



GOLDFIELDS-ESPERANCE REGIONAL DROUGHT RESILIENCE PLAN

BUILDING RESILIENCE TO DROUGHT THROUGH WATER SECURITY

MAY 2025



The Drought Resilience Planning Program is jointly funded through the Australian Government's Future Drought Fund and Western Australia's Department of Primary Industries and Regional Development.

ACKNOWLEDGEMENT OF COUNTRY

The Goldfields-Esperance Regional Drought Resilience Plan (Plan) has been developed across the Goldfields-Esperance region and recognises the region's many Aboriginal language groups and traditional custodians, that have been caring for Country and its lands and waters for thousands of years.

The Plan acknowledges the need to preserve and sustainably use water within the landscape to sustain healthy Country, cultural practices, values and determination. This Plan supports Aboriginal communities' right to safe and secure water supplies and aims to enhance First Nations' voices in decision-making and opportunities for economic development.

The Goldfields-Esperance Development Commission acknowledges the Traditional Owners of Country across the Goldfields-Esperance region. We recognise the connection of Aboriginal peoples to the land, waters and community.

We pay our respects to Elders past and present and acknowledge Aboriginal and Torres Strait Islander peoples, communities and cultures living in the region.

Image: Salt Lake, Shire of Menzies
Credit: Shire of Menzies

ACKNOWLEDGEMENT IN ABORIGINAL LANGUAGES

For thousands of years, Aboriginal and Torres Strait Islander peoples have welcomed visitors to their Country as part of their cultural practices.

The Welcome, which serves to give permission to the visitors to be on their Country, is delivered through spoken language, song, dance, and at times a smoking ceremony. Adopting the practice of a Welcome to Country by Traditional Owners or custodians of the land, or an Acknowledgement of Country by non-Aboriginal or non-custodians of the land, demonstrates our recognition of Aboriginal and Torres Strait Islander peoples as the first peoples of this land and our commitment to culturally safe and inclusive ways of working.

As a continuation of GEDC's commitment to our reconciliation journey, we have our Acknowledgement to Country currently translated into ten of the 17 Aboriginal languages of our region.

We thank the Goldfields Aboriginal Language Centre and the language custodians for their contribution to this resource. Locations of languages are approximate and may not be based on traditional locations.



MARTU WANGKA

Ngurra lampaju kulinyila Nga Goldfields-pa kamu Esperance-pa Development Commission-lu kulinyi ngurra waljajarra pararra Goldfieldspakamu Esperance wana nyuntutinyi kurnu parna kapi kamu ngurra walja. Ngayutinyipa kuntala kanyininyi parparriku Martuku ngurra kamu kuruwarri kamu jilpi tuju julujarnu kamu yungunku.

CUNDEELE WANGKA

Parna-lipitja Kulira Watjarni. Kawultjarra-ngurra Itjaparantja Tjanala Tjungungku Atatjarra-kulira Kanyintjakitja- nyinapayi, Kamitjantu panyangu Kamitjantu palya watjarni, wati minyima tjukurpa kanyilpayinyi tjananya, panya Kawultjarra-ngurra, Itjaparantala tjanala rawanguru nyinanyinara; parna, ngurra, kapimpa rawa nyina-nyinatja tjananya. Nganarna Kamitjantu, Arnanguku ngurrara winki palya watjarni kaltja kurlu; munu Yirna-tjarta, iriritja-mpa kuwarritja kurlu-kurlu.

NGADJU

Ngadjungarra ngurra nguntu wamurti. Goldfields-Esperance Development Commission-nya ngadjungarra nguntu tartinyirri matayi wamurti pana katajala Goldfields-Esperance region mathulu tjukurpa munjanguu pana, kapi and mathalu. Ngadjungarra nguntu tartiny matayi pana, tartiny ngaringin matayi yungarnkin matayi.

WANGKATJA

Yintaanku parna. Goldfields-Esperance Development Commission yintaa Yarnangu Goldfields-Esperance-ngku tjanaku tirtu kanyila parna, kapi ka ngurra. Ngalipaku kulila Yarnangu ka tjanaku Tjukurpa; ka nalpa pirni wanka ka ngalpa pirniku warrkanu.

PITJANTJATJARRA

Wirrurl kanyilpai ngurra ka palu jana lintinyi. Anangu tjutaku kanima ngurra wirruru munu kapi, ngurra. Anangu tjuta wirru ngurra kanyilpai ka tjilpi tjuta irriti tjana pukalpa nyinapayi.

NOONGAR

Goldfields-Kepa Kurl djandjoo koortiny. Birdiya kaditjijiny Noongar Moort boolarang Goldfields – Kepa Kurl boodjar wer baalabang ngadiny dandjoo yoodaniny Boodjar Kep wer Moort. Ngalak kadidjiny ngalang kootadjinong boola Moort-ak Ngalak kadidjiny ngalang koota-djinong boola moort-ak.

NGAANYATJARRA

Goldfields-Esperance Development Commission ninti ngurra kanyilpa Kawutjarra-ngurra. GEDC ninti purikanya manta lipi, kapi puru ngurra. Pirni kurnta yanangu, yanangu pirni-lu ngurra walykumunu kanyinma puru lurrtjuring. Pirn-lu kurtarriwa ngayuku kutjurlping katja puru ngula puru kuwarring katja.

TJUPAN

GEDC-tula yurrulykula yilta ngaarla parnajanu. Goldfields-Esperance region mantangkaya nyinanyi kapi, ngurra, parnaya kanyinyi. Respect-pala nintilku yiltajanalarti, Tjukurrpala janampa respect-amulku. Elders-tila respect nintilku, elders kuwarrija, elders-jaya yan wantingu nganananya.

MADUWONGGA

Ruukulinu Ngurra Nangana The Goldfields-Esperance Development Commission ruukulinu ngurra kapi nangana nurraku, nurrapirni ngurra yungkarra nyinannyinangu mirrirringku nurra jirtu tawarra nyinannyinan. Ngalipaka The Goldfields-Esperance Development Commission pukurlpa wangkatjapirni jirtu yamatjirrin nyalpapirni, kaparlipirni tana kuwarri nyinan, tana pawurtu.

NGALIA

Goldfields-Esperance Development Commission ruukuliku Wangkatja pini Malpa, Anang tjuta ngurrara Goldfields-Esperance regiontjanu. Tjanalu tirtu kanyira parnaku, kapiku, ngurraku, tjanalu kuturtu kurti kanyira. Goldfields-Esperance Development Commission kuntawiya kulilku, nyakula, pukurlpa piniku kuwarri nyinara, pukurlpa nyalpa piniku tiwa nyinangu. Palunya.

DEFINITIONS & ACRONYMS

TERM	DEFINITION
Drought	A prolonged period of abnormally dry conditions that negatively impacts on water availability in a region and, consequently, affects the economy – including missed opportunities for growth – and environment of the region, and the health and well-being of its residents.
Water Security	Ensuring that needs for water – encompassing quantity, quality, and affordability and access – can be met, over time and under changing supply and demand profiles. And, that this is achieved by investment coordination and operations that are economically efficient, financially and environmentally sustainable, culturally appropriate, and resilient to shocks.
Exposure	The degree to which a region and/or priority area/theme is affected
Sensitivity	The degree to which a region and/or priority area/theme is harmed
Impacts	Described as the consequence of exposure and sensitivity
Adaptive Capacity	The capability and capacity to adjust and manage impacts
Vulnerability	Summary risk assessment considering impacts (exposure & sensitivity) and adaptive capacity

ACRONYM	NAME
GEDC	Goldfields-Esperance Development Commission
RDRP	Regional Drought Resilience Plan
GE-RDRP	Goldfields-Esperance Regional Drought Resilience Plan
DPIRD	Department of Primary Industries and Regional Development
DAFF	Department of Agriculture, Fisheries and Forestry
DVA	Drought Vulnerability Assessment
DWER	Department of Water and Environmental Regulation
FDF	Future Drought Fund

ACRONYM	NAME
GEWSG	Goldfields-Esperance Water Security Group (Project Advisory Group)
GVROC	Goldfields Voluntary Regional Organisation of Councils
RCA	Regional Climate Alliance (a sub-committee of GVROC)
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
GAWSS	Goldfields and Agricultural Region Water Supply Scheme
CWSP	Community Water Supplies Partnerships program
WDD	Water Deficiency Declaration

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FORWARD

NB: to be completed for final plan delivery, following public comment period



Image: Wireless Hill Water Tank, Esperance

EXECUTIVE SUMMARY

The Goldfields-Esperance Regional Drought Resilience Plan (the Plan) provides a foundation to identify, inform and guide actions to achieve water security and drought resilience across the region.

Jointly funded by the Department of Primary Industries and Regional Development (DPIRD) and the Federal government's \$5 billion Future Drought Fund (FDF), this Plan builds on the region's aspiration to achieve water security through a shared vision.

The Plan delivers on the FDF's investment theme of 'Better Planning' that seeks to ensure regional communities can plan and respond proactively for future climates.

The Plan is also aligned to the WA State Government's Climate Adaptation Strategy and follows similar principles of collaboration, locally led initiatives and evidence-based decision making to effect positive resilience building outcomes for the Goldfields-Esperance region.

The Plan should be read in conjunction with the Drought Vulnerability Assessment (DVA) for the region, which provides an evidence base that underpins the priorities and actions identified.

Approximately 170 individuals and 60 organisations were engaged through the development of this plan. During the consultation process, four clear thematic outcomes emerged that together support the objectives of the Plan and the priorities and aspirations of the region.

These thematic outcomes are:

- **Informed, Empowered Communities**
- **Positioned for Growth**
- **Efficient and Resilient Water**
- **Innovative Futures**

Underpinning these thematic outcomes is the fundamental principle of **Healthy Landscapes**, which reflects the significance of conserving and restoring landscapes to sustain healthy water resources into the future.

Throughout consultation, a strong focus emerged on future-focused solutions that would achieve preparedness for climate scenarios. Stakeholders and communities sought responses that enhanced their empowerment and authorship of solutions and almost universally identified collaboration as a mechanism to achieve this.

Water security is a significant economic enabler and key driver of regional liveability, including social and cultural connection. As the region's climate, water requirements and availability evolve, further work will be required to ensure the sustainability and prosperity of Goldfields-Esperance communities and industries. This Plan is intended to be a living document and will be reviewed and monitored over time to ensure it continues to meet the needs of the region.



HEALTHY LANDSCAPES

Conserving and restoring landscapes to sustain healthy water resources



INFORMED, EMPOWERED COMMUNITIES

Building and enhancing localised, regionally relevant knowledge of water resources and policy to empower communities



POSITIONED FOR GROWTH

Ensuring sufficient capacity and agility to capture emerging opportunities and support growth



INNOVATIVE FUTURES

Harnessing innovation and research and development to create regionally-relevant solutions for future scenarios



EFFICIENT & RESILIENT WATER

Investing in driving efficiencies to achieve fit for purpose, sustainable systems for the future

Image: Greater Western Woodlands, near Norseman

INTRODUCTION

Drought is an enduring feature of the Australian landscape. In Western Australia, climate change projections indicate that the state will experience drying conditions, with increasing variability of rainfall and longer periods of more severe droughts.

With terrain that stretches from the temperate coastal sandplains of the south-east to the arid interior, the Goldfields-Esperance region extends across a vast and remote landscape where dry conditions and climate variability are a recurring feature.

To better prepare for, and respond to these changing climates, the Australian Government is supporting communities and industries to implement actions that build regional Australia's resilience to drought.

THE REGIONAL DROUGHT RESILIENCE PROGRAM

The FDF is an Australian Government initiative to help regional communities become more prepared for, and resilient to, the impacts of drought.

The Regional Drought Resilience Planning (RDRP) program is jointly funded by the FDF and DPIRD and brings together regional organisations, Local Governments, communities and industry to prepare for future drought risk and identify priority actions to build drought resilience (Department of Agriculture, Fisheries and Forestry, 2025 and Department of Primary Industries and Regional Development, 2024).

These plans develop a coordinated, community-led and evidence-based approach to assess the historical and projected future impacts of drought, and identify the region's vulnerabilities, priorities and adaptation pathways against a range of future climate scenarios.

The Goldfields-Esperance Plan has a strong focus on achieving water security, which is recognised by the region as a key vulnerability and an enabler to building more drought resilient communities, landscapes and industries.



Image: Fire impacted landscape, Shire of Dundas

DROUGHT RESILIENCE IN GOLDFIELDS-ESPERANCE

For many Goldfields-Esperance communities, the pursuit of water security is deeply embedded in their sense of self. Historically, water has always been an economic enabler and a key driver of achieving and maintaining liveability outcomes.

For Aboriginal peoples, waterways and places of water are integral to the ways in which they engage in cultural exchange, source food and navigate the landscape. They are significant sites of storytelling and cultural value but are also created by and the home of Spirit Beings (Curtin University & Umwelt 2023).

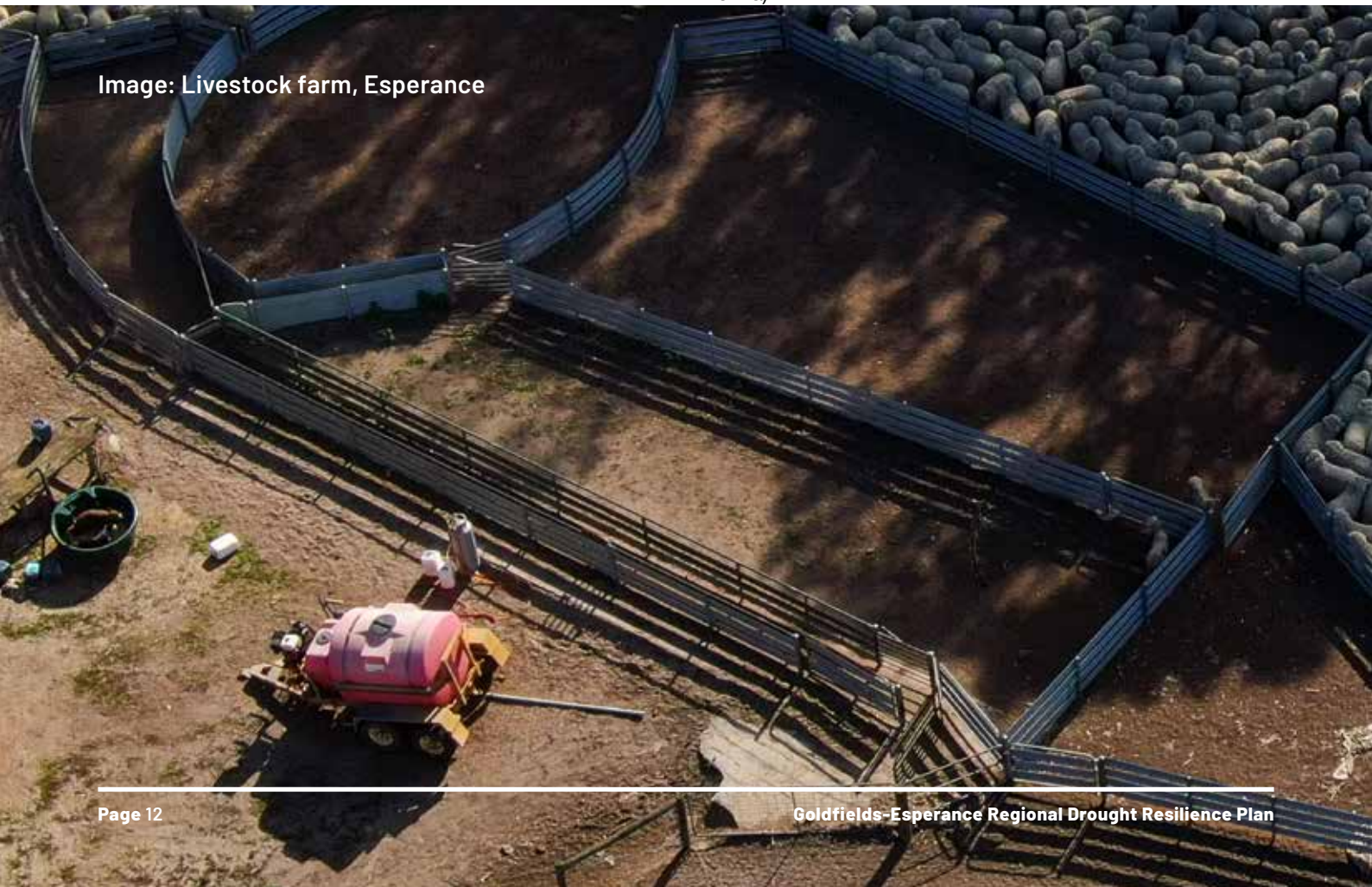
Both the region's more arid interior and southern coastal stretches have a long history of lived experience with drought and dry conditions, however climate change is changing the region's landscapes and communities' experiences with Country. The visual impacts of a drying climate and declining availability of water resonated strongly with stakeholders, and many consulted for this plan noted concerns about lakes and waterbodies drying up, less native plants flowering and trees dying (GEDC 2024a). This in turn may impact certain cultural practices, including hunting and is also encouraging pest species, such as camels, to venture closer to remote communities, impacting the natural environment and damaging built infrastructure in their wake.

In a predominately arid region, the life-sustaining properties of water are often brought into sharp focus. Prior to the construction of the GAWSS, or Golden Pipeline, the 30,000 inhabitants of the Goldfields region relied on insecure, inadequate surface and ground water. Essential not only for life, but for processing the precious minerals mined in the region, water was literally more expensive than whiskey.

When the 566km long pipeline connecting freshwater from Mundaring Weir to Kalgoorlie was completed in 1903, it was the longest pipeline in the world. The secure provision of freshwater enabled economic activity and growth throughout many inland communities and its importance to the economic and social fabric of Western Australia was recognised by its inclusion on the National Heritage List (Water Corporation 2022).

This acute focus on the necessity of water to sustain both life and industry, coupled with the region's isolation, has led to a culture of practicality, innovation and problem-solving, particularly for those peoples and communities not connected to the GAWSS. The adaptive capacity of the region, its communities and primary producers was reflected throughout the consultation process by the strong desire of communities to be agents of positive change in achieving water security (GEDC 2024a).

Image: Livestock farm, Esperance



Despite the region's willingness to adapt to change, the sheer isolation and low population base of Goldfields-Esperance presents challenges for Local Governments and communities, making it difficult to deliver required services in an efficient manner. Local Governments are often positioned as a first responder during emergency events or natural disasters, such as bushfires. In the Shire of Dundas, which has a population of less than 800, the volunteer brigade is often a first responder for bushfires that occur across its more than 90,000km² land mass.

The logistics of managing emergencies across these vast distances means that strategic planning to ensure adequate and appropriate resources are located across the region is both challenging and expensive (GEDC 2024a). This scenario is familiar to most of the communities across the region, particularly where poor access to fit-for-purpose water adds an increased layer of complexity.

Throughout consultations, geographic isolation was raised as a primary vulnerability for communities and Local Governments. For many communities, there is only one road in and out, meaning that any disruptions to road networks such as fire or flood, renders a community cut off. For those towns, such as Menzies, that are supplied water exclusively via trucks, road network disruptions leave towns and people

without water (GEDC 2024a).

While climate change means many of the region's communities will see a reduction in annual rainfall, drought is not the only expected impact. Increased extreme heat events, more intense fires, unpredictable rainfall timings and the impacts of flooding were also identified as key vulnerabilities (Aither, 2025).

Across the pastoral landscapes, stakeholders identified that the relationship between prolonged drought periods and vegetation decline are having significant impact on runoff trends across the landscape. With more frequent and intense rainfall events, a lack of vegetation is leading to increased flooding and contributing to landscape degradation (GEDC 2024a).

This highlights the intrinsic link between drought and other climate vulnerabilities. Communities have been clear that building resilience means considering these impacts as part of the broader climate change context and planning how to respond to these interconnected climate events is central to building their resilience (GEDC 2024a).



OUR PLAN

Communities in the Goldfields-Esperance region have a long history of working collaboratively to forge solutions. This Plan builds on work undertaken by the region for the region by focusing on the key climate vulnerabilities identified by communities and stakeholders.

In 2007, GVROC a strategic alliance across nine Local Governments, was formed to work together to drive solutions to enhance and benefit the region. Recent work has focused on climate preparedness and through the WA Government's Regional Climate Alliance Program, a Goldfields-Esperance Regional Climate Alliance was formed as a sub-committee of GVROC. As part of a Climate Risk Assessment and Adaption Plan for Goldfields-Esperance, completed in 2023 by GVROC with support from GEDC, stakeholders across the region identified water access and supply as the primary climate vulnerability (Ironbark Sustainability, 2023) (GVROC, 2023).

Access to fit-for-purpose water is increasingly becoming a barrier to economic development, diversification and liveability outcomes in the Goldfields-Esperance region. Insufficient infrastructure and supply in the region are

disproportionally impacting socio-economic disadvantage and health inequality. This is expected to be exacerbated by the impacts of climate change (Ironbark Sustainability, 2023).

In 2023, a Goldfields-Esperance Water Security Group (GEWSG) was formed with endorsement from the then Minister for Water, the Hon. Simone McGurk MLA, comprised of members from GVROC, GEDC, Water Corporation and the Department of Water and Environmental Regulation (DWER). The group's aim is to drive water security solutions and investigate actions to optimise the existing water resources to fit-for-purpose uses. The GEWSG is the Project Advisory Group for the Goldfields-Esperance Regional Drought Resilience Plan.

The region's aspirations to achieve water security for their communities and industries has shaped the focus of this plan. A shared vision, regionally relevant definitions and agreed outcomes support this Plan by providing the foundation for practical, collaborative and achievable actions to build water security and a climate resilient region.



Definitions

Establishing a universal definition of drought that encompass the impacts of drought for all people and landscapes is challenging. Therefore, the Plan presents a regionally specific definition of drought that highlights the experience of the Goldfields-Esperance region and will support the Plan in achieving the region’s vision. As drought and water are inextricably linked, a regionally specific definition of water security was also developed.

DROUGHT

A prolonged period of abnormally dry conditions that negatively impacts on water availability in a region and, consequently, affects the economy – including missed opportunities for growth – and environment of the region, and the health and well-being of its residents.

WATER SECURITY

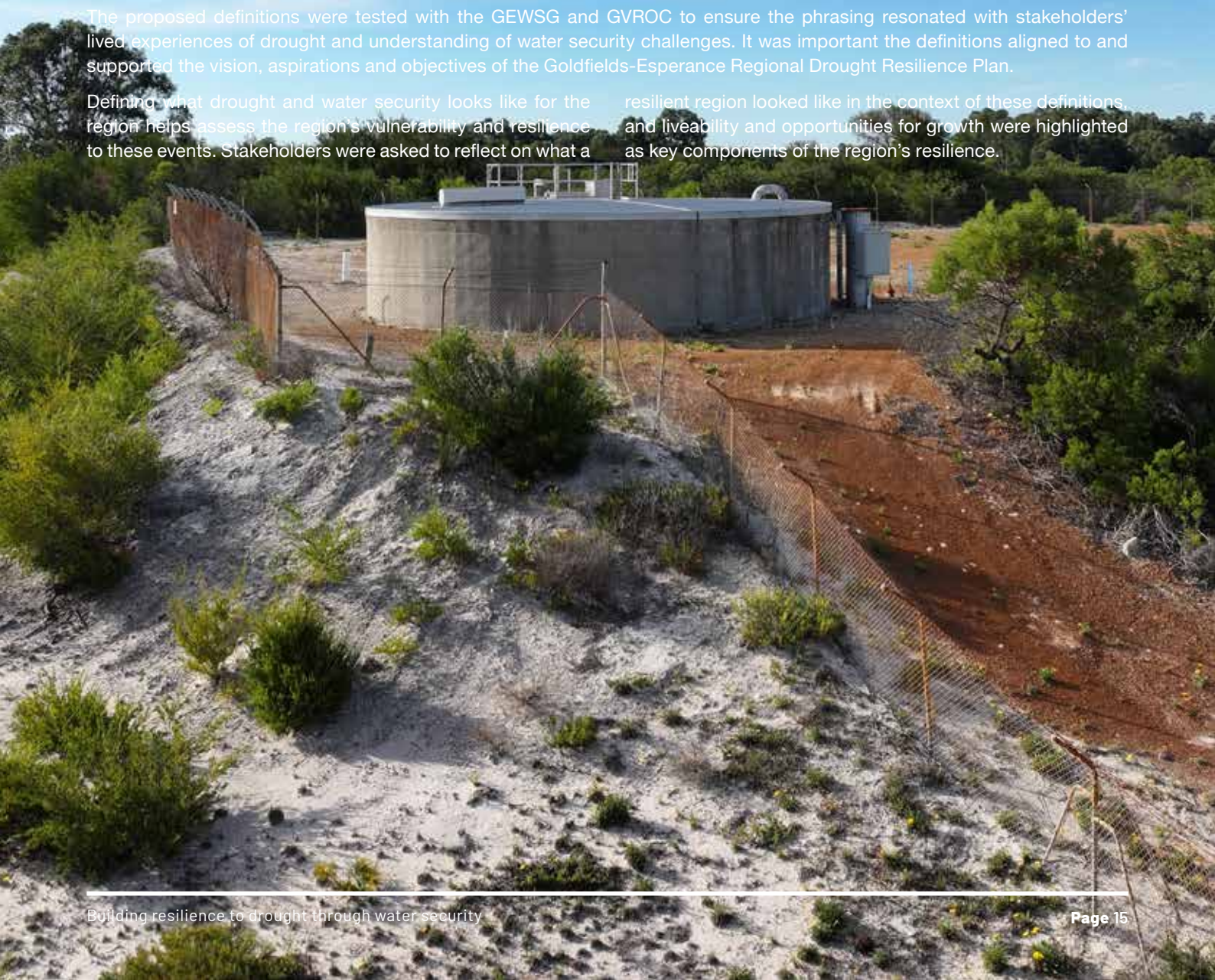
Ensuring that needs for water – encompassing quantity, quality, and affordability and access – can be met, over time and under changing supply and demand profiles. And, that this is achieved by investment coordination and operations that are economically efficient, financially and environmentally sustainable, culturally appropriate, and resilient to shocks.

These definitions are informed by other nationally accepted terminologies including the Australian Government’s definition of water security, the Bureau of Meteorology and the Defining Drought in Western Australia, report produced by Curtin University (Aither, 2023) (Bureau of Meteorology, 2025) (Mastrantonis, 2022).

The proposed definitions were tested with the GEWSG and GVROC to ensure the phrasing resonated with stakeholders’ lived experiences of drought and understanding of water security challenges. It was important the definitions aligned to and supported the vision, aspirations and objectives of the Goldfields-Esperance Regional Drought Resilience Plan.

Defining what drought and water security looks like for the region helps assess the region’s vulnerability and resilience to these events. Stakeholders were asked to reflect on what a

resilient region looked like in the context of these definitions, and liveability and opportunities for growth were highlighted as key components of the region’s resilience.



CASE STUDY - SHIRE OF MENZIES

ACCESS TO POTABLE WATER

With limited water resources and a reliance on a single water supply across many Goldfields-Esperance communities, maintaining access to fit for purpose water is crucial for communities – particularly during emergency events.

Every day, up to three trucks make the 260km round trip from Kalgoorlie to fill Menzies' sole 200,000L tank with potable water supplied from the GAWSS. It's the only source of water for the town's 575 residents, with no access to suitable ground water and limited ability to capture what rain does fall. But with only one sealed road in and out of the small mining and pastoral town, disruptions to the Goldfields Highway can literally leave Menzies without water.

In late 2023, with multiple fires burning across the landscapes surrounding Menzies, the highway was closed for several days, stranding around 50 freight trucks. With water trucks unable to reach Menzies, the only potable water available to the town and it's additional hundred stranded travellers, was the 200,000L tank.

Shire President Paul Warner said the closures highlighted the precarious situation this limited storage capacity put the town in.

"It was very scary when those fires came through... we just don't have a lot of options and that's the only way water gets in," he said.

When the highway was eventually reopened, the Shire estimated only a foot of water remained in the tank. Water availability is front of mind for Menzies residents, and the water trucks travelling through town every day are a visual reminder of just how vulnerable the town's supply is.

Mr Warner said a key priority is increasing the town's water storage capacity to improve its ability to respond to unforeseen events and empower the community to unlock new opportunities.

"It's a big constraint to economic development, we've been told there's no more development possible," Mr Warner said.

"It was very scary when those fires came through... we just don't have a lot of options and that's the only way water gets in"

Paul Warner
Shire President

Image: Niagara Dam, Menzies

The Shire is working hard to make the most of every drop of water, installing guttering on public buildings and in collaboration with the Goldfields Voluntary Regional Organisation of Councils (GVROC) is pursuing the refurbishment of an old dam for non-potable use. Securing this resource would reduce the demand on potable water and enable the Shire to improve the town's public amenity by planting native trees and increasing green spaces.

Despite being an important centre for mining and exploration, and a key stop for travellers on the Goldfields Highway, Shire Acting Chief Executive Peter Bentley said small Local Governments like Menzies lacked the resources to make significant investments into water.

“Commercially we’re up against it,” he said.

“We just don’t have the critical mass (of people) to be investing in big infrastructure.”

However, the Shire is keeping a future focused approach, and believes opportunities for investment into alternative water solutions, such as wastewater recycling could be a viable option if the right partnerships emerge.



Image: Town Hall, Menzies



PLAN VISION

A vibrant region underpinned by **sustainable access to diverse water sources** that enhance regional resilience by managing risk and enabling growth

Image: Creek, Menzies

OBJECTIVES FOR THE PLAN

The key objectives for the Plan were developed to support the region's overall vision, outcomes and goals surrounding water security and drought resilience. The priorities and aspirations of the communities and organisations consulted shaped the development of the objectives, which were subsequently refined by the GEWSG (GEDC 2024a). The process of developing the GE-RDRP and the Plan itself are targeted towards delivering on these objectives.



To identify practical and investable actions and **projects** that can **attract funding** and are **readily implementable**.



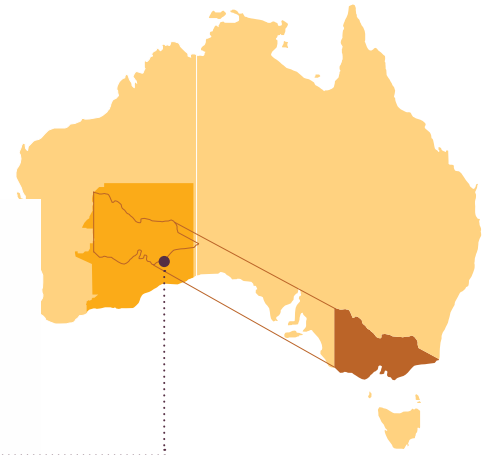
Promote and facilitate increased **collaboration**, communication and partnerships through the development of a **shared understanding** of the region's **drought vulnerabilities and water security priorities**, and the delivery of regional and sub-regional actions that can support multiple users' priorities.



Empower regional **stakeholders** to have **authorship of their solutions** and determination over the direction of their communities, industries or landscape's future.

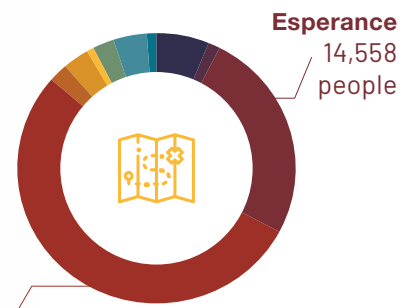
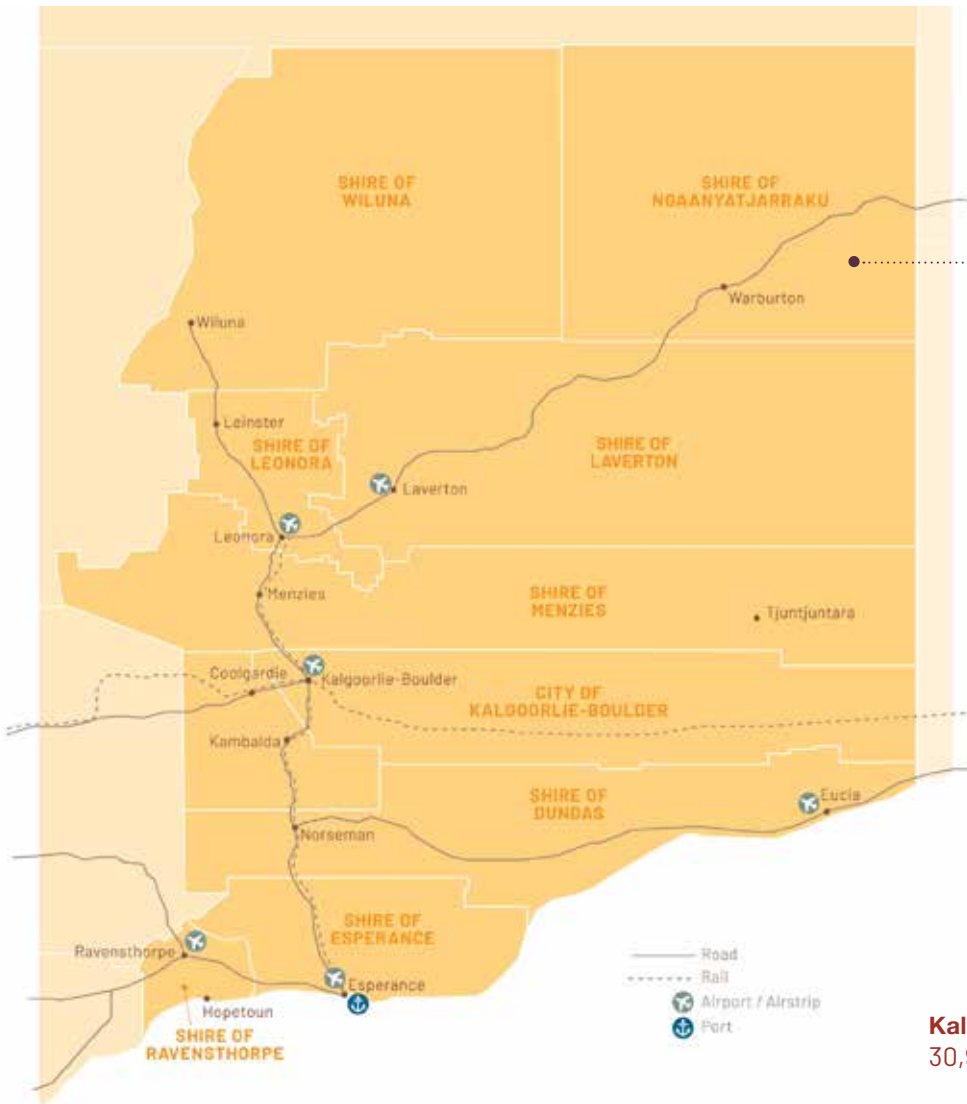
CONTEXT

About the Region



The Goldfields-Esperance region is located in the south-eastern corner of Western Australia.

The largest in WA, our region covers an expansive land area of over **950,000km²**, which is more than **four times the size of Victoria**



Kalgoorlie-Boulder
30,991 people


58,134*
People call our region home


36 years
Median age


17
Indigenous languages and dialects


9.2%
Aboriginal and/or Torres Strait Islander

Population per Local Government Area*

● Coolgardie	3,779
● Dundas	723
● Esperance	14,558
● Kalgoorlie-Boulder	30,991
● Laverton	1,444
● Leonora	1,737
● Menzies	577
● Ngaanyatjaraku	1,482
● Ravensthorpe	2,280
● Wiluna	563

Sources: REMPLAN 2021, *2024 ABS Estimated Resident Population

SIGNIFICANT MINING REGION

One of the most significant mining regions in Australia, producing commodities including gold, nickel, copper, lithium, iron ore, rare earths and critical minerals. The mining sector contributes \$27.7 billion in regional economic output.

UNIQUE NATURAL ASSETS

A diverse landscape with distinct climates and unique ecosystems, including desert landscapes, spinifex grasslands, mulga woodlands and coastal heath and scrublands. The Great Victorian Desert is the largest dune desert system in Australia, while the Great Western Woodlands are the largest unfragmented temperate woodlands in the world, with 20% of Australia's plant species. In the region's south, the Fitzgerald Biosphere is a biodiversity hotspot with an incredibly high level of endemic species under threat.

STRONG AGRICULTURAL SECTOR

The Southern sub-region has a high value broadacre industry, with cropping, livestock, fisheries and forestry industries. The sector contributes \$936 million in economic output and is a major employer of the Southern sub-region. Pastoral activities extend across the Central and Northern sub-regions.

KEY STATISTICS



\$40.8 billion

**Economic Output
(2023-24)**



\$277,712

**Per Capita
Gross Regional
Product**



\$403,476

**Per Worker
Gross Regional
Product**



3.3%

**Unemployment
Rate
(Dec 2024)**



37,696

**Jobs in the
Region**



\$5 million +

**REDs funding
across 7 rounds**

TOP 10 INDUSTRY

Sectors by Economic Output (\$m)

Mining	\$27 billion
Manufacturing	\$4.5 billion
Construction	\$1.6 billion
Rental, Hiring & Real Estate	\$1.2 billion
Agriculture, Forestry & Fishing	\$936 million
Transport, Postal & Warehousing	\$872 million
Electricity, Gas, Water & Waste	\$545 million
Public Administration & Safety	\$533 million
Healthcare & Social Assistance	\$504 million
Education & Training	\$392 million

Sources: REMPLAN 2024

Water in the Goldfields-Esperance Region

THE GAWSS

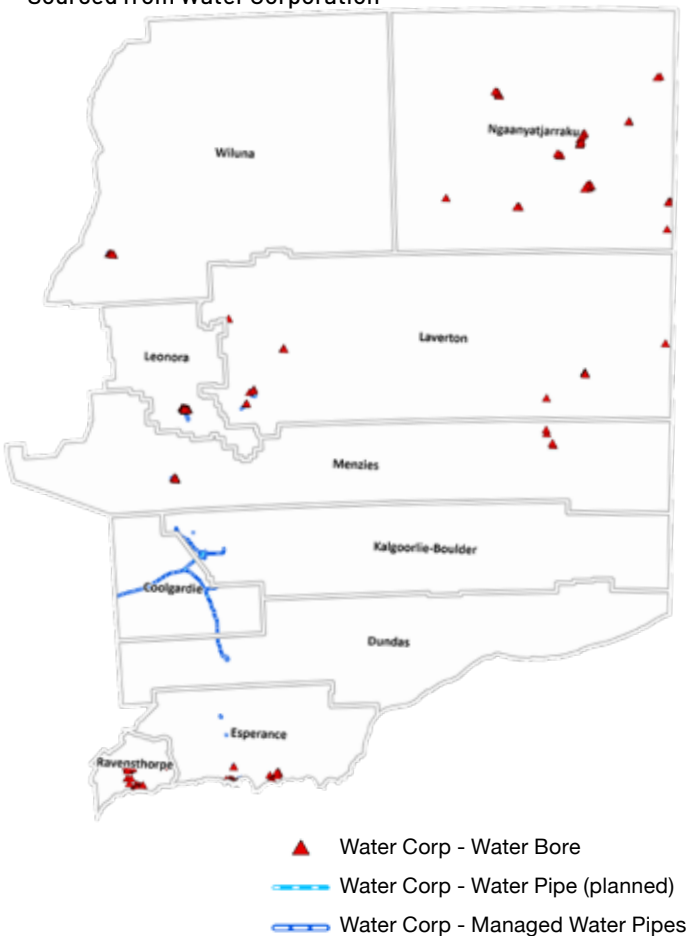
The GAWSS sources water from Mundaring Weir in Perth and services customers across the Wheatbelt and central Goldfields, including Kalgoorlie-Boulder, Coolgardie, Menzies and Norseman (Figure 1). The GAWSS, operated by the Water Corporation, supplies approximately 28GL/year of potable water across 9,601km of water mains. The scheme supplies more than 100,000 residential customers (Water Corporation, n.d.).

The scheme is connected to Perth’s Integrated Water Supply System which can draw on groundwater and seawater desalination in addition to surface water in Mundaring Weir if needed (Department of Planning; WA Planning Commission 2015).

FIGURE 1

Water Corporation owned assets across the Goldfields-Esperance region of Western Australia.

Sourced from Water Corporation



GROUNDWATER

Groundwater is the primary potable water supply for towns and industries outside of the Central Goldfields, including Ravensthorpe, Esperance, Leonora, Laverton, Wiluna and the communities across the Ngaanyatjarra Lands (Figure 2). Bores accessing shallow aquifers and deep paleochannels are common where towns, mines and pastoral stations are located and are often coupled with desalination or reverse osmosis units where groundwater is too saline (Aither, 2025).



Image: Esperance Bore Fields



Image: Rainwater tank

NON-POTABLE RESOURCES

Non-potable water supplies are highly dependent on local context across users and landscapes of the region (GEDC, 2024a). In the larger population centres, wastewater treatment and stormwater capture and reuse have been utilised for a number of years. Desalination in Esperance has also been identified as a potential source of water for industrial use, and potentially potable water and other future industries (GEDC, 2024a).

Barriers to the adoption of non-potable water alternatives have left many communities and industries of the region reliant on potable water supplies for non-potable activities. The access to and use of non-potable water supplies are an important opportunity to provide water security to the region.

SURFACE WATER

Surface water resources are scarcely utilised throughout much of the region, inhibited by inconsistent or low rainfall patterns and high evaporation rates particularly in the Central and Northern Goldfields. However, surface water assets, primarily captured in dams are an integral resource in the Esperance and Ravensthorpe Shires where broadacre enterprises and associated rural communities exist.

The pastoral industry accesses a mix of surface and groundwater resources, informed by local conditions and resource availability (Aither, 2025).

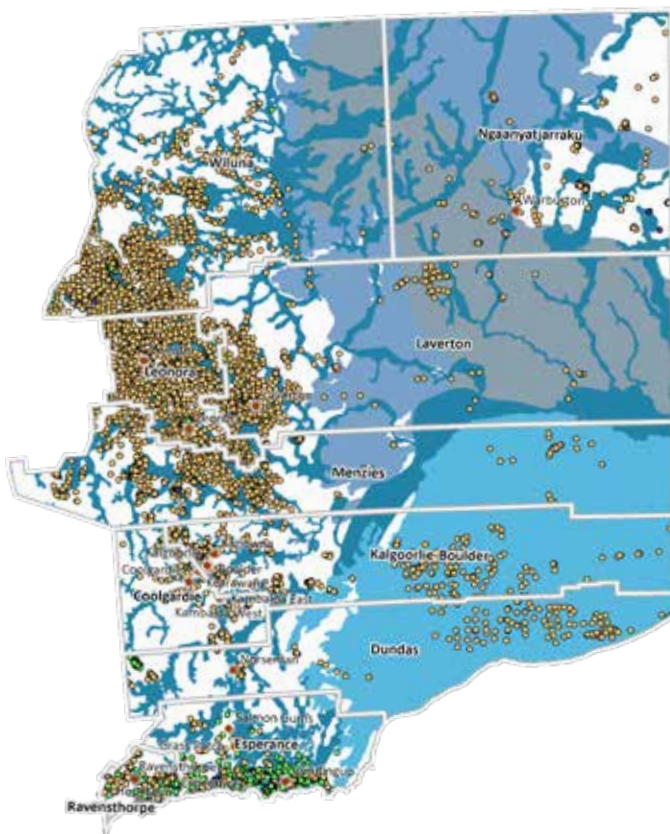


FIGURE 2

Groundwater bores and resources across the Goldfields-Esperance region of Western Australia.

Sourced from the National Groundwater Information System.

Water Bore (NGIS)

- Commercial & Industrial
- Exploration
- Monitoring
- Other
- Stock & Domestic
- Unknown
- Water Supply

Water Aquifer

- Grant Group
- Hampton Sandstone
- Loongana Sandstone
- Lower Tertiary Sediments
- Nullarbor Limestone
- Palaeovalley
- Sedimentary Rocks
- Surficial Sediments



Image: Leonora

CASE STUDY - SHIRE OF LAVERTON

ENHANCING NON-POTABLE WATER

Investing in alternative water supplies to reduce the use of potable water for non-potable uses is enabling local governments to unlock economic potential and improve liveability.

Over the next few years, thousands of trees will be planted around the town of Laverton as the Shire enacts plans to make the northern Goldfields town greener, cooler and more liveable.

More than 400 mature trees have already been planted across Laverton and artificial turf is gradually being replaced with real grass. The aim is to activate spaces in the town's centre, providing cool public places for the community, while improving amenity.

The project is possible due to collaboration between Water Corporation and the Shire to identify alternative, non-potable water supplies that reduce the pressure on the town's drinking water supply.

Until recently, the Shire only had access to potable water provided by one Water Corporation-managed bore. Shire CEO Phil Marshall said this had meant the Shire was using precious potable water to green the town's sports oval. Limited water supplies also meant the Shire was constrained in its ability to maintain parks and streetscapes.

“It came through very clearly when we started looking at this that Shire could actually work with Water Corporation to achieve localized solutions that suit our community”

Phil Marshall
Shire of Laverton CEO



In partnership with Water Corporation, three additional bores were identified as suitable to supply non-potable water and seed funding from Water Corporation allowed two bores to become operational. The Shire has now allocated additional funds to equip a third bore.

Building an effective working relationship with Water Corporation was pivotal to the project's success and allowed the Shire to undertake some of the works required to achieve efficiencies.

"It came through very clearly when we started looking at this that the Shire could actually work with Water Corporation to achieve localized solutions that suit our community," Mr Marshall said.

"That required flexibility and an understanding of each other, but we can certainly see the benefit of working together and building that relationship."

It's a project that is also positioning the town for future climates and an anticipated increase in extreme heat days. Thousands of trees will be planted in Laverton over coming

years as part of GVROC's Urban Greening program, which is aimed at increasing urban canopy and biodiversity to help build more resilient communities across the Goldfields-Esperance region.

Mr Marshall said the greening of the town had been a priority for the community for many years and was already building morale amongst residents.

"You can't underestimate the importance of this to the community. We're on the edge of the desert, but people can see the changes happening and there is such a positive feeling about it," Mr Marshall said.

The additional water supply and town greening project also enables the Goldfields town to capitalize on increased tourism opportunities emerging from the sealing of the Outback Way, a 2700km road connecting Laverton to Winton in Queensland.

"If we can encourage people to stop in Laverton for half a day or even overnight then that's great for the town," Mr Marshall said.



BUILDING THE PLAN

This Plan presents a coordinated approach to building drought resilience in the region focused on water security. It has been informed by both empirical and anecdotal evidence to ensure this approach is not only underpinned by a robust evidence base but tested against and reflective of the region's lived experience.

The Plan has three foundational elements:



DROUGHT VULNERABILITY ASSESSMENT (DVA)

Developed through the vulnerability assessment framework established during the WA pilot Regional Drought Resilience Planning program (Aither, 2025).



COMMUNITY CONSULTATION PROGRAM

Designed to capture the priorities and needs of stakeholders representing varying industries, communities, and interests from across the region to ensure the plan is community-led and regionally specific (GEDC, 2024a).



ACTION PLAN

Captured in the response section of this Plan, presenting the priorities, actions, and implementation pathways across a range of future climate scenarios to build water security and address drought resilience.



Scope

The resilience planning landscape is increasingly active as communities, industries and governments recognise the need for better preparedness, response and recovery from changing climates.

This Plan aims to address gaps in the region's resilience planning landscape to deliver practical and meaningful actions, focused on community, sub-regional or regional scale initiatives that address water scarcity and accessibility, impacts of fires and floods and extreme heat conditions.

The Plan seeks to align and promote other efforts being delivered, that are focused at an individual or private benefit level. The Plans actions will also support several significant resilience projects being delivered across the region, including GVROC's Urban Greening and Adapting Community Assets for Climate Change programs.

A list of these and other related programs addressing areas of climate and drought resilience are included in Appendix A.

Image: Gravel Road, Menzies

Defining Boundaries

Due to the vastness, complexity and diversity of the region, the Plan approaches drought resilience at a regional, sub-regional and community scale. Sub-regional boundaries were developed collaboratively with the GEWSG and GVROC and are determined by the status of potable water supply, perceived climate trends and dominant industry presence at a Local Government level. Sub-regions for the purpose of this Plan are:

NORTHERN SUB-REGION

Includes the Shires of Wiluna, Ngaanyatjarraku, Laverton and Leonora. Potable water supply is mostly sourced from bores and the dominant industries are mining and pastoral. Climate involves long periods of dry conditions broken by short-lived, intense rainfall events.

CENTRAL SUB-REGION

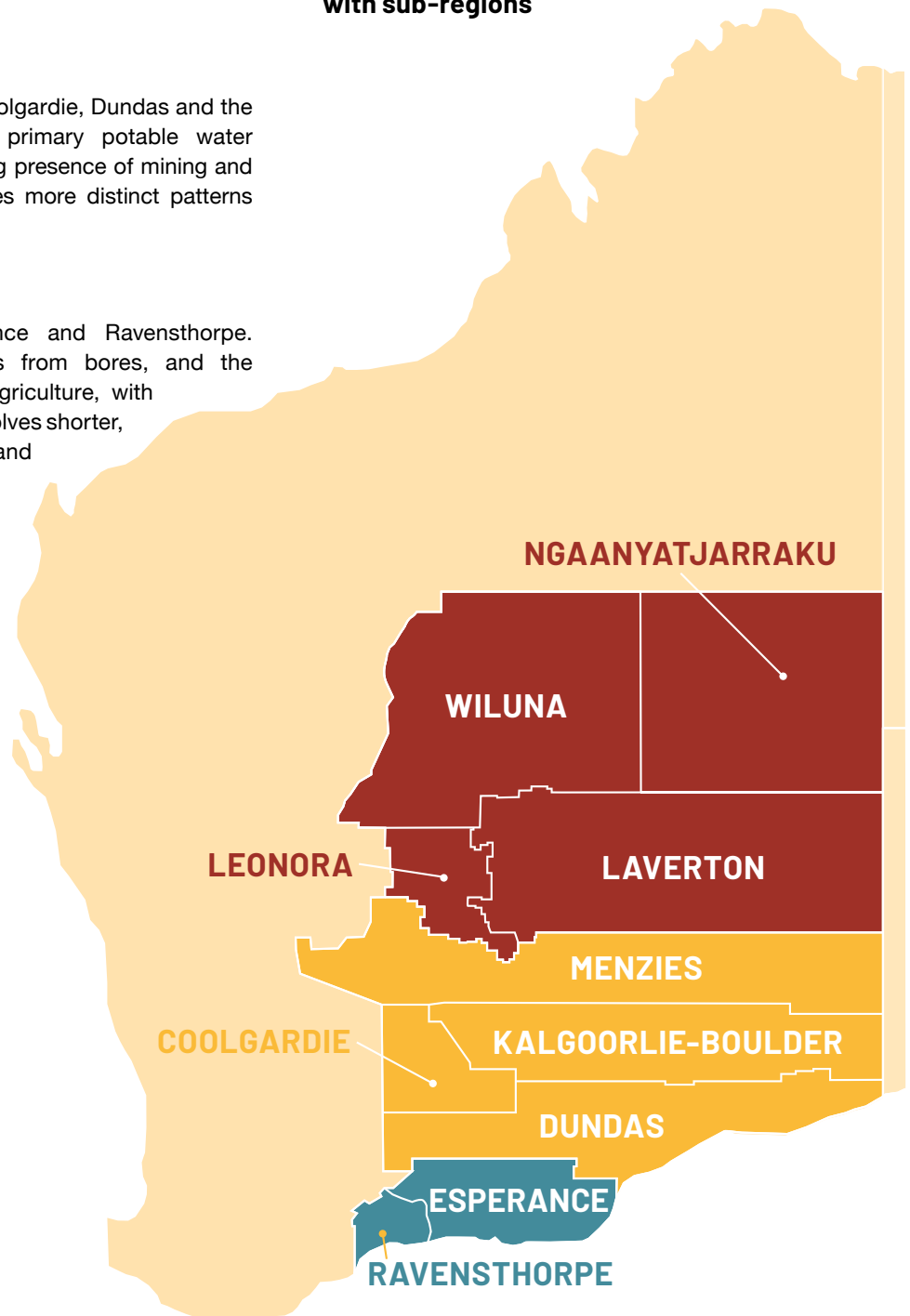
Includes the Shires of Menzies, Coolgardie, Dundas and the City of Kalgoorlie-Boulder. The primary potable water supply is the GAWSS, with a strong presence of mining and pastoral industries. Climate involves more distinct patterns on a local level.

SOUTHERN SUB-REGION

Includes the Shires of Esperance and Ravensthorpe. Primary potable water supply is from bores, and the dominant industry is broadacre agriculture, with some mining presence. Climate involves shorter, more intense cycles between wet and dry conditions.

FIGURE 3

Goldfields-Esperance RDRP area with sub-regions



Stakeholder Engagement

The Plan was developed through a community-led process to ensure the Plan was regionally relevant, aligned to lived experiences and could deliver positive outcomes for the communities, industries and landscapes of the region.

Engagements aimed to share the intent of the Plan and provide the opportunity for stakeholder's perspectives and priorities to be captured and inform the development and direction of the Plan.

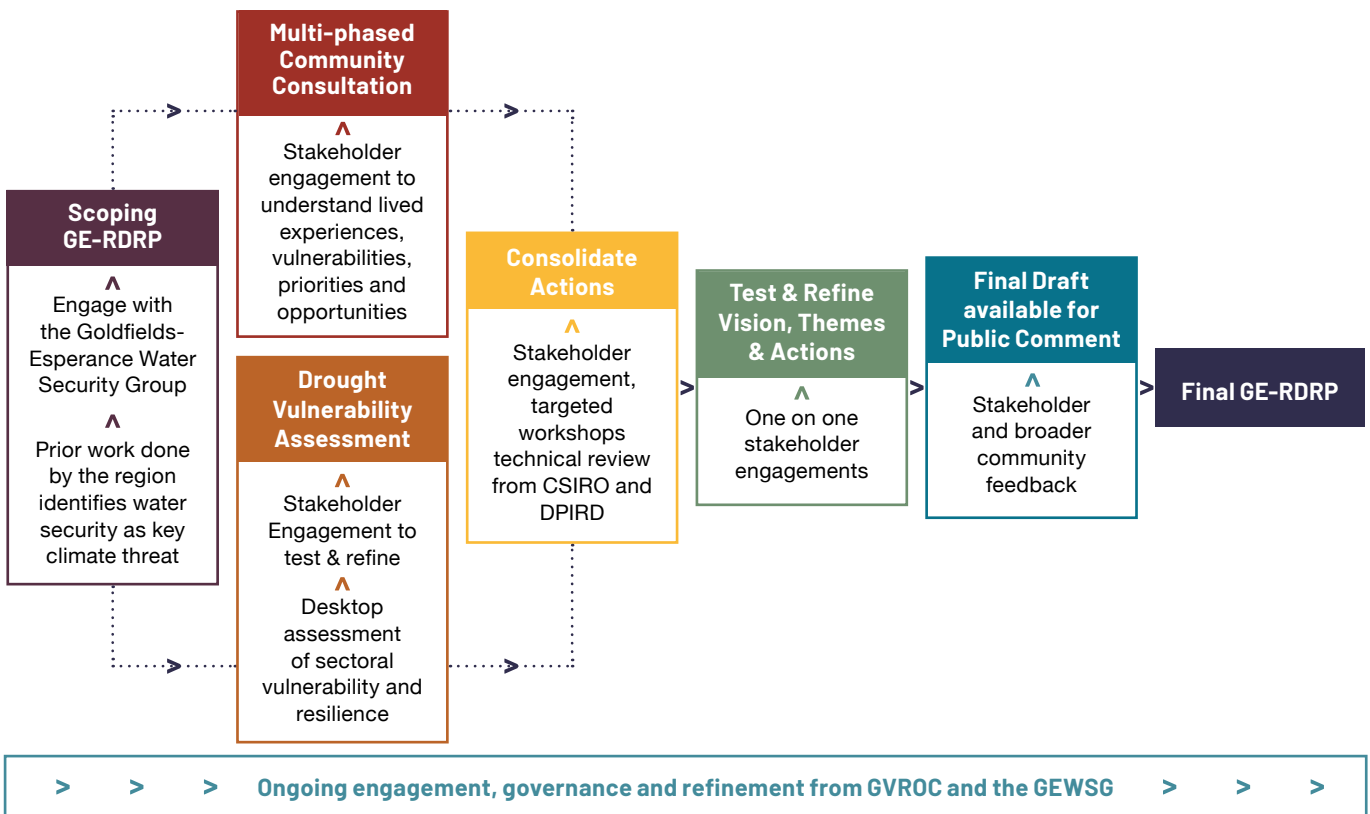
Throughout the development of the Plan, approximately 170 individuals across 60 organisations were engaged in an ongoing process, outlined in Figure 4 below.



Image: Town Hall, Menzies

FIGURE 4

A multi-phases stakeholder engagement process was undertaken to develop the GE-RDRP



Images: Regional Drought Resilience Plan Consultation Road Trip

CASE STUDY - WONGUNTHA CAPS WATERSMART FARMS TRIAL

An innovative trial to unlock alternative water supplies is securing a sustainable resource for a rural school and delivering added benefits for on farm irrigation and emergency water supplies.

The Wongutha CAPS training farm near Esperance is trialling innovative technology to unlock alternative water supplies by testing a small-scale, solar-driven, Brackish Water Reverse Osmosis (BWRO) desalination system.

The school caters for Year 11 and 12 Aboriginal students, predominantly from remote towns and communities throughout Western Australia, with up to 76 students boarding and 10-12 staff living onsite.

Wongutha Facilities Manager Kris Nostrini said when the site was at capacity, the school consumed around 30,000 litres per day.

The school was previously supplied by rain capture from roofs and poor-quality groundwater, which was under increasing pressure to balance the water demands of training facilities and farm operations.

“In the last five years the water quality had reduced dramatically due to an increase in salinity, and the ageing infrastructure struggled to supply the volume needed,” Mr Nostrini said.

“We were in dire need of finding an alternative source - trucking in water was the most likely option.”

The small-scale desalination unit has proven to be effective in a decentralised, rural, small-system setting and has been designed to produce 7.3ML of fresh water per annum.

“The small scale off grid desalination unit has revolutionized our water supply onsite. The system is able to supply up

to 30,000 litres a day which can offset our complete onsite usage,” Mr Nostrini said.

This has led to added benefits for Wongutha school and provided additional benefits to on farm irrigation and emergency response supplies.

“Our rainwater supplies last longer and can be dedicated to higher quality needs.”

“The brine produced by the desalination process is being used to irrigate salt bush and salt tolerant plants. We have seen a fantastic response to the extra water available for the plants.”

“We also have the ability to supply quality water to surrounding landholders in time of drought or for emergency needs such as bushfires.”

Part of the WaterSmart Farms program, the project has been a collaborative partnership between the School, the Department of Primary Industries and Regional Development (DPIRD), Water Corporation, Murdoch University and the National Water Grid Authority.

Through innovation and collaboration this project has enabled Wongutha Caps to establish a secure and sustainable water supply, improve its use of fit for purpose higher quality resources and unlocked new opportunities to support the broader landscape and rural community to respond to drought and fire events.

“The brine produced by the desalination process is being used to irrigate salt bush and salt tolerant plants. We have seen a fantastic response to the extra water available for the plants.”

Kris Nostrini
Wongutha Facilities Manager

Image: Saltbush at Wongutha CAPS

Drought Vulnerability Assessment

The DVA reviews the historic and likely future drought related impacts, water resources, availability and scarcity across the region. It also includes anecdotal evidence gathered during consultations that identify the region’s lived experience with drought.

The DVA provides an assessment of key vulnerabilities by sector, which are used to highlight the varying exposures, sensitivities and adaptive capacities of different water users across the region. In addition, this enables inter-sector relationships and the influence of drought and water security on these relationships to be identified.

THE SECTORS EXPLORED WITHIN THIS ASSESSMENT ARE DEFINED AS:



Mining



**Remote
Communities**



**Community
Water Supply**



**Conservation
& Land
Management**



Pastoral



Broadacre

The region itself was found to be highly vulnerable to changing climate conditions, with each sub-region facing unique challenges. Vulnerability by sector is highly variable and the relationships between sectors will influence individual water user’s resilience. This assessment has served to pinpoint important gaps in the region’s resilience and provides direction on where efforts of the plan should be focused and how.

The DVA serves as a robust evidence base that underpins the priorities and actions captured in the plan, detailed below. It is summarised below.

Image: Crop Stubbles, Hopetoun

Exposure




The DVA analysed 50th percentile scenarios of climate projections to 2050 to understand the likely rainfall, temperature and drought severity each sub-region will be exposed to in the future. While the Southern sub-region is likely to experience the greatest decline in average annual rainfall, conversely the north-east of the region will see an increase up to 20% (Aither, 2025).




Changes in drought severity are closely linked to rainfall projections and the Southern sub-region will likely suffer the greatest increase in severity of drought events. However, across the whole Goldfields-Esperance region, temperatures are expected to rise by 1-2 degrees consistently. The frequency of extreme heat days will be a greater concern to communities and industries in the northern parts of the region, which already experience maximum temperatures that are on average higher than southern areas (Aither, 2025).

Vulnerability

TABLE 1

Summary of the Goldfields-Esperance regional drought vulnerability assessment by sector

EXPOSURE	SENSITIVITY	ADAPTIVE CAPACITY	VULNERABILITY
 MINING			
<p>Mines in the Central Subregion will be exposed to declining annual average rainfall, with opportunistic summer rainfall.</p> <p>Mines in the Northern Subregion are likely to experience longer extended dry periods broken by short intense rainfall events.</p>	<p>Most water dependent sources used for mining activities (deep and extensive paleochannels) are not sensitive to changes in rainfall, temperature or potential drought occurrences.</p>	<p>As water security is generally dealt with up front through the identification of secure water there is little need for ongoing capacity to address changes in water supply.</p>	<p>Drought periods are unlikely to significantly impact the mining industry directly.</p> <p>There are other water security vulnerabilities that stem from drought which require mines to manage the degree to which mining water use interacts or is perceived to interact with other water sources or water dependent values.</p>
 REMOTE COMMUNITIES			
<p>Climate change will exacerbate existing water supply and quality issues in remote communities.</p> <p>It is unclear what affect increased rainfall and decreased drought severity will have on groundwater supplies. It may result in flood impacts to critical transport infrastructure.</p>	<p>Remote communities have a high sensitivity to water-related stress, compounded by other sensitivities including poor health outcomes, social connectivity and local economic opportunities.</p>	<p>Remote communities are some of the most socio-economically disadvantaged in the Goldfields-Esperance Region - Climate risks are likely to compound these disadvantages and have a negative impact on liveability.</p>	<p>Infrastructure uplift is critical to address water quality issues from naturally occurring contaminants and salinity issues and improve the condition and suitability of existing infrastructure. Significant investment and planning are required to improve infrastructure.</p>
 PASTORAL			
<p>Pastoralists in the west of the Central Subregion (Nullarbor) and the Northern Subregion are likely to be exposed to more severe droughts and reductions in long-term average rainfall.</p>	<p>Severe droughts and extreme heat will affect pastoralists' ability to meet stock watering requirements, particularly if they have limited groundwater resources or rely on shallow aquifers.</p>	<p>Access to emergency water resources and adaptive farm management strategies are limited by pastoralists' remoteness and capacity.</p>	<p>Greater drought exposure will limit grazing availability and increase the vulnerability of pastoral land to long-term degradation.</p>

EXPOSURE	SENSITIVITY	ADAPTIVE CAPACITY	VULNERABILITY
 COMMUNITY WATER SUPPLY			
<p>Towns will experience increased supply pressure from a hotter, dryer climate as well as increased demand in line with projected population and economic activity growth.</p> <p>This presents a key risk to water supply in the Esperance area, driving reduced groundwater recharge and saline intrusion risks to coastal aquifers and putting pressure on treated wastewater to supply economic activity, parks, gardens and schools.</p>	<p>A hotter, dryer climate will increase water supply and quality issues in small communities in the Southern Subregion with limited groundwater and high reliance on rainfall. The Esperance area also remains vulnerable to these climatic effects.</p> <p>Water supply and quality is a challenge for multiple small towns dependent on local groundwater and with limited freshwater sources, sporadic recharge, and declines in the availability of high-quality groundwater. Water carting is already required to supply some of these communities, and for some these arrangements are largely permanent.</p>	<p>Significant infrastructure investment is needed to increase adaptive capacity to drought. Improvements to sewerage and wastewater infrastructure are needed to increase use of recycled water and stormwater.</p>	<p>Town water supply arrangements have been developed to manage prolonged drought, high temperatures and variable rainfall, but climate change is likely to increase severity and frequency.</p> <p>More frequent, extended and severe droughts will put demand pressure on the key supply schemes of GAWSS and Esperance, and on wastewater and storm water supplies used for non-potable uses</p>
 CONSERVATION AND LAND MANAGEMENT			
<p>There are large areas of conservation reserves, indigenous protected and/or managed areas and Unallocated Crown Land (UCLs) across the region that are naturally adapted to drought, but climate change may mean significant changes to these asset's condition</p>	<p>More prolonged and severe droughts can impact fire regimes, particularly in the Central and Southern Subregion, and demonstrate a dependency on sufficient water access to maintain and protect critical infrastructure, and environmental and cultural assets.</p> <p>Increasing severity of large rainfall events in the Northern and Central Subregions can impact runoff and recharge cycles and may contribute to erosion and landscape degradation.</p> <p>Water insecurity and landscape degradation in culturally significant Indigenous remote areas impact communities' ability to maintain traditional land management practices and connection to Country.</p>	<p>Adaptive land management is key to building landscape resilience.</p>	<p>Managing longer-term climate variability is important for sustainability across land areas during drought and as climate changes.</p>
 BROADACRE			
<p>Broadacre farming in the Southern Subregion will be highly exposed to reducing average rainfall and increasing drought severity</p>	<p>Farmers in the far north of the Southern Subregion near Salmon Gums and in the far west near Ravensthorpe will be the most sensitive to increased drought risk.</p> <p>These areas already receive relatively low rainfall and have lower yield potential than farming areas in higher rainfall zones closer to the coast.</p> <p>Livestock producers in the low rainfall areas will be more sensitive to reduced rainfall with increased demand for fodder and water for animal welfare.</p>	<p>Broadacre producers generally have high adaptive capacity with a range of opportunities to improve the water efficiency and resilience.</p> <p>Prioritisation of and investment in adaptive capacity measures is impacted by a range of factors including availability of capital.</p>	<p>Broadacre is highly susceptible to drought with seasonal reliance on rainfall to achieve seasonal crop yields and maintain healthy stock.</p> <p>Farmers in the North and West of the Southern Subregion are expected to be particularly vulnerable to future droughts due to high exposure, high sensitivity and reliance on external emergency water resources.</p>

CASE STUDY - SHIRE OF DUNDAS

BUSHFIRE EMERGENCY RESPONSE

Isolation, vast land areas and limited resources are challenges faced by remote Goldfields-Esperance Local Governments, who are often positioned as the first responder to emergency events that occur across expansive tracts of Western Australia.

The Shire of Dundas covers an enormous area of 93,000km² – which includes a significant amount of Unallocated Crown Land (UCL), Reserves and Pastoral Leases. More than 700km of the Eyre Highway, the major freight and transport route connecting WA and South Australia, traverses the Shire.

However, with a small population, including around 380 rate payers and volunteer fire brigade made up of six members, the Shire has limited capacity to plan for and respond to the increasing frequency of bushfire emergencies.

The sheer size of the region, and the need to protect significant infrastructure assets including the Eyre Highway, interstate rail, telecommunications and the digital fibre network, makes mitigation and response efforts incredibly important, but comparatively expensive.

Dundas Shire Chief Executive Officer Peter Fitchat describes the risks faced by the Eyre Highway corridor as national in scale but local in responsibility. He said historically the Shire has spent significant amounts of their operating budget on fire-fighting efforts, but the low revenue base of the Shire had meant that this has flow-on impacts to other areas of their budget.

The Shire is well positioned to respond to emergencies in a coordinated and strategic manner thereby increasing the efficiency of effort, but on its own, lacks the resources to

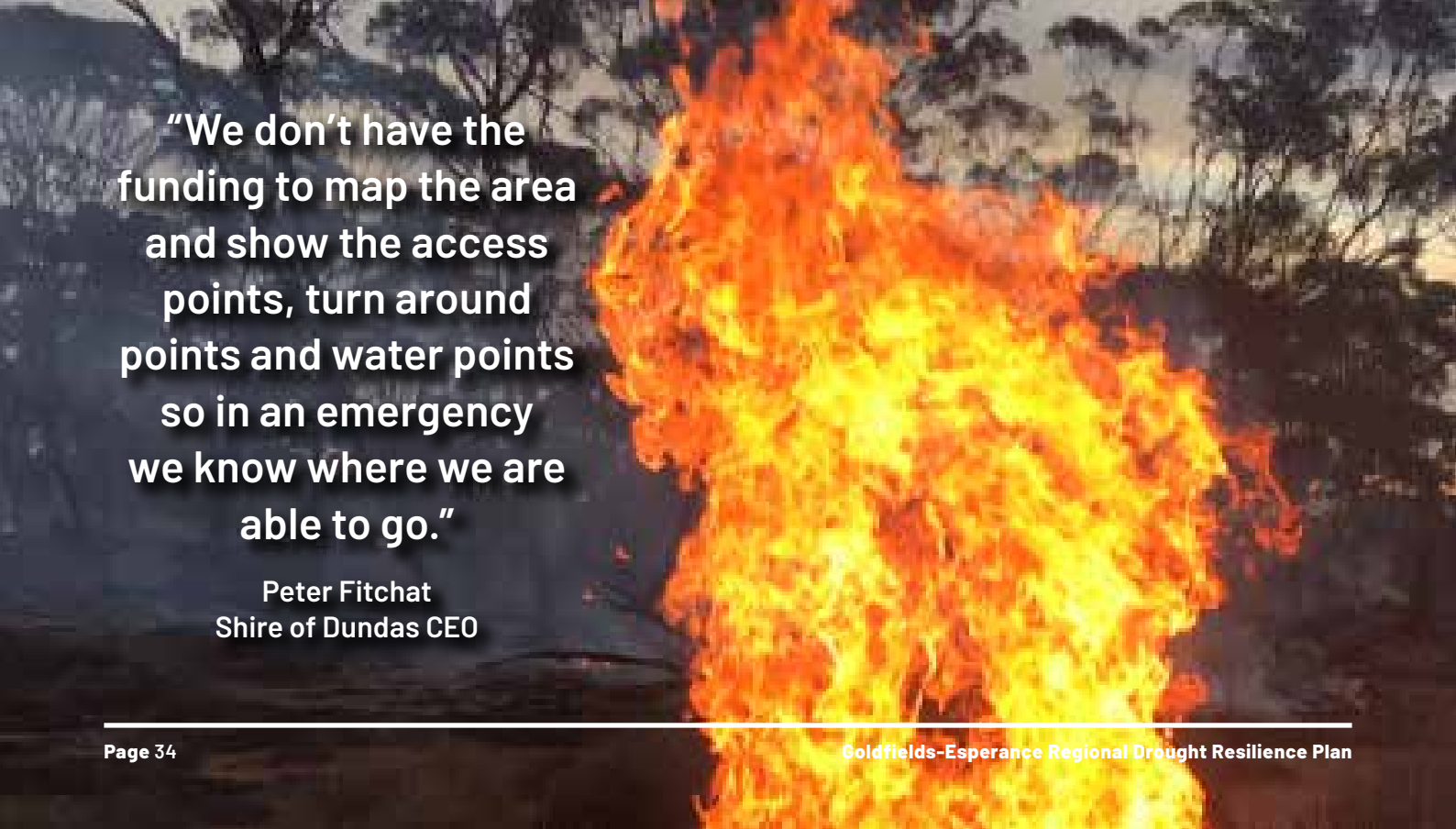
undertake the planning required for mitigation and response efforts.

“We don’t have the funding to map the area and show the access points, turn around points and water points so in an emergency we know where we are able to go. Access tracks could be closed, or not maintained. This is a concern from a workplace Health and Safety aspect... it’s dangerous to go into firefighting mode,” Mr Fitchat said.

Some areas of the Shire require a 360km round trip with a tanker to reach the nearest water point and where no water is available, the Shire must use potable water from the GAWSS.

The Shire is seeking support to enhance existing and develop new water access points for emergencies, but recognises that greater strategic planning and collaboration across agencies would help to maximise cost efficiencies, improve coordination and enhance local preparedness.

“We would love to have the resources and a team geared up to properly address this, and to maintain those strategic access points, because the community sees it as vital to looking after significant State infrastructure and those natural assets like the Great Western Woodlands,” Mr Fitchat said.



“We don’t have the funding to map the area and show the access points, turn around points and water points so in an emergency we know where we are able to go.”

**Peter Fitchat
Shire of Dundas CEO**

CASE STUDY - TJIWARL PALYAKUWA

WATER LICENSING AGREEMENTS

The Tjiwarl People, whose land lies in the Northern Subregion, have a spiritual relationship to water and the value that wetlands, rivers, springs, bushland and caves bring, including their cultural significance and the ecosystem benefits they provide (Department of the Premier and Cabinet, 2024). Tjiwarl land has been subject to a systematic process of granting rights to conduct mineral exploration, prospect and mine myriad mineral types, and rights to use Tjiwarl waters for mineral exploitation. As a result, Tjiwarl People were restricted from accessing resources traditionally used, and alterations occurred to the cultural landscape that were once part of Tjiwarl lands (Department of the Premier and Cabinet, 2023).

The Government of Western Australia entered into the Tjiwarl Palyakuwa (Agreement), as a result of three compensation claims that were filed by the Tjiwarl People against the State in 2020. The Agreement is a historical native title compensation settlement between the WA Government and the Tjiwarl Aboriginal Corporation and provides the Tjiwarl People with a package of benefits that compensate them for historical acts by the State that have impaired or extinguished their native title. The process undertaken is consistent with the WA Government's commitment to negotiated agreements in the state's Aboriginal Empowerment Strategy for 2021 to 2029.

"Water is life to Tjiwarl people and we have a responsibility to look after it. The Tjiwarl Agreement has given us a much better say in how mining companies manage water resources, and we hope that the productive relationships we are building with them means that this will continue into the future." Greg Ryan-Gadsden, Chief Executive Officer, Tjiwarl Aboriginal Corporation

The package of benefits includes the following important water related actions:


- An agreement to undertake a Tjiwarl Water Study to identify locations of water resources on Tjiwarl Country and their associated cultural, environmental and economic values. Following the Tjiwarl Water Study, a Tjiwarl Water Plan will be jointly developed.

- More access to water information relating to licenses and permits granted under the Rights in Water Irrigation Act 1914 (WA)
- A Tjiwarl specific process for the grant of water licenses under the Rights in Water and Irrigation Act 1914 (WA) has been agreed in the Agreement. This gives Tjiwarl Native Title Holders the opportunity for earlier engagement with licence applicants and both formal and structured involvement in the licensing process beyond that typically provided for.
- A Water Working Group to oversee and implement commitments and processes made with respect to water in Tjiwarl Country.

With the drought conditions of recent years, the Tjiwarl People's concerns for water resources and the impacts of mining have been heightened. The Agreement and water-related actions above provide Tjiwarl with a strong and transparent foundation for protecting the water resources of the region that support cultural and environmental values. Although most of this will come from having a more meaningful say in water licence applications that are being assessed by DWER, other benefits, such as the accessibility of water information, will also come from the more open relationships that are being established with mining companies and the Department as a result of the Agreement.

This package of works represents a significant step forward in ensuring that Tjiwarl People can continue to sustainably manage natural resources on Tjiwarl Country and is a demonstrated benefit of communities moving forward with negotiated agreements with the WA Government. However, even without an agreement in place, the water licensing provisions included in the Tjiwarl Agreement, could be used as a guide for other Native Title groups in the Goldfields Region to reach similar outcomes.

Image: Lake Miranda, Tjiwarl Country



"Water is life to Tjiwarl people and we have a responsibility to look after it. "

Greg Ryan-Gadsden, Chief Executive Officer, Tjiwarl Aboriginal Corporation

RESPONSE

Vision & Thematic Outcomes

The Goldfields-Esperance region, across its industries and communities, has a long history of harnessing innovation to adapt to changing climates and scenarios and driving place-based change.

Almost universally, consultations revealed communities did not want to be passive recipients of water-focused responses. Instead, communities wanted to be empowered to seek the solutions required to build long term sustainability for their landscapes, communities and economic fabric.

A strong focus on building knowledge and understanding, partnerships and collaboration emerged during the conversations held throughout the RDRP process. As stakeholders began to connect with each other through the lens of the RDRP, early steps towards building strategic relationships and developing collaborative projects emerged. Mitigating against the vulnerabilities presented by isolation and remoteness were key considerations

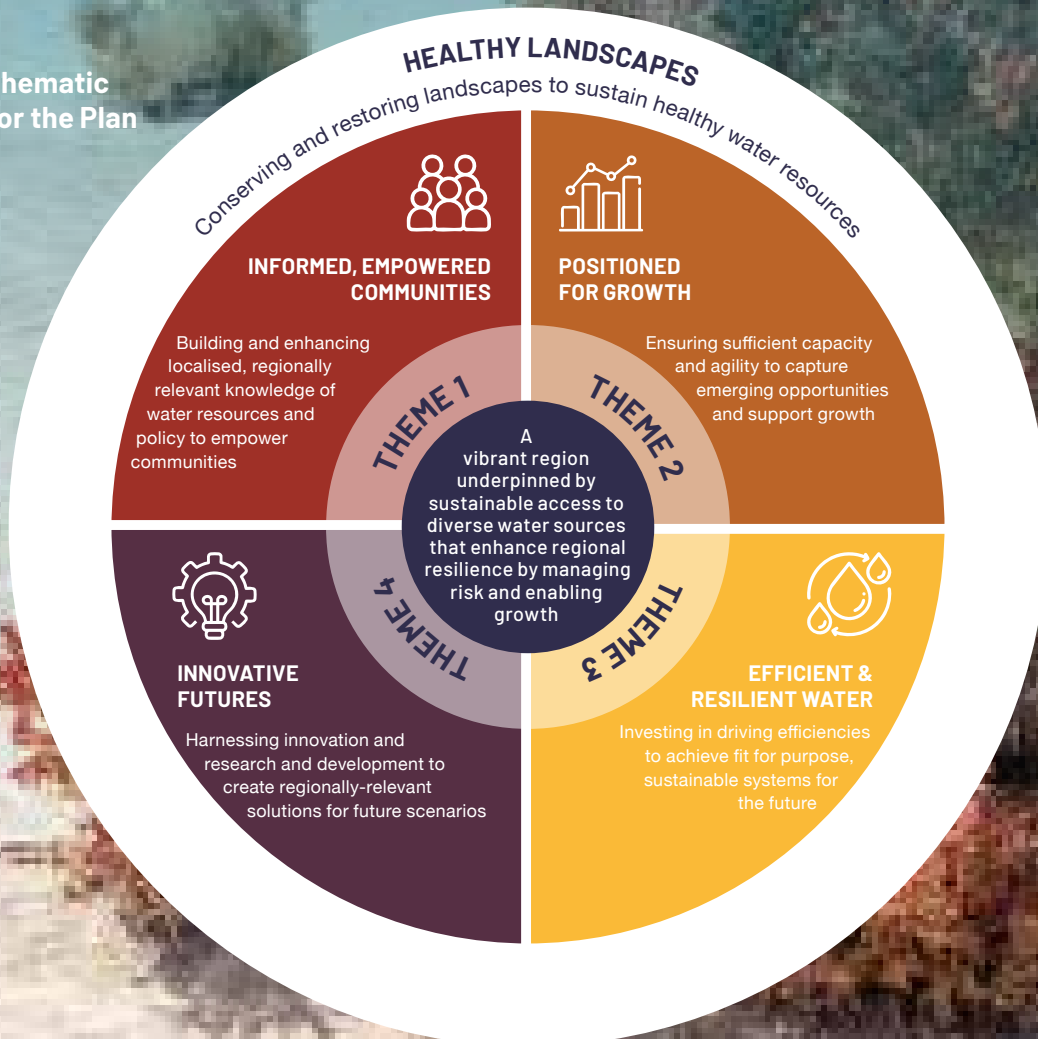
(GEDC 2024a). Collaboration was identified by all stakeholders as a mechanism to achieve the Plan's objectives and features across many of the identified actions.

Stakeholders clearly wanted to ensure the RDRP's actions would build resilience and focus on preparedness rather than reactive response. Solutions were required to be future-focused, enable economic growth and place communities in a position to harness emerging opportunities in a dynamic manner.

Four key themes have been identified that will support the delivery of aspirations identified by stakeholders and the vision for the Plan (Figure 5). These themes are underpinned by healthy landscapes and the conservation and restoration of natural assets to sustain healthy water resources. The themes are represented as outcomes that together will support the objectives of the Plan and the priorities and aspirations of the region.

FIGURE 5

Vision and thematic outcomes for the Plan



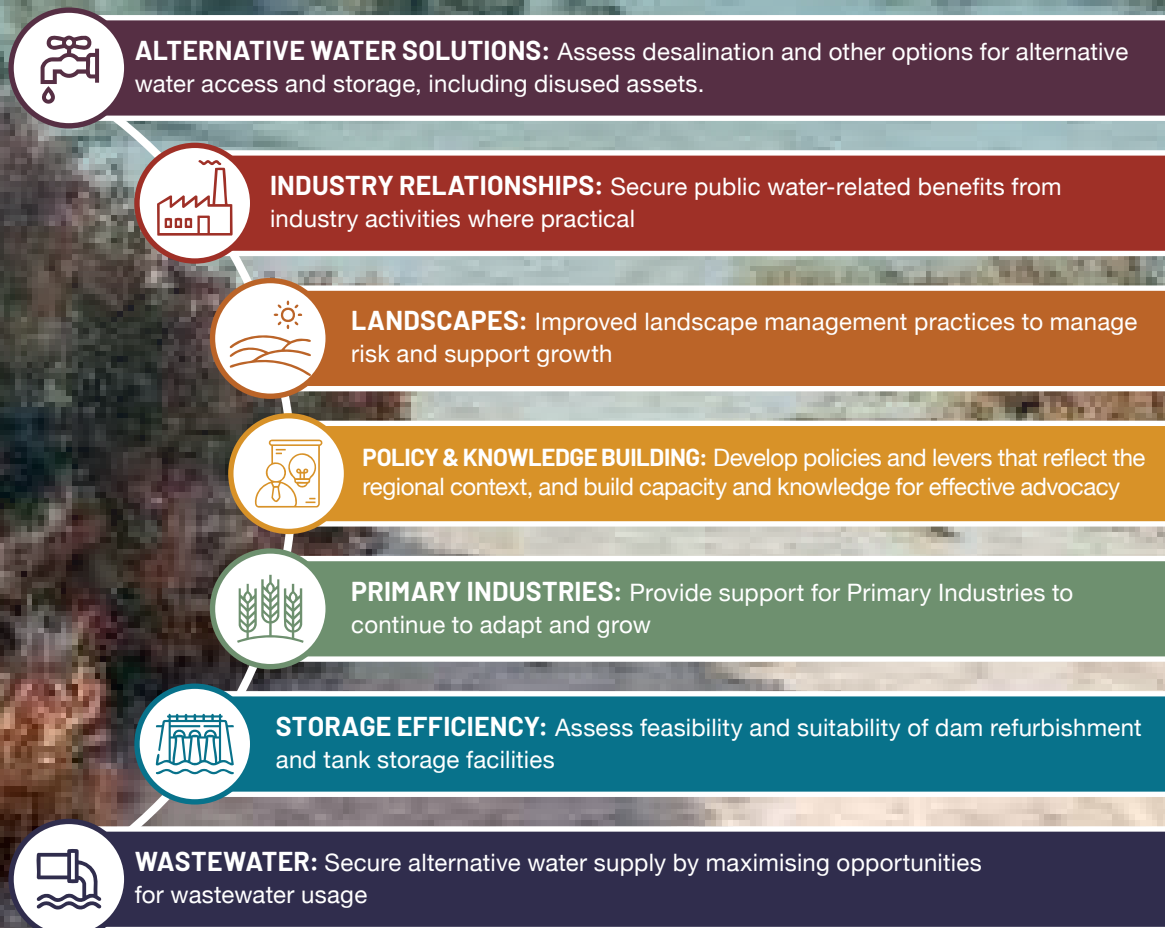
Priority actions for delivery

Underpinning the vision and thematic outcomes are actions. The actions have been informed and shaped by the Drought Vulnerability Assessment and consultation program.

Actions have been identified and characterised to support an understanding of responsibility, scale and how they will support future progress and delivery against the thematic outcomes. Actions are grouped into areas of focus (Figure 6), and identified against the local, sub-regional or regional level as well as relevant thematic outcomes.

FIGURE 6

Action areas of focus



CASE STUDY - SOUTH EAST PREMIUM WHEAT GROWERS ASSOCIATION INNOVATIVE BROADACRE COMMUNITIES

A collaborative demonstration trial is helping growers find cost effective options to adapt on farm and community water assets to a changing climate, increasing rural water security and drought resilience.

For small agricultural communities dependent on annual rainfall capture, secure water resources are essential to the viability of their broadacre production systems.

However, shifting rainfall patterns in areas such as the northern mallee in Esperance have seen a reduction in winter rainfall, and importantly a reduction in runoff generating rainfall events. In the last ten years Salmon Gums and Grass Patch have been declared water deficient multiple times.

Identifying a need for innovative solutions to maximise rainfall capture and storage, the industry is working together to improve the efficiency of their existing dams and catchments.

Together with local farmers, the South East Premium Wheat Growers Association (SEPWA) has delivered an innovative demonstration trial focused on increasing on-farm capture potential by lining traditional roaded catchments with used tarps sourced from CBH grain bins.

The trial results show the tarps can effectively produce runoff after a 1.5mm rainfall event, where traditional well maintained roaded catchments require around 10mm before generating any runoff.

“This significant increase in rainfall capture is vital to the ongoing viability of farming enterprises given the importance of access to water, particularly during summer, for stock

and bushfire control. It is also key to summer weed control which is proving essential to continuous cropping farming and producing more grain from less growing season rainfall,” Michelle Handley, Chief Executive Officer of SEPWA said.

In areas like Salmon Gums, generating run off on sub 5mm events is critical. Rainfall data from the Salmon Gums tarp trial site showed the area only received three rainfall events greater than 10mm over the 12 month period following installation of the tarps.

Without the tarps, the Salmon Gums site would only have generated runoff three times in an entire year.

The learnings from the project, including how to install the tarps, how effective they are at harvesting water from rainfall events and how long they will last, will support the sector to make more informed decisions based on locally relevant outcomes.

“There are hundreds of dams in the region that were built for different rainfall conditions and cost effective improvements in their performance have the potential to yield big gains,” Ms Handley said.

Other communities across the Goldfields-Esperance region may be able to adapt the learnings of this trial to other local contexts to maximise water capture in a drying climate.

The project is led by SEPWA in collaboration with the Department of Primary Industries and Regional Development (DPIRD) and the Department of Water and Environmental Regulation (DWER) with funding from the Community Water Supply Program. Delivered in consultation with ASHEEP & BEEF, the Shire of Esperance, CBH, the University of Western Australia (UWA) and growers.



Image: Lined catchments at the SEPWA trial site in Salmon Gums

Action Structure

Actions are planned to take place in a targeted manner to ensure they build on and adapt in response to emerging information and data. This is particularly important for the response in this Plan due to the need to enhance understanding of supply and demand dynamics before implementing solutions. To achieve this objective, a review

of all actions was undertaken to identify the immediate priorities for delivery. There are two types of priority actions: foundational actions (Table 2) and 'quick wins' (Table 3). The delivery of the priority actions will support future action pathways (Table 4) to be developed (Figure 7).

FIGURE 7

Priority actions will support the delivery of future action pathways















Image: Fitzgerald Biosphere, Hopetoun

Foundational Actions

TABLE 2

Foundational actions that will establish pathways for the future















ACTION	REGION	THEMES	NEXT STEP
 POLICY & KNOWLEDGE BUILDING			
Advocate for in-creased input and collaboration into Water Corporation water supply planning processes	Regional	 	<p>Identify and build out engagement pathway with GEWSG.</p> <p>Initial target is to hold an information session with Water Corporation on existing plans and planning arrangements.</p>
Enhance knowledge sharing opportunities on water resource regulatory arrangements between DWER and regional industry	Regional	  	<p>Identify and build out engagement pathway with GEWSG.</p> <p>Initial target is to hold an information session with DWER.</p>
Undertake a review of water demands, including the regional non-potable water demands	Regional		<p>Develop a scope of work to prioritise the areas of focus for the review with input from GVROC.</p> <p>All LGAs must be able to provide clear water demand figures for what they have the ability to control (e.g. POS, fire water, future development).</p>
Conduct a Northern Goldfields Paleochannel status report	Northern		<p>Identify and build out engagement pathway with GEWSG - advocate for funding to complete.</p>
Formalise opportunities to work collaboratively with Water Corporation to administer the rollout of the Aboriginal Communities Water Services Program, including the identification of fit-for-purpose infrastructure development that support remote communities to remain on Country.	Northern Central		<p>Identify and build out engagement pathway with GEWSG and relevant remote communities</p>
Review progress on the implementation of Tjiwarl Palyakuwa (Agreement) and lessons that can be shared with other Prescribed Bodies Corporates.	Regional		<p>GEDC to identify and build out engagement pathway with Tjiwarl Aboriginal Corporation.</p>
 WASTEWATER			
Undertake a desktop review of policy and frameworks to enhance LGA knowledge when investigating wastewater opportunities	Regional		<p>Develop a scope of work to prioritise the areas of focus for the review with input from GVROC.</p> <p>Consideration of Shire of Dundas as a partner in review/case study.</p>

ACTION	REGION	THEMES	NEXT STEP
 STORAGE EFFICIENCY			
Coordinate review of dam refurbishment potential across the sub-regions and build on findings from WaterSmart Dams program	Regional		Develop a scope of work to prioritise the areas of focus for the review with input from GVROC and other relevant users/stakeholders (e.g. agricultural industry groups).
 INDUSTRY RELATIONSHIPS			
Enhance knowledge on the pathways for LGAs to leverage outcomes from mining proponents (planning mechanisms, water and environmental approvals, social license)	Regional		Identify and build out engagement pathway with GEWSG
Enhance knowledge on pathways to engage and optimise benefits from water asset development associated with the Outback Way	Northern Central		Identify and build out engagement pathway with MainRoads
 LANDSCAPES			
Map emergency response capacity of the region including capabilities, and strategic assets/location to support a community-led, sub-regional strategic fire management plan	Regional		Develop a scope of work to prioritise the areas of focus with input from GVROC and southern and central sub-regional stakeholders (e.g. agricultural, Prescribed Body Corporate).
Investigate best-practice flood mitigation measures that are locally relevant for local government, with a lens on major transport routes and infrastructure, and pathways/processes to implement	Regional		GVROC to work with DWER to update floodplain mapping in consideration of climate change, including mitigation options. GEWSG to identify and build out engagement pathway to collaborate with MainRoads and Rangelands NRM to share knowledge of assets, roads and landscapes, including link to Outback Way
 PRIMARY INDUSTRIES			
Align to and promote programs delivering knowledge and capacity building for best practice forage and feed budgeting, soil testing, stocking rates and nutritional needs assessments	Regional		Work to encapsulate Southern Rangelands Revitalisation Program and the SW WA Drought Hub Southern Rangelands Situational Analysis into program of works.
Align to and build on the outcomes from WaterSmart Farms and consider opportunities to apply learnings in across Goldfields communities.	Regional		Work with DPIRD to identify implementation pathways

Quick Wins

TABLE 3

Quick win actions identified by Stakeholders

ACTION	REGION	THEMES	NEXT STEP
 POLICY & KNOWLEDGE BUILDING			
Improve uptake and grow Waterwise programs to enhance community awareness and water use efficiency	Regional	 	GVROC to support LGAs and work with Water Corporation to develop regionally specific and appropriate programs at an LGA or sub-regional level
 WASTEWATER			
Wastewater Treatment Plant upgrades and associated expansion of the re-use scheme	Southern		Shire of Esperance to work with DWER and Water Corporation to progress the re-use scheme
Water Bank project under the National Water Grid	Central	 	City of Kalgoorlie-Boulder to continue existing delivery pathway
 STORAGE EFFICIENCY			
Develop strategic investment pre-feasibility assessment to provide clear, structured and shared understanding of cost/benefits and feasibility of Cordingup dam refurbishment	Southern		Shire of Ravensthorpe with Water Corporation involvement to commence development of scope of work
Strategic water supply points and improvement projects to support community water supply, fire-fighting and emergency stock	Southern	 	Shire of Esperance
Dam refurbishment to reduce need for water carting	Northern Central		GVROC to continue co-development of Community Water Supplies Partnerships funding applications with Shire of Menzies, Wiluna and Dundas
Investigate levers to support adoption of residential and commercial tanks and gutters to enhance community and LGA supply	Regional	 	GVROC to work with DWER to explore opportunities to develop regional roll out of tanks and gutters on LGA buildings




ACTION	REGION	THEMES	NEXT STEP
 ALTERNATIVE WATER SOLUTIONS			
Research into innovative technology to use waste products from desalination as inputs into community or broadacre settings	Regional		Research to reuse brine in mining industry currently being delivered by Curtin University – extend learnings beyond mining industry
Confirm partnership arrangements with Curtin University School of Mines to investigate opportunities for nano-technology in regional context	Central		City of Kalgoorlie-Boulder to continue engagement with Curtin University to finalise partnership and research delivery arrangements and timing
 LANDSCAPES			
Develop water management plan for Kartjidianup including identification of assets and infrastructure required to ensure secure water supply for Land Management and conservation programs	Southern		Esperance Tjaltjraak Native Title Aboriginal Corporation (ETNTAC) to identify and implement preferred development pathway



Image: Water Treatment Facility, Esperance
















Future pathways for action



























The priority actions identified will support the development of future action pathways (Table 4). It is intended that these additional actions will be reviewed and prioritised after the initial 12 months of RDRP implementation, including any new priority actions that emerge. This is a fundamental aspect of the Monitoring, Evaluation and Learning Framework.

Stakeholders identified that the actions identified here will remain priorities as they support the long-term resilience of communities and the region. However, the prioritisation of future actions has the potential to change in response to emerging trigger points, including major new mine or industrial development proposals that lead to efforts to target how stakeholders can work with proponents to optimise community outcomes.

TABLE 4

Actions to inform future action pathways

ACTION	REGION	THEMES
 POLICY & KNOWLEDGE BUILDING		
Assessment of pathways for funding allocated to central support programs to be diverted into preparedness activities at a local level	Regional	
Ensure LGA involvement and collaboration in GAWSS upgrade planning	Central	
Ensure technical work (demand, storage, evaporation, reliability) is done in preparation for grants	Regional	
Work with Water Corporation on policy levers to ensure industrial water supply aligns with economic growth opportunities	Regional Kalgoorlie-Boulder	
Work with DWER to optimise water carting efficiencies to rural communities.	Southern	
Investigate Traditional Owners interest in sharing cultural knowledge for water and drought resilience and map pathways for bilateral knowledge sharing.	Regional	
 WASTEWATER		
Enhance regulatory environment and facilitation of treated wastewater opportunities	All regions	
Advocate for streamlining of approvals and red tape reduction to unlock wastewater use opportunities	All regions	
Conduct feasibility assessment of wastewater potential and opportunities for Northern Goldfields communities	Northern	
 STORAGE EFFICIENCY		
Assess efficacy of WaterSmart Dams findings in Northern and Central sub-regional environments	Northern, Central	
Cost-benefit analysis for evaporation control to inform cost-effective practical control solutions for local governments and broadacre agriculture	All regions	
Dam refurbishment for fire management	Shire of Dundas	

ACTION	REGION	THEMES
ALTERNATIVE WATER SOLUTIONS		
Evaluate feasibility and cost/benefit analysis of new and existing technologies under different regional conditions and usage patterns	Regional	
Identify degraded or abandoned assets that could be reinstated for alternative use (ie community storage) and map steps required to reinstate and divest	Regional	 
Work with government and other stakeholders to support the development of alternative, fit for purpose water supply for industrial use, and potentially potable water and other future industries	Southern, Central	 
Investigate stormwater capture and storage opportunities for town water supply	Regional	
INDUSTRY RELATIONSHIPS		
Establish partnerships with mining companies to explore water synergies for public benefit	Northern, Central	 
Information sharing on post mine closure procedures and rehabilitation opportunities for community and local aboriginal organisations or businesses	Northern, Central	 
Establish framework that facilitates increased transparency and accessibility of information between community, government and mining.	Northern, Central	
Look at water-related mine closure opportunities and partner with research at the CRC for Transformation to Mining Economies	Northern, Central	 
LANDSCAPES		
Develop community-led, sub-regional strategic fire management plan that are aligned to DFES regional plans and can be used to prioritise emergency response infrastructure investment	Regional	  
Advocate for best practice road design that supports recharge and mitigates erosion and flooding.	Regional	   
Increase number of monitoring points across the region for climate, water or other factors (i.e. soil moisture)	Regional	
Landscape remediation and rehydration to mitigate flood and erosion risk, promote sustained vegetation cover and support recharge.	Regional	 
PRIMARY INDUSTRIES		
Research and development to improve reliability of forecasts and models for broadacre and other industries	Regional	 
Continued research and demonstration to shift broadacre industry to more drought tolerant systems	Southern	

MONITORING, EVALUATION & LEARNING FRAMEWORK

The Monitoring, Evaluation and Learning (MEL) framework outlines an agreed approach for monitoring progress and performance against the actions and outcomes identified within the Plan. It establishes mechanisms for identifying and sharing learnings for future improvements and facilitates transparency, adaptive management and effective program delivery.

The MEL framework aligns with Plan implementation and includes consideration of the delivery of the foundational and 'quick win' actions outlined in the previous section and their influence on setting future pathways for action. The MEL framework sets the requirements for monitoring the delivery of the foundational and 'quick win' actions and provides a check-in point every 12-months to review, refine and inform ongoing implementation of the future action pathways in line with thematic outcomes. This approach ensures flexibility and continuous improvement of Plan implementation into the future.

Approach

The MEL framework sets out a practical and fit-for-purpose approach with four key components based on best-practice MEL:

PROGRAM LOGIC

A common approach to strategic planning which provides a consistent basis upon which to monitor and evaluate and to drive learning and continuous improvement.

MONITORING

the regular, systematic collection of data or information to track delivery and give an indication of progress towards achieving intended outcomes.

EVALUATION

The periodic collection and analysis of data or information to assess the value of a program and the extent to which it is achieving, or has achieved, intended results.

LEARNING

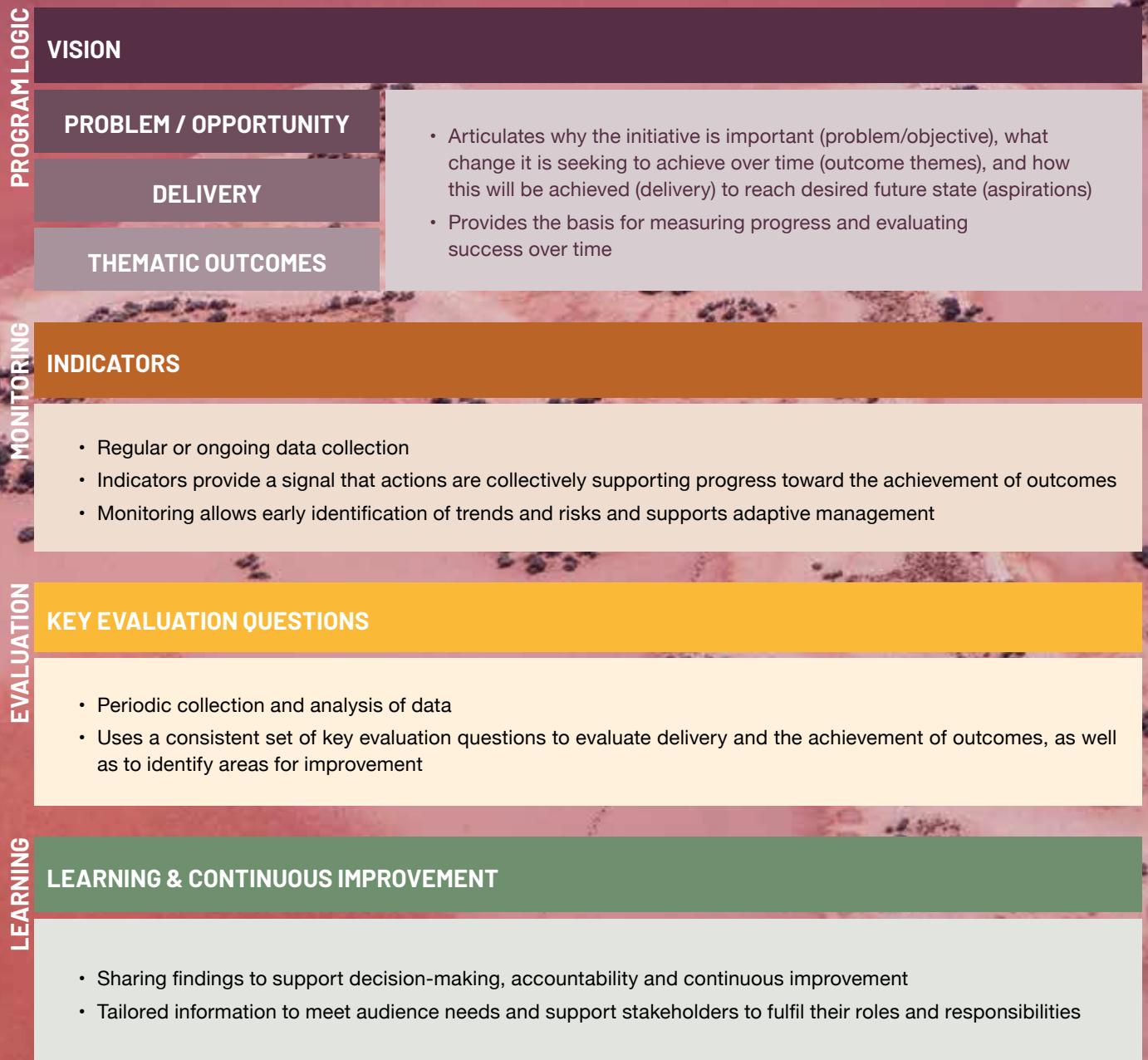
Structured mechanisms for embedding lessons from implementation to support continuous improvement and adaptively manage towards intended outcomes.

These four components are shown conceptually in Figure 8.



FIGURE 8

Conceptual MEL framework



Program logic

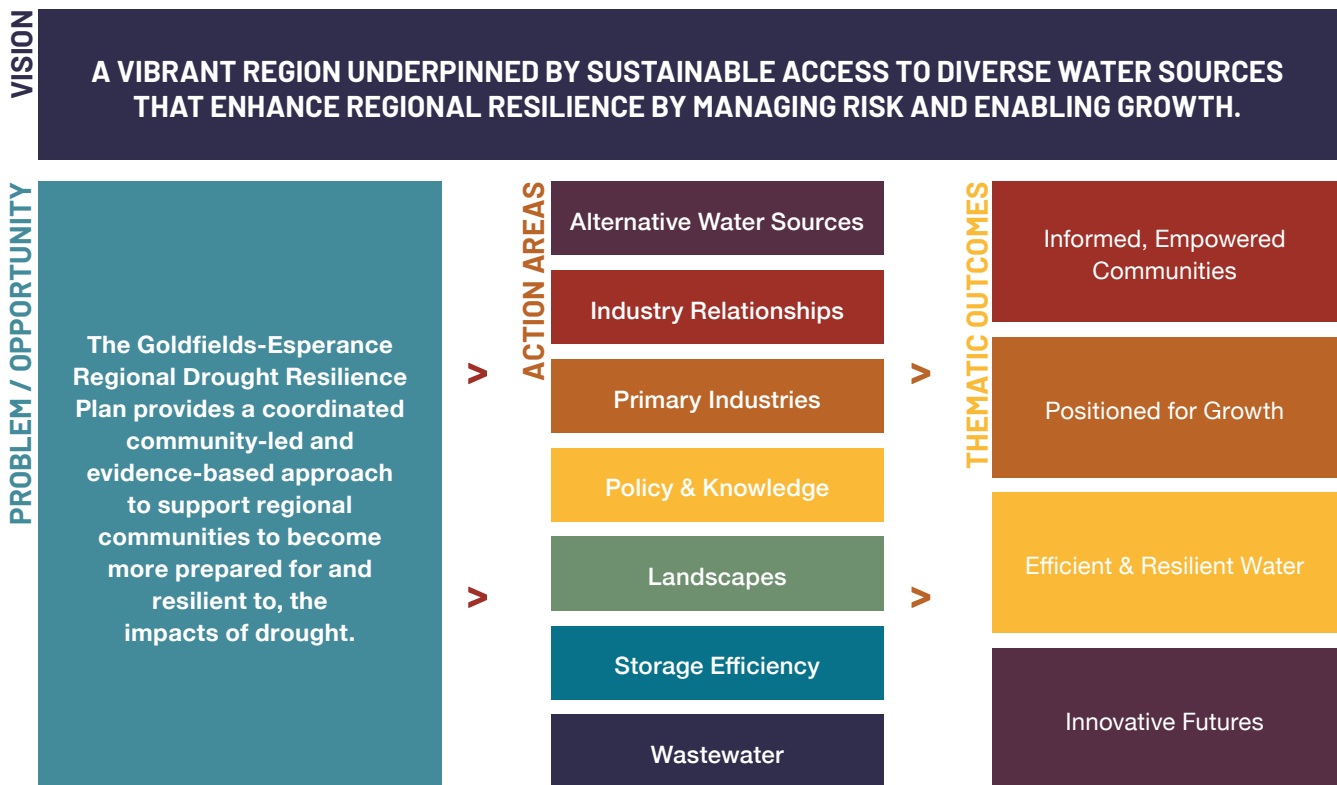
A program logic approach has been used to capture the desired outcomes for the Plan and support outcomes-based monitoring and evaluation. The program logic articulates the desired change that the Plan is expected to deliver over time.

Although demonstrable progress towards outcomes is expected within the first 12 months of Plan implementation, the program logic recognises that this period will also help build the foundations of future work to support long-term outcome achievement. This reflects the importance of the Plan’s foundational actions and how they will lead to future actions.

The program logic is provided below (Figure 9).

FIGURE 9

Program logic



Monitoring indicators



The MEL framework uses indicators to track progress towards the four thematic outcomes the Plan actions collectively aim to deliver. The monitoring approach acknowledges that these actions will build change over time, with the first 12 months focused on foundational and quick win actions to build the knowledge and relationships needed to deliver future actions to improve the conditions underpinning regional water security.

The monitoring approach therefore sets indicators for foundational actions which are expected to occur within the first 12 months, providing an indication that actions are collectively on track. It also outlines anticipated future indicators for the 12-36 month implementation period which will be reviewed at the 12-month mark (as outlined in following sections).

Indicators for tracking progress towards thematic indicators are provided below (Table 5).

TABLE 5

Indicators for tracking progress towards thematic outcomes

A VIBRANT REGION UNDERPINNED BY SUSTAINABLE ACCESS TO DIVERSE WATER SOURCES THAT ENHANCE REGIONAL RESILIENCE BY MANAGING RISK AND ENABLING GROWTH.		
FOUNDATIONAL INDICATOR (WITHIN 12 MONTHS)	ANTICIPATED FUTURE INDICATOR (12-36 MONTHS)	ASSESSMENT APPROACH
 INFORMED, EMPOWERED COMMUNITIES		
Increased engagement activities and participation from community and industries as part of water supply and water resource planning processes	Clear and consistent method to ongoing engagement and participation	Documentation and reporting from GEWSG, Water Corporation and DWER, DPIRD, Main Roads
Plans and scopes of work for priority research and information sharing pathways complete	Priority research complete and communicated	Documentation and reporting from GRVOC, Water Corporation and DWER
Increased expression of interest from LGAs, Traditional Owners, community and industry with water security related initiatives and opportunities	Increased level of interest, engagement and investment in programs and initiatives from LGAs, Traditional Owners, community and industry	Data on applications, attendance and number of initiatives activated
 POSITIONED FOR GROWTH		
External investment, projects and engagement pathways are identified and initiated	Increased external investment into drought resilience and water security building initiatives	Data on scale of external investment into drought resilience and water security building initiatives
Priority water management and asset planning complete		
 EFFICIENT AND RESILIENT WATER		
Targeted investment projects by LGAs in 'quick wins' are funded and outcomes communicated	Increased level of interest, engagement and investment in applications for funding from LGAs	Documentation and reporting from GRVOC
Scope of work to undertake research to support and prioritise future funding applications complete	Feasibility assessment of priority projects commenced	Documentation and reporting from GRVOC
 INNOVATIVE FUTURES		
Engagement with key industry and academic partners to finalise partnership and research delivery arrangements and timing	Partnership arrangements developed and implemented	Documentation and reporting from GRVOC, industry and academic partners
Priority knowledge sharing opportunities identified and communication planning complete	Communication of lessons from projects, engagement and other activities complete	Documentation and reporting from GRVOC, industry and academic partners

Key evaluation questions

Periodic evaluation will be guided by key evaluation questions (KEQs) to guide information gathering and analysis and to identify insights into achievements and lessons. The KEQs explore the main elements of the program logic and will be used as part of the evaluation process every 12 months.

TABLE 6

Key evaluation questions

KEY EVALUATION QUESTIONS	DATA SOURCES
<p>1 Is the rationale and intent of the Plan still relevant? Consider:</p> <ul style="list-style-type: none"> • Have there been any changes in the operating environment since the start of the Plan, such as major changes in water demand, technology, management practices, planning or policy settings? • What implications does this have on the intent of the overall Plan or specific actions? 	<ul style="list-style-type: none"> • Qualitative insights from Stakeholder representatives • Empirical evidence resulting from the delivery of foundational actions
<p>2 Have actions been implemented as intended? Consider:</p> <ul style="list-style-type: none"> • What actions and outputs have been progressed or completed? • Was progress influenced by external factors? If so, how? • Was the program implemented within the expected timeframes? 	<ul style="list-style-type: none"> • Review of milestone achievement and action implementation reporting • Qualitative insights from Stakeholder representatives
<p>3 Are there any barriers to future actions? If so, how can these barriers be addressed? Consider:</p> <ul style="list-style-type: none"> • Was implementation constrained in any way by resources, information availability, partner or stakeholder participation? • Was implementation influenced by any unanticipated external factors, such as policy changes, economic factors or environmental conditions? • Is there anything that could be done differently or better? 	<ul style="list-style-type: none"> • Qualitative insights from Stakeholder representatives
<p>4 What have been the Plan’s achievements against intended outcomes to date? Consider:</p> <ul style="list-style-type: none"> • What are the results and trends against outcome indicators? 	<ul style="list-style-type: none"> • Monitoring data • Qualitative insights from Stakeholder representatives
<p>5 To what extent did activities support the achievement of outcomes? Consider:</p> <ul style="list-style-type: none"> • Were activities targeted effectively towards achieving outcomes? • Have any additional actions necessary to support outcomes been identified in the course of implementation? 	<ul style="list-style-type: none"> • Qualitative insights from Stakeholder representatives • Monitoring data
<p>6 What unintended outcomes (positive or negative) have arisen, if any? Consider:</p> <ul style="list-style-type: none"> • Have partners or stakeholders experienced any unintended consequences? • Were any adjustments to program implementation required to ensure achievement of outputs or outcomes? Why were adjustments required? 	<ul style="list-style-type: none"> • Qualitative insights from Stakeholder representatives • Monitoring data
<p>7 What improvements could be made to Plan implementation in the future, if any?</p> <ul style="list-style-type: none"> • What changes to scientific, industry, technical and management knowledge and understanding should be considered in future Plan implementation? • Are resources, governance and management appropriate to support future implementation? 	<ul style="list-style-type: none"> • Qualitative insights from Stakeholder representatives • Review of milestone achievement and action implementation reporting

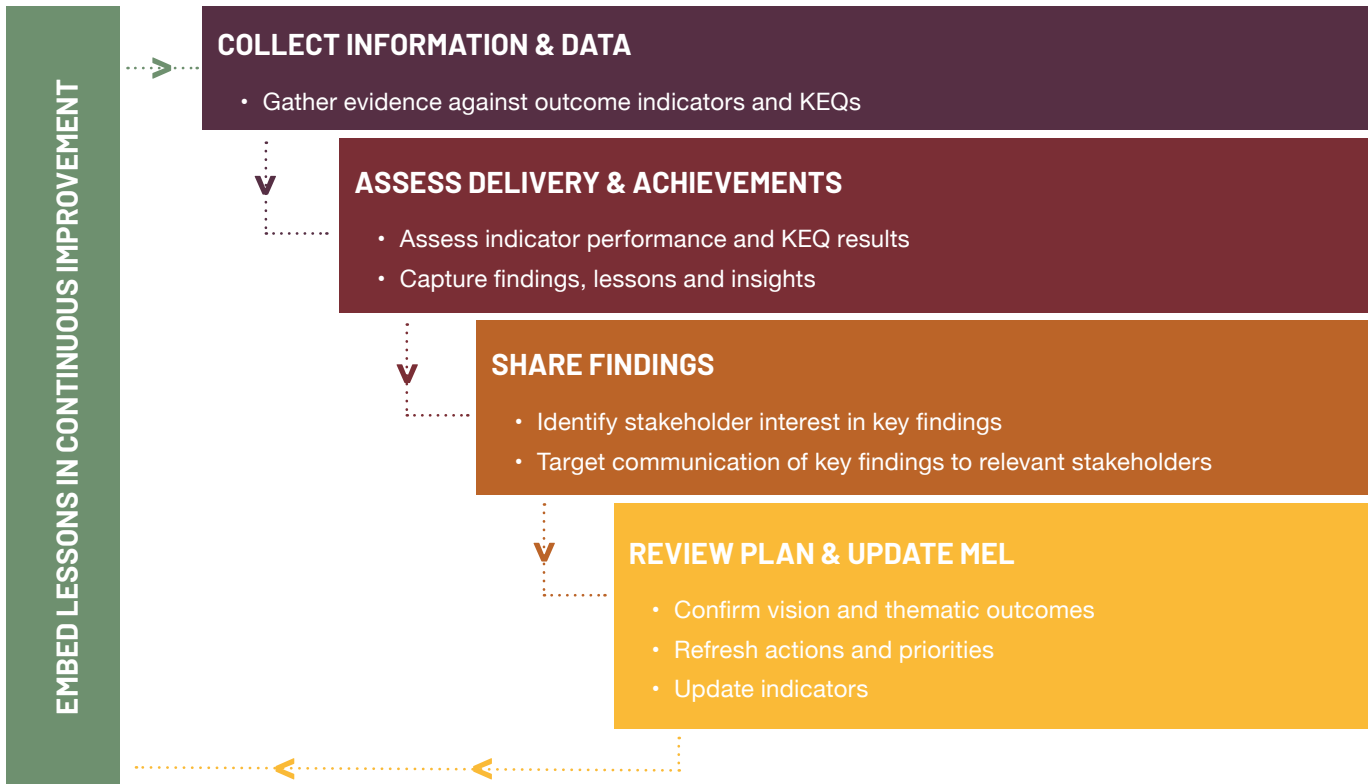
MEL process

The MEL framework sets out a 12-month cycle aligned with Plan implementation and foundational and future actions. This timing provides a check-in point to review progress to date and adjust delivery as needed to ensure implementation remains focused on key priorities and outcome achievement.

The key steps within the 12-month cycle are outlined below (Figure 10).

FIGURE 10

Overview of 12-month MEL cycle



MEL Roles & Responsibilities

Clear, fit-for-purpose governance arrangements are critical to using MEL to support successful Plan implementation and outcomes. The Plan has overarching governance arrangements which will be used to implement the MEL framework, ensuring roles and responsibilities are clear and sit with the most appropriate stakeholders and decision-makers.

Roles and responsibilities to implement the MEL framework should follow principles for good governance, including:

CLARITY OF PURPOSE

Ensuring that all stakeholders understand their roles and the contribution they are making to the MEL framework and to the Plan and have clear accountabilities. This ensures key steps, such as information collection and updating actions to reflect lessons, are executed efficiently and effectively.

OPERATIONAL AUTONOMY

Empowering and trusting stakeholders to exercise their responsibilities and to make the decisions required to deliver the outcomes that they are accountable for. This supports efficient MEL and empowers effective decision-making to implement lessons.

EFFECTIVE PERFORMANCE MONITORING:

Consistent, fit-for-purpose and transparent monitoring of performance of assigned roles and responsibilities. This supports accountability and helps identify what changes may be required to achieve success.

Risks & Assumptions

Stakeholders identified that the priority actions identified in this plan, commencing with the foundational actions and 'quick wins', will remain priorities with adjustments only being made only in the event of a major trigger to water demand or supply opportunities. Such events may include either a substantive new mine is identified for immediate investment or, a major new industrial water use (e.g. industrial precinct) or supply opportunity (e.g. recycled water from an industrial precinct). These events can cause substantive short-term risks to the delivery of the intended outcomes of the Plan if not managed. Ongoing monitoring and reporting on these risks are part of the ongoing monitoring arrangements for the implementation of the Plan.

More broadly, Plan actions are based on assumptions about the context and settings for water management in the Goldfields-Esperance region. This includes assumptions about economic and industry performance, community profiles, related policy and investments, ecological conditions, and stakeholder engagement and participation. A key example includes Sector Adaptation Planning by the government that is occurring in Western Australia. This is expected to include specific actions and pathways that will intersect with those outlined in the Plan. Any material changes to these underlying assumptions may impact Plan implementation and outcomes. Risks and assumptions, and any changes needed to account for them, are considered through the KEQs and MEL process.



Image: Munghinup Dam, Shire of Ravensthorpe

References

- Aither, 2025. Drought Vulnerability Assessment of the Goldfields-Esperance Region. Prepared for the Goldfields Esperance Development Commission.
- Aither, 2023. Town and city water security; Definition and reporting framework. Prepared for the Department of Climate Change, Energy, the Environment and Water. Sourced, <https://www.dcceew.gov.au/sites/default/files/documents/town-and-city-water-security-definition-reporting-framework.pdf>
- Bureau of Meteorology, 2025. Understanding Drought. Drought Centre of Knowledge. Sourced, <http://www.bom.gov.au/climate/drought/knowledge-centre/understanding.shtml>
- City of Kalgoorlie-Boulder, 2025. Kalgoorlie-Boulder Water Bank Project. Sourced, <https://yoursay.ckb.wa.gov.au/kalgoorlie-boulder-water-bank-project>
- Curtin University & Umwelt, 2023. Northern Goldfields Water Resources Situational Analysis, Prepared for BHP Nickel West. Sourced, https://www.bnp.com/-/media/project/bhp1ip/bhp-com-en/documents/sustainability/environment/water/230428_niw_wrsa.pdf
- Curtin University, (n.d). Goldfields Fit-For-Purpose Industrial Water Supply Research, Milestone 14 – Final Report. Curtin University WA School of Mines.
- Department of Agriculture, Fisheries and Forestry (DAFF), 2025. Regional Drought Resilience Planning. Future Drought Fund. Sourced, Regional Drought Resilience Planning - DAFF (agriculture.gov.au)
- Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2025. Priority Places, Fitz-Stirlings; Threatened Species & ecological communities. Sourced, https://www.dcceew.gov.au/environment/biodiversity/threatened/strategy/priority-places/fitz-stirlings#toc_1
- Department of Planning, Lands and Heritage. 2019. Aboriginal communities in the Goldfields district of Western Australia. Sourced, <https://www.wa.gov.au/system/files/2021-06/ABL->
- Department of Planning; WA Planning Commission. (2015). Goldfields-Esperance Regional Planning and Infrastructure Framework, Part A: Regional Strategic Planning. Western Australian Planning Commission. Sourced, https://www.wa.gov.au/system/files/2021-07/GFE_Goldfields-Esperance_Framework_PartA_June2015.pdf
- Department of the Premier and Cabinet (DPC). 2024. Tjiwarl Palyakuwa (Agreement) Indigenous Land Use Agreement - Tjiwarl Palyakuwa. Tiiwa kuwarri yampa ngula. Sourced, <https://www.wa.gov.au/organisation/department-of-the-premier-and-cabinet/tjiwarl-palyakuwa-agreement-indigenous-land-use-agreement-tjiwarl-palyakuwa-tiiwa-kuwarri-yampa-ngula>.
- Department of the Premier and Cabinet (DPC). 2023. Tjiwarl Palyakuwa (Agreement) Indigenous Land Use Agreement documents. Sourced, <https://www.wa.gov.au/government/document-collections/tjiwarl-palyakuwa-agreement-indigenous-land-use-agreement-documents>
- Department of Primary Industries and Regional Development (DPIRD), 2025. Southern Rangelands Revitalisation Program. Agriculture and Food. Sourced, <https://www.agric.wa.gov.au/southernrangelands#:~:text=The%20Southern%20Rangelands%20Revitalisation%20Program%20aims%20to%20support,productivity%20and%20livestock%20management%20in%20WA%E2%80%99s%20southern%20rangelands.>
- Department of Primary Industries and Regional Development (DPIRD), 2024. Regional Drought Resilience Planning Program. Agriculture and Food. Sourced, <https://www.agric.wa.gov.au/regional-drought-resilience-planning>
- Department of Primary Industries and Regional Development (DPIRD), 2021. Regional Snapshots: Goldfields-Esperance (Esperance Port Zone). Western Australian Broadacre Agriculture Regional Snapshots. Sourced, <https://www.agric.wa.gov.au/sites/gateway/files/DPIRD%20Regional%20snapshot%20brochure%20GoldfieldsEsperance.pdf>
- Department of Primary Industries and Regional Development (DPIRD), 2025. WaterSmart Farms – Water Security and Resilience in a Drying Climate. Agriculture and Food. Sourced, <https://www.agric.wa.gov.au/watersmart-farms>
- Department of Water and Environmental Regulation, 2025. Community Water Supplies Partnerships program. Water Supply. Sourced, <https://www.wa.gov.au/service/building-utilities-and-essential-services/water-supply/community-water-supplies-partnerships-program>

References Cont.

- Department of Water and Environmental Regulation, 2025. Strategic community water supply plans and water deficiency arrangements. Water Supply. Sourced, <https://www.wa.gov.au/service/building-utilities-and-essential-services/water-supply/strategic-community-water-supply-plans-and-water-deficiency-arrangements>
- Goldfields-Esperance Development Commission. 2024a. Emerging Themes of the Goldfields-Esperance Regional Drought Resilience Plan: Regional and sub-regional emerging trends in vulnerabilities and priorities. GEDC.
- Goldfields-Esperance Development Commission. 2024b. Annual Report 2023-24, GEDC. Sourced, <https://www.gedc.wa.gov.au/our-commission/publications/>
- Goldfields-Esperance Voluntary Regional Organisation of Councils (GVROC), 2023. Goldfields Esperance Water Security Action Plan. GVROC Regional Climate Alliance.
- Great Victorian Desert Biodiversity Trust, 2024. Our Region, The Great Victorian Desert. Sourced, www.gvdbiodiversitytrust.org.au
- Grower Group Alliance, 2022. Southern Rangelands Drought Resilience Situational Analysis. South-West WA Drought Resilience and Innovation Hub. Sourced, <https://www.gga.org.au/wp-content/uploads/2022/09/20220902-Southern-Rangelands-SW-WA-Hub-Situational-Analysis-DRAFT.pdf>
- Grower Group Alliance, 2025. WaterSmart Dams – Making Dams Work Again. South-West WA Drought Resilience and Innovation Hub. Sourced, <https://www.gga.org.au/activity/watersmart-dams/>
- Grower Group Alliance, 2022. Wheatbelt Drought Resilience Situational Analysis. South-West WA Drought Resilience and Innovation Hub. Sourced, <https://www.gga.org.au/wp-content/uploads/2022/11/20220902-Wheatbelt-SW-WA-Hub-Situational-Analysis-DRAFT.pdf>
- Ironbark Sustainability. 2023. Climate Risk Assessment and Adaption Plan for Goldfields-Esperance, GVROC. Sourced, https://www.gvroc.com/_files/ugd/13930a_bd434721b1514088bfb4194e6676c1f.pdf
- Mastrantonis, S. 2022. Defining Drought in Western Australia. Centre for Crop and Disease management, School of Molecular and Life Science, Curtin University, Bentley, WA
- Outback Highway Development Council (OHCD), 2025. The Outback Way; Australia's Longest Shortcut. Sourced, <https://www.outbackway.org.au/>
- Pringle, H. et al., 2019. Managing Outback Roads, let it go, let it flow; water your landscapes, not your roads. Rangelands Natural Resource Management.
- Thackway and Cresswell. 1995. "An Interim Biogeographic Regionalisation for Australia: a framework for establishing the national system of reserves." Sourced, Department of Climate Change, Energy, the Environment and Water. <https://www.dcceew.gov.au/environment/land/nrs/science/ibra#:~:text=Download%20Australia%27s%20bioregion%20map%20%28PDF%202.77%20MB%29%20The,climate%2C%20geology%2C%20landform%2C%20native%20vegetation%20and%20species%20information.>
- Water Corporation, 2025. Aboriginal Communities Water Services. Ongoing Works. Sourced, <https://www.watercorporation.com.au/Outages-and-works/Ongoing-Works/Aboriginal-Communities-Water-Services>
- Water Corporation, 2025. Waterwise Council Program. Waterwise programs. Sourced, <https://www.watercorporation.com.au/Waterwise/Waterwise-programs/Waterwise-Council-Program>
- Water Corporation. 2022. Preserving the iconic Golden Pipeline. Sourced, <https://www.watercorporation.com.au/About-us/Latest-updates/October-2022/Preserving-the-iconic-Golden-Pipeline>
- Water Corporation. (n.d.). Goldfields & Agricultural. Sourced, <https://www.watercorporation.com.au/Our-water/Climate-change-and-WA/Climate-and-Goldfields-and-Agricultural/Goldfields-and-Agricultural>.
- Wilderness Society. 2025. Great Western Woodlands. Sourced <https://www.wilderness.org.au/iconic-places/great-western-woodlands>

APPENDICES

Appendix A: Drought Resilience Planning Alignment in the Goldfields-Esperance Region

TABLE A1

State and National Resilience Planning Initiatives

PROGRAM	DESCRIPTION	ALIGNMENT
DAFF Future Drought Fund	The Future Drought Fund (FDF) aims to boost drought and climate resilience.	The GE-RDRP and associated actions support the FDF's objectives, including: <ul style="list-style-type: none"> • Partnering for local solutions • Building knowledge, skills and capability • Innovating for transformation • First Nations initiatives • Measuring progress and sharing knowledge
Other RDRPs	The state approach to delivering RDRPs has developed a framework for collaboration and knowledge sharing between regions during plan development and implementation.	Alignment between regional plans to be identified.
DPIRD Southern Rangelands Revitalisation Program	Capacity building to support pastoralists to develop revitalization plans that support improved rangelands condition and livestock profitability.	Landscape management & flood mitigation priorities identified in the GE-RDRP.
DPIRD Water Smart programs (Farms, Dams and Industries)	Trials to improve knowledge of best practice dam and catchment design and test novel solutions including lined dams and desalinization units for broadacre systems.	R&D priorities identified by the broadacre sector, opportunities to apply learnings to other contexts.
South West WA Drought Hub Situational Analyses	Maps drought related agricultural initiatives occurring within the regions and gaps or opportunities for future work to address drought risks on farm.	Support individual or industry led actions at the local scale.
Waterwise Councils Program	Supports local governments to improve water efficiency and adopt waterwise practices in their operations and communities.	Provides pathway for GE local governments to implement actions under Theme 3.
Strategic Community Water Supplies Partnerships program (DWER)	Encourage the planning and establishment of reliable non-potable water supplies to meet emergency farmland and firefighting water needs and reduce scheme water use.	Pathway for local governments and communities to develop projects to increase water security and emergency response capacity.

PROGRAM	DESCRIPTION	ALIGNMENT
Aboriginal Community Water Services Program (Water Corporation)	Program to manage the provision of water services to Remote Aboriginal communities and progress infrastructure upgrades to deliver safer and more reliable water services.	Working to improve water security of remote Aboriginal communities in the region.
WA Climate Adaptation Strategy	The state approach to climate adaptation which establishes the need for Sector Adaptation Plans (SAPs) to be developed for key sectors in Western Australia, including water and primary production.	Will provide key support and direction for action in the region, including cross-cutting actions.
Climate Science Initiative WA	The state will work with partners to deliver several key actions, such as detailed climate projections and establishing a climate adaptation research hub.	Provide knowledge and key data at a local level to support the delivery of actions in the region.
Diversify WA	State's economic development framework and outlines the Western Australian Government's vision for a strong and diversified economy.	Supports actions that relate to economic diversification in key sectors, including tourism, mining and agriculture.
State Infrastructure Strategy	Outlines the state's significant infrastructure needs and priorities including in response to climate change.	Supports actions that address/relate to infrastructure to increase water security, healthy landscapes and regional resilience.

TABLE A2

Regionally-led Resilience Planning Initiatives & Related Work

PROGRAM	DESCRIPTION	ALIGNMENT
GVROC Regional Climate Alliance Adapting Community Assets for Climate Change	Framework to support local governments identify most beneficial climate change adaptation pathways for local infrastructure assets.	<ul style="list-style-type: none"> Addressing vulnerabilities outside of water security and drought and supporting infrastructure investment at local government level.
GVROC Regional Climate Alliance Goldfields Esperance Urban Forrest and Biodiversity Program	Tree and shrub planting program in town centers between 2025 – 2027 using native and drought tolerant species, to reduce impacts of extreme heat days and improve livability and amenity.	Addressing related drought impact, extreme heat days and healthy landscapes, aligned with the Plan.
GEDC Strategic Plan 2022-2024	Outlines the approach to the delivery of regional development outcomes, as well as key initiatives and strategies to drive economic and social development for the Goldfields-Esperance region	The GE-RDRP aligns with and supports the initiatives identified within the Strategic Plan.
Curtin University Goldfields Fit-For-Purpose Industrial Water Supply Research	Investigating water treatment options for Fit-For-Purpose Industrial Water Supply in the Goldfields, including use of Nano-filtration technology	Identifying alternative water supplies and fit-for-purpose water for industry, themes 2,3 & 4.

Appendix B: Consultation and Engagement for the GE-RDRP

CONSULTATION & ENGAGEMENT

Stakeholder engagement was a key element in the development of the GE-RDRP. Between March 2024 – April 2025, approximately 156 individuals and 55 organisations were engaged in consultations or briefings, including one on one or small group discussions and meetings, targeted small group workshops, online surveys and phone conversations, delivered both in person and online.

Engagements aimed to share the intent and development of the Plan and provide the opportunity for stakeholders' perspectives and priorities to be captured and inform the development and direction of the Plan.

Discussions sought to understand the lived experience of drought and water insecurity for stakeholders including their perceived climate impacts and vulnerabilities and their

priorities for action and potential opportunities for future development. Some of the questions explored during these discussions include:

- What are the impacts of drought or water insecurity on your region? What communities, landscapes or industries are the most vulnerable to these impacts?
- What actions could be taken to address these vulnerabilities and build resilience? Are there any barriers that would need to be overcome?
- What are the top priorities for your region to become more resilient and build water security?
- What economic or social opportunities could be realised if the region was not vulnerable to drought and water security?

TABLE B1

Consultation agenda shared with Stakeholders to facilitate discussion around the key questions listed above

Session 1	Climate Experiences: Exploring climate impacts throughout history as well as what threats are impacting you now. It will also explore future trends and your major concerns.
Session 2	Capacity: Understanding capacity to adapt, absorb or mitigate current and future climate impacts, with a key focus on assessing water assets and fit-for-purpose infrastructure.
Session 3	Vulnerabilities: Identifying the most vulnerable places, communities or industries in your region.
Session 4	Solutions: Opportunities and barriers that currently exist to address vulnerabilities and build resilience.

TABLE B2

Organisations engaged throughout the development of the GE-RDRP

STAKEHOLDER GROUP	ORGANISATIONS
Local Government	<ul style="list-style-type: none"> • The Goldfields Voluntary Regional Organisation of Councils (GVROC) and the GVROC Regional Climate Alliance • The City of Kalgoorlie-Boulder and the Shires of Ravensthorpe, Esperance, Coolgardie, Dundas, Menzies, Laverton, Leonora, Wiluna and Ngaanyatjarraku
Service Providers	<ul style="list-style-type: none"> • MainRoads • Telstra • Fortescue Future Industries • Water Corporation • Western Power • Water haulage providers (Desert Sands Cartage, Hamptons Transport & other)

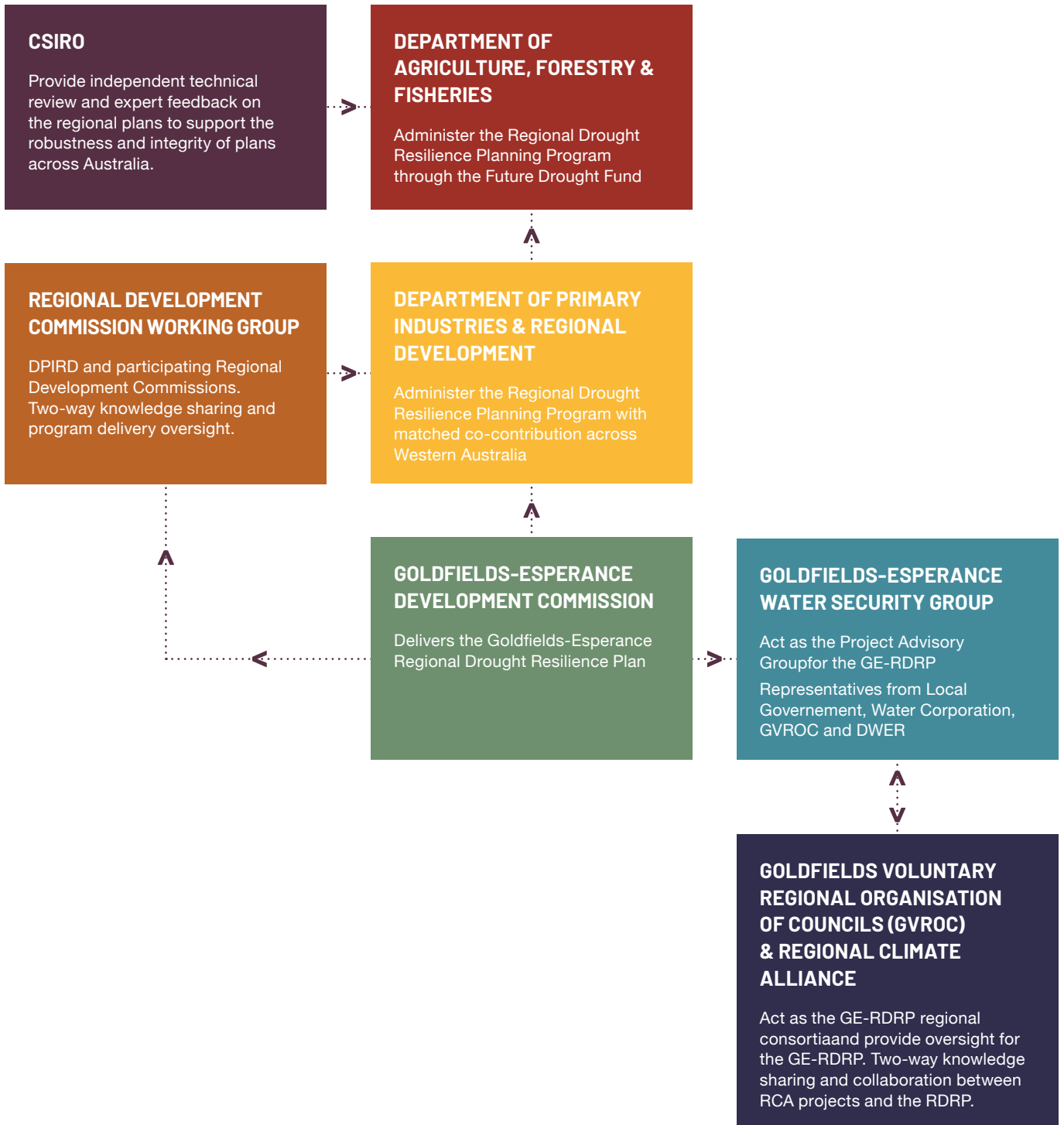
STAKEHOLDER GROUP	ORGANISATIONS
Primary Industries	<ul style="list-style-type: none"> • The South-West WA Drought Resilience Adoption and Innovation Hub • Dept. Primary Industries and Regional Development programs: <ul style="list-style-type: none"> - Southern Rangelands Revitalisation Program - Climate Resilience Taskforce Natural Capital Investment - Water Smart Dams, Farms & Industries • South East Premium Wheat Association • ASHEEP & BEEF • Ravensthorpe Agricultural Initiative Network • North Mallee Farm Improvement Group • Esperance Zone Initiative Network • Southern Rangelands Pastoral Alliance • Goldfields Nullarbor Rangelands Biosecurity Association • South Coast Natural Resource Management • Rangelands Natural Resource Management • Individual broadacre and pastoral businesses
Prescribed Body Corporates, Native Title Body Holders and Aboriginal Corporations and Services	<ul style="list-style-type: none"> • Esperance Tjaltjraak Native Title Corporation • Ngaanyatjarra Lands Council • Paakanu Aboriginal Corporation • Native Title Services Goldfields • Pila Nguru (WTAC) Aboriginal Corporation • Kultju Aboriginal Corporation • Ngadju Aboriginal Corporation • Warnpurru Aboriginal Corporation • Upurli Upurli Nguratja Aboriginal Corporation • Tjiwarl Aboriginal Corporation • Kakarra Aboriginal Corporation
Community Organisations and Representatives	<ul style="list-style-type: none"> • Ravensthorpe & Hopetoun Community Resource Centers • Regional Arts WA • Other interested individuals
Mining	<ul style="list-style-type: none"> • The Chamber of Minerals and Energy • Lynas • BHP • Genesis Minerals • Brightstar Resources • First Quantum Minerals • Goldfields Australia
Tertiary Institutes	<ul style="list-style-type: none"> • Curtin University, WA School of Mines • UWA, School of Agriculture and Environment
State Departments	<ul style="list-style-type: none"> • Department of Water and Environmental Regulation • Department of Jobs, Tourism, Science and Innovation • Department of Biodiversity, Conservation and Attractions • Workforce Australia • Department of Primary Industries and Regional Development

Governance

Figure B1 outlines the governance framework for the development phase of the GE-RDRP outlining the role of the GEDC, GVROC and the GEWSG as well as the State and Federal Department funding providers that provided strategic input, technical expertise and State-wide alignment to support the robustness and effectiveness of the final Plan.

FIGURE B1

Conceptual framework outlining the organisations that form the governance framework for the delivery of the Plan and their indicative relationships.





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