



Waste Data Strategy

November 2019

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Contents

1.0 The role of the Waste Data Strategy	1
2.0 Why do we need a Waste Data Strategy?	1
3.0 Scope	2
3.1 Who does this strategy apply to?	2
3.2 Terminology	2
4.0 Principles	3
5.0 Objectives	4
Objective 1: Meet legislative requirements	4
Objective 2: Support the delivery of the waste strategy	5
Objective 3: Meet the needs of stakeholders.....	6
6.0 Strategies and actions.....	8
7.0 Implementation	17
8.0 References	18

1.0 The role of the Waste Data Strategy

This Waste Data Strategy is a supporting document of the *Waste Avoidance and Resource Recovery Strategy 2030* (the waste strategy) and the *Waste Avoidance and Resource Recovery Strategy Action Plan 2030* (the action plan). It provides information about the principles, objectives and specific actions which will be undertaken by the Waste Authority and Department of Water and Environmental Regulation (DWER) in relation to waste data, in order to implement the action plan, and achieve the targets and objectives of the waste strategy.

The waste strategy, released on 10 February 2019, sets a vision for all Western Australians to strive for, which is supported by principles, objectives, targets and strategies. The waste strategy states that a Waste Data Strategy will be developed to:

... guide the ongoing development of data definitions, collection mechanisms, management and reporting requirements to ensure progress on Waste Avoidance and Resource Recovery Strategy 2030 can be monitored appropriately and that any revision of approach is based on sound information. (p.40)

The waste strategy also provides a number of targets intended to guide and measure waste and resource recovery performance in Western Australia (WA). Achievement of these targets requires a holistic approach which extends across the whole economy and engages all stakeholders – including industry, government and the community. Waste data will be required to evaluate the state's performance against waste strategy targets.

The waste strategy is supported by the action plan. A number of the actions within the action plan directly relate to, or rely on, the collection and management of waste data.

2.0 Why do we need a Waste Data Strategy?

Data provides a foundation for the management of waste in WA. It is crucial to evaluating the state's performance (and how we compare to other jurisdictions), identifying issues and opportunities (for example, for specific waste streams such as food waste) and enabling evidence-based decisions and actions.

Timely and reliable data underpins the development and maintenance of effective waste management legislation, licensing, policy, programs, and the Waste Avoidance and Resource Recovery Levy (waste levy). WA also supplies data to the Australian Government for national comparisons and the development of national benchmarks, policy and programs.

A large amount of data related to waste and recycling in WA is currently collected, reported, analysed and used by a wide range of stakeholders, including state government agencies, local government, regional councils and community groups.

Until now, DWER and the Waste Authority have had no single point of overarching guidance regarding what types of waste data should be collected or how it should be reported, stored and used. There has been a lack of coordination between the entities which collect waste data, limited data sharing between these entities, and no shared plan for addressing data gaps, inefficiencies or opportunities for improvement.

In an audit of the effectiveness of the 2012 *Western Australian Waste Strategy: 'Creating the right environment'* in October 2016, the Office of the Auditor General highlighted the importance of accurate, reliable, representative and complete data but noted a number of areas where such data had been lacking.

The Waste Data Strategy provides guidance with the aim of ensuring that the waste data needs of stakeholders are met and that delivery of the waste strategy is better informed and more likely to succeed.

3.0 Scope

3.1 Who does this strategy apply to?

The primary focus of the Waste Data Strategy is to guide the actions to be undertaken by the Waste Authority and DWER to improve waste data management in WA, including waste data reporting, collection, storage and use.

The Waste Data Strategy will also guide DWER and the Waste Authority's interactions and engagement with other stakeholders who are involved in, and critical to, waste data activities.

As a public document, the Waste Data Strategy can also serve as a reference to inform the waste data activities and decisions of all stakeholders in WA's waste sector.

3.2 Terminology

Consistent with the waste strategy, the focus of this Waste Data Strategy is on 'solid waste' (waste products or materials that are 'spadeable'). This scope may broaden over time to incorporate aspects of the circular economy, or align with national waste data reporting regimes.

For the purposes of the waste strategy, and this Waste Data Strategy, solid waste is further described as:

Municipal solid waste (MSW) is waste primarily collected from households and local governments through waste and recycling collections.

Commercial and industrial (C&I) waste is waste produced by institutions and businesses. It includes waste from schools, restaurants, offices, retail and wholesale businesses and industries, including manufacturing.

Construction and demolition (C&D) waste is waste produced by demolition and building activities, including road and rail construction and maintenance, and excavation of land associated with construction activities.

For the purposes of this Waste Data Strategy:

Data means facts, measurements, figures and statistics which are collected as information for analysis or reference.

Waste means solid waste from municipal, commercial and industrial, or construction and demolition sources.¹

Waste data means data and information related to the generation, management, collection, treatment, storage, recycling and disposal (legally or illegally) of solid waste.

Waste data may include data which directly relates to waste materials (e.g. volumes or tonnages), as well as data associated with activities such as waste treatment processes and outcomes, attitudes and behaviours toward waste, and other information required to evaluate or monitor programs and policies related to solid waste.

¹ 'Waste' here includes 'problem wastes' (materials that are difficult to manage, such as mattresses or household hazardous waste) where they are considered a priority of the waste strategy. It excludes clinical waste and radioactive waste. Further information for operators on assessing whether material waste is available in this [fact sheet on assessing waste](#).

4.0 Principles

This Waste Data Strategy includes six principles to guide decisions about waste data to better ensure that decisions align with the Waste Data Strategy objectives. All principles are regarded as equally important for effective waste data management:

1. **Relevant:** Data will only be collected where there is a clear, beneficial reason for doing so.
2. **Quality:** As far as is practicable, data will be fit for purpose, complete, consistent and accurate.
3. **Transparent:** Data limitations, inconsistencies and uncertainty caused by the way data is collected, reported and/or analysed should be communicated to ensure transparency around data reliability.
4. **Timely:** Data will be updated as required and made available to stakeholders in a useful timeframe.
5. **Efficient:** Data will be collected, used and reported in an efficient and coordinated manner, to reduce the burden on reporting entities and make the best use of all data collected. Duplicative collection and reporting will be avoided.
6. **Open by default, protected where required:** Data will be collected, stored and used in a way that is consistent with the *Waste Avoidance and Resource Recovery Act 2007* (WARR Act), as well as the *Western Australian Whole of Government Open Data Policy* (Department of Premier and Cabinet, 2015). Where appropriate, data will be publicly released and made easily discoverable and understood. Confidential and commercial data will be protected.

5.0 Objectives

To ensure WA's waste data needs are met, the management of waste data should be based on sound data management principles (as outlined in Section 4.0) and the achievement of objectives. Focusing resources on the data management activities that meet these objectives will help ensure the state's waste data needs are met.

The management of waste data in WA (i.e. the collection, reporting, analysis and use of waste data) will be undertaken to meet the following objectives:

1. **Meet legislative requirements:** including managing licence arrangements, monitoring of compliance and enforcement.
2. **Support delivery of the waste strategy:** including monitoring and reporting on performance, and informing waste policy, programs and decision making.
3. **Meet the needs of waste data stakeholders:** including those who collect, report and use waste data.

Objective 1: Meet legislative requirements

WA waste data will be collected and reported in order to meet a number of legislated obligations:

Who?	Why?	Legislation
<ul style="list-style-type: none"> • Local government • Waste service/facility operators 	<p>Meet reporting obligations: Amendments to the WARR Regulations made in June 2019 require data recording and annual reporting to DWER by:</p> <ul style="list-style-type: none"> • all local governments that provide waste services • waste recyclers that treat, process or sort at least 1,000 tonnes of reprocessed, recycled or recovered material in a financial year • landfills that receive at least 20,000 tonnes of solid waste in a financial year at the licensed landfill or the relevant premises and are located outside of the metropolitan region. 	Waste Avoidance and Resource Recovery Regulations 2008 (r.18C)
<ul style="list-style-type: none"> • Waste service/facility operators 	<p>Meet licence conditions: Licence conditions require operators of waste facilities which are prescribed premises to report data to DWER annually. Many licences also require data to be collected and available on site for inspection but not submitted to DWER. Licence holders provide audit compliance reports to DWER in accordance with licence condition requirements.</p>	<i>Environmental Protection Act 1986</i> (s.62 & s.62A)
<ul style="list-style-type: none"> • DWER 	<p>Monitor and audit prescribed premises, enforce licence conditions: DWER may enter premises and require occupiers to produce information or data for enforcement purposes.</p>	<i>Environmental Protection Act 1986</i> (s.89 & s.90)
<ul style="list-style-type: none"> • Waste service/facility operators • DWER 	<p>Track controlled waste: Licensed carriers and occupiers of waste facilities are obliged to provide data relating to the transport of controlled waste to DWER. DWER reports this information to the Australian Government to meet federal and international reporting obligations - National Environment Protection Council and Basel.</p>	Environmental Protection (Controlled Waste) Regulations 2004 (r.41A)
<ul style="list-style-type: none"> • Signatories to national product stewardship schemes • DWER 	<p>Meet obligations of national product stewardship schemes: For example Australian Packaging Covenant, National Tyre Product Stewardship Scheme, and National Television and Computer Recycling Scheme. Signatories may be required to report straight to the Australian Government, or report to DWER, which then passes data onto the Australian Government.</p>	Environmental Protection Regulations 2013 (r.12-13) Product Stewardship (Televisions and Computers) Regulations 2011 (r.5.02)
<ul style="list-style-type: none"> • Waste Authority 	<p>Undertake legislated functions: The Waste Authority collects and analyses waste data in order to undertake some of its functions, for example:</p> <ul style="list-style-type: none"> • provide advice and recommendations to the Minister and CEO • develop, promote and review the waste strategy and coordinate its implementation. 	<i>Waste Avoidance and Resource Recovery Act 2007</i> (sch.2)
<ul style="list-style-type: none"> • Waste service/facility operators 	<p>Apply the waste levy: Category 63, 64 and 65 landfill operators receiving waste must make records in an approved form and lodge a return with the CEO in the approved form quarterly setting out details of waste received.</p>	Waste Avoidance and Resource Recovery Regulations 2008 (r.17 & r.18)
<ul style="list-style-type: none"> • Waste Authority • DWER 	<p>Annual reporting: DWER and the Waste Authority are required to publish annual reports. Waste data is used to inform key financial and performance indicators and report on operational activities.</p>	<i>Financial Management Act 2006</i> (s.61) <i>Government Financial Responsibility Act 2000</i> (s.5)

Objective 2: Support the delivery of the waste strategy

The waste strategy sets out a waste vision for the state:

Western Australia will become a sustainable, low-waste, circular economy in which human health and the environment are protected from the impacts of waste.

In order to achieve this vision, the waste strategy outlines objectives, targets and strategies for waste management in WA. A number of these include, or are dependent on, the collection, analysis and reporting of waste data.

The waste strategy includes waste management objectives and targets for the state:

Objectives	Avoid <i>Western Australians generate less waste.</i>	Recover <i>Western Australians recover more value and resources from waste.</i>	Protect <i>Western Australians protect the environment by managing waste responsibly.</i>
State targets	<ul style="list-style-type: none"> 2025 – 10% reduction in waste generation per capita. 2030 – 20% reduction in waste generation per capita. 	<ul style="list-style-type: none"> 2025 – Increase material recovery to 70%. 2025 – All local governments in the Perth and Peel regions provide consistent three bin kerbside collection systems that include separation of FOGO from other waste categories. 2030 – Increase material recovery to 75% From 2020 – Recover energy only from residual waste. 	<ul style="list-style-type: none"> 2030 – No more than 15% of Perth and Peel regions' waste is disposed to landfill. 2030 – All waste is managed by and/or disposed of to better practice facilities.
Targets for waste generators	Community	Community	Community
	<ul style="list-style-type: none"> 2025 – Reduction in MSW generation per capita by 5%. 2030 – Reduction in MSW generation per capita by 10%. 	<ul style="list-style-type: none"> 2020 – Increase MSW material recovery to 65% in the Perth and Peel regions, 50% in major regional centres. 2025 – Increase MSW recovery to 67% in the Perth and Peel regions, 55% in major regional centres. 2030 – Increase MSW material recovery to 70% in the Perth and Peel regions, 60% in major regional centres. 	<ul style="list-style-type: none"> 2030 – Move towards zero illegal dumping. 2030 – Move towards zero littering.
Targets for waste managers	Government and industry	Government and industry	Government and industry
	<ul style="list-style-type: none"> Reduction in C&D waste generation per capita by 15% by 2025, 30% by 2030. Reduction in C&I waste generation per capita by 5% by 2025, 10% by 2030. 	<ul style="list-style-type: none"> C&D sector – Increase material recovery to 75% by 2020, 77% by 2025, 80% by 2030. C&I sector – Increase material recovery to 70% by 2020, 75% by 2025, 80% by 2030. 	<ul style="list-style-type: none"> 2030 – Move towards zero illegal dumping.
Targets for waste managers	Waste industry	Waste industry	Waste industry
	<ul style="list-style-type: none"> 2030 – All waste is managed and/or disposed using better practice approaches. 	<ul style="list-style-type: none"> 2030 – All waste facilities adopt resource recovery better practice. 	<ul style="list-style-type: none"> 2030 – No more than 15% of Perth and Peel regions' waste is disposed to landfill. 2030 – All waste facilities adopt environmental protection better practice.

The waste strategy highlights the ongoing challenge of establishing baseline data and the need for improved data collection and analysis. This will better enable the measurement and evaluation of waste management programs and initiatives and ensure funding and other resources are directed where they are most needed and can be most effective. Many of the strategies within the waste strategy rely on waste data, and a number directly relate to data management.

One of the major supporting documents of the waste strategy is the action plan, released in February 2019. The action plan prioritises actions to deliver against high-level strategies outlined in the waste strategy.

Each action in the action plan is linked directly to one or more of the high level strategies of the waste strategy, and in turn, each action in this Waste Data Strategy is linked to an action within the action plan.

To effectively implement the waste strategy and action plan, data will be required to:

- establish the baseline benchmarks against which the targets can be compared
- better understand specific waste streams and the opportunities and barriers to improving their management
- develop the policies and programs which will contribute to the achievement of the targets
- measure progress against the targets
- measure performance relative to other jurisdictions
- contribute data to national data sets
- determine whether the objectives have been achieved.

Much of the data needed to achieve this is already being collected. However, improvements to current approaches, the collection of new data and better use of existing data will also be required.

Objective 3: Meet the needs of stakeholders

Waste data stakeholders are a diverse group of entities which record, report, collect and use waste data for a wide range of reasons. They are entities which:

- **Record and report waste data:** record waste data on a regular basis for internal use and/or to report it to an external body. Recording and reporting may be mandated or voluntary.
- **Collect and collate waste data:** gather, store and manage waste data from a number of different sources (i.e. the entities which record and report the data). Collection may be mandated or voluntary.
- **Analyse and use waste data:** analyse waste data and use it for a range of different purposes, for example to fulfil legislative obligations, develop policy and programs, inform business and investment decisions, monitor performance, or for community education and engagement.

Waste data stakeholders include:

The Department of the Environment and Energy (DoEE) and other Australian Government agencies	Community and charity groups, National Association of Charitable Recyclers
Australian Bureau of Statistics (ABS)	Schools
DWER and other state government agencies	Individuals
Waste Authority	Waste industry bodies
Local governments, regional councils and the Western Australian Local Government Association	Controlled waste – waste holders, carriers and occupiers of waste facilities
Waste facility operators	Organisations receiving WARR Account grant funding or participating in WARR Account-funded programs
Signatories to national product stewardship schemes (e.g. Australian Packaging Covenant, National Tyre Product Stewardship and Television and Computer Recycling schemes)	Keep Australia Beautiful Council (KABC)

Consultation undertaken within DWER and with the wider waste sector through the consultation process for the development of the waste strategy has revealed many gaps and inefficiencies in the way waste data is currently being managed. In summary, stakeholders are seeking:

Consistency:

- More state-wide consistency in approaches to data collection and reporting.
- Standardised data measures, terminology and waste classifications for reporting.
- Increased mandated/regulated data reporting.

Guidance:

- More guidance from the State Government on data terminology, definitions and methodologies for data collection, including at facilities which lack data collection technology, resourcing or capacity.

Coordination:

- Improved co-ordination of data collection and the sharing of data, especially at the State Government level.
- Centralised management of data and a central platform for stakeholders to access.

Resourcing:

- Better resourcing for data collection, auditing and verification processes to increase data reliability for all stakeholders.
- Wider scope for who reports waste data and what data is reported.

Value:

- Increased prominence in the use and reporting of data to make its value more visible.
- Use of data to monitor the state's progress against waste strategy targets and develop evidence-based policy, programs and targets, including in regional and remote areas.
- Communication/engagement with stakeholders to encourage data collection/compliance, and improve waste generation, recovery and environmental protection performance.

Systems/technology:

- Overcome the limitations of the information systems used to collect and store data.
- Use of technology to facilitate data collection.

Through the strategies and actions set out in this Waste Data Strategy, the Waste Authority and DWER are seeking to address these stakeholder needs.

The Waste Data Strategy will be reviewed approximately every five years, in line with the legislated review of the waste strategy under section 33 of the WARR Act.

6.0 Strategies and actions

These strategies and actions contribute towards the achievement of the Waste Data Strategy objectives, and will be undertaken in alignment with the Waste Data Strategy principles. They will be led by the Waste Authority in consultation with all relevant business units/functional areas within DWER. The Waste Authority will report on the progress of each action on an annual basis.

Timelines for the achievement of the actions have been indicated:

- **Ongoing:** activities which are currently under way and/or which will be continuously undertaken.
- **Short-term:** activities to commence within the next 1-2 years.
- **Medium-term:** activities to commence within the next 3-5 years.
- **Long-term:** activities to commence in more than five years.

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
1.0 Improve, centralise and streamline waste data storage and reporting	1.1 Investigate ways to better coordinate existing data collection activities, share data, and reduce reporting duplication.	Ongoing				<ul style="list-style-type: none"> • Waste Authority • DWER • Waste facility operators • Local governments & regional councils • Controlled waste – waste holders, carriers and occupiers of waste facilities 	7
	1.2 Implement a centralised approach to waste data reporting:	Short-term	✓	✓	✓		
	<ol style="list-style-type: none"> Develop an online platform for waste data reporting requirements under regulation 18C of the <i>Waste Avoidance and Resource Recovery Regulations 2008</i> (WARR Regulations). Undertake consultation and provide guidance to waste facility operators on the use of online platform. Develop a centralised storage platform for waste data which can be used to run queries and produce consistent reliable reports. Support the development of Environment Online to streamline waste data reporting across DWER. 	Medium-term					

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
2.0 Collect data to monitor WA's waste and recycling performance and enable measurement and reporting against waste strategy targets	2.1 Undertake annual data collection activities to monitor waste and recycling performance.	Ongoing				<ul style="list-style-type: none"> • Waste Authority • DWER • Waste facility operators • Local governments & regional councils • ABS • DoEE • Other jurisdictions 	7
	2.2 Ensure that data collected is consistent with amendments to the WARR Regulations and waste strategy targets, and is reported in a more timely and harmonised manner. Critically review the type of data collected to ensure it is fit for purpose, and provides the necessary baseline information to allow trends to be identified early.	Short-term					
	2.3 Provide support to local governments, recyclers and landfill operators who are liable persons for data reporting under regulation 18C the WARR Regulations.						
	2.4 Use existing and new datasets to evaluate progress against waste strategy targets: <ol style="list-style-type: none"> 1. Identify data needed to evaluate progress against waste strategy targets. 2. Identify existing data sources which contribute to evaluation of progress against waste strategy targets, and gaps in data (required datasets that are not currently collected). 3. Design policy and programs in a way which facilitates data collection to fill current data gaps, and evaluation of progress against waste strategy targets. 		✓	✓	✓		
	2.5 Review the data collection, storage, analysis and reporting practices of Waste Wise Schools in order to investigate ways in which this data can: <ul style="list-style-type: none"> ○ contribute to the evaluation of progress against waste strategy targets 	Medium-term					

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
	<ul style="list-style-type: none"> be used in the evaluation and further development of the Waste Wise Schools program. 						
	2.6 Use existing and new datasets to develop and monitor better practice guidance and programs.						
	2.7 Collaborate with other jurisdictions and agencies to develop standards for collecting more detailed data about waste flows in the circular economy, including: <ul style="list-style-type: none"> design and manufacture of products distribution to retailers consumption, use, reuse and repair. 	Long-term					
	2.8 Identify existing sources of waste avoidance and reuse data and any additional waste materials/activities that could be captured as waste avoidance or reuse data. Investigate the feasibility of projects to capture this data.						
3.0 Improve data confidence	3.1 Develop methods for expressing the uncertainty associated with reported waste data.	Short-term	✓	✓	✓	<ul style="list-style-type: none"> Waste Authority DWER Local governments and regional councils Waste facility operators 	7
	3.2 Develop improved processes for data collation, analysis, verifying and reporting of waste and recycling data under regulation 18C of the WARR Regulations to reduce the risk of error.						
	3.3 Provide metadata that assists with accessibility and appropriate use of waste data.	Medium-term			✓		
	3.4 Develop and implement a compliance program for data reported under regulation 18C of the WARR Regulations.	Long-term	✓	✓	✓		4

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
	3.5 Develop policies and legislation in consultation with stakeholders to increase the accuracy of waste data.						5
4.0 Improve availability of waste data for stakeholders	4.1 Provide stakeholders with regular data updates through reporting on the data collected through regulation 18C of the WARR Regulations, fact sheets, annual reports, and the Waste Authority and DWER websites.	Ongoing				<ul style="list-style-type: none"> • Waste Authority • DWER • DLGSC • All waste data stakeholders 	7
	4.2 Use the MyCouncil website to deliver disaggregated local government waste data to stakeholders. This includes developing a review process and updated framework with the Department of Local Government, Sport and Cultural Industries (DLGSC).	Short-term		✓	✓		
	4.3 Work with stakeholders to identify additional types and formats of data that they would find useful, and investigate new platforms to deliver waste data to stakeholders.	Long-term					
5.0 Collect and manage data for the development and evaluation of policy and programs	5.1 Collect data to facilitate the implementation of the WA litter prevention strategy and investigate impact of KABC-supported community clean-ups on the national litter index.	Ongoing				<ul style="list-style-type: none"> • KABC • Waste Authority • DWER • Organisations receiving WARR Account grant funding 	7
	5.2 Use data to inform waste review and reforms, and to develop evidence-based policy and programs, with the waste strategy focus materials as a priority.						

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
	<p>5.3 Develop new policy and programs to facilitate data collection, reporting, use and evaluation:</p> <ol style="list-style-type: none"> 1. Build data collection and monitoring mechanisms into the design of new policy and programs, including contracts with external contractors 2. Use the data collected to monitor, evaluate, and improve policies and programs as required. 					or participating in WARR Account-funded programs	
	<p>5.4 Investigate options for collecting data that will inform assessment of the effectiveness of existing policy and programs, for example:</p> <ul style="list-style-type: none"> o better practice programs (e.g. Better Bins) o newly introduced initiatives (e.g. container deposit scheme; lightweight plastic bag ban) o other existing waste-related policy and WARR Account-funded programs 	Short-term	✓	✓	✓		
	<p>5.5 Use existing and new datasets to develop and evaluate waste engagement, education and communications programs and resources:</p> <ul style="list-style-type: none"> o identify existing sources of behaviour change data and any additional data sources or activities that could be captured o investigate the feasibility of a project to amalgamate and build on existing sources of behaviour change data o use behaviour change data in combination with other data sources to develop and evaluate waste engagement, education and communications programs and resources (including KABC roadside littering signage and the supply of car litter bags). 	Medium-term					

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
	5.6 Improve data on landfill material composition to enable an improved understanding of opportunities for waste reduction and recycling by material type, which can allow better informed and targeted programs and policy.						
	5.7 Develop and implement a regional litter monitoring program and litter audits in regional and remote communities.						
6.0 Improve consistency of waste data terminology and definitions	6.1 Provide clear guidance on waste classifications and definitions.	Ongoing				<ul style="list-style-type: none"> • Waste Authority • DWER • Waste facility operators • Local governments & regional councils 	7
	6.2 Investigate ways to better align and integrate State Government waste data with national waste data approaches, and with the national waste policy objective to develop a national definition and classification system for wastes (including hazardous and clinical wastes) that aligns with international conventions and has provision for items that have ceased to be classed as waste.	Medium-term	✓	✓	✓		
	6.3 Revise waste classifications and definitions that relate to the collection, reporting and management of data, to reflect current knowledge and ensure waste materials are managed according to their risk and are treated and/or disposed of appropriately.	Long-term					
7.0 Collect comprehensive and reliable data on food waste	7.1 Develop a dataset of food waste data: <ol style="list-style-type: none"> 1. Review food waste data collection processes to identify existing data sources and gaps, and establish baseline data. 2. Investigate ways to improve food waste data management. 	Short-term		✓	✓	<ul style="list-style-type: none"> • Waste Authority • Food and beverage industry 	2

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
	3. Develop a dataset which can be used to: <ul style="list-style-type: none"> ○ design communications, education, and funding programs aimed at changing behaviour to reduce food waste ○ promote food and garden organics (FOGO) kerbside systems to increase the recovery of food waste ○ monitor and improve the effectiveness of food waste communications, education and funding programs ○ contribute to the National Food Waste Baseline. 	Medium-term				<ul style="list-style-type: none"> • Hospitality industry • Local governments and regional councils • Community and charity groups 	
8.0 Reform of data measurement and management for the application of the waste levy²	8.1 Improve data recording and reporting on waste stockpiling to improve the functioning of the waste levy.	Short-term				<ul style="list-style-type: none"> • DWER • Waste facility operators 	5
	8.2 Improve the accuracy of waste measurement for the purposes of waste levy calculation.	Medium-term	✓	✓	✓		
	8.3 Review the scope and application of the waste levy to ensure it meets the objectives of the waste strategy.						
9.0 Manage data for the development and implementation of Local	9.1 Use data to develop and implement Local Government Waste Plans which align local government waste planning processes with the waste strategy: <ol style="list-style-type: none"> 1. Provide local government with templates and guidance for the development of waste plans, 	Short-term	✓	✓	✓	<ul style="list-style-type: none"> • Waste Authority • DWER • Local governments & 	4

² All actions related to the waste levy will be subject to additional processes, including consultation, which are not detailed in the Waste Data Strategy.

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
Government Waste Plans	<p>including the collection and reporting of baseline data.</p> <p>2. Collect and collate data submitted by local governments as part of waste plans and reporting on waste plan implementation.</p> <p>3. Use waste plan data to inform the development of policy/programs aimed at local government, and to support the implementation of waste plans.</p>	Medium-term				regional councils	
10.0 Improve illegal dumping data	<p>10.1 Develop a dataset of illegal dumping data:</p> <p>1. Investigate the data required to establish baseline data and allow more targeted detection, investigation and prosecution of illegal dumping.</p>	Short-term				<ul style="list-style-type: none"> • DWER • Local governments & regional councils • Community and charity groups 	5
	<p>2. Develop a dataset of illegal dumping data which can be used:</p> <ul style="list-style-type: none"> ○ in the design of community engagement and education campaigns to raise awareness of illegal dumping and its impacts so as to reduce illegal dumping incidences ○ to measure the effectiveness of, and improve, community engagement and education campaigns ○ to work with land owners and managers to build their capacity to tackle illegal dumping ○ to contribute to the development of guidance to prevent the illegal dumping of waste at charitable recycler waste collection sites ○ to measure the effectiveness of enforcement as a change behaviour mechanism. 	Long-term	✓	✓	✓		7
11.0 Use data to inform approaches to	11.1 Identify the data required to undertake a strategic review of WA's waste infrastructure (including landfills) by 2020 to guide future infrastructure development.	Short-term		✓	✓	<ul style="list-style-type: none"> • Waste Authority • DWER 	6

Waste Data Strategy	Actions	Timeline	Waste Data Strategy Objective			Stakeholders	Link to Action Plan (Action number)
			1. Meet legislative requirements	2. Support the delivery of the waste strategy	3. Meet the needs of stakeholders		
waste infrastructure	11.2 Identify the data required to investigate options for developing a 'needs-based' approach to the approval of new landfills and other waste infrastructure.	Medium-term				<ul style="list-style-type: none"> Local governments and regional councils Department of Planning, Heritage and Lands 	
	11.3 Identify the data required to assess existing recovery facility and landfill siting and management practices and develop information to guide achievement of better practice approaches.						
12.0 Use data to develop and evaluate government procurement policy/programs which avoid waste and increase use of recycled products	12.1 Collect comprehensive and reliable data on government procurement of recycled products and waste avoidance: <ol style="list-style-type: none"> Develop and implement data collection protocols and guidance material, with an emphasis on the waste strategy focus materials. Identify opportunities for avoiding waste and increasing use of recycled products to support local market development through government procurement. Use data to develop procurement policy/programs. Collect data on policy/programs. Use data to evaluate policy/programs and publically report on outcomes. 	Short-term		✓		<ul style="list-style-type: none"> Waste Authority DWER Department of Finance Other State Government agencies 	3
		Medium-term					
		Long-term					

7.0 Implementation

The Waste Authority will lead the implementation of this Waste Data Strategy by:

- working with DWER and other key waste stakeholders to ensure that the strategies and actions of the Waste Data Strategy are delivered
- drafting annual business plans and administering WARR Account funding to support the strategies and actions of the Waste Data Strategy
- reporting on the progress of the strategies and actions.

As the Department responsible for the management and regulation of matters related to waste, DWER, as approved by the Minister for Environment, will:

- commit to relevant strategies and actions outlined in this Waste Data Strategy and allocate resources to their delivery in consultation with all relevant business units/functional areas
- report on the progress of the strategies and actions.

The Waste Data Strategy will be reviewed with the next review of the waste strategy, due in 2022/23.

8.0 References

Department of Premier and Cabinet 2015, *Western Australian Whole of Government Open Data Policy*, Department of Premier and Cabinet, Perth.

Office of the Auditor General Western Australia 2016, *Western Australian Waste Strategy: Rethinking Waste*, Office of the Auditor General Western Australia, Perth.

Waste Authority 2012, *Western Australian Waste Strategy: 'Creating the Right Environment'*, Waste Authority, Perth.

Waste Authority 2019, *Waste Avoidance and Resource Recovery Strategy 2030*, Waste Authority, Perth.

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