Government of **Western Australia**
Department of **Water and Environmental Regulation**

We're working for Western Australia.

Annual report

2020–21

Our performance

Our performance

Outcome one

Western Australia'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

About 2,300 groundwater bores, 270 river gauging stations and 170 meteorological sites provide quality data which allows us to monitor the condition and status of the water resources in our rivers, streams and aquifers.

This information is provided free of charge to industry, members of the public and government. It has many uses including informing water allocation, water licensing, water quality management, flood risk assessment and the state's flood warning network.

Our staff can spend days or weeks at a time in remote and high-risk locations maintaining our groundwater bores and river gauging stations, checking instruments and taking measurements.

The Groundwater Asset Management program maintains and replaces the department's groundwater monitoring network of about 2,300 monitoring bores to enable the collection of reliable and accurate groundwater information.

We are also trialling new technology to enable groundwater level information to be automatically transmitted by mobile and satellite 'telemetry' systems from our remote bores to our data store, where it will be instantly available to staff and the wider community.

Water information

Much of the water data we collect is made available through our online systems.

The Water Information Reporting portal (WIR) provides instant access to more than 133,000 water monitoring sites.

This data is used by consultants and researchers 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 2020–21 year was the biggest ever for WIR data with 6,183 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 and infrastructure during 2020–21 compared with the previous year (see table on page 38).

Water and land use planning

The department's land use planning program continues to support sustainable development by providing water and environmental data and expertise to inform the state's statutory and strategic land planning system.

As well as automated data provision, the department provides specialist technical advice to ensure water challenges and impacts on the environment are adequately identified and planned for. As the department has moved to greater integration of water and environmental management, so too has our advice expanded to better link risks and other reqirements we regulate.

The consultation and formal advice we provide enables the Western Australian Planning Commission, LGAs and other decision-making agencies to make informed land use planning decisions which consider and respond to impacts they may have on flooding and inundation, water quality, water environments and the health and sustainability of water resources.

This work supports the urban sector to deliver quality waterwise developments. For the Perth and Peel regions in particular, this information is vital as land development to meet population growth continues to expand in areas with complex environmental and water constraints. It also aligns with and helps deliver actions of the Waterwise Perth Action Plan and waterwise outcomes for METRONET.

Water Information Reporting data use

Purpose	17–18	18–19	19–20	20–21
Environmental assessment	2,603	2,117 ↓	2,670 ↑	2,467 ↓
Research and investigation	1,141	1,082 ↓	1,035 ↓	1,444 ↑
Other	281	289 ↑	505 ↑	393 ↓
Mining and exploration	288	382 ↑	435 ↑	495 ↑
Agriculture	311	260 ↓	309 ↑	286 ↓
Domestic supply	73	99 ↑	248 ↑	172 ↓
Water source protection	203	108 ↓	231 ↑	216 ↓
Infrastructure	238	275 ↑	226 ↓	350 ↑
Property dev./land use planning	310	259 ↓	212 ↓	187 ↓
Industry and commerce	55	45 ↓	39 ↓	92 ↑
Recreation	15	13 ↓	15 ↑	81 ↑

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

- 1,582 requests for water advice from DPLH
- 850 requests from LGAs
- 217 requests from DMIRS
- 44 requests from the EPA
- 390 requests from other stakeholders, including other State Government agencies and utilities, and industry.

We also advised on 166 water management reports associated with land planning and mining activities.

Floodplain mapping and advice

We provide advice to developers, insurance companies, local government and members of the public, mostly about new developments on floodplains. In the last financial year, the department responded to more than 550 requests for flood risk and floodplain management advice.

This year we also helped in the response to flooding in Carnarvon, Nullagine and Albany. A preliminary report on the February 2021 Gascoyne River flood at Carnarvon and the effectiveness of the town's existing flood mitigation measures was prepared.

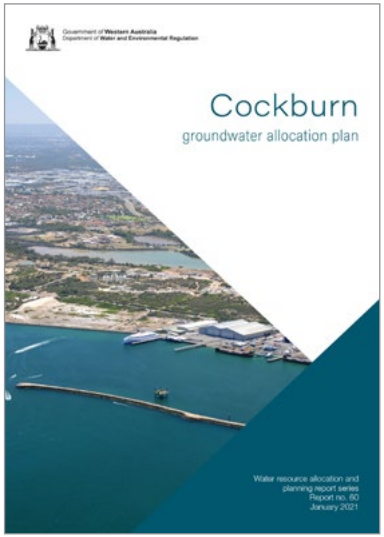
Service two: Water planning, allocation and optimisation

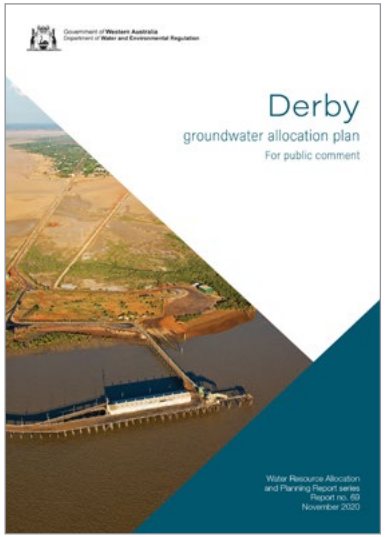
Water allocation plans

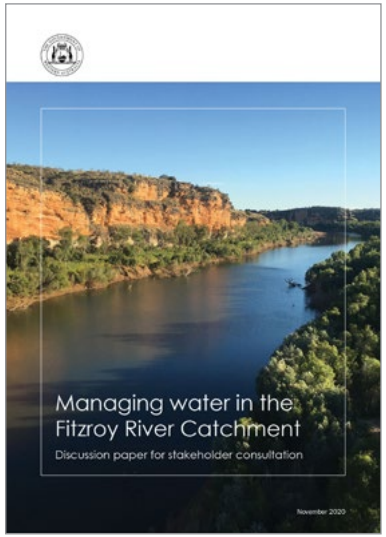
Water allocation plans are the department's key water documents to support our regulatory approach. They establish how much water is available from aquifers and rivers, how much water is set aside for the environment and public drinking water supply, and how much can be sustainably licensed to businesses and individuals.

In the Kwinana Peel region, the department released the final *Cockburn groundwater allocation plan* and associated technical documents in December 2020, as part of a review of groundwater allocation plans to deliver Action 14 of the Waterwise Perth Action Plan.

In the Kimberley, the department released the draft *Derby groundwater allocation plan* for public comment in November 2020. The comment period closed on 31 May 2021 and the department is in the process of collating and working through the public comments to finalise the plan.







The department also continued to work on the Fitzroy catchment in the Kimberley and published *Managing water in the Fitzroy River Catchment: Discussion paper for stakeholder consultation* in November 2020. Feedback on the discussion paper will inform development of the Fitzroy water allocation plan for public comment.

Perth groundwater remains a high priority and we have been working with water users and other stakeholders to prepare the next Gnangara groundwater allocation plan, and implement the Waterwise Perth Action Plan's target to reduce groundwater abstraction by 10 per cent by 2030. Adjusting our water use to match the impacts of climate change is an important

measure to ensure groundwater remains a long-term and low-cost source of water for our growing city. The department expects to have the new Gnangara groundwater allocation plan ready for public comment later in 2021.

The department also completed its annual compliance report on environmental management of groundwater from Gnangara and its tri-annual compliance report for the Jandakot mound, fulfilling obligations under Ministerial Statement 819 for Gnangara and Ministerial Statement 688 for Jandakot.

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

Water investigations

The department investigates, measures and quantifies the state's surface water and groundwater resources. This scientific information enables robust planning, regulation and protection of our water resources and supports sustainable state development.

The State Groundwater Investigation Program installs groundwater monitoring infrastructure and collects, interprets and provides new water information to resource managers and the community. The program is aligned to the state's water demand and management needs, including State Government initiatives, and has more than 10 active investigation projects between Esperance and Broome.

Currently we are:

- investigating seawater intrusion in coastal aquifers in Esperance, Dunsborough to Bunbury, Myalup and Broome
- investigating groundwater-dependent ecosystems between Broome and 80 Mile Beach to ensure groundwater levels are maintained to support users, and the wetlands and ecosystems that rely on groundwater
- determining the hydrogeological characteristics that affect groundwater flow and salinity and their relationship with surface water systems between Perth and Moora
- assessing the potential for managed aquifer recharge as an alternative water supply in the Swan Valley and north-east growth corridor.

Current water investigations

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The department's water modelling program develops surface water and groundwater models to assess the availability and quality of water. These models are used to assist in decision-making to protect the environment and support sustainable productive use of water. The program is used to help set water allocation limits, inform water licence and water allocation planning decisions, underpin advice to decision-makers, inform policy development, evaluate the response of water resources to actual conditions, and defend appeals against the department's decisions.

During 2020–21, two significant numerical groundwater models were completed, and both will be presented to the Modelling Board for endorsement in the coming months. The South West Aquifer Modelling System (SWAMS numerical groundwater model) will be used in the department as a planning tool and will be provided to external proponents to help their modelling work.

Calibration of the Myalup Regional Groundwater Model was completed in-house and externally reviewed as fit for purpose. The predicative scenarios will be completed and used to inform the Myalup Allocation Plan. Five hydraulic models were completed, which improve data quality at streamflow gauges. One flood model was completed, which supports land use planning for the Perth Peel expansion.

Two estuary models were also completed. These assess the impacts of changes to surge barrier or sand bar management, catchment management, and climate and sea level to determine the potential impacts on estuary condition of different management regimes and future climate.

Information from gauging stations like this one at Manjimup Brook is used to develop surface water and groundwater models to assess the availability and quality of water

The department is responsible for protecting water quality in about 140 public drinking water source areas (PDWSAs) across the state.

Water source protection

Our work in water source protection helps maintain access to safe, reliable and affordable drinking water supplies. The department is responsible for protecting water quality in about 140 public drinking water source areas (PDWSAs) across the state.

In the areas where Water Corporation is the provider, a Memorandum of Understanding (MoU) between our agencies formalises our working arrangements for source protection. The MoU is updated regularly to ensure it remains contemporary.

The department owns (or has vesting for) some land in PDWSAs, and Water Corporation regularly undertakes land management on our behalf. The agencies also work together to acquire land that is posing major risks to drinking water quality.

All active PDWSAs are covered by drinking water source protection reports, which are subject to ongoing review by the department in consultation with State and local government, traditional owners, landowners, industry and the community. We work closely with our stakeholders to implement recommendations in the report which address risks to water quality and help keep the source safe. The reports provide a boundary, priority areas and protection zones for each source and allow us to arrange constitution of those boundaries under legislation.

We provide technical advice on how to manage risks in PDWSAs to other agencies, local government, developers, industry and other stakeholders. Key projects this year included providing strategic advice on the Perth and Peel @ 3.5million frameworks and addressing risks from per-and-polyfluoroalkyl substances (PFAS) from firefighting foams in mining and landfill sites, and wastewater discharge areas.

We are also involved in the South West Native Title Settlement and providing advice on its implementation within PDWSAs.

Water supply planning

Our water supply planning function is focused on understanding the state's future water needs and promoting water demand management and supply options for sustainable development.

Preparing local government, industrial and agricultural groundwater users in the South West for a future with less groundwater and surface water is a main priority for the department's water supply planning function. The department works with local governments on solutions for irrigating parks and other public open spaces in new developments where groundwater is limited. This includes identifying potential shortfalls in groundwater availability, providing advice on maximising the use of available groundwater and developing approaches to selecting alternative or additional sources of water.

In February 2021, based on submissions by Water Corporation and the department, Infrastructure Australia added the Perth and south-western coast water security as a high-priority initiative to its national infrastructure priority listing. This listing highlights the need to plan and develop new water supply infrastructure and demand management initiatives to tackle the projected effects of climate change on groundwater supplies across the coastal aquifer systems from Geraldton to Augusta. Future submissions will present project proposals for further assessment by Infrastructure Australia in support of potential joint funding of new water infrastructure projects by the State and Australian Governments.

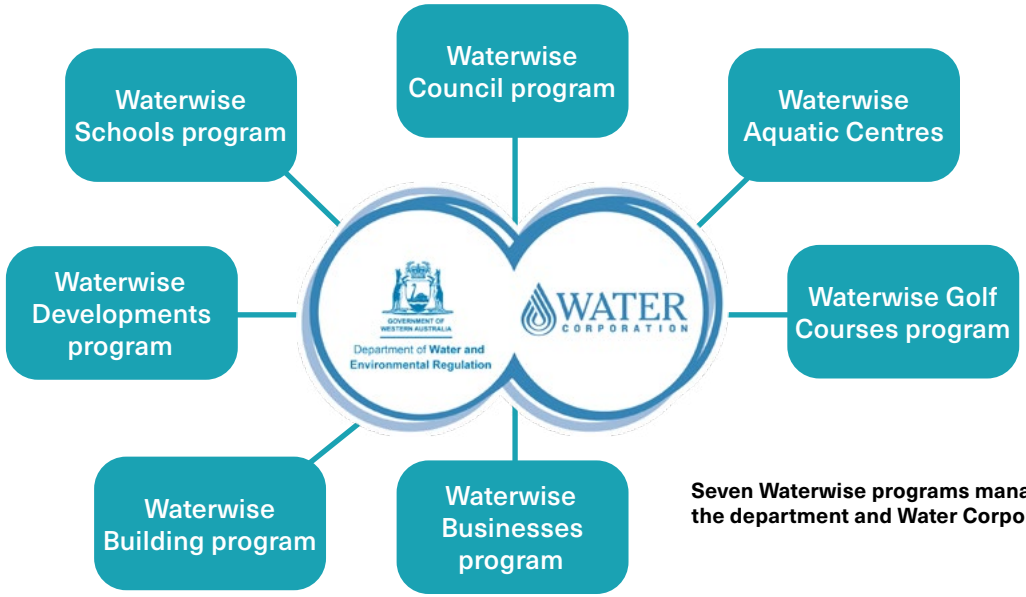
We also work closely with Water Corporation and other water service providers such as Aqwest and Busselton Water to help with optimising planning for future public water supply and integrated water planning.

Waterwise

State Government Waterwise programs and initiatives build strong relationships with local governments, industry and the community to improve water efficiency, climate resilience and liveability.

Seven Waterwise programs are jointly or individually managed by the department and Water Corporation:

- Waterwise Council program
- Waterwise Aquatic Centres
- Waterwise Golf Courses program
- Waterwise Businesses program
- Waterwise Building program
- Waterwise Developments program
- Waterwise Schools program.



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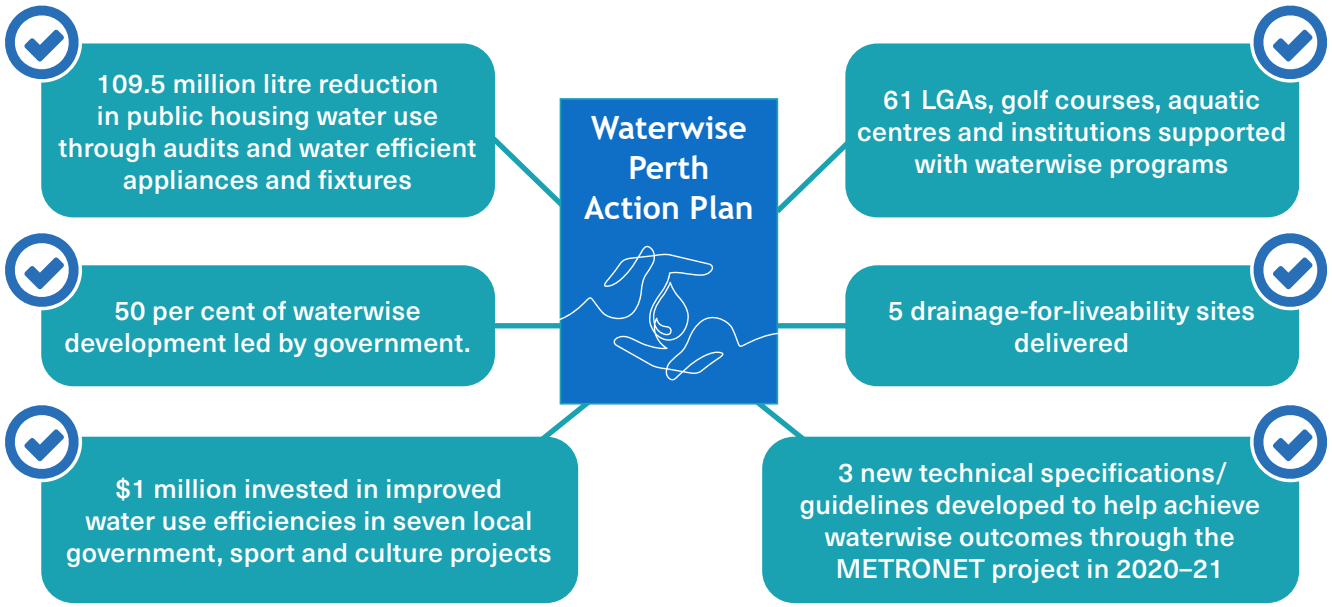


Examples of results under the Waterwise Perth Action Plan

Waterwise Perth Action Plan

The Waterwise Perth Action Plan was launched in October 2019 as part of the State Government's co-ordinated response to the impacts of climate change.

This plan is about stimulating change across a wide number of focus areas by engaging state agencies, local governments, the urban development industry and the wider community, and inviting them to help us transform Perth and Peel into leading waterwise regions by 2030.

Significant ground has been made under the plan across a wide number of areas.

Rural water planning

Climate change is creating long-term water security challenges for farmers in the dryland agricultural regions in the southern half of WA.

In response, the State Government has continued to support improved non-potable water supplies on and off farms, and carted emergency livestock water to areas under a 'water deficiency declaration'. The year started with 12 declarations in place in shires in the southern and south-eastern dryland agricultural areas, but winter rains in 2020 enabled the Gairdner area declaration in the Shire of Jerramungup to be revoked in August 2020. Improved rainfall over summer and good follow-up rainfall in autumn recharged the majority of on-farm and off-farm dams to allow for a further nine declarations to be revoked in six shires in May 2021.

At 30 June 2021, two declarations remained in place in Salmon Gums and Grass Patch in the Shire of Esperance.

During the year, $416,295 was spent on water carting, bringing the total cost of water carting to areas with water deficiency declarations in place to $3.7 million.

Work to increase capacity to manage water scarcity in these dryland farming areas has also continued.

The State Government invested $915,902 through the Community Water Supply Program in 2020–21, helping nine local governments deliver 10 projects which will improve their emergency community water capacity and reduce their future use of scheme water. The shires of Merredin, Mukinbudin, Wyalkatchem (two projects), Chapman Valley, Toodyay, Jerramungup, Plantagenet,

Gnowangerup and Lake Grace received grants to undertake works, including improving the stormwater reuse network, fitting new pump, pipe and tank facilities, and realigning catchment channels. This builds on works the government has previously undertaken on community water supplies, bringing the total to nearly $1.5 million for 17 projects.

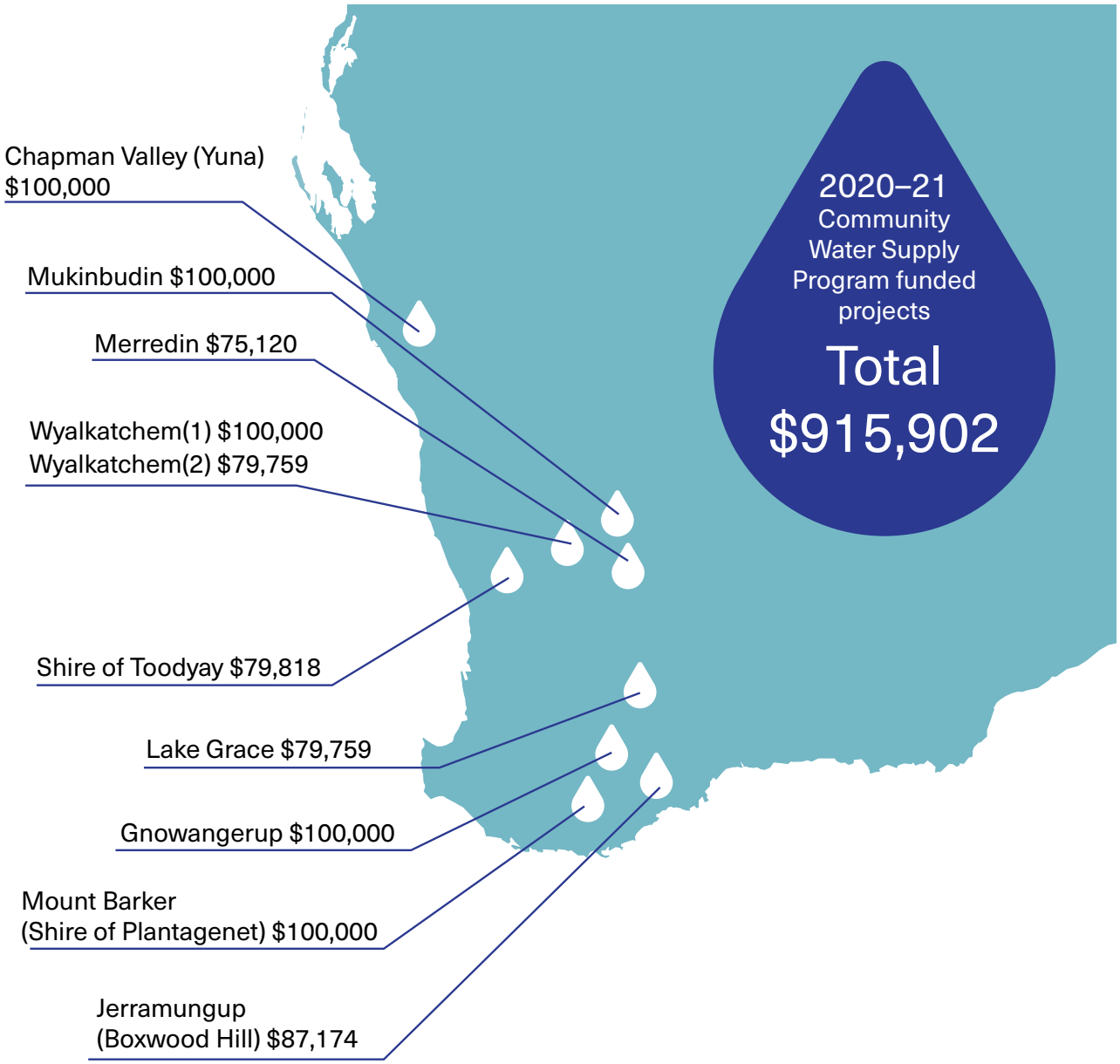
The Rural Water Planning works program also invested $741,890 this year to upgrade 32 agriculture area dams vested with the department and in priority areas to continue to build on the strategic water supply network across the dryland agricultural area.

WA rivers and estuaries

We coordinate management actions to improve water quality in rivers and regional estuaries based on good science.

The department provides a centre of expertise in aquatic science to support management decisions relating to water quality in rivers, streams and other water bodies. This expertise in catchment and estuary numerical modelling, river and estuary science, remediation science and phytoplankton (microscopic algae) ecology supports all initiatives across our river and estuary programs.

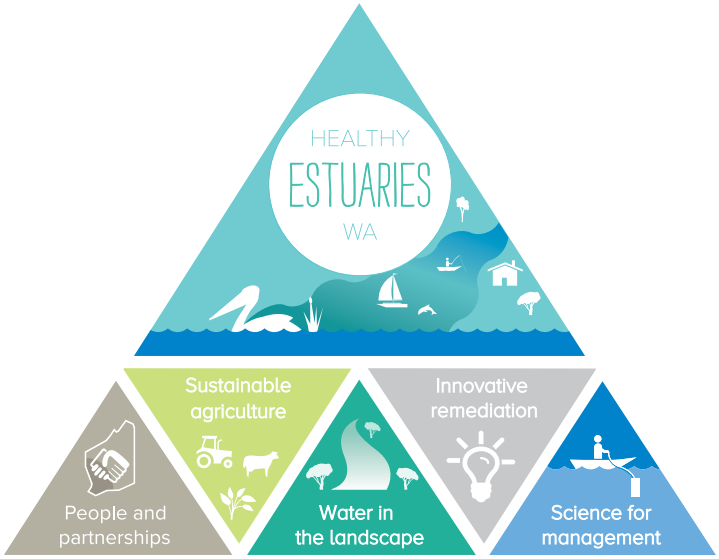
More than 80 per cent of Western Australians live around estuaries – they are central to



the WA way of life, supporting businesses, recreation and tourism. Because of population pressures and intensive agriculture in the catchments, water quality in many estuaries has deteriorated. Estuaries are where rivers meet the ocean, and their health is linked to conditions of the catchment land surrounding them, as well as conditions in the water itself. We combine the scientific understanding of how nutrient losses from catchments lead to poor water quality and the practical actions needed, such as water quality improvement plans.

For effective regional delivery, these plans rely on shared responsibility involving government agencies, LGAs, community, natural resource management groups and industry.

Our ability to coordinate partnerships and actions that drive sustainable water and environmental outcomes is showcased in our world-class estuaries work, which continues with Healthy Estuaries WA. This program is part of the $60 million Green Jobs Plan as part of the WA Recovery Plan.



Water Minister Dave Kelly, second left, launches Healthy Estuaries WA with department staff

Healthy Estuaries WA picks up on the work of the successful Regional Estuaries Initiative and award-winning Revitalising Geographe Waterways program. It builds collaboration between community, science, government and industry to improve water quality through developing and implementing best-practice fertiliser application to broadacre agriculture, dairy effluent management and large-scale trials of soil amendment. This reduces the amount of nutrients and organic matter entering waterways.

Healthy Estuaries WA continues work in the priority catchments of the South West land division comprising the Peel-Harvey estuary, Leschenault Estuary, Vasse-Geographe waterways, Hardy Inlet, Wilson Inlet, Torbay Inlet and Oyster Harbour.

Bindjareb Djilba: A plan for the protection of the Peel-Harvey estuary

The plan was launched in December 2020 and its implementation is a State Government election commitment.

It represents a whole-of-government approach to improving water quality in the Peel-Harvey estuary, with emphasis on the need to reduce nutrients from current catchment sources such as agriculture and minimise future nutrient enrichment through more effective land-use planning.

The plan represents three years of consultation and detailed scientific analysis and numerical modelling, building on the department and its predecessors' 20 years of experience working in the Peel-Harvey.

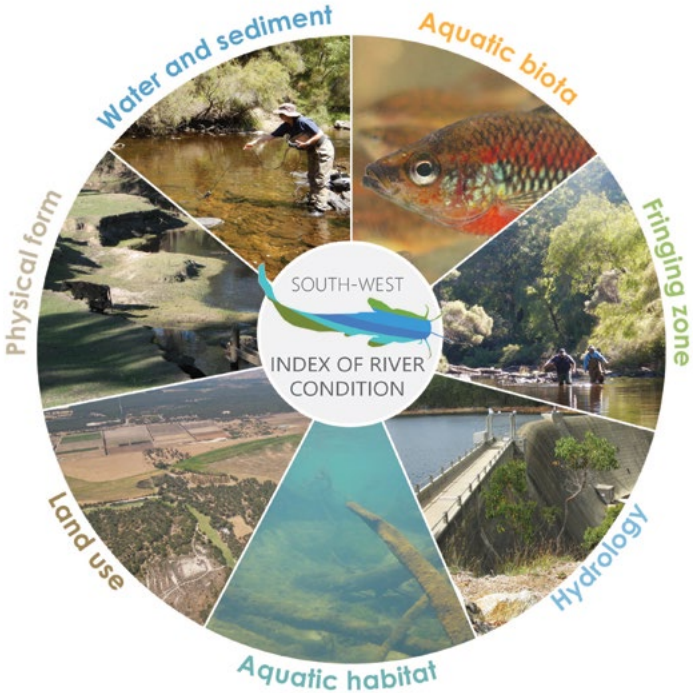
An important component is the extensive engagement with Bindjareb Noongar people, the traditional owners of the plan area, working towards a genuine partnership in the management of the estuary.

The plan's actions are supported through Healthy Estuaries WA and the contributions of all delivery partners.

Healthy Rivers program

This program collects, analyses and interprets data about our rivers and their catchments, and uses the knowledge gained to provide advice to support land use and water allocation planning, licensing and approvals, assessment of compliance, and management of environmental water releases. This includes determining the ecological requirements of our aquatic systems, assessing environmental risks and impacts, and evaluating waterway management activities.

Central to the program is long-term, standardised assessments of 150 strategic river health sites across the South West, as well as investigating emerging issues as required. About 700 individual site assessments have been completed through the program between Jurien Bay and Esperance since 2010.

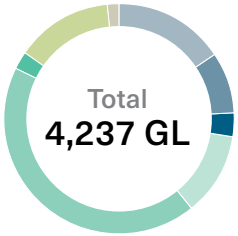


In 2020–21, assessments were conducted at 60 sites from Gingin Brook in the north through to the Donnelly and Warren rivers in the South West.

All river health information, as well as assessment methods and guidance, is made available to support others in assessing and managing rivers. A summary of data from river health assessments is freely available from the department's Healthy Rivers website.

Service three: Water regulation, licensing and industry governance

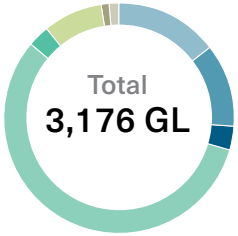
Western Australia's water users by sector



Total licensed volume by sector

- **Agriculture** 661GL (16%)
- **Commercial and institutional** 372 GL (9%)
- **Industry and power generation** 133 GL (3%)
- **Irrigation scheme supply** 503 GL (12%)
- **Mining** 1,817 GL (43%)
- **Parks, gardens and recreation** 106 GL (3%)
- **Public water scheme supply** 584 GL (14%)
- **Other*** 62 GL (1%)

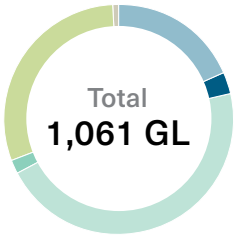
*Other includes environment and conservation, and stock and domestic.



Groundwater licensed volume by sector

- **Agriculture** 464 GL (15%)
- **Commercial and institutional** 370 GL (12%)
- **Industry and power generation** 103 GL (3%)
- **Mining** 1,798 GL (57%)
- **Parks, gardens and recreation** 104 GL (3%)
- **Public water scheme supply** 262 GL (8%)
- **Environment and conservation** 32 GL (1%)
- **Other*** 42 GL (1%)

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



Surface water licensed volume by sector (allocated volume)

- **Agriculture** 197 GL (19%)
- **Industry and power generation** 30 GL (3%)
- **Irrigation scheme supply** 488 GL (46%)
- **Mining** 19 GL (2%)
- **Public water scheme supply** 321 GL (30%)
- **Other*** 6 GL (0.5%)

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

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

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, we managed about 12,535 water licences across 466 groundwater and 184 surface water resources. These licences authorise the taking of 4,237 gigalitres (GL) of water – 3,176 from groundwater resources and 1,061 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 (see previous page graphs).

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 2021, there were 931 licences to construct and alter groundwater wells and 446 permits granted across the state.

In 2020–21, 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-risk water licence applications was 30 days, representing our best performance in two years. The 39 and 47-day average performance for medium and high-risk water licence applications respectively is also well under established timeliness targets.

Water licences administered 2020–21

12,535
licences and permits

Our Water Licensing Backlog Reduction program achieved its primary objective to reduce the water licensing backlog to 350 applications by 30 September 2019, and we continued to maintain the backlog below that target throughout 2020–21.

As of 30 June 2021, there were 229 water licence applications in the backlog. 2020–21 resulted in an additional 62 applications received compared with the previous year, representing a 2 per cent increase.

Water Online

The Water Online portal is available to licensed and prospective water users to lodge water licence and permit applications. The system 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 2020–21, we continued to promote the uptake of the Water Online customer portal by licensees, with 1,882 new registered users from a total of 6,962 registered users, and 52 per cent of water licence applications submitted electronically during the last financial year. We also introduced several system enhancements to strengthen the water licensing and compliance management functionality of the system, improving the overall user experience.

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.

These important compliance activities are delivered by six regional offices and are tailored to ensure they reflect the water resource management context, objectives and challenges within these diverse regional water management areas.

In 2020–21, our compliance monitoring effort within individual water resources was proportionate to the current level of water use, the demand for new or increased water entitlements, and the likelihood of damage

to the water resource and water-dependent environment resulting from non-compliance with water licences or other breaches of water resource legislation.

Compliance with water metering requirements and licensed water entitlements was a key priority. Our 2020–21 compliance monitoring program consisted of on-ground and off-site monitoring activities, with 350 on-ground water licence compliance inspections and water meter audits conducted, and 1,343 off-site water use surveys and compliance report reviews finalised. We also processed 4,731 meter reading submissions.

As an outcome of these monitoring activities, 4,540 incident reviews and investigations were undertaken, and we responded to 338 confirmed incidents of non-compliance with a combination of statutory and non-statutory enforcement actions. We issued 193 letters of education, 77 warning notices and 47 infringement notices, and gave 21 statutory directions.

Measurement of licensed water take

The *Measuring the taking of water policy* (2016) sets out how licensed water users in WA are required to measure their water take. Under the policy, the measurement of licensed abstraction was significantly expanded through a model of self-supply metering, where licensees are responsible for meter installation, maintenance, reading and reporting. This requirement was introduced in a staged approach bringing the metering threshold down from 500 megalitres (ML) to 10 ML.

Since the gazettal of the Rights in Water and Irrigation Amendment Regulations 2018, we have developed a range of communication and education tools to notify affected licensees of the amendments, inform them about potential impacts on them and their existing water-use measurement activities, and promote compliance with the regulations.

In 2020–21, the final stage of the implementation program started for licences with entitlements of 10 ML or more across the state, and there are now 6,405 licences, allocating 4,179 GL of water, that are subject to metering and alternative measurement requirements under the regulations.

As of 30 June 2021, 97 per cent of the total volume of water licensed for use in WA was required to pass through an approved measurement device.

While the policy recognises metering as the preferred mechanism for measurement of licensed abstraction, it also states metering will not be required in circumstances where it is impractical, or where there is minimal benefit to our water resource management actions. In these situations, the policy provides

Water compliance in 2020–21

4,540 incident reviews

193 letters of education

77 warning notices

47 infringement notices

Domestic garden bore restriction in 2020–21

194
warning notices

12
infringement

for alternative measurement systems to be approved by us for implementation by licensees or, in certain limited circumstances, exempt licensees from the requirement to measure their licensed abstraction.

Domestic garden bore restrictions

Perth metropolitan area garden bore users have been subject to a watering roster of three days a week since 2007 and garden bores are subject to statewide restrictions imposed under the Water Agencies (Water Use) By-laws 2010.

An MoU between the department and Water Corporation sets out a cooperative approach towards the compliance and enforcement responsibilities for domestic garden bore watering restrictions.

During the last financial year, the department's Water Efficiency Measures program issued 194 warning notices and 12 infringements for breaches of domestic garden bore watering restrictions.

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 such as Water Corporation to deliver water supply, irrigation, sewerage and drainage services.

Beyond the three utilities, there are 37 other water service providers in WA, including 16 local governments which are exempt, four irrigation cooperatives, mining companies and developers.

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

Water service domestic violence code

As part of State Government initiatives to combat domestic violence, the department developed a domestic violence code under the *Water Services Act 2012*, which came into effect in December 2020. The code prescribes minimum requirements for water service providers to support residential customers who have been affected by family violence. Compliance with the code is a requirement of water service licences.

Managing public water supply abstraction

Groundwater licensed to Water Corporation forms an important part of Perth's public water supply, comprising up to 40 per cent of the water supplied through the Integrated Water Supply Scheme (IWSS).

As part of our adaptive management of Perth's groundwater resources in response to climate change, the department works with Water Corporation to ensure groundwater abstraction for the IWSS limits impacts

to the city's important wetlands and groundwater-dependent bushland.

This involves reducing groundwater abstraction in line with climate change and working with Water Corporation to bring climate-independent sources to the IWSS mix. We also work with Water Corporation to adjust the distribution of abstraction each year to help protect these ecosystems, with water level criteria set by the Minister for Environment.

Through this work, we have supported the development of Water Corporation's groundwater replenishment scheme, 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. Our Perth regional confined aquifer capacity study, *Studying Perth's deep aquifers to improve groundwater management*, guided Water Corporation on suitable locations for recharge and abstraction for an expansion of the scheme. These locations support full recovery of the volume of water being recharged and provide improved water resource and environmental outcomes.

We are also helping Water Corporation to review the IWSS groundwater bore maintenance and replacement program to identify the best locations (and aquifers) for ongoing take of groundwater.

The department is preparing a draft Gnangara allocation plan for public comment. The draft plan will include measures to rebalance groundwater abstraction in line with the impacts of climate change.

The plan helps deliver Action 14 of the Waterwise Perth Action Plan: review groundwater allocation plans for Gnangara, Perth South and Jandakot, Cockburn and Serpentine to manage groundwater levels for wetlands, urban trees and irrigation of green spaces. It also contributes to achieving the 2030 target of 10 per cent less groundwater use across the region. This is factored into Water Corporation's future water supply planning.

Our Perth regional confined aquifer capacity studies have guided Water Corporation on suitable locations for groundwater replenishment

Water fees

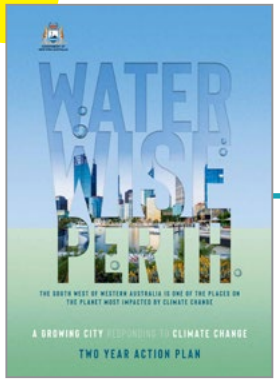
Most water licence and permit holders in WA do not pay a fee for service.

However, a water licence and permit application assessment fee is charged for applications from the mining and public water supply sectors. These sectors are among the largest water users by total volume, requiring significant departmental effort to assess the sectors' water licence and permit applications.

Fees for these two sectors recognise the need to meet the costs of assessing water licence and permit applications from which these industries derive significant commercial benefit.

During 2020–21, we spent $14,015,324 on the assessment of all water licence and permit applications, and collected $931,977 in fees from 159 licensees for 371 applications assessments.

Two key targets of Waterwise Perth Action Plan



Reduce groundwater use by 10 per cent across the Perth and Peel regions by 2030

Ensure recycled and alternative water supplies make up 45 per cent of the projected gap between future water demand and water supply

Water policy

A revised Managed Aquifer Recharge (MAR) policy and new accompanying guideline was released to facilitate the reuse of WA's valuable water resources.

The MAR policy and guideline were delivered as part of the State Government's Waterwise Perth Action Plan, contributing to achieving two key targets:

- reducing groundwater use by 10 per cent across the Perth and Peel regions by 2030
- ensuring recycled and alternative water supplies make up 45 per cent of the projected gap between future water demand and water supply.

The policy and guideline provide a management framework for MAR operations in WA. They include useful information to help with establishing a managed aquifer recharge project while safeguarding the environment, water users and public health. They also support proponents in investigating whether MAR is a viable and cost-effective solution to meet their water demands.

Outcome two

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

Pollution Response team in action

Service four: Environmental regulation

Being a responsive and credible regulator

Much of our role involves discharging regulatory functions under the legislation we administer, primarily under the EP Act, the RIWI Act and the *Contaminated Sites Act 2003* (Contaminated Sites Act).

In the past financial year, we have continued to assess and issue approvals or assessments under these acts, as well as conduct associated compliance activities.

Importantly, we have made efficiency and effectiveness improvements to the way in which we regulate, in terms of those with whom we communicate and what we expect from them.

Our regulatory approach

The department launched its new regulatory approach guidance at the Regulatory Stakeholders Reference Group meeting in November 2020.

This articulates how all the elements of the department fit together to achieve better water and environmental outcomes and provides clarity for stakeholders on what they can expect from us.

Our approach recognises that the environmental, waste management and water resource management challenges we face as a society require multifaceted interventions designed collaboratively and delivered collectively.

It also recognises that being a successful regulator depends on strong relationships, and that by collaborating with others, we achieve better outcomes.

Regulatory statistics performance and capability

The department had a busy year working with regulated stakeholders. This included engagement during the COVID-19 pandemic response over important issues such as delays to fieldwork required for approvals, and potential compliance-related issues.

On top of the ongoing continuous improvement in this area of our business, this year required us to put in extra effort working with stakeholders to navigate advice, assessments and approvals, and compliance issues in the best and most efficient manner without compromising environmental protection or water resource management outcomes.

We have made efficiency and effectiveness improvements to the way in which we regulate, in terms of those with whom we communicate and what we expect from them.

Industry Regulation

Industry Regulation has continued to be extremely busy with the team receiving 643 applications, about 18 per cent more applications compared with the previous financial year. This continues the trend of increasing application numbers observed over recent years.

The second quarter of 2020–21 was the busiest quarter in the past three financial years with 182 applications received, and our licensing and works approvals processes are under test.

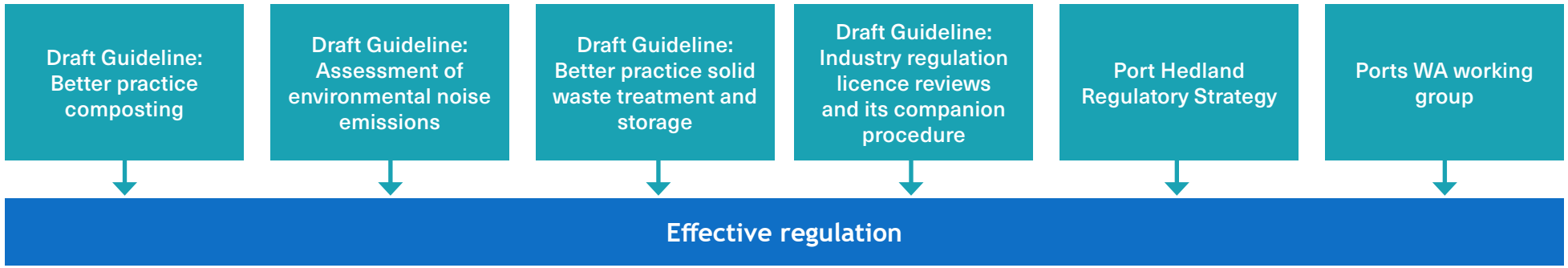
Applications from the resources sector increased substantially in the latter half of the year with a rise of 27 per cent compared with the previous financial year, demonstrating business confidence during the COVID-19 pandemic. New large-scale projects – including iron ore, salt, gold, nickel and rare earths among other commodities – have contributed to a surge in applications. This trend is expected to continue into the 2021–22 financial year.

In the agribusiness sector, the department received high numbers of applications and inquiries in sectors including the red meat industry, intensive piggeries, sheep feedlot industry and downstream industries such as the animal feed manufacturing and meat processing industries. The increase has seen the department work collaboratively with the Department of Primary Industries and Regional Development to support and service the needs of industry in a timely manner.

Our staff have continued to demonstrate resilience, finding systems and process efficiencies in response to demand, with 580 applications determined. This compares with 643 applications received for the 2020–21 financial year.

The average working-day time across all applications was 66 days, a significant achievement compared with the 81 days total average of the previous two financial years when taking into account the increase in applications this financial year. As of 30 June 2021, there were 283 open applications with the department.

One such efficiency within Industry Regulation has been the rollout of improvements to the department's public-facing decision reports which have helped staff reduce assessment workloads while improving the readability and conciseness of the reports. Industry Regulation has recently been allocated additional funding to respond to industry demand and to streamline approval processes in readiness for the Environment Online build. Recruitment processes are almost complete for a range of officer levels. Recruitment is not without challenges in a strong employee market with the mining industry also actively recruiting.



An important part of being an effective regulator is providing guidance and direction in key areas and specific projects. Industry Regulation, in conjunction with other directorates, has achieved this through:

- releasing the *Draft Guideline: Better practice composting*
- releasing the *Draft Guideline: Assessment of environmental noise emissions*
- developing the *Draft Guideline: Better practice solid waste treatment and storage*
- developing the *Draft Guideline: Industry regulation licence reviews* and its companion procedure
- releasing the *Port Hedland Regulatory Strategy*
- participating in the Ports WA working group.

Our waste sector team continued to help implement waste policy outcomes. This year the team performed a critical role in delivering licensing decisions which resolved the final hurdle for the container deposit scheme going live on 1 October 2020, as well as assessing and determining applications relating to the rollout of FOGO in support of the waste strategy.

Waste licensing was also involved in the development of the *Waste not, want not: Valuing waste as a resource discussion paper*. This sought feedback on the proposed legislative framework for waste-derived materials, which aims to provide certainty about when material is no longer waste, meaning licensing under the EP Act would not be required and waste levy requirements would not be triggered where relevant.

Native vegetation regulation

The Native Vegetation Regulation branch received 358 native vegetation clearing permit applications last financial year, about 7 per cent more than for 2019–20. This branch has continued to work on reducing the number of backlog applications and improving response timelines. The average number of working days spent on making a decision has improved – from 71 days in 2019–20 to 68.5 days in 2020–21. The percentage of applications decided within a timeframe of 60 working days also improved, from 50 per cent in 2019–20 to 57 per cent in 2020–21.

As of 30 June 2021, there were 197 open applications with the department. The number of applications has remained steady through the last and previous financial years.

The Native Vegetation Regulation branch, in collaboration with the Better Regulatory Practice branch in the Regulatory Capability division, has made progress in regulatory reform this year. Three new assessment pathways were developed and new decision report templates, designed to communicate the key information supporting decisions more effectively and transparently, were created. One of these was a dedicated pathway for very low-impact clearing applications, developed in anticipation of the new clearing referral provisions that will soon be proclaimed in accordance with the *Environmental Protection Amendment Act 2020* (EP Amendment Act).

Other important ongoing work during the 2020–21 financial year included several projects in preparation for other changes arising from amendments to the EP Act, extensive involvement in the bilateral agreement negotiations with the Australian Government and supporting the Strategic Policy directorate in implementing the recommendations of the WA environmental offsets review.

Native Vegetation Regulation continued to work as part of the interagency Local Government Roadside Clearing Regulation Working Group, developing a strategy for setting out the key objectives, outcomes and priorities of the group. The target outcomes include improved local government understanding of the clearing permit process, improved assessment timeframes for local government clearing permit applications and more strategic planning for local government clearing activities, including delivery of strategically planned environmental offsets in highly cleared landscapes.

Environmental Compliance and Enforcement

As part of the 2020–21 Environmental Compliance program, more than 250 inspections were undertaken in the financial year. From these inspections, 77 sites were found to be non-compliant, with one or more non-compliances identified. A total of 249 non-compliances were identified across the 77 sites.

In partnership with LGAs, 284 inspections were conducted as part of the Light Industry Program.

Investigations were also undertaken in response to pollution and intelligence reports and through information gained through our compliance programs. Investigations resulted in 58 successful convictions, and the issuing of 93 infringements, 54 letters of warning and 14 statutory notices.

Within this, 51 persons/entities were prosecuted for illegal dumping, amounting to $126,321.90 in fines and the payment of $39,996.90 in costs.

Pollution Watch received 3,287 reports and our Pollution Response team responded to 237 incidents including chemical spills, fuel tanker rollovers and industrial, hazardous materials fires.

Growth in controlled waste transport continued to increase during the financial year with more than one million tonnes of controlled waste reported to the department on 97,385 controlled waste tracking forms. A total of 703 new controlled waste licence applications were also assessed.

There were also 133 known or suspected contaminated sites reported to us, and 394 sites classified during the period, with a total of 4,396 sites now classified under the Contaminated Sites Act.

Technical improvements

Satellite technology is improving the way we regulate, and we are now able to access higher-resolution imagery more frequently.

This year we entered into a new contract with Planet Labs, a company that offers the highest coverage capacity of any commercial satellite imagery provider. This increased our capacity to be more effective in our desktop compliance monitoring activities, including surveillance.

2020–21 Environment Compliance Program

250+
inspections

249
compliance issues

284
Light Industry Program inspections

Pollution and intelligence reports

58
successful convictions

93
infringements issued

54
letters of warning issued

51
prosecutions for illegal dumping

3,287
reports to Pollution Watch

237
incidents Pollution Response responded to

Outcome three

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

Alkimos in the Northern corridor

Service five: Environmental and water policy

Environmental Protection Act amendments

The EP Act is WA's primary environmental protection legislation. It regulates emissions and discharges to the environment, and the clearing of native vegetation, and provides the legal framework for environmental impact assessments to be undertaken by the EPA.

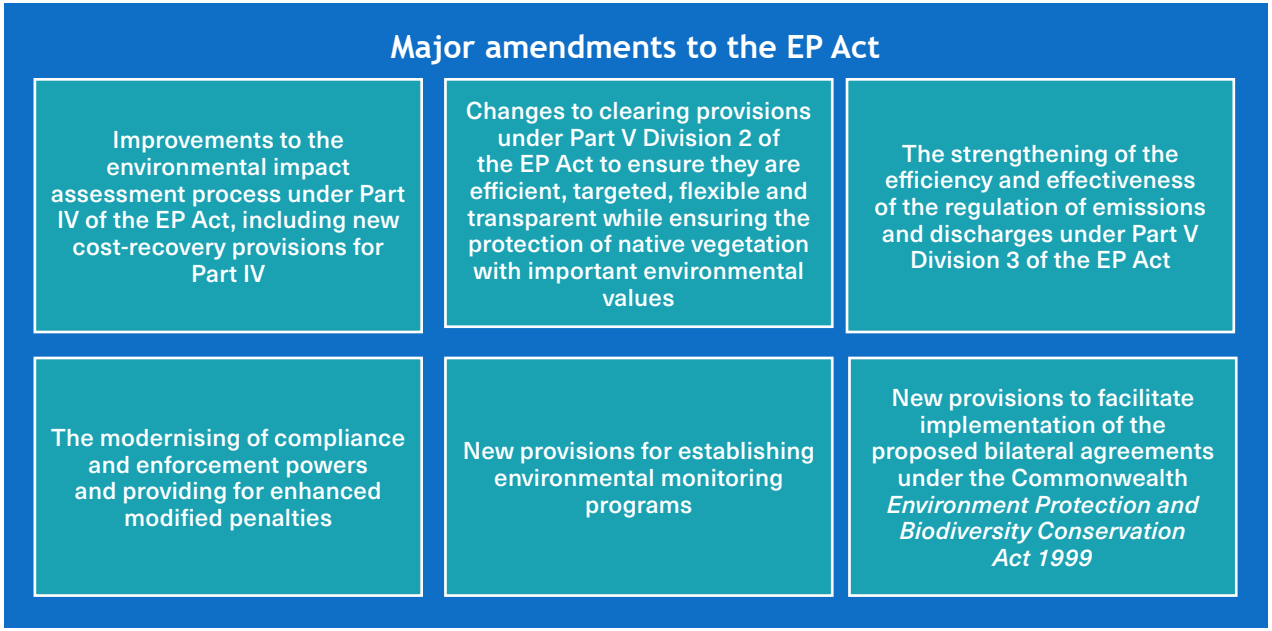
The EP Amendment Act received Royal Assent on 19 November 2020. These amendments represent the most significant reform of WA's environmental legislation in more than 30 years.

The EP Amendment Act introduces a raft of amendments to modernise and streamline regulatory processes under the EP Act, while ensuring environmental protection standards are maintained.

Implementation of the EP Amendment Act is being undertaken in a staged approach working with industry, non-government organisations and the community. This process includes the development of regulations, policies and processes to support the amendments.

The first stage of implementing the EP Amendment Act occurred in February 2021. These amendments included important administrative improvements, stronger investigative powers for inspectors and new head powers to develop key regulations.

The department is progressing work to implement the second and third proclamation stages, which are anticipated in late 2021 and the end of 2022 respectively.



Western Australian Climate Policy

In November 2020, the State Government released the *Western Australian Climate Policy*, outlining actions to create a low-carbon future and create jobs in clean industries to support WA's economic recovery. Development and implementation of the policy is being led by our department.

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.

The department will coordinate key whole-of-government actions, including commitments for public sector agencies to transition to net zero emissions and the development of sectoral emissions reduction strategies and a Climate Resilience Strategy.

The department will deliver the $3.1 million Climate Science Initiative to develop improved climate change projections and will collaborate with Treasury to deliver a Climate Risk Framework aimed at identifying and managing climate impacts to government assets and operations.

64 actions in WA Climate Policy

Net zero emissions by 2050

In April 2021, the State Government launched the department-led Regional Climate Alliance program, a $500,000 investment to support collaboration between local governments to address regional climate change issues. This funding will enable the establishment of two alliances and will facilitate on-the-ground projects and resources to support coordination. The program is a collaboration between the department, DLSCI and WALGA.

Release of the policy also coincided with the launch of the $21 million Electric Vehicle Strategy, a new plan to support improved uptake of electric vehicles and facilitate a low-emissions transport sector. The department chairs the Western Australian Electric Vehicles Working Group which is responsible for coordinating implementation of the strategy.

Clean Energy Future Fund

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 cost-effective reduction in emissions, and which could lead to the broader adoption of innovative clean energy technologies.

Merredin Collgar Wind Farm (© Tourism WA)

In January 2021, two Goldfields-based projects were offered grants worth more than $2.6 million in the first round of the fund.

- Nomadic Energy received $1 million to install 5 megawatts (MW) of modular, re-deployable solar panels at Saracen's Carosue Dam gold mine. The flexibility to redeploy the solar panels removes a key barrier to using green energy at mine sites, where a mine may cease operating before the cost of the solar panels has been recovered.

The projects will create up to 400 jobs and generate 77,000 megawatt hours of electricity each year – enough to power 15,000 houses and save 53,000 tonnes of carbon emissions, which is equal to taking 17,000 cars off the road.

- ResourcesWA received $1.6 million to install 30 MW of solar power at the Homestead mine site in the Goldfields, supplying power to the Paddington Mill and Mungari Mill sites and batteries to reduce the impact of outages and support Western Power's local substation.

The projects will create up to 400 jobs and generate 77,000 megawatt hours (MWh) of electricity each year – enough to power 15,000 houses and save 53,000 tonnes of carbon emissions, which is equal to taking 17,000 cars off the road.

The Clean Energy Future Fund is an important part of the State Government's commitment to achieving net zero greenhouse gas emissions by 2050 and supporting our state's COVID-19 economic recovery plan.

Native vegetation policy

The department has been leading native vegetation reform, including undertaking public consultation on the *Native Vegetation in Western Australia* issues paper which proposed initiatives to improve native vegetation protection and management.

A draft state native vegetation policy has been prepared, taking into account submissions on the issues paper and extensive engagement across state agencies. The draft was planned to be released for public consultation in 2020 but this was delayed because of impacts from COVID-19.

This will be the first native vegetation policy for WA. It will promote a whole-of-government approach to protecting and managing the state's valuable native vegetation by improving coordination across all relevant State Government functions.

The draft policy is now planned to be released for public consultation in 2021, so stakeholders are given an opportunity to provide input on how our native vegetation is protected and managed.

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 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 introduced continuous real-time water monitoring in

the Cockburn Sound marine area in November 2020. Eight real-time monitors complement an established monthly water sampling program which includes 14 additional sites.

The monitoring network will better enable the department to detect and understand environmental changes associated with algal blooms or pollution events which may result in fish kills. The baseline data from the network will inform the planning, decision-making and implementation of Westport – the State Government initiative to identify the necessary infrastructure for Perth's future freight needs.

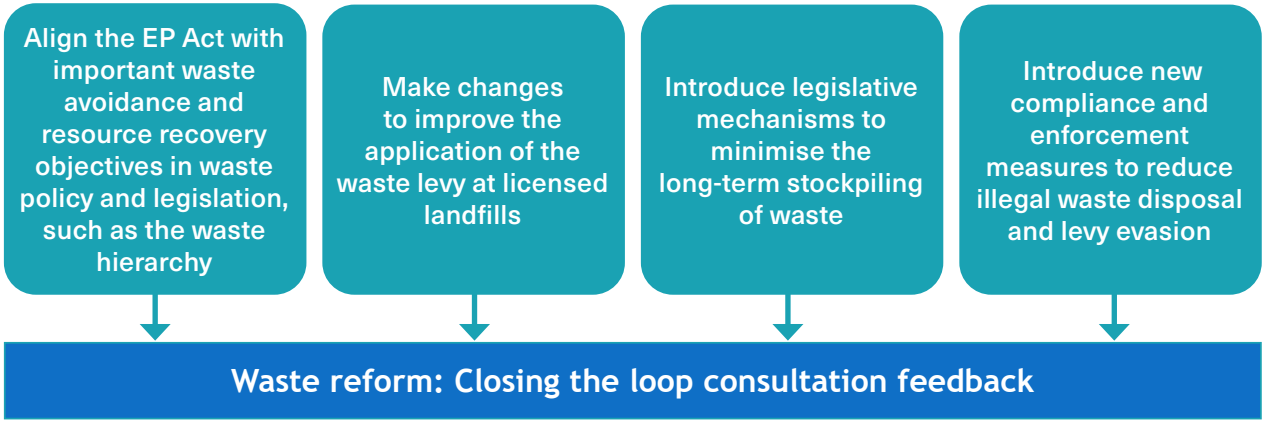
The Cockburn Sound Management Council met four times during the financial year.

Waste reform

The waste strategy sets clear objectives and performance targets for WA to improve waste management. This includes the goal to increase material recovery by 75 per cent by 2030.

To implement the waste strategy and deliver targets, we need the right legislative framework and levers to support the waste industry, local government and the community.

The State Government, through the department, is progressing a suite of legislative reform projects. Over the past year, four key consultation processes have been undertaken.



The *Closing the loop* consultation paper sought feedback on proposals for waste reform including:

- aligning the EP Act with important waste avoidance and resource recovery objectives in waste policy and legislation, such as the waste hierarchy
- making changes to improve the application of the waste levy at licensed landfills
- introducing legislative mechanisms to minimise the long-term stockpiling of waste
- introducing new compliance and enforcement measures to reduce illegal waste disposal and levy evasion.

Following a five-month public consultation period, extended because of COVID-19, 40 submissions were received from waste industry members and the community. The department is now preparing a Decision Regulatory Impact Statement which will outline the final legislative proposals to be implemented.

In September 2020, the State Government released the waste reform consultation paper *Waste not want not: Valuing waste as a resource – Proposed legislative framework for waste-derived materials* for a 12-week public consultation period. The paper outlined the proposed framework for waste-derived materials and the legislative amendments required for implementation. The legislative amendments will provide certainty about when materials derived from waste are no longer considered waste, meaning that licensing under the EP Act would not be required and waste levy requirements would not be triggered where relevant.

The department received 44 submissions on the paper and a Consultation summary report was published in July 2021.

The *Review of the Waste Levy consultation paper* sought input to review the scope and application of the waste levy to ensure that it meets the objectives of the waste strategy, and to establish a schedule of future levy rates.

The consultation paper was also released for five months in 2020 because of COVID-19, with 41 submissions received. The findings of the review have been prepared for consideration by the State Government.

Also in September 2020, the department published a discussion paper seeking public feedback on the second statutory review of the *Waste Avoidance and Resource Recovery Act 2007*. 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. The department has reviewed the 17 submissions received and is preparing a statutory report for State Government consideration.

These consultations have provided important feedback to improve the waste legislative framework in WA, which will support a shift to a sustainable low-waste circular economy. The department will continue its work on these important waste legislative reform projects during 2021–22.

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 which aims to ensure clean air is achieved and maintained throughout the Perth metropolitan region to 2030 and beyond. The committee met twice between July 2020 and June 2021.

Murujuga Rock Art Strategy

The State Government is working in partnership with the Murujuga Aboriginal Corporation (MAC) to protect the ancient rock art of Murujuga, on the Dampier Archipelago and Burrup Peninsula.

Our work with MAC is another way in which the department is using its specialist skills to work with traditional owners and custodians to implement the *Murujuga Rock Art Strategy* and protect these culturally and spiritually important rock carvings, or petroglyphs.

This partnership reflects a shared commitment to a constructive long-term relationship to support the implementation of the strategy and includes funding to support MAC in its long-term endeavour to manage Murujuga.

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

Puliyapang Pty Ltd, a joint venture between Tocomwall and Calibre Ventures Pty Ltd, was engaged in February 2020 to implement a rock art monitoring program on Murujuga. The Puliyapang Pty Ltd contract was terminated on 30 April 2021 because of a breach of conditions.

Calibre Professional Services One Pty Ltd was appointed in June 2021 to continue the work previously performed through the Puliyapang Pty Ltd joint venture. In partnership with subject matter experts from Curtin University, Art Care and Chem Centre, it is leading the development of the monitoring program, which will help determine if there are changes to the rock art over time, and what is causing the changes. This will help ensure the protection of the rock art into the future.

The monitoring program is underpinned by an independent peer review process to provide confidence in the scientific rigour and design of the monitoring program. Peer reviewers with national and international expertise in environmental quality management, statistical analysis, geochemistry, air quality and rock art monitoring and management are reviewing key aspects of the program.

Murujuga is undergoing a World Heritage listing process as part of the State Government's commitment to have the area's archaeological, cultural and spiritual values internationally recognised.

Our work helps to preserve those values at a technical level, as well as support co-existence between Aboriginal culture and heritage values and industry on Murujuga. The Murujuga Rock Art monitoring program supports the World Heritage nomination process and will inform future management of the rock art.

The monitoring program will be guided by the cultural law, knowledge and practices of the Circle of Elders, traditional owners and custodians of Murujuga.

The monitoring program will be guided by the cultural law, knowledge and practices of the Circle of Elders, traditional owners and custodians of Murujuga. Murujuga rangers will be involved in all aspects of the monitoring program and trained by leading experts to monitor the rock art in the field.

Murujuga hosts multibillion-dollar industries which significantly contribute to the local, state and national economy, and provide employment in the area. Industry on the Burrup Peninsula includes Rio Tinto's Dampier Port operations, the North West Shelf Karratha gas plant, Woodside's Pluto liquefied natural gas (LNG) plant and Yara Pilbara's liquid ammonia fertiliser plant and technical ammonium nitrate production facility.

Further expansion and future developments are proposed. Some of these are being assessed under the Commonwealth *Environment Protection and Biodiversity Act 1999* (EPBC Act) and the EP Act.

The State Government considers that the unique Aboriginal cultural and heritage values of Murujuga can continue to coexist with well-regulated industry and new economic opportunities which deliver benefits to the local community.

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 the waste strategy was launched. Its accompanying action plan is reviewed annually.

The waste strategy and its action plan provide the State Government, Waste Authority, 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 is working with the Waste Authority and the Minister for Environment to implement the waste strategy and remains focused on its three key objectives: to avoid waste, recover more value and resources from waste, and protect the environment and human health from the impacts of waste.

In 2020-21, the department and the Waste Authority continued to work collaboratively

- The WasteSorted 'Be a GREAT sort' behaviour change campaign was launched in August 2020, encouraging people to sort their waste correctly and reduce the volume of waste going to landfill
- Funding and guidance supported the delivery of consistent three-bin kerbside collection systems which include FOGO
- The Roads to Reuse program supported the increased use of recycled C&D materials in road base and other projects
- There was support and assessment of local government waste plans
- A waste infrastructure audit and needs analysis informed the basis of the state waste infrastructure plan
- Waste Data Online was developed and implemented, enabling reporting under regulation 18C of the Waste Avoidance and Resource Recovery Regulations 2008

Waste projects

Behaviour change

The WasteSorted behaviour change campaign was launched in August 2020 to encourage people to more effectively sort their waste to reduce contamination and therefore reduce the volume of waste sent to landfill in WA.

The 'Be a GREAT sort' campaign promotes five priority behaviours:

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

The campaign is promoted on regional TV, metropolitan radio, video advertising (YouTube and social media) and in printed materials.

The WasteSorted communications toolkit was revised to ensure consistency with the behaviour change campaign and to promote waste sorting in households. The toolkit and the 'Be a GREAT sort' campaign materials are also available to stakeholders to amplify key messages. Local governments using the campaign materials over the past year include the cities of Albany, Armadale, Swan, Kalamunda and Wanneroo, the shires of Augusta-Margaret River, East Pilbara and Esperance, the Town of Bassendean, the Bunbury Harvey Regional Council and the Eastern, Western and Southern Metropolitan regional councils.

We are continuing to ensure all programs delivered or funded by the Waste Authority are aligned with the behaviour change campaign, with work underway to transition the branding of the current Waste Wise Schools program to WasteSorted schools by early 2022.

'Be a GREAT sort' campaign

Greenbushes Primary School children with waste-free lunches

Waste Wise Schools highlights 2020–21

- 18 schools recognised for 10 consecutive years of WWS accreditation from a total of 254 accredited schools
- $132,025 awarded in grants to 45 accredited schools for projects such as paper and plastics recycling systems, composting and worm farming, waste wise vegetable gardens and reuse collection infrastructure
- Waste-management curriculum materials developed and provided to schools to support teachers in the delivery of waste wise education
- Educational waste audits run at 70 schools
- A school waste system assessment tool developed
- 18 professional learning workshops and webinars delivered for metropolitan and regional teachers
- An online learning module implemented to facilitate professional learning in regional areas

Waste Wise Schools

The Waste Wise Schools (WWS) program 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.

Hazardous Household 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. Temporary collection days were also run by various local governments throughout the year to provide facilities in areas with no nearby permanent collection site.

This year, two new facilities have come online with:

- funding of $50,000 allocated to construct a new HHW collection site in the City of Karratha, which opened in March 2021
- a further $50,000 allocated to provide a new HHW collection site in the City of Bayswater, with development underway.

Funding will be used to purchase equipment to enable staff to accept, handle and store dropped-off HHW materials safely.

In 2020–21, more than 520 tonnes of materials (including acids, batteries, flammable liquids, paint and cleaning products) were collected for safe recovery or disposal.

Better Bins and Better Bins Plus: Go FOGO

Work continued to support the original Better Bins program which helps local governments move towards three-bin collections (general waste, co-mingled recycling and mostly garden organics, with some instances of food organics being included). This helps residents improve waste separation at the source, thereby increasing recovery rates.

Better Bins opened in 2014 as a pilot and ran as a fully operational program from 2016 to 30 June 2019. During this time, the State Government provided more than $14.6 million to 28 metropolitan local governments and regional councils. This helped local governments to provide better practice kerbside services to more than 550,000 households in WA.

Better Bins paved the way for the Better Bins Plus: Go FOGO program, which started in 2020 and is underpinned by the Waste Authority's approach to residential organics recycling of FOGO. The *Better practice FOGO kerbside collection guidelines* describe better practice three-bin kerbside collection services, including mobile kerbside bins, kitchen caddies and compostable liners, complementary educational measures, and action to support markets for FOGO-derived materials.

The Better Bins Plus: Go FOGO program has committed $4.5 million in 2020–21 to further support local governments to make the transition to the better-practice three-bin FOGO service consisting of a red-lidded bin for general waste, a yellow-lidded bin for recycling, and a lime green-lidded bin for FOGO.

In 2020–21, a total of 16 local governments 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 approaching 300,000 households.

Go FOGO program in 2020–21

16
local governments signed up

almost
300,000
householdes covered

Roads to Reuse

Environment Minister Amber-Jade Sanderson, second right, at the Princess Margaret Hospital demolition site

The RtR program encourages State Government agencies, local governments, regional councils and the private sector to use recycled C&D products in civil applications such as road construction.

C&D waste makes up about half of the state's waste stream and represents about half of material recovered from recycling. Work continues to increase the recovery of C&D waste to meet the state's target to recover 75 per cent of materials by 2030.

Funding for RtR is provided from the Waste Avoidance and Resource Recovery Account and is made available for C&D recyclers through the RtR Product Testing Scheme.

Following the success of the RtR pilot project, with MRWA utilising more than 30,000 tonnes of recycled C&D products in the Kwinana Freeway Widening and Murdoch Drive Connection project, the partnership has continued, with MRWA using close to 30,000 tonnes more in WA roads in 2020–21.

RtR has also provided other organisations with opportunities to collaborate and use recycled material. Sustainability was at the forefront of the DevelopmentWA Subiaco Oval deconstruction, where materials were broken into large segments and transported to recycling facilities. This ensured maximum recycling opportunities and minimum impact on the environment and community. The material was recycled and used by MRWA in road construction projects.

Similar methods are being applied to the deconstruction of Princess Margaret Hospital in 2021, which has a target to recycle 96 per cent of its demolition materials. The intention is for concrete from the site to be processed into RtR material for use in road construction.

The department continues to work closely with MRWA, DevelopmentWA, InfrastructureWA and the Department of Finance on more sustainable procurement decisions to encourage greater use of recycled materials.

Work continues to increase the recovery of C&D waste to meet the state's target to recover 75 per cent of materials by 2030.

Waste plans

Local government waste plans bring together the many different aspects of local government waste management and provide local governments with a mechanism to align their waste services with the waste strategy.

In 2019, 43 local governments in Perth, Peel, and regional cities and centres were notified they were required to prepare waste plans to demonstrate how the waste services they provide will be managed to achieve consistency with the waste strategy. The cities of Albany, Bunbury and Busselton, and the Kalgoorlie-Boulder and Greater Geraldton regional centres were required to provide these to the department for assessment and endorsement by 31 March 2021 under section 40(2) of the *Waste Avoidance and Resource Recovery Act 2007*.

As of 30 June 2021, 41 waste plans were submitted to the department for assessment, and two granted extensions for council approval. A total of 34 waste plans have been endorsed by the Director General, one waste plan was not endorsed, and the remainder are still under assessment.

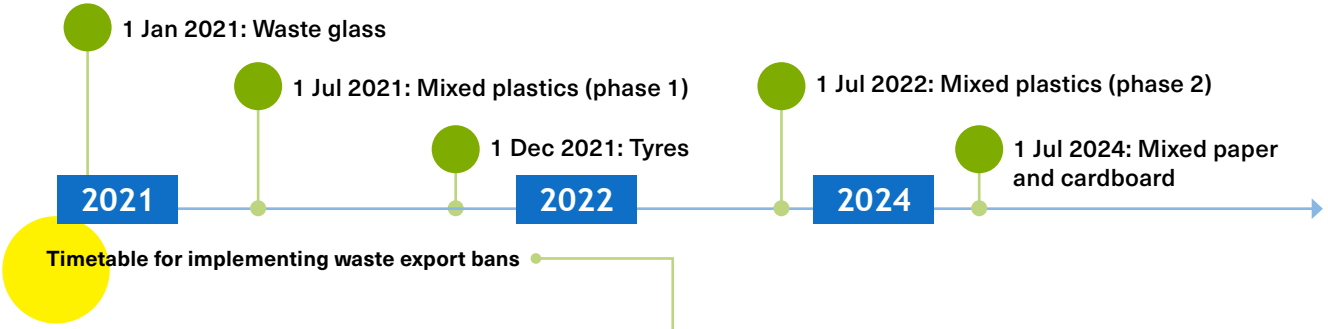
The waste plans identify a range of actions local governments are implementing which are consistent with and contribute towards the achievement of the waste strategy targets and objectives. These include changes and improvements to waste services and infrastructure, the development of policies and procedures, data enhancements and behaviour change programs.

Local governments 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.

WasteSorted grant funding

The 2020–21 WasteSorted Grants – Infrastructure and Community Education program was delivered on behalf of the Waste Authority. This replaced the Community and Industry Engagement program and supports investment in local recycling infrastructure with grants of up to $250,000, or educational programs with grants of up to $50,000.

In 2020–21, 13 WA businesses, not-for-profits, local governments and community groups received more than $1.5 million in grants. This included funding for six infrastructure projects totalling $1.24 million and eight community education projects receiving a total of more than $300,000.



The COVID-19 pandemic impacted delivery of some projects and saw the department working closely with recipients to ensure valuable outcomes.

Since 2017, the department has administered waste grant funding programs which have provided $6 million to WA projects to improve the recovery and reuse of focus materials including plastics, C&D waste, textiles and FOGO.

E-waste

A range of recycling services are provided across WA for electronic wastes (or 'e-waste') such as televisions, computers, mobile phones and batteries. However, more needs to be done to address this growing waste stream.

The department worked collaboratively with the Department of Jobs, Tourism, Science and Innovation to develop and run the 2020–21 WasteSorted E-waste Grants program. In January 2021, the State Government announced funding of nine e-waste projects totalling $1 million though the New Industries Fund: WasteSorted e-waste grants for e-waste projects to improve innovation in processes and e-waste collection.

The State Government has committed to ban e-waste disposal to landfill by 2024, and to provide $14 million to implement this ban, including supporting local recycling facility development. A material flow analysis was started to document the types, volumes and flows of e-waste generated in WA to further inform policy options. This work will be a key input into the State Government's e-waste commitments.

Australian Government waste export ban and recycling modernisation

The Australian Government's *Recycling and Waste Reduction Act 2020* regulates the export of certain types of processed waste while building Australia's capacity to generate high-value recycled commodities and associated demand. The timetable for implementing waste export bans began with waste glass from 1 January 2021 and continues with mixed plastics (phase 1) from 1 July 2021;

mixed plastics (phase 2) from 1 July 2022; tyres from 1 December 2021; and mixed paper and cardboard from 1 July 2024.

To support the development of local markets for materials impacted by the export ban, during the year the department ran two expression-of-interest processes for new recycling infrastructure: one for mixed paper and cardboard, and another covering tyres, plastics and regional infrastructure.

In February 2021, the State and Australian Governments announced $70 million in joint funding to drive a total of $174 million recycling investment in WA. $20 million from the national Recycling Modernisation Fund and $15 million from the State Government will leverage investments across eight new projects processing about 140,000 tonnes of WA plastic and tyre waste every year.

A further $15 million from the national Recycling Modernisation Fund and $15 million from the State Government will go towards a new $86.6 million Suez Recycling and Recovery/ Auswaste Recycling pulp mill capable of processing 100,000 tonnes of waste paper and cardboard a year, to be operational before the export ban on mixed paper comes into effect.

The department will continue to work with the Australian Government and other states and territories to ensure WA's e-waste commitments complement work being undertaken at the national level.

Waste Reform Advisory Group

Following its establishment in March 2019, the Waste Reform Advisory Group has informed the development of waste and recycling policy and legislation in WA in support of the waste strategy and state waste targets.

The group includes representatives from the Waste Authority, local government, peak industry and resource bodies, community groups, non-government organisations and material recovery operators.

Throughout 2020–21, the group continued to provide input on policy and legislation focused on supporting the best waste outcomes for the community, industry and the state.

Container deposit scheme

Containers for Change started on 1 October 2020, paving the way for reduced litter, improved recycling rates and the creation of new businesses and employment opportunities across the state.

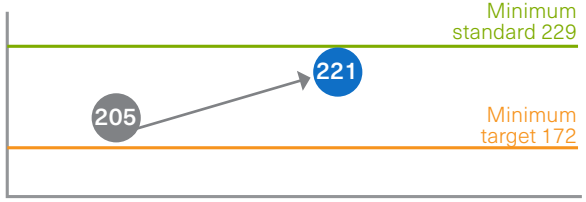
Containers for Change is run by WA Return Recycle Renew Ltd (WARRRL), a not-for-profit company responsible for establishing and managing the day-to-day operation of the scheme's collection network. The department provides regulatory oversight of the scheme.

Premier Mark McGowan and former Environment Minister Stephen Dawson use a reverse vending machine

More than 535 million containers have been returned through Containers for Change, and more than $1.9 million donated to charities and community groups.

The return rate for the period January to March 2021 was 59 per cent, according to the latest available figure. This compares with about 34 per cent of eligible beverage containers collected and recycled before the start of Containers for Change.

Containers for Change opened with 205 refund points, exceeding the minimum target (172) for refund points at the scheme's start. This had increased to 221 refund points by June 2021, progressing towards the 229 required under the department's Minimum Network Standards.



Increased numbers of refund points

More than 730 jobs have been created by Containers for Change, with about 40 per cent of these going to people with disability, the long-term unemployed or Aboriginal Australians.

In 2020, the Minister for Environment approved 139 applications for community grants totalling more than $210,000. These grants were used by a range of community groups to fund container donation and refund points.

40%

730+
jobs have been created by Containers for Change

Some of the community feedbacks on CDS

The program has been a win for both the school and the environment. Students and the broader school community are engaging in the scheme and raising much needed funds for our P&C and of course these items are being kept from general waste and our environment. Very successful and beneficial program. (Spencer Park Primary School)

We love it – we use the trailer we purchased every week and convert our used containers into much needed funds. It is a great fundraiser for Broome Surf Life Saving Club and it is wonderful not adding to the landfill. (Broome Surf Life Saving Club)

Operating a Refund Point at Wyalkatchem has been incredibly rewarding from a financial point of view, but more importantly, it has been rewarding with regard to the wellbeing and social interaction of the Men's Shed Members, both with each other and with the public. So far, we have received well over 550,000 containers. (Wyalkatchem Men's Shed)

Keep Australia Beautiful Council

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

KABC's *Litter Prevention Strategy for Western Australia 2020–2025* was released on 21 August 2020 by the then Minister for Environment. This builds on the success of the previous strategy, which resulted in a 41 per cent reduction in litter since 2012–13, exceeding its target of a 25 per cent reduction.

A range of education, awareness and engagement programs continued such as the Adopt-a-Spot, Tidy Towns and Clean Schools programs, the Community Litter Grants and the Litter Reporting Scheme.

KABC's iconic Tidy Towns Sustainable Communities awards continued to draw a high number of strong applications. The well-attended awards ceremony was opened by the Governor of Western Australia, Hon Kim Beazley, KABC's patron.

The Clean Schools program engages large numbers of primary and secondary school students across the state. This year the Australian Microplastics Assessment Project (AUSMAP) program was introduced to students. Schools showed a high degree of interest in developing their students as citizen scientists to examine the level of microplastics in the marine environment.

KABC issued 1,104 infringements through the Litter Report Scheme, with a conversion rate of 95 per cent from reports of littering from vehicles.

Other significant projects started during the year included the development of a new litter audit methodology in collaboration with all states and territories and the development of a regional roadside litter campaign in partnership with and funded by MRWA.

Outcome five

Quality advice to the EPA and Minister for Environment on significant proposals, schemes and environmental issues

Service seven: Environmental impact assessment services to the EPA

This year the EPA marks 50 years of protecting the WA environment, with Professor Matthew Tonts starting as EPA Chair in January 2021.

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

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

Development proposals

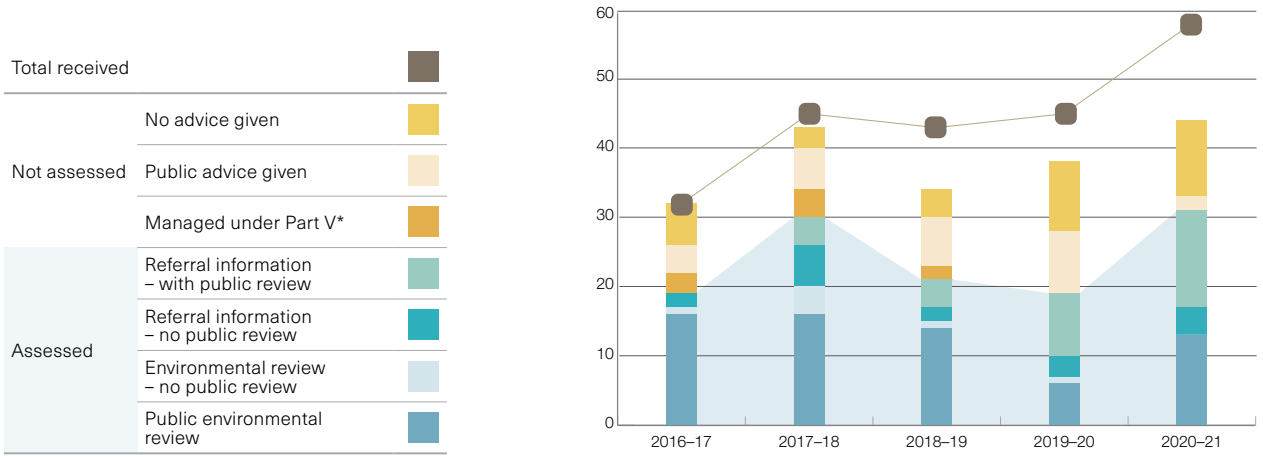
During 2020–21, 58 development proposals were referred to the EPA. This is the highest number of referrals received in the past six years (see graph on right).

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 determined that 13 referred proposals did not require further assessment by the Authority, and 31 referred proposals required formal assessment. This is a substantial increase in the number of proposals to be assessed from the previous two years (see graph below).

Planning schemes

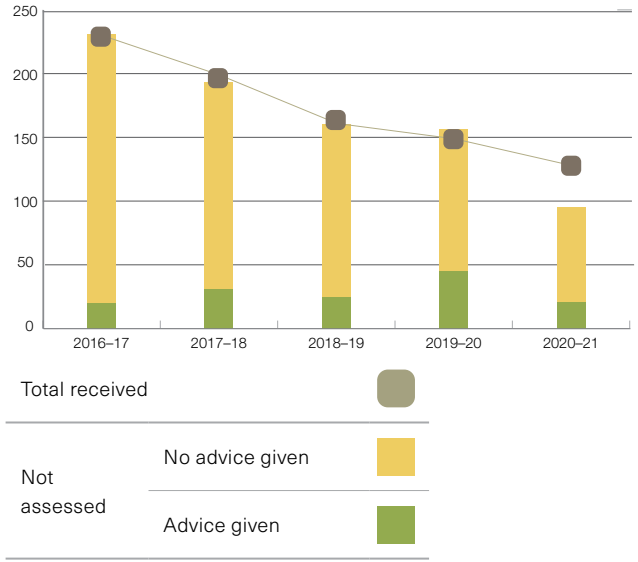
During 2020–21, department staff dealt with 128 schemes which were referred to the EPA. The total number of schemes referred to the EPA continues to decline (see graph on the next page) because of planning reforms introduced in 2014–15.



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

Total development proposals referred to the EPA and decisions

The EPA determined three referred schemes required formal assessment and 98 did not require further assessment by the Authority. Of the 98 that did not require further assessment, the EPA provided advice and recommendations on environmental factors for 23 referred schemes.



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

Completed assessments

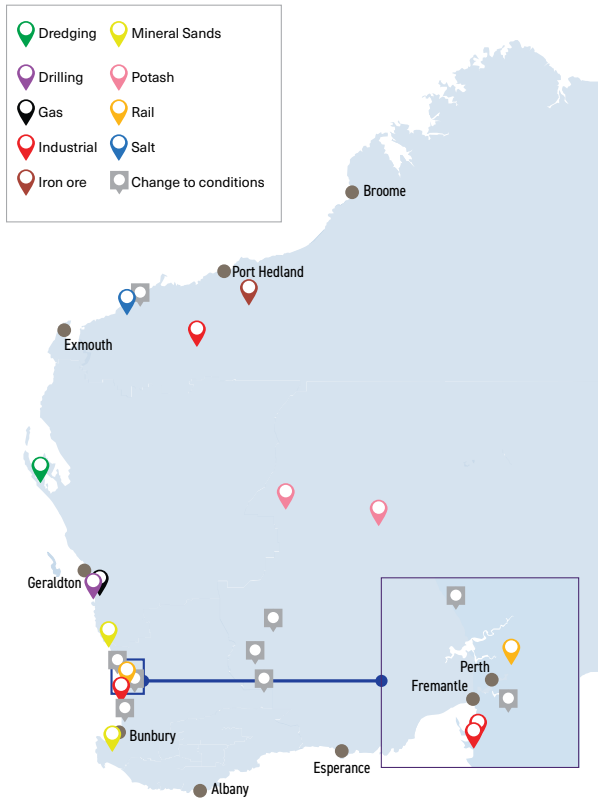
In 2020–21, the department supported the EPA to complete 21 assessment reports to the Minister for Environment, which included 13 reports on the assessment of significant proposals and eight reports on changes to conditions of existing projects (see the table).

The map shows the location and type of all the proposals for which assessment reports were completed in 2020–21.

These included the first assessment under the EPA's new greenhouse gas emissions guidance. The EPA recommended implementation of Pilbara Energy Generation's 165 MW power station, subject to conditions supporting the proponent's commitment to net zero greenhouse gas emissions by 2040. The Minister for Environment issued approval of the power station in February 2021.

The EPA also recommended implementation of stage 2 of the Waitsia Gas Project, which was the second assessment completed under the greenhouse gas emissions guidance.

Location and type of all proposals for which assessment reports were completed in 2020–21



Assessment reports completed

Type of assessment	2017–18	2018–19	2019–20	2020–21
Formal assessments				
Public environmental review	5	10	7	5
Environmental review (no public review)	-	2	1	1
Assessment on referral information (no public review)	5	2	3	5
Assessment on referral information (with public review)	1	1	5	2
Strategic proposal	1	-	-	-
Subtotal	12	15	16	13
Changes to conditions				
s. 46 inquiry	7	9	24	8
Total	19	24	40	**21**

In 2020–21, the EPA also completed its assessment of the northern and central sections of the Bunbury Outer Ring Road. The EPA's recommended implementation of this 19 km freeway came with a significant offsets strategy to counterbalance impacts to the western ringtail possum, black cockatoo and threatened ecological communities.

METRONET continues to be one of the State Government's most significant and ambitious infrastructure projects. This year, department staff undertook post-assessment work on METRONET proposals, including the Thornlie-Cockburn Link and Yanchep Rail Extension.

The EPA also completed its assessment of the Malaga to Ellenbrook Rail Line in 2020–21 and is currently assessing the Byford Rail Extension.

Other assessment work

The statement issued by the Minister for Environment may include conditions for the preparation and approval of environmental management plans. During 2020–21, the department completed the assessment of 96 environmental management plans, with 104 still under assessment.

Any changes to a proposal 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 2020–21, the department provided support to the EPA Chair to complete 35 changes to existing proposals under section 45C of the EP Act, with 36 proposed changes still under assessment.

The overall existing workload for development proposals is 272. This is an increase from last year and includes assessment of environmental management plans; requested changes to conditions and proposals in Ministerial Statements; referrals yet to be determined; and 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.

Environmental management plans in 2020–21

96
completed the assessment

104
still under assessment

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.

In August 2020, the then Minister for Environment requested the EPA provide advice on the potential cumulative impacts of proposed activities and developments on the values of Exmouth Gulf. The department helped the EPA with extensive consultation, including:

- a community meeting in Exmouth to identify the opportunities for the future of the environment, people and places in and around the gulf
- a three-week public consultation on current and proposed pressures facing the gulf and how they impact the area's environment, and social and cultural values.

This strategic advice will be a significant tool for future decision-making in the region. It will also improve how the EPA addresses cumulative impacts in environmental impact assessment.

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 2020–21.

This year, the department also helped the EPA in its extensive consultation program on the changes to the environmental impact assessment procedures suite. The revised procedures are required to implement the amendments to the EP Act, which are expected to come into force later in 2021.

This included a five-week public consultation, targeted industry briefings and direct engagement with the EPA's Stakeholder Reference Group.

This financial year the EPA also updated its *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment*. The updated guidance replaces two former guidance documents: *Technical Guidance – Sampling methods for terrestrial vertebrate fauna* and *Technical Guidance – Terrestrial fauna surveys*.

In addition, the department continued to facilitate opportunities for public involvement in the development of guidelines and advice by publishing the following on the EPA's online consultation hub:

- draft *Technical Guidance – Subterranean fauna surveys for environmental impact assessment*
- draft revised environmental impact assessment procedures required to implement amendments to the EP Act
- strategic advice for the Exmouth Gulf fact sheet.

Peel Inlet from the Murray Serpentine Delta

Service nine: Compliance monitoring services to the Minister for Environment

Part IV of the EP Act

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.

As outlined in Service four: environmental regulation – 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 the 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 2020–21 program, we continued to monitor significant proposals authorised under Ministerial Statements, completing 59 audits including iron ore mining activities, oil and gas facilities and large infrastructure projects. A total of 216 compliance assessment reports were reviewed and 33 notices of non-compliance were reported.

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