Western Australian
Auditor General's Report

Western Australian Waste Strategy: Rethinking Waste

Report 23: October 2016

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WESTERN AUSTRALIAN AUDITOR GENERAL'S REPORT

Western Australian Waste Strategy: Rethinking Waste

Report 23
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THE PRESIDENT
LEGISLATIVE COUNCIL

THE SPEAKER
LEGISLATIVE ASSEMBLY

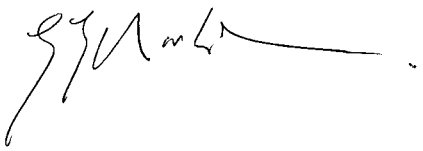
WESTERN AUSTRALIAN WASTE STRATEGY: RETHINKING WASTE

This report has been prepared for submission to Parliament under the provisions of section 25 of the *Auditor General Act 2006*.

Performance audits are an integral part of the overall audit program. They seek to provide Parliament with assessments of the effectiveness and efficiency of public sector programs and activities, and identify opportunities for improved performance.

This audit looked at whether strategies to reduce the State's reliance on landfill for dealing with household, construction, demolition, commercial and industrial waste have been successful. My report finds that the management of waste in Western Australia has improved since implementation of the Waste Strategy in 2012, with increases in resource recovery and reduced reliance on landfill. However, none of the four Waste Strategy targets to divert waste from landfill were met in 2015 and data to inform the progress of waste management is incomplete and unreliable.

I wish to acknowledge the staff at the Department of Environment Regulation and the board of the Waste Authority for their cooperation with this audit. I also thank the various stakeholders for taking the time to help inform this report.



GLEN CLARKE
ACTING AUDITOR GENERAL
19 October 2016

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Auditor General's overview

The traditional linear 'make, use, dispose' economy drives economic growth but also creates waste in vast quantities. Western Australia's (WA) waste production was estimated at over 2.4 tonnes per person in 2014-15. WA is not only a very high producer of waste on a per capita basis, we are also well below the national average when it comes to recycling waste.

Most waste produced in WA ends up in landfill, largely due to the perception that it is a relatively cheap disposal option. However, landfills also produce toxins that can leach into the soil and groundwater, and methane, a greenhouse gas that is 21 times more potent than carbon dioxide. The damage this does to our environment means the real cost of landfill is far more than most of us realise.

Addressing this risk requires us to become better at avoiding waste production. Pay as you go programs, which provide financial incentives to decrease waste are emerging. These incentives will see us starting to treat waste as we do utilities like electricity and water.

WA also needs to become better at recycling waste products. Waste products often contain materials of commercial value that can be reused or processed and sold. A prime example is the use of construction and demolition waste to build roads, car parks and cycle paths.

Substantial markets for recycled waste products exist in many Australian states and overseas. However, in WA we face the challenge of isolation and long transport distances, along with the perception that landfilling is cheap. Growing the WA market will require both government and community support.

This audit showed that waste generation and recycling figures are trending in the right direction. However, they are still well short of the 2020 targets in the WA Government's *Waste Strategy: Creating the Right Environment*.

The Waste Authority and the Department of Environment Regulation have a tough task in changing behaviours and practices. More effective coordination and cooperation will go some of the way to achieving desired outcomes. But what is really required, particularly as our population increases, is commitment by the entire community.

Executive summary

Introduction

This audit assessed whether strategies to reduce the State's reliance on landfill for dealing with household, construction, demolition, commercial and industrial waste have been successful. Landfills are regarded as necessary for dealing with waste. However, they are also known producers of toxins that can leach into the soil and groundwater, and methane, a greenhouse gas that is 21 times more potent than carbon dioxide.

We focused on implementation of the *Western Australian Waste Strategy: Creating the Right Environment* (Waste Strategy), by the Waste Authority, with support from the Department of Environment Regulation (DER). We sought extensive feedback from a range of community, industry and government stakeholders, who are all involved in the day to day recovery and disposal of waste.

Background

Western Australia's (WA) waste production was estimated at 6.2 million tonnes, or 2.4 tonnes per person, in 2014-15.[1] Only 42% was diverted from landfill (waste diversion), largely due to the relatively cheap cost of landfill, which encouraged waste disposal.

Waste can also be a valuable resource when properly managed. But, national reporting in 2010-11 found that WA's diversion rate of 39% was lower than most other states and territories, and much lower than the national rate of 60%.[2]

The combination of a lack of local markets for recycled waste and lengthy transport distances are 2 of the main waste management challenges for WA. Population increases are likely to see waste generation increase unless there is concerted effort by the whole community, including government and industry, to avoid, reduce and recycle waste.

In line with Australia's *National Waste Policy: Less Waste More Resources,*[3] the State Government developed the Waste Strategy, which was released in March 2012 after consultation with industry, local government (LG) and regional councils (RCs).[4] The Waste Strategy's vision is to move to a low-waste society by reducing waste generation, increasing the amount of resources recovered and reducing disposal to landfill for both metropolitan and regional WA.

The Waste Strategy includes targets and is supported by an annual business plan. The business plan sets out a number of projects to be funded that year. Each project should have a business case that details the objectives, agency and stakeholder roles, costs, benefits and risks.

There are a variety of options available to manage waste depending on waste streams and local conditions. Avoiding waste production is the State's preferred method to reduce waste generation, followed by recovery of materials for reuse, reprocessing and recycling. Energy recovery may be suitable for residual waste instead of landfilling, which is the least preferred waste management option.

1 ASK Waste Management (2016). Recycling Activity in Western Australia 2014-15.
2 Commonwealth Department of the Environment (2013). National Waste Reporting 2013.
3 Commonwealth Department of the Environment, Water, Heritage and the Arts (2009). National Waste Policy: Less Waste, More Resources.
4 A regional council is a subsidiary of 2 or more LGs that provide services such as waste and environmental management to its member councils.

Waste is typically managed as 1 of 3 streams:

- municipal solid waste (MSW) – waste from households, public places and public buildings, collected by LGs or their contractors
- construction and demolition (C&D) – material generated from commercial, government or residential building and demolition sites
- commercial and industrial (C&I) – waste originating from commercial and/or industrial activities (e.g. metals, paper, cardboard, plastic, food organics, glass, timber).

The Waste Strategy defines targets for waste diversion for metropolitan and major regional centres and for the 3 waste streams. It also outlines 5 strategic objectives and priorities, focusing effort on: long-term planning, regulatory services, best practice guidelines, economic incentives to support waste diversion and resource recovery, and communication.

Private industry, LGs, and RCs are waste operators and dispose and recover waste materials, but managing waste as a resource and planning for infrastructure requirements is a State responsibility.

Legislation and responsibilities

The *Waste Avoidance and Resource Recovery Act 2007* (WARR Act) is the principal legislation for waste management. The *Environmental Protection Act 1986* (EP Act) is the primary legislation to regulate waste in WA to prevent, control and abate pollution and environmental harm.

The WARR Act, amongst other things, established the Waste Authority, a 5 member statutory authority whose members are appointed by the Governor on the recommendation of the Minister for the Environment (Minister). The Waste Authority's responsibilities include to:

- provide strategic and policy advice to the State Government
- implement policies, plans and programs consistent with the Waste Strategy
- apply funding from the Waste Avoidance and Resource Recovery Account (WARR Account), to strategic initiatives.

Operating in conjunction with the WARR Act is the *Waste Avoidance and Resource Recovery Levy Act 2007* (WARR Levy Act).

Under this Act, a landfill levy was established on waste received at licensed landfill sites within the Perth metropolitan area or metropolitan waste disposed at regional landfills. The levy aims to discourage waste disposal to landfill while also providing funds for use by the Waste Authority to encourage resource recovery and alternative waste treatment options.

The WARR Levy Act requires at least 25% of the levy to be paid into the WARR Account. The other 75% is paid by DER to the State by way of an owner distribution. From 1 July 2008 to 30 June 2016, the WARR Account received $108 million in landfill levy payments, and $9 million in interest and other miscellaneous income, of which $98 million was distributed.[5] A balance of $11 million was transferred from its predecessor, the Waste Management and Recycling Account.

Under the WARR Act, the Minister must provide the Waste Authority with 'services and facilities as are reasonably necessary to enable it to perform its functions'. DER provides the Waste Authority with these services and facilities.

5 Source: Waste Authority annual reports.

DER also administers the EP Act. DER's additional waste-related services include to:

- license 'prescribed premises' that undertake activities listed in Schedule 1 of the Environmental Protection Regulations 1987, such as landfills, to regulate emissions and discharges to the environment
- develop policies and strategies that promote environmental outcomes.

Audit conclusion

The management of waste in Western Australia has improved since implementation of the Waste Strategy in 2012 with increases in resource recovery and reduced reliance on landfill. However, none of the 4 Waste Strategy targets to divert waste from landfill were met in 2015 and data to inform the progress of waste management is incomplete and unreliable.

The failure to achieve 2015 targets is in part caused by delays to long-term state and local infrastructure planning, and also a lack of clarity of DER and Waste Authority respective roles and responsibilities, both between the agencies and amongst stakeholders. The absence of clear roles and responsibilities has affected the cooperation between the agencies and impacted on the planning of projects, the promotion of key messages, the prioritising of effort and the monitoring of outcomes.

The absence of effective cooperation has contributed to delays in funding of approved projects that aim to increase recycling or reduce waste. At 30 June 2016, only 58% of the 2015-16 budgeted WARR Account funds were distributed with unspent funds exceeding $30 million.

The State should be able to monitor progress and the effectiveness of specific waste strategies and funded projects. However, this is not the case. Monitoring of waste generation and recycling at the local, regional and state level, is affected by incomplete and unreliable data and inconsistent planning and progress reporting of projects.

Regulation of waste management facilities can improve. Required inspections of all 3 risk based categories of licensed waste operations range from 47% to 87% of target. Smaller waste operators can avoid regulation, including inspection, by maintaining activities below the threshold that requires licensing.

Key findings

Waste Strategy targets were not met but progress has been made

- The Waste Strategy comprised 4 key targets for diversion of C&I, C&D, metropolitan MSW and major regional centres MSW from landfill by 2015. Some important improvements have occurred but no targets were met:
    - The target for diverting C&I waste from landfill was 55% of 'material presented for collection across the state'. The actual result was 52%. Recovery of C&I for reuse increased from 28% to 52% between 2011 and 2015.
    - C&D is the largest category of waste. Actual diversion in 2015 was 42% compared to the 60% target. Recovery of C&D for reuse rose from 31% to 42% between 2011 and 2015.
    - The metropolitan MSW result was a 40% diversion from landfill compared to the 50% target. Recovery of MSW for reuse was virtually unchanged at 40% in 2015 compared with 39% in 2011.

- The major regional centres MSW result was a 24% diversion[6] compared to the 30% target. Recovery increased from 20% in 2011.

- The State Government targeted improving the low recycling rates of MSW and C&D waste by commencing the $20 million Better Bins Program (BBP) in 2014 and the $10 million Recycled Construction Products Program (RCPP) in 2015. Both programs are in their infancy, but along with a range of other grant schemes, align with Waste Strategy objectives to improve the recovery of MSW and C&D waste and reduce the use of landfill.

The data used for planning and monitoring is incomplete

- Data to inform the progress of waste management at the local, regional and state level, is incomplete and unreliable. Reliable data is needed to understand the WA waste and recycling industry, prioritise annual business plan projects and provide information about the effectiveness of the Waste Strategy.
    - Reporting on recycling activity by licensed waste operators is voluntary and as a result, only 62% return the Recycling Activity Review data that is used to report progress towards meeting Waste Strategy targets.
    - Waste measurement methods vary in accuracy. For instance:
        - from use of weighbridges to visual estimates
        - the use of estimates when apportioning waste between different waste streams such as C&I or C&D.
    - Data on waste volumes or tonnages provided by waste operators is not verified or audited. Although it is an offence under the EP Act to give false or misleading information, waste operators have incentives to skew results to ensure they remain within their licensed volumes for processing or receiving waste. Without any verification of this information, DER is unable to determine whether operators have accurately reported their waste volumes.
    - The production of waste in regional areas between 2010-11 and 2012-13 was estimated to account for 35% of the State's total. However, regional waste production to report against Waste Strategy targets is based on an estimate using metropolitan data, thereby making it even less assured than for the metropolitan area.
    - Unreliable data means that DER does not know if the decrease in landfill activity is a direct result of increases in resource recovery, or other factors, such as stockpiling or illegal dumping of waste.

- The Waste Authority requested compulsory supply of data on waste disposal and recycling by all licensed waste facilities in 2013. DER is currently developing amendments to the Waste Avoidance and Resource Recovery Regulations 2008 to include compulsory recordkeeping and annual reporting of waste and recycling data by LGs, waste recyclers and licensees of major regional landfills. This should help to increase the reliability of waste data.

6 Note Office of the Auditor General for Western Australia (OAG) calculation based on Waste Strategy definition of major regional centres.

Agency roles are unclear leading to poor planning and reporting and delays in funding

- A lack of good coordination and cooperation between the Waste Authority and DER is affecting the planning and implementation of strategies and achievement of outcomes. In our view, this is largely caused by uncertainty or a difference of view about the respective roles and responsibilities of both agencies.
    - The 5 member Waste Authority board effectively has no decision-making powers, as these rest with the Minister. It also has no staff, instead relying on DER to provide services and facilities to fulfil its role. DER has assigned about 27 staff from its Waste Authority Services (WAS) unit to support the Waste Authority. However, these staff are also subject to direction and assignment from DER, which has a different role in waste management. The staff are therefore subject to the competing priorities of the 2 agencies.
    - The Waste Authority is unable to require the assigned DER staff give priority to projects it regards as of most importance, such as engaging stakeholders in waste infrastructure planning and promoting key messages on waste avoidance and minimisation.
    - DER staff and stakeholders expressed confusion about which agency directs waste policy and strategic planning, and whether the Waste Authority's advice must be accepted and its plans implemented.
    - A draft Service Level Agreement (SLA) attempts to establish the support DER will provide the Waste Authority. The SLA defines the principles for a constructive working relationship between the agencies and attempts to provide greater clarity on agency functions outlined in the WARR Act. However, it does not address agency roles and responsibilities in adequate detail to achieve this. For example it does not include a description of service standards or specific time periods and resources to conduct specific business plan projects.
- There is no overarching implementation plan to guide timing and prioritisation of individual projects outlined in annual business plans. The level of cooperation that is needed between the Waste Authority and DER to ensure annual business plans are in place and projects are approved, funded and implemented in a timely manner, was not evident. As a result, project approvals were delayed, and 22 of 47 (47%) projects outlined in the 2015-16 Business Plan did not receive funding, despite unspent WARR Account funds exceeding $30 million at the end of June 2016.
- Project business cases and regular and comprehensive reporting of progress of funded projects was often not evident, thereby limiting accountability for WARR Account moneys:
    - In 2015-16 only 9 of the 25 projects that incurred expenditure had approved business cases against which progress could be measured. However, since this audit, DER has developed business cases to support another 9 proposed new programs within the 2016-17 Business Plan, which the Minister approved on 30 June 2016.
    - Regular and comprehensive reporting of projects outlined in annual business plans is absent. Progress reporting was limited to monthly high level dashboard reports to the Waste Authority and irregular project reports presented at Waste Authority board meetings. However, since July 2016, DER's Waste Authority Services unit has been developing more detailed project reporting to the board that includes comment on project progress.

- Detail of expenditure for internal DER projects was also notably absent. DER receives approximately $7 million annually from the WARR Account for purposes such as levy and compliance inspections, administrative support and policy and legislative review. The Waste Authority has sought, but has not received from DER, a detailed breakdown to show that the moneys from the WARR Account for DER administration, compliance and policy have been expended on Waste Authority functions.

Good practice waste management planning and guidance is limited

- The 2014 Strategic Waste Infrastructure Plan Project (SWIPP) was intended to be a key step toward shifting the focus from landfill, to waste avoidance and resource recovery in the Perth metropolitan and Peel regions. The SWIPP working group was expected to define a long-term plan for waste facilities, including an outline of the number and types of facilities likely to be required and their optimum location. Planning, acquiring approvals and constructing waste infrastructure can take in excess of 10 years.
- However, the SWIPP did not outline the future infrastructure needed. Instead, it recommended that the State Government and waste operators commence planning for this. The Waste Authority advised that the report was only the first step in the process, but no further progress has been made. In the absence of state-level planning, LG's are left to make their own choices, but:
    - Based on a DER review in 2015 only 8 of the 30 metropolitan LGs have any form of waste plan and these do not need to align with state plans and strategies. Planning by LGs in isolation means they are less likely to adopt practices that align to the Waste Strategy.
    - Our site visits to 9 metropolitan and regional waste facilities showed that LGs, RCs and industry use a variety of resource recovery systems and have different visions for waste management. These systems do not always align with the State Government's preferred approaches to waste management including the most effective ways of diverting MSW from landfill.
    - The State has approved 2 waste to energy facilities for treating metropolitan MSW. Both are in the south of the metropolitan area and in close proximity in Rockingham and Kwinana. While there are a variety of factors that influence infrastructure location, we would have expected the site of such infrastructure to be informed by long-term state planning that would place them further apart to enable more LGs to minimise transport distance and cost.

DER is unable to ensure that all waste operators manage waste appropriately

- DER has a robust risk-based inspection regime for licensed premises but is not meeting its timeframes for inspecting sites. In the absence of timely inspections, DER is reliant on operators self-reporting environmental issues or on complaints from external parties. From our analysis of DER records, which we were unable to confirm were fully complete and accurate, we saw that:
    - high risk sites should be inspected each year, but only 47% were inspected annually during a 3-year period in 2013-16
    - moderate risk sites should be inspected once every 2 years but only 49% were inspected at least once in the same 3 year period
    - low risk sites should be inspected at least once within a 3 year period but only 87% were inspected at least once in the same 3 year period.

- DER is unable to provide assurance that all waste operators are compliant with the EP Act and WARR Act:
    - DER uses community complaints in accordance with its *Regulatory Function Complaints Policy (July 2013)* as one way to identify potential breaches of legislation.
    - DER regulate licensed waste operators but other waste operators can avoid regulation by conducting activities below thresholds[7] that require licensing or registration, or by simply not applying for a licence. Unlicensed operators are not subject to any routine checks or inspections by DER as its focus is on licensed premises.
    - DER does not check whether unlicensed operators are conducting activities at a level that requires a licence.
- Waste facilities receiving metropolitan waste get greater DER attention due to its focus on monitoring compliance with landfill levy payments in addition to license compliance. Of 22 sites inspected 4 or more times during a 3-year period between 2013 and 2016, all were in or within 200 km of the Perth metropolitan area. Regional facilities further from the metropolitan area, regardless of risk rating, were subject to limited inspection and received minimal input on how to manage waste to decrease landfilling.
- The Waste Authority and DER provide only limited high level, state-wide waste management and guidance material for consideration by waste operators. LGs provide some guidance to the community. However, the Waste Strategy's vision to move to a low waste society is not high on the agenda for all waste operators and LGs, and no agency monitors whether operators use good practice methods to manage waste. The existing inconsistent waste management systems hinder efforts to increase resource recovery, reduce waste to landfill and meet Waste Strategy targets.

Simple messages and incentives to engage the community in waste avoidance and minimisation are needed

- The Waste Authority in 2013 prepared key messages to foster awareness of Waste Strategy targets and objectives but they were not approved until 2016 and are not yet implemented. Similarly, the Waste Authority developed a Better Bins Engagement Program to ensure consistency in the rollout of the Better Bins Program by LGs, but this project was not approved in 2015-16. A more focused version of the engagement program, the Right Bin communication toolkit and evaluation, was approved in July 2016. Every household produces waste. Communicating messages for behaviour change is an essential component of the Waste Strategy.
- The landfill levy is one tool to avoid and minimise waste production, but it is not enough incentive to encourage all stakeholders to contribute to Waste Strategy objectives and meet targets. Emphasis has been placed on managing waste produced by the community and industry, but little on avoiding waste production, which sits at the top of the waste hierarchy and is a key element of the Waste Authority's mandate. For instance, government has no policy for minimising its own waste. DER and the Waste Authority could also encourage LGs to consider different options for waste avoidance schemes such as replacing regular kerbside waste collection with services that residents request and pay for as required.
- The disposal of problem wastes such as household hazardous wastes, packaging wastes, tyres, mattresses and electronic wastes, is a serious challenge. The Waste

7 Schedule 1 of the Environmental Protection Regulations 1987 lists the thresholds for prescribed premises for the purposes of Part V of the *Environmental Protection Act 1986*, such as landfills and solid waste depots.

Strategy recognises that specific solutions may be needed to manage these types of wastes, such as product stewardship or Extended Producer Responsibility (EPR) whereby waste management costs are built into the product cost. However the Waste Strategy does not include any specific solutions to manage problem wastes. The only related project to receive funding in the 2016-17 Business Plan is the ongoing Household Hazardous Waste (HHW) program, which provides funds for permanent facilities where householders can drop off unwanted household chemicals at no charge. A number of national schemes have been adopted in WA, such as drumMuster, PaintBack and TyreStewardship Australia.

- The Container Deposit and Recovery Scheme Bill 2016 to adopt a Container Deposit Scheme for drink bottles and cans in 2018 was recently introduced in Parliament. If adopted, this will add to state-based schemes implemented in WA to manage HHW and electronic waste. Managing problem wastes is important to minimise illegal disposal and associated environmental and health risks and will provide a good opportunity to engage the whole community in waste avoidance and minimisation.

Recommendations

1. By the end of February 2017, Waste Authority and DER should:
    a. Clarify and communicate the roles of each agency, which includes details of:
        i. agency responsibilities for waste policy development and actions to meet Waste Strategy objectives and targets
        ii. decision-making processes between DER staff and the Waste Authority.
    b. Finalise a Service Level Agreement (SLA) and governance framework.
    c. Develop business cases and implementation plans for all projects funded by the WARR Account.
    d. Provide regular and comprehensive progress reporting for all annual business plans, associated projects and financial expenditure to the Waste Authority board.
2. By the end of June 2017, Waste Authority, with the support of DER, should:
    a. Promote key messages to the community that focus on waste avoidance and minimisation.
    b. Identify and agree on solutions that will enhance the accuracy of waste and recycling data to report against Waste Strategy targets.
    c. Ensure data used to report against the major regional centre MSW target is representative of all regional areas of Western Australia.
    d. Publicly report annually on progress towards achieving all metropolitan and regional Waste Strategy targets.
    e. Improve accountability and transparency of WARR Account fund expenditure.
    f. Improve ways to bring together metropolitan and regional agencies, LG, industry and community representatives to assist knowledge exchange and strategic waste planning.
3. By the end of June 2018, Waste Authority, with the support of DER, should:
    a. Complete a State Waste and Recycling Infrastructure Plan to ensure alignment with the State planning framework.
    b. Provide good practice guidance on waste avoidance and minimisation, managing problem wastes and managing waste and recycling facilities.
    c. Assess the need for the State Government to adopt a policy of using recycled products as a way of encouraging community use of recycled products.
    d. Ensure Waste Strategy implementation includes planning and projects to improve resource recovery in regional Western Australia.
4. By the end of June 2018, DER should:
    a. Ensure licensed waste operators provide annual waste and recycling data.
    b. Conduct risk assessments of unlicensed waste operators and determine what steps need to be taken to ensure they conform with legislative requirements.

Agency responses

Waste Authority

The Waste Authority accepts the findings.

The Waste Authority remains committed to continue and, where necessary, improve focus of delivery of the Western Australian Waste Strategy and working with all stakeholders to guide Western Australia to a low waste society.

Western Australians are avoiding, re-using, re-processing and recycling waste at an increasing rate.

2015 targets have not been met. The Waste Strategy was a decade plan (2010-2020) which was adopted in 2012. In 2015 Western Australia is 3 years into a 5-year mid-term review.

The sector is in a transitional phase and directives vs voluntary schemes should be explored further.

Waste collection and processing arrangements vary considerably across WA. There are opportunities to achieve economies of scale and to coordinate significant supplies of waste. Experience in other jurisdictions highlights the benefits of aligning local waste planning with state plans and strategies, and providing coordination of procurement of waste services on behalf of local governments.

Long term planning of waste processing and recycling facilities that divert waste from landfill to promote the most efficient use of resources is needed. Improved alignment of local and State Government waste planning will benefit diversion from landfill and promote the most efficient use of resources.

Engagement, acceptance and awareness of the community is as important as the provision of physical infrastructure and collection systems. Consistency of messaging across homes, workplaces and public areas is a key fundamental.

The Waste Authority and the DER are not a ‘natural’ fit and this compromises the most efficient use of resources to deliver essential projects.

Department of Environment Regulation

DER supports the key findings that: progress has been made towards the delivery of the Waste Strategy targets; and improvements can be made to the data used for planning and monitoring. DER is developing amendments to the Waste Avoidance and Resource Recovery Regulations 2008 to support improved data to assist in this regard.

DER notes the finding that agency roles are unclear leading to poor planning and reporting and delays in funding. The *Waste Avoidance and Resource Recovery Act 2007* sets out the roles and responsibilities of the Minister, Chief Executive Officer and Waste Authority. DER and the Waste Authority are finalising a service level agreement and developing a governance framework and improved project management.

In relation to the finding on the need for good practice waste management planning and guidance, DER regulates waste-related prescribed premises under the *Environmental Protection Act 1986* to prevent, control and abate pollution and environmental harm. The intent of DER’s guidance materials is to explain its regulatory role and industry’s obligations.

Audit focus and scope

The audit objective was to determine whether strategies to reduce the State's reliance on landfill for dealing with household, construction, demolition, commercial and industrial waste have been successful.

We based our audit on the following lines of inquiry:

- Are sustainable waste practices in place to increase resource recovery and reduce waste to landfill?
- Are waste minimisation strategies monitored and assessed at the state, regional and local level, and are they working?
- Are Waste Authority grants distributed to projects and programs that increase resource recovery and reduce waste to landfill?

We focused on the activities of the Waste Authority and DER to reduce the State's reliance on landfill for waste disposal. Particularly we looked at progress made against the *Western Australian Waste Strategy: Creating the Right Environment*, adopted by the State Government in March 2012, and annual business plans from 2008-09 to 2016-17.

We did not look at actions by local government (LG) or industry, or the management of controlled waste, liquid waste, mining waste and waste water.

In undertaking the audit we:

- reviewed plans, policies, strategies, guidelines, budgets and financial statements, industry and LG waste and landfill levy data, meeting minutes and other documents from the Waste Authority and DER from 2008 onwards
- analysed DER's prescribed premise site inspection, landfill levy, Recycling Activity Review (RAR), Local Government Waste and Recycling Census (LG Census), and Incident Complaints Management System (ICMS) data from January 2012 to May 2016. Note: we could not determine the accuracy and completeness of some information DER provided
- interviewed metropolitan and regional stakeholders, community members, waste industry operators, LGs, RCs and key agencies with a role in managing waste in WA
- reviewed published national and international literature on waste management, including national waste reporting
- attended meetings organised by the Western Australia Local Government Association (WALGA) with the Officers Advisory Group and Waste Management Association of Australia (WMAA)
- conducted site visits to 4 metropolitan and 5 regional waste facilities, which included landfills, and alternative waste treatment (AWT), organics processing, waste transfer and C&D recycling facilities
- reviewed submissions from community, LG, RC and industry stakeholders.

This was a performance audit, conducted under section 18 of the *Auditor General Act 2006* and in accordance with Australian Auditing and Assurance Standards. Performance audits primarily focus on the effective management and operation of agency programs and activities. The approximate cost of tabling this report is $420,000.

Audit findings

Waste Strategy targets were not met but progress has been made

The management of waste in Western Australia (WA) has improved since implementation of the *Waste Strategy: Creating the Right Environment* (Waste Strategy) in 2012, with evident increases in resource recovery and reduced reliance on landfill.

Although none of the 4 Waste Strategy targets for the diversion of waste from landfill were met, diversion for commercial and industrial (C&I) waste came close (Figure 1). But, unreliable data on waste production and recycling, particularly in regional areas, is limiting effective reporting on progress against Waste Strategy targets, and waste planning and policy development.

Improving the State's waste management performance is essential if WA is to move from being one of the highest waste producers of any state or territory in Australia. WA produced around 6.2 million tonnes of waste in 2014-15[8] and only 42% was diverted from landfill. The last national report found that WA's diversion rate of 39% in 2010-11 was much lower than the national rate of 60%.[9]

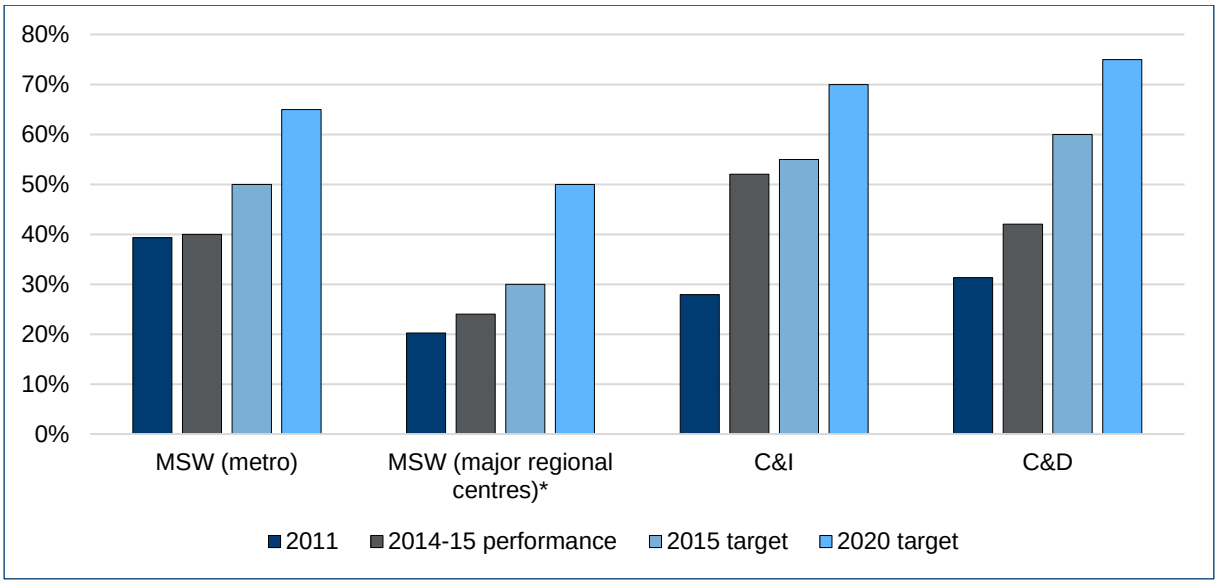
The State Government has commenced programs to develop sustainable waste practices, which are intended to address shortfalls in the diversion of municipal solid waste (MSW) and construction and demolition (C&D) waste to try and meet 2020 targets. Details of the Better Bins Program (BBP) and Recycled Construction Products Program (RCPP) are presented in Appendix 3.

Targets were not met

The Waste Strategy set targets for the diversion of C&I, C&D and metropolitan and major regional centre MSW from landfill by 2015. Most waste streams showed improvement compared with the 2011 baseline data, although the rate of metropolitan and regional MSW diversion from landfill has changed little (Figure 1).

The C&I recovery rate improved, predominantly through reprocessing of paper, cardboard and metals, from 28% to 52%, while C&D recovery saw a smaller increase, from 31% to 42% (Figure 1).

8 ASK Waste Management (2016). Recycling Activity in Western Australia 2014-15.
9 Commonwealth Department of the Environment (2013). National Waste Reporting 2013.



Source: DER

Figure 1: Statewide diversion rates and Waste Strategy targets for 3 waste streams

**In the absence of an agreed definition of 'major regional centres' the data used includes all regional data supplied by DER.*

The C&D sector produces around 51% of the State's waste while 23% comes from the C&I sector. The remaining 26% of the State's waste is MSW. Local governments (LGs) are responsible for the collection and disposal of MSW. LGs can work together through regional councils (RCs), formed to manage waste on behalf of member councils. LGs can also contract private industry or manage their own collections, recycling activities, and landfills.

Unreliable data limits understanding of the state of waste

Data used to measure waste generation and disposal in WA is incomplete and unreliable due to voluntary participation in data collection, variation in waste measurement methods and a lack of data verification. As well, data is not routinely collected for alternate methods of waste disposal such as stockpiling. The Waste Authority and DER use the data to:

- understand the waste and recycling industry in WA
- determine what waste management systems deliver good practice outcomes
- prioritise business plan activity areas and provide information about the effectiveness of the Waste Strategy and business plan programs.

Without accurate monitoring and assessment of the state of waste and resource recovery, government and industry lack the knowledge needed for local, regional and statewide policy development, long-term planning for waste management and resource recovery options.

To measure progress towards Waste Strategy targets, DER and the Waste Authority rely on 3 sources of waste data (Table 1). They use this to determine:

- the quantity of waste diverted from landfill through recycling activity
- the quantity of waste disposed to landfill
- the sector source (MSW, C&D, C&I) of the recycled and landfilled waste.

Data System	LG Waste and Recycling Census (LG Census)	Recycling Activity Review (RAR)	Landfill Levy Returns
Participants	LG, RC	DER list of known LG, RC and industry recyclers	Licensed landfills that receive metropolitan waste
Submission type	Voluntary – annual	Voluntary – annual	Compulsory – quarterly
Participation rate	95%	62%	100%*
Data collected	Annual tonnes of MSW collection (e.g. kerbside bins, vergeside bulk and green waste)	Annual tonnes of MSW, C&D and C&I waste recycled	Tonnes of metropolitan MSW, C&D and C&I waste deposited in licensed landfills

Source: DER

Table 1: Data collected to measure waste generation and recycling in WA in 2014-15

**Landfill levy data from one large landfill operator involved in legal proceedings not included.*

Data reliability is affected by participation rates and accuracy. Participation rates vary, with compulsory landfill levy returns the highest. Of the 2 voluntary systems, LG Waste and Recycling Census (LG Census) participation rates are high, but Recycling Activity Review (RAR) rates are comparatively low at 62%, declining from 80% in 2011-12.

A decrease in participation by companies has impacted the accuracy of the RAR. For example, C&D recycling companies that did not submit data for the 2014-15 RAR accounted for 18% of the volume of waste recycled in the previous year. This translates to reduced knowledge of C&D recycling, and less reliable data to report against Waste Strategy targets.

The range of methods used to collect data, and the current controls over that data, affect data accuracy. The waste data varies from accurate weighbridge measures, to less accurate truck counts and visual estimates.

Data controls are weak as waste processors only provide a summary of data and an estimate of the proportion of the 3 waste streams (MSW, C&D and C&I), which is not audited. While it is an offence under the EP Act to give false or misleading information, there is a risk of underreporting by waste operators to ensure they remain within their licensed volumes for processing or receiving waste.

Data verification methods focus on checking appropriate use of survey forms and identifying any large annual changes in volumes of each waste stream. DER does not for example, request raw data from operators, or conduct or request any form of audit or checking of the data or controls over collection of the information.

The Waste Authority requested compulsory installation of weighbridges at all landfills that collect the landfill levy in 2011 after exploring options to increase the use of recycled C&D materials in State Government civil works. In 2013 the Waste Authority requested DER add compulsory supply of data on waste disposal and recycling by all licensed waste facilities.

To address these requests, DER is currently developing amendments to the Waste Avoidance and Resource Recovery Regulations 2008 to include compulsory recordkeeping and annual reporting of waste and recycling data by LGs, waste recyclers and licensees of major regional landfills.

This should help to increase the reliability of waste data.

Data shows a decrease in waste disposed to landfill but exact causes are unknown

Total estimated waste generated in WA fell from 6.7 million in 2013-14 to 6.2 million tonnes in 2014-15,[10] despite population increase.

Reductions in 'inert', or non-biodegradable, waste to landfill coincided with the January 2015 increase in the landfill levy, from $28 to $55 per tonne for putrescible waste and from $8 to $40 per tonne for inert waste. Inert waste includes sand, bricks, concrete and glass. Putrescible (biodegradable) waste, delivered to landfill, declined to a lesser extent. Unreliable data means that DER is not certain whether the decrease in landfill activity is a direct result of increases in resource recovery, or other factors.

The average volume of inert waste disposed to landfill declined from 266,860 tonnes per quarter in 2014 to 36,930 tonnes[11] per quarter in 2015. This equates to over 900,000 tonnes per year, or an 86% reduction since the significant landfill levy increase on 1 January 2015.

DER has established that the difference is not attributable to far greater recycling of inert waste. Reported recycling increased by only 16,000 tonnes for 2014-15. Rather, DER believes that it is due to stockpiling of waste.

DER investigations estimated landfill and waste recycling facilities in Perth had stockpiled 1,245,000 tonnes of inert waste at the end of 2015, accounting for much of the waste not buried in landfill. However, with no previous measure of stockpiled waste, this provides no indication of the degree this practice may have increased. Known unauthorised activities, such as using crushed waste as fill materials and processing of skip bin waste by unlicensed waste operators were identified by DER during inspections and accounted for another 150,000 tonnes of inert waste.

Industry feedback and site visits showed evidence of alternative disposal methods to avoid landfill levy payment, which included:

- metropolitan waste disposed to regional landfills – there is no requirement for landfills to request or report the source of waste received
- sequential landfilling – inert waste is collected, sifted, crushed or shredded and used as 'construction fill' without any form of testing for contamination or degree of 'cleanliness'. The reprocessed waste can be provided for free
- stockpiling and illegal dumping (Figure 2).

10 ASK Waste Management (2015). Recycling Activity in Western Australia 2013-14.

11 Figures were converted from m^3 to tonnes using the industry standard estimation of 1 m^3 of inert waste in situ equivalent to 1.5 tonnes within the landfill.

Examples of stockpiling and illegal disposal of waste in WA

Clockwise from top left

- sand, bricks, rock, furniture and mulch dumped in a metropolitan industrial area
- inert regional landfill within 200 km of the metropolitan area with putrescible timber
- stockpile of scrap metal at a regional landfill site
- stockpile of bricks and concrete at a metropolitan C&D recycling facility.

Figure 2: Examples of stockpiling and illegal disposal of waste in WA

Achievement of regional waste and recycling targets is not assessed

DER and the Waste Authority are unable to report against major regional centre waste diversion and recycling targets, despite these targets being included in the Waste Strategy.

Data from regional areas is limited as there is no reporting requirement. Instead, estimates of waste production are used, based upon metropolitan data. This means that DER's understanding of waste generation and resource recovery in regional WA, and therefore the state, is unreliable and cannot be used as a definitive resource to report against Waste Strategy targets and develop waste policy.

Waste Strategy targets were set for MSW diversion from landfill in major regional centres (Figure 1) from 8 proposed regions. However, 2014 and 2015 Waste Strategy annual reports did not report progress against this target.

LG Census data, which includes information on MSW diversion, is collected from 110 regional LGs but is not routinely used to report on Waste Strategy targets. DER indicated that this was due to potential data inaccuracies, including the fact that LG Census data reflects what LGs pass on to recyclers and not the proportion that was actually recovered. Facilities rarely recover 100% of what they receive.

For internal DER reporting, regional waste production has been estimated based upon an assumption that regional waste production rates are the same as metropolitan rates. This assumption is flawed. Another internal DER report of regional data showed that the 20% of the state's population in regional areas produce 35% of the state's waste. Metropolitan and regional waste production is therefore not the same. This assumption also implies that metropolitan specific events, such as the effect of the landfill levy, will impact regional waste generation.

Another example highlights gaps in regional data caused by voluntary collection and reporting. There are 30 metropolitan and 110 regional LGs. Thirty-nine LGs reported recycling C&D waste in the 2014-15 LG Census, of which 25 were regional LGs. The City of Greater Geraldton for instance, reported that they routinely use local recycled C&D material in civil works projects, including road construction. But the RAR for the same period reported no C&D reprocessing from regional areas.

Current State Government programs aim to meet future targets

The State Government targeted improving the low recycling rates of MSW and C&D waste by commencing the $20 million Better Bins Program (BBP) in 2014 and the $10 million Recycled Construction Products Program (RCPP) in 2015 (Appendix 3).

Both programs aim to reduce waste to landfill and improve consistency in the way LGs and industry manage recyclable materials. The State Government fund and support these programs but both are voluntary. WA's isolation, lack of local processing facilities, and limited development of local markets for acceptance and use of recycled products, place the success of these programs at risk.

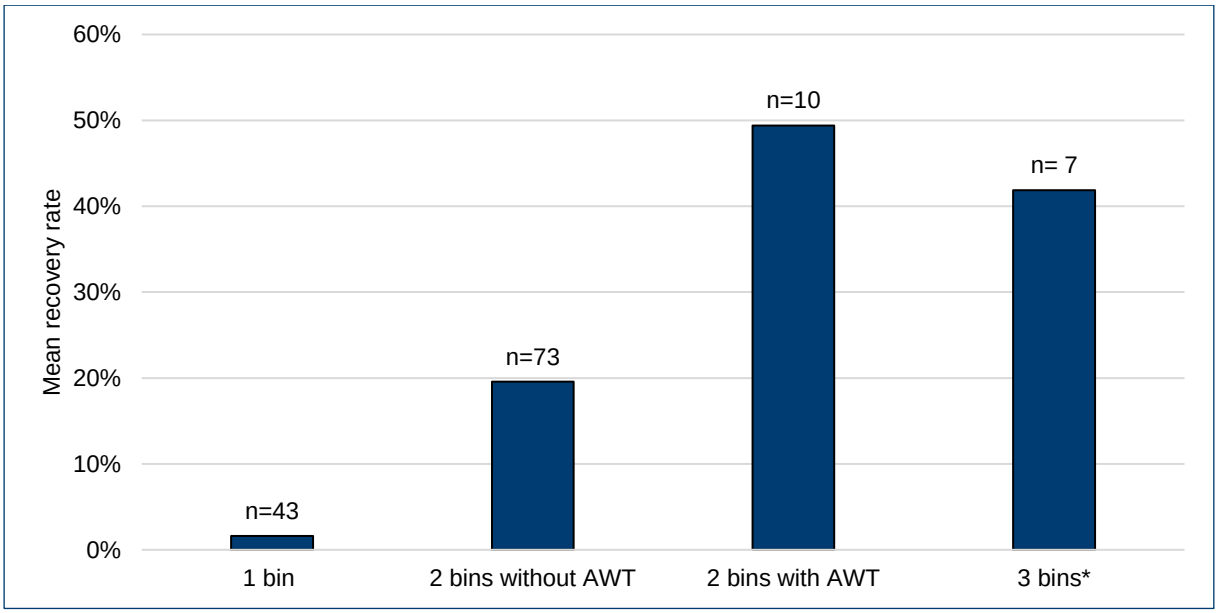
Better Bins Program shows encouraging results

The BBP offers funding and guidance to LGs to support source separation of waste using a MSW collection system to separate general, co-mingled recycling and green waste. To date, 5 metropolitan and 3 regional LGs have signed up to participate in the BBP. This represents only 6% of the 140 LGs and 18% of the state's population.

A change to the 3 bin system represents a substantial investment for LGs, particularly regional LGs with a small ratepayer base.

The Waste Authority pays $30 per household to LGs participating in the BBP. However, for one metropolitan LG, the additional cost to purchase new bins was estimated at $10 million while the BBP funding it received was $2 million. Convincing more LGs to join up to the BBP to ensure its success may be difficult.

The program is in its infancy, but information provided to us by DER indicates promising results, particularly in conjunction with existing alternative waste treatment (AWT) facilities that use mechanical, biological or thermal processes to convert waste to energy or useful by-products. Figure 3 below shows that LGs with 3 bin collection systems contributed more to diverting waste from landfill than 1 or 2 bin systems without any form of AWT. Three metropolitan and 2 regional LGs had 3 bin collection systems in place prior to the BBP. Managing contamination and developing reliable markets for compost will be an ongoing challenge.



Source: DER

Figure 3: Average recovery rates for LGs with different kerbside service types 2014-15

** 1 with AWT, 6 without AWT.*

New programs show improvements in the construction and demolition waste sector

The Recycled Construction Products Program provides incentive payments to approved applicants to use recycled C&D products in civil construction, such as roads, cycle paths and carparks. The RCPP was announced in September 2015. The first funding period runs from 10 September 2015 to 30 June 2017, but as at 30 June 2016, only $3,232 of funding had been spent (Appendix 1 – Recycled C&D Market Development Program).

Recycling C&D material can offer environmental and performance benefits, and cost savings. It remains underutilised in WA. The national average recycling rate for construction waste is 58%[12]. NSW and SA recover 75% of C&D material while Victoria recovers 69%. By comparison, WA recovers just 42%.

LGs and industry have no statutory requirements to meet targets for waste diversion. A handful of LGs use recycled C&D products, such as the Cities of Rockingham and Canning, but we could not find evidence that this was a widespread practice.

In WA, government specifications, such as *Main Roads Specification 501 – Pavements* for the construction of roads, do not encourage or include using recycled products. By contrast, other states, such as Queensland, NSW, Victoria and SA, actively support the use of recycled materials in road construction. For example, Queensland's Department of Public Works specifies that contractors must divert a minimum 40% by weight of construction, refurbishment and demolition materials for buildings and civil infrastructure projects away from landfill.[13]

Stakeholders consulted during the audit indicated that WA's construction industry could use most C&D material produced. Lack of government endorsement was seen as the leading impediment to doing so.

12 Environment Protection and Heritage Council and Commonwealth Department of the Environment, Water, Heritage and the Arts (2010). National Waste Report 2010.
13 Queensland Department of Public Works (2009). Recycling Policy for Buildings and Civil Infrastructure.

In the absence of state guidance, the Institute of Public Works Engineering Australasia WA, with support from the Waste Authority, has recently produced a specification for the use of by-products of the C&D industry in 'road making aggregates'. The specification is supported by WALGA for use in LG road construction.

In the commercial and residential building industry, the Waste Authority and Master Builders Association (MBA) WA aim to reduce waste in Perth and Peel through the *Smart Waste Guide*. This guide was introduced in April 2014 through a strategic partnership with the Waste Authority. An example of what can be achieved to increase recycling using the guide is shown in Figure 4 below.

Case Study – Recycling in the construction industry

The construction of an average 3-bedroom, 2-bathroom, single-storey double brick residence in Perth generates approximately 24% C&D waste by weight.[14] By contrast one local recycling company constructed a new housing development with only 5% waste to landfill – see photo.

Figure 4: Source separated waste destined for recycling at a residential construction site in Perth

Agency roles are unclear leading to poor planning and reporting and delays in funding

The 5 members of the Waste Authority effectively have no decision-making powers. These rest with the Minister for Environment (Minister). The Waste Authority also has no staff, instead relying on DER to provide services and support. Good collaboration between the Waste Authority and DER is integral to ensuring the Minister receives sound advice from the agencies about projects to achieve Waste Strategy objectives. The need for improvement in some areas was evident to us.

Agency roles and responsibilities are unclear

Agency roles and responsibilities are not clearly defined and agreed between DER and the Waste Authority. Stakeholders involved in waste management, both internal and external to State Government, consistently expressed confusion about which agency directs waste policy and strategic planning, and whether the Waste Authority's advice is accepted or adopted.

Waste policy development is a significant area of overlap between the 2 agencies, though their respective legislated roles mean that each takes a different focus. However, this creates some confusion as to the responsibilities of the 2 agencies, which impacts on planning and

14 Felmingham et al. (2016). Building Construction Waste Audit and Management Assessment, WA. Murdoch University.

reporting, and delays distribution of project funds from the WARR Account. Ultimately, this affects the achievement of the Waste Strategy's objectives.

The interpretation of the legislation contributes to confusion about agency functions and accountabilities

The WARR Act outlines the functions of the Waste Authority. The WARR Levy Act, the EP Act and associated Regulations also outline roles and responsibilities of the Waste Authority and DER. Under the legislation the Waste Authority:

- provides strategic and policy advice to the State Government and the Minister
- implements policies, plans and programs consistent with the Waste Strategy
- distributes WARR Account funds to strategic initiatives approved by the Minister.

DER is required to deliver waste-related services, including to:

- provide services and facilities to support the Waste Authority and implement programs and projects outlined in the Waste Authority's annual business plans (Figure 5)
- issue licences to 'prescribed premises' to regulate emissions and discharges (including waste) to the environment under the EP Act. Premises that operate lower risk activities are 'registered', and managed and regulated through industry-generic regulations, codes of practice or guidelines
- regulate compliance with licence conditions
- develop and implement policies and strategies that promote environmental outcomes. This includes providing advice to the Minister.

An existing Memorandum of Understanding (MoU) and Service Level Agreement (SLA) from 2009 and a recent revised draft SLA define a minimum required level of service from DER to the Waste Authority. This includes 'timely provision of corporate, enforcement and prosecution, policy and reporting and governance services'. The draft SLA currently operates in practice, in place of the 2009 agreement.

The draft SLA attempts to provide greater clarity on agency functions outlined in the WARR Act, but does not address agency roles and responsibilities in adequate detail to achieve this. The SLA defines the principles for a constructive working relationship between the agencies and attempts to provide greater clarity on agency functions outlined in the WARR Act. It does not include a description of service standards or specific time periods and resources to conduct specific projects, including how DER will implement its own projects that are outlined in annual business plans and funded from the WARR Account.

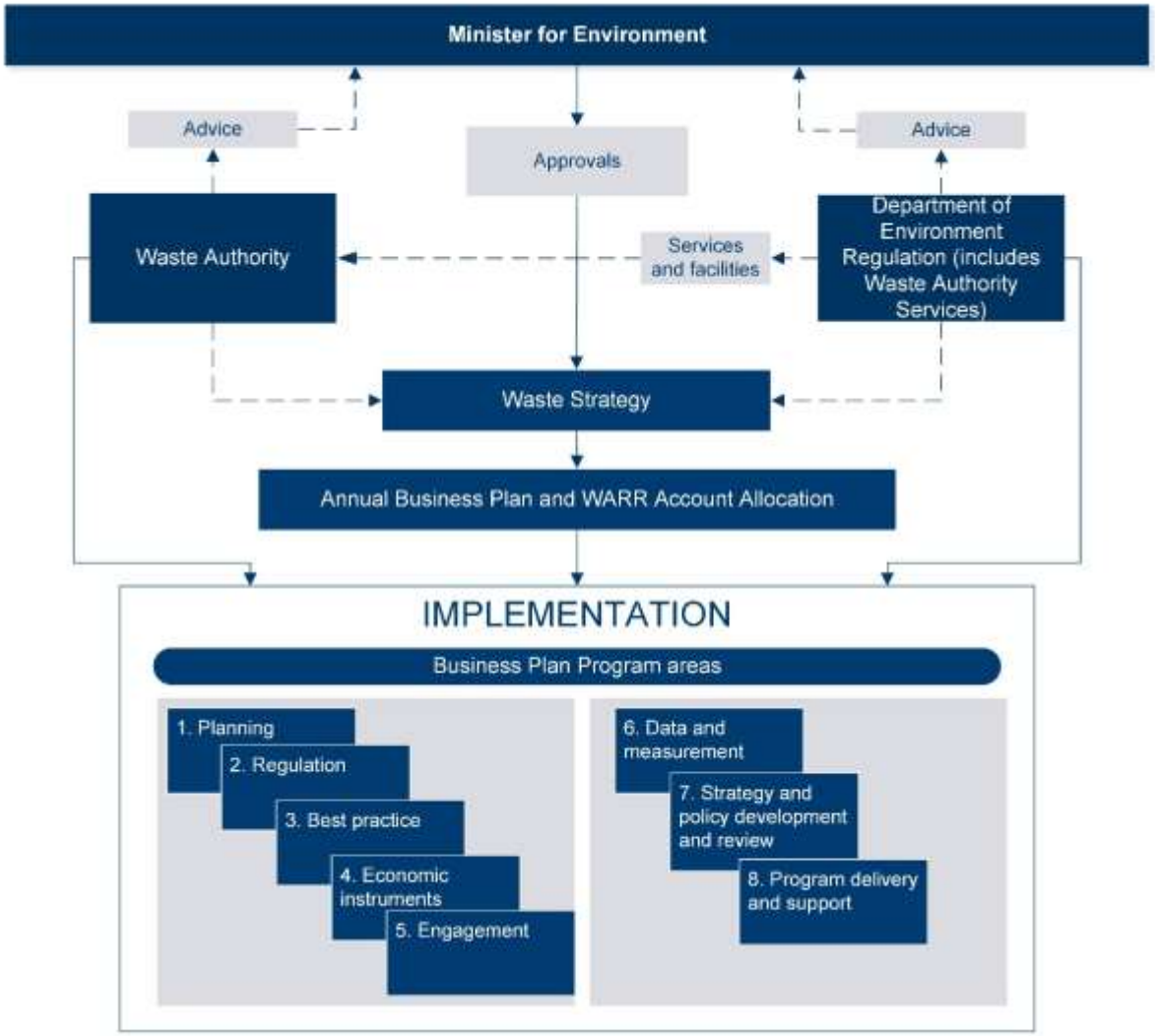


Figure 5: Organisational and governance relationships between the Minister, Waste Authority and DER and Waste Strategy implementation

Administrative arrangements create further challenges

Under the current administrative arrangements, as shown in Figure 5, both DER and the Waste Authority provide advice to the Minister in regard to annual business plans and proposed projects contained within. However, the different focus of each agency can result in inconsistent advice to the Minister, resulting in delays or rejection of funding requests. As previously mentioned, the balance in the WARR account currently exceeds $30 million.

The administrative arrangements also create tension between the Waste Authority and DER and impact the Authority's ability to carry out its statutory functions effectively.

DER provides a 27 person Waste Authority Services (WAS) unit to support the Waste Authority. The WAS is funded from the landfill levy paid into the WARR Account. Significantly, the Executive Manager of the WAS reports to and works under the direction of DER rather than the Chairman of the Waste Authority. The Waste Authority's different focus means that its priorities may not align with that of DER and WAS staff.

The effect of the different priorities is demonstrated by delays in the implementation of public messages about waste avoidance and minimisation.

In 2013, the Waste Authority developed a series of key messages within a Communications Plan that it regarded as critical to its focus on waste avoidance and recovery. The Communications Plan is part of a broader State Waste Communications Framework. An Annual Communications Plan was approved in 2016, but is yet to be implemented. The broader framework has yet to be approved.

In recognition of these issues, DER and the Waste Authority advised that they will finalise an SLA and have commenced a project to produce a governance framework to help clarify the expectations and outcomes of each agency. This framework is to be based on the Public Sector Commission's *Good Governance Guide for Public Sector Agencies Principles*.

Processes for releasing WARR Account funds and reporting project outcomes was poor but is now improving

Since 2008, approximately $117 million has been received into the WARR Account, predominantly from the landfill levy for use on waste avoidance and recovery activities. However, administrative hold-ups and differing agency priorities have delayed progression of approved projects and caused the unexpended balance in the WARR Account to currently exceed $30 million. Reporting of the progress and outcomes of funded projects was also problematic but is now improving.

The administrative process for releasing Waste Avoidance and Resource Recovery Account funds has improved

The administrative process for transferring WARR account funds to external parties is now, for the most part, reasonable and transparent.

The process involves the Waste Authority, with support from DER, designing projects to support waste avoidance and recovery. Such projects include the Better Bins Program and Recycled Construction Products Program (Appendix 3).

The Waste Authority then seeks the Minister's approval of an annual business plan comprising the recommended projects (and their budget) as well as proposed funding of DER for the administrative costs it will incur in the upcoming financial year. Projects approved by the Minister in the annual business plan must commence in that year or else they must be approved again in the following year's plan.

In August 2015, the accountability of the process was enhanced by requiring a Ministerial endorsed business case for each approved project, prior to any release of funds. This followed a Ministerial request for 'greater prescription in the governance arrangements for expenditure from the WARR Account' prior to a significant increase in landfill levy payments in January 2015. Each business case details project objectives, deliverables, risks, key stakeholders, success measures and resources.

But, there are some exceptions to the requirement for a business case:

- There is no requirement for DER to detail the outputs and targets associated with its waste related services. These services include the WAS unit that supports the Waste Authority, Waste Wise Schools, and administrative and environmental regulation activities, including compliance inspections. This lack of accountability causes tension with the Waste Authority.
- The Minister can choose to approve the release of funds without a business case. In 2015-16, 2 new projects received funding without a business case.

Once a business case is endorsed, the project can proceed. This may involve direct funding or inviting stakeholders such as LGs, industry or the community to apply for grants to carry out operations that support the individual projects.

Delays in preparing the 2014-15 annual business plan in particular has impacted on funding of projects. The 2014-15 Business Plan was not approved until 12 March 2015 – just over 3 months before the end of the year to which it related. The approval of the 2015-16 Business Plan in October 2015 was timelier but still was not approved before the start of the year as we would expect.

The release of funding for new projects in 2015-16 was then still subject to approval of business cases before the end of the year in order for funds to be released. It was understandable why stakeholders made comments to us that were critical of the process and of financial support for waste industry development.

Delays in approvals contributed to unspent WARR Account funds exceeding $30 million at the end of June 2016. Only 62% of the budgeted expenditure of $18.7 million for 2014-15 Business Plan programs was spent. The story was similar for 2015-16, with only 58% of the budgeted expenditure of $29.7 million spent (Table 2 and Appendix 1).

Program and project	Budget ($)	Expenditure ($)	%
Planning	145,000	0	0
Regulation	2,175,000	2,158,710	99
Best Practice	8,030,000	2,517,775	31
Economic Instruments	11,067,000	3,825,288	35
Engagement	3,245,000	1,262,684	39
Data and Measurement	150,000	78,625	52
Strategy and Policy Development and Review	100,000	25,740	26
Waste Authority Services	2,800,000	2,880,481	103
DER Indirect Costs	2,000,000	3,201,002	160
Old Programs	0	1,161,215	–
Total	**29,712,000**	**17,111,520**	**58**

Source: DER and Waste Authority Business Plan 2015-16

Table 2: Summary of WARR Account budget and expenditure 2015-16

Forty-seven percent (22 of 47) of approved projects in the 2015-16 Business Plan did not register expenditure in the 2015-16 financial year. These include projects such as the Better Bins Engagement Program and Local Government Waste Plans (Appendix 1). Other significant projects only spent a portion of allocated funds, including the 2 flagship RCPP (Recycled C&D Market Development Program) and Better Bins Programs (Better Bins Kerbside Collection).

Significantly, internal DER activities associated with Regulation and Engagement (Waste Wise Schools), and Program and Administration Support were close to fully funded (highlighted in Appendix 1). However, the Waste Authority, which is legislatively responsible for the administration of the WARR Account, receives limited detail of how these funds are allocated or spent.

We noted significant progress in the timeliness of approvals during the conduct of our audit. On 30 June 2016 the Minister approved the 2016-17 Business Plan as well as business cases to support 9 proposed new programs.

Progress reporting was poor but is now improving

In 2015-16, only 9 of the 25 projects that incurred expenditure had approved business cases. The remaining 16 projects had no business cases as they were either approved prior to

August 2015 or had direct Ministerial approval. The requirement since August 2015 for a project to have a business case means that the Waste Authority and DER now have measures to track progress and achievement of project outcomes.

Regular and comprehensive progress reporting of project outcomes within agencies and to the community is still lacking, though the process is evolving. Monthly, high level reporting provided detail of whether a project had commenced, was ongoing, meeting milestones, or was complete. DER's WAS unit also provided briefing notes and irregular individual project reports at monthly Waste Authority board meetings. There was no regular and comprehensive detail of project deliverables and outcomes.

This variation in the level of reporting and project implementation plans has impacted upon the Waste Authority's ability to report on progress of the annual business plans and the Waste Strategy, which is due for review in 2017.

In recognition of this, the Waste Authority and DER drafted business cases to support all new proposed projects included in the 2016-17 Business Plan. From July 2016, WAS provided a supplementary monthly report to the Waste Authority board with information on current projects. However, reporting on internal DER projects remains minimal.

Long-term planning and good practice guidance is limited

Long-term infrastructure planning was recognised in the 2012 Western Australian Waste Strategy as essential but little progress has occurred since. Also important is the need to move LGs, RCs and other industry stakeholders towards practices that shift the focus from the use of landfill to waste avoidance and resource recovery. Conflicting priorities, inconsistent waste management systems and minimal local waste planning hinder efforts to meet Waste Strategy targets in both metropolitan and regional areas. Guidance from the Waste Authority and DER needs to improve if this shift in behaviour is to occur.

The need for long-term planning is recognised but is not occurring

State planning

The State Planning Strategy 2050 in conjunction with the Waste Strategy, requires action be taken to reduce waste to landfill, and increase resource recovery and waste avoidance through, amongst other things, improved strategic planning.

The 2014 Strategic Waste Infrastructure Plan Project (SWIPP) was expected to define a long-term plan for waste facilities for the Perth metropolitan and Peel regions. The SWIPP working group, comprising representatives from the Water Authority, DER, LGs, RCs and industry, sought to contribute to Strategic Objective 1 of the Waste Strategy to define:

> *'…a long-term plan outlining the number and types of facilities that are likely to be required, their optimum location and access to transport network along with trends in the generation of waste and the change in waste stream composition...'*

Planning, acquiring approvals and constructing waste infrastructure is a lengthy process that can take in excess of 10 years. However, the SWIPP did not outline the future infrastructure needed. Instead, it effectively just confirmed that a plan defining the long-term requirements needed to be done. They recommended:

> *'State Government and the waste industry should commence actively planning for and implement measures necessary to establish the waste and recycling infrastructure needed for 2050 to ensure sufficient sites and capital are secured'.*

The Waste Authority advised that the report was only the first step in the process. However, no alternative means of outlining the infrastructure requirements and locations needed to

achieve the Waste Strategy recovery targets is in sight meaning that waste operators have in effect been left to make their own choices.

Local planning

Without a detailed plan to guide the state's waste infrastructure requirements, there is a risk that LGs will have conflicting priorities, may duplicate effort, or lack the expertise needed to plan for longer term waste management.

Only 8 of the 30 metropolitan LGs had some form of dedicated waste plan in 2015 and they did not need to align with state plans and strategies. In the absence of any direction from the SWIPP, Waste Authority or DER, waste operators are likely to focus on local priorities and more immediate commercial factors than longer term options that better align to the Waste Strategy.

An apparent example of this is 2 waste to energy facilities for disposal of MSW that were approved for construction in 2015. Both facilities are located in close proximity – in Rockingham and Kwinana. With no similar facilities elsewhere in the metropolitan area, we would have expected such infrastructure to be located further apart to enable more LGs to minimise transport distance and cost. Although there would be a multitude of complex reasons for the siting this indicates that their location was not based upon long-term state planning.

The WARR Act enables DER to require LGs to produce local Waste Plans. To date, DER has not directed any LGs to produce these plans. However, if such direction was given then it would provide a good opportunity for the Waste Authority and DER to engage with LGs and possibly achieve a longer term and broader perspective to integrated waste management planning.

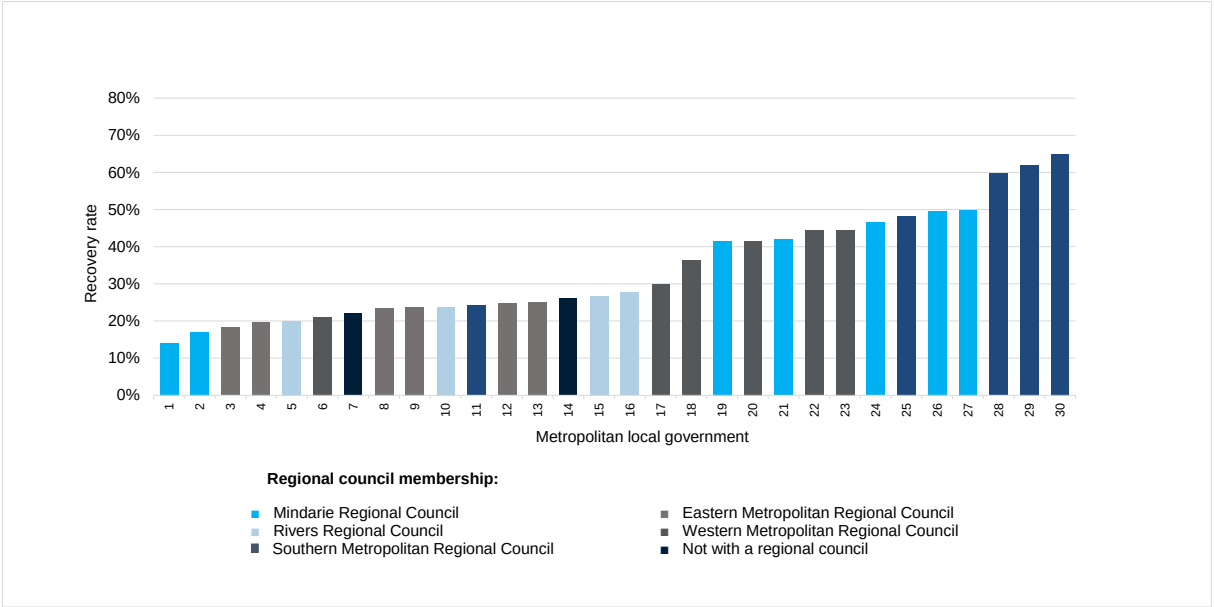
Inconsistent management of MSW restricts achievement of Waste Strategy targets

Our site visits and stakeholder discussions made it clear that stakeholders involved in the management of MSW have varying views and attitudes. Incentives and motivations also vary and do not necessarily align with the Waste Strategy, and the State Government's preferred approaches to diverting MSW from landfill.

Inconsistent waste management systems for MSW coupled with limited guidance from State Government hinder efforts to increase resource recovery and reduce waste to landfill.

Metropolitan diversion rates vary widely

MSW diversion rates for metropolitan LGs varied from 14% to 65% in 2013-14 (Figure 6), reflecting differing waste management practices and levels of commitment to waste diversion.



Source: DER

Figure 6: Variation in metropolitan local government MSW recovery rates for 2013-14

The Western Australian Local Government Association (WALGA) produced a *Vision for Waste Management in the Metropolitan Area* on behalf of LGs, which aims to bring consistency through adoption of an integrated waste management system. It recommended:

- mandating the expectations for waste treatment options and investing in waste reduction and avoidance
- reviewing the appropriateness of 'landfill diversion' as the best benchmark of waste management performance
- ensuring waste avoidance and reduction is a cornerstone of the long-term approach to waste management.

The Waste Authority and WALGA also suggested changes in the governance structure of RCs, which is missing from the Waste Strategy but may be an integral component of improving waste management. This included reducing the number of RCs, compulsory LG membership and geographically based boundaries. WALGA went on to recommend each RC develop and deliver a regional waste plan ‘compatible with a Waste Authority metropolitan wide plan for waste management’.

An opportunity now seems available to build on WALGA’s momentum by establishing a working group, similar to that process used to develop the SWIPP, to plan an integrated LG approach to waste management.

Waste production in regional areas is still increasing

The management of regional MSW is also variable. For example, one publicly available study of LGs in the Pilbara and Broome recorded MSW diversion from landfill as ranging from 0% to 44% in 2011-12.[15] Other unpublished research found that larger regional centres in WA with populations over 20,000, reported MSW diversion rates ranging from 7% to 59% in 2014-15.

15 Talis Consultants (2013). Waste Data Study for the Pilbara Region and Shire of Broome. Note: high 44% diversion rate for Broome was due to the inclusion of C&I waste as MSW.

The majority of waste (57%) in the Pilbara and Broome region was disposed to landfill, but future growth projections and infrastructure options that include waste to energy plants, have the potential to change waste dynamics in the regions significantly.

DER has reported that regional waste production is growing. Its figures suggest that waste disposal in regional WA grew around 29% between 2010-11 and 2012-13 – from 1.0 million tonnes to 1.3 million tonnes. In 2014-15 regional waste production was estimated at 1.6 million tonnes (2.4 tonnes per person[16]). If reliable data existed, estimates would not be needed.

WA has 110 regional LGs, of which 78 have a population of under 5,000. These LGs may cover large areas but are often resource poor due to low populations and therefore a low rate base to derive income.

LGs provide the majority of regional waste infrastructure to service these communities – mostly landfills, which are often poorly managed, with no progressive rehabilitation or effective management of both daily operating and whole of life costs. To address these issues DER has prioritised developing Environmental Standards for Rural Landfills with input from WALGA and the Waste Management Association of Australia. A draft is scheduled for release in 2016.

Some local governments are making serious efforts to divert waste

Four major regional centres have made good progress towards meeting Waste Strategy diversion targets. For example, the City of Albany diverted 32% of MSW from landfill in 2014-15 with a 3 bin collection system. The City of Bunbury, also with an existing 3 bin system, diverted 61% of MSW from landfill in 2014-15 and uses a regional composting facility to produce high quality organic fertiliser. The City of Bunbury expects that this diversion rate will rise if it can exclude contaminants from organic waste collections prior to processing at the compost facility (Figure 7).

Figure 7: Plastic, glass and metal containers contaminate organic waste at Bunbury-Harvey Regional Council's composting facility

16 ASK Waste Management (2016). Recycling Activity in Western Australia 2014-15.

Department of Environment Regulation's regulatory program has gaps

It is evident that DER's inspection program is driven by a focus on facilities that pay the landfill levy. The Waste Strategy is a statewide strategy, however regional facilities that do not receive metropolitan waste, regardless of risk rating, receive limited input on how they might manage waste to decrease reliance on landfill. DER regulates licensed waste operators but waste operators can avoid regulation if they are not licensed. They are then not subject to any routine checks or inspections by DER unless a complaint is lodged.

Inspection reporting is insufficient

DER's records do not easily lend themselves to establishing the number of licensed premises that manage waste, or the frequency of inspection of those premises. Our review of DER's data led us to believe that DER license 270 such premises in WA.

Of these premises, DER regularly inspects the 37 licensed landfills that pay the landfill levy. Of these 37 sites, 8 metropolitan and 14 within 200 km of the Perth metropolitan area, were inspected more than 3 times during the 3-year period between 2013 and 2016. The remaining 233 licensed premises were not visited as frequently. However DER could not confirm that our understanding of the number and frequency of visits to licensed premises was correct.

DER regulates licensed premises that manage larger quantities of waste and uses a consistent process to detect breaches of the EP Act, WARR Act and WARR Levy Act at those premises. Licensed premises self-report on compliance with their licence conditions and the WARR Levy Act. DER conduct site inspections every 1 to 3 years to monitor compliance with license conditions.

DER has a risk-based inspection regime for licensed premises. Data linkage difficulties within DER's systems meant that we were unable to establish accurately the completeness and frequency of inspections. However, analysis of a subset of data provided for a 3-year period in 2013-16 suggested that DER does not meet its timeframes for inspecting sites:

- high risk sites (17) should be inspected each year, but only 47% were inspected annually
- moderate risk sites (116) should be inspected at least once every 2 years, but only 49% met this target
- low risk sites (113) should be inspected at least once every 3 years but only 87% met this target.

DER may therefore be unaware of environmental issues unless the issue is self-reported by the operator or DER receive a complaint.

Industry feedback also suggests inspection frequency is variable and not necessarily tied to risk. Some premises may receive multiple visits in a year while others receive none. For example:

- one large metropolitan C&D recycler reported 17 visits from DER inspectors between December 2015 and June 2016, primarily to assess complaints about dust emissions
- another large metropolitan C&D recycler reported routine monthly inspections during 2015-16
- one major regional LG reported a single inspection of their landfill and waste transfer facilities between 2013 and June 2016 despite a recent history of significant non-compliance with license conditions.

Small operators are not required to be licensed

Unlicensed and unregistered operators that conduct activities below thresholds that require licensing or registration,[17] or simply do not apply for a licence, are not subject to inspection from DER Officers unless DER receives a complaint. DER does not inspect these operators and their facilities as its focus is on licensed premises. DER informed us they use techniques, such as satellite imagery, to monitor larger waste operators who they suspect should hold a licence but do not. However, we saw minimal evidence of this process. DER also could not report on the number of complaints received about unlicensed operators due to the inadequacy of its complaints register, discussed immediately below.

DER's complaints management system could be improved

DER investigates complaints as 'pollution incidents' under Environmental Protection (Unauthorised Discharges) Regulations 2004 and records the details in an Incident Complaints Management System (ICMS). In 2013-14, DER recorded 4,336 complaints, 3,247 complaints in 2014-15 and 3,948 complaints in 2015-16.

We were unable to establish the extent to which complaints were proven and letters of warning or infringement notices were issued. This is because the capacity to interrogate the ICMS is limited. It also means that DER cannot for example obtain the following information for planning and analysis purposes:

- the number of complaints against licensed or unlicensed operators within a defined time period so as to inform its inspection program
- how many times licensing complaints resulted in follow up actions
- if and how an incident was resolved.

No agency monitors and advises on good practice

No agency monitors whether waste operators are implementing good practice waste management methods. This contributes to poor support for the Waste Strategy and an uneven playing field for waste operators, particularly in regional WA where investment and opportunities for economic development are limited.

The Waste Authority and DER offer some guidance to waste operators. However, waste facility operators interviewed during the audit requested greater 'on the ground' guidance from DER through its 12 Compliance Officers that inspect licensed waste facilities throughout WA. The waste operators considered these staff are in a unique position to provide advice on good practice waste management and recycling activities.

Regional landfill sites often have minimal resources to invest in recycling activities, are poorly managed due to lack of staff and long-term planning, and have no weighbridge to accurately report data. These factors mean regional facilities could do with more visits from DER to ensure they meet Waste Strategy objectives and environmental regulations. DER has provided advice for the Indian Ocean Territories and agrees regional WA would benefit from a similar level of guidance.

DER though is cautious about offering on the ground guidance as it sees this role as inconsistent with its regulatory approach, which relies on independence. DER's approach therefore is generally not to give advice unless the advice relates to its function of monitoring compliance with license conditions. While we understand DER's perspective it does mean that opportunities to introduce good practices are likely to be overlooked.

17 Schedule 1 of the Environmental Protection Regulations 1987 lists the thresholds for prescribed premises for the purposes of Part V of the *Environmental Protection Act 1986*, such as landfills and solid waste depots.

More guidance could be provided

There is opportunity for government to provide more written good practice guidance to support LGs, RCs and waste operators. The Waste Authority provides a wealth of information on its website, including fact sheets, case studies, and position statements, such as:

- *Waste Authority Position Statement Construction and Demolition (C&D) Waste* – 2016
- *Waste Authority Communications Guidelines: Communicating Effectively for Improved Recycling and Waste Minimisation* – 2013.

The State Government invested over $6 million in 94 Strategic Waste Investment Scheme projects between 2004 and 2013. Many of the project outcomes provide good examples of options for recycling and while described in reports available on the Waste Authority's website, they have rarely been turned into guidance material. Examples of projects that could be used as the basis for guidance material include:

- Rottnest Island Authority was given $161,000 in 2004 for 'Away from Home Recycling'
- Green Skills was given $109,000 in 2006 for the 'Towards Zero Waste Events – Pilot Program'.

Practical guidance material could eventually replace the need for additional project funding in this, and other areas. As an example, the State currently has no guidance material on recycling for public places or events despite previous work supported by the Waste Authority to produce a Guide to Waste Wise Community Events.

Simple messages and incentives to engage the community in waste minimisation are needed

Messages and incentives to engage the community in waste avoidance and waste minimisation can improve. The landfill levy alone is not enough incentive to encourage all stakeholders to avoid production of waste and divert waste from landfill. New incentives are likely to become necessary in order to meet the Waste Strategy objectives and targets.

Key messages are needed to engage the community

In 2013, the Waste Authority prepared a series of simple, community-wide messages to foster awareness of the Waste Strategy targets and objectives. However, the messages were only approved in April 2016 and the implementation plans are yet to be approved.

The Waste Authority's key messages to increase community awareness of the importance of effective waste management include:

- *Your actions make a difference*
- *Put it in the right bin*
- *Accept and take responsibility*
- *Driving smarter waste management*
- *We invest the landfill levy in waste programs*.

The Minister approved the key messages in the Waste Authority's *Annual Communications Plan* in April 2016. A toolkit to support correct waste separation and recycling waste for LGs participating in the Better Bins Program was approved in June 2016. An associated draft State Waste Communications Framework, produced in June 2014, is not yet approved. This

is despite funding being available to provide support to the Waste Strategy's 'Strategic Objective 5 – Communicate messages for behaviour change and promote its adoption'.

The value of simple community messaging was clearly demonstrated in the Water Corporation's 'Whatever you do, just drop 2' catch phrase.

This behavioural change campaign, launched in November 2015, successfully encouraged householders to reduce water use (Figure 8). At the start of summer, the Perth area had used almost 9 billion litres more than the water consumption target. By the end of the campaign water use was back on target and a study revealed an estimated water saving of 7.2 billion litres.

Figure 8: The Water Corporation's simple behavioural change campaign message

As mentioned earlier, the Waste Authority prepared the Better Bins Engagement Program to accompany the rollout of the BBP by LGs. Although the program was allocated $845,000 of the $3.2 million 'engagement' budget available in 2015-16, the campaign was not approved. The result was that each of the 8 LGs rolled out the new bin systems without common waste avoidance and minimisation messages, reducing the likelihood of consistent understanding of and success for the program. A new Right Bin communication toolkit and evaluation project was approved in the 2016-17 Business Plan.

Producing key messages is one step in engaging the community in good practice waste management, but the messages also need to be promoted. Examples of a variety of messages designed to avoid and minimise waste are readily available. See Appendix 2 for a simple, but effective and locally produced example.

There is no incentive for the community to avoid or reduce waste

In establishing Waste Strategy targets, the State Government placed emphasis on promoting good practice management of the waste that the community and industry produce, but less attention on avoiding the production of waste.

The WARR Act outlines the Waste Authority's role in liaising with LG to coordinate efforts to prevent waste. Yet waste avoidance is not a prominent message within the community, all of whom are involved in waste management within their own household, in public places or in the workplace.

Waste avoidance sits at the top of the waste hierarchy (Figure 9), and is a key element of the Waste Authority's mandate and meeting the Waste Strategy's vision to move to a low-waste society.

Figure 9: Waste hierarchy based on the WARR Act

The landfill levy, and Waste Authority initiatives, such as Waste Wise Schools (WWS), BBP, RCPP, Illegal Dumping Program, Community Grants Scheme and the Regional Funding Program, go some way towards promoting waste avoidance. However, the very definition of waste as 'material that is unwanted by, or excess to the requirements of the party from whom it comes' means that a key message to promote waste avoidance is needed to swing the focus away from dealing with the waste that is produced.

One waste avoidance initiative that has met with some success is the Waste Wise Schools program shown in Figure 10. However, there is an opportunity to standardise data collection, reporting and evaluation to more accurately measure program success. Messages that are clear and easy to understand would contribute in a similar manner to waste avoidance and minimisation.

Case Study – Waste Wise Schools (WWS)

DER's WWS program educates schoolchildren in strategies to reduce landfill based on the 3 R's – reduce, reuse, recycle. WWS offers curriculum linked activity packs for primary and secondary schools to plan, implement and maintain waste avoidance and minimising projects such as recycling, composting, worm farming and waste free lunches.

Participants rate the program highly to promote school engagement and increase resource recovery. To date, the program has engaged with 852 of the 1,144 schools in WA.

Figure 10: *Waste Free Wednesday* is a Waste Wise Schools initiative

Waste avoidance is difficult to measure. The *NSW Waste Avoidance and Recovery Strategy 2014-21* includes an objective to 'avoid and reduce waste generation' and associated target to 'reduce the rate of waste generation per capita'. In WA there is no incentive for community members to avoid or reduce waste other than a 'feel good' reward. An inability to measure does not prevent promotion of waste avoidance strategies.

Good practice techniques are available. The trial and adoption of successful techniques will be more likely if supported by all levels of government, industry and the community.

To promote waste minimisation, some LGs have recently changed the way they charge for community waste services. For example, the Town of Cambridge provides free recycling bins, charges an additional annual fee for green waste bins and a reduced annual fee for smaller general waste bins via their *Max Recovery Campaign*.

The City of Stirling offers one free skip bin per financial year for junk waste, and on demand mattress, white goods and e-waste collections. In the first 12 months of the service the City of Stirling reported it collected 43% less waste from verges in skips when compared with the previous 12 month period when it offered a scheduled loose verge collection.

Achieving desired outcomes is more likely if messaging and supporting practices are consistent. Figure 11 illustrates how varying practices across the Perth metropolitan area can undermine messaging.

Case Study – Variation in public place waste and recycling bins

Most waste from public place disposal facilities and special events ends up in landfill, regardless of whether bins are labelled to separate waste and recycling. Bin labelling and colours vary, leaving people confused about where to place waste.

Some examples of public bin systems in Perth, clockwise from top left, include (Figure 11):

- University of WA – 'recycling' and 'waste' bins
- Hillarys Boat Harbour – blue Department of Transport (DoT) waste bins
- Bicton Quarantine Park – green lid waste and yellow lid recycling bins
- City Beach – 'recycling' and 'landfill' bins.

Figure 11: Variation in public bins throughout the Perth metropolitan area

The State Government needs other ways to encourage waste operator buy-in to the Waste Strategy

The Waste Authority does not have the power or controls to implement the Waste Strategy without the collective support of government, private sector and community. But current methods mostly encourage diversion of waste from landfill rather than waste avoidance, which include to:

- increase the cost of landfill by imposing a levy or tax
- ban disposal of specific wastes from landfill, e.g. organics, household hazardous wastes, mattresses (problem wastes)
- mandate pre-treatment or sorting of waste before disposal
- regulate wastes by product stewardship programs.

Apart from payment of the landfill levy, support for the Waste Strategy is optional. Finding other ways to encourage whole of community and whole of government buy-in to waste avoidance and minimisation is an essential component of meeting Waste Strategy targets.

In WA, the landfill levy is used as an economic tool, aided by the Waste Authority's push to improve source separation of waste. Together, these methods contribute to waste reduction, but do not offer a total solution. For example, the State Government has no policy for minimising its own waste. In the case of building C&D waste, the cost of the landfill levy may simply be passed onto the customer with no options offered to avoid waste.

The Waste Strategy recognises the importance of product stewardship or Extended Producer Responsibility (EPR) but there are few state-based schemes in WA. The State Government prefers to pursue national schemes, such as drumMuster, PaintBack and TyreStewardship Australia even though its 2005 *Extended Producer Responsibility Policy Statement* and the WARR Act both provide opportunity for state-based schemes to be developed. EPR schemes can play an important role in resource recovery, particularly for problem wastes, by encouraging producers to reduce waste at all points in a product's lifecycle, reduce the environmental impacts of products, and improve resource recovery.

LGs identified cans, bottles, glass and plastic as the largest source of littering in WA. Other problem wastes include asbestos, tyres, used motor oil, commercial plastics, inert rubble and mattresses, due to their environmental risk, bulk or costly disposal.[18] All are candidates for product stewardship or EPR schemes, yet formal schemes either do not exist, or where they do exist, such as the Australian Packaging Covenant and Tyre Stewardship Australia, have had limited success.

Despite the preference for adopting national schemes, the State Government has introduced the Container Deposit and Recovery Scheme Bill 2016 into the Legislative Assembly in August 2016. If passed, it will establish a beverage container deposit and recovery scheme for drink bottles and cans in WA in 2018, to help improve recycling and reduce littering.

The State Government has also invested over $6 million in 94 Strategic Waste Investment Scheme projects between 2004 and 2013. But despite this investment, further action is needed to achieve desired recycling rates and manage problem wastes such as organics, tyres, plastic containers and glass, which can be recycled but often end up in landfill or as litter.

18 WALGA (2016). Problematic Materials for Local Government Background Paper.

Canada is one of the most advanced users of EPR. The Canadian Council of Ministers of the Environment prepared the *Canada-wide Action Plan for Extended Producer Responsibility*[19] strategy in 2009. It offered recommendations and guidance to promote consistent use of EPR schemes. Provincial governments develop and implement regulations, performance standards and monitoring protocols, and enforce regulations. In 2014 Canada had over 70 programs covering 23 product categories.[20]

In the absence of EPR schemes for all problem wastes, some LGs and industry waste operators are proactive in seeking solutions for disposing of problem wastes. For example, the City of Canning use recycled concrete and used tyres to construct retaining walls (Figure 12) and a number of RCs recycle mattresses (Figure 13).

Source: City of Canning

Figure 12: Innovative use of used tyres and recycled concrete in a retaining wall

Case Study – Mattress recycling

Mattresses are a problematic waste. Landfills in the Perth and Peel region receive over 130,000 mattresses each year.[21] To recycle a mattress costs $20, compared with a $40 price to landfill. Producers and consumers have no responsibility to pay for mattress disposal. This usually rests with LGs or RCs.

Up to 90% of mattress components can be recycled: steel springs (scrap metal), timber (toys, mulch, animal bedding), foam (carpet underlay) and textiles (punching bags). But only 15% of mattresses are recycled as local enterprises are too busy to recycle more.

Figure 13: Mattresses awaiting recycling at a regional local government waste facility

19 Canadian Council of Ministers of the Environment (2009). Canada-wide Action Plan for Extended Producer Responsibility.
20 Shaw, T. (2014). EPR: A Canadian Perspective. Recycling Today, June 2014.
21 Bill Marchbank Waste Management Services (2012). Review of Options for a Pilot Project to Increase Recycling of Mattresses from the Residential Sector in the Perth and Peel Regions of Western Australia.

Appendix 1: WARR Account budget and expenditure 2015-16

Program and project	Budget ($)	Expenditure ($)	%
Planning	**145,000**	**0**	**0**
Local Government Waste Plans	120,000	0	0
Water Corporation Co-location Study	25,000	0	0
Regulation	**2,175,000**	**2,158,710**	**99**
Levy Inspection, Compliance, Enforcement, Illegal Dumping	2,050,000	2,158,710	105
Recovery and Disposal Operations Guidelines	50,000	0	0
Recycled Product Specifications	75,000	0	0
Best Practice	**8,030,000**	**2,517,775**	**31**
Best Practice Funding Principles Review	150,000	17,835	12
Best Practice Vergeside Review	50,000	0	0
Best Practice Drop Off Review	50,000	0	0
Household Hazardous Waste Program Review	50,000	0	0
Best Practice Local Government Planning Scheme Review	40,000	0	0
Best Practice Charitable Recycling Group Guidelines	50,000	0	0
Better Bins Kerbside Collection	6,850,000	2,490,510	36
Better Verge Collections	300,000	0	0
Better Drop Off Point Network	300,000	0	0
Better Practice Local Government Planning	40,000	0	0
Better Practice Charitable Recycling Organisation Rebate	150,000	9,430	6
Economic Instruments	**11,067,000**	**3,825,288**	**35**
Waste Processing Procurement Team	275,000	0	0
Recycled C&D Market Development Program	5,550,000	3,232	0.1
Household Hazardous Waste Program	2,600,000	2,362,304	91
WATEP II Program	200,000	14,916	7
Resource Recovery Grant Scheme	500,000	0	0
Community Grant Scheme	350,000	182,422	52
Greenstamp Strategic Partnership (SP)	180,000	119,715	67
Keep Australia Beautiful Council SP	802,000	820,000	102
Master Builders Association SP	300,000	281,722	94
WA Local Government Association SP	180,000	22,982	13
Waste Management Association SP	30,000	17,995	60
Electrical, Utilities and Public Administration (EUPA)	100,000	0	0
Engagement	**3,245,000**	**1,262,684**	**39**
Communications Framework Implementation	650,000	280,037	43

Program and project	Budget ($)	Expenditure ($)	%
Waste Engagement Strategy Scoping Report	100,000	0	0
Better Bins Engagement Program	845,000	0	0
Behaviour Change Expert Advice Panel	100,000	0	0
Behaviour Change Trials	300,000	0	0
Behaviour Change Cost Benefit Assessment and Communication	50,000	0	0
Waste Wise Schools	1,000,000	917,864	92
Infinity Awards	100,000	52,295	52
Corporate Communications and Website	100,000	12,488	12
Data and Measurement	**150,000**	**78,625**	**52**
Data and Information Strategy Scoping Report	50,000	0	0
Annual Local Government Waste and Recycling Census	5,000	1,560	31
Annual Recycling Activity Report	75,000	77,065	103
Local Government Waste and Recycling Data Collection and Reporting	20,000	0	0
Strategy and Policy Development and Review	**100,000**	**25,740**	**26**
Waste Strategy, Legislation and Policy Review and Evaluation	50,000	3,820	8
National Waste Policy and Initiatives	50,000	21,920	44
Program and Administration Support	**4,800,000**	**6,081,483**	**127**
Waste Authority Services	2,800,000	2,880,481	103
DER Indirect Costs	2,000,000	3,201,002	160
Old Programs	**0**	**1,161,215**	
Regional Funding Program	0	1,159,998	
Waste and Recycling Infrastructure Planning	0	1,217	
Total	**29,712,000**	**17,111,520**	**58**

Source: DER and Waste Authority Business Plan 2015-16

Appendix 2: Example of locally produced guidance material for nappy disposal

Appendix 3: Waste Authority programs

Better Bins Program (BBP)

- Offers funding and guidance to LGs to support source separation through a collection system to separate general, co-mingled recycling and green waste (Figure 14).

Figure 14: The 3 bin system advocated by the Waste Authority follows the Australian Standard for bin colours and markings

- Aims to increase MSW recovery, which will assist the state to meet Waste Strategy targets. Adelaide, Melbourne and Sydney use 3 bin systems, and generally achieve higher recovery than traditional 1 or 2 bin systems.
- To date, 5 metropolitan and 3 regional LGs had signed up to participate in the BBP by June 2016, which is only 6% of the 30 metropolitan and 110 regional LGs and represents 18% of the state's population.
- Waste Authority developed a Better Bins Engagement Program to ensure consistency in the rollout of the Better Bins Program by LG. The project was not supported or approved, leading to concern that variation in implementation by each LG may decrease broader community understanding.

Recycled Construction Products Program (RCPP)

- Provides an incentive to metropolitan LGs, RCs, state government entities and the private sector, to use recycled C&D products in civil construction.
- Aims to increase the use and acceptability of recycled materials by transitioning the construction products market so recycled products are readily accepted or preferred to virgin materials.

- Provides incentive payments to users of recycled C&D products in approved civil applications of $4/tonne for use of road base and $2/tonne for drainage rock. The recycled material must be produced by DER licensed C&D waste processing facilities and consistent with DER's *Material Guidelines* or other policy developed under DER's *Guidance Statement: Regulating the use of waste-derived materials*[22].
- Claim amounts may be increased by 50% per tonne where LGs introduce a policy that supports the use of recycled C&D products in their own civil works and encourages and approves the use of these products in private development and civil works in their jurisdiction.
- LGs, RCs, state government entities and the private sector can apply for funding to use recycled C&D products produced by DER licensed facilities that meet DER's environmental standards, in metropolitan civil construction projects, such as roads, cycle paths and carparks.

22 DER withdrew these guidelines in March 2016 subject to a review of DER policy following the outcome of legal proceedings involving the State Government's collection of the landfill levy in WA.

Acronyms

AWT	alternative waste treatment
BBP	Better Bins Program
C&D	construction and demolition
C&I	commercial and industrial
DER	Department of Environment Regulation
EP Act	*Environmental Protection Act 1986*
EPR	extended producer responsibility
ICMS	Incident Complaints Management System
LG	local government
MSW	municipal solid waste
RAR	Recycling Activity Review
RC	regional councils
RCPP	Recycled Construction Products Program
SLA	Service Level Agreement
SWIPP	2014 Strategic Waste Infrastructure Plan Project
WALGA	Western Australian Local Government Association
WARR Account	Waste Avoidance and Resource Recovery Account
WARR Act	*Waste Avoidance and Resource Recovery Act 2007*
WARR Levy Act	*Waste Avoidance and Resource Recovery Levy Act 2007*
WAS	Waste Authority Services
WMAA	Waste Management Association of Australia
WWS	Waste Wise Schools

Auditor General's Reports

Report Number	Reports	Date Tabled
22	Opinion on Ministerial Notification	13 October 2016
21	Opinion on Ministerial Notification	6 October 2016
20	Ord-East Kimberley Development	7 September 2016
19	Information and Communication Technology (ICT) in Education	17 August 2016
18	Opinions on Ministerial Notifications	11 August 2016
17	Financial and Performance Information in Annual Reports	21 July 2016
16	Grant Administration	7 July 2016
15	Management of Feedback from Public Trustee Represented Persons	30 June 2016
14	Management of Marine Parks and Reserves	30 June 2016
13	Maintaining the State Road Network – Follow-on Audit	29 June 2016
12	Regulation of Builders and Building Surveyors	22 June 2016
11	Information Systems Audit Report	22 June 2016
10	Opinions on Ministerial Notification	8 June 2016
9	Payment of Construction Subcontractors – Perth Children's Hospital	8 June 2016
8	Delivering Services Online	25 May 2016
7	Fitting and Maintaining Safety Devices in Public Housing – Follow-up	11 May 2016
6	Audit of Payroll and other Expenditure using Data Analytic Procedures	10 May 2016
5	Audit Results Report – Annual 2015 Financial Audits – Universities and state training providers – Other audits completed since 1 November 2015; and Opinion on Ministerial Notification	10 May 2016
4	Land Asset Sales Program	6 April 2016
3	Management of Government Concessions	16 March 2016
2	Consumable Stock Management in Hospitals	24 February 2016
1	Supplementary report Health Department's Procurement and Management of its Centralised Computing Services Contract	8 June 2016 17 February 2016

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