GOVERNMENT OF WESTERN AUSTRALIA

Department of **Water and Environmental Regulation**

Annual report 2021–22

Our performance

Department of Water and Environmental Regulation

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Statement of compliance

For the year ended 30 June 2022

Hon Dave Kelly MLA
Minister for Water

Hon Reece Whitby MLA
Minister for Environment; Climate Action

In accordance with section 63 of the *Financial Management Act 2006*, I hereby submit for your information and presentation to Parliament the annual report for the Department of Water and Environmental Regulation for the financial year ended 30 June 2022.

The annual report has been prepared in accordance with the provisions of the *Financial Management Act 2006*.

Michelle Andrews
Director General
22 October 2022

The department's Prime House head office. Picture: Davin Storey

We acknowledge the Traditional Owners, the Whadjuk people of the Noongar Nation of the land upon which we live and work, and pay our respects to their Elders past and present.

We recognise the practice of intergenerational care for Country and its relevance to our work bringing it to life on Whadjuk Noongar Boodja*. We seek to listen, learn and genuinely engage and build strong partnerships. We aim to provide sustainable opportunities for Aboriginal people within our workforce and through our business.

Country is a term used by Aboriginal people to describe the lands, waterways and seas to which they are intrinsically linked. The wellbeing, law, place, custom, language, spiritual belief, cultural practice, material sustenance, family and identity are all interwoven as one.

Working with the community, we move forward with a shared commitment to protect and conserve Country for our future generations.

*The Department of Water and Environmental Regulation's head office, Prime House, is located in Joondalup, on Whadjuk Noongar Boodja. The above Acknowledgement of Country was endorsed by the department's Aboriginal Water and Environmental Advisory Group.

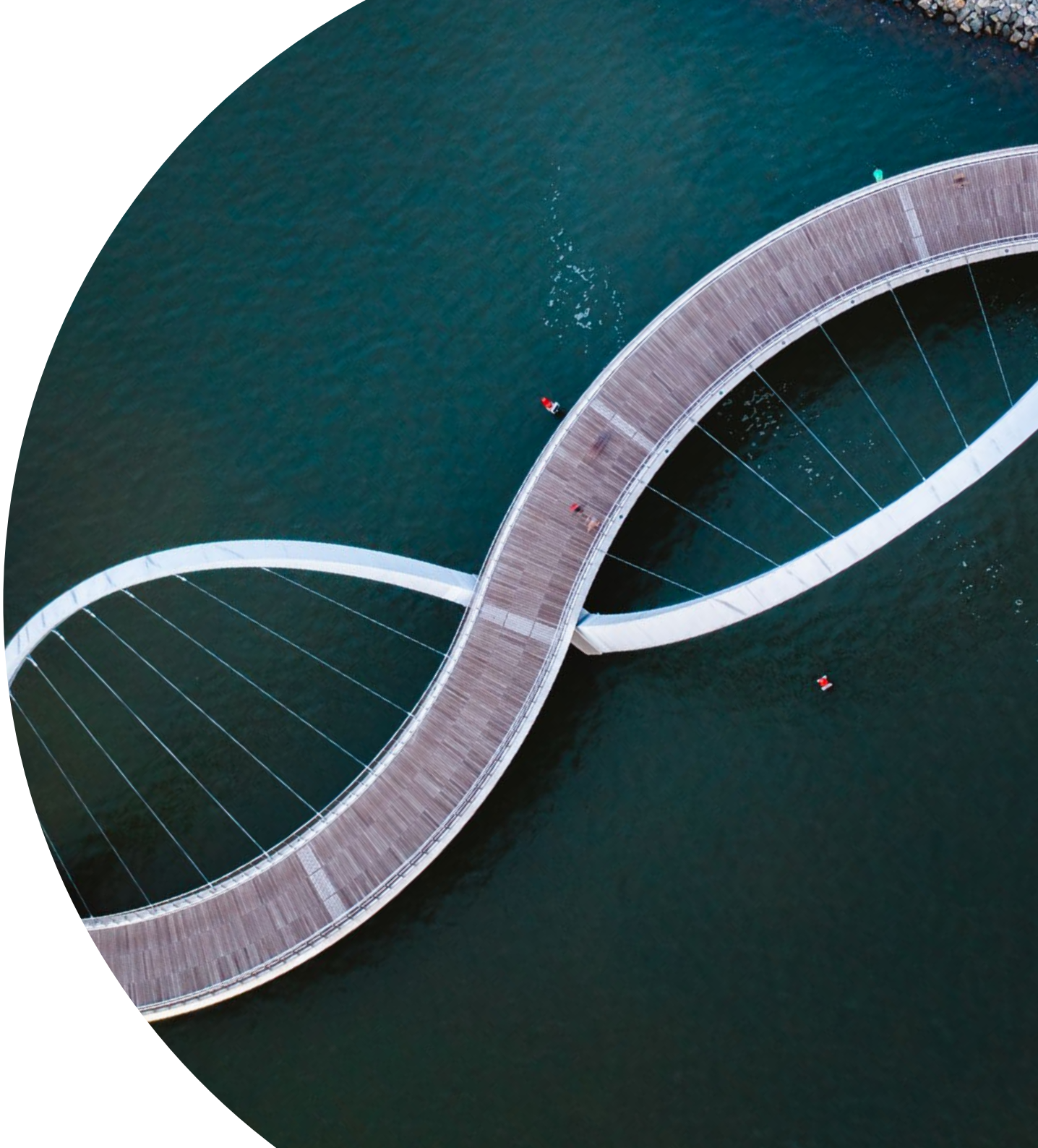
Our Frankland-Denmark team meet with Mount Barker Elders

Contents

Our performance

Outcome one

WA's growth and development is supported by the sustainable management of water resources for the long-term benefit of the state.



Service one – Water information and advice

Water measurement

The department collects hydrological data from about 2,400 groundwater bores, 280 river gauging stations and 170 meteorological sites across WA to monitor the condition of the state's ground and surface water resources.

This information is provided free of charge to industry, members of the public and government. Accurate water-monitoring data supports our water allocation, water licensing, water quality management and flood risk assessment programs, and is vital for the state's flood warning service.

Our staff can spend days to weeks in remote locations maintaining our monitoring instrumentation systems and collecting new hydrological measurements. The department's ground and surface water asset management programs upgrade and replace our monitoring infrastructure to enable the safe and efficient collection of accurate data. We are constantly evaluating and implementing new technology and techniques to improve the efficiency of the measurement program, and the quality and availability of the information.

We have trialled new technology to automatically transmit groundwater level data by mobile and satellite 'telemetry' systems from our remote bores to our database systems. We are planning how we can implement 'groundwater telemetry' across our monitoring network to reduce monitoring expense and provide data at the frequency it is required by our scientists, planners and the wider community.

Water information

Much of the water data we collect is made available through our online systems. The Water Information Reporting (WIR) portal provides instant access to more than 134,000 water monitoring sites. This data is used for environmental assessments, research and investigation, mining and minerals exploration, infrastructure and urban development, industry and commerce, and agriculture.

WIR is a great example of how we can transform and improve our business through online services, and how our stakeholders are benefitting from our efforts.

The 2021–22 year was the biggest ever for WIR data, with 7,146 requests for water information. We continued to deliver automated information, meeting our KPI with an average turnaround time of 26 seconds.

Analysis of data use shows most of these requests relate to environmental assessment, and research and investigation. There was an increase in requests for mining and exploration in 2021–22 compared with the previous year.

Water Information Reporting data use 2021–22 (financial year)

Purpose	18–19	19–20	20–21	21–22
Environmental assessment	2,117	2,670 ↑	2,467 ↓	2,547 ↑
Research and investigation	1,082	1,035 ↓	1,444 ↑	2,242 ↑
Other	289	505 ↑	393 ↓	364 ↓
Mining and exploration	382	435 ↑	495 ↑	573 ↑
Agriculture	260	309 ↑	286 ↓	269 ↓
Domestic supply	99	248 ↑	172 ↓	194 ↑
Water source protection	108	231 ↑	216 ↓	292 ↑
Infrastructure	275	226 ↓	350 ↑	335 ↓
Property dev./land use planning	259	212 ↓	187 ↓	223 ↑
Industry and commerce	45	39 ↓	92 ↑	78 ↓
Recreation	13	15 ↑	81 ↑	29 ↓

Water and land use planning advice

We are now navigating far more constrained land to build our future neighbourhoods, manage their water supplies and protect critical ecosystems such as wetlands.

In alignment with the *Draft State Planning Policy 2.9 Planning for Water* and the *Draft State Planning Policy 2.9 Planning for Water Guidelines*, the department provides site-specific advice to local governments and land planning agencies on water and environmental regulation and water resource management in urban areas to minimise the effects on natural systems and support sustainable development. Water resources should be considered at each planning stage.

Continuous improvements in our investigative and modelling programs, and the integration of all of our science and expertise, have increased our ability to inform land use changes at structure, precinct, district and regional levels. This will not only protect, but optimise, our groundwater resources through waterwise design, irrigation systems and practices.

Early planning at the right scale is critical in order for flood, drainage and environmental factors to be considered, and to ensure adequate time to plan for water supply, infrastructure and service provision options that meet regulatory requirements.

The department continued this year to investigate solutions through better collaboration, focusing on opportunities for industry to engage with our, and other, departments before the start of statutory planning processes, and to determine a common understanding of development challenges. This role extends to pre-emptively scoping regulatory processes under Part V of the EP Act and *Contaminated Sites Act 2003* (Contaminated Sites Act), to ensure proponents are adequately informed of other legislative requirements pertaining to development proposals through a whole-of-department consolidated approach.

Proponents will be supported by improvements in how we do business through Streamline WA and Environment Online.

In the last financial year, the department assessed and responded to:

- 1,470 requests for water advice from DPLH
- 833 requests from local government authorities (LGAs)
- 168 requests from DMIRS
- 59 requests from the EPA
- 351 requests from other stakeholders, including other State Government agencies and utilities, and industry.

We also advised on 124 water management reports associated with land planning.

Land development fronts

The Perth and Peel @ 3.5 million planning frameworks identify areas for urban expansion for a projected population of 3.5 million by 2050.

We have used the land use planning and infrastructure frameworks to determine long-term water demands and provide the Western Australian Planning Commission (WAPC) with strategic flood risk management and land capability advice.

Work in Perth development fronts (such as East Wanneroo) has shown that land use changes as a result of urbanisation and other changes to Perth's footprint have had a significant influence on groundwater recharge and Superficial aquifer water levels, as well as on the health of our groundwater-dependent ecosystems, rivers and waterways.

To address the risk that urbanisation will bring to drinking water quality, environmental assets and urban infrastructure water management plans will be prepared by DPLH and proponents under the East Wanneroo district water management strategy. These will outline acceptable land uses and propose measures to address water quality impacts, and protect environmental assets and urban infrastructure from rising groundwater levels.

Drainage planning and floodplain modelling

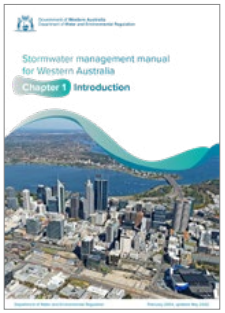
The department works collaboratively with local governments, other State Government agencies, service providers, the community and natural resources management agencies to support the delivery of better water and environmental outcomes in the urban environment.

We do this by producing strategic catchment-scale flood models for priority development areas and major state projects, and delivering guidance on stormwater and groundwater management to assist developers and decision-makers to identify and resolve issues at the earliest stages of the land planning process. Key achievements include the following:

Strategic drainage investigations to support WAPC decision-making for Perth and Peel @ 3.5 million

The department provided strategic flood risk management and land capability advice to the WAPC to inform their comparative analysis between East of Kwinana and Ravenswood and Pinjarra Planning Investigation areas in the Perth and Peel @ 3.5 million frameworks. This advice was underpinned by the department producing two flood modelling and drainage studies which included two sophisticated flood models, using national standards, to determine the flood extent of the areas. It was also supported by a flood risk management and land capability assessment report.

Capacity building for local government and industry



Through a continuous improvement program, we are streamlining existing guidance, aligning with national standards and producing new work on catchment drainage modelling, and stormwater and groundwater management issues for urban development.

Key achievements include:

- the development of strategic guidance, including presentations to industry at the Institute of Public Works Engineering Australasia (IPWEA) and Hydropolis on the transition to *Australian Rainfall and Runoff*
- minor updates to the *Stormwater Management Manual for Western Australia* as part of a continuous improvement program.

Floodplain mapping and advice

The flooding in the Eastern States this year has again highlighted the need for proactive management of floodplains to mitigate the risk of flooding to people, property and infrastructure. The department plays a key role in managing floodplains and responded to more than 700 requests for floodplain management advice in 2021–22.

Our online floodplain mapping tool has been updated to include eight additional waterways in Bunbury, Moora, Boddington and the suburbs of Haynes and Hilbert in the City of Armadale.

In June 2021 we released a report on our assessment of the February 2021 Gascoyne River flood at Carnarvon. We also provided advice and analysis to the preparation of the Carnarvon Floodplain Management Working Group Report released in May 2022. The State Government accepted all 27 recommendations of the working group that will support the Carnarvon horticulture area to recover from the 2021 flood event and reduce the risk of impacts from future flooding.

Service Two - Water planning, allocation and optimisation

Water allocation plans

Gnangara groundwater allocation plan started — 2016

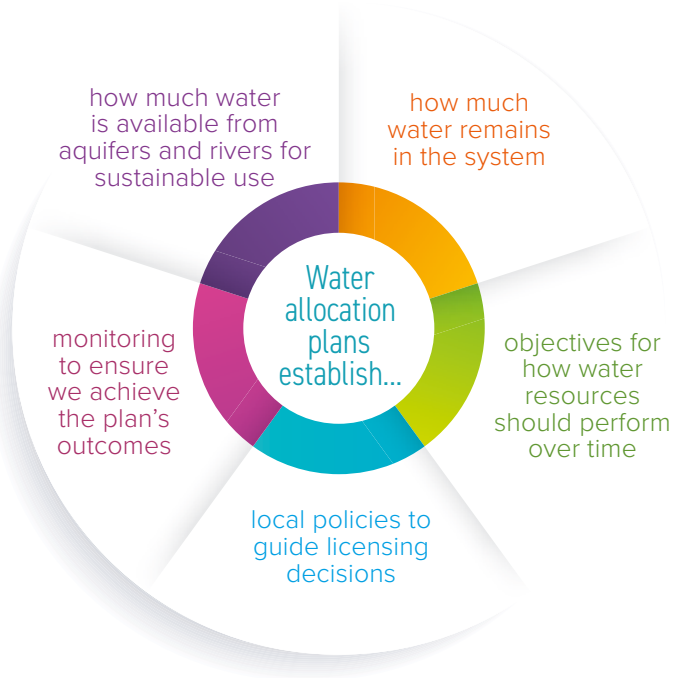
The public comment period for draft Derby groundwater allocation plan closed — 2021 May

The public comment period for Managing water in the Fitzroy River Catchment closed — 2021 Aug

The Gnangara groundwater allocation plan was released — 2022 Jun

Water allocation plans are the department's key documents to support our regulatory water licensing approach. They establish how much water is available from aquifers and rivers for sustainable use and licensing, and how much water remains in the system for the environment. They also establish:

- objectives for how water resources should perform over time
- local policies to guide licensing decisions
- monitoring to ensure we achieve the plan's outcomes.



Work to develop a new Gnangara groundwater allocation plan started in 2016. As part of this, the department completed detailed scientific assessments and advanced groundwater modelling of recharge and abstraction under climate change. This included a four-year $7 million investigation into the Perth region's deep aquifers, local groundwater studies, and developing options to sustainably manage groundwater by sharing the required reductions to abstraction across water users, aquifers and areas.

In addition to science, decisions in the draft plan were informed by extensive consultation with stakeholders to consider approaches for each sector's ability to transition and adapt to reduced groundwater use. Through the public comment period, the department received about 200 submissions that were considered to improve and finalise the plan.

Between 19 November 2021 and 28 February 2022, the State Government sought feedback on the *Gnangara groundwater allocation plan: draft for public comment*.

The Gnangara groundwater allocation plan was released on 3 June 2022, along with the Methods report and Statement of response. The Statement of response details our responses to the comments we received and how they informed the final plan.

We have also continued to review groundwater allocation limits and plans to manage the impacts of climate change from Geraldton to Esperance, including under the Waterwise Perth Action Plan.

In the Kimberley, work is underway to finalise the Derby groundwater allocation plan and develop a plan for the Fitzroy area. Since the public comment period for the department's *draft Derby groundwater allocation plan* closed on 31 May 2021, we have collated submissions and are working with respondents on the complex issues raised. Further engagement with Traditional Owners will be undertaken before finalising the plan.

The public comment period for *Managing water in the Fitzroy River Catchment: Discussion paper for stakeholder consultation* closed on 31 August 2021. The department received more than 43,000 submissions and we are working on a response, which will inform the next steps on the complex and important issues raised.

We continue to evaluate our water allocation plans and consider changes to this resource, including the impacts of climate change on water availability.

Stakeholder consultation submission

43,000+

Fitzroy River catchment stakeholder submissions in response to discussion paper

Water investigations

The department continues to deliver targeted groundwater investigations to ensure government and industry have timely knowledge of water resources suitable for drinking water supply, agriculture, horticulture, mining and industry in areas where it is most needed.

The flagship State Groundwater Investigations Program (SGIP), funded by the State Government, invested $5.451 million across 18 concurrent projects from La Grange in the Kimberley to Esperance on the South Coast.

We also continued our partnership projects with leading research organisations, universities and industry, ensuring the department keeps pace with contemporary scientific methods. This included collaborations with the University of Western Australia, Australia's national science agency CSIRO and the Water Corporation on two complementary projects to improve estimates of rainfall recharge in the Perth Basin. Using a combination of field data collection and numerical modelling simulations, these projects will refine our understanding of recharge processes and how active management of recharge can affect groundwater replenishment rates.

The department has a reputation for using cutting-edge science. Innovative technology, designed and manufactured in Perth, was trialled as part of our investigation into groundwater resources in Perth's Swan Valley.

Together with CSIRO, we are using a Loupe portable electromagnetic survey tool during the Swan Valley North-East Corridor groundwater investigation project. This is designed for rapid data collection and mapping electrical conductivity near the ground surface.

Highlights of the SGIP included:

- **Progression of the La Grange project collecting LIDAR (Light Detection and Ranging) data and the start of ecological surveys to investigate where important cultural and ecological values are maintained by groundwater.**

  La Grange (Port Hedland to Broome) is an area of high water demand and the project will provide new information to protect groundwater-dependent values and provide security for water users. As part of this we developed a Collaboration Agreement with the Nyamba Buru Yawuru people, built on the principle of mutual respect, that will allow the department to meet our responsibilities while also supporting the aspirations of the Yawuru people.

- **Completion of a 3-D hydrogeological model for the Dandaragan Plateau between Moora and Gingin, which synthesises new stratigraphy, water-level, water chemistry and airborne electromagnetic survey data into one groundwater assessment tool.**

  The model significantly updates our previous understanding from the 1990s. We have identified additional areas of recharge to the Leederville-Parmelia aquifer and improved mapping where fresh or marginal groundwater supplies may be available. The model will inform a review of allocation limits in the next Gingin Water Allocation Plan, which is due in 2025.

- **Progression of our Seawater Interface suite of five projects across the state, which will help us manage and protect the limited fresh groundwater resources along our coasts for public water supply and private use.**

  This included installing 33 new groundwater monitoring bores along an 80 km stretch of coastline between Dunsborough and Busselton. Improved monitoring of the interface will be used to better define its location and, in the longer term, the data will inform how to best minimise the potential movement of the seawater interface from cumulative impacts of pumping from hundreds of groundwater users in the area.

- **Completion of phase two of the Groundwater Telemetry Trial, successfully testing monitoring units in the Kimberley and Perth-Peel regions.**

  The final technical assessment report is now complete and the telemetry will revolutionise our work in this area. It will enable us to provide high-frequency data from thousands of remote groundwater monitoring bores to our hydrologists, planners, industry and the community, with reduced operational effort and cost.

The work being undertaken through this new project will provide important additional information on groundwater quality close to the Swan River. This follows an airborne electromagnetic survey of the Swan Valley project area and its groundwater flows in 2020.

Novel science connecting groundwater and seagrass in Karajarri Country

We joined forces with Karajarri Rangers this year and used our aquatic and groundwater science expertise to conduct a leading-edge scientific investigation in Karajarri Country, in the south-west Kimberley.

This project draws on the experience of our Aquatic Science branch, SGIP and marine environmental science consultants O2 Marine. The first-time study looks for connections between the marine ecosystem and the freshwater aquifer, including seagrass.

While the work we are doing is aquatic science, it is part of the SGIP La Grange Groundwater Dependent Ecosystem studies to inform water resource management decisions in the area.

The potential groundwater dependence of this area was first identified through a Commonwealth Environment Protection and Biodiversity Conservation Act assessment of water abstraction on adjacent pastoral lands. This triggered research into the dependency of this environment, the seagrass and the ecosystem it supports on groundwater throughflow. This coastal area has strong environmental values and is an important habitat for dugongs, turtles, dolphins, humpback whales and other marine life.

Work on Karajarri Country is in partnership with the Karajarri Rangers on behalf of the Karajarri Traditional Lands Association. These environmental values are of extreme importance to community aspirations for healthy Country, and connected to the cultural and spiritual beliefs of the Traditional Owners, specifically the Naja Naja clan of the Karajarri people, who have used this area for food and cultural activities for millennia.

Work on Karajarri Country is in partnership with the Karajarri Rangers on behalf of the Karajarri Traditional Lands Association.

Our staff in the North West region monitor groundwater levels in the area, as do licensees, and the data is incorporated into this project. Over two days the team launched a boat from Purnturrpurnturr area (Port Smith lagoon) and travelled to Mirntanymartaji area (Gourdon Bay), where they conducted the fieldwork.

A newly acquired instrument (Rad7 with RadAQUA) enabled the continuous monitoring of radon in water. Radon-222 is a chemical element naturally occurring in aquifers as a by-product of uranium. Its presence is considered a tracer of groundwater.

Water source protection

Our water source protection work helps maintain safe, reliable and affordable drinking water supplies. The department is responsible for managing about 140 public drinking water source areas (PDWSAs) across the state. This number varies as new sources are proclaimed and old sources are abolished.

All active PDWSAs are covered by drinking water source protection reports, which are subject to ongoing review by the department in consultation with the State Government, local governments, Traditional Owners, landowners, industry and the community. We work with our stakeholders to implement recommendations in the reports which address water quality risks and help keep the source safe. The reports provide a boundary, priority areas and protection zones for each source.

We provide technical advice on how to manage risks in PDWSAs to other agencies, local governments, developers, industry and other stakeholders.

Key projects this year included...

- specialist advice on Environment Online
- implementing our commitments under the South West Native Title Settlement
- preparing guidelines for conducting risk assessments in PDWSAs, abolishing legacy sources
- updating our website
- providing advice to the Minister for Water on recreation proposals in PDWSAs.

Water supply planning

Our work in this area informs the water planning for new industries and agriculture, as well as WA local governments looking for solutions to irrigate parks and gardens in new urban development's where groundwater is not available. We also work with water service providers on strategic planning for future public water supplies.

Over the last year, our water supply planning has focused on supporting the implementation of the Waterwise Perth Action Plan and work to inform future submissions on the Infrastructure Australia high-priority listing for 'Perth and south-western coast water security'. This will support future non-potable water project proposals for consideration by State and Australian Governments.

In addition, the department maintains the statewide Water Supply Demand Model to periodically estimate future water demand and supply availability on a regional and subregional scale across water use sectors. This statewide outlook is used to communicate emerging water supply demand trends to government and inform discussions with industries, local governments and development agencies. In 2021–22 our water use trend analysis and demand projections were used to evaluate existing water supply strategies for the Mid West and Great Southern regions.

Waterwise actions and plans

One of the State Government's priorities is to create waterwise cities and towns that are cool, liveable, green and sustainable – places where people want to live, work and spend their time. Our economic, social and environmental future is dependent on securing our water resources in the context of climate change.

The state's first Waterwise Perth Action Plan was launched by the State Government in October 2019 and is led by our department. It provides a strategic, whole-of-government approach to planning and addressing water-related issues associated with urban intensification, more frequent and hotter days, and the increasing demand for water in the face of climate change.

Over the past two years the plan has involved eight partner agencies and multiple industry and community stakeholders. It has encompassed 38 key actions that have helped conserve water resources and enhanced urban green spaces, while educating and engaging the community and delivering government-led water-sensitive policy, planning and development.

As of 30 June 2022 the department was working on Kep Katitjin – Gabi Kaadadjan Waterwise Perth Action Plan 2, to be released later in 2022. The Noongar name Kep Katitjin – Gabi Kaadadjan means 'water knowledge' in both the Whadjuk and Bindjareb dialects, to reflect the Country and Traditional Owners that the plan covers. The management of our precious water with shared knowledge and wisdom is at the heart of this plan.

Major achievements delivered through the Waterwise Perth Action Plan included:

84,000 waterwise plants
planted across Perth and Peel suburbs

3,500 trees
planted across 18 Perth and Peel local governments

300 million litres
of water saved through the Leak Assist Rebate Scheme

92 million litres
of water saved through the Water-efficient Showerhead Swap Scheme

142.7 million litres
of water saved through retrofitting 735 public housing properties with 1,348 water-efficient fixtures

49,000 students
participating in the Waterwise Schools Program, with 10,209 downloads of lesson plans from the Water Corporation's education website

The release
of the Managed Aquifer Recharge Policy, which enables innovative alternative water solutions.

Waterwise development guide

We partner with the Water Corporation to jointly and individually manage seven Waterwise programs and initiatives that build strong relationships with local governments, industry and the community to improve water efficiency, climate resilience and liveability, including the Waterwise Developer Program.

Many actions in the Waterwise Perth Action Plan focus on creating waterwise and climate-resilient public open space and recreational areas.

A joint initiative between DevelopmentWA, the Water Corporation and our department, the *Guide to a Waterwise Development* was created by sustainability experts Josh Byrne & Associates to demonstrate the benefits of waterwise design in homes and communities of the future. Design options investigated in the guide can be applied to all types of developments, and support efforts by developers, local governments, urban water professionals and others to deliver future communities that use and reuse water efficiently.

The waterwise development guide is one of many water-saving initiatives undertaken to support Perth's transition to a leading waterwise city by 2030.

The goal is to make water-sensitive urban design mainstream practice in Perth's development industry, supported by demonstrated examples through government-led Waterwise developments such as OneOneFive Hamilton Hill. The guide will be updated to include lessons learnt and insights captured during the construction and occupation phases of this exemplar project.

By incorporating water-sensitive urban design, communities can reduce reliance on scheme water, better utilise local water sources and create cooler microclimates that support local biodiversity. Our work under the Waterwise Perth Action Plan, including this guide, makes it easier for developers to integrate water-sensitive urban design into new estates.

New research hub

Our Waterwise actions and plans have been supported by our work with the WA Water Sensitive Transition Network and other local partners, and joining forces with the Monash Sustainable Development Institute to launch the Water Sensitive Cities Australia WA hub in October 2021.

The hub will ensure the latest science is applied to local water-focused projects and priorities. It will draw on the institute's diverse and strong research capabilities and experience in delivering practical research and tools to advance waterwise cities.

It will provide a proven mechanism and enhanced capability for WA industry, local governments, the State Government and researchers to keep collaborating and make waterwise practice mainstream.

The launch of the Water Sensitive Cities Australia WA hub

The new hub further extends the important role the WA Water Sensitive Transition Network plays in making our cities more waterwise and climate resilient.

Water Sensitive Cities Australia was established at Monash University's Monash Sustainable Development Institute to continue the mission of the Cooperative Research Centre for Water Sensitive Cities.

This centre's extensive body of research has demonstrated that waterwise cities practices and principles work. The next step is to make them the norm. This is now the mission of Water Sensitive Cities Australia and is being delivered through the State Government's Waterwise Perth Action Plan as well as many other projects and initiatives.

Waterwise Councils irrigation training program

The department launched the three-year Waterwise Councils irrigation training program in May 2021, to equip local government staff with the skills and knowledge to ensure best practice in efficient water use through improved irrigation design, installation and maintenance. The program will fully subsidise up to three training positions for parks and irrigation staff of eligible local councils endorsed as Gold under the existing Waterwise Council Program.

The program was fully subscribed in the first year, with the 33 available training positions awarded to 13 different Gold waterwise local governments who expressed interest in the program.

Waterwise Council Program

The Waterwise Council Program, run jointly with the Water Corporation since 2009, supports local governments to improve water efficiency and help create waterwise communities. The program recognises the work of local governments leading by example and inspiring residents to be waterwise.

The City of Joondalup was awarded the 2022 Platinum Waterwise Council of the year. The shires of Exmouth and Harvey are WA's newest Waterwise Councils, while the City of South Perth was acknowledged for becoming one of only 26 local governments to achieve Gold recognition. There are 48 councils statewide now endorsed through the Waterwise Council Program.

Drainage for Liveability

The Drainage for Liveability Program is a joint initiative with the Water Corporation that supports a waterwise Perth by making our communities more sustainable, productive, resilient and liveable.

Working with interested community groups, LGAs and the development industry, we are improving stormwater drains and basins to increase the social and environmental value of these spaces in our urban environment. In 2020–21 we developed a new guidance note that outlines the approach of the department and the Water Corporation to implementing *Australian Rainfall and Runoff – A Guide to Flood Estimation*.

Wharf Street Basin Next Generation Community Park, before and after

Wharf Street Basin Next Generation Community Park

The department, in partnership with the Water Corporation and the City of Canning, provided a WA-first pilot project to turn a stormwater basin in the City of Canning into a community smart park.

The Wharf Street Basin project used water-sensitive infrastructure and technology such as smart bins and solar power to transform the area into a park that provides benefits to the environment and community. The project has won multiple awards including:

- a 2022 Stormwater Western Australia Award for Excellence in Research and Innovation and Excellence in Infrastructure
- an Australian Water Association Awards (WA) Infrastructure Project Innovation Award (Metro)
- an IPWEA Australasia Excellence Awards Best Public Works Project $2m–$5m
- a commendation for the 2022 PLAWA Regional Awards for Excellence, Best use of technology Award for the Smart Canning App.

Rural water planning

Through the Rural Water Planning Program, the State Government continues its commitment to assist 64 shires in the dryland agricultural area to address non-potable water needs and build resilience in small rural communities. Support has been provided through the Community Water Supply Program, Agricultural Area (AA) capital works program and water carting under the water deficiency declaration and water carting under water deficiency declarations.

The 2021–22 year started with two declarations in place in Salmon Gums and Grass Patch in the Shire of Esperance. These were revoked in July 2021 because of above-average rainfall and on-farm water supplies being adequate to meet livestock demand. Water deficiency declarations were again announced in Salmon Gums and Grass Patch because of poor summer rainfall and prolonged dry conditions, and water carting started on 1 March 2022. This was suspended on 6 May 2022 because of adequate rainfall and run-off into on-farm dams. During the year, $82,270 was spent on water carting.

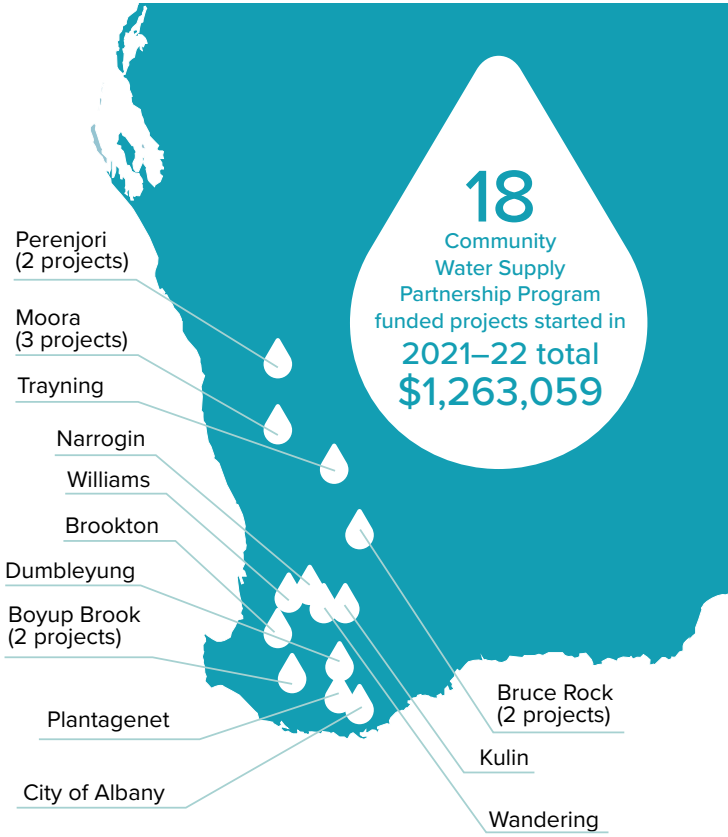
The Rural Water Planning works program has invested $279,395 this year to upgrade 14 AA dams and supplies vested with the department or in priority areas.

More than 100 community water projects have been completed across rural and regional WA, with $4.27 million spent by the State Government.

Under the two-year (July 2021–June 2023) National Water Grid Connections Fund, the State Government has committed to $3.65 million in funding towards the AA dams and Strategic Community Dams project, and $1.6 million for the Community Water Supplies Partnership Program with local government. These Australian Government co-funded projects will increase water security in dryland agricultural areas vulnerable to dry conditions and the effects of climate change. The projects will provide emergency water for firefighting and farming needs as well as fit-for-purpose irrigation water for townscape and sporting facilities.

The AA dams project will ensure non-potable water infrastructure is developed at 70 priority sites in 37 shires. The Community Water Supplies Partnership Program projects will boost the Community Water Supply Program, and provide funding assistance (up to $100,000 per project) to local governments and rural communities to develop and upgrade their non-potable water supplies.

Eighteen Community Water Supply Partnership Program projects started in 2021–22, to the value of $1,263,059. They are in the City of Albany and shires of Boyup Brook (two projects), Brookton, Dumbleyung, Kulin, Narrogin, Perenjori (two projects), Trayning, Williams, Bruce Rock (two projects), Moora (three projects), Plantagenet and Wandering.



The planning and delivery of the AA dams and Strategic Community Dams projects is progressing within 37 shires. Works to the value of $954,070 have started in many parts of the dryland agricultural area and these supply points will be maintained to provide sources of emergency water, which can be accessed by farmers in times of serious on-farm water deficiency.

Rivers and estuaries

We provide a centre of expertise in aquatic science and coordinate evidence-based management actions to improve water quality in rivers and regional estuaries. Our expertise in river and estuary science, catchment and estuary numerical modelling, remediation science, seagrass and phytoplankton (microscopic algae) ecology supports our river and estuary programs.

Healthy Estuaries WA

Estuaries, where rivers meet the ocean, are central to our way of life and economy in WA. More than 80 per cent of our population lives around them and they support industries including tourism and fisheries. Their health is linked to the land use of surrounding areas and the conditions of the catchment areas and rivers that flow into them. Intensive population growth and agriculture in the catchments of our estuaries have negatively impacted their water quality.

We combine the scientific understanding of how nutrient losses from catchments affect water quality with the strategic and practical actions needed to reduce these losses in the long term. We lead water quality improvement planning for priority estuaries to drive efforts across all levels of government, natural resource management groups, industry and the community to address declining water quality and its ecological impacts.

Our world-class work to achieve outcomes for our estuaries and the communities that live and work around them continues with Healthy Estuaries WA. This program works in partnership with community, science, government and industry to reduce the amount of nutrients and organic matter entering waterways. Healthy Estuaries WA works in the priority catchments of Peel-Harvey estuary, Leschenault Estuary, Vasse-Geographe waterways, Hardy Inlet, Wilson Inlet, Torbay Inlet and Oyster Harbour.

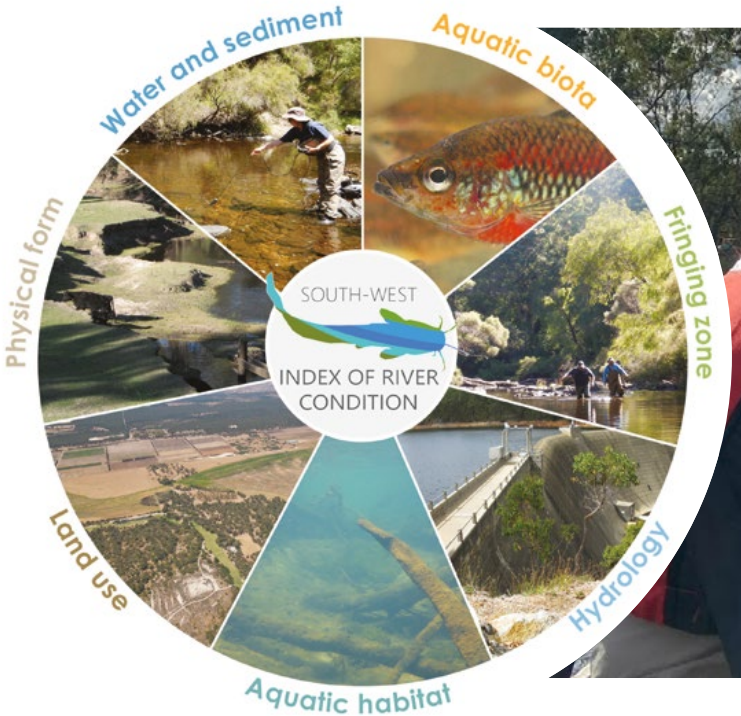
We work with natural resource management groups and the agriculture industry to foster implementation of best practices in fertiliser management, dairy effluent management, and fencing and revegetation of areas adjacent to streams and drains. We are investigating innovative remediation techniques to reduce nutrient loads in agricultural areas. Our scientists monitor the water quality and ecology in estuaries and the rivers that flow into them, contributing important data to inform management decisions.

Healthy Rivers

A healthy river supports the natural ecosystem as well as a range of commercial activities and social amenity for our communities. Cultural and spiritual values are also intricately linked to river environments and the unique biodiversity they support. Human activity in and around rivers and their catchments, coupled with reduced rainfall because of climate change, has resulted in considerable and increasing pressure on our rivers. Maintaining healthy rivers requires contemporary, adaptive management supported by good science.

Our Healthy Rivers program delivers monitoring, research, partnerships and advice to protect and improve the health of our rivers. Long-term, standardised river health assessments are an integral part of the program, providing knowledge to determine ecological requirements and assess environmental risks and impacts. In 2021–22 about 80 river health assessments were conducted at sites from Geraldton in the north through to Pemberton in the south. In addition to the long-term monitoring network of more than 150 strategic river health sites, assessments are also conducted in response to unforeseen events and emerging issues. Summaries of findings and methodology from river health assessments are publicly available on the department's Healthy Rivers website.

Our Healthy Rivers team provides technical advice to support land use and water allocation planning, licensing and approvals, assessment of compliance, management of environmental water releases and evaluation of waterway management activities. This includes responding to a growing number of public inquiries via the Healthy Rivers website. The team is also progressing scientific studies in support of management decisions, including studies on ecotoxicity and evaluation of the success of river restoration projects.



Service Three - Water regulation, licensing and industry governance

Water licensing

Water is an especially precious resource in WA within the context of climate change, increasing population, and continued growth in the state's economy. Water resource management legislation, including the *Rights in Water and Irrigation Act 1914* (RIWI Act), provides the statutory basis on which water is allocated to users in certain areas and for certain water-use activities, through water licences that are granted by the department in the interests of the state.

Licensing is our principal regulatory tool for ensuring our water resources and dependent ecosystems are protected, and water use is productive and sustainable. Water licences stipulate how much water can be taken by the licence holder or an approved third party, what resource it can be taken from, where it can be used and for what purpose. They are generally issued for a term of 10 years and are subject to other terms, conditions and restrictions relevant to individual circumstances which must be complied with by the licence holder.

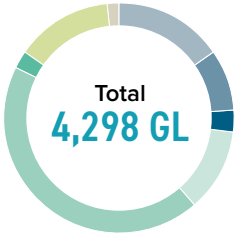
At 30 June 2022, we managed 12,677 water licences across 486 groundwater and 216 surface water resources. These licences authorise the taking of 4,298 GL of water – 3,241 from groundwater resources and 1,057 from surface water resources. The licences are issued across a range of water-use sectors, including the mining, public water supply, agricultural and industrial sectors.

Water licences managed 2021–22

12,677

Western Australia's water users by sector

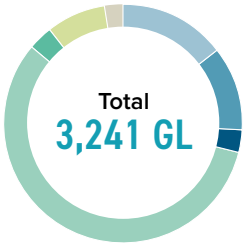
Please note: The sector volumes (both individual and totaled) in each of these charts have been subject to rounding.



Total licensed volume by sector

- **Agriculture** 663 GL (15%)
- **Industry and power generation** 132 GL (3%)
- **Mining** 1,872 GL (43%)
- **Public water scheme supply** 582 GL (14%)
- **Commercial and institutional** 373 GL (9%)
- **Irrigation scheme supply** 504 GL (12%)
- **Parks, gardens and recreation** 106 GL (3%)
- **Other*** 67 GL (2%)

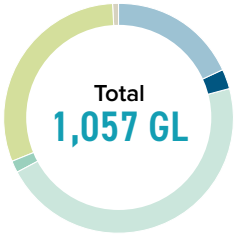
*Other contains environment and conservation, and stock and domestic.



Groundwater licensed volume by sector

- **Agriculture** 472 GL (15%)
- **Industry and power generation** 101 GL (3%)
- **Parks, gardens and recreation** 105 GL (3%)
- **Other*** 79 GL (2%)
- **Commercial and institutional** 370 GL (11%)
- **Mining** 1,853 GL (57%)
- **Public water scheme supply** 261 GL (8%)

*Other includes environment and conservation, stock and domestic, and irrigation scheme supply.



Surface water licensed volume by sector (allocated volume)

- **Agriculture** 191 GL (18%)
- **Irrigation scheme supply** 490 GL (46%)
- **Public water scheme supply** 320 GL (30%)
- **Industry and power generation** 30 GL (3%)
- **Mining** 19 GL (2%)
- **Other*** 6 GL (0.6%)

*Other includes stock and domestic, commercial and institutional, environment and conservation, and parks, gardens and recreation.

In certain areas, the construction of water-use infrastructure including bores and dams, and the disturbance or interference of the beds and banks of watercourses, are also subject to authorisations requiring licences and permits. As of 30 June 2022, there were 952 licences to construct and alter groundwater wells and 525 permits to interfere with beds and banks granted across the state.

In 2021–22 the water licensing target timeframes for average application processing (65 days low risk, 75 days medium risk and 95 days high risk) were achieved for all application risk categories. The average assessment timeliness performance for low, medium and high-risk water licence applications were 35 days, 52 days and 65 days, respectively, remaining well under established timeliness targets.

As at 30 June 2022 there were 265 water licence applications in backlog. The 2021–22 backlog result was 245, meaning there was an 8 per cent increase in the backlog. However, this remains well within the target threshold of 350 applications.

Water Online users 2021–22

1,958
new registered external users

56%
applications are submitted online

Water Online

The Water Online portal is available to licensed and prospective water users to lodge water licence and permit applications. The portal also allows for licensees, and approved third parties acting on their behalf, to submit reports and meter readings electronically and in real time in accordance with the conditions of their licences and permits.

In 2021–22 we continued to promote the uptake of the Water Online customer portal by licensees, with 1,958 new registered external users from a total of 8,187 external registered users. The percentage of applications submitted electronically continues to rise and 56 per cent of applications were submitted online in this financial year.

Water Online was updated to support implementation of the Gnangara Water Allocation Plan and ensure a continued streamlined water licence application assessment process.

Water compliance in 2021–22

5,400
incident reviews and investigations

107
letters of education

37
infringement notices

Water compliance and enforcement

To ensure the community makes best use of available water resources, the department administers a suite of water resource management legislation in a manner that is open, fair and reasonable. We also undertake compliance initiatives and programs aimed primarily at promoting and encouraging protection of water resources and the water-dependent environment. We provide a range of support mechanisms to licensees which promote self-regulation in complying with the terms, conditions and restrictions of their individual water licences, a key objective of our Compliance and Enforcement Policy.

Our 2021–22 compliance monitoring program consisted of on-ground and off-site monitoring activities, with 426 on-ground water licence compliance inspections and water meter audits conducted, and 1,336 desktop water use surveys and compliance reports submitted. We also processed 4,170 meter reading submissions.

As an outcome of these monitoring activities, 5,400 incident reviews and investigations were undertaken, and we responded to 279 confirmed incidents of non-compliance with a combination of statutory and non-statutory enforcement actions. We issued 107 letters of education, 99 warning notices and 37 infringement notices, and gave 34 statutory directions.

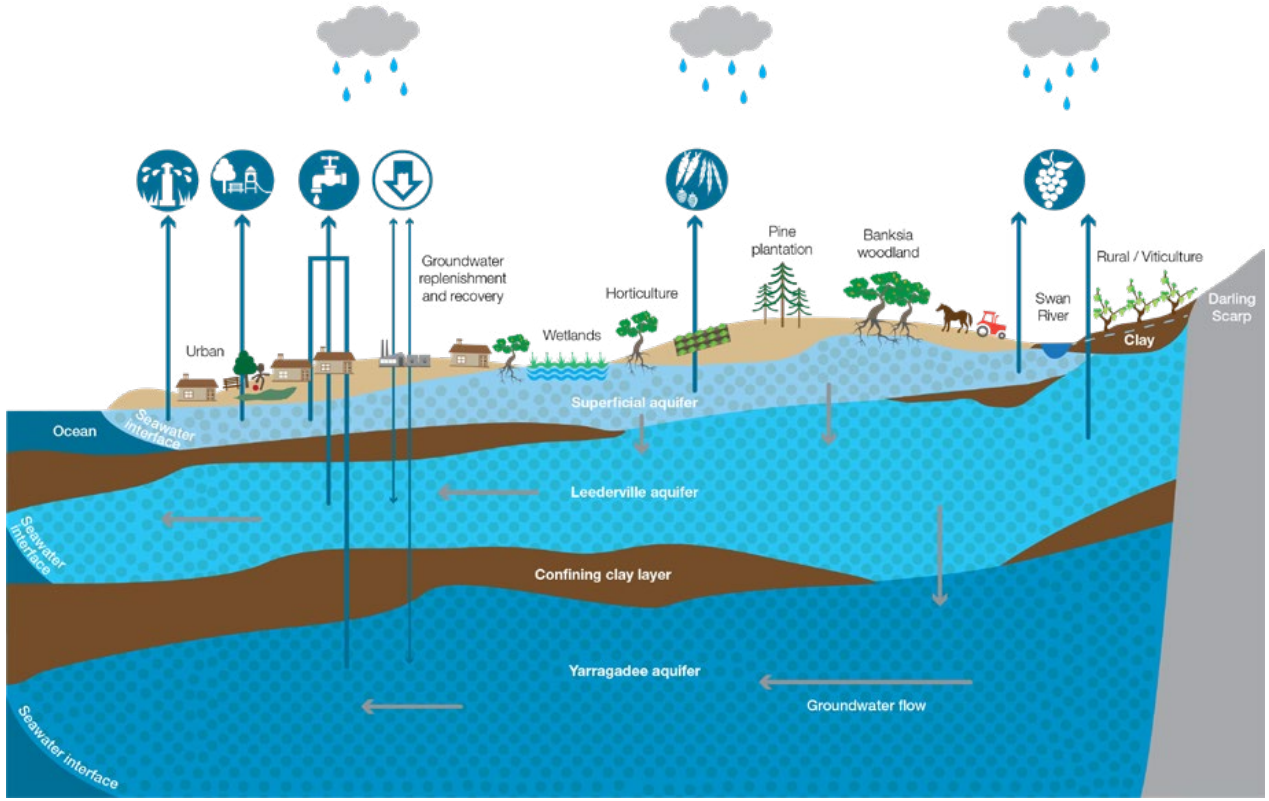
As of 30 June 2022, 6,234 water licences (representing 4,202 GL of water) were subject to metering and alternative measurement requirements under the Rights in Water and Irrigation Regulations 2000.

Gnangara Mound Metering Program

The Gnangara Metering Project was funded by the State Government to install water meters on licensed groundwater bores drawing groundwater from the Gnangara groundwater system. A total of 1,269 state-owned water meters were installed at a variety of semi-rural and lifestyle properties, horticultural and viticultural precincts, and commercial or industrial premises.

Data gathered from the program was used to undertake a number of specialised water resource management and planning activities. Landholders were encouraged to analyse their water use practices and make changes to improve their water use efficiency.

Under our *Measuring the taking of water* policy, most of the state's water licensees are required to install, maintain and read their own meters. As part of implementing this policy, licensees who received a state-owned meter were given the opportunity to take over ownership or request removal of the meters. 2021–22 saw the completion of this four-year program and resulted in 1,188 meters being handed over to licensees and 81 meters being removed.



The Gnangara groundwater system has three main aquifers and supports Perth's water supplies, wetlands and bushland areas

Domestic garden bores

The department is responsible for regulating the take of water, including domestic garden bores.

Permanent watering restrictions for garden bore owners in the Perth metropolitan area came into effect in 2007, restricting watering to three rostered days per week and between the hours of 6pm and 9am. A total winter sprinkler ban then came into effect in 2010, imposed by the Water Agencies (Water Use) By-laws 2010. Under the by-laws, regional areas of WA are restricted to watering once per day between 6pm and 9am.

In June 2022, the State Government announced that the sprinkler roster for garden bores in the Perth and Mandurah area would be reducing from three days to two rostered days per week, as of 1 September 2022. This is necessary to address the impacts of climate change. The change will save about 30 GL of groundwater every year. It will mean more groundwater is retained in the system and will see the watertable stabilise, particularly in urban areas.

The department will assist the Water Corporation in providing educational material to householders to adapt their gardens to the new sprinkler roster. In addition, the Water Corporation will make available rebates on smart irrigation technology, spring sprinkler system check-ups and waterwise workshops to assist households with the transition.

Water Minister Dave Kelly launches the draft Gnangara groundwater allocation plan, which proposed changes to the garden bore sprinkler roster

Water services

Government-owned water utilities Water Corporation, Busselton Water Corporation and Bunbury Water Corporation (Aqwest) are established under the *Water Corporations Act 1995*. The *Water Services Act 2012* provides powers to enable licensed service providers including the water corporations to deliver water supply, sewerage, irrigation and drainage services. In addition to the three utilities, there are 26 other licensed water service providers in WA, including eight local governments, four irrigation cooperatives, four mining companies, nine developers and the Rottnest Island Authority.

The Water Services (Water Corporations Charges) Regulations 2014 and the Water Services Regulations 2013 are amended annually to publish the fees and charges for Aqwest, Busselton Water and Water Corporation. The department is responsible for amending the regulations, in consultation with the three water corporations, so they take effect from the beginning of each financial year.

The department has been working closely with the Water Corporation and the Department of Communities to ensure a smooth transition for the Water Corporation to become the licensed water service provider in several large Aboriginal communities and town-based communities, under the *Water Services Act 2012*. The Water Corporation is starting upgrades and the department is assisting it to meet its regulatory obligations in this transition, including wastewater treatment plant licensing, native vegetation clearing permits, water resource licensing and public drinking water source protection.

Managing public water supply

The department regulates the Water Corporation by licensing it under the RIWI Act to take groundwater from the Gnangara and Jandakot groundwater systems to supply Perth's Integrated Water Supply Scheme.

Under the 2022 *Gnangara groundwater allocation plan*, the Water Corporation's abstraction from the Gnangara groundwater system for the Integrated Water Supply Scheme will be reduced by 30 GL/year in 2028. To supplement this reduction, the Water Corporation has proposed a new 100 GL/year desalination plant at Alkimos, with the first 50 GL stage expected by 2028.

We continue to work with the Water Corporation to annually revise the distribution of groundwater abstraction for the scheme to limit impacts on significant groundwater-dependent ecosystems and other groundwater users. Since 2012, this work has greatly improved abstraction patterns, ensuring less groundwater is taken from the most sensitive areas of the Gnangara and Jandakot groundwater systems.

We work closely with the Water Corporation to assess options to meet demand for the scheme and better manage water resources. Through this work, we have supported the Water Corporation to

develop its groundwater replenishment scheme, which is a climate-independent water source. Groundwater replenishment involves treated wastewater being further treated to drinking water standards and then recharged into aquifers for later use as public water supply.

In 2016, we supported a proposal from the Water Corporation to expand Perth's groundwater replenishment scheme from 14 to 28 GL. Our Perth Regional Confined Aquifer Capacity study, *Studying Perth's deep aquifers to improve groundwater management*, guided the Water Corporation on suitable locations for recharge and abstraction for the expansion. These locations support full recovery of the volume of water being recharged and provide improved water resource and environmental outcomes. Integrated Water Supply Scheme dams are also licensed by the department. The dams play a vital role for storage of water in wetter years and storage of desalination water, and by directly supplying metropolitan and some regional communities. Licence conditions require the Water Corporation to periodically release water from selected dams to ensure there are sufficient flows downstream to benefit the environment and other surface water users.

Water fees

The department regulates the taking of water to protect the state's water resources and to support the sustainable use of water across WA. Fees for water licence and permit applications have been in place for the mining and public water supply sectors since 2018. The revenue from these fees has been used by the department to improve application assessment timeliness and to address a backlog in water licence and permit applications.

We have achieved a reduction in the water licence and permit application backlog, from a high of 673 applications at the end of March 2019 to 265 at June 2022.

During 2021–22, we spent $13,834,515 on the assessment of all water licence and permit applications, and collected $903,058 in fees from 252 licensees for 352 application assessments.

Water policy

In December 2021, the department released the *Draft Guideline: Spring Exemptions* for public comment. The draft guideline provides a voluntary process and step-by-step guide to assist landholders in determining whether a spring exemption under the RIWI Act applies on their property.

During the public consultation period, we field-tested the draft guideline over two days with members of the Warren Donnelly Water Advisory Committee and landholders at various properties in the Warren and Donnelly river catchments. A series of online forums were also held with key stakeholder groups.

We received 73 submissions over the public consultation period, which ended on 31 May 2022. Most of the submissions received were from the south-west of the state, with many from Manjimup, Bridgetown and Pemberton. Feedback was received from a variety of stakeholders which will be used to improve the guideline and make it simpler for landholders to understand and apply.

A report summarising the feedback received, and how it has been considered in developing the final version of the guideline, will be published by the department alongside the final version of the guideline.

Outcome two

Emissions, discharges, and clearing of native vegetation are effectively regulated to avoid unacceptable risks to public health and the environment.

Service Four – Environmental regulation

A responsive and credible regulator

We discharge regulatory functions under the EP Act, RIWI Act and Contaminated Sites Act. Throughout 2021–22, we have continued to assess and issue approvals or assessments under these acts, as well as conduct associated compliance activities.

The practices set up during the first year of the pandemic continued. We increased engagement with stakeholders to navigate advice, assessments and approvals, and to deal with compliance issues in the best and most efficient manner without compromising outcomes.

Industry regulation

In 2021–22 the Industry Regulation division received 586 applications, an 8.8 per cent decrease when compared with the previous year. This reverses the trend of increasing application numbers seen over recent years.

The department experienced a 40 per cent reduction in applications received from the resources industries between quarters one and three. Over the same period, applications from the waste sector reduced by 31 per cent, and applications from the process industries sector remained steady across all quarters.

The reduction in applications can be attributed to the impact of industry conditions, particularly in the petroleum and resources sectors, which have resulted in the easing of some commodity prices (noting too that some have also strengthened), supply chain challenges and labour shortages. However, when viewed across the past three financial years, the 2020–21 number of applications is unusually high and exceeding workforce capacity, with the 2021–22 number more reflective of a typical year.

The Industry Regulation division has additionally set up a Major Projects Team as part of the Process Industries Group. It has been tasked with streamlining assessments for applications referred through the Lead Agency Framework along with other applications of state or strategic significance.

The Process Industries Group has seen strong growth in agribusiness applications and is predicting this trend will continue into 2022–23, particularly in the areas of alcoholic beverage manufacturing and red meat industries.

Labour shortages have placed pressure on all sectors, including Industry Regulation. These shortages combined with an increase in assessment complexity have resulted in a significant decrease in determined applications in quarter three. This decrease was particularly clear across resource and process industries.

Significant recruitment and performance improvement strategies have been put in place which, combined with reform work, have seen an improvement in performance during quarter four 2021–22. This is expected to result in sustained improved performance by quarter one 2022–23.

Industry Regulation staff have shown continued resilience despite this challenging environment. The average processing time across all applications was 80 working days; although higher than the previous year it is lower than the average 81 working days of the previous two financial years. As of 30 June 2022, there were 278 open applications.

Industry Regulation reform initiatives

An environment of continuous improvement to increase efficiency continues to be a focus:

▶ **Schedule One review**

A review and update of Schedule One is needed as part of the third tranche of EP Act amendments. This review is focused on changing from regulating premises to regulating activities and the incorporation of works approvals into licensing.

▶ **Port Hedland Dust Monitoring Network**

On 1 January 2022, as part of the State Government's response to the Port Hedland Dust Management Taskforce Report recommendations, the department took over control of the air quality monitoring network from the Port Hedland Industries Council (PHIC). We are focused on working with industry to implement a new dust management guideline with a self-assessment tool and we held industry workshops on this in Port Hedland in May 2022.

▶ **Southwest Landfill Strategy**

The aims of the strategy include:

- a comprehensive review of waste disposal operations in the region
- providing direction and coordination in response to the Stanley Road Waste Management Facility
- coordinating stakeholder communication and engagement
- identifying and managing risks in the region.

Native vegetation regulation

The department received 298 native vegetation clearing permit applications in 2021–22, about 16 per cent less than for 2020–21.

We have continued to work to reduce the number of backlog applications and improve response timelines. This is reflected in the average number of working days taken to make a decision remaining fairly steady, from 68.5 days in 2020–21 to 72 days in 2021–22. As a result of the focus of reducing the number of backlog applications, the percentage of applications decided within a timeframe of 60 working days decreased from 57 per cent in 2020–21 to 51 per cent in 2021–22.

Native vegetation clearing in 2020–21

298
applications received

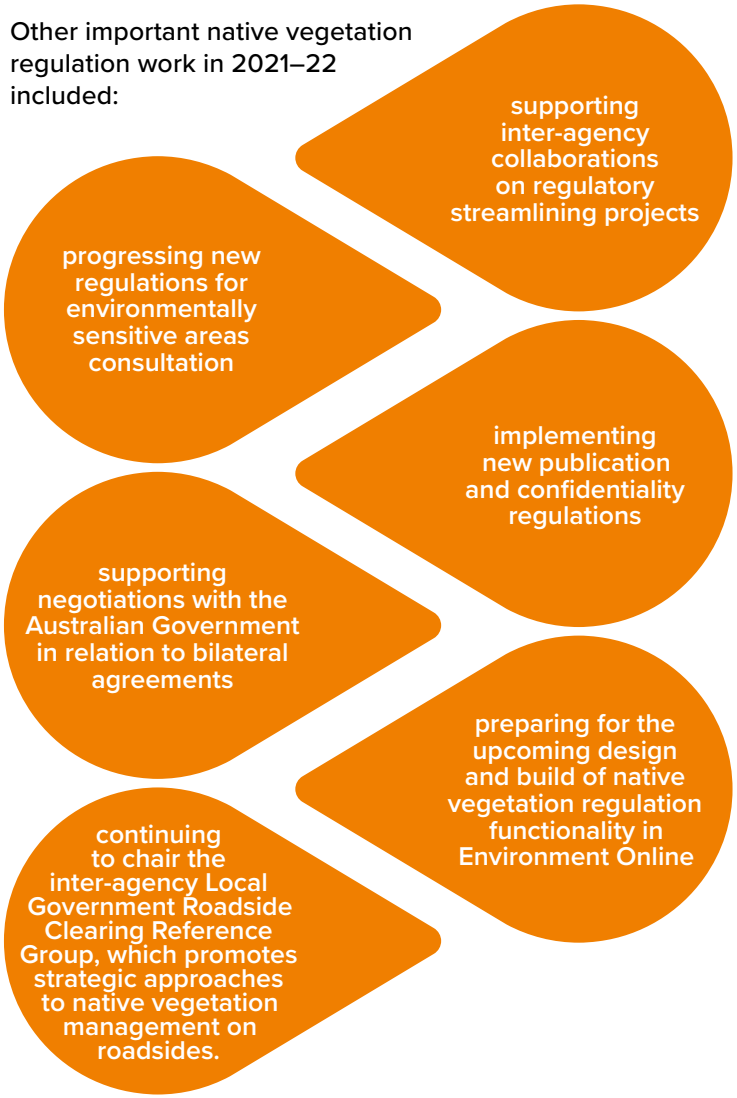
207
open applications as of 30 June 2022

As of 30 June 2022 there were 207 open applications with the department. The number of open applications has remained relatively steady over 2021–22 and previous financial years.

Amendments to the EP Act proclaimed in October 2021 included a new clearing referral process for proposed native vegetation clearing activities that are likely to have very low EP Act environmental impacts. To support stakeholders, the department published the new *Guideline: Native vegetation clearing referrals*. Stakeholder interest in referrals has been high. As of 30 June 2022 the department had received 108 referrals; of the 102 for which a determination had been made by this date, 33 were determined to not require a clearing permit for the proposed clearing.

As part of broader work to deliver on the outcomes of the Western Australian environmental offsets framework review, in 2021–22 the department regularly engaged with DBCA to streamline delivery of land acquisition offsets using monies from the Part V Environmental Offsets Fund. This collaboration will result in a more strategic, longer-term approach to land acquisitions and allow alignment with bioregional planning approaches in the future. Several prospective land acquisitions are being explored.

Other important native vegetation regulation work in 2021–22 included:



Environmental compliance and enforcement

The department has wide-ranging statutory and regulatory responsibilities directed at achieving improved outcomes for public health, the environment and our water resources.

We are committed to being a responsive and credible regulator by consistently applying and enforcing the legislation we administer. We use a range of tools to monitor compliance with this legislation and to prevent breaches.

Our Compliance and Enforcement team undertook 251 inspections in the 2021–22 financial year. There were 161 non-compliances identified from the waste levy and industry compliance inspections.

Over the same year investigations undertaken in response to pollution and intelligence reports, as a result of information gained through our compliance programs, resulted in 53 successful convictions, 131 infringements issued, 35 Letters of Warning issued and one statutory notice issued.

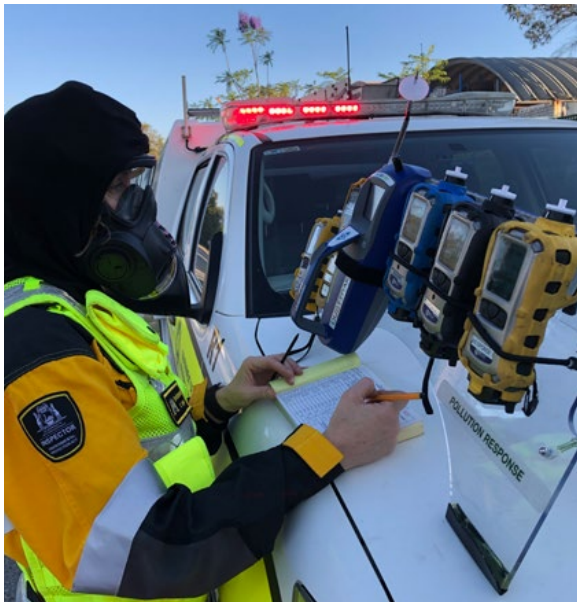
Over 100,000 controlled waste tracking forms tracked more than 1.2 million tonnes of controlled waste on roads in WA. Some 606 new controlled waste licence applications were managed in 2021–22.

Pollution Watch received 3,378 reports and our Pollution Response Team responded to 207 incidents including chemical spills, fuel tanker rollovers and hazardous materials fires.

There were also 96 known or suspected contaminated sites reported to us, and 224 sites classified during the period, with a total of 4,528 sites now classified under the Contaminated Sites Act.

Amendments to the Contaminated Sites Regulations 2006 were gazetted in March and June 2022. The March 2022 amendments made improvements to the operation and effectiveness of the Regulations, while the June 2022 amendments support the Automatic Mutual Recognition of Occupational Registration Scheme for contaminated sites auditors in WA.

We also published updated guidelines for the *Assessment and management of contaminated sites* and the *Use of monitored natural attenuation (MNA) for groundwater clean-up* guidelines during the reporting period.



Compliance and enforcement in 2021–22

53
successful convictions

Controlled waste tracking in 2021–22

1.2 mil tonnes
of controlled waste were tracked

Pollution Response Team in 2021–22

207
incidents were responded to

Illegal dumping

The department responds to reports of illegal dumping through our Waste Compliance program partners and LGAs, and our proactive initiatives include deploying covert surveillance cameras.

Illegal dumping is the unauthorised discharge or abandonment of waste and is an offence under section 49A of the EP Act. On conviction, the offence carries a maximum penalty of $125,000 for corporations and $62,500 for individuals.

Forty-five illegal dumpers were prosecuted in the 2021–22 financial year. Fines ranged from hundreds of dollars to one of $50,000. Courts can also order offenders to pay for environmental remediation which can run into thousands of dollars. The main dumping grounds were in state forest, where accumulated discarded waste attracts more dumping.

Common types of waste dumped include tyres, household goods such as furniture and mattresses, car parts and garden waste. Some of the more unusual items spotted in 2021–22 included a nail salon chair, a complete moped and a cabin cruiser boat. Tyres are of particular concern as they provide a breeding ground for mosquitoes and are a fire hazard.

The Waste Compliance program for 2022–23 will focus on the ‘Avoid, Recover and Protect’ objectives of the waste strategy.

Illegal dumping in 2021–22

45

illegal dumpers were prosecuted

Oil dumper case

On the morning of 18 August 2021, a passer-by noticed three young males next to what appeared to be a number of dumped oil drums on the side of Nicholson Road in Oakford.

The witness called the Shire of Serpentine and Jarrahdale, and a ranger was on the scene within 20 minutes. He was met by the sight of a pool of thick oil spreading from the drums, which had been pierced. A clean-up crew was despatched and the oil was cleaned up before it soaked into the soil.

The reserve along Nicholson Road is a common dumping ground, and about two months before the oil drum incident covert cameras had been placed to catch illegal dumpers in the act. The cameras were checked and a white Holden Commodore utility vehicle was pictured entering the area with a tray full of drums, and leaving a short time later with 12 drums missing.

The Shire called department investigators who spoke with the owner of the car. He was interviewed and admitted dumping the drums but denied piercing them. The result was a court date and a $15,000 fine, plus clean-up costs of $3,029.

Port Hedland air monitoring network

Control of the Port Hedland Ambient Air Quality Monitoring Network was handed over to the department in December 2021.

The network was originally established by the PHIC in 2009. It has provided data for the Port Hedland Dust Management Taskforce, the department and the community, assisting industry and government in developing strategies and evaluation of dust impacts from the port.

A Memorandum of Understanding signed with PHIC sets out the key principles for the full transfer of the network, including the refurbishment, operation, maintenance and audit of it, cost recovery and access to data. The network will continue to be funded by industry, through PHIC members BHP, Roy Hill, Fortescue Metals Group, Pilbara Ports Authority, Consolidated Minerals, Mineral Resources and Pilbara Minerals.

The department has appointed third-party specialist air quality monitoring contractor Ecotech to operate and maintain the network. A live feed of the data gathered from nine dust-monitoring points around Port Hedland is accessible from our Port Hedland Air Quality webpage.

PHIC and its members have committed to achieving a zero-net increase in emissions even if iron ore exports increase, and are spending millions of dollars on dust mitigation to support this commitment.

Industry will continue to work with the community and the State Government to apply leading dust mitigation and management measures to minimise industry's contribution to dust in the Port Hedland air shed.

Director General Michelle Andrews and PHIC Chief Executive Officer Kirsty Danby at the transferring of the Port Hedland Ambient Air Quality Monitoring Network

Outcome three

Development and implementation of strategic policy and legislation that promoted sustainable environmental outcomes.

Service five – Environmental and water policy

WA climate policy

The department is coordinating the implementation of the *Western Australian Climate Policy* and *State Electric Vehicle Strategy*. This includes commitments for public sector agencies to transition to net zero greenhouse gas emissions by 2050 and the development of sectoral emissions reduction strategies and a Climate Adaptation Strategy.

The policy contains 64 actions and underscores the State Government's commitment to work with all sectors of the economy to achieve net zero emissions by 2050. The policy will also ensure the state's environment, economy and community are more resilient and better prepared for the unavoidable impacts of climate change.

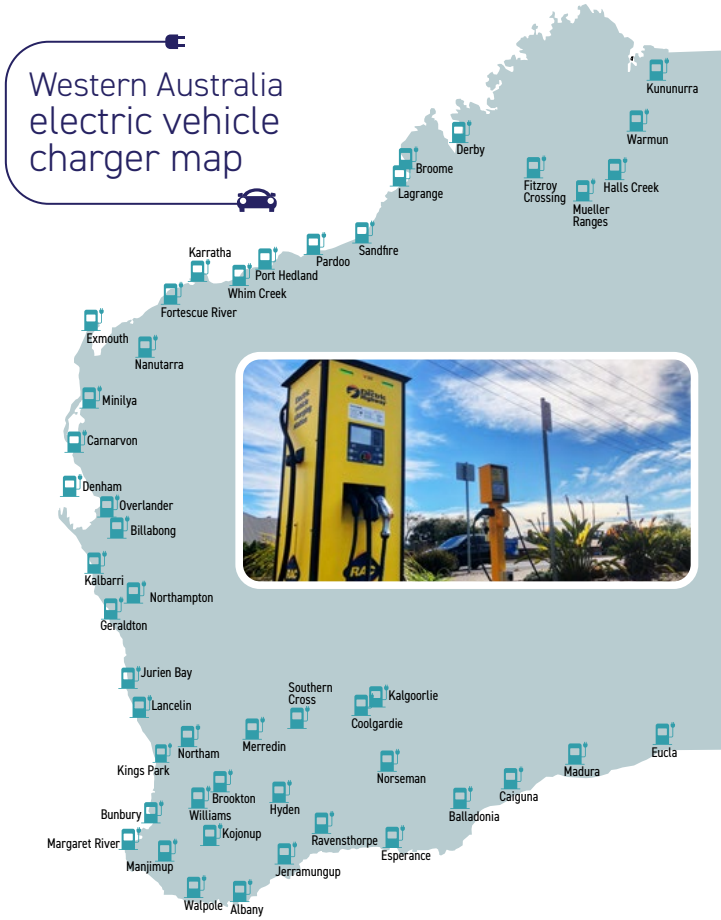
In December 2021, the then Minister for Climate Action, Hon Amber-Jade Sanderson MLA, launched the development of the Sectoral Emissions Reduction Strategies (SERS) to provide a robust and credible plan for emissions reduction to achieve WA's targets. The SERS will emphasise government and industry partnerships to address the shared challenge, leverage opportunities and deliver credible and practical emissions reduction pathways.

The department is delivering the $3.1 million Climate Science Initiative to provide the most up-to-date assessment of how WA's climate may change over the next century. The new climate projections are expected to be delivered in 2024 and will be produced in partnership with other jurisdictions and Murdoch University.

We are also collaborating with Treasury to deliver a Climate Risk Framework to identify and manage climate impacts to government assets and operations.

In July 2021, two partnerships representing 13 local governments were selected as WA's first Regional Climate Alliances. The $500,000 Regional Climate Alliance pilot program will allow the South Coast Alliance to undertake projects that reduce emissions from fleet vehicles and waste, and improve bushfire preparedness and management. The Goldfields Voluntary Regional Organisation of Councils will progress projects that reduce the increased risk of bushfires, mitigate the impacts of drought and improve the uptake of renewable energy and energy-efficiency solutions.

The department chairs the WA Electric Vehicles Working Group, overseeing the implementation of the State Electric Vehicle Strategy. In August 2021, up to 90 new electric vehicle fast-charging stations, at 45 locations, were announced. The stations will connect Perth and regional WA – stretching north to Kununurra, south to Esperance and east to Kalgoorlie – and provide charging stations on average about every 160 km.



The department is administering the $15 million Carbon Innovation Grants Program to support Western Australian heavy industries transition to net zero carbon emissions in line with the WA Climate Policy. Starting next financial year, the program will fund feasibility studies and trials that help to avoid, reduce or offset carbon emissions from heavy industry processes, with a focus on supporting innovative technologies for carbon abatement and sequestration.

Clean energy

The Clean Energy Future Fund, a $19 million initiative administered by the department, continued to support the implementation of innovative clean energy projects in the state. The fund supports projects that demonstrate significant, cost-effective reductions in emissions and which could lead to the broader adoption of innovative clean energy technologies.

In April 2022 seven innovative clean energy projects were offered grants worth more than $11.3 million in the second round of the fund. The seven projects are expected to:

- invest $197 million, much of it in WA
- create up to 255 jobs during construction and provide 63 operational jobs
- generate 81,000 megawatt hours (MWh) each year, enough to power 16,000 average WA homes
- avoid about 132,000 tonnes of carbon emissions each year, equivalent to taking 42,000 cars off the road, or 2.4 million tonnes of carbon emissions over their design lives.

If the two included pilot projects are successful and technologies prove commercially viable, the seven projects could reduce emissions by 111 million tonnes of carbon dioxide equivalent in WA over their lifetimes.

Successful round two projects:

- **Frontier Impact Group's Narrogin Renewable Diesel Project as part of the FutureEnergy Australia joint venture with Carnarvon Energy Ltd**

  $2 million to build a high-temperature pyrolysis plant to produce 18 million litres of renewable diesel per year, as well as biochar and wood vinegar.

- **Power Research and Development's Pumped-up Walpole project**

  $2 million to build a 1.5 MW pumped hydroelectric storage in Walpole using two farm dams to store 30 MWh and increase grid reliability.

- **Advanced Energy Resources' Moora Microgrid project**

  41.8 million to build a wind, solar and battery microgrid incorporating biogas and existing solar generation. This will serve a piggery, citrus farm and potentially other farms in Moora.

- **Strike Energy's Mid West Geothermal Project**

  $2 million to drill a pilot well to demonstrate geothermal energy near Dongara to enable a future 180 MW project.

- **Alcoa's Electric Calcination project**

  $1.7 million to pilot replacing gas with electricity for calcination of alumina to decarbonise the refining process, giving WA a commercial advantage to grow a green aluminium industry with our abundant renewable resources.

- **Metro Power Company's AmbriSolar Battery Energy Storage System project**

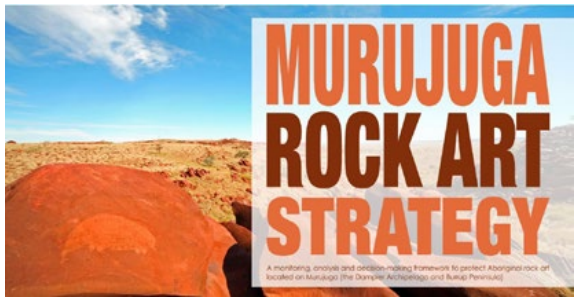
  $340,000 to add solar generation and a DC-coupled battery to an existing solar farm in Merredin.

- **Alinta Energy's Port Hedland Big Battery project**

  $1.5 million to add battery storage to a gas-fired power station to replace spinning reserve, which burns gas, with energy stored in the battery to provide instant support to the grid when needed.

Murujuga Rock Art Strategy

The State Government is committed to working in partnership with the Murujuga Aboriginal Corporation (MAC) to protect the rock art of Murujuga, and to support Traditional Custodians in their aspirations for Murujuga. Through this partnership, the department provides funding to MAC to support its ongoing involvement and oversight of the Murujuga Rock Art Strategy and monitoring program.



The strategy establishes the framework for long-term monitoring and analysis of changes to the rock art on Murujuga to determine whether they are subject to accelerated change. The framework provides a transparent, risk-based and adaptive approach to managing impacts to the rock art, which is consistent with the State Government's responsibilities under the EP Act.

The department has primary responsibility for the day-to-day implementation of the strategy. Its purpose is to protect the rock art from the potential impacts of anthropogenic emissions.

The Murujuga Rock Art Monitoring Program is one of the most comprehensive studies of its kind in the world and reached an important milestone with the publication of the *Monitoring studies data collection and analysis plan* in April 2022. Through the partnership, MAC and the department have joint oversight and decision-making on all aspects of the monitoring program. The program follows the Murujuga Research Protocols that have been created by MAC as the central organisation for developing and managing all research within the Murujuga National Park, Burrup Peninsula and Dampier Archipelago. These protocols set out the rules for working on Murujuga in a way that respects traditional Aboriginal cultural practices and the knowledge owned by the Traditional Custodians of Murujuga. Every aspect of the monitoring program is respectfully designed and guided and informed by the cultural law, knowledge and practices of the Circle of Elders, Traditional Owners and Custodians of Murujuga.

The plan outlines the scientific studies and monitoring required to detect any potential changes to the rock art on Murujuga. Development of the plan included significant stakeholder engagement and extensive peer review from national and international experts. In response to the reviews the number of study locations has been increased to cover an area of more than 50,000 ha, including rock art on the islands of the Dampier Archipelago. Peer reviews will continue to be an important feature of the monitoring program as early results from studies are received, and into the future.

In 2021–22 Calibre Group and experts from Curtin University, Artcare and ChemCentre worked with the Murujuga Elders and Rangers to select culturally and scientifically appropriate locations for air quality monitoring stations, rock art panels and sample rocks for monitoring across the peninsula and islands.

MAC Ranger Glen Aubrey and Andrew Thorn (Artcare) undertaking colour and condition monitoring

Environment Minister Reece Whitby with MAC Chief Executive Officer Peter Jeffries

Through the partnership, MAC and DWER have joint oversight and decision-making on all aspects of the monitoring program.

In April 2022, the monitoring team completed the first season of field work with the Murujuga Rangers and installed the first air quality monitoring station at the MAC office. A further 20 new air quality monitoring stations will be installed in 2022 and the team will continue collection of field data and laboratory analysis. MAC Rangers are working alongside scientists on Country to undertake monitoring as well as access formal training. This will help MAC transition to a central role in managing the Murujuga Rock Art Monitoring Program and support local jobs for Aboriginal people. Results from the first full year of monitoring studies will be available in 2023 to inform the development of Interim Environmental Quality Criteria and the ongoing regulation of industry under the EP Act.

The Murujuga Rock Art Stakeholder Reference Group facilitates engagement between MAC and key government, industry and community representatives on the development and implementation of the rock art strategy. In 2021 the department undertook a review of the operation and effectiveness of the group, including seeking the views of MAC and other members.

In May 2022, the Minister for Environment approved changes to the terms of reference and membership, and appointed Professor Stephen van Leeuwen as the Chair for the group's second term. These changes reflect the State Government's ongoing commitment to partnering with MAC and ensuring that MAC remains a strong voice central to all decisions relating to Murujuga.

The Murujuga Rock Art Monitoring Program supports the World Heritage nomination process for the Murujuga Cultural Landscape and will inform future management of the rock art. The State Government is committed to having the area's archaeological, cultural and spiritual values recognised internationally.

Murujuga hosts multibillion-dollar industries which contribute significantly to the local, state and national economy, and provide employment in the area. The State Government considers that the unique Aboriginal cultural and heritage values of Murujuga can continue to coexist with well-regulated industry. Industry operating on the Burrup Peninsula provides funding for the monitoring program. In 2021–22 this included contributions from Rio Tinto, Woodside Energy and Yara Pilbara.

A Murujuga air monitoring station is lowered into position

EP Act amendments

The *Environmental Protection Amendment Act 2020* received Royal Assent on 19 November 2020. These amendments to the EP Act represent the most significant reform of WA's primary environmental legislation in more than 30 years. Implementation of the amendments is being undertaken in three main stages.

First stage – Feb 2021

The amendments include:

- improvements to the environmental impact assessment process under Part IV of the EP Act, including new cost-recovery provisions for assessments
- changes to clearing provisions under Part V Division 2 of the EP Act to ensure they are efficient, targeted, flexible and transparent while ensuring the protection of native vegetation with important environmental values
- improving the regulation of emissions and discharges under Part V Division 3 of the EP Act, including removing the requirement for a separate works approval and providing for prescribed activities
- modernising defences and investigation and enforcement powers, and providing for enhanced modified penalties
- new powers to recover costs from industry of environmental monitoring programs undertaken by government
- new provisions to facilitate the implementation of the bilateral agreements under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The first stage was completed in February 2021. These amendments modernised and streamlined provisions and provided stronger investigative powers.

Second stage – Oct 2021

Proclamation of the second stage occurred in October 2021. These amendments facilitated the implementation of bilateral agreements with the Australian Government, modernised and streamlined processes relating to environmental impact assessment and the clearing of native vegetation, and enabled the declaration of environmentally sensitive areas through regulations.

The department has made regulations and guidance to support the amendments, including:

- Environmental Protection Regulations Amendment (Publication and Confidentiality) Regulations 2021
- Environmental Protection (Bilateral Agreements) Regulations 2021
- Environmental Protection (Cost Recovery) Regulations 2021 and implementation policy
- Revised EPA Procedures for environmental impact assessment
- Guideline for native vegetation clearing referrals
- Procedure for native vegetation clearing permits.

The department is developing additional regulations to further support the amendments, including to:

- facilitate consultation on, and declaration of, environmentally sensitive areas
- prescribe image data sources to create efficiencies in proving unauthorised clearing
- enable notices, orders and other documents to be given, sent and served by electronic communication.

Third stage – mid-2023

The third stage of the amendments relates to:

- implementing the prescribed activity regime under the new Part V Division 3, including reforming licensing categories and associated fees under the Environmental Protection Regulations 1987
- proclaiming head powers to allow for regulations for environmental monitoring programs in regulations to cost recover monitoring of cumulative environmental impacts
- providing a regulatory framework for the management of offset funds
- commencement of environmental protection covenant provisions to enable the CEO to enter into an environmental protection covenant with the owner of the land as a condition of a clearing permit or Ministerial Statement.

The department is progressing work to proclaim the third stage of amendments, which is anticipated to be in mid-2023.

Planning reform and new planning regulations

All new and amended planning schemes are currently required to be referred to the EPA for a decision on whether the scheme should be assessed under Part IV of the EP Act, regardless of whether it will have an environmental impact.

Section 56 of the *Planning and Development Amendment Act 2020* will introduce new section 48AAA into the EP Act. Once proclaimed, section 48AAA will enable regulations to be made prescribing certain classes of new and amended planning schemes that are not required to be referred to the EPA for assessment.

These new regulations will streamline the EPA's assessment of new and amended planning schemes to focus on schemes that affect the environment. The department anticipates these new regulations will be published in late 2022.

Review of waste legislation

The department has completed its second statutory review of the *Waste Avoidance and Resource Recovery Act 2007*, the principal legislation for setting the policy framework for waste in WA.

The review considered the effectiveness of the legislation in meeting its objectives for reducing waste and encouraging resource recovery, and its alignment with the waste strategy.

Recommendations arising from the review are in the *Review of the Waste Avoidance and Resource Recovery Act 2007*, which was tabled in Parliament on 27 October 2021.

Native vegetation policy

The department led development of the first whole-of-government *Native vegetation policy for Western Australia*. Released on 26 May 2022, the policy aims to protect and enhance native vegetation through better collaboration across government and with stakeholders. A net gain in native vegetation will protect biodiversity, fix carbon and create environmental employment.

The State Government has allocated $3.3 million for the first two years of its implementation, including $600,000 for a scope and business case for a new mapping system to monitor the extent of native vegetation statewide. Progress in the first two years, and its findings, will inform how it will be resourced into the future.

Consultation will play an ongoing role in the policy's implementation, so native vegetation is managed to protect and enhance biodiversity while also providing other benefits stakeholders are seeking. Examples include regional and Aboriginal jobs, business certainty for regulated stakeholders, productive landscapes, cool and liveable cities, and community wellbeing.

The final policy reflects feedback from more than 1,000 participants during each of the two consultation periods on an issues paper in 2020 and a draft policy in 2021.

Improving WA's environmental offsets framework

Environmental offsets are actions that provide environmental benefits which counterbalance the significant residual environmental impacts or risks arising because of a project or activity.

The department has completed a review of WA's environmental offsets framework and made 25 recommendations for improvement. In consultation with stakeholders, the department has developed an *Implementation plan for the review's recommendations*.

One of the implementation plan projects is to finalise the WA environmental offsets metric to help quantify offsets in WA. The WA metric comprises a calculator and guideline on its use and was released in October 2021. A *Draft procedure for environmental offsets metric inputs* was released for public consultation in May 2022 and the department has undertaken workshops for training on the WA metric and inputs.

This work, along with progressing bilateral agreements with the Australian Government, will improve the alignment between State and Australian Government environmental assessment processes.

Minamata Convention on Mercury

The Minamata Convention on Mercury is an international treaty to protect human health and the environment from the harmful effects of mercury and mercury compounds. It requires reductions in emissions from products, processes and industries using, emitting or releasing mercury to air, land or water.

On 7 December 2021, Australia ratified the Minamata Convention when the signed Instrument of Ratification was deposited with the United Nations. The Minamata Convention came into force in Australia on 7 March 2022.

The department consulted with agencies and organisations to determine whether WA met requirements of the Minamata Convention. This included the Department of Health in relation to disposal of dental amalgam waste, and electricity providers regarding phasing out high-pressure mercury valve lamps used in street lighting.

To meet the Minamata Convention requirements, the Environmental Protection Regulations 1987 were amended to prohibit the use of mercury and mercury compounds in specified manufacturing processes.

Advisory groups

Aboriginal Water and Environment Advisory Group

The department acknowledges and recognises the important role of First Nations peoples and their significant cultural knowledge and connection to Country and living waters such as rivers, springs, soaks, jilas and saltwater. This knowledge and connection helps protect and manage WA's environment and water resources.

In 2019, the department established the Aboriginal Water and Environment Advisory Group (AWEAG) to ensure that Aboriginal knowledge, values and needs are considered and appropriately addressed across department strategies, policies, programs and planning for the management and regulation of the state's environment and water resources.

The group, co-chaired by the Director General and newly appointed Aboriginal Co-Chair Jason Barrow, meets four times a year.

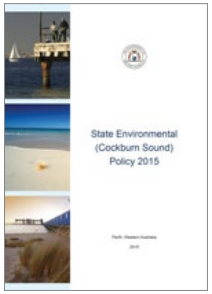
In 2021 the department undertook a review of AWEAG. The review examined the roles, function and operation of the advisory group, focusing on membership, responsibilities, representation and expertise required, support for members, strategic focus, priorities and alignment with other reforms. Following the review, the AWEAG Terms of Reference were amended and endorsed by members at the group's meeting in May 2022.

Air Quality Coordinating Committee

The Air Quality Coordinating Committee comprises representatives from the State Government, industry, business and the community.

The committee oversees implementation of the Perth Air Quality Management Plan (AQMP) which aims to ensure clean air is achieved and maintained throughout the Perth metropolitan region to 2030 and beyond. Members are revising the Perth AQMP. The committee met twice between July 2021 and June 2022.

Cockburn Sound Management Council



The Cockburn Sound Management Council, supported by the department, is an advisory council to the Minister for Environment established under section 25 of the EP Act.

One of the council's roles is to oversee and coordinate environmental monitoring of the Cockburn Sound marine area, consistent with the *State Environmental (Cockburn Sound) Policy 2015*. The department began monthly water quality sampling in the Cockburn Sound marine area in January 2021. Previous water quality sampling was limited to weekly sampling during the summer. The monthly water sampling program will assist in providing a deeper understanding of the environmental changes associated with different weather conditions. It complements the department's continuous real-time water monitoring in the Cockburn Sound marine area.

The Cockburn Sound Management Council met four times during the financial year.

Exmouth Gulf Taskforce

The State Government is working in partnership with Nganhurra Thanardi Garrbu Aboriginal Corporation to ensure conservation and enhancement of the key values of Exmouth Gulf and its surrounds.

Exmouth Gulf is recognised globally for its significant environmental, cultural and social values and is home to important habitat for marine fauna and flora, including nursing humpback whales, whale sharks and highly valuable mangrove systems.

In May 2022, the State Government announced a new taskforce to facilitate and coordinate stakeholder and community input into the environmental management of Exmouth Gulf and its surrounds.

The Exmouth Gulf Taskforce is an advisory taskforce to the Minister for Environment established under section 25(1) of EP Act. The taskforce will have an independent Chair and up to 15 members, including representatives of the Nganhurra Thanardi Garrbu Aboriginal Corporation, relevant government agencies, stakeholders and the community.

The taskforce will provide advice to the Minister for Environment and produce a report by July 2024 that addresses the information gaps on Exmouth Gulf and its surrounds. The taskforce is supported by the department.

Waste Reform Advisory Group

The Waste Reform Advisory Group was established in 2019, following the release of the waste strategy. The group informs the development of waste and recycling policy and legislation in WA as part of the waste strategy and state waste targets. It also had a key role in supporting business continuity during the COVID-19 pandemic.

The group is chaired by the department's Director General and includes representatives from the Waste Authority, local government, peak industry and resource bodies, community groups, non-government organisations and material recovery operators. The group met four times in 2021–22.

Outcome four

Waste avoided and the recovery of materials from landfill maximised.

Service six – Waste strategies

Waste Avoidance and Resource Recovery Strategy 2030

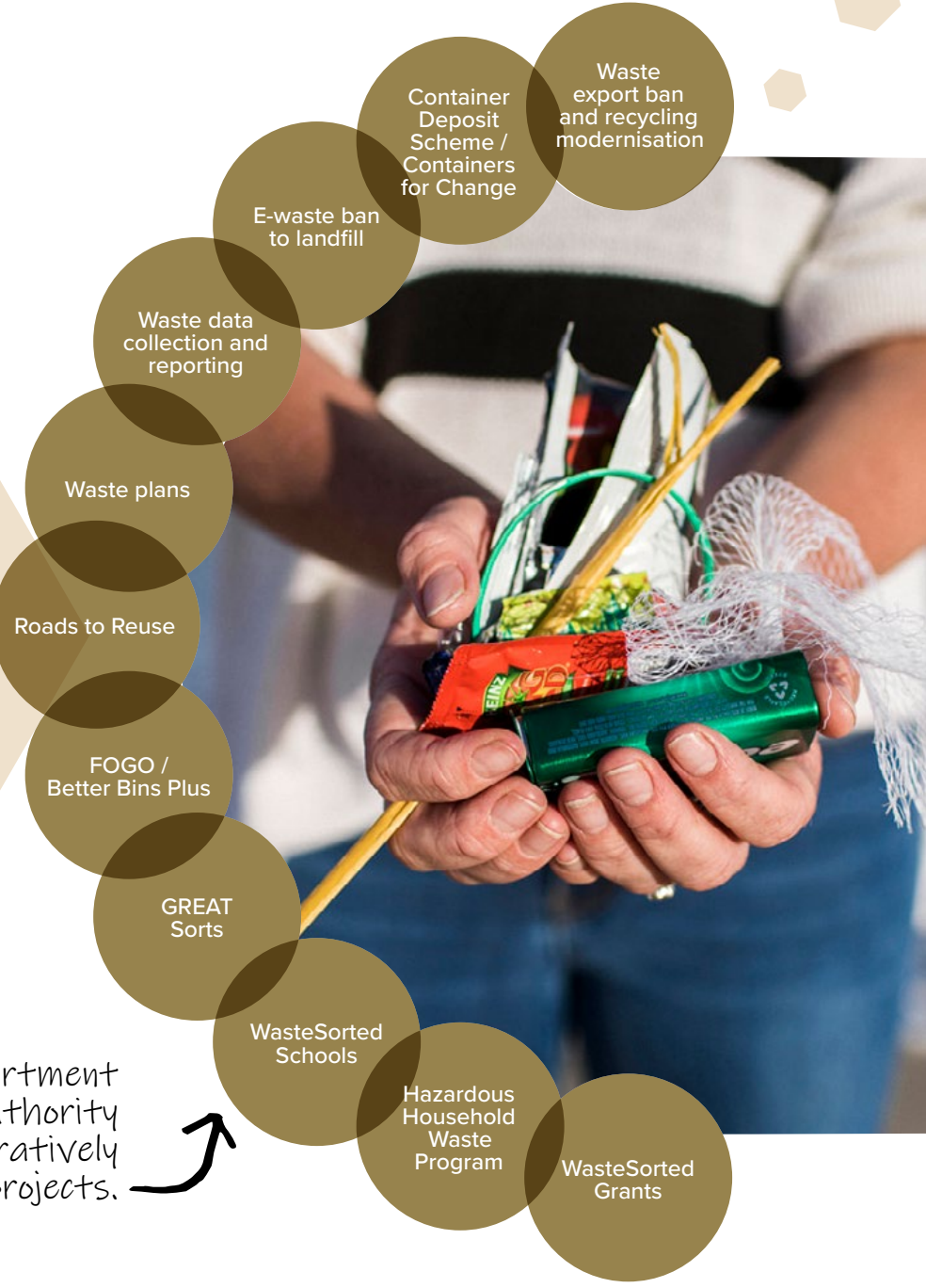
In February 2019 WA's waste strategy was launched. Its action plan is reviewed annually.

The waste strategy and its action plan provide the State Government, local government, industry and community with a clear picture of current waste issues and a roadmap for the future. The aim of the strategy is for WA to become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste.

The department works closely with the Waste Authority and the Minister for Environment to implement the waste strategy.

WASTE AUTHORITY
WA...TOO GOOD TO WASTE

In 2021–22, the department and the Waste Authority continued to work collaboratively through these projects.



Australian Government waste export ban and recycling modernisation

The Australian Government's *Recycling and Waste Reduction Act 2020* banned the export of waste plastic, tyres, glass, paper and cardboard from 1 January 2021. This presented a range of opportunities and challenges for WA. To become more resilient to fluctuating international markets and trends, WA must create appropriate local infrastructure and markets for recycled resources.

Two major programs are underway to develop recycling infrastructure that are funded by the State Government and matched by the Australian Government from its Recycling Modernisation Fund. The State Government has committed $15 million to the development of local paper and cardboard recycling infrastructure. This will help manage the state's estimated 80,000 tonnes of mixed and unsorted paper and cardboard that will need to be processed locally. The State Government also committed $20 million in funding and land to develop processing infrastructure for local plastics and tyres. The department is administering these two major infrastructure investment programs.

Combined with Australian Government contributions and industry investment, it is expected WA will receive a $174 million investment boost to recycling infrastructure in the next five years through these projects.

The department continues to work closely with industry stakeholders such as local recyclers and the Australian Government to help WA manage the impact of the waste export bans.

Container Deposit Scheme – Containers for Change

Containers for Change started on 1 October 2020, helping to reduce litter and increase recycling as well as creating new business and employment opportunities across the state.

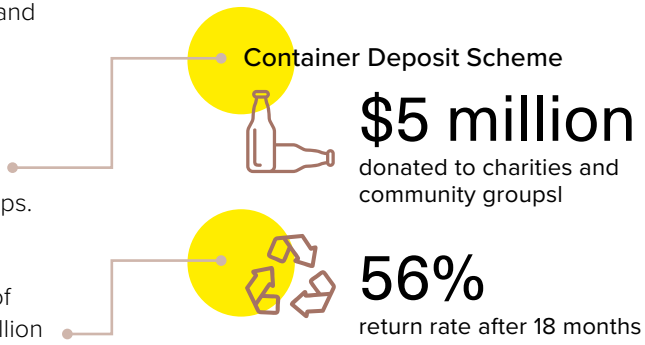
Containers for Change is run by WA Return Recycle Renew Ltd, a not-for-profit company responsible for developing and maintaining the collection network, recycling containers, community education and financial management. The department administers the legislative framework to support the scheme, including assessing container approval applications, monitoring scheme performance and providing regulatory oversight.

By the end of June 2022 more than 1.47 billion containers had been recovered for recycling and about $5 million donated to more than 4,900 registered charities and community groups.

After 18 months of operation to 31 March 2022, Containers for Change achieved a return rate of 56 per cent, representing an additional 500 million containers recycled compared with the pre-scheme baseline of 34 per cent recovery.

WA is leading the nation as the only jurisdiction actively ensuring plastic and metal container lids are being recycled. The lids are stored separately by refund points then picked up by WestTip in the Perth metropolitan area and Cleanaway in the regions, before being transported to Total Green where they are decontaminated and sorted into plastics, steel and aluminium.

The steel and aluminium lids are sold to recyclers, while the plastic lids are sent to CLAW Environmental to be made into pellets for manufacturers to use. WA business NovaPlas, in Canning Vale, is using 100 per cent of the available pellets to manufacture concrete spacers, which are used across a range of construction projects.

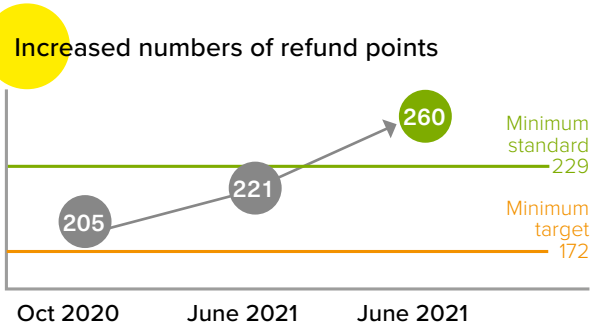


The network has created more than 820 jobs, including for people with disability and long-term unemployed people.

Containers for Change opened with 205 refund points, exceeding the minimum requirement of 172, and grew to more than 260 refund points by March 2022.

The network includes a significant number of social enterprises, and not-for-profit and Aboriginal corporations, and has created more than 820 jobs, including for people with disability and long-term unemployed people.

Increased numbers of refund points



E-waste ban to landfill

Waste electrical or electronic equipment (e-waste) continues to be one of the fastest-growing waste streams worldwide. E-waste can contain valuable and rare materials, as well as substances that are hazardous to the environment.

The department is working to deliver a statewide ban on e-waste disposal to landfill by 2024 to support increased material recovery from e-waste, reduce the environmental impacts of e-waste in landfills and contribute to more jobs and economic growth in WA.

Funding of $14 million has been committed to the implementation of the ban. Consultation on the approach and regulatory impact of the ban, grants for new infrastructure for collection and recycling, and community education will be delivered before and after the start of the ban.

The ban considers waste management practices, market forces, national policy and e-waste bans in other states and territories. The ban will complement existing product stewardship schemes for televisions and computers, mobile phones, batteries, fluorescent tubes and light fittings.

Waste data collection and reporting

Progress towards the avoidance, recovery and disposal targets in the waste strategy is assessed using data collected under regulation 18C of the Waste Avoidance and Resource Recovery Regulations 2008. In 2020, Waste Data Online was launched to enable liable persons to lodge their regulation 18C annual returns online. This year, 256 liable persons lodged annual returns with the department using Waste Data Online.

Targeted reviews are used to improve the quality of waste and recycling data collected through Waste Data Online. Nine targeted reviews of annual returns lodged by liable recyclers were conducted in 2021–22.

Waste plans

Waste plans provide local governments with a mechanism to align their waste services with the waste strategy and identify and implement actions which are consistent with and contribute towards achieving the waste strategy targets and objectives. These include changes and improvements to waste services and infrastructure, the development of policies and procedures, data enhancements and behaviour change programs.

Local governments in Perth, Peel and major regional centres (the cities of Albany, Bunbury, Busselton, Kalgoorlie-Boulder and Greater Geraldton) have been required to prepare waste plans under section 40(2) of the *Waste Avoidance and Resource Recovery Act 2007*.

As of 30 June 2022, 44 waste plans were submitted to the department for assessment, 35 of which have been endorsed by the Director General. Eight waste plans were not endorsed, and one is still under assessment.

Local governments are required to report annually to the department on the implementation of their waste plans, with the first annual report for the 2021–22 financial year due on 1 October 2022.

Roads to Reuse

The Roads to Reuse (RtR) program encourages State Government agencies, local governments, regional councils and the private sector to use recycled construction and demolition (C&D) products in civil applications such as road construction. It does this by supporting the supply to market of recycled C&D products that meet a product specification, to protect human health and the environment.

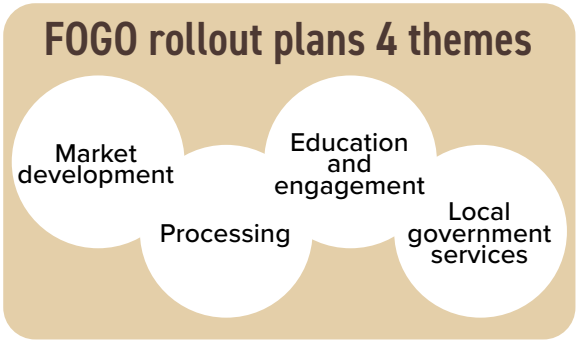
Funding is offered to C&D recyclers through the RtR Recycler Support Scheme to help with costs such as sampling and testing. RtR also delivers an independent audit of C&D recyclers' processes and products to provide an additional level of assurance to purchasers of recycled C&D products.

The department and the Waste Authority have worked closely with Main Roads WA, the Department of Health and the Waste and Recycling Industry of WA to deliver the project. Main Roads has now used more than 100,000 tonnes of RtR products.

The Waste Authority has established a C&D Reference Group to provide advice in relation to the C&D objectives and targets in the waste strategy. This C&D Reference Group's advice builds on the success of RtR to support additional C&D recycling.

Food and garden organics

The department is supporting the waste strategy target to roll out better-practice three-bin FOGO (food organics and garden organics) services across Perth and Peel local governments by 2025. The department supports the Waste Authority to develop and implement annual FOGO rollout plans which contain actions relating to four themes:



Key highlights to support the FOGO rollout include the $20 million Better Bins Plus: Go FOGO program, guidance materials including a step-by-step guide, and the ongoing development of FOGO behaviour change materials delivered through WasteSorted. The department is also planning to publish the *Guideline: Better practice organics recycling* and seeking to deliver projects that support their implementation.

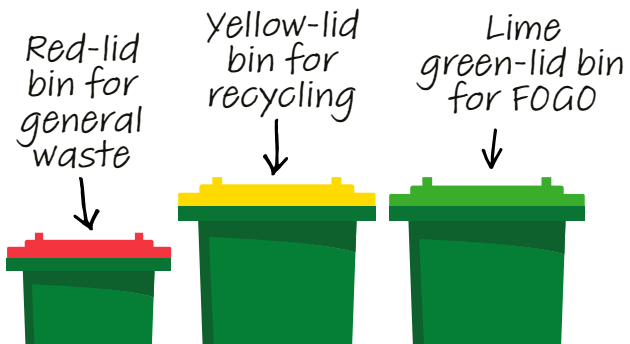
Better Bins Plus: Go FOGO

A three-bin system to recover organics is the best way to improve material recovery from the municipal solid waste stream and reduce greenhouse gas emissions. Three-bin systems help residents improve waste separation at the source, thereby increasing recovery rates.

The Better Bins Plus: Go FOGO program has so far provided $4.75 million to support local governments to make the transition to three-bin FOGO services consisting of a:

- red-lid bin for general waste
- yellow-lid bin for recycling
- lime green-lid bin for FOGO.

The *Better practice FOGO kerbside collection guidelines* describe better practice three-bin kerbside collection services. These include mobile kerbside bins, kitchen caddies and compostable liners, complementary educational measures and action to support markets for FOGO-derived materials.



A City of Melville FOGO truck

Eighteen local governments have signed up to the program to receive funding of up to $25 for each household receiving a three-bin FOGO collection service, with a coverage of more than 310,000 households.

Better Bins Plus

18 local governments

signed up to GO FOGO program

Behaviour change

The WasteSorted behaviour change campaign, Be a GREAT Sort, was launched in August 2020 to encourage people to sort their waste and reduce the volume of waste sent to landfill in WA. The campaign promotes five priority behaviours:

- **G**ifting to charity
- **R**ecycling
- **E**arth-cycling organic waste
- **A**voiding
- **T**aking items to drop-off points.

In 2021–22, the campaign was promoted on radio, catch-up television, YouTube and social media channels, and in printed materials.

New campaign materials were developed to promote correct battery disposal, composting at home and food waste avoidance. Two videos were also developed to build trust in recycling and FOGO recovery processes. The WasteSorted toolkit was also expanded to provide more FOGO resources to support local governments to communicate about kerbside services.

Many stakeholders have adopted the GREAT Sorts campaign, including the Resource Recovery Group; Eastern Metropolitan, Western Metropolitan and Bunbury Harvey Regional Councils and their member councils; the shires of East Pilbara and Augusta Margaret River; and the cities of Albany, Armadale, Cockburn, Vincent and Wanneroo.

The GREAT Sorts messaging features on the sides of waste trucks, local government vehicles, at drop-off facilities, on posters in libraries, in local newspapers and in annual waste guides. This has amplified key messages and contributed to consistent waste messaging across the state.

WasteSorted Schools

The WasteSorted Schools program, formerly Waste Wise Schools, works with schools in WA to implement educational strategies for avoiding waste, recovering waste as a resource, and reducing waste sent to landfill, while developing positive environmental values in students and the wider school community.

Participating schools model responsible environmental behaviours through hands-on learning experiences linked to the WA curriculum.

▶ **The 2021–22 WasteSorted Schools highlights saw:**

- 20 schools recognised for 10 consecutive years of accreditation from a total of 242 accredited schools
- the new WasteSorted Schools grants program launched in February 2022; overall $126,967 was awarded in grants to 41 accredited schools for school infrastructure and initiatives that avoid and recover school waste, such as paper and cardboard, food waste, single-use packaging and general recycling
- the WasteSorted Schools program rebranded to align with other Waste Authority programs, with new waste-management and curriculum resources to support teachers in the delivery of WasteSorted education
- 16 professional learning workshops, webinars, networking and sharing sessions delivered to metropolitan and regional teachers, students and local governments
- educational waste audits and incursions run at 83 schools
- an online learning module implemented to facilitate professional learning in regional areas.

Above: Augusta Primary School: Infinity Award Winner Soft Plastic Collection
Left: Riverton Primary School's garden

Household Hazardous Waste Program

The Household Hazardous Waste (HHW) program helps with the storage, transport, treatment and recovery of HHW collected by local governments and regional councils.

HHW refers to products used in and around the home that are flammable, toxic, explosive or corrosive. If not disposed of correctly, HHW can pose a threat to human health and the environment.

The HHW program has nine metropolitan and six regional permanent local government facilities where householders can drop off unwanted household chemicals at no charge.

In 2021–22, more than 477 tonnes of materials (including acids, batteries, flammable liquids, paint and cleaning products) were collected for safe recovery or disposal.

HHW program in 2020–21

477 tonnes

of materials were collected for safe recovery or disposal

WasteSorted Grant funding

The WasteSorted Grants – Infrastructure and Community Education program supports investment in local recycling infrastructure with grants of up to $250,000 and educational programs with grants of up to $50,000.

In 2021–22, 21 WA businesses, local governments and community organisations received more than $1.41 million in grants. This included funding for nine infrastructure projects totalling $1.26 million and 12 community education projects receiving a total of more than $150,000.

The COVID-19 pandemic continued to impact some projects. Recipients successfully adapted to the challenges with support from the department, ensuring valuable project outcomes were still delivered.

Since 2017, the department has administered waste grant funding programs which have provided $7.4 million to WA projects to improve the recovery and reuse of focus materials, including plastics, C&D waste, textiles, and FOGO.

Above: John Curtin College of the Arts paper recycling
Right: Mary's Mount Primary School's composting bins

Keep Australia Beautiful Council

The department provides services to the Keep Australia Beautiful Council (KABC).

Its *Litter Prevention Strategy for Western Australia 2020–2025* is in its second year of implementation and sets a target of reducing litter by 30 per cent over the lifetime of the strategy.

This year we undertook the first litter survey using the new litter measurement methodology developed by states and territories, to replace the national litter index. This litter survey was undertaken in 10 locations in the Perth metropolitan area in May 2022.

The range of behaviour-change programs continues to grow and evolve. These include the Adopt-a-Spot, Tidy Towns and Clean Schools programs, Community Litter Grants and the Litter Report Scheme. KABC started consultation and trials to reduce the use of single-use plastics in its Adopt-a-Spot program and Outback Packs. KABC's longstanding Tidy Towns Sustainable Communities awards continued to draw a high number of strong applications, with 34 being received in 2021.

The Clean Schools program engages large numbers of primary and secondary school students across the state. Professional development for school staff and incursions continue to be strongly supported by schools. The Australian Microplastics Assessment Project (AUSMAP) program continued to engage schools in developing their students as citizen scientists to examine the level of microplastics in the marine environment.

KABC started work to update its 'Bin It' litter campaign to align with new waste priorities, including development of a new campaign to support the Litter Report Scheme.

KABC is also working with the department, DBCA, Department of Transport, MAC and Pilbara Ports Authority to survey and audit marine debris in the Karratha region ahead the development of a source reduction plan.

Keep Australia Beautiful WA

Above from top: Tidy Town 2021 winners; KABC officer Shirley Brindley raising awareness with students to reduce litter; KABC Chair Michael Aspinall presents Mullewa artist Helen Ansell with her custom-designed bin stickers

Left: Clean-ups in Exmouth, Waste Warriors from Sheoak Grove Primary School, KABC outback packs for travellers to pick up litter

Outcome five

Quality advice to the Environmental Protection Authority and Minister for Environment on significant proposals and environmental issues.

Service seven – Environmental impact assessment services to the EPA

We support the EPA in conducting environmental impact assessments of develoment proposals and planning schemes.

The EPA is an independent authority that provides advice on environmental matters directly to the Minister for Environment.

The department has continued to provide services to the EPA to conduct environmental impact assessments of significant development proposals and planning schemes.

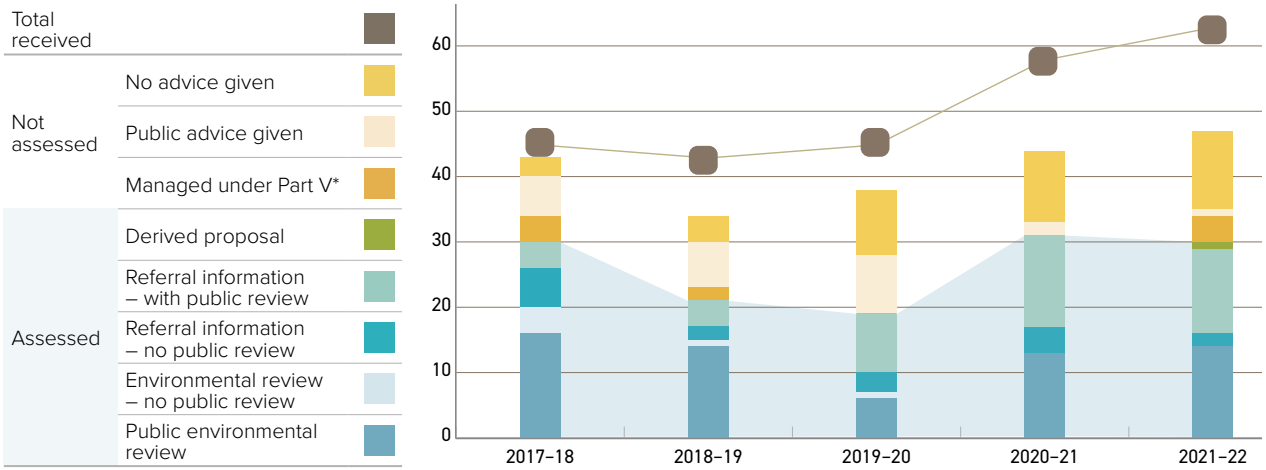
Development proposals

During 2021–22, there were 63 development proposals referred to the EPA. This was the highest number in the past seven years.

The EPA may not necessarily make a determination on whether to assess a referred proposal in the same year the proposal is referred. Only when the EPA has sufficient information about the referred proposal can it make a determination on whether formal assessment is required. The EPA made a determination on 47 referred development proposals during 2021–22. This is the most determinations made in a financial year, compared with the past seven years. Thirty of these determinations required formal assessment and 17 did not require further assessment by the EPA.

Of the 17 that did not require further assessment, the EPA provided specific advice on environmental matters to the proponent of one of those proposals.

▶ Total development proposals referred to the EPA and decisions

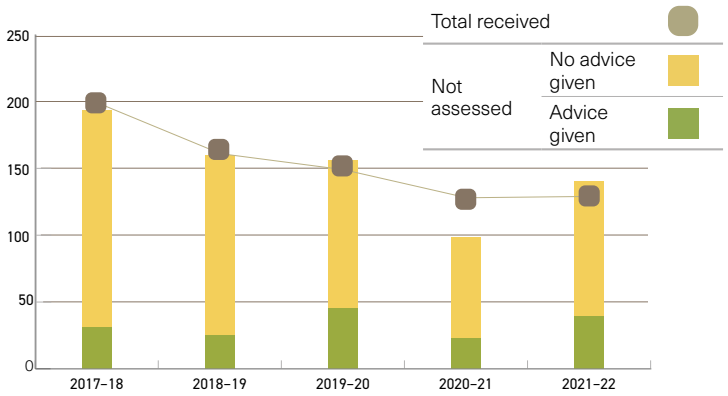


* Descriptor now considered under 'Not assessed: No advice given'

Planning schemes and scheme amendments

During 2021–22, the EPA dealt with 141 referred schemes. One required formal assessment and 140 did not require further assessment by the EPA. The EPA provided advice and recommendations on environmental factors to the responsible authority on the environmental issues raised by 39 of the referred schemes that did not require further assessment.

Total schemes and scheme amendments referred to the EPA and 'not assessed' decisions



Completed assessments

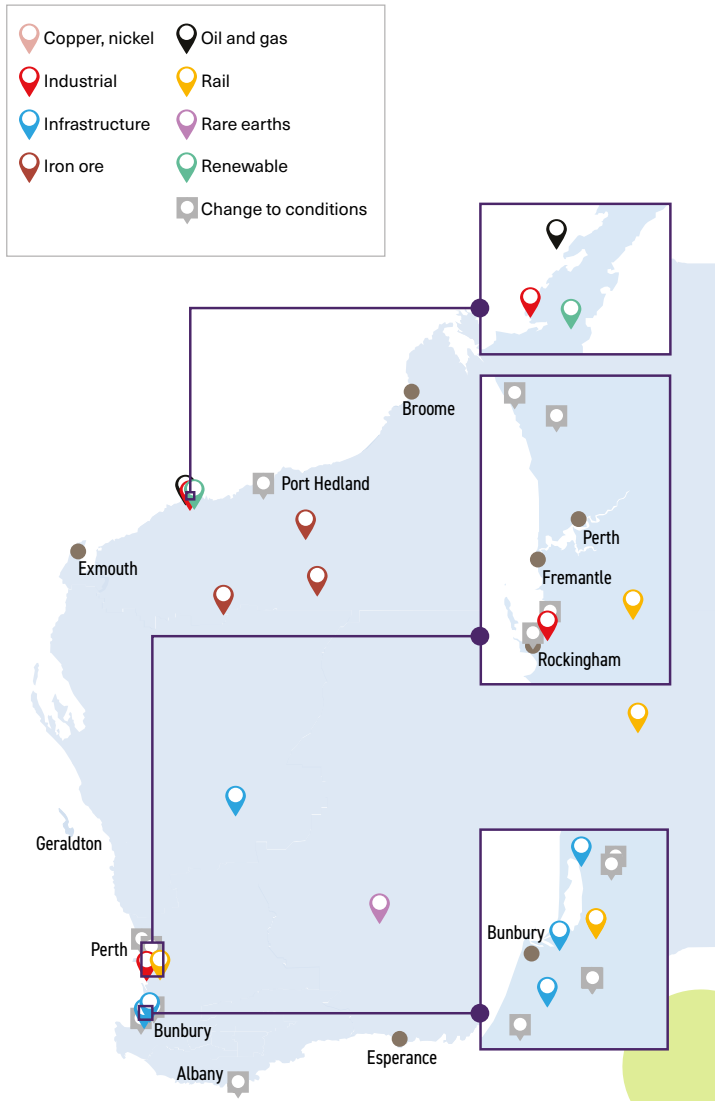
In 2021–22, the department supported the EPA to complete 23 assessment reports to the Minister for Environment, which included 14 reports on the assessment of significant proposals and nine reports on changes to conditions of existing projects.

The map shows the location and type of all the proposals for which assessment reports were completed in 2021–22. This included the first assessment of a renewable hydrogen project in WA. The EPA recommended implementation of the proposal by Yara Pilbara Fertilisers Pty Ltd to develop a Renewable Hydrogen Plant on the Burrup Peninsula, subject to conditions.

In 2021–22, the EPA also completed its assessment of the southern section of the Bunbury Outer Ring Road. The EPA's recommendations included strict conditions to preserve and enhance the habitats of the western ringtail possum and other conservation-significant species.

Assessment reports completed

Type of assessment	2018–19	2019–20	2020–21	2021–22
Formal assessments				
Public environmental review	10	7	5	5
Environmental review (no public review)	2	1	1	0
Assessment on referral information (no public review)	2	3	5	2
Assessment on referral information (with public review)	1	5	2	7
Strategic proposal	-	-	-	-
Subtotal	15	16	13	14
Changes to conditions				
s. 46 inquiry	9	24	8	9
Total	24	40	21	**23**



Location and type of all proposals for which assessment reports were completed in 2021–22

A proposal for a rare earths processing facility in the Goldfields was also recommended for implementation by the EPA, subject to conditions which included a native vegetation buffer at least 30 m wide to screen the proposed facility from residents and the City of Kalgoorlie-Boulder's entrance along Great Eastern Highway.

Other assessment work

The statement issued by the Minister for Environment may include conditions for the preparation and approval of environmental management plans. During 2021–22, the department completed the assessment of 47 environmental management plans, with 144 still under assessment.

Any amendments to a proposal or implementation conditions once a statement has been issued must be approved under section 45C of the EP Act. The EPA Chair is delegated to make decisions under section 45C on behalf of the Minister for Environment. During 2021–22, the department provided support to the EPA Chair to complete 27 amendments to existing proposals under section 45C of the EP Act, with 23 proposed amendments still under assessment.

The overall existing workload for development proposals is 314. This is an increase from last year and includes:

- assessment of environmental management plans
- requested amendments to conditions and proposals in Ministerial Statements
- referrals yet to be determined
- significant development proposals undergoing formal assessment.

Consultation

Members of the public are encouraged to participate in consultation opportunities during the environmental impact assessment process by offering advice, identifying omitted relevant information, providing local knowledge and proposing alternatives.

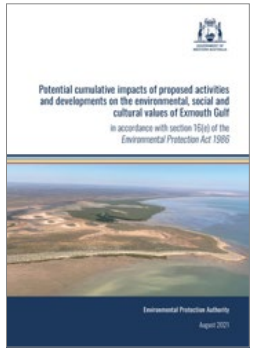
The department facilitated opportunities for public involvement in the assessment process by:

- publishing the referral information for all referred proposals on the EPA website for seven-day public comment
- publishing relevant proponent information (such as environmental review documents) during the assessment on the EPA website for public review.

Service eight – Environmental management services to the EPA

The department provided services to the EPA to develop guidelines and strategic advice to manage environmental impacts and protect the environment.

Exmouth Gulf



In August 2021 the EPA delivered its strategic advice on the potential cumulative impacts on Exmouth Gulf to the then Minister for Environment.

The advice, formed at the request of the Minister under section 16(e) of the EP Act, sought to provide a thorough understanding of how new proposals could add to the cumulative impacts on the environmental, social and cultural values of Exmouth Gulf.

The department supported the EPA throughout this year-long study, coordinating face-to-face engagement with stakeholders and the Exmouth community, public consultation and targeted meetings with local government, business and Traditional Owners.

In December 2021 the State Government announced it would implement all of the EPA's recommendations, including establishing a new marine park for the eastern and southern portions of the Gulf, and Class A reserves for other local areas of significance.

Public advice

In December 2021 the EPA finalised its *Guidance for planning and development: Protection of naturally vegetated areas in urban and peri-urban areas*.

Completed in accordance with section 16(k) of the EP Act, the public advice applies to strategic planning, new schemes and scheme amendments, structure plans, and subdivision and development proposals in urban and peri-urban areas of WA.

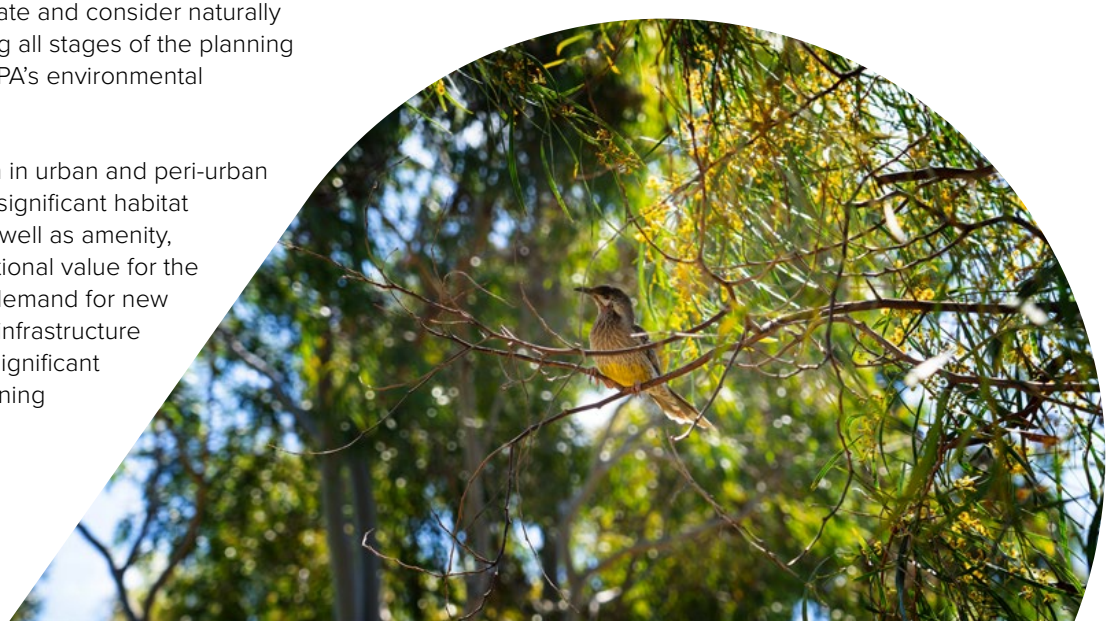
The guidance sets out the views and expectations of the EPA for the protection of naturally vegetated areas. It will help planners, developers, proponents and referrers to integrate and consider naturally vegetated areas during all stages of the planning process to meet the EPA's environmental objectives.

The natural vegetation in urban and peri-urban areas of WA provides significant habitat for flora and fauna, as well as amenity, landscape and recreational value for the community. Ongoing demand for new housing, industry and infrastructure in these areas exerts significant pressure on our remaining natural vegetation.

This public advice will ensure greater emphasis on appropriately protecting these areas at all stages of the planning process.

Stakeholder Reference Group

The department also continued to support the EPA in regular consultation with its Stakeholder Reference Group. The group consists of key external stakeholders and peak industry bodies who provide input directly to the EPA on its guidelines, processes and performance. The group met quarterly in 2021–22.



Outcome six

Compliance with Ministerial Statement implementation conditions are monitored effectively.

Service nine – Compliance monitoring services to the Minister for Environment

In accordance with section 48(1) of the EP Act, the department may monitor proposals approved by the Minister for Environment, for the purpose of determining whether the implementation conditions set out in the Ministerial Statement are being complied with. If a proponent does not ensure implementation of the proposal is in accordance with the implementation conditions, the proponent commits an offence. When non-compliance with an implementation condition or proponent commitment in a Ministerial Statement is identified, the proponent is issued with a 'notice of non-compliance', detailing actions required to rectify the issue and regain compliance.

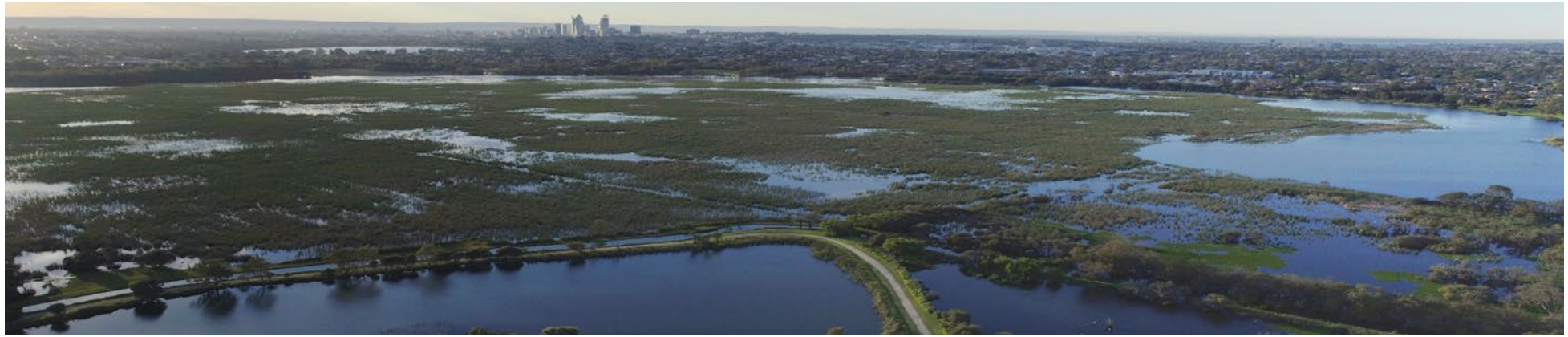
The Minister for Environment is informed of each non-compliance. The department undertakes its environmental compliance activities through a structured annual program. The program incorporates a variety of proactive and reactive methods to monitor compliance, including audits of proposals, reviews of compliance assessment reports, onsite inspections and stakeholder engagement. The annual program enables resources to be effectively managed and achieve better environmental outcomes. The results from compliance audits identify areas for improving proponents' compliance and inform future annual programs and the environmental impact assessment process.

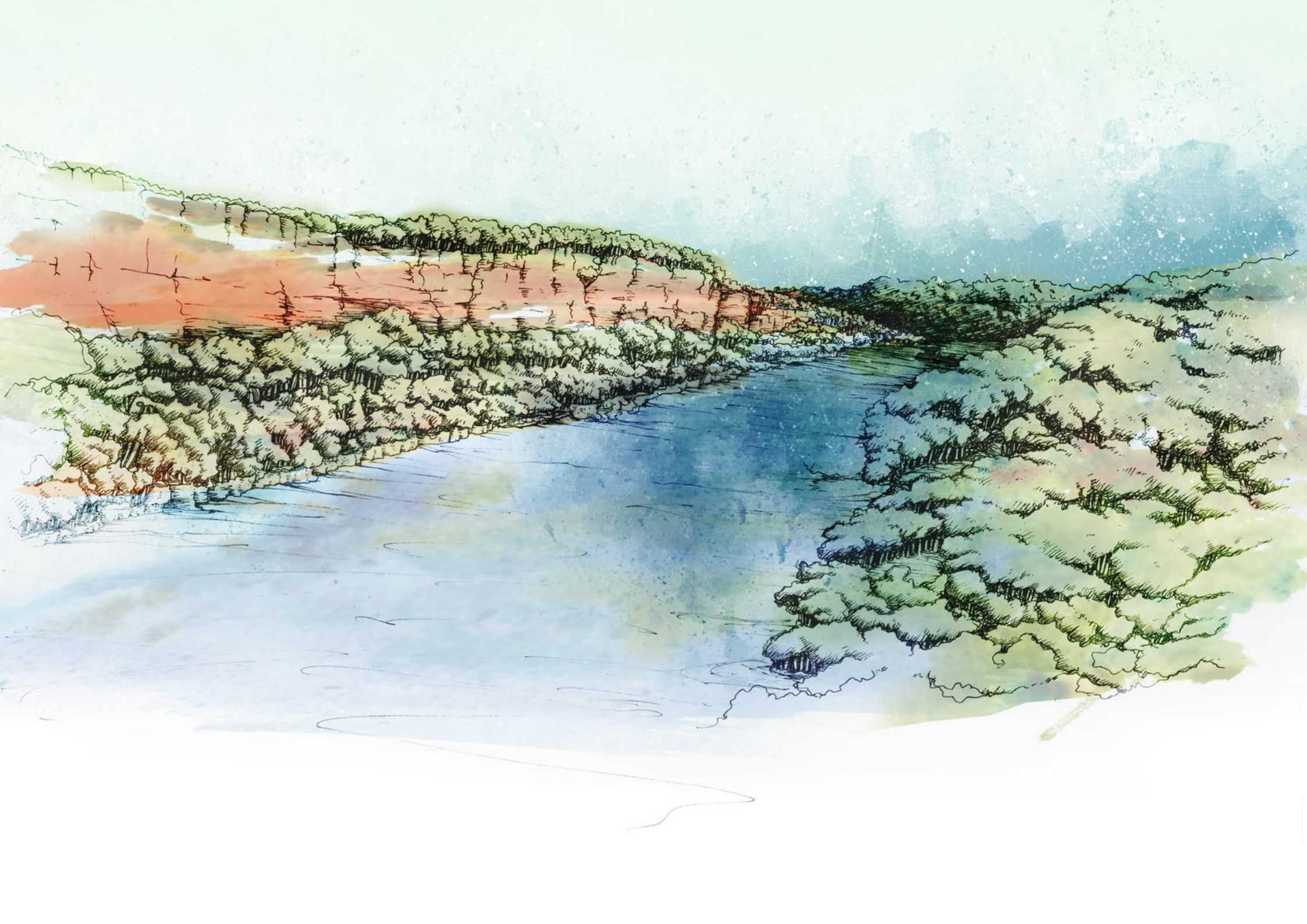
Compliance and audit activity

Under our 2021–22 program, we continued to monitor significant proposals authorised under Ministerial Statements, completing 34 audits including iron ore mining activities, oil and gas facilities and large infrastructure projects. A total of 186 compliance assessment reports were reviewed and 47 notices of non-compliance were reported.

Compliance and audit activity in 2020–21

186
compliance assessment reports were reviewed





Appendices

Appendix A: Legislation

Legislation administered by the Department of Water and Environmental Regulation as at 30 June 2022

- *Carbon Rights Act 2003*
- *Contaminated Sites Act 2003*
- *Country Areas Water Supply Act 1947*
- *Environmental Protection Act 1986*
- *Environmental Protection Amendment Act 2020*
- *Environmental Protection (Landfill) Levy Act 1998*
- *Litter Act 1979* (the Department of Water and Environmental Regulation is the agency principally assisting the Minister for Environment in the administration of this Act assisted by the Keep Australia Beautiful Council [Western Australia])
- *Metropolitan Arterial Drainage Act 1982*
- *Metropolitan Water Authority Act 1982*
- *Metropolitan Water Supply, Sewerage and Drainage Act 1909*
- *National Environmental Protection Council (Western Australia) Act 1996*
- *Plumbers Licensing Act 1995* (except part 5A which is administered by the Minister for Commerce principally assisted by the Department of Mines, Industry Regulation and Safety) – alternative citations are *Water Services Coordination Act 1995* and *Water Licensing Act 1995*
- *Rights in Water and Irrigation Act 1914*
- *Waste Avoidance and Resource Recovery Act 2007* (the Department of Water and Environmental Regulation is the agency principally assisting the Minister for Environment in the administration of this Act assisted by the Waste Authority)
- *Waste Avoidance and Resource Recovery Levy Act 2007* (the Department of Water and Environmental Regulation is the agency principally assisting the Minister for Environment in the administration of this Act assisted by the Waste Authority)
- *Water Agencies (Powers) Act 1984*
- *Water Agencies Restructure (Transitional and Consequential Provisions) Act 1995*
- *Water Corporations Act 1995*
- *Water Efficiency Labelling and Standards Act 2006*
- *Water Resources Legislation Amendment Act 2007*
- *Water Services Act 2012*
- *Water Services Coordination Act 1995*
- *Water Services Licensing Act 1995* (also called Plumbers *Licensing Act 1995*) (except part 5A, which the Department of Commerce administers)
- *Waterways Conservation Act 1976*

Regulations administered by the Department of Water and Environmental Regulation as at 30 June 2022

- Clean Air (Determination of Air Impurities in Gases Discharged to the Atmosphere) Regulations 1983
- Contaminated Sites Regulations 2006
- Country Areas Water Supply (Clearing Licence) Regulations 1981
- Environmental Protection (Abattoirs) Regulations 2001
- Environmental Protection (Abrasive Blasting) Regulations 1998
- Environmental Protection (Clearing of Native Vegetation) Regulations 2004
- Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998
- Environmental Protection (Controlled Waste) Regulations 2004
- Environmental Protection (Fibre Reinforced Plastics) Regulations 1998
- Environmental Protection (Goldfields Residential Areas) (Sulfur Dioxide) Regulations 2003
- Environmental Protection (Kwinana) (Atmospheric Wastes) Regulations 1992
- Environmental Protection (Metal Coating) Regulations 2001
- Environmental Protection (NEPMNPI) Regulations 1998
- Environmental Protection (NEPMUPM) Regulations 2013
- Environmental Protection (Noise) Regulations 1997
- Environmental Protection (Packaged Fertiliser) Regulations 2010
- Environmental Protection (Petrol) Regulations 1999
- Environmental Protection (Plastic Bag) Regulations 2018
- Environmental Protection (Recovery of Vapours from the Transfer of Organic Liquids) Regulations 1995
- Environmental Protection (Rural Landfill) Regulations 2002
- Environmental Protection (Solid Fuel Burning Appliances and Firewood Supply) Regulations 1998
- Environmental Protection (Unauthorised Discharges) Regulations 2004
- Environmental Protection Regulations 1987
- Litter Regulations 1981
- Noise Abatement (Noise Labelling of Equipment) Regulations (No. 2) 1985
- Plumbers Licensing and Plumbing Standards Regulations 2000
- Rights in Water and Irrigation Regulations 2000
- Waste Avoidance and Resource Recovery Amendment Regulations 2019
- Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulations 2019
- Waste Avoidance and Resource Recovery (Container Deposit Scheme) Amendment Regulations 2019
- Waste Avoidance and Resource Recovery (Container Deposit Scheme) Amendment Regulations 2020
- Waste Avoidance and Resource Recovery Levy Regulations 2008
- Waste Avoidance and Resource Recovery Regulations 2008
- Water Agencies (Entry Warrant) Regulations 1985
- Water Agencies (Infringements) Regulations 1994
- Water Corporations (Transitional Provisions) Regulations 2013
- Water Services Regulations 2013
- Water Services Coordination Regulations 1996
- Water Services (Water Corporations Charges) Regulations 2014
- Waterways Conservation Regulations 1981

Other subsidiary legislation affecting our activities

For all other subsidiary legislation including by-laws, notices, declarations, proclamations, approvals, exemptions, orders, policy, pollution control areas, vesting orders, irrigation districts, standards and guidelines, please visit www.legislation.wa.gov.au

Other key legislation affecting our activities

In the performance of our functions, the department complied with the following laws:

- *Aboriginal Heritage Act 1972*
- *Auditor General Act 2006*
- *Corruption and Crime Commission Act 2003*
- *Disability Services Act 1993*
- *Equal Opportunity Act 1984*
- *Financial Management Act 2006*
- *Freedom of Information Act 1992*
- *Government Employees Housing Act 1964*
- *Industrial Relations Act 1979*
- *National Environmental Protection Council Act 1997 (Commonwealth)*
- *Occupational Safety and Health Act 1984*
- *Long Service Leave Act 1958*
- *Minimum Conditions of Employment Act 1993*
- *Native Title Act 1993 (Cwlth)*
- *Public Interest Disclosure Act 2003*
- *Public Sector Management Act 1994*
- *Salaries and Allowances Act 1975*
- *State Records Act 2000*
- *State Supply Commission Act 1991*
- *Workers' Compensation and Injury Management Act 1981*
- *Work Health Safety Act 2020* (from 31 March 2022)

Appendix B: Shortened forms

Term	Definition
AA	Agricultural Area
AQMP	Perth Air Quality Management Plan
AUSMAP	Australian Microplastics Assessment Project
AWEAG	Aboriginal Water and Environment Advisory Group
BCP	Business Continuity Plan
C&D	Construction and demolition
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DBCA	Department of Biodiversity, Conservation and Attractions
DMIRS	Department of Mines, Industry Regulation and Safety
DPIRD	Department of Primary Industries and Regional Development
DPLH	Department of Planning, Lands and Heritage
EPA	Environmental Protection Authority
FOGO	Food organics and garden organics
FOI	Freedom of information
HHW	Household hazardous waste
ILUA	Indigenous Land Use Agreement
IPWEA	Institute of Public Works Engineering Australasia
JTSI	Department of Jobs, Tourism, Science and Innovation
KABC	Keep Australia Beautiful Council

Term	Definition
KPI	Key performance indicator
LGA	Local government authority
MAC	Murujuga Aboriginal Corporation
MLA	Member of the Legislative Assembly
NARCliM 2.0	New South Wales and Australian Regional Climate Modelling Project
PDWSA	Public drinking water source areas
PHIC	Port Hedland Industries Council
SERS	Sectoral Emissions Reduction Strategies
SGIP	State Groundwater Investigations Program
SWIS	South West Interconnected System
RAP	Reconciliation Action Plan
RtR	Roads to Reuse
WA	Western Australia
WAPC	Western Australian Planning Commission
WHS	Work Health Safety
WIR	Water Information Reporting
WWF	World Wide Fund for Nature
YSRC	Yamatji Southern Regional Corporation

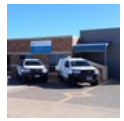
Contact us









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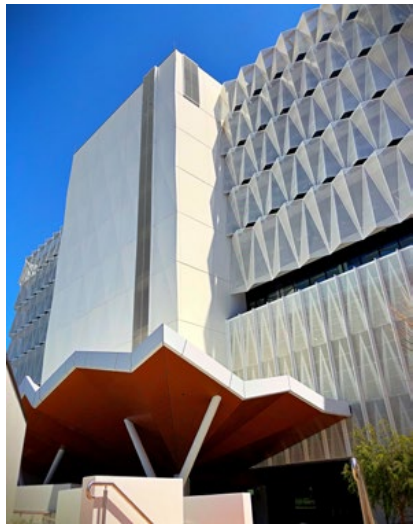

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Feedback form

Your feedback on our 2021–22 annual report would be greatly appreciated. We will use your comments to help improve the clarity and presentation of our publications. Thank you for your input.

- Did the report help you understand the department, its purpose, services and performance?

  not at all | not really | somewhat | yes | absolutely

- Did you find the design and presentation functional and effective?

  not at all | not really | somewhat | yes | absolutely

- Was the report clear, concise and easy to read?

  not at all | not really | somewhat | yes | absolutely

- Did you find the structural format of the report simple and logical?

  not at all | not really | somewhat | yes | absolutely

Please return completed feedback forms to:
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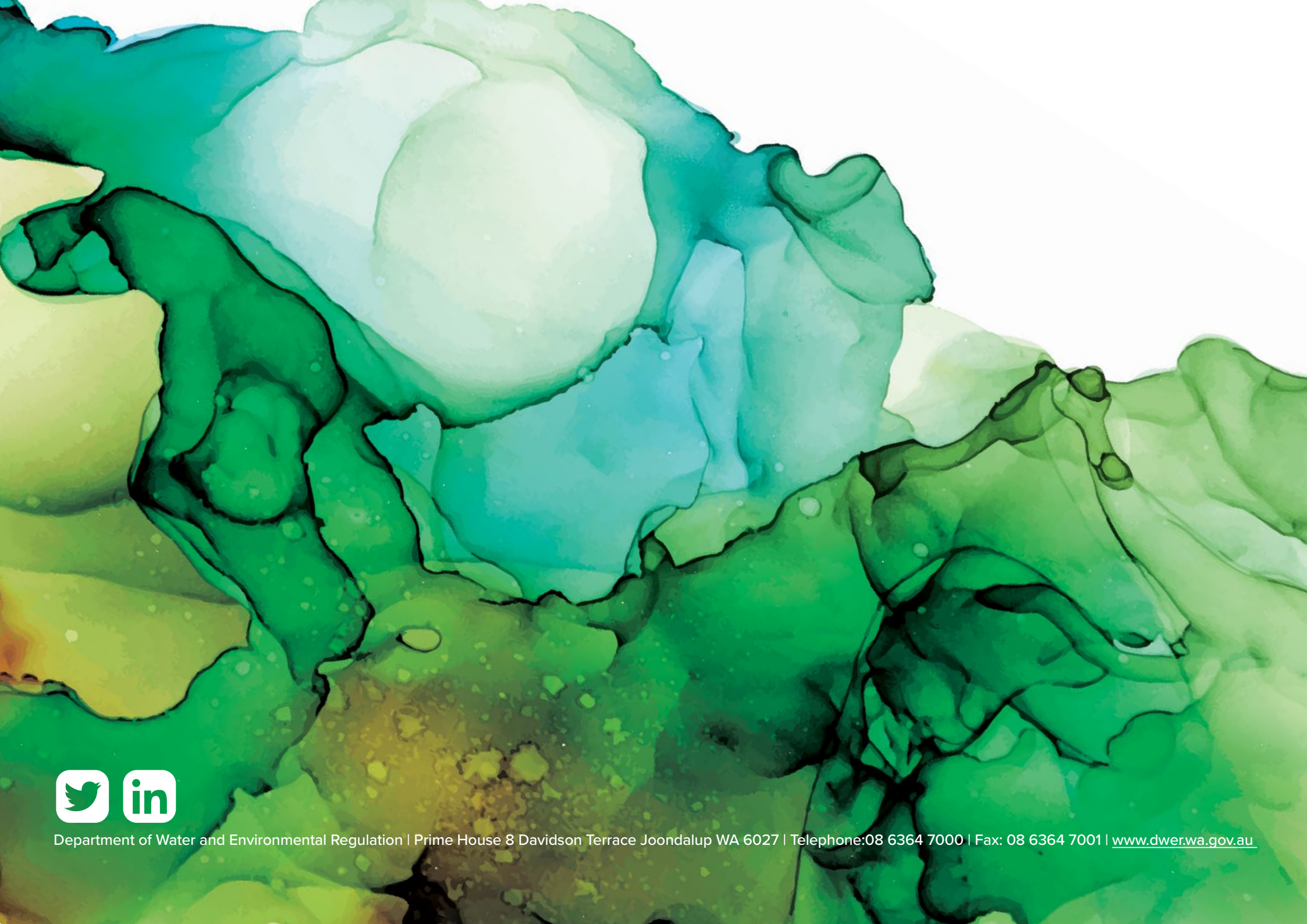

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