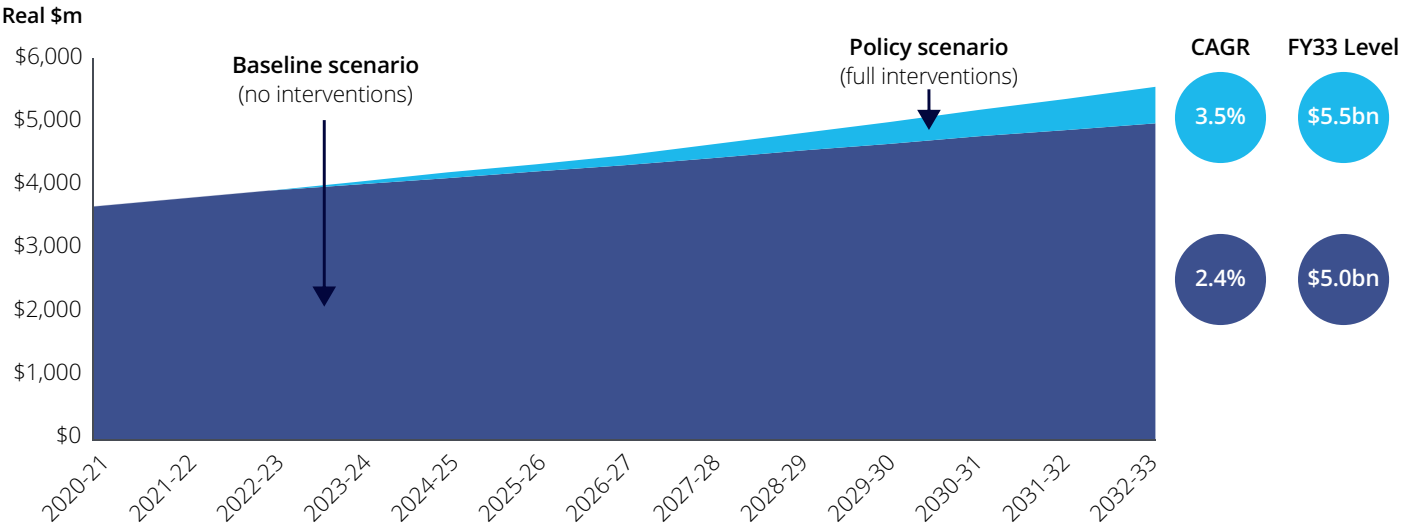
Having defined the shocks as shown in Table 5.1, the baseline and policy scenarios were modelled in DAE R-GEM to determine the economic impact. The model assessment period was selected as 10 years from the commencement of interventions. Hence, with interventions commencing from 2023-24, the final modelled year is 2032-33. For some opportunities (Opportunities 4, 7, and 8 combined), it was determined that benchmarks were only likely to be achieved well after 2032-33. For these shocks, only the impacts to 2032-33 are reflected in the modelling results.

The modelling outcomes are shown in Figure 5.3. Based on the assumed size and timing of the shocks applied, the modelling results suggest that – to 2032-33 – Mandurah's economy could expand at a compound annual growth rate (CAGR) of 1.1 percentage points per annum higher than the baseline scenario (i.e., 3.5 per cent per annum vs. 2.4 per cent per annum). This would result in Mandurah's economy reaching a total undiscounted real gross regional product (GRP) of around \$5.5 billion by 2032-33, compared to around \$5.0 billion under the baseline scenario (Figure 5.3). This equates to a total incremental economic impact of \$1.5 billion over the period (in real present value terms).

Figure 5.4 illustrates the expected impact of the opportunities on industry output. The health and aged care sector benefits most from the suite of opportunities, with additional industry output of \$140 million by 2032-33 (Figure 5.4). This is driven by opportunities targeting increased training and employment in the aged care sector, and delivery of telehealth services which is assumed to increase the output of Mandurah's health sector, associated with Opportunities 3 and 5.

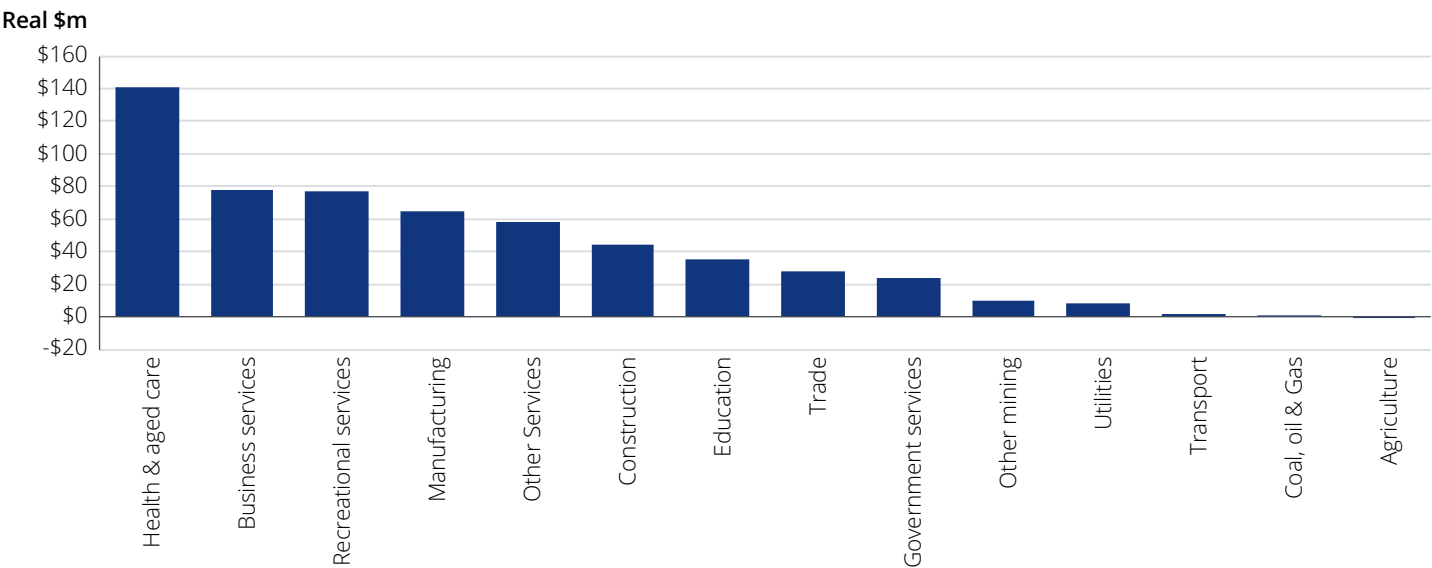
An increase in the output of the business services sector is driven by the uplift in the professional, scientific, and technical services workforce associated with Opportunity 8. Other industries such as recreational services and manufacturing benefit from other opportunities targeting hospitality training, social interventions to address unemployment and the blue tech workforce training.

Figure 5.3: Mandurah real Gross Regional Product (GRP) added



Source: Deloitte

Figure 5.4: Incremental real GRP added by industry, 2032-33 (undiscounted)



Source: Deloitte

5.4.2 Employment impact

The impact of the policy scenario can also be represented in terms of additional employment in Mandurah. Note that all references to employment in this section are on a ‘place of work’ basis – that is, they represent jobs located in Mandurah irrespective of where the worker lives; and they do not consider Mandurah residents who work outside the region.

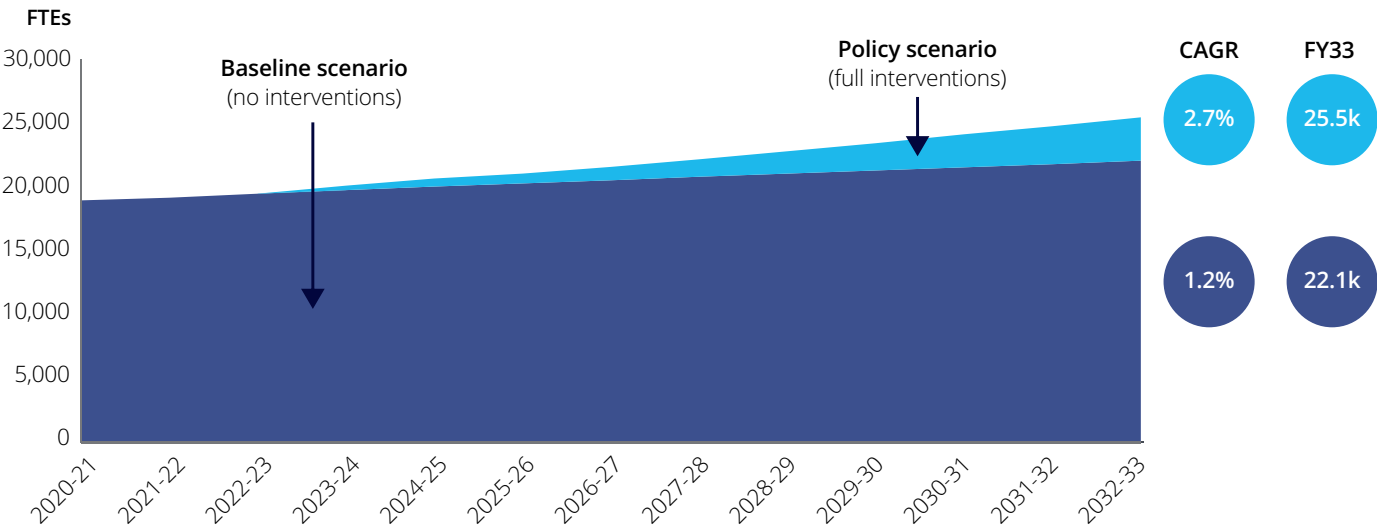
Full-time equivalent (FTE) employment within Mandurah’s economy is forecast to grow at a CAGR of around 1.5 percentage points per annum higher in the project case relative to the base case (2.7 per cent per annum vs. 1.2 per cent per annum). At this growth rate, an additional 3,400 FTE employees would be added in the project case compared to the base case (Figure 5.5).

Accounting for the role of part-time workers, this additional 3,400 FTE would equate to approximately 5,400 additional workers within Mandurah.

Further, accounting for population growth that would be required to sustain this level of employment growth – for example, considering that many jobs may be filled by people with a non-working spouse and/or dependent children – this uplift in employment could imply an overall uplift in Mandurah’s population of around 9,900 people in total.

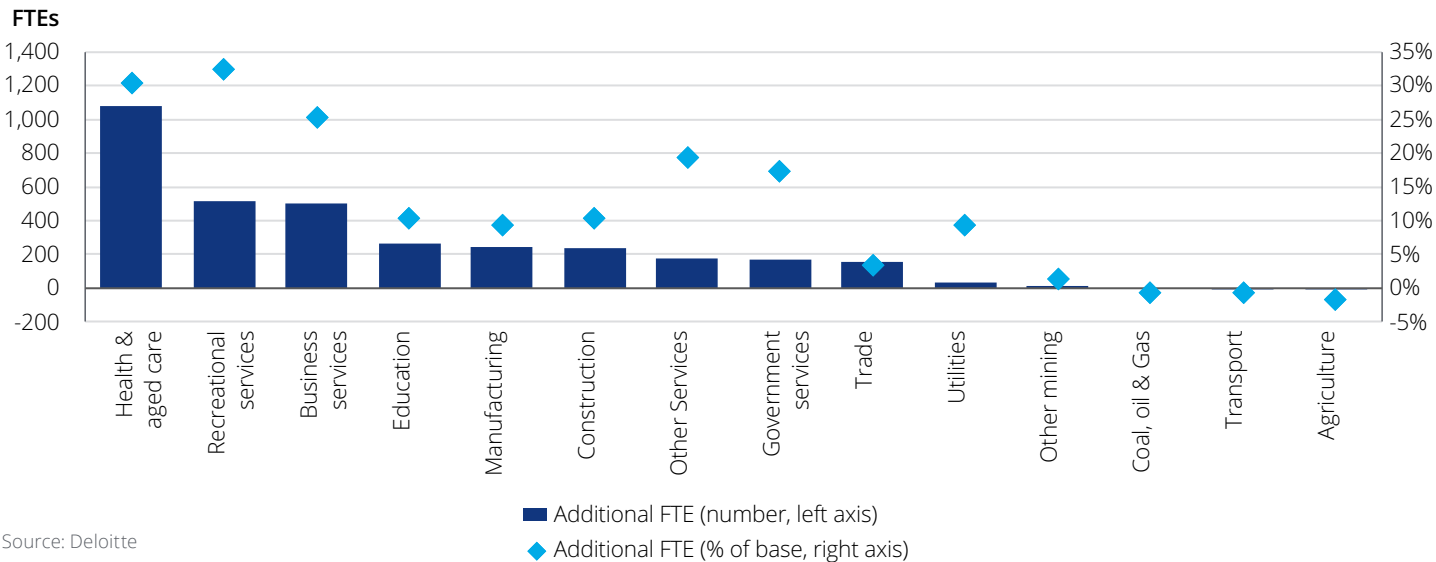
Incremental impacts to employment by industry are closely aligned with the industry-level impacts to incremental GRP. As shown in Figure 5.6, the health and aged care sectors experience the largest uplift in additional employees by 2032-33, equal to approximately 1,080 FTE (31 per cent higher than the baseline) in 2032-33. While the absolute increase in recreational services and business services employment is lower than in health, the relative uplift is substantial (+33 per cent and +26 per cent, respectively). This reflects the significant impacts of realising Opportunities 1, 2, and 8.

Figure 5.5: Mandurah FTE employment added – jobs located in Mandurah



Source: Deloitte

Figure 5.6: Incremental employment added by industry, 2032-33 (FTE) – jobs located in Mandurah



Source: Deloitte





6 Realising future opportunities



6.1 Introduction

The final step in this study involves translating the 'what' to the 'how': the eight opportunities represent high-level objectives for Mandurah's future economic development, but the realisation of each opportunity is dependent on the implementation of potentially many various policy, infrastructure, and investment activities in the future. This chapter outlines a longlist of potential actions to realise the opportunities (Figure 6.1).

Importantly, the longlist of interventions is not intended to be prescriptive. It is not an implementation plan for each opportunity, nor does it attempt to prioritise the individual interventions based on their relative impact, resource requirements, or ease of implementation.

Rather, the longlist serves as a point of reference for policymakers – including the City of Mandurah, Peel Development Commission and WA Government agencies – to provide ideas of novel and / or effective interventions that have been trialled or implemented elsewhere and aimed at addressing similar challenges in similar jurisdictions to Mandurah.

A longlist of 56 potential interventions was developed across the eight opportunities. The longlist was principally developed based on a review of case studies from elsewhere in WA, Australia, and overseas. Each intervention is broad-based but actionable.

They may require input, leadership and / or assistance from other parties including the State and Federal government, and the private and not-for-profit sectors. Interventions are predominantly drawn from Australian evidence, including from jurisdictions which formed the benchmarks for the CGE modelling discussed in chapter 5.3. Interventions also draw on global evidence where unique or outlying interventions have demonstrated success. The jurisdictions from which the case studies were sourced are summarised in Figure 6.2.

The following sections outline a summary of each longlisted intervention according to the opportunity to which it is most closely associated. Where some opportunities have potentially many interventions, these are grouped into high-level themes sharing common objectives, resources, and outcomes. For example, there are six interventions all relating to the enhancement of 'sport and recreation' assets and programs that may drive the realisation of Opportunity 1: Make Mandurah the lifestyle capital of WA.

The interventions are a mix of discrete infrastructure investment projects, policy reform, new programs or services, and regulatory change. Where applicable, and where data was available, each intervention is documented alongside the roles of government in implementing it, the role of third parties including private business and the not-for-profit sector, and expected benefits, costs, and other impacts.

Figure 6.1: Approach – Identify potential actions to realise the opportunities

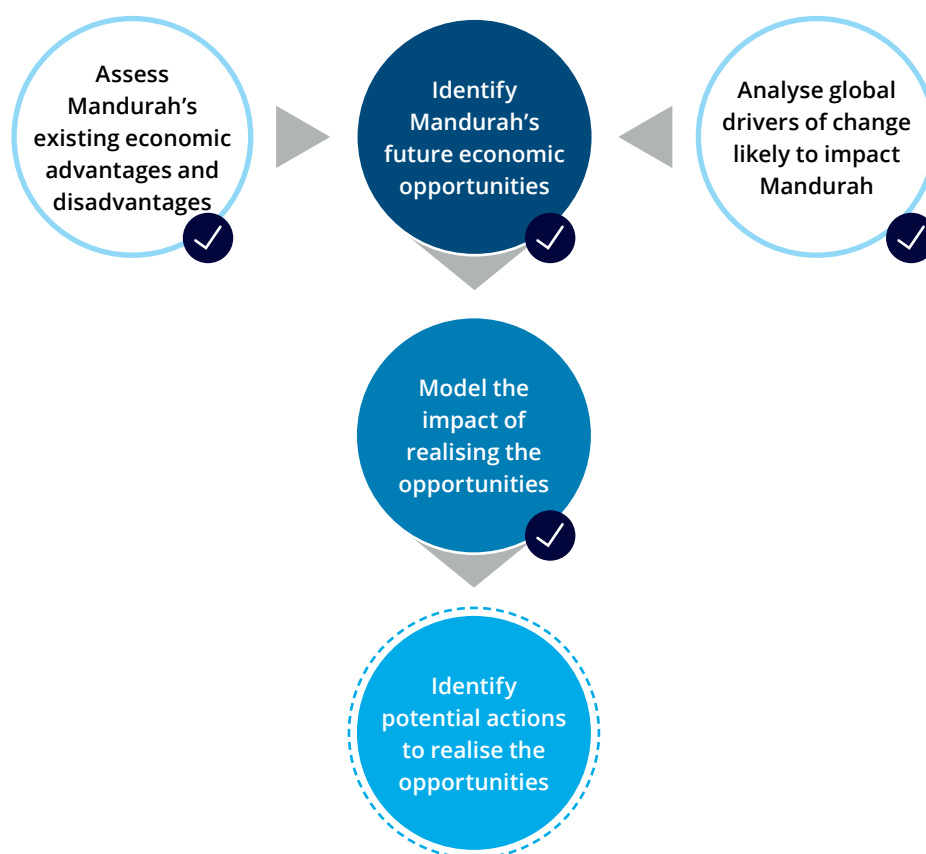
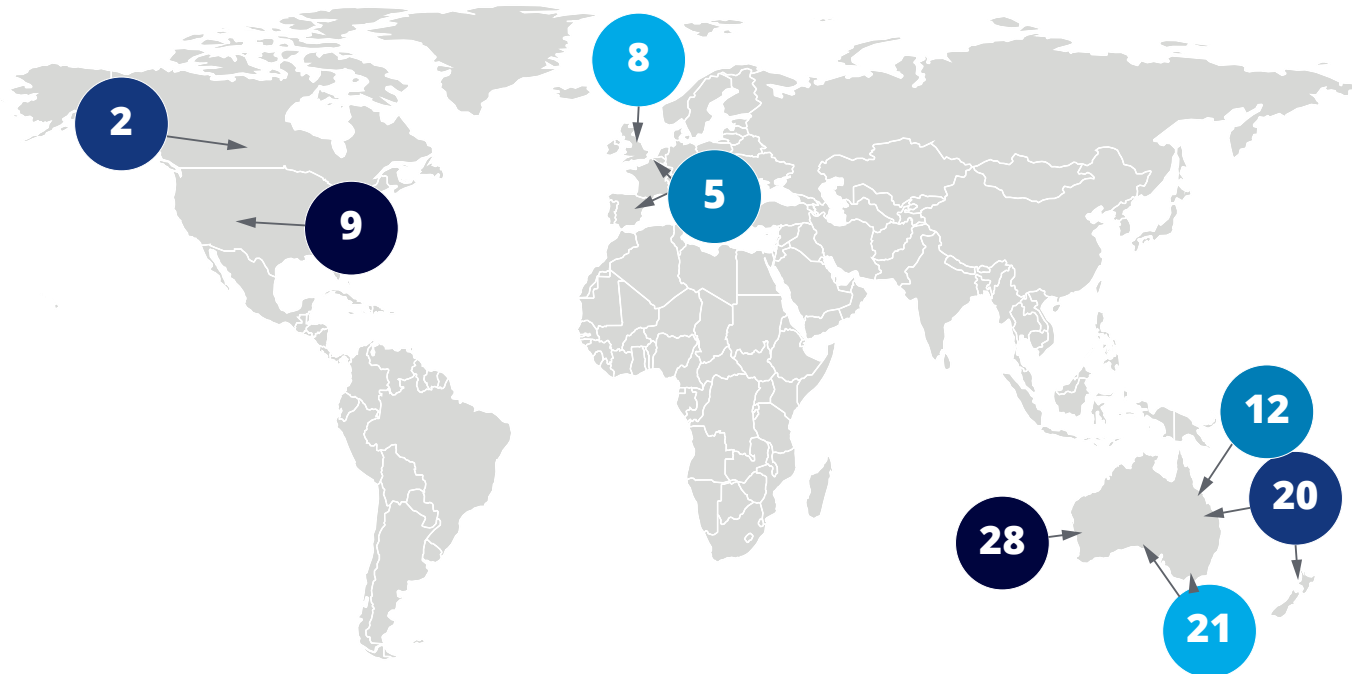


Figure 6.2: Locations from which case studies were sourced



6.2 Longlist of Study interventions

Within the longlist, the interventions are discussed according to themes that have a shared purpose related to an opportunity. The interventions are summarised in this section with references made to the original case study where appropriate. The complete descriptions including case studies, anticipated benefits and costs are detailed in Appendix C.

6.2.1 Opportunity 1: Make Mandurah the lifestyle capital of WA

The key themes and interventions for Opportunity 1 are shown in Figure 6.3, Figure 6.4, Figure 6.5 and Figure 6.6 below. Individual case studies are detailed and referenced in Appendix B. The four themes for this opportunity are:

- **Theme 1:** Enhancing natural assets
- **Theme 2:** Sport & recreation
- **Theme 3:** Entertainment & culture
- **Theme 4:** Other services

Figure 6.3: Opportunity 1, Theme 1 – Enhancing natural assets

Theme 1: Enhancing Natural Assets

Enhance the accessibility and safety of Mandurah's natural assets



Beach Development

Improve beach facilities with potential sites including Madora Bay, San Remo Beach, Watersun Beach, Silver Sands Beach (northern end) and an upgrade at Halls Head.

The Mandurah Waterfront Project was recently completed, including developments at the Western Foreshore Recreation Precinct, Eastern Foreshore South Precinct, Eastern Foreshore North Boardwalk Precinct, and redevelopment of the Smart Street Precinct. Initial proposals for concept plans received over 90% community support and the Project subsequently received \$10m and \$7m funding from the State and Federal Governments respectively. The Waterfront Project paves the way for further redevelopment throughout Mandurah's beaches.

Potential sites for beach development include Madora Bay, San Remo Beach, Watersun Beach, Silver Sands Beach (northern end) and an upgrade at Halls Head. Similar redevelopments include the Scarborough Beach Foreshore Redevelopment which renewed 1km of beachfront with climbing walls, a skate facility, pool complex, civic square and surf club building; the Busselton Foreshore Redevelopment which added picnic spaces with improved beach access, turf, hospitality venues, BBQ areas, bike paths, playgrounds, toilets and tree coverage; and the Cable Beach Foreshore Redevelopment which is planned to include centralised parking, an arbour structure, open lawns, gardens, BBQ and picnic facilities.



Board Walk & Pathway Infrastructure:

Expand boardwalk style footpaths to leverage the existing natural amenities of the beach and estuary.

For example, the Warana Coastal Pathway Construction on the Sunshine Coast is being funded over several years with support from Queensland State Government grants.



Yalgorup National Park Eco-tourism Destination Development

An existing opportunity identified by the City of Mandurah and supported by the State Government to develop eco-tourism.

The Queensland State Government is also developing eco-tourism opportunities in its National Parks through the Ecotourism Trails project, including partnering with Cassowary Coast Regional Council to build mountain-biking trails through the national park in Cardwell, North Queensland.

Figure 6.4: Opportunity 1, Theme 2 – Sport and recreation



Figure 6.5: Opportunity 1, Theme 3 – Entertainment and culture

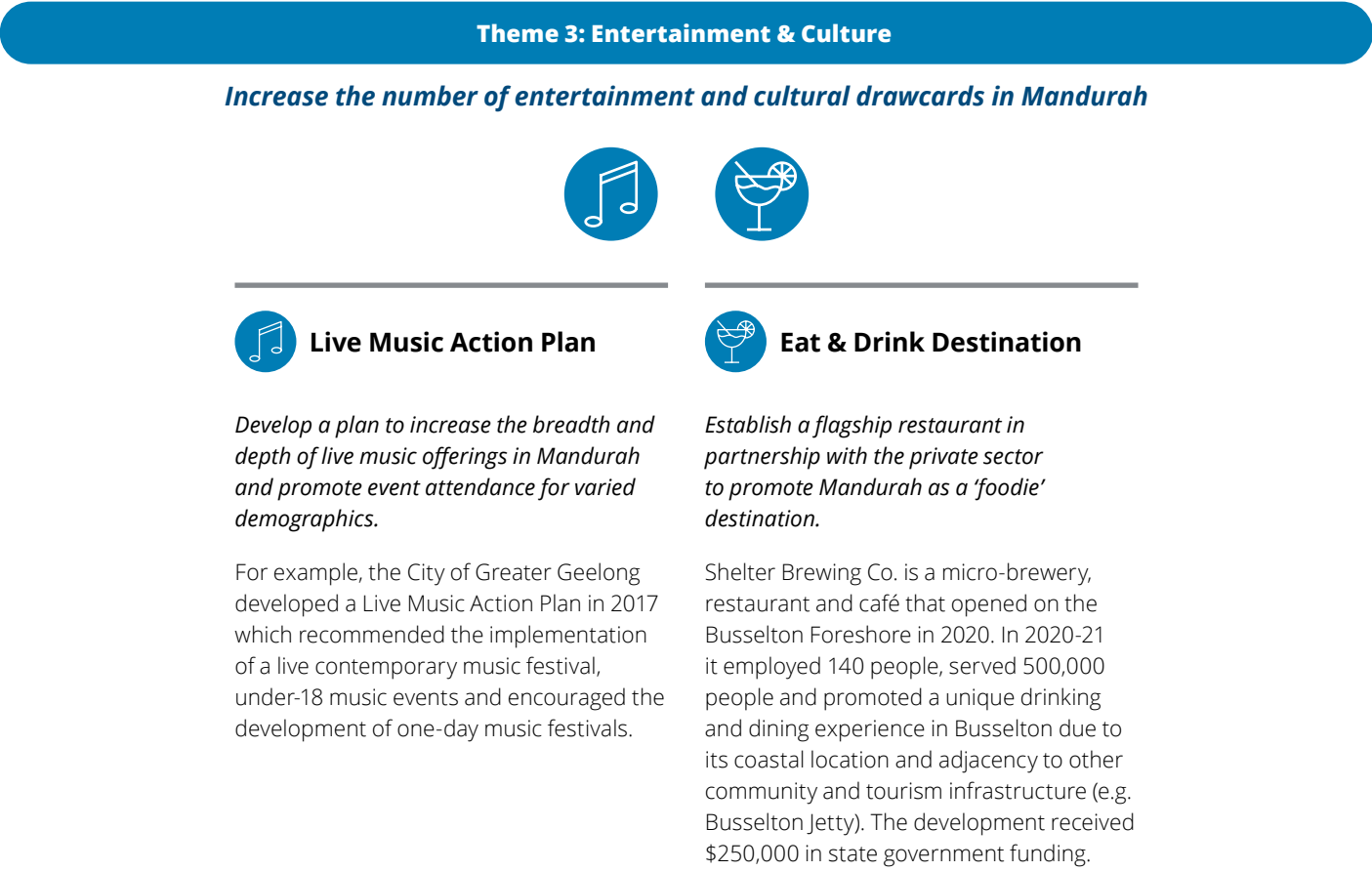


Figure 6.6: Opportunity 1, Theme 4 – Other services



6.2.2 Opportunity 2: Develop Mandurah into a world-class Hospitality Education Precinct

The key themes and interventions for Opportunity 2 are shown in Figure 6.7 below. Individual case studies are detailed and referenced in Appendix B. The key theme for this opportunity is 'Excellence in Hospitality Training'.

Figure 6.7: Opportunity 2, Theme 1 – Hospitality excellence

Theme 1: Excellence in Hospitality Training

Develop the hospitality workforce of the future and build capability for high quality hospitality service delivery in the region



World-Class Hospitality Education Precinct

Develop hospitality training capabilities by partnering with the private sector and RTOs with capacities to deliver training and education in a range of high-end and emerging hospitality skillsets.

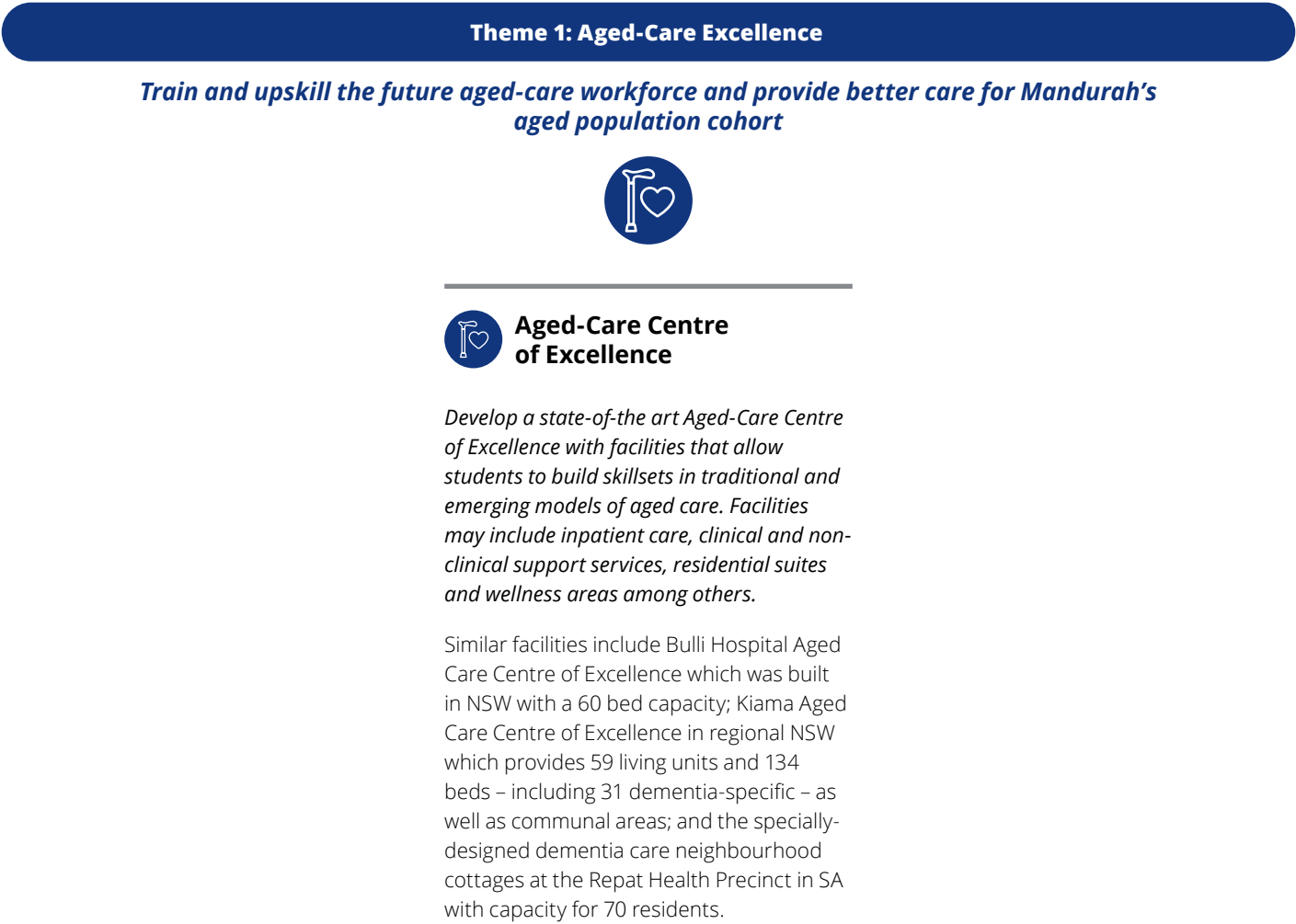
Any development should be closely integrated with, and complimentary to, existing infrastructure developments and education offerings in the region including South Metropolitan TAFE and the Western Australian Food Innovation Precinct (WAFIP) at the Peel Business Park in Nambearup. Facilities at a potential future World-Class Hospitality Education Precinct could include state-of-the art commercial kitchens, a functioning premium café/restaurant, and student accommodation, likely in partnership with a private sector stakeholder. Australian examples of similar infrastructure include the Frankston Learning and Innovation Precinct in Chisholm, Victoria; the Gordon Culinary School at Gordon TAFE in Victoria; and the Institute of Culinary Excellence (a private RTO in Brisbane) which was awarded best culinary school in Australia in 2018.

Other non-culinary offerings would also be required to build the region's brand. As an example, Switzerland is home to many of the world's most highly regarded hospital, hotel and events management institutions. Ecole hôtelière de Lausanne (EHL) offers multiple short courses, bachelors and graduate programs in hospitality, hotel and culinary and restaurant management. The Australian Centre for Event Management at University of Technology Sydney (UTS) also offers a range of professional development programs and short-courses in event management. Course offerings and structure could be leveraged and tailored to suit the requirements of the education precinct.

6.2.3 Opportunity 3: Build the capacity of the aged care workforce

The key themes and interventions for Opportunity 3 are shown in Figure 6.8 below. Individual case studies are detailed and referenced in Appendix B. The theme for this opportunity is ‘Aged-care excellence’.

Figure 6.8: Opportunity 3, Theme 1 – Aged-care excellence



6.2.4 Opportunity 4: Make Mandurah a hub for 'Blue Collar Tech' training

The key themes and interventions for Opportunity 4 are shown in Figure 6.9 and Figure 6.10 below. Individual case studies are detailed and referenced in Appendix B. The themes for this opportunity are:

- **Theme 1:** Trainee support
- **Theme 2:** Employer support

Figure 6.9: Opportunity 4, Theme 1 – Training and development

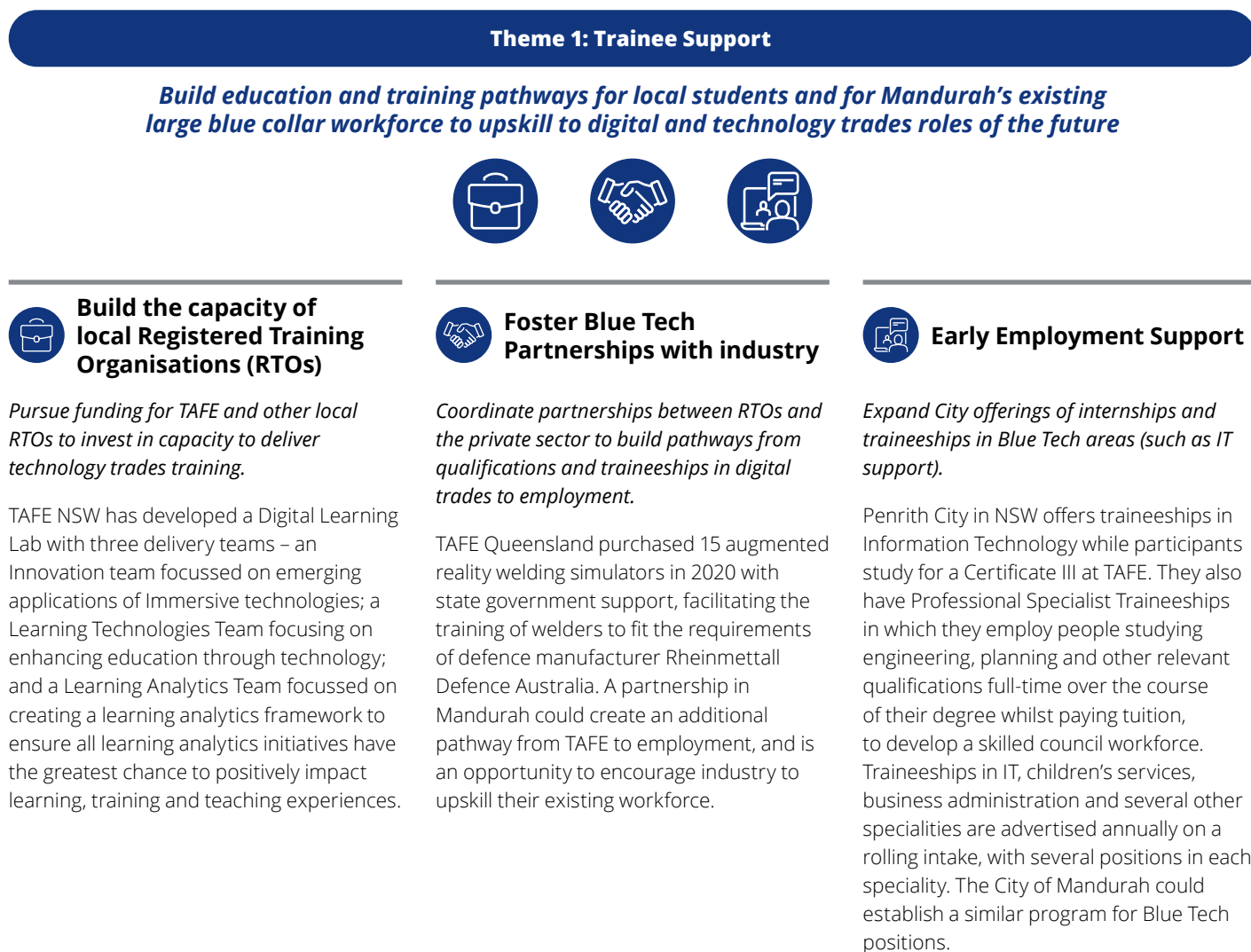
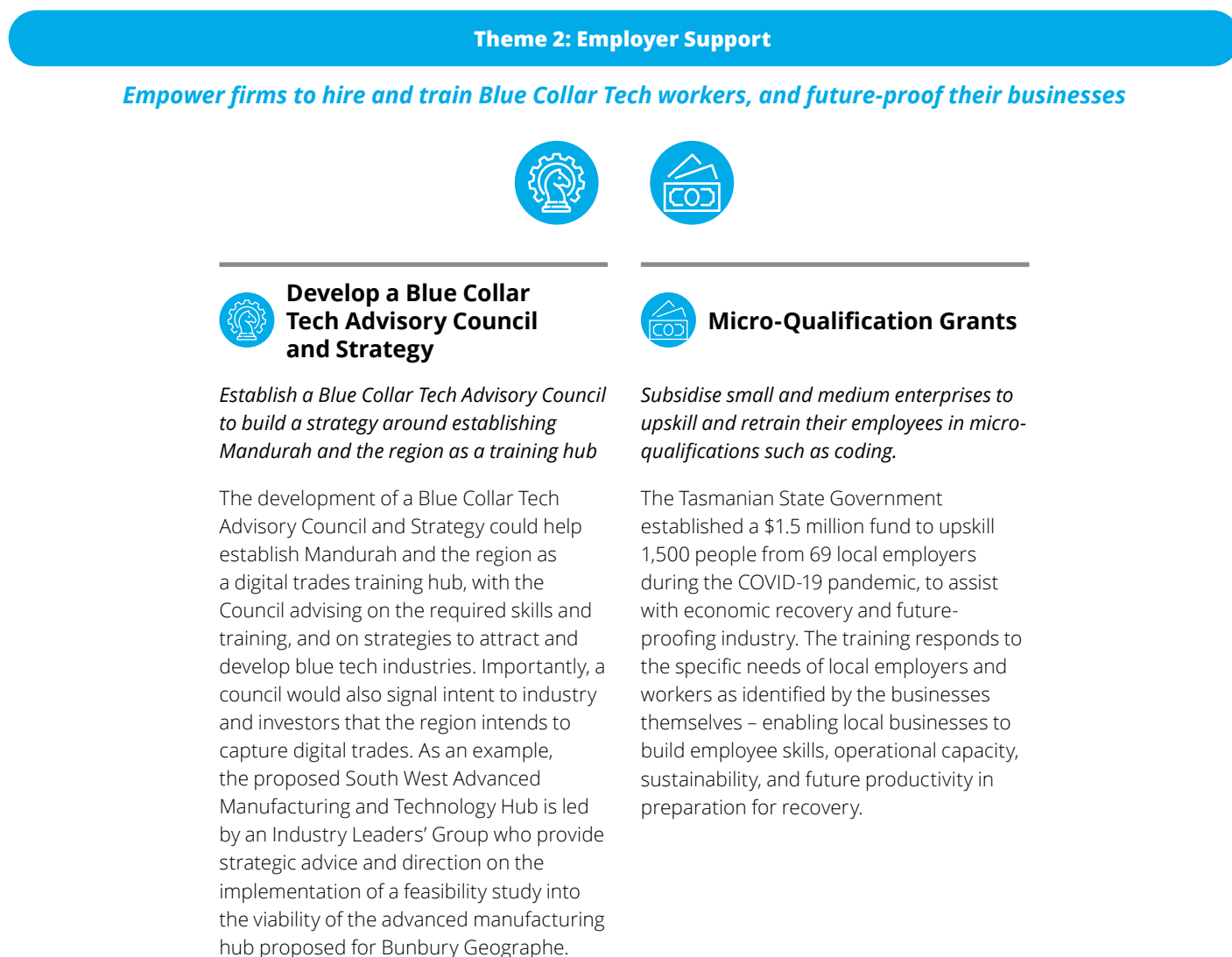


Figure 6.10: Opportunity 4, Theme 2 – Employer support



6.2.5 Opportunity 5: Innovation in healthcare delivery

The key themes and interventions for Opportunity 5 are shown in Figure 6.11 and Figure 6.13 below. Individual case studies are detailed and referenced in Appendix B. The themes for this opportunity are:

- **Theme 1:** Telehealth
- **Theme 2:** Other innovative healthcare

Figure 6.11: Opportunity 5, Theme 1 – Telehealth

Theme 1: Telehealth

Build education and training pathways for local students and for Mandurah's existing large blue collar workforce to upskill to digital and technology trades roles of the future

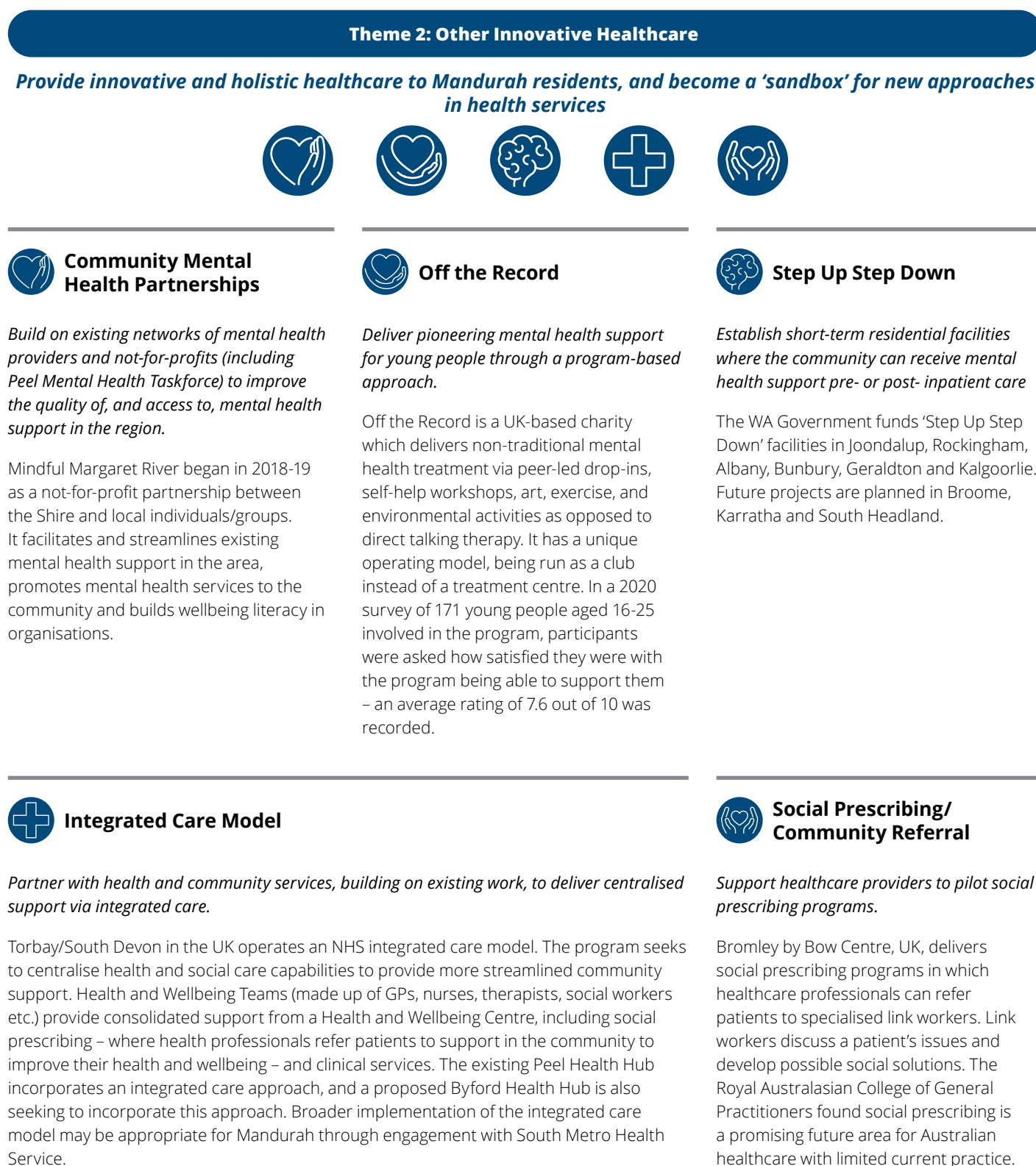


Telehealth Hub

Support the development of a Mandurah hub to deliver telehealth services to the region, including promotion of uptake, tele-triage, platform development, IT support and research.

For example, the University of Mississippi Medical Centre includes a Federal government-funded Telehealth Centre of Excellence. The Centre provides telehealth information, research, and services to the broader public. As well as improving healthcare, investment in telehealth infrastructure can also have positive spill-over benefits for innovation and training in the region. Key technology requirements include greater internet bandwidth, imaging technology or peripherals (e.g. digital stethoscopes) and access to technical staff and technology training programs. The application of this concept could be extended to using telehealth technology for the coordination of services delivered in complex areas that involve additional parties (e.g., carers), such as mental health.

Figure 6.13: Opportunity 5, Theme 2 – Other innovative healthcare



6.2.6 Opportunity 6: Innovative social interventions

Key themes and interventions for Opportunity 6 are shown in Figure 6.14, Figure 6.15 and Figure 6.16 below. Individual case studies are detailed and referenced in Appendix B. The themes for this opportunity are:

- **Theme 1:** Community development
- **Theme 2:** Employment specific
- **Theme 3:** Barrier reduction

Figure 6.14: Opportunity 6, Theme 1 – Community development





Human Services Alliance

Review existing coordination of human services groups in Mandurah and close gaps as necessary.

The City of Busselton's Community Development Officer facilitates monthly meetings of human services organisations in Vasse, Bunbury and Busselton in the Vasse Human Services Alliance. This provides opportunities to discuss funding, programs, and emerging community issues. The City of Mandurah could review and expand human services groups through coordinating with them in a focused channel of communication.



Creating Healthy Places

Develop local planning in consultation with health and community service professionals.

The UK Government established the Healthy Places program in 2015. The program implements the design ethos that place-based interventions can be designed to improve population health and strengthen community bonds, such as through group-based social activities in public places that encourage physical activity. It ensures that community health care and social and mental health considerations and services are integrated into new housing developments. Ten trial sites for building new housing developments were chosen in 2016 and supported over 3 years whilst implementing the program's design ethos. The trial was considered successful, and the key principles of 'Healthy Places' released to inform future planning developments.



Leverage the retiree population to improve community relationships

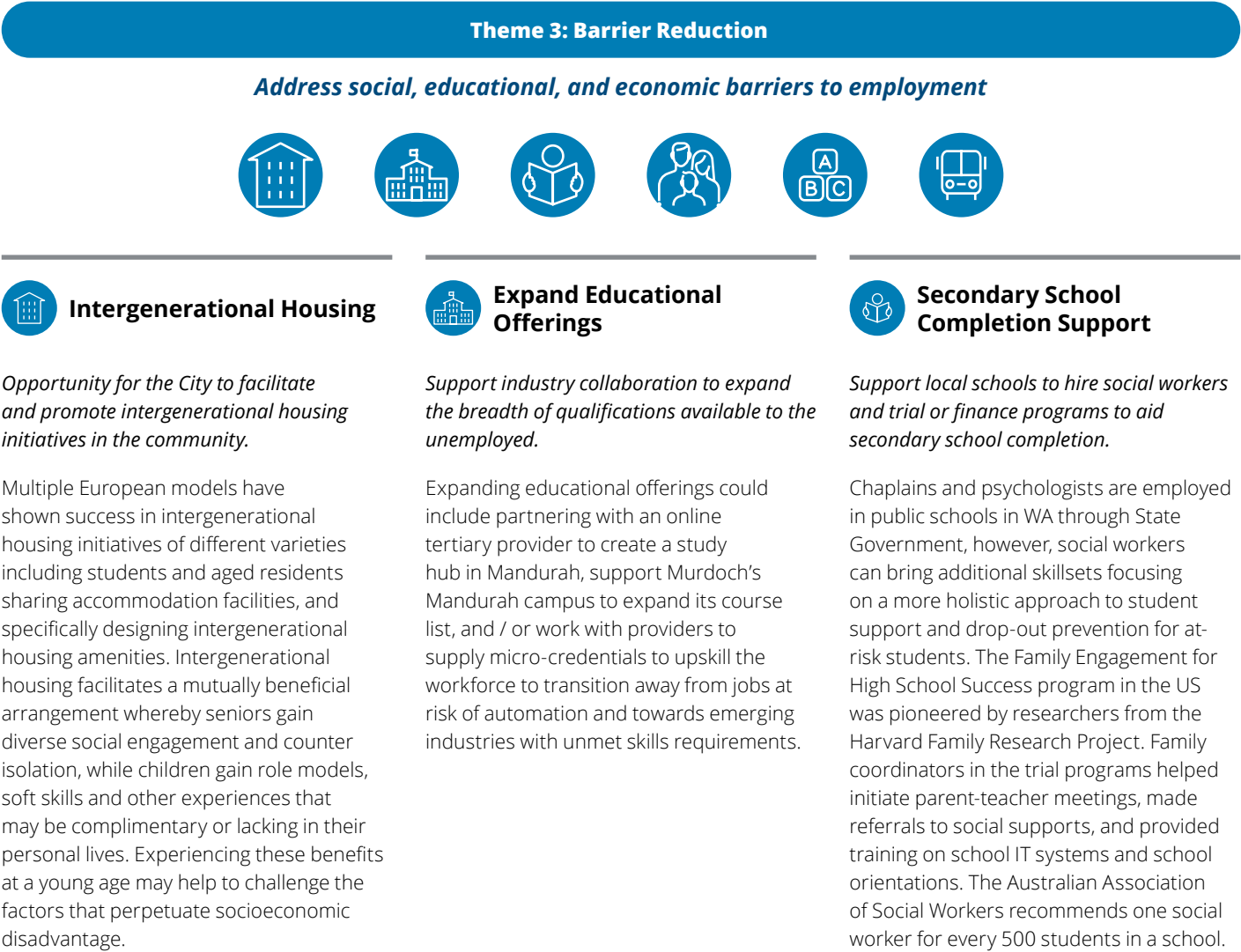
Tap into the life skills and experiences of retirees in the Peel region to mentor and support at-risk youth.

The US Dream Academy operates eight 'Dream Learning Centres' around the US. The academy aims to inspire and elevate the lives of children of incarcerated parents and vulnerable young people through high-performance relationships with caring adults. The academy runs Life Lessons' program, which connects retirees as mentors for youth. The academy asks retiree mentors to invest 1-hour per week with a child at one of its Dream Learning Centres.

Figure 6.15: Opportunity 6, Theme 2 – Employment specific



Figure 6.16: Opportunity 6, Theme 3 – Barrier reduction





Family Support Network

Facilitate the operation of the Family Support Network (FSN) model or similar programs in Mandurah.

The FSN model is a partnership between the community sector and the WA Department of Communities and is supported by the State Government, with some private sector funding. FSNs provide a common entry point to services and provide support to families by linking families into services partnerships, including family support and counselling, parenting support, homelessness services, family and domestic violence services and community support. FSNs provide earlier and targeted support to families with complex problems that are vulnerable to the child protection system, and help provide supplementary care and support beyond direct clinical services which may involve waitlists or extended periods between services without informal or formal support.

FSNs operate across the metropolitan area in four service area corridors; Canning/Armadale, Perth/Midland, Mirrabooka/Joondalup and Fremantle/Rockingham. There is an opportunity to expand the FSN to a Mandurah corridor to improve services to families with complex problems and vulnerabilities to involvement with the child protection system.



Early Intervention Education Support

Prioritise strong educational outcomes in primary and secondary school, including funding possible attendance and development interventions.

The Early Years Education Program, trialled in Victoria, identified children at-risk of poor educational outcomes and offered three years of care and education for 50 weeks a year, five hours per day. Results indicated improved social-emotional development and reduced caregiver stress.



Reducing Transport Disadvantage

Conduct a review of high-priority transport barriers to education in and around Mandurah

Depending on the nature of the high-priority problems identified, the City could explore a number of solutions that aim to improve community transport links for underserved communities, including expanding existing public transport offerings or trialling unique multi-modal programs. For example, the City of Wollongong offers community transport options for older people via bookings made at least a week in advance. The City of Sydney has also installed car share bays since 2008 and now has over 800 throughout the city. Additionally, RAC, UWA and Whoosh partnered in 2020 to deliver a multi-mode transport service trial (bikes, e-bikes and cars) via 6 mobility hubs at the Crawley campus, while TransRegional expanded its public transport offerings to Bridgetown, after an 18-month trial in 2020.

6.2.7 Opportunity 7: A hub to lead industry decarbonisation and climate resilience and adaption strategies

The key themes and interventions for Opportunity 7 are shown in Figure 6.17 below. Individual case studies are detailed and referenced in Appendix B. The themes for this opportunity are:

- **Theme 1:** Decarbonisation & climate resilience

Figure 6.17: Opportunity 7, Theme 1 – Decarbonisation and climate resilience



6.2.8 Opportunity 8: Develop a larger base of professional workers in Mandurah

The key themes and interventions for Opportunity 8 are shown in Figure 6.18 and Figure 6.19 below. Individual case studies are detailed and referenced in Appendix B. The themes for this opportunity are:

- **Theme 1:** Attract the Knowledge Sector to Mandurah
- **Theme 2:** Attract and Retain Professionals in Mandurah

Figure 6.18: Opportunity 8, Theme 1 – Attract the Knowledge Sector to Mandurah





Office Space Development

Consider the need for quality office space in existing and future city development planning.

The Mandurah City Centre Revitalisation Strategy and Foreshore Redevelopment plans, and forthcoming City Masterplan, could include plans for the development of quality office spaces to attract more business and industry to set up or relocate to Mandurah, while managing associated traffic and infrastructure impacts.



Regional Telecom Improvements

Continue to monitor opportunities related to regional telecommunications transmission capacity improvements.

Regional telecommunications transmission capacity is a high priority initiative for Infrastructure Australia. Possible avenues of improvement include upgrading existing regional networks and investing in new networks. Improving bandwidth speeds and internet connectivity in the region may help to attract and retain businesses, as well as possible jobs created from the infrastructure development phase. Advocate to State and Commonwealth Government to fund digital connectivity improvements.



Runway Program

Collaborate with a business development charity to build & upskill businesses.

In 2017-18, the City of Greater Geelong sponsored 9 successful start-up pitches in a variety of industries to participate in a 6-month Runway business development / incubation program creating 49 new jobs and \$16 million in extra economic output in the region.

Figure 6.19: Opportunity 8, Theme 2 – Attract workers

Theme 2: Attract and Retain Professionals in Mandurah

Attract and retain professional workers in Mandurah



Public Work & Expansion

Develop a hub for public sector workers and/or incentivise an agency to re-locate to Mandurah.

Multiple State and Commonwealth Government organisations, including Peel Development Commission, Department of Communities, Department of Primary Industries and Regional Development, Centrelink and Department of Local Government, Sport and Cultural Industries have offices in Peel. There is an opportunity to centralise these workers in one place as part of the City Centre Revitalisation Plan. Furthermore, a Federal agency like the CSIRO could be aided to establish an office in Mandurah, possibly as part of the Australian Waterways Centre of Excellence proposal.



Remote Working Hub

Capitalise on work from home and 'regionalisation' trends through the development of a remote working hub.

The Republic of Ireland spent approximately A\$7.8 million developing remote working hubs across Ireland during the pandemic, with features including hot desks and broadband access. Further, the Victorian Public Service has also developed five Suburban Hubs as a part of the Victorian Government's longer-term flexible working arrangements. Regional and suburban hubs provide benefits such as greater flexibility to support staff wellbeing and productivity, increased options for remote working to support work/life balance, greater internet connectivity speeds and reliability, reduced commute time to a work site, and exposure to networking and social interaction opportunities.



Childcare Accessibility

Improve childcare accessibility through council facilitation of a public or private venture, intergenerational care, or expansion of after-school care.

Intergenerational care is a new concept which Griffith University trialled in 2018 in four locations across Queensland and NSW. It involves either co-locating aged care and childcare to consolidate costs or a visiting program. Other examples include the expansion of after school care services, such as the existing Waratah All Year Care Service; and the provision of subsidies to support sole parents who work non-standard hours to pay a neighbour or friend to care for their child in a similar model to New Zealand's Flexible Childcare Assistance for single parents. Increased childcare options and accessibility in Mandurah would in turn facilitate greater employment options for parents including joining the workforce, working desired additional hours, or upskilling to higher skilled professional jobs.





6.3 Longlist of existing proposed interventions

In addition to the longlist of interventions identified in this study, an existing list of interventions proposed by other stakeholders was also compiled by the City and PDC. These interventions do not necessarily relate to the interventions process or longlist developed for this study, but have been categorised under the same opportunities and themes in recognition of potential synergies. Where possible the entity responsible for identifying these interventions is noted. Further, the project status of each intervention is designated according to the following categories, as noted by the City and PDC:

● **Proposed**
● **Planning/Feasibility/
Business case**
● **Current**

6.3.1 Opportunity 1: Make Mandurah the lifestyle capital of WA

The key themes and interventions for Opportunity 1 are shown in Table 6.1, Table 6.2, Table 6.3 and Table 6.4 below. The four themes for this opportunity are:

- **Theme 1:** Enhancing natural assets
- **Theme 2:** Sport & recreation
- **Theme 3:** Entertainment & culture
- **Theme 4:** Other services

Table 6.1: Opportunity 1, Theme 1 – Enhancing natural assets

Project Name	Project Description	Source	Project Status
Peel-Harvey Estuary Trails	Project identified by the COM and supported by State Government. Paddle launch upgrades, construction of paddle trail, construction of Island Shared Use trail of 30km, extend the Thrombolites trail and upgrade associated infrastructure.	City	●
Round The Estuary Trail	Feasibility and CBA project identified by the COM and supported by the Peel Development Commission, investigating the potential establishment of a mixed-use trail around the 80km perimeter of the Peel-Harvey Estuary.	City	●
Peel Aspiring Geopark	A project initiated by Geoparks WA and the Peel Development Commission with support from the COM to establish a Geopark in Peel, including sites within COM such as the Thrombolites – the largest microbiolite reef in the Southern Hemisphere. Long term project but will have significant economic impact when established. Geotourism initiatives along the way will support short to medium term benefits.	Geoparks WA / PDC	●
Sculptures – Tourism and Environment project	Tourism project identified by FORM and supported by State Government and the COM. Construction of 5 huge wooden sculptures in various locations. Project will have a significant economic impact during the exhibition life of the project, approximately one year. Construction and launch by Nov 2022.	FORM / COM	●
Cultural Tourism Offerings	Collaborate with Indigenous population to develop a cultural tourism program – potential to incorporate an Indigenous cultural centre into existing infrastructure such as Mandurah Performing Arts Centre or new infrastructure such as Yalgorup trails or AWCE.	PDC Sub Regional Report	●
Waterfront Redevelopment	Redevelopment of the significant public spaces within the Mandurah City Centre focused around the Eastern and Western Foreshores.	City / State & Federal Gov't	●

Table 6.2: Opportunity 1, Theme 2 – Sport & recreation


Project Name	Project Description	Source	Project Status
Develop plan to attract/develop sports franchise/license for national competition to Mandurah	Explore the potential to attract/create a nationally recognised sports team for Mandurah to raise community participation, and improve Mandurah's brand recognition nationally.	City	

Table 6.3: Opportunity 1, Theme 3 – Entertainment & culture









Project Name	Project Description	Source	Project Status
Arts & Culture Strategy	Development of a strategy to guide the growth of artistic and cultural activities (including creative industry and live music) across the City.	City	
Strong Diverse Calendar of Events	Attract and create new events that enable a strong annual calendar of diverse events to be built aimed at attracting visitors and increasing the number of overnight stays in Mandurah.	City	
Attract a high quality lifestyle proposal for Mandurah's Western Foreshore.	Undertake an expression of interest process for new opportunities on Mandurah's Western Foreshore to add to the attraction of the City Centre.	City	

Table 6.4: Opportunity 1, Theme 4 – Other services

Project Name	Project Description	Source	Project Status
Community / Social Housing Development	Undertake a City led design charette to test development models for underutilised land for social/affordable housing both in LGA ownership and Community Sector. This can be used as a basis to make sites development ready in preparation for funding Opportunities.	PDC Sub Regional Report	
Planning and design project	City of Mandurah to lead design planning activity to develop models for social/affordable housing both in LGA and Community Sector ownership. Potential for use as a basis to prioritise and make sites development ready in preparation for funding opportunities.	Draft PATM Action Plan	
Industry partnerships	Develop / facilitate partnership approach between LGAs and construction industry/local developers to deliver sustainable, affordable, intergenerational and/or universal design housing as demonstration projects/display homes.	Draft PATM Action Plan	
Housing scorecard	Develop a publicly available 'scorecard' and 'up-spec request' that can be made available to the public for use when assessing, negotiating modifications and upgrades to project homes to accommodate liveable/universal design.	Draft PATM Action Plan	
Regional Learning Hub	Support the establishment of a tertiary education Regional Learning Hub to provide local resources and pastoral care for tertiary students in Mandurah and the Peel region. Build on current ECU hub and leveraging off existing co-working spaces. Medium to long term initiative.	PDC Sub Regional Report	

Project Name	Project Description	Source	Project Status
City Centre Master Plan	Undertake community engagement and detailed planning for the development of a new Master Plan and enhanced vision for the Mandurah City Centre.	City	●
City Centre Parking Plan	Undertake community engagement and detailed planning for the development of a Parking Plan for the inner City Centre precinct.	City	●
Integrated Transport Plan	Develop an integrated plan that outlines the future vision for all modes of transport across the City.	City	●
New Tourist Resort Offering	Feasibility study into the options available for the development of a new tourist (Caravan / Chalet accommodation) in Mandurah	Visit Mandurah / PDC	●
Student Accommodation Offering	Development of cost effective student accommodation to support new education and training industry opportunities (ie. hospitality, aged care, blue tech, health care) for Mandurah.	City	●
Backpackers Holiday Offering	Development of low cost, short stay holiday accommodation to support the hospitality and other seasonal industry opportunities for Mandurah.	City	●
Extension of Retail Trading Hours	Community engagement and Cost Benefit Analysis into a permanent extension of the retail trading hours for Mandurah.	City	●
Transform Mandurah Campaign	Development of a marketing campaign aimed specifically at private investment attraction and residential / lifestyle living opportunities.	City	●
Mandurah Business Fibre Zone	Development of a plan for fast speed digital internet access across the Mandurah City Centre to facilitate a business connectivity.	City	●

6.3.2 Opportunity 2: Develop Mandurah into a world-class Hospitality Education Precinct

Key themes and interventions for Opportunity 2 are shown in Table 6.5 below. The key theme for this opportunity is 'Excellence in Hospitality Training'.


Table 6.5: Opportunity 2, Theme 1 – Excellence in hospitality training

Project Name	Project Description	Source	Project Status
Immigration Attraction Program	Develop a program aimed at attracting new immigrants to live and train in Mandurah to support and grow the hospitality training hub. (Note – this initiative could also other industry opportunities including aged care, blue tech and health services).	City	●
Economic Development Grants	Review of the City of Mandurah Restart Economic Development Grants program with a focus on excellence in hospitality delivery. Note Criteria to also support Blue Tech training, Aged Care Training and Innovation Health Care opportunities.	City	●
Inflight Catering & Airline Hospitality	Seek opportunities for partnerships between In-flight Catering and Airline Hospitality services and Mandurah's hospitality training hub.	City	●

6.3.3 Opportunity 3: Build the capacity of the aged-care workforce

The key themes and interventions for Opportunity 3 are shown in Table 6.6 below. The theme for this opportunity is 'Aged-care excellence'

Table 6.6: Opportunity 3, Theme 1 – Aged care excellence

Project Name	Project Description	Source	Project Status
Increase access to home care or support in local community	<p>Provision of quality and regular care, either in home or at a facility. Greater access to home care support for ageing population in isolated LGAs to facilitate community remaining in the LGA and connected to family, friends, and support networks as identified by the Aged Care Royal Commission (Pillar 1: Home Care)</p> <p>From July 2023, the new Commonwealth Support at Home Program will replace:</p> <ul style="list-style-type: none"> • Commonwealth Home Support Programme (CHSP) • Home Care Packages (HCP) Program • Short-Term Restorative Care (STRC) Programme • Residential respite programs. 	Draft PATM Action Plan	

6.3.4 Opportunity 5: Innovation in healthcare delivery

The key themes and interventions for Opportunity 5 are shown in Table 6.7 and Table 6.8 below. The themes for this opportunity are:

- **Theme 1:** Telehealth
- **Theme 2:** Other innovative healthcare

Table 6.7: Opportunity 5, Theme 1 – Telehealth



Project Name	Project Description	Source	Project Status
Mental health care coordination centre	South Metro Health Service have over a number of years suggested the need for the trial of a mental health care coordination centre (call centre) where patients, GP's, carers etc can make initial contact and then have appropriate care, appointments and follow-up coordinated.	PHWT	

Table 6.8: Opportunity 5, Theme 2 – Other innovative healthcare

Project Name	Project Description	Source	Project Status
Peel Health Campus and Health Precinct Expansion	The \$152 million expansion planned for the Peel Health Campus, including the transfer from private to public management, presents a range of opportunities with a number of new private proposals (i.e. day hospitals and care services) being considered.	City / State Gov't	

6.3.5 Opportunity 6: Innovative social interventions

Key themes and interventions for Opportunity 6 are shown in Table 6.9, Table 6.10, Table 6.11 and Table 6.12 below. The themes for this opportunity are:

- **Theme 1:** Community development
- **Theme 2:** Employment specific
- **Theme 3:** Barrier reduction
- **Theme 4:** Pride in place – infrastructure led intervention (*additional to Deloitte themes*)

Table 6.9: Opportunity 6, Theme 1 – Community development


Project Name	Project Description	Source	Project Status
Education and development interventions	Early interventions and support for pre-kindergarten and primary school aged residents to raise early childhood developmental milestones and literacy and numeracy capability to allow students to successfully meet the breadth and depth standard, the achievement standard and the literacy and numeracy standards throughout senior secondary schooling and achieve WACE. Example programs suitable for investment include The University of Western Australia and Edith Cowan's Children's University Program which already partners with some of Mandurah's schools.	PDC Sub Regional Report PoP Roadmap	

Table 6.10: Opportunity 6, Theme 2 – Barrier reduction






Project Name	Project Description	Source	Project Status
Murdoch University Scholarships	City funded university study scholarships for Murdoch university designed to support the disadvantaged manage the financial costs of tertiary education.	City	

Table 6.11: Opportunity 6, Theme 3 – Health & wellbeing

Project Name	Project Description	Source	Project Status
Respite care for young people 12-15	Develop a model to provide of respite care for young people who need a break from their family or are unable to access foster care.	Draft PATM Action Plan	
Common Ground Housing Solution	Development of a dedicated transition to housing facility (\$28 million allocated) including wrap around services to reduce homelessness and improve community health and wellbeing.	State Gov't	
Community Outreach Service	Implementation of an assertive (intervention) outreach program aimed at supporting people that are homeless and/or with mental health related issues to improve public safety and community health and wellbeing.	State Gov't	
Primary prevention programs	Increased provision of primary prevention programs (through existing provider) and initiatives that: <ul style="list-style-type: none"> • Address inequality and other conditions that reinforce violence; • Promote health, respectful relationships; and • Create partnerships with groups and organisations from the community and private sector to strengthen awareness of and responses to family and domestic violence. 	Draft PATM Action Plan	

Project Name	Project Description	Source	Project Status
Build capacity of the local Aboriginal Community Controlled Organisation	Increase resources allocated to local ACCO to enable expansion of culturally safe and appropriate health and community services for Binjareb, Wilman, and Whadjuk People of the Noongar Nation.	Draft PATM Action Plan	●
Children's mental health services	Wrap around services for children based on an early intervention model. Programs to include social engagement, safe places for children and activities after school (and holidays). Therapeutic services to target traumatic family, domestic and sexual violence, depression, and anxiety. Services include family support (whole of family).	Draft PATM Action Plan	●
Community and mental health service for 65+:	Expanded provision of dedicated mental health services to support ageing population (65+) who have unique mental health challenges and needs. Focus on enabling access through aged-care friendly approaches (i.e., in-place models, face to face delivery, connection) and early intervention.	Draft PATM Action Plan	●
Peel Health Hub 2.0	Expansion of physical footprint and Advance Access Care Model services linked to Peel Health Hub to include: <ul style="list-style-type: none"> Expanded Family, Domestic and Sexual Violence services (including forensic services for sexual assault); Eating disorder clinic; Expanded adult (men's, women's and seniors) mental health services; Women's health services; and Clinical Care Coordination. 	PHWT & Draft PATM Action Plan	●
Parenting passport program	Parenting program for first time parents to learn about stress, anger, behaviour, expectations, management strategies, support. Program to improve outcomes for children's development.	Draft PATM Action Plan	●
Expand Aboriginal health & community services	Increase resources for Aboriginal and Torres Strait Islander Health Service provision. Expand culturally appropriate and safe community, health, and healing services to Aboriginal people living in the Region. Services to provide primary health care, space for visiting specialists, and allied health services.	Draft PATM Action Plan	●

Table 6.12: Opportunity 6, Theme 4 – Pride in place – infrastructure led intervention

Project Name	Project Description	Source	Project Status
Public Revitalisation Program	Development of a community led revitalisation program targeting the upgrade and redevelopment of public spaces (including parks and reserves, street scapes etc) within areas of greatest disadvantage to stimulate private investment and create pride in place and community inspiration.	City	●

6.3.6 Opportunity 7: A hub to lead industry decarbonisation and climate resilience and adaption strategies

The key themes and interventions for Opportunity 7 are shown in Table 6.13 below. The themes for this opportunity are:

- **Theme 1:** Decarbonisation & climate resilience

Table 6.13: Opportunity 7, Theme 1 – Decarbonisation & climate resilience

Project Name	Project Description	Source	Project Status
Australian Waterways Centre of Excellence	An innovation hub celebrating the Peel-Harvey Estuary, Murray River and coastal environments by providing a centralised anchor point to include water science research, offices, eco-tourism attractions and industry specific activity. Example – https://hobsonsabaywetlandscentre.org.au/our-centre	TM S1	●
Peel & Perth Hydrogen Cluster	Active participation in the group to identify industry opportunities for Mandurah.	City	●
Woodside Hydrogen Refuelling Station	Partnership with Woodside for the development of a hydrogen refuelling station pilot project.	City	●
North Mandurah Waste water Reuse Scheme	Development of a plan to use wastewater from the Gordon Rd Waste Water treatment facility to irrigate public spaces in Mandurah's growing northern corridor.	City	●
Leeuwin Offshore Wind Farm	Investigate partnership opportunities for job creation in the research, planning, construction, monitoring and maintenance of the proposed Leeuwin Offshore Wind Farm proposal.	City	●
Solar Installation Incentive Program	Incentive based scheme aimed at owners of public and private rental properties to encourage domestic solar power installation aimed at reducing carbon emissions and the costs of living for renters.	City	●
Various	Other existing initiatives: <ul style="list-style-type: none"> • WALGA Energy Sustainability & Renewables Project • CHRMAP • Bush Fire Mitigation Planning & Delivery • Greening Mandurah Strategy (including Urban Tree Canopy Strategy) • City of Mandurah Decarbonisation Strategy • Solar Plan • LED Lighting Retrofit Program • Cities Power Partnership 	City	●

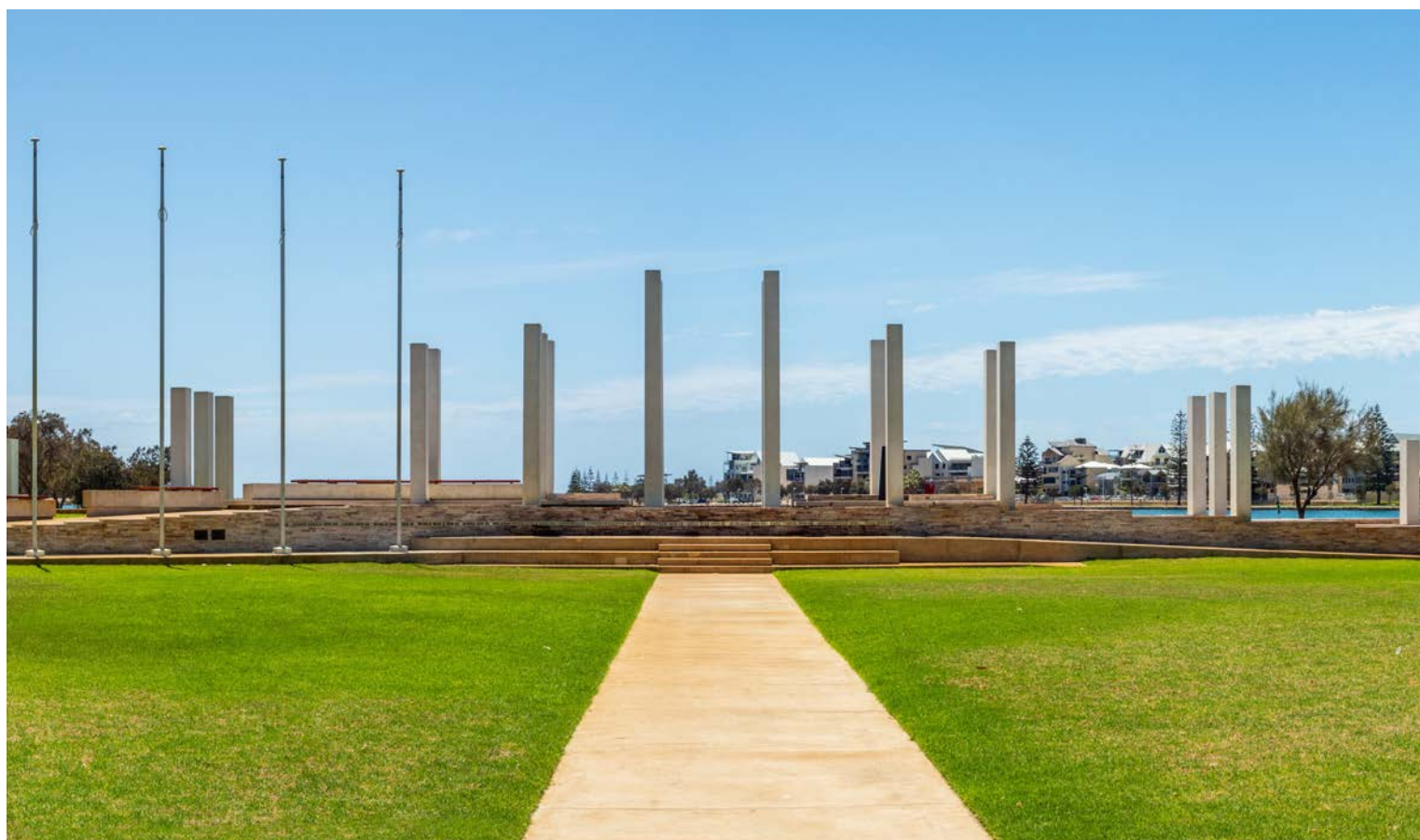
6.3.7 Opportunity 8: Develop a larger base of professional workers in Mandurah

The key themes and interventions for Opportunity 8 are shown in Table 6.14 below. The themes for this opportunity are:

- **Theme 1:** Attract and retain professionals in Mandurah

Table 6.14: Opportunity 8, Theme 2 – Attract and retain professionals in Mandurah

Project Name	Project Description	Source	Project Status
Creation of Mandurah's Civic Heart	Developing a hub of activity in the centre of Mandurah, including office space, a government agency and relocated City offices, bringing life to the heart of Mandurah.	TM S1	●
Targeted business capacity building	Programs that build the capacity of small business owners in targeted sectors to manage and grow their enterprise and people. Potential target sectors include: Aboriginal enterprises; Health and community services; Manufacturing enterprises; Eco-tourism enterprises; Agriculture SME's; and Food production SMEs	PoP Roadmap	●
Targeted skills development and attraction	Partner with industry to identify urgent workforce needs and skills shortages in the region to identify urgent workforce needs and skills shortages constraining strategic industry growth and engage to develop targeted initiatives to upskill, reskill, job-match and attract talent.	PoP Roadmap	●
Creation of Mandurah's Civic Heart	Undertake a masterplanning activity of the Mandurah City centre to identify potential approaches to raise productivity and raise investment	City	●
City of Mandurah Property Strategy	The development of a plan that aims to maximise the City's land based assets within the City Centre in line with the objectives and recommendations of the City Centre Master Plan.	City	●





7 Next steps



This report represents the first phase in the process of realising future economic opportunities for Mandurah. Figure 7.1 outlines the 'logic map' of steps undertaken in this report, and next steps that the City of Mandurah and PDC could take to progress Transform Mandurah to implementation.

The steps undertaken in this report are summarised under the Define strategic program phase in Figure 7.1, with reference to relevant sections within the report where each step is explored in detail. Under the next Review and consultation phase, it is anticipated that a high-level prioritisation process will be undertaken to identify which of the problems and opportunities explored in this report should be addressed in the short term. Subsequently, a more detailed process to identify the most viable intervention(s) to address each problem or opportunity will follow in the Evaluate and progress individual projects phase. The level of detail and precise stages within this process can be tailored to each project based on the scale of the impact that the project is expected to have on the Mandurah and broader WA economy, the level of funding required, and the partners and stakeholders expected to be involved.

7.1 Review and consultation

The longlist of interventions presented in this report contains a significant number of potential actions that vary widely in their cost, anticipated economic impact or benefit, complexity of implementation, and stakeholders required to be involved and/or partners required to deliver. The longlist has also been organised by which of the eight future economic opportunities each intervention is most likely to aid in realising.

It is recommended that the next phase of Transform Mandurah involve a high-level review of the longlist, including in the context of other projects either proposed, in planning, or being delivered (see Chapter 6.3). This process should involve a high-level prioritisation of the interventions to ensure that the resources available to the City of Mandurah, PDC, and other agencies and partners are directed toward the implementation of priority actions.

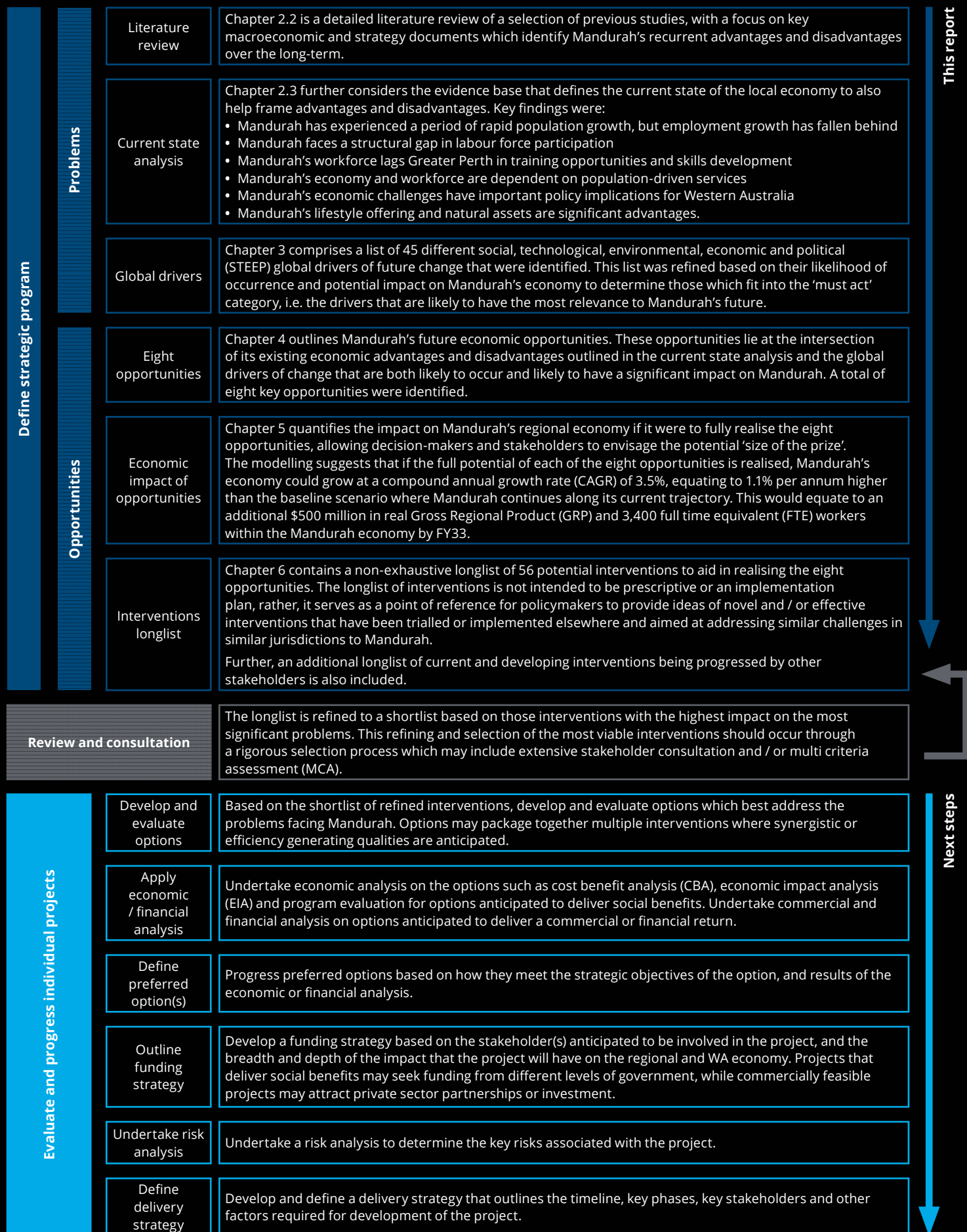
7.2 Individual projects

The Evaluate and progress individual projects phase shifts the focus from strategic-level consideration of future economic opportunities to focus on specific actions and projects. It is anticipated that this process would follow the typical progression of a project business case as follows:

- **Develop and evaluate options:** This step should result in a refined shortlist of options for each specific intervention. For example, in the case of the Aged care centre of excellence intervention (see Chapter 6.2.3), this step might shortlist the options to deliver the centre of excellence based on varying location, scale of employment and training capacity, and delivery model. An objective evaluation method (such as the use of multi-criteria analysis) should be used at this step to refine the shortlist.
- **Apply economic/financial analysis:** The shortlist of options should be evaluated using an objective economic assessment approach (such as cost-benefit analysis).
- **Define preferred option(s):** Based on the results of the economic analysis, one or more preferred options for delivery should be identified. Further analysis may be required to differentiate options.
- **Outline funding strategy:** Based on the results of the financial analysis, identify the funding requirement to deliver the preferred option and set out the funding strategy.
- **Undertake risk analysis:** Rigorous analysis should be undertaken to identify project risks, set up controls and mitigation strategies, and evaluate key residual risks after mitigation is taken into account. The scope of the preferred option may need to be revisited subject to the magnitude of any material residual risks.
- **Define delivery strategy:** Dependent on the complexity and scale of the project, this step may involve analysis of market capacity to deliver the project, constructability, packaging, and procurement analysis to define the preferred delivery model.



Figure vi: Outline of steps undertaken in this report and anticipated next steps





Endnotes



1. City of Mandurah, *Mandurah Matters: Phase 2 Restart Mandurah*, see: <https://www.mandurahmatters.com.au/restartmandurah>.
2. City of Mandurah (2020) *Mandurah Matters: 2020-2040 Strategic Community Plan*.
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5. Syme Marmion & Co (2020) *Emerging Industries for the Peel Region: An Initial Overview*.
6. City of Mandurah (2020) *Mandurah Matters: 2020-2040 Strategic Community Plan*.
7. Syme Marmion & Co (2008) *'Southern City' Strategy & Action Plan*.
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12. Peel Development Commission (2016) *Peel Tourism Economic Development Infrastructure Strategy 2016-20*.
13. Peel Development Commission (2019) *Peel Tourism Investment Framework*.
14. Commonwealth of Australia, Australian Early Development Census 2018.
15. Australian Council for Educational Research (released 2021) *Trends in International Mathematics and Science Study (TIMSS) 2019*
16. Wang, M-T., & Degol, J in Developmental Review (2013) Motivational pathways to STEM career choices: *Using expectancy-value perspective to understand individual and gender differences in STEM fields*, 33(4), p 304-340
17. Australian Council for Educational Research (released 2021) *Trends in International Mathematics and Science Study (TIMSS) 2019*
18. Google maps, accessed 28th March 2022
19. Rent assistance is generally available to rent-payers who also receive other Commonwealth payments, including but not limited to the age pension, carer payment, disability support pension, ABSTUDY allowance, youth allowance, and JobSeeker. For more information see Department of Social Services: <https://www.dss.gov.au/housing-support/programmes-services/commonwealth-rent-assistance>.
20. Deloitte calculations based on UK Home Office, *The economic and social costs of crime, July 2018. Excludes costs relating to drug offences and excludes costs of imprisonment post sentencing*.
21. Australia Institute of Health and Welfare (2019) *National Drug Strategy Household Survey*.
22. Deloitte calculations based on an average of 13.2 unintentional drug-related deaths per annum over the period and using a value of statistical life (VSL) of \$5.1 million in 2021 dollars, see Department of the Prime Minister and Cabinet (2021) *Best practice regulation guidance note: Value of statistical life*.
23. Australian Institute of Health and Welfare (2021), *Mental health services in Australia: Medicare-subsidised mental health-specific services*, see: <https://www.aihw.gov.au/reports/mental-health-services/mental-health-services-in-australia/report-content/medicare-subsidised-mental-health-specific-services>
24. Australian Institute of Health and Welfare (2022) *Housing Affordability*, see: [Housing affordability – Australian Institute of Health and Welfare \(aihw.gov.au\)](https://www.aihw.gov.au/housing-affordability)
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Appendix A

Drivers of future change










A.1. Drivers of future change

A.1.1. Social drivers

Social drivers of change represent the forces capable of shifting society from its current state based on demographic, cultural, and other factors. They will manifest in changing attitudes and expectations, including how people interact with one another, what employees expect of their employers and vice-versa, and the different types of products in demand from a shifting consumer base.

A summary of the 16 social drivers identified is provided in Table A.1

Table A.1: Social drivers

Driver	Summary
 Remote working	Remote working has accelerated during COVID-19, but this trend predated the onset of the pandemic, having been a key part of the 'future of work' conversation for several years. Initially widespread due to the impact of lockdowns, remote working is likely to persist well into the future as jurisdictions grapple with new variants and spikes in cases with policy measures aimed at 'living with the virus' rather than stamping out cases altogether. Remote working will likely have significant implications for productivity, city planning, and the labour market.
 Competition for talent	Fierce competition for talent will grow as the mismatch in skills available and capabilities needed in the workforce widens given our technology and people-focused future. Tomorrow's workers are increasingly likely to need to use their heads rather than their hands, a trend that has been playing out for some time. Digital literacy is core to this, as is on-the-job training to enable workers to remain up to date with skills and capabilities more frequently than may have been the case in the past.
 Concentration of wealth	As global wealth inequities grow, the divide between the rich and poor is widening, coupled with stagnating middle-class incomes. COVID-19 has compounded these issues, as jurisdictions' ability to access vaccine supply and treat patients is closely linked to income and the distribution of wealth. In the medium term, stagnation of incomes and the limited ability to take on debt will slow growth in consumption in middle-income economies.
 Crowd sourcing	As consumers are increasingly interconnected through social media, and with the rise of digitalisation, collective intelligence gathering from a wide variety of individuals is growing. This is likely to have a wide range of impacts, from shortening the timeline of product and policy development, to disrupting employers' traditional workforce planning models as discrete tasks or processes can be externally crowdsourced.
 Empowered women	Women are making significant inroads into top leadership positions across the public and private sectors, while female participation in the workforce is growing overall. Female empowerment is emerging as an important driver of growth in developing countries. Increasing participation by women in the workforce will add to economic growth, as well as having significant impacts on policy and enabling infrastructure – a prime example being, the growing need for affordable and available childcare and greater workplace flexibility.
 Knowledge worker	Intellectual capital is rising in value compared to physical labour and financial capital, placing a premium on the creation and application of knowledge to gain competitive advantage. The importance of knowledge-based work has increased as natural resources are depleted and dependence on the primary sector of the economy declines. Unlike other factors of production, intellectual capital does not suffer from scarcity, and its relationship with productivity is likely to continue to experience rapid change as technology disrupts how knowledge workers participate in the economy.
 Mass migration	Immigration, demographic change and increases in the number of refugees will have important effects on cultural assimilation, integration, and economic development. Regulatory and social structures, as well as politics, are challenged by mass immigration, and the potential responses from countries likely to be net recipients vary widely. For many advanced economies, acceptance of greater inbound migration is one of few options to address birth rates insufficient to replenish natural population growth in the long term.

Driver	Summary
 Next-gen workforce	<p>The retirement of baby boomers and growth in the Gen-Z workforce requires organisations to create new incentives to attract, develop and retain a competitive and flexible labour pool. The 'older' cohort of Gen-Z are already of working-age, being today's entry-level employees and graduates. As the concentration of Gen-Z in the workforce increases, so too will the significance of their different expectations of employers, perspectives on career development, and how to succeed in the workplace.</p>
 Sharing economy	<p>The collaborative nature of the online environment has led to the sharing economy, in which technology is leveraged to unlock idle capacity and provide new access to products. The impact of the sharing economy is in the unlocking of value in underutilised assets across the economy (including Labour). The rise of the sharing economy will also see a transfer of market share and wealth from traditional suppliers of goods based on ownership models, to participants in the sharing economy.</p>
 Urbanisation	<p>Cities are growing more quickly than regional and rural areas and are simultaneously witnessing an increasing concentration of wealth. This will have impacts on both the scale and distribution of demand for goods and services, as incomes and quality of life tend to be greater in urban centres than rural and regional areas. Prioritisation of policy and infrastructure will also shift, as will the availability of labour and capital in regional areas to cater to industries like agriculture.</p>
 Ageing population	<p>The global population will continue to age over the next 20 years, as Baby Boomers and Gen-Xs grow older, while advances in healthcare will see average life expectancy extend further. As more consumers age, they will further disrupt product and service delivery from travel and entertainment to retail, broader built environment, cities/suburbs, and other industries. Meeting the future scale and quality of services to the aged will require businesses to innovate, as well as being of greater significance to policymakers.</p>
 COVID-19 restrictions	<p>The introduction of physical distancing in the community as a means of mitigating impacts of the COVID-19 pandemic resulted in significant adverse impacts for high-touch industries like hospitality, recreation, culture and the arts. It also forced sectors like education and health to adapt to provide services using new delivery models. The continued use of restrictions even as most jurisdictions adopt a 'living with COVID' policy approach suggests their impacts will continue into the long term.</p>
 COVID-19 vaccines	<p>COVID-19 vaccines are likely to remain important features of health systems into the medium term, as jurisdictions attempt to avoid spikes in serious illness by pitting boosters against variants of the virus. But vaccines have implications beyond the health system directly. Government vaccination rules and mandates need to be navigated by consumers and businesses in most industries, and many employers will be required to factor vaccination status into their workforce planning.</p>
 Empowered minorities	<p>The barriers faced by minorities are being increasingly recognised by the broader community. Awareness is a critical step in achieving change, with significant economic benefits as a result. Social inclusion across cultural groups can play a critical role in lifting living standards through increased productivity in the workplace, improved employment and health outcomes, reducing the cost of social services, and by more evenly sharing the benefits of economic growth across society.</p>
 Demand for customisation	<p>Control is shifting away from the manufacturer, giving the consumer a greater say in what, when, and how they receive their goods and services. The challenge facing suppliers is to develop machine systems that enable manufacturers to produce small, individualised orders at scale in a cost-effective way. The race to meet these changing needs will require industries to be agile and innovative to capitalise on significant growth opportunities.</p>
 Resumption of travel	<p>As travel gradually resumes with the opening-up of more and more jurisdictions, the composition of travel demand is likely to be impacted by COVID-19 in the long term. Businesses will now face the choice of resuming travel for in-person activities while having undertaken significant investment in remote working technology. These impacts are likely to be more muted for leisure travel and visitation of friends and family, especially between jurisdictions separated by uncompromising travel restrictions for long periods of time.</p>

A.1.2. Technological drivers

The invention and adoption of new technology can alter the way that goods and services are designed, produced, and delivered across industries and jurisdictions. Shifts in technology have significant implications for business' costs, need, and availability of inputs, including labour. Changes in communication, transport, energy, innovation, and automation can occur quickly, with first movers often enjoying an advantage over late adopters.

A summary of the 11 technological drivers identified is provided in Table A.2

Table A.2: Technological drivers

Driver	Summary
 Extended reality	Use of augmented and virtual reality is spreading from consumer to commercial applications, with significant implications for sectors from retail to healthcare, design, and education. Potential impacts range from retailers incorporating extended reality to provide an enhanced purchase experience (e.g., visualising and customising products before purchase) to replacing testing and training that might normally occur in high-pressure, high-stakes environments, such as in medicine.
 Automation	With accelerating technological advancement, it's clear we are on the cusp of a new age of machine learning, machine doing, and AI. Automation is becoming a standard practice, therefore jurisdictions and organisation that resist change on the ground of protecting jobs will be left behind and become less competitive. Over the longer term, economic gains will be very large, however there are short term dislocation costs, notably in labour markets.
 5G/enhanced connectivity	The fastest 5G networks are expected to be at least ten times faster than 4G, while 6G technology could eventually be 100 times faster than 5G, opening significant new possibilities. Remote 5G and subsequent technologies are also likely to offer a comparable or greater level of service to fixed-line broadband systems, an important consideration for policymakers and utilities companies that manage this infrastructure.
 'As a service' models	'As a Service' business models are growing as a strategic and operational blueprint that may soon begin upending operational models in sectors beyond technology. As these models become more prevalent, consumers will shift their expectations of product and service providers (either private or public) from experience at the point of transaction to lifecycle experience.
 Internet of things	The Internet of Things (IoT) connects the digital and physical worlds by collecting, measuring, and analysing data to predict and automate processes. The IoT ecosystem of connected electronic devices that can be accessed remotely continues to grow, with significant implications for industry and community. Adoption has been accelerated by lower-cost computing power and the ubiquity of wireless networks enabling almost any device to be connected to the IoT.
 Social media	Social media has become a dominant platform for communication, leading to new forms of rapid connectivity and interaction across the global landscape. Social media has revolutionised the way people communicate, allowing for instantaneous and global communication, easy access to diverse sources of information, and opportunity to contribute and participate in these communications.
 Digitisation of healthcare	Digitisation of healthcare is revolutionising the healthcare industry, enabling lower cost of service, better diagnostics, and greater choice in treatment. This includes advanced genomics, digital manufacturing, use of nanotechnology and the widespread development of genetically modified products. The adoption of telehealth as an alternative to the conventional delivery model for primary healthcare has been greatly accelerated by the COVID-19 pandemic.
 Additive manufacturing	Additive manufacturing is growing in use, disrupting traditional strategic drivers of value in the sector: from low cost and scale, to ingenuity in design and flexibility in production. Disruption in conventional supply chains – accelerated by COVID-19 – has seen the relocation of production activity, manufactures seeking new sources of supply, and shifting customer demands. These pressures are making additive manufacturing practices more prominent.

Driver	Summary
 Cyber disruption	As information and data flows rise significantly in an increasingly online world, the risk of cyber disruption also rises, putting trillions of dollars of value at risk in future. An increase in sophisticated state-sponsored cyber-attacks has implications for strategic and national security, as well as adverse impacts on business. Consumer perceptions of a failure to respond to cyber risk can also compromise trust in businesses and institutions.
 Quantum technologies	Quantum technology offers the opportunity to create industries and revolutionise existing industries, enabled by recent advancements in capabilities to isolate, control, and sense individual quantum particles. Capturing the technology will require significant investment in research and skills, with potential disruptive applications in medicine, defence, national security, natural resources, and the financial services sectors.
 Artificial intelligence	New technologies are focused on augmenting the processing capabilities of machines for human-like intelligence, with applications in future stretching beyond just enhancing efficiency. Non-human systems will perform a greater number of tasks than at present and will improve the productivity of those tasks. As AI adoption grows, so too will the global competition for human talent with the technical expertise and capability necessary to design, implement, and maintain AI.





A.1.3. Economic drivers

Economic drivers influence the cost and availability of inputs to production, the ability and incentives for consumers and businesses to spend, and the macroeconomic settings that determine policy responses – for example, the fiscal policy to mitigate impacts of the COVID-19 pandemic or monetary policy used to curtail rising inflation.

A summary of the eight economic drivers identified is provided in Table A.3

Table A.3: Economic drivers

Driver	Summary
 Evolving supply chains	COVID-19 and US-China trade tensions have created a renewed focus on global supply chains, with the nature of supply relationships and the location of supply likely to shift in future. Both events exposed that little is known by companies or governments about the location or practices of the supply tiers below 'tier 1'. Future supply relationships will be characterised by greater transparency and data flows, and policymakers will come under increased pressure to consider whether certain products – especially products of strategic significance – will be manufactured locally.
 Globalisation 4.0	While globalisation has boosted world economic growth, created higher levels of economic development, and reduced poverty over the past 20 years, the onset of COVID-19 has resulted in the largest and fastest decline in international flows in modern history. However, significant structural change to global economic interactions was underway before the pandemic, with value chains being reshaped as emerging markets establish themselves and demand drivers shift from goods and merchandise to services and data.
 Growing middle class	The global middle class is predicted to number around 7-8 billion by 2040, with significant changes in the economic, social, and political compact globally. The middle class drives household consumption within the global economy and demand more in the way of services and adequate infrastructure provision from government. The new middle class will reside predominantly in Asia.
 Resource price variability	The availability of resource commodities has been core to the growth and development of the global economy over the past century. The finite nature of these resources and the time, cost, and complexity of extracting, transporting, and refining them into end products have meant that markets for resource commodities have typically been characterised by demand and supply imbalance, and subsequent price volatility. The pandemic and geopolitical tensions have added to volatility, causing unexpected shifts in the prices of futures and commodities, affecting investment decisions.





Driver	Summary
 Monetisation of data	The rise of technology has seen exponential growth in data flows worldwide. Data availability is transforming businesses and have become a valuable component of the value chain. The monetisation of data to obtain a quantifiable economic benefit has grown in scale and become more widespread across multiple industries, including responding to data by making measurable business improvements and inform decision-making.
 Return of the consumer	Governments took a substantially greater role in global economic growth during the early part of the COVID-19 pandemic, as consumer and business confidence collapsed. More recently, low interest rates, cash transfers from government, and a bounce-back in confidence have seen a resurgence in consumption with implications for higher inflation occurring sooner than anticipated. The distribution of consumption has also shifted, with demand for services falling away due to COVID-19 restrictions in favour of goods.
 Acceleration of productivity	The COVID-19 pandemic greatly accelerated the adoption of remote working, digital communications, information-sharing, and other technology and practices that boost productivity, including in industries such as health and education where service delivery models had largely gone unchanged over preceding decades.
 Stakeholder capitalism	The last two decades has seen a widespread decline in trust for 'business as usual' both in private enterprise and in politics. Motivated by shareholder and employee concern, most large businesses are shifting toward more environmentally and socially responsible practices, which yield both short- and long-term benefits. Participation by a wider group of more informed, more energised, and more vocal stakeholders is likely to continue to grow.

A.1.4. Environmental drivers

Environmental drivers concern ecological and environmental factors like weather, climate, and climate change, including evolving community perceptions and policy relating to each of these – such as growing demands by shareholders to see large companies previously dependent on fossil fuels decarbonise their production activities.

A summary of the four environmental drivers identified is provided in Table A.4.

Table A.4: Environmental drivers







Driver	Summary
 Resource scarcity	As the global population grows, demand is increasing for natural resources while pressure to conserve them is growing. Markets can have limited ability to manage natural resources resulting in greater burden being placed on government intervention through regulation and other interventions. This will have implications for poverty, inequality, demographics, and public health.
 Environmental awareness	Yesterday's 'green agenda' is today's way of life. Environmental awareness has significantly increased through the use of social media, digital access to information and real time information on events – notwithstanding the tangible effects and experience of climate change today. Consumers, governments, and investors are more environmentally aware, and demand sustainable products, services, and socially responsible business practices and policy decisions.
 Climate change	As climate change continues, natural disasters and abnormal weather patterns will increasingly have unprecedented effects on all aspects of our economy and everyday lives. There is strong scientific, community and political pressure for the development of low-carbon economies, the transition to which will affect business and government significantly. Today, customers expect green standards to be developed by governments and met by businesses, while employees need to be comfortable that their employer demonstrates strong social and ethical values on climate issues.
 Renewable energy	Energy markets are undergoing rapid change amidst climate action and technological advancement. This change is creating significant transformative investment opportunities. Companies are facing growing pressure from shareholders to reduce their carbon footprint and/or become carbon neutral, while governments face pressure to decarbonise electricity infrastructure and incorporate renewable energy considerations into decisions such as environmental approvals for major projects.

A.1.5. Political drivers

Political drivers relate to the role of governments in economic growth and development, as well as changing community perceptions of government and how this influences economic activity by consumers and business. This category of driver also concerns how governments in different jurisdictions interact with one another.

A summary of the six political drivers identified is provided in Table A.5.

Table A.5: Political drivers

Driver	Summary
 COVID-19 fiscal legacy	The global policy response to the COVID-19 pandemic saw the most significant deployment of government spending since World War II, supported by an extraordinary increase in public debt at record-low interest rates. Political debates around balanced budgets and debt reduction temporarily subsided, but these are likely to return as the pandemic progresses. Adoption of austerity measures could result in a similar period of economic malaise to the post-GFC period, and governments will seek to balance the need for ongoing fiscal support to tackle future variants and outbreaks.
 Geopolitical change	Heightened geopolitical risk and related change has become the new normal, with uncertainty surrounding policy, international relations, and political leadership now a driving force behind economic and social volatility, investment decision-making and consumer sentiment. This volatility is underpinned by a shift in global economic drivers and actors. The transition will not be immediate nor smooth or certain. Fragmentation and the emergence of multiple poles of power are expected.
 Regulatory landscape	Regulation provides the rules of engagement across most economic and social activities. A sound regulatory landscape is fundamental to economic prosperity, social cohesion, and development. As such, a regulatory framework needs to encourage longer term investment, planning through certainty, flexibility, and fairness. Existing regulatory systems are being stretched and challenged by digital transformation and wider adoption of technology, requiring increasingly complex and responsive regulation.
 Role of government	The GFC and COVID-19 have seen governments take on a far bigger role in the economy, irrespective of pre-crisis expectations for smaller government. Massive fiscal interventions – encompassing everything from wage subsidies, to guaranteeing supply of medical products, to imposing vaccination rules around different types of businesses and venues – have become the norm since the onset of the pandemic. It remains uncertain whether the role of government in the economy will shrink beyond the COVID-19 pandemic, and whether the enlarged role will be used to effect long-term reform in addition to short-term mitigation measures.
 Trust and transparency	Strong institutions empower economies by ensuring a stable operating environment, smoother transmission mechanisms, less costly and less risky economic interactions, a credible set of property rights, and respect for the rule of law. For decades such institutions were widely viewed as the main feature differentiating advanced economies from developing countries. More recently, a growing trust deficit within society for private and public institutions may threaten growth – and this paradigm may grow more complex amid technological advancements.
 Social unrest	Global civil unrest has doubled over the last decade, with economic and social inequality often at the core of conflicts. Large and prolonged periods of social unrest can have adverse effect on the economy through the uncertainty it creates – planned investment can be deferred or cancelled, supply chains can be severely disrupted through interference in transportation, and city lockdowns and property damage have direct costs for business. In some instances, positive impacts may occur in the longer term if civil unrest leads to outcomes like policy reform, democratisation, or improvements in civil rights.



Appendix B

CGE modelling



B.1. CGE modelling with DAE-RGEM

CGE modelling provides the most reliable and respected basis of determining the net impact of changes affecting the economy. These changes may be external shocks, like a slowdown in global demand for a given commodity or service; they may be policy changes, like the introduction of a carbon tax; or they may be a new project or investment, like a road or sporting stadium.

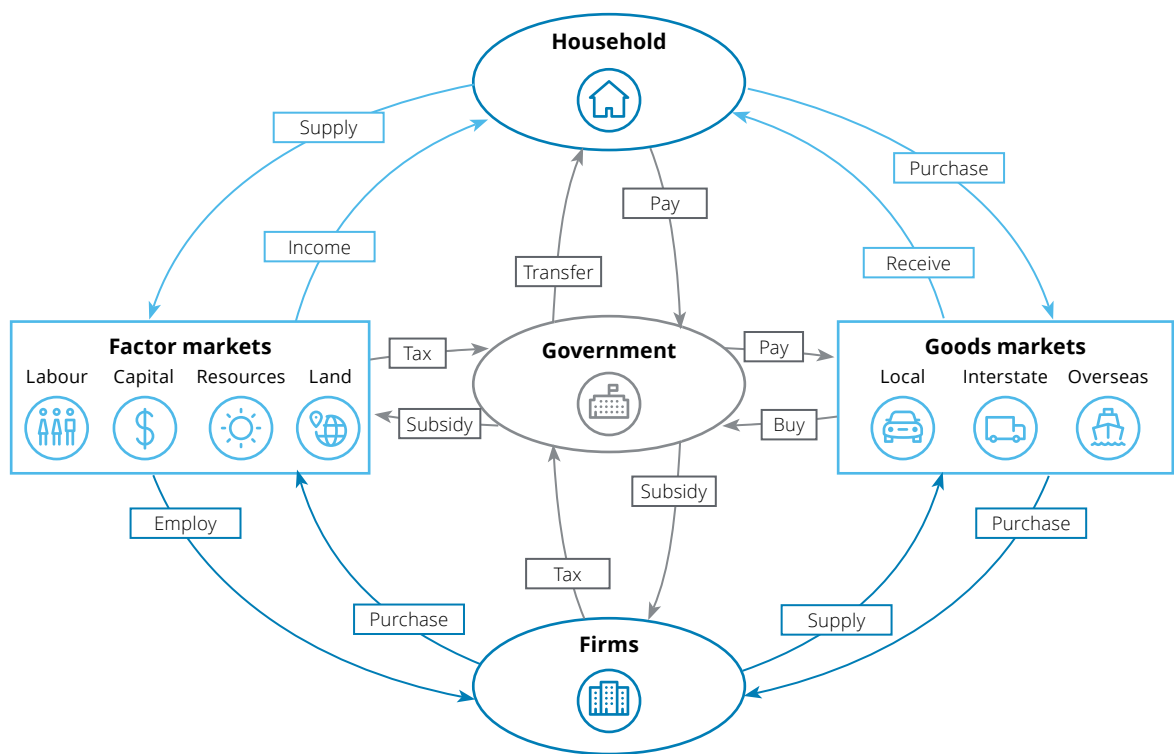
It is a framework that supports bespoke scenario analysis in a single, robust, integrated economic environment, enabling an assessment of the net impact on key macroeconomic indicators such as GDP and employment, and key sectoral measures like industry output. CGE modelling is the preferred framework for gauging the impacts of large, multi-year projects throughout the economy, and is widely recognised by all levels of government in Australia. But like all modelling, there is a right and a wrong way to do CGE analysis. Deloitte Access Economics uses approaches to CGE modelling that have been honed through years of experience, and in collaboration with government economic agencies. We bring a trusted and proven approach to this complex area of modelling.

Our in-house CGE model, DAE-RGEM, is unrivalled in both its capability and in the breadth of its applicability to policies, projects and wider scenario analysis. DAE-RGEM is one of the only models in the world that can model the impact of a scenario on individual Australian regions (such as individual cities or local government areas), linked to each other, and to other individual countries (e.g., China) in the global trading system.

DAE-RGEM encompasses all economic activity – including production, consumption, employment, taxes and trade – and can run scenarios through time involving multiple regions, industries and commodities. It is a model that can be customised for specific purposes, whether that be an unorthodox industry definition, a unique regional perspective or multi-faceted policy or project evaluation.

Figure B.1 gives a stylised representation of DAE-RGEM, specifically a system of interconnected markets with appropriate specifications of demand, supply and the market clearing conditions determine the equilibrium prices and quantity produced, consumed, and traded.

Figure B.1: Stylised representation of DAE-RGEM



Source: Deloitte Access Economics

The model rests on the following key assumptions:

- All markets are competitive, and all agents are price takers
- All markets clear, regardless of the size of the shock, within the year.
- It takes one year to build the capital stock from investment and investors take future prices to be the same as present ones as they cannot see the future perfectly
- Supply of land and skills are exogenous. In the business as usual case, supply of natural resource adjusts to keep its price unchanged; productivity of land adjusts to keep the land rental constant at the base year level.
- All factors sluggishly move across sectors. Land moves within agricultural sectors; natural resource is specific to the resource using sector. Labour and capital move imperfectly across sectors in response to the differences in factor returns. Inter-sectoral factor movement is controlled by overall return maximizing behaviour subject to a Constant-Elasticity-of-Transformation (CET) function. By raising the size of the elasticity of transformation to a large number we can mimic the perfect mobility of a factor across sectors and by setting the number close to zero we can make the factor sector specific. This formulation allows the model to acknowledge the sector specificity of part of the capital stock used by each sector and also the sector specific skills acquired by labour while remaining in the industry for a long time. Any movement of such labour to another sector will mean a reduction in the efficiency of labour as a part of the skills embodied will not be used in the new industry of employment.

DAE-RGEM is based on a substantial body of accepted microeconomic theory. Key features of the model are:

- The model contains a 'regional household' that receives all income from factor ownerships (labour, capital, land and natural resources), tax revenues and net income from foreign asset holdings. In other words, the regional household receives the gross national income (GNI) as its income.
- The regional household allocates its income across private consumption, government consumption and savings so as to maximise a Cobb-Douglas utility function. This optimisation process determines national savings, private and government consumption expenditure levels.

- Given the budget levels, household demand for a source-generic composite goods are determined by minimising a CDE (Constant Differences of Elasticities) expenditure function. For most regions, households can source consumption goods only from domestic and foreign sources. In the Australian regions, however, households can also source goods from interstate. In all cases, the choice of sources of each commodity is determined by minimising the cost using a CRESH (Constant Ratios of Elasticities Substitution, Homothetic) utility function defined over the sources of the commodity (using the Armington assumption).
- Government demand for source-generic composite goods, and goods from different sources (domestic, imported and interstate), is determined by maximising utility via Cobb-Douglas utility functions in two stages.
- All savings generated in each region are used to purchase bonds from the global market whose price movements reflect movements in the price of creating capital across all regions.
- Financial investments across the world follow higher rates of return with some allowance for country specific risk differences, captured by the differences in rates of return in the base year data. A conceptual global financial market (or a global bank) facilitates the sale of the bond and finance investments in all countries/regions. The global saving-investment market is cleared by a flexible interest rate.
- Once aggregate investment level is determined in each region, the demand for the capital good is met by a dedicated regional capital goods sector that constructs capital goods by combining intermediate inputs in fixed proportions, and minimises costs by choosing between domestic, imported and interstate sources for these intermediate inputs subject to a CRESH aggregation function.

Producers supply goods by combining aggregate intermediate inputs and primary factors in fixed proportions (the Leontief assumption). Source-generic composite intermediate inputs are also combined in fixed proportions (or with a very small elasticity of substitution under a CES function), whereas individual primary factors are chosen to minimise the total primary factor input costs subject to a CES (production) aggregating function.

B.2. Assumptions

B.2.1. Comparison jurisdictions used for benchmarking

The list of comparison jurisdictions used for benchmarking are shown in Table B.1.

Table B.1: Comparison jurisdictions used for benchmarking

SA3	SA4	State
Wollongong	Illawarra	NSW
Geelong	Geelong	VIC
Newcastle	Newcastle and Lake Macquarie	NSW
Mornington Peninsula	Mornington Peninsula	VIC
Maroochy	Sunshine Coast	QLD
Gosford	Central Coast	NSW
LaTrobe Valley	LaTrobe - Gippsland	VIC

Source: Deloitte based on desktop research

B.2.2. Industries comprising the CGE model database

The list of industries comprising the CGE model database are shown in Table B.2.

Table B.2: Industries comprising the CGE model database

Industry name	Industry description
Agriculture	Industries relating to the cultivation of grains, vegetables, dairy, livestock, and forestry products
Coal	Mining and agglomeration of hard coal, lignite and peat
Oil & Gas	Extraction, manufacture and distribution of petroleum and natural gas, service activities incidental to oil and gas extraction
Other mining	Mining of metal ores, other mining and quarrying
Food processing	Processing and production of meat, dairy, vegetable oils, processed grains and other food products
Manufacturing	Light and heavy manufacturing of value added goods
Trade	Wholesale and retail trade, repair of motor vehicles and motorcycles
Road and rail Transport	Land transport and transport via pipelines, water and air transport, warehousing, and support activities
Utilities	Electricity, steam and air conditioning supply, sewerage, waste management and remediation activities
Construction	Construction of houses, factories, offices, roads, and other buildings
Education	Education
Health and aged care	Human health and social work, aged care
Recreation	Recreational, cultural, sporting, accommodation, food, and other service activities
Government services	Public administration and defence
Business services	Financial intermediation, real estate activities, other business services
Other services	Information and communication services

Source: Deloitte



Appendix C

Interventions case studies



This appendix provides supporting information for the individual interventions described under each opportunity in Chapter 6. For each opportunity, this appendix outlines further detail for case studies used to inform the interventions, and documents anticipated benefits and costs of each action, based on the case studies and where data and other information was publicly available to do so.

Opportunity 1: Make Mandurah the lifestyle capital of Western Australia

Action	Description	Case study	Anticipated benefits	Anticipated costs
Beach Development	Improve beach facilities with potential sites including Madora Bay, San Remo Beach, Watersun Beach, Silver Sands Beach (northern end) and an upgrade at Halls Head.	<p>Case Study 1: The Mandurah Waterfront project was recently completed with over 90% community support for concept plans and \$10m and \$7m funding from the State and Federal Governments respectively⁴⁶.</p> <p>Case Study 2: The Scarborough Beach Foreshore redevelopment renewed 1km of beachfront with climbing walls, skate facility, playground, pool complex, civic square and surf club building.⁴⁷</p> <p>Case Study 3: The Busselton foreshore redevelopment is a 10 year development which has added family friendly picnic spaces with easy beach access, turf coverage, hospitality venues, BBQ areas, bike paths, shade sales, playgrounds, toilets, tree coverage etc.⁴⁸</p> <p>Case study 4: The Broome Shire is in the process of developing the Cable Beach Foreshore to include centralised parking, an harbour structure, open lawns, trees, gardens, BBQ and picnic facilities etc.⁴⁹</p>	<ul style="list-style-type: none"> • Potential to create more vibrant and appealing foreshore areas. • Improves Mandurah's reputation as a lifestyle destination. • Ground lease revenues from hospitality venues on Busselton foreshore are used directly for Jetty and foreshore upkeep. • Employment opportunities in development and upkeep. 	<ul style="list-style-type: none"> • The Scarborough Foreshore redevelopment was an \$100 million State Government Project. • The Cable Beach redevelopment received \$6 million in federal funding through the Building Better Regions Fund.
Board Walk & Pathway Infrastructure	Expand boardwalk style footpaths that are closer to the beach	Case Study 1: The Warana Coastal Pathway Construction on the Sunshine Coast is being funded over several years with support from Queensland Government grants. ⁵⁰	<ul style="list-style-type: none"> • May improve liveability (particularly in northern suburbs like Madora Bay which are developing quickly). 	<ul style="list-style-type: none"> • Environmental impact. • Investment may be required. • Possibility of state/federal support.
Peel Yalgorup Wetlands Development	An existing option to utilise the Yalgorup National Park for ecotourism.	Case Study 1: The Queensland State Government is developing eco-tourism opportunities in its National Parks through the Ecotourism Trails project. For example, they are partnering with Cassowary Coast Regional Council to build mountain-biking trails in Cardwell, North Queensland. ⁵¹	<ul style="list-style-type: none"> • May develop a tourist attraction in the region. • Could encourage consistent maintenance of the National Park. • Possible revenue streams from visitors. 	<ul style="list-style-type: none"> • \$100,000 feasibility study for Cardwell – cost split between council and state. • \$500,000 in federal funding has been committed for Cardwell Stage 1 (Early Works).

Action	Description	Case study	Anticipated benefits	Anticipated costs
Cycling Access and Promotion ⁵²	Promote cycling by developing cycling-friendly infrastructure and increasing access to bikes.	<p>Case Study 1: Parklets (moveable mini parks with bike parking, vegetation and seating) promote cycling in Hackney London.</p> <p>Case Study 2: The Birmingham City Council gave away 3000 bikes to disadvantaged residents to encourage the uptake of cycling.</p> <p>Case Study 3: "Park and Pedal" – drivers park their cars for free in a specified area and cycle the rest of the way to work in York, UK.</p>	<ul style="list-style-type: none"> May encourage health benefits for residents and improve Mandurah's overall liveability. 	<ul style="list-style-type: none"> Costing highly dependent on design. \$100-400 per bike, \$20 per helmet on average.⁵³ Lost revenue from parking, cost of lockers.
Aquatic Theme Park	Utilise area of proposed commercial interest in front of King Carnival as an aquatic 'theme park'.	Case Study 1: Aquatastic in Busselton is a private venture that runs a mini aquatic theme park on the foreshore over the summer holidays each year. ⁵⁴	<ul style="list-style-type: none"> Employment opportunities. Develops the appeal of the Mandurah foreshore. 	<ul style="list-style-type: none"> A shark net is installed in Busselton (private or public cost not available). Support of business to develop.
Sporting Event Attraction	Promote Mandurah as a destination for major sporting events.	Case Study 1: Ironman runs events in Busselton which employ more than 100 contractors and 1700 volunteers, contributing about \$8.3 million in direct expenditure to WA. ⁵⁵	<ul style="list-style-type: none"> An estimated \$2 million per year was injected into the economy in the Mandurah 70.3 between 2012 and 2015. 	<ul style="list-style-type: none"> Administrative burden of drawing big sporting events to Mandurah.
Upgrade Indoor Sporting Facilities	Develop Mandurah Aquatic and Recreation Centre to improve the level of indoor sporting facilities.	<p>Case Study 1: Caloundra on the Sunshine Coast has an indoor stadium with 4 mixed use courts, seating for 1700 people, a kiosk and meeting rooms. It is used for sporting events as well as conferences/exhibitions.⁵⁶</p> <p>Case Study 2: The Traralgon Sports Stadium was redeveloped in 2019/20 by the Latrobe City Council to add 4 new courts, 3000 seats and amenities for players and spectator. After its redevelopment the centre was named as one of Basketball Victoria's new high performance training hubs as part of their elite pathway.⁵⁸</p>	<ul style="list-style-type: none"> Improved sporting facilities for local residents. Opportunity to host higher level matches. 	<ul style="list-style-type: none"> Dependent on level of investment -Caloundra upgraded their stadium with 500 tiered seats at a cost of \$250,000.⁵⁷ Traralgon Sports Stadium upgrade cost \$19 million with \$17 million from the Latrobe Valley Authority and \$2 million from Sport and Recreation Victoria.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Upgrade Outdoor Sporting Stadium	Develop the existing David Grays Arena or build a new arena to increase the availability of quality sporting grounds in Mandurah.	<p>Case Study 1: The Sunshine Coast Stadium has capacity for 12,000 patrons at games and 20,000 patrons for live music. The grandstand has seating, corporate boxes and function areas, change rooms, coaches' boxes, medical rooms and catering facilities. The stadium is the centre of the Kawana Sports precinct which also includes seven rugby fields, PA system, high performance training centre and Lake Kawana (utilised for triathlons, rowing, SUP and swimming events). The Stadium has hosted NRL games and concerts.⁵⁹</p> <p>Case Study 2: Mars Stadium in Ballarat, Victoria was redeveloped in 2016 and has capacity for 11,000 spectators. It hosts two AFL games each year. The stadium renovation included meeting AFL oval requirements, increasing public seating, electronic video and scoreboards.⁶¹</p>	<ul style="list-style-type: none"> Improved sporting facilities for local residents. Opportunity to host higher profile matches. Opportunity to host live music events. 3,000 jobs were created in the Mars Stadium redevelopment and \$11 million injected into the regional economy. The Mars stadium is expected to increase annual tourism spending in Ballarat by nearly \$3.6 million. 	<ul style="list-style-type: none"> The grandstand cost \$10 million and the Sunshine Coast Council is aiming for a \$68 million expansion to increase fixed seating to 11,618. The upgrade is costed at \$6,400 per seat with the average Australian cost exceeding \$10,000 per seat.⁶⁰ \$15 million was committed by the Victorian Government for the 2017 redevelopment. \$6.6 million was announced in 2019 for further upgrades.
Dry Stack Marina	Develop a dry stack marina to increase the number of storage option for boats in the region as the population grows.	<p>Case Study 1: Marina Vela in Barcelona has a fully automated dry stack marina which can store 222 boats up to 9 metres long and weighing up to 4 tonnes. A dry stack marina stores boats in stacks inside a building instead of in berths on the water.⁶²</p> <p>Case Study 2: Gold Coast Marina and Shipyard offers a dry stack marina for up to 250 boats.⁶⁴</p>	<ul style="list-style-type: none"> Dry stack marinas offer convenience, less maintenance and security. Accommodate the likely growth in demand for boats as Mandurah's population grows. Potential for increased visitation and tourism expenditure. 	<ul style="list-style-type: none"> Estimated building cost at \$2,000-2,400 per boat for at least a 60 boat shed⁶³. Mandurah Boat Stacking provides a stack currently which is not fully enclosed so may create competition for them.
Live Music Action Plan ⁶⁵	Develop a plan to increase the live music offerings in Mandurah and promote event attendance for varied demographics.	<p>Case Study 1: The City of Greater Geelong developed a Live Music Action Plan in 2017. It involved a live contemporary music festival, under-18 music events and encouraging the development of one-day music festivals.⁶⁶</p> <p>Case Study 2: The City of Busselton built an amphitheatre in their foreshore redevelopment which is used to host events such as the Battle of the Bands.⁶⁷</p>	<ul style="list-style-type: none"> Expected to become a key lifestyle drawcard for younger people in particular to Mandurah. It may also promote tourism and economic benefits for the arts and culture industry. 	<ul style="list-style-type: none"> Administrative burden. Administrative burden, cost of amphitheatre planned in redevelopment.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Eat & Drink Destination	Establish a flagship restaurant in partnership with the private sector to promote Mandurah as a 'foodie' destination.	Case Study 1: Shelter Brewing Co. is a micro-brewery, restaurant and café that opened on the Busselton Foreshore in 2020. It employs 140 people, served 500,000 people in its first year and promotes a unique drinking and dining experience in Busselton. It received \$250,000 in state government funding. ⁶⁸	<ul style="list-style-type: none"> • Aids in promoting Mandurah as a lifestyle capital, encouraging tourism and increasing employment. 	<ul style="list-style-type: none"> • Administrative burden.
Housing Density Reform	Meet demand for high density housing through City facilitation.	Case Study 1: Mandurah's existing planning caters for mixed-use developments in the City Centre, so the focus could be on attracting a private enterprise to build high density living options. The Toowoomba Regional Council stated in late 2021 that they would review options to stimulate medium density housing construction and offer available land that could be used by community housing providers. ⁶⁹	<ul style="list-style-type: none"> • Meet demand for higher density, lower cost housing in the region 	<ul style="list-style-type: none"> • Administrative burden and possible investment
School Programs Capacity & Development	Review the capacity and quality of Mandurah schools to satisfy a growing population.	<p>Case Study 1: The City may facilitate the establishment of a new school, such as Georgiana Molloy Anglican School which was built in Busselton in 2003 to fill demand for private schools in the area.⁷⁰</p> <hr/> <p>Case Study 2: It may be possible to support the development of further quality of specialised programs offered by local public high schools, such as Rossmoyne SHS's Bushrangers WA and Youth Leaders program, and specialist maths, specialist classical music and specialist volleyball programs.⁷¹</p>	<ul style="list-style-type: none"> • Improved quantity and quality of education in the region • Attract families to move to the area for education 	<ul style="list-style-type: none"> • Dependent on level of investment

Opportunity 2: Establish Mandurah as a Centre of Excellence for World-Class Hospitality

Action	Description	Case study	Anticipated benefits	Anticipated costs
World-Class Hospitality Education Precinct	Develop hospitality training capabilities with an RTO with capacities in commercial cookery, kitchen operations, patisserie, and hospitality provision. Facilities could include a commercial kitchen and a functioning café/restaurant. Also an opportunity to partner with the private sector to build student accommodation.	Case Study 1: The Frankston Learning and Innovation Precinct in Chisholm, Victoria. ⁷²	• Potential to create more vibrant and appealing foreshore areas.	• \$85 million
		Case Study 2: The Gordon Culinary School at Gordon TAFE in Victoria was completed as a renovation of an existing restaurant. ⁷³	• Improves Mandurah's reputation as a lifestyle destination.	• \$23.5 million
		Case Study 3: The Institute of Culinary Excellence was built as a private RTO in Brisbane in 2013 and awarded best culinary school in Australia by 2018. ⁷⁴	• Ground lease revenues from hospitality venues on Busselton foreshore are used directly for Jetty and foreshore upkeep.	• Privately funded (costing not available)
		Case study 4: Short courses, bachelors and graduate programs offered by EHL Switzerland.	• Employment opportunities in development and upkeep.	• Dependent of extent of course offerings and staffing requirements
		Case study 5: Short courses and professional development programs offered by University of Technology Sydney (UTS)		

Opportunity 3: Build the capacity of the aged-care workforce

Action	Description	Case study	Anticipated benefits	Anticipated costs
Aged Care Centre of Excellence	An Aged Care Centre of Excellence can be used to both train an aged care workforce and provide high quality care to Mandurah's older residents. Facilities can include inpatient care, clinical and non-clinical support services, residential suites, wellness areas etc.	Case Study 1: Bulli Hospital Aged Care Centre of Excellence was built in NSW with a 60 bed capacity. ⁷⁵	• Aims to encourage health benefits for residents and improve Mandurah's overall liveability.	• \$50.4 million
		Case Study 2: Kiama Aged Care Centre of Excellence was built to service Kiama and surrounds in NSW. It provides 59 living units and 134 beds- including 31 dementia-specific – as well as communal areas. The project was privately managed as a redevelopment of an existing farmhouse. ⁷⁶	• Possible creation of employment during and after build: the Dementia Care Facility in SA is expected create 500 construction jobs and 95 ongoing healthcare positions.	• \$105 million
		Case Study 3: The SA state government has partnered with charity HammondCare to build a neighbourhood of cottages in the Repat Health Precinct specifically designed for dementia care. The neighbourhood has capacity for 70 residents and will be completed in 2023. ⁷⁷		• Overall precinct redevelopment is receiving \$115 million in state government funding. The Dementia Care facility will only cost a portion of this amount.

Opportunity 4: Make Mandurah a hub for Blue Tech training and industries

Action	Description	Case study	Anticipated benefits	Anticipated costs
Build RTO capacity	Increase the capacity of an RTO to provide Blue Tech training by renovating computer labs or providing advanced technology.	Case Study 1: TAFE NSW has developed a Digital Learning Lab with capacity in virtual reality, augmented reality and an innovation team. Their lab is focused on tech applications in teaching but exemplifies the shift to the digital age. ⁷⁸	<ul style="list-style-type: none"> • Enable increased quality and quantity of Blue Tech training. 	<ul style="list-style-type: none"> • Dependent on level of investment.
Foster Blue Tech Partnerships with industry	Partner with an RTO and the private sector to support a pathway from qualifications and traineeships into entry-level employment.	Case Study 1: TAFE Queensland purchased 15 augmented reality welding simulators last year (with government support) to train welders to fit the requirements of defence manufacturer Rheinmetall Defence Australia. This partnership created a pathway from TAFE to employment. ⁷⁹	<ul style="list-style-type: none"> • Expected to promote employment opportunities for Blue Tech workers and increase interest in the industry. 	<ul style="list-style-type: none"> • Administrative burden.
Early Employment Support	Expand current city offerings of internships and cadetships in Blue Tech areas (such as IT support).	Case Study 1: Penrith City in NSW offers traineeships in Information Technology while participants study for a Certificate III at TAFE. They also have Professional Specialist Traineeships in which they employ people studying engineering, planning etc. full-time for their entire degree and pay tuition to develop a skilled council workforce. ⁸⁰	<ul style="list-style-type: none"> • May assist in career development for the Blue Tech workforce in Mandurah. 	<ul style="list-style-type: none"> • Training and employment expenditure. • Possible tuition expenditure.
Develop a Blue Collar Tech Advisory Council and Strategy	Establish a Blue Collar Tech Advisory Council to build a strategy around establishing Mandurah and the region as a training hub.	Case Study 1: The South West Advanced Manufacturing and Technology Hub aims to investigate the feasibility of establishing an advanced manufacturing and technology hub focusing on Bunbury Geographe. It is envisioned a facility in Bunbury Geographe would give manufacturers an edge when competing for work by providing local access to infrastructure, technology, training, education and research. ⁸¹	<ul style="list-style-type: none"> • Could better inform and prepare businesses for the future of work and improve employment outcomes for Blue Tech workers. 	<ul style="list-style-type: none"> • Possible financial and administrative costs involved.
Micro-Qualification Grants	Subsidise small and medium enterprises to upskill and retrain their employees in micro-qualifications like coding.	Case Study 1: The Tasmanian State Government established a \$1.5 million fund to upskill 1500 people from 69 local employers during the COVID-19 pandemic to assist with economic recovery and resilience. ⁸²	<ul style="list-style-type: none"> • Expected to enable at risk SMEs to become 'future-ready' and prevent structural unemployment. 	<ul style="list-style-type: none"> • Dependent on level of investment.

Opportunity 5: Innovation in healthcare delivery

Action	Description	Case study	Anticipated benefits	Anticipated costs
Telehealth Hub	A centre to provide services including promotion of uptake, tele-triage, developing platforms, IT support and research.	<p>Case Study 1: The University of Mississippi Medical Centre has a government-funded Telehealth Centre of Excellence. They provide telehealth information, research and services to the broader public.⁸³</p> <p>Case Study 2: Mandurah Oedema Clinic, among other services in Mandurah, already offers telehealth. The City could provide support with broadband upgrades and provision of telehealth equipment like telemedicine stethoscopes etc.⁸⁴</p>	<ul style="list-style-type: none"> • Could create employment in a highly skilled sector, improve access to medical services and generate positive medical outcomes for the community. Administrative burden, capital expenditure, possibility of government support. 	<ul style="list-style-type: none"> • Administrative burden, capital expenditure, possibility of government support. • Administrative burden of support
Community Mental Health Partnerships	Develop a network of mental health professionals to improve the quality of and access to mental health support in the region.	Case Study 1: Mindful Margaret River began in 2018/19 as a not-for-profit partnership between the Shire and local individuals/groups. It facilitates and streamlines existing mental health support in the area, promotes mental health services to the community and builds wellbeing literacy. ⁸⁵	<ul style="list-style-type: none"> • Seeks to improve mental health outcomes for the community. 	<ul style="list-style-type: none"> • Administrative burden.
Off the Record	Delivers non-traditional mental health support for young people.	Case Study 1: Off the Record in Bristol, UK is an example of a program-based approach in which young people are given control over their mental health support. The charity delivers non-traditional mental health treatment via peer-led drop-ins, self-help workshops, art, exercise, and environmental activities as opposed to direct talking therapy. It is run as a club instead of a treatment centre. In a 2020 survey of 171 young people aged 16-25 involved in the program, participants were asked how satisfied they were with the program being able to support them – an average rating of 7.6 out of 10 was recorded. ^{86,87}	<ul style="list-style-type: none"> • Off the Record was found to return ownership to youth, creating more effective engagements. • Seeks to address youth needs more effectively with non-clinical, holistic solutions. 	<ul style="list-style-type: none"> • A pilot program in Mandurah would require significant funding to establish with a possibility of state/federal support.
Step Up Step Down Facilities	Short-term residential facilities where people can receive mental health support pre- or post- inpatient care.	Case Study 1: The WA Government funds Step Up Step Down facilities in Joondalup, Rockingham, Albany, Bunbury, Geraldton and Kalgoorlie. Future projects are planned in Broome, Karratha and South Headland. There is also an opportunity to tie in the facility with the proposed upgrade of the Peel Health Campus. ⁸⁸	<ul style="list-style-type: none"> • May improve mental health outcomes for the community. 	<ul style="list-style-type: none"> • Administrative burden.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Integrated Care Models	Partner with health and community services to deliver centralised support.	Case Study 1: Torbay/South Devon in the UK is an example of the NHS integrated care model. The program integrates health and care capabilities to provide more streamlined community support. Teams (made up of GPs, nurses, therapists, social workers etc.) provide centralised support from a Health and Wellbeing Centre. ⁸⁹	<ul style="list-style-type: none"> Torbay's model was found to improve health and social outcomes. It also reduced pressure on health facilities, such as hospital stays for older people. 	<ul style="list-style-type: none"> Administrative burden. Investment would be required to build a Health and Wellbeing Centre though there is a possibility of state/federal support.
Social Prescribing/Community Referral	Support healthcare providers to pilot social prescribing programs.	<p>Case Study 1: Bromley by Bow Centre UK delivers social prescribing programs where healthcare professionals can refer patients to link workers. Link workers talk through the patient's issues and develop social solutions which can include: financial advice, volunteering, exercise, arts activities, community groups.⁹⁰</p> <hr/> <p>Case Study 2: Royal Australasian College of General Practitioners found social prescribing is a promising future area for Australian healthcare with limited current practice. They estimated 20per cent of patients consult GPs for primarily social problems which do not suit clinical solutions. They recommended uptake nationally and training of link workers to sustain demand.⁹¹</p> <hr/> <p>Case Study 3: Frankston Mornington Peninsula Social Prescribing program is a pilot social prescribing program in Victoria. Community link workers support people referred to them to participate in the community to better their health and wellbeing.⁹²</p>	<ul style="list-style-type: none"> Aims to build stronger, healthier communities by addressing community needs with non-clinical, holistic solutions. 	<ul style="list-style-type: none"> Likely to require federal or state government funding. The UK Government committed £5 million to create a National Academy of Social Prescribing.

Opportunity 6: Innovative social interventions

Action	Description	Case study	Anticipated benefits	Anticipated costs
Abundant Communities	A formalisation of the current Street Mates program that includes specific roles for more efficient functioning.	<p>Case Study 1: Edmonton Canada employs ABCD in its community development. Research from Nurture Development (an ABCD practice) found people are 4 times more likely to find work through their networks than a job centre and supportive communities increase chances of good health by 27 per cent.⁹³</p> <p>Case Study 2: One of Edmonton's key ABCD programs is Abundant Communities. This is a formal, community-driven program that promotes neighbourhood connectivity and interaction through community 'champions'.⁹⁴</p>	<ul style="list-style-type: none"> Expected to build more empowered communities by returning ownership to the community itself Expected to improve social cohesion and outcomes such as reduced crime and higher employment. 	<ul style="list-style-type: none"> Administrative burden of consistent application.
Targeted Infrastructure Development	Prioritise developing lifestyle infrastructure in lower socio-economic areas.	<p>Case Study 1: New York City, USA, has committed \$150 million USD to making improvements to Brownsville neighbourhood in Brooklyn under the Brownsville plan. This includes community consultation on needs, renovations of parks and playgrounds, a new teen centre, cultural programs to promote community gathering and mixed-use developments to improve street safety and accessibility.⁹⁵</p>	<ul style="list-style-type: none"> Improved social and health outcomes through access to better facilities. 	<ul style="list-style-type: none"> Administrative burden and possible investment.
Develop a Women's Charter	Lead the development of a Women's Charter for WA Local Government that actively drives gender equity and women's workforce participation	<p>Case Study 1: The Victorian Local Governance Association's Women's Charter commits to the three principles of gender equity, diversity and active citizenship for signatory jurisdictions in Victoria. In addition to enhancing women's representation in local government, the Charter also strives to increase the numbers and participation of women in public life.⁹⁶</p> <p>Case Study 2: The Maribyrnong City Council hosts various programs for women including those targeting sports, leadership, early intervention among others.⁹⁷</p> <p>Case Study 3: While most policy measures to support women's participation occur at the state or national level, the OECD suggests some policy actions which are within the grasp of local governments such as access to childcare, financial literacy, and extending social protections.⁹⁸</p>	<ul style="list-style-type: none"> Increased socioeconomic outcomes for women including workforce participation Improvement in broader economic outcomes such as workforce participation rates and income per capita Reduction in discrimination and violence against women 	<ul style="list-style-type: none"> Administrative burden

Action	Description	Case study	Anticipated benefits	Anticipated costs
Human Services Alliance	Expand the current Human Services Facebook group to monthly meetings facilitated by the City of Mandurah.	Case Study 1: The City of Busselton's Community Development Officer facilitates monthly meetings of human services organisations in Vasse, Bunbury and Busselton in the Vasse Human Services Alliance. Provides opportunities to discuss funding, programs, and emerging community issues. ⁹⁹	<ul style="list-style-type: none"> Aims to streamline and support human services provision in Mandurah. 	<ul style="list-style-type: none"> Cost of venue, administrative burden.
Creating Healthy Places	Develop local planning in consultation with health and community service professionals.	Case Study 1: The UK Government established the Healthy Places program with 10 trial sites building new housing developments chosen in 2016 and supported over 3 years. The principles of Healthy Places were released to inform future planning developments. ¹⁰⁰	<ul style="list-style-type: none"> Improved consultation with health and community services groups in new developments was found to improve health and social outcomes in the community. 	<ul style="list-style-type: none"> Cost of liaising with health professionals, developers, the not-for-profit sector etc.
Leverage the retiree population to improve community relationships	Tap into the life skills and experiences of retirees in the peel region to mentor and support at-risk youth	Case Study 1: The US Dream Academy operates eight 'Dream Learning Centres' around the US. The academy aims to inspire and elevate the lives of children of incarcerated parents and vulnerable young people through high-performance relationships with caring adults. The academy runs Life Lessons' program, which connects retirees as mentors for youth. The academy asks retiree mentors to invest 1-hour per week with a child at one of its Dream Learning Centres. ¹⁰¹	<ul style="list-style-type: none"> Provide mentoring and learning experiences for disadvantaged and at-risk youth Reduce isolation and loneliness for seniors 	<ul style="list-style-type: none"> Cost of developing, planning and operating the program Potential for private sector funding or NFP involvement.
Social Enterprise Training	Provide training for at-risk youth in in-demand skills such as hospitality, childcare, disability services or agriculture through a social enterprise model.	Case Study 1: STREAT Melbourne was established in 2010 and has 7 hospitality venues. Its programs target at-risk and disadvantaged youth and include job readiness, a 20 week skills training program in the venues, placements for graduates with hospitality partners and holistic support (mental and physical health etc.). Their flagship Cromwell café was established at a cost of \$6.5 million. ¹⁰²	<ul style="list-style-type: none"> Could provide improved educational and employment outcomes for disadvantaged youth. 	<ul style="list-style-type: none"> Administrative burden Investment cost will depend on if project is council owned/run.
Step Up to Social Work	Establish a Step Up scholarship program for in-demand industries.	Case Study 1: The Gateshead Council UK provides a Step Up to Social Work program to train current degree holders to become social workers over 14 months. The UK Government supports the students with a £19,833 bursary for the duration of the program. ¹⁰³	<ul style="list-style-type: none"> Can develop a workforce for industries with high need. May support people to avoid structural unemployment. 	<ul style="list-style-type: none"> The UK Government budgeted £25 million for the program, but the funding amount could be tailored to meet the scope of the program.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Transitional Employment Programs	Transition people from welfare to work through supported placements in the private sector.	<p>Case Study 1: Washington State runs three WorkFirst programs. Community Jobs: 6 months of paid work – 20 hours a week spent working, 20 hours a week spent completing ‘barrier management’. Career Jump: same as Community Jobs except employer commits to taking on participant once program ends. Community Works: unpaid structured work in community services.¹⁰⁴</p> <p>Case Study 2: Goodwill San Francisco is a non-for-profit store which trains people in digital skills, warehouse and logistics, and retail operations. Wages are paid through government welfare benefits.¹⁰⁵</p> <p>Case Study 3: The Department of Human Services in Hawaii runs Supporting Employment Empowerment (SEE) Hawaii Work which subsidises 100per cent of the state’s minimum wage for a placement employee and 50per cent of every dollar paid on top of that within a set threshold. They also provide childcare and transport cost support.¹⁰⁶</p> <p>Case Study 4: The current Federal Government Transition to Work program is for those aged 15-24 and provides work experience with employers with a youth bonus wage subsidy of up to \$10,000 if ongoing employment is offered to the participant.¹⁰⁷</p> <p>Case Study 5: The Federal Government PaTH internship is a program established in 2017 for 17-24-year-olds on income support who have required with employment services for at least 6 months. Provides internship placements for 30-50 hours per fortnight over 4-12 weeks with an additional \$200 fortnightly payment on top of income support to each participant. Employers receive an \$1000 bonus.¹⁰⁸</p>	<ul style="list-style-type: none"> • Should incentivise on-the-job training and help to promote improved social outcomes for at-risk and vulnerable communities. • Hopes to reduce dependency on welfare and break the cycle of poverty for disadvantaged families. 	<ul style="list-style-type: none"> • PaTH internships and Transition to Work have federal government funding, as does the SEE Hawaii Work program and WorkFirst Washington. • The City of Mandurah could potentially offer similar financial incentives to businesses or employees or seek state/federal funding to do so.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Mayor's Taskforce for Jobs	Develop a taskforce or implement targeted programs to address youth unemployment.	Case Study 1: The Mayors Taskforce for Jobs in New Zealand runs specific programs to alleviate youth unemployment. Specific programs include mentoring Maori young leaders, developing literacy and numeracy skills in workplaces and scholarships for at-risk youth to attend Outward Bound courses. ¹⁰⁹	<ul style="list-style-type: none"> • Found to promote youth employment, delivering 1326 jobs in NZ for young people last year. • Seeks to create direct links between public servants and youth leaders. 	<ul style="list-style-type: none"> • Administrative burden of programs • The scholarships are \$3,600 NZD for each Outward Bound course.
Inter-generational Housing ¹¹⁰	Possibility for the City to facilitate and promote intergenerational housing initiatives in the community.	<p>Case Study 1: Humanitas in Amsterdam provides subsidised rent for young people to live in residential nursing homes.</p> <p>Case Study 2: Sættemdammen in Denmark is an intergenerational housing project of 70 people who participate in joint activities.</p> <p>Case Study 3: De Hogeweyk in the Netherlands brings younger people into residential homes that specialise in dementia care to support residents.</p>	<ul style="list-style-type: none"> • May improve social cohesion and increase wellbeing. 	<ul style="list-style-type: none"> • Administrative burden • Possible capital investment in a project.
Expand Educational Offerings	Partner with an online tertiary provider to create a study hub in Mandurah, support Murdoch's Mandurah campus to expand courses or work with providers to supply micro-credentials to upskill the transitioning workforce.	Case Study 1: The City of Busselton partnered with CQU in 2017 – they also have a university campus relatively close (ECU Bunbury) but with limited course offerings. They leased CQU the old Visitors Centre site to create a study hub for their online students to attend. ¹¹¹	<ul style="list-style-type: none"> • Could increase the breadth and depth of educational opportunities in the region. 	<ul style="list-style-type: none"> • Administrative burden • Possible cost of grants and subsidies.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Secondary School Completion Support	Support schools to hire social workers and trial or finance programs to aid secondary school completion.	<p>Case Study 1: The Family Engagement for High School Success program was pioneered by researchers from the Harvard Family Research Project. Family coordinators in the trial programs helped initiate parent-teacher meetings, made referrals to social supports, provided training on school IT systems and school orientations.¹¹²</p> <p>Case Study 2: The US Department of Education provides High School Graduation Initiative funding to local and state education groups to assist in preventing drop-outs for at-risk students.¹¹³</p> <p>Case Study 3: The Australian Association of Social Workers recommends one social worker for every 500 students in a school. Chaplains and psychologists are employed in public schools through State Government funding in WA. However social workers can bring an additional skillset focusing on a more holistic approach that can be offered in conjunction.¹¹⁴</p>	<ul style="list-style-type: none"> • Possibly improves educational and social outcomes for vulnerable children. • Seeks to build long-term capacity building for the community and the workforce by increasing graduation attainment rates. 	<ul style="list-style-type: none"> • Funding required to support schools to pilot and develop programs, with the possibility for State Government support. • Administrative burden.
Family Support Network Initiative	Facilitate the operation of the Family Support Network model or similar programs in Mandurah.	Case Study 1: The FSN model aims to build parenting skills, reduce the likelihood of children being in the child protection system and create culturally safe support systems by coordinating holistic, early intervention with families from a centralised support team. Assessment and coordination is delivered by a lead agency while support is undertaken by partner agencies. ¹¹⁵	<ul style="list-style-type: none"> • May help to improve social, emotional and health outcomes for families through early intervention. 	<ul style="list-style-type: none"> • Administrative burden.
Early Intervention Education Support	Prioritise strong educational outcomes in primary school, including funding possible attendance and development interventions.	Case Study 1: The Early Years Education Program was trialled in Victoria with the University of Melbourne. At-risk children were offered three years of care and education for 50 weeks a year, five hours per day. Promising results of the pilot indicated better IQ, social-emotional development and reduced stress for caregivers. ¹¹⁶	<ul style="list-style-type: none"> • May improve educational and social outcome for vulnerable children. • Aims to improve long-term capacity building for the community and the workforce. 	<ul style="list-style-type: none"> • Funding required to support schools to pilot and develop programs, with the possibility for State Government support. • Administrative burden.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Reducing Transport Disadvantage	Create a community transport link for underserved communities, expand existing public transport offerings or trial unique multi-modal programs.	<p>Case Study 1: The City of Wollongong offers community transport options for older people via bookings made at least a week in advance. The buses/vans/cars pick up and drop off from the individual's home address.¹¹⁷</p> <p>Case Study 2: The City of Sydney has been installing car share bays – used by providers like Car Next Door, Flexicar & Popcar – since 2008 and now has 800. It allows people to book car share services and has a positive environmental impact by reducing vehicle ownership.¹¹⁸</p> <p>Case Study 3: RAC, UWA and Whoosh partnered in 2020 to deliver a multi-mode transport service trial (bikes, e-bikes and cars) via 6 mobility hubs at the Crawley Campus. May be possible for Mandurah to pilot the program council wide and/or in outer regions to improve transport access.¹¹⁹</p> <p>Case Study 4: TransRegional expanded its offerings to Bridgetown after an 18-month trial of fee-paying school bus services and responses from residents. It opened the town bus service in February 2021, the first new regional public transport network in 10 years.¹²⁰</p>	<ul style="list-style-type: none"> Provides extended transport options for disadvantaged communities that may help to improve employment outcomes May build Mandurah as a work destination if employees from neighbouring areas (Waroona, Pinjarra) can more easily access Mandurah. 	<ul style="list-style-type: none"> Dependent on level of investment: public transport is state funded and community transport options would require City funding. The new Bridgetown service has estimated running costs of \$120,900 per year.

Opportunity 7: A hub to lead industry decarbonisation and climate resilience and adaptation strategies

Action	Description	Case study	Anticipated benefits	Anticipated costs
Decarbonisation Initiatives	Establish, or incentivise a private company to establish, a decarbonisation hub to support businesses in the region to decarbonise cost effectively and encourage uptake of decarbonisation strategies in the community more broadly.	<p>Case Study 1: HILT CRC is an emerging decarbonisation hub provider with government and private sector partners including Alcoa and the Department of Jobs, Tourism, Science and Innovation. It has received \$175 million in total funding for the next decade.¹²¹</p> <p>Case Study 2: NSW is seeking to establish a Decarbonisation Innovation Hub in 2022 to, connect industry and assist with funding/innovation.¹²²</p>	<ul style="list-style-type: none"> May have environmental benefits and improve business climate resilience. 	<ul style="list-style-type: none"> Dependent on level of investment undertaken.
Community Owned Renewable Energy	Support a social enterprise to invest community capital into renewable energy projects.	<p>Case Study 1: CORE Geelong partners with community investors and finds a host site of suitable size to transform to solar power, saving 210 tonnes of emissions per annum from one project alone. The City of Greater Geelong supports the initiative financially.¹²³</p>	<ul style="list-style-type: none"> This is expected to have environmental and economic benefits. 	<ul style="list-style-type: none"> City of Greater Geelong funded the \$48,000 business case. Ongoing support may require extra expenditure.
Environmental Upgrade Finance	EUF is a loan for environmental building upgrades that is repaid through council rates.	<p>Case Study 1: Sustainable Australia Fund provides EUF through councils in Victoria, NSW and SA. It has provided \$30 million so far in financing and reduced 300,000 tonnes of emissions through the upgrades.¹²⁴</p>	<ul style="list-style-type: none"> Method for businesses to reduce their emissions. Stimulate spending to local contractors and tradespersons 	<ul style="list-style-type: none"> Currently unavailable in WA, administrative burden of Government legislating in WA Once in place, collection of payments may incur costs
Renewable Energy and hydrogen Investor Toolkit	Develop a standalone or suite of investor toolkits that clearly articulate the case for investment in Mandurah and the key metrics necessary for decision making.	<p>Case Study 1: South Australia's investor prospectus prioritises the state's comparative advantages in hydrogen production, alongside factors such as potential export channels, examples of successful existing projects, and government contacts and support options.¹²⁵</p> <p>Case Study 2: Queensland's investor prospectus prioritises the actual process of investment, including listing land types and approval definitions, detailing facilitation services of specific government departments, specifying relevant regulatory thresholds, and describing other types of approvals that may be required for a successful project.¹²⁶</p>	<ul style="list-style-type: none"> Increased attraction for renewable energy and hydrogen investment in Mandurah and surrounds Potentially streamline development process and bring forward future investment 	<ul style="list-style-type: none"> Financial costs associated with research and report writing and/or software development

Action	Description	Case study	Anticipated benefits	Anticipated costs
Climate Resilient Councils	Formally adopt strategies to improve the City's climate resilience such as sustainable procurement.	<p>Case Study 1: The Queensland Government has established a framework to help councils become climate resilient.¹²⁷</p> <p>Case Study 2: The City of Wollongong and Sunshine Coast Council have committed to specific emissions reduction targets.¹²⁸</p>	<ul style="list-style-type: none"> • This is expected to have positive environmental benefits. • Build public image. 	<ul style="list-style-type: none"> • Administrative burden.

Opportunity 8: Develop a strong base of professional workers in Mandurah

Action	Description	Case study	Anticipated benefits	Anticipated costs
West Tech Fest Liaison	Partner with West Tech Fest to attract more start-ups to Mandurah.	Case Study 1: West Tech Fest holds an annual conference to discuss and promote innovation in Western Australia and the Asia Pacific more generally. In future years there may be an opportunity for Mandurah to bid to host the conference, partner with the conference to deliver a program or presentation, or join the West Tech Fest Investor Network which provides capital to West Australian start-ups. ¹²⁹	<ul style="list-style-type: none"> • Possibility of increasing start-up base in Mandurah. • Build public image and visible role models • Increase skills mix in workforce 	<ul style="list-style-type: none"> • Dependent on level of investment.
Regional Skills Incentives	Provide relocation grants to eligible workers	Case Study 1: NSW Government provides up to \$10,000 for employee relocation costs to regional areas. ¹³⁰	<ul style="list-style-type: none"> • This may encourage professionals to relocate to Mandurah. 	<ul style="list-style-type: none"> • Dependent on level of investment.
Runway Program	Collaborate with a business development charity (Runway) to build & upskill businesses.	Case Study 1: In 2017 the City of Greater Geelong sponsored 9 successful pitches to participate in a 6-month Runway program creating 49 new jobs and \$16 million in economic output. ¹³¹	<ul style="list-style-type: none"> • May attract and retain start-up businesses in Mandurah. 	<ul style="list-style-type: none"> • Between \$430,000 and \$1,060,000 based on the case study.
Office Space Development	Consider the need for quality office space in existing and future city development planning.	Case Study 1: The City Centre Revitalisation Strategy and Foreshore Redevelopment plans can both use projected population growth to plan for quality office spaces, and associated traffic and infrastructure impacts, for Mandurah going forward. ¹³²	<ul style="list-style-type: none"> • This could potentially attract a larger professional workforce to Mandurah and provide better office space for businesses. 	<ul style="list-style-type: none"> • Administrative burden.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Regional Telecom Improvements	Monitor opportunities related to regional telecom transmission capacity improvements.	Case Study 1: Regional telecommunications transmission capacity is a high priority initiative for Infrastructure Australia. Possible avenues include upgrading existing regional networks and investing in new networks. ¹³³	<ul style="list-style-type: none"> Upgrades could benefit the economy in future through increased connectivity and productivity 	<ul style="list-style-type: none"> Not yet any specific opportunities available – still in planning phase.
Renew Program	Partner with Renew Australia to connect vacant commercial premises with creative businesses.	Case Study 1: An initiative that started in Newcastle that has since been utilised in Wollongong and Geelong among other places. The initiative is run by Renew Australia, and in Geelong was funded by the Local Council and Creative Victoria. Creative businesses are provided rent-free premises for otherwise empty buildings and vacant commercial shops receive upkeep. The creative enterprises offer a variety of visual amenities and goods and attract foot traffic to neglected urban areas. ¹³⁴	<ul style="list-style-type: none"> Improve foot traffic to city and encourage commercial business tenancies. 	<ul style="list-style-type: none"> Dependent on level of investment.
Public Work and Expansion	Develop a hub for public sector workers and/or attract a Commonwealth agency to build an office in Mandurah	<p>Case Study 1: Multiple State Government organisations, including Department of Fisheries, Department of Planning, Lands and Heritage and Department of Local Government, Sport and Cultural Industries have offices in Peel. There is an opportunity to centralise these workers in one place as part of the City Centre Revitalisation Plan.¹³⁵</p> <p>Case Study 2: A Federal agency like the CSIRO could be aided to establish an office in Mandurah, possibly as part of the Australian Waterways Centre of Excellence proposal.¹³⁶</p>	<ul style="list-style-type: none"> This could potentially consolidate and build a foundation for a larger professional workforce to Mandurah. 	<ul style="list-style-type: none"> Administrative burden and possible investment.

Action	Description	Case study	Anticipated benefits	Anticipated costs
Remote Working Hub	Capitalise on 'regionalisation' through a remote working hub.	<p>Case Study 1: Republic of Ireland spent approximately \$8 million AUD building hubs across Ireland during the pandemic with features including hot desks and broadband access.¹³⁷</p> <p>Case Study 2: The Victorian Public Service has also developed five Suburban Hubs as a part of the Victorian Government's longer-term flexible working arrangements, allowing VPS employees to work from a combination of home, hub and primary workplace.</p>	<ul style="list-style-type: none"> • Greater flexibility to support staff wellbeing and productivity • Increased options for remote working to support work/life balance • Greater internet connectivity speeds and reliability • Reduced commute time to a work site • Exposure to networking and social interaction opportunities. 	<ul style="list-style-type: none"> • Depends on level of investment (renovation, new build etc).
Childcare Accessibility	Improve childcare accessibility by providing through City facilitation in the private or public sector.	<p>Case Study 1: Intergenerational care is a new concept which Griffith University trialled in 2018 in four locations across Queensland and NSW. It involves either co-locating aged care and childcare to consolidate costs or a visiting program.¹³⁸</p> <p>Case Study 2: The City could facilitate expansion of after school care services, such as the existing Waratah All Year Care Service.¹³⁹</p> <p>Case Study 3: Support sole parents who work non-standard hours to pay a neighbour or friend to care for their child in a similar model to New Zealand's Flexible Childcare Assistance for single parents.¹⁴⁰</p>	<ul style="list-style-type: none"> • Affordable childcare may attract young professionals. 	<ul style="list-style-type: none"> • Significant investment potentially required, but potential to partner with private sector.



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Limitation of our work

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