

WASTE AVOIDANCE AND RESOURCE RECOVERY REGULATIONS 2008

(Regulation 18D)

NOTICE OF INFORMATION REQUIRED FOR AN ANNUAL RETURN OF LIABLE LOCAL GOVERNMENTS THAT PROVIDE WASTE SERVICES

PERSON WHO DESCRIBES INFORMATION REQUIRED FOR AN ANNUAL RETURN

I, Mike Rowe, in my capacity as the chief executive officer of the department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*¹ (CEO) hereby describes in this notice the information relating to reportable waste² or recycling of reportable waste that is required to be provided in an annual return and the procedures to be followed to record and calculate or estimate that information pursuant to regulations 18C and 18D(1) of the *Waste Avoidance and Resource Recovery Regulations 2008*.

PERSON REQUIRED TO PROVIDE AND USE INFORMATION IN THIS NOTICE

In this notice, a person is a *liable person* as described under regulations 18B(1) and 18B(2) of the *Waste Avoidance and Resource Recovery Regulations 2008* if they are a local government defined under section 1.4 of the *Local Government Act 1995* as established under the *Local Government Act 1995* that provides waste services, which includes regional local governments³ pursuant to the definition of *local government* in section 3(1) of the *Waste Avoidance and Resource Recovery Act 2007*⁴ (referred to as a “liable local government” in this notice).

The liable local government must inform the CEO in a form approved in writing by the CEO⁵ that it is a liable local government that provides waste services pursuant to regulation 18B(5)(a) of the *Waste Avoidance and Resource Recovery Regulations 2008*. Waste services, as defined by section 3(1) of the *Waste Avoidance and Resource Recovery Act 2007*, means the following:

¹ The “department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*” is currently the Department of Water and Environmental Regulation.

² Regulation 18A of the *Waste Avoidance and Resource Recovery Regulations 2008* defines **reportable waste** to mean waste that is solid matter.

³ A *regional local government* is established under section 3.61 of the *Local Government Act 1995*, which provides in section 3.61(1):

Two or more local governments (referred to in this Division as the participants) may, with the Minister’s approval, establish a regional local government to do things, for the participants, for any purpose for which a local government can do things under this Act or any other Act.

⁴ The definition in section 3(1) of the *Waste Avoidance and Resource Recovery Act 2007* of *local government* to include “a regional local government established for the purpose of providing waste services” applies to the *Waste Avoidance and Resource Recovery Regulations 2008* by virtue of section 44(1) of the *Interpretation Act 1984*, which states:

Words and expressions used in subsidiary legislation shall have the same respective meanings as in the written law under which the subsidiary legislation is made.

⁵ The term “approved” is defined in regulation 3 of the *Waste Avoidance and Resource Recovery Regulations 2008* to mean approved by the CEO in writing. The Department of Water and Environmental Regulation is developing an approved form (an online reporting system) for reporting which it will release by 30 June 2020.

- the collection, transport, storage, treatment, processing, sorting, recycling or disposing of waste; or
- the provision of receptacles for the temporary deposit of waste; or
- the provision and management of waste facilities, machinery for the disposal of waste and processes for dealing with waste.

A liable local government is subject to Part 3A of the *Waste Avoidance and Resource Recovery Regulations 2008* pursuant to regulation 18B(1). Under regulation 18C of Part 3A of the *Waste Avoidance and Resource Recovery Regulations 2008*, a liable local government is required to make and lodge an annual return relating to reportable waste or the recycling of reportable waste containing information as required by this notice under regulation 18D.

RELEVANT WASTE SERVICES

The information described in items 1 to 3 under the heading **INFORMATION REQUIRED TO BE CONTAINED IN AN ANNUAL RETURN** below pertain to the following waste services provided by the local government, whether that service is operated by the liable local government or by a third party under contract with the relevant liable local government.

- Kerbside collection of mixed waste transported directly to landfill or transported to landfill via a transfer station;
- Kerbside collection of mixed waste collected and processed through a waste composting facility.
- Kerbside collection of mixed waste collected and processed through an energy recovery facility, or any other such facility.
- Kerbside collection of co-mingled dry recyclables;
- Kerbside collection of garden organics;
- Kerbside collection of combined food organics and garden organics;
- Kerbside collection of separated dry recyclables;
- Vergeside collection of garden organics;
- Vergeside collection of mixed bulk waste;
- Vergeside collection of specific bulk products;
- Drop-off services for mixed waste;
- Drop-off services for dry recyclables;
- Drop-off services for green waste;
- Drop off-services for hard waste or bulk rubbish, including waste recovered for sale at the drop-off facility;
- Public place services provided through permanent bins in public places for mixed waste;
- Public place services provided through permanent bins in public places for recyclables;
- Special event services provided through temporary bins in public places for mixed waste;
- Special event services provided through temporary bins in public places for recyclables; and
- Any of the services described above that are provided to commercial premises.

Kerbside services are containerised, regular services where waste or recycling are collected from the kerb in front of the residence.

Vergeside services are intermittent or on-demand collection services for garden organic wastes or bulk waste. Typically, these services are non-containerised, but bulk bins may also be used. Bulk waste refers to bulky household items, such as furniture, mattresses and white goods.

Drop-off services allow householders to self-haul their waste to facilities such as transfer stations, landfills and recycling depots that are operated by the local government.

Public place services are permanent public waste and recycling bins, such as street litter bins.

Special Event services are temporary, short-term waste and recycling services designed to service a special event (e.g. a festival or street market)

INFORMATION REQUIRED FOR THE ANNUAL RETURN – REGULATIONS 18C AND 18D

For the purposes of making an annual return under regulation 18C of the *Waste Avoidance and Resource Recovery Regulations 2008*, the liable local government must include the following information in that annual return, and record that information pursuant to regulation 18D(1)(b)(i) and 18D(5).

1. Liable local governments must record and report in their annual return the following data in tonnes against each waste service listed above under the heading **RELEVANT WASTE SERVICES** provided to the residential or commercial premises located within their district for the purposes of regulation 18D of the *Waste Avoidance and Resource Recovery Regulations 2008*:
 - total weight of waste collected;
 - total weight of waste disposed of to landfill;
 - total weight of waste recovered; and
 - total weight of waste recovered by the approved waste material category.
2. Liable local governments must record and report in their annual return the following cost and charge data:
 - fees charged for waste and recycling collection services; and
 - cost of providing waste and recycling collection services.
3. Liable local governments must record and report in their annual return the following data for each waste service provided:
 - percentage of households provided with such service;
 - participation rate;
 - frequency;
 - type, size and colour of containers used (for kerbside collection services only);
 - number of residential premises covered by the service; and
 - number of commercial premises covered by the service.
4. Liable local governments must calculate or estimate by virtue of regulation 18D(1)(b)(ii) of the *Waste Avoidance and Resource Recovery Regulations 2008* the information required in

items 1 to 3 using the *Approved procedure for estimation/calculation of annual return information by local governments required under the Waste Avoidance and Resource Recovery Regulations 2008* at Attachment 1 of this notice, which forms part of this notice.

5. Liable local governments must make and submit their annual return in the approved⁶ form.
6. Liable local governments must, by virtue of regulation 18D(1)(b)(i) of the *Waste Avoidance and Resource Recovery Regulations 2008*, keep any records relevant to the calculation, estimation or verification of the information reported in its annual return in a legible written form, or so as to be readily convertible into such a form, for a period of not less than 5 years from the day on which the record was made.

CURRENT REPORTING AND LIABILITY

The liable local government must make an annual return in the approved⁷ form and lodge it with the CEO on or before 1 October each year. The annual return must contain the information required under this notice for the most recently completed financial year relating to reportable waste⁸ or recycling of reportable waste.

This CEO Notice replaces all previous CEO Notices issued to liable local governments under regulation 18D(1) of the *Waste Avoidance and Resource Recovery Regulations 2008*.

There are a number of offences provided for under regulation 18E of the *Waste Avoidance and Resource Recovery Regulations 2008* for breaches by a liable local government under regulations 18B, 18C and 18D, carrying a fine of \$10,000.

Mike Rowe
Chief Executive Officer
Department of Water and Environmental Regulation

19 May 2020

⁶ The term “approved” is defined in regulation 3 of the *Waste Avoidance and Resource Recovery Regulations 2008* to mean approved by the CEO in writing. The Department of Water and Environmental Regulation is developing an approved form (an online reporting system) for reporting which it will release by 30 June 2020.

⁷ See footnote 6 above.

⁸ Regulation 18A of the *Waste Avoidance and Resource Recovery Regulations 2008* defines **reportable waste** to mean waste that is solid matter.

Attachment 1

Approved procedure for estimation/calculation of annual return information by local governments required under the *Waste Avoidance and Resource Recovery Regulations 2008*

Approved procedure of the CEO of the department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007* as required under regulation 18D of the *Waste Avoidance and Resource Recovery Regulations 2008*

June 2019

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1 Objective

To establish the procedure of the chief executive officer of the department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*⁹ (CEO) for estimating and calculating information to be reported in an annual return under regulations 18C and 18D(1) of the *Waste Avoidance and Resource Recovery Regulations 2008* (WARR Regulations).

This document is intended for liable persons, as defined by regulation 18B(2) of the WARR Regulations, if they are a local government defined under section 1.4 of the *Local Government Act 1995* as established under the *Local Government Act 1995* that provides waste services, which includes regional local governments¹⁰ pursuant to the definition of *local government* in section 3(1) of the *Waste Avoidance and Resource Recovery Act 2007*.

2 Background

The WARR Regulations require liable persons to make and lodge annual returns with the CEO on or before 1 October in each year. The annual returns must contain information for the most recently completed financial year relating to reportable waste¹¹ or the recycling of reportable waste, as required by the notice under regulation 18D(1) (Notice).

The WARR Regulations require annual returns to be prepared using procedures for the purposes of calculation or estimation methods described and approved by the CEO in the Notice.

3 CEO approved procedure

This document provides the procedure to be followed by local governments for the purposes of the calculation or estimation liable local governments are required to use to prepare their annual returns under regulation 18C of the WARR Regulations.

This document forms a part of the Notice approved by the CEO.

4 Reportable waste material categories

Liable local governments must categorise and report reportable waste information using the approved reportable waste material categories provided in Appendix A.

⁹ The “department principally assisting the Minister for Environment in the administration of the *Waste Avoidance and Resource Recovery Act 2007*” is currently the Department of Water and Environmental Regulation.

¹⁰ The definition of *local government* in section 3(1) of the *Waste Avoidance and Resource Recovery Act 2007* to include “a regional local government established for the purpose of providing waste services” applies to the *Waste Avoidance and Resource Recovery Regulations 2008* by virtue of section 44(1) of the *Interpretation Act 1984* which states:

Words and expressions used in subsidiary legislation shall have the same respective meanings as in the written law under which the subsidiary legislation is made.

¹¹ Regulation 18A of the *Waste Avoidance and Resource Recovery Regulations 2008* defines **reportable waste** to mean waste that is solid matter.

Liabile local governments must seek the Department of Water and Environmental Regulation’s (DWER) approval to prepare their returns using more detailed categories, consistent with their own activities and record-keeping. Where alternative categories are proposed, local governments must demonstrate how these align to the categories in Appendix A.

5 Hierarchy of approved methods

This clause provides a hierarchy of approved methods that liable local governments must use to prepare their annual returns as part of the required procedure under regulation 18D(b) of the WARR Regulations. Liable local governments must choose the method to be used based on the best-available information. That is, the local government must use the “highest” preferred method for which the data is available.

Clauses 8 and 9 of this procedure provide approved methods for use by non-metropolitan local governments with less than 5,000 population and local governments with less than 1,500 population. The population of a local government will be determined as the Estimated Resident Population (ERP) in the latest release of *ABS catalogue 3218.0 – Regional Population Growth* at 30 June of the year the return is due.

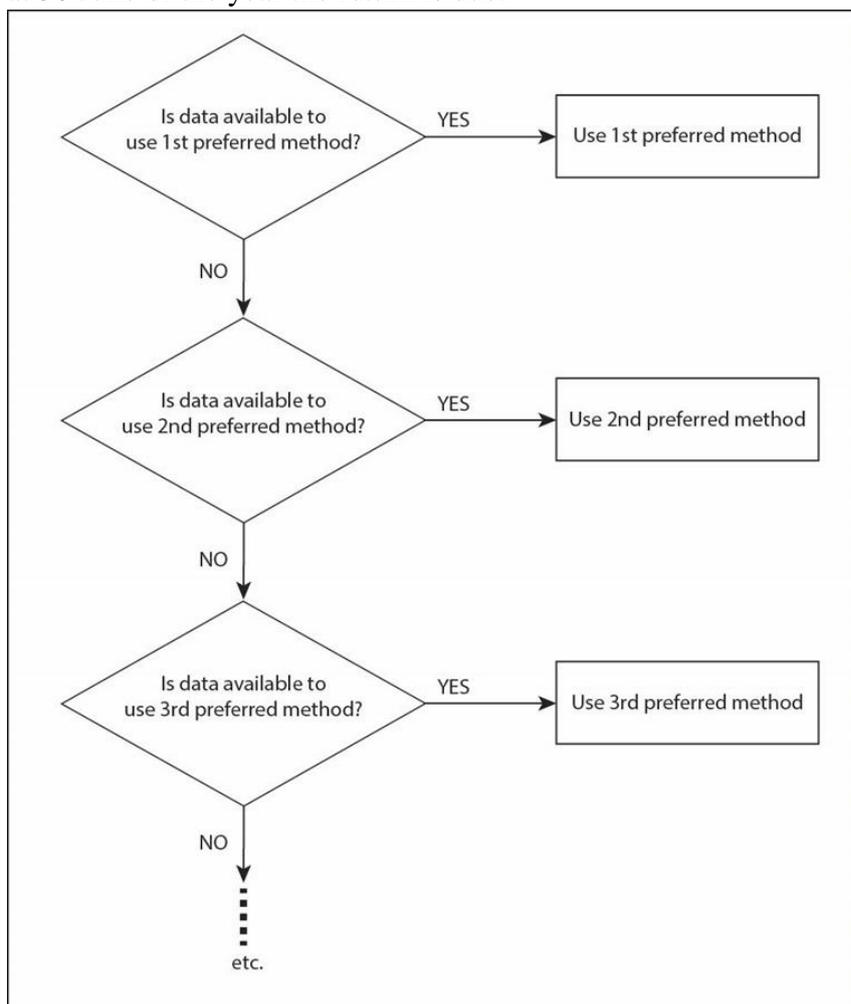


Figure 1: Hierarchy of approved methods

Where liable local governments rely on a third party to provide data (e.g. from a recycler or landfill), local governments must ensure that those facilities use these approved methods to collect and report the data.

5.1 Estimating weight of reportable waste collected, recycled and disposed

Liable local governments are required to record and report data about the waste services they provide to residents and commercial premises located within their local government area. Most local governments already have access to data on the amount of reportable waste and recycling of reportable waste they collect, recycle and dispose. Under the WARR Regulations, recyclers and large regional landfills will be required to record and report the amount of waste and recycling they receive, treat and dispose.

Local governments should obtain accurate data from the waste and recycling facilities where the reportable waste they collect is delivered, whether it is operated by the local government itself or by a third party.

5.1.1 1st approved method – Estimation by weight

The most preferred method for estimating the amount of reportable waste collected, recycled or disposed is for the reportable waste to be weighed on a calibrated weighbridge, load cell or scales at the facility where it is delivered. The total annual weight of the reportable waste collected, recycled or disposed is the sum of all the vehicle loads that enter the facility.

Volume estimation may be used for small loads under one cubic metre in size (i.e. loads transported in cars and utes).

Equation 1: Estimating total annual weight of reportable waste by weighing each load

$$\text{Annual waste} = \sum (\text{weight of all vehicle loads})$$

Table 1: Data to be collected for estimation by weight

<i>Data required to be collected</i>	<i>Data sources</i>
Total weight of each load	Weighbridge records
Material type of each load	Weighbridge records

5.1.2 2nd approved method – Volume estimation

Where weighing reportable waste is not possible, the amount of reportable waste must be calculated by estimating the volume of reportable waste at point of aggregation or disposal/processing and multiplying it by the relevant material category bulk density. Approved default values for vehicle volumes and bulk densities for CEO of DWER approved reportable waste material categories are in Appendix B.

Equation 2: Volume method for calculating total weight

$$\text{Annual waste} = \sum (\text{volume of waste}) \times (\text{density of waste})$$

Table 2: Data to be collected for volume estimation

<i>Data required</i>	<i>Data sources</i>
Volume of each vehicle / container	Gatehouse records
% capacity of vehicle / container in use	Estimated for each load as it arrives - default is 100%
Material category of each load (e.g. mixed paper, co-mingled recycling)	Determined by gatehouse operator as load arrives

5.2 Estimating weight of recyclables diverted vs disposed where reportable waste is delivered to a material recovery facility (MRF) or other regional waste processing facility

Where reportable waste is delivered to a MRF, alternative waste treatment plant (AWT) or other regional waste processing facility, the waste will typically be combined with waste from multiple sources and it may not be possible to directly measure the weight of waste recycled or disposed from a single local government.

Liabile local governments will obtain the total weight (using the relevant approved methods in clauses 5.1.1 or 5.1.2) of their reportable waste delivered to the facility and then estimate the total weight of waste diverted and disposed from the facility residual rate (i.e. the percentage of total waste received at the MRF/AWT that was disposed to landfill).

Equation 3: Estimating total material diverted from a MRF or AWT

$$\begin{aligned} \text{Total material recycled [t]} \\ = \text{total material collected [t]} \times (100\% - \text{facility residual rate}[\%]) \end{aligned}$$

Where a facility is unable to provide a residual rate, the default rate of 35% will be used to estimate the amount of reportable waste diverted for recycling.

5.3 Drop off collections - additional guidance

Drop-off collections are where reportable waste is delivered to the waste depot by the residents of the local government i.e. self-hauled waste. Details on the source (i.e. residential or commercial) and type of waste should be determined and recorded as vehicles enter the site. Liabile local governments may assume that all small loads (single axle trailers, utes, cars and vans) are sourced from the domestic waste stream. Small loads of mixed waste types (e.g. garden waste and mixed dry recyclables) should be recorded as the predominant waste type or as “mixed putrescible waste”.

The amount of reportable waste collected must be determined either at point of entry, or after the point of aggregation, if the waste depot uses a transfer station. Liabile local governments may use volume assessment or use a default weight value (Appendix B) to determine the amount of waste in small loads (single axle trailers, utes, cars and vans), regardless of whether the receiving facility has a weighbridge.

5.3.1 Where site has a transfer station

Reportable waste is weighed or volume-assessed after aggregation at the transfer station, the relevant approved methods listed in clauses 5.1.1 or 5.1.2.

Reportable waste source and type are estimated using averages determined from the transfer station gatehouse records of individual loads.

5.3.2 Drop-off site with no transfer station

Reportable waste is weighed, or its volume is assessed, on entry to the drop off site using the relevant approved methods listed in clauses 5.1.1 or 5.1.2.

Recyclables leaving a drop-off facility may be assessed and recorded for material type and weight or volume when they leave the facility or from records provided by the recycler.

5.4 Combined collections

Liable local governments are required to report the weight of reportable waste collected, diverted and disposed by waste collection service and type of premises (i.e. domestic or commercial). Some local governments collect both commercial, domestic and/or public place waste on the same collection run. In this case, the following methods must be used to determine the proportion of reportable waste collected from each waste stream.

5.4.1 Combined bin collections

Where reportable waste from more than one containerised collection service and/or type of premises is collected in the one vehicle, the weight of reportable waste collected from each may be estimated using relative annual bin capacity (i.e. bin numbers multiplied by bin volume, assuming bins are 100% full).

Equation 4: Estimating amount of each waste stream for combined collections

$$\begin{aligned} & \textit{Proportion of Domestic waste} \\ & = \frac{\textit{domestic annual bin capacity}}{\textit{(domestic + commercial + public place) annual bin capacity}} \\ & \textit{Annual domestic} = \textit{Proportion of domestic} \times \textit{Total waste collected} \end{aligned}$$

If the liable local government does not know how many services it provides, it must undertake an audit of its bins in the field and the waste services it provides.

5.4.2 Mixed use developments

Reportable waste from commercial and domestic premises may be collected in the same bins in some mixed-use developments. Where commercial and domestic waste is collected in the same bin, proportion the commercial and domestic streams for mixed use developments by estimating the total amount of waste collected and then subtracting the estimated total amount of domestic waste based on per household generation rate (either estimated by the local government and approved by DWER or using the default values provided in Appendix B).

5.5 Recycled materials

Liability local governments must obtain the total weight of recyclable reportable waste delivered to the recycling facility using the relevant approved methods described in clauses 5.1.1 or 5.1.2. The weight of residual/contaminated waste must be removed from the weight of recycled materials.

The amount of each material recycled can be estimated by:

- a) weighing the sorted material;
- b) volume assessing the sorted material;
- c) applying waste composition data from waste audits on the liability local government's own waste stream; or
- d) applying average waste composition data from waste audits at the facility receiving the recyclables.

5.6 Estimating the cost of providing waste and recycling services.

In order of decreasing preference, costs may be reported as:

- a) costs by waste type and waste service;
- b) costs by waste or service type; or
- c) overall cost.

The estimated cost of a service should only include costs directly related to providing that service. These may include:

- Waste management staff salaries / wages, plus "overheads" to cover general administration costs (usually as a relative proportion of staff salary, e.g. 50%)
- Collection and disposal contracts
- Waste education costs
- Operational costs for equipment
- Maintenance on equipment / waste vehicles / bins
- Annual amortised capital costs of new equipment / waste vehicles / bins (i.e. the total cost is distributed over the life of the equipment)
- Annual amortised landfill closure costs (the estimated closure cost is divided by the lifespan of the landfill, with the annual cost incorporated into the annual budget)
- Annual amortised costs of constructing a new, replacement landfill in the future (the estimated closure cost is divided by the lifespan of the landfill, with the annual cost incorporated into the annual budget)
- Waste consultancy costs
- Waste service tender costs (e.g. advertising)

5.7 Charges

Where a liability local government charges different rates for the same service to different customers (e.g. if pensioner discounts are given on waste charges), then the charge reported should be the non-discounted rate for a standard single unit dwelling.

In order of decreasing preference, charges may be reported as:

- a) separate charges for recycling and/or waste disposal services; or
- b) combined charge for waste disposal and recycling services

6 Commercial waste collections

Liabe local governments are required to report the amount of commercial and industrial (C&I) reportable waste and recycling collected from commercial premises located within their local government area through services they (the individual local governments) provide or are provided under contract on their behalf. Where the reportable waste is not collected separately from the domestic waste, the relative amounts for each waste stream may be estimated by the relative annual bin capacity for each waste stream using the methods in clause 5.4.

7 Default values

Liabe local governments must use facility-specific values where this information is available (see also clause 10). Approved default values for estimating volume for various vehicle types and bulk densities for various reportable waste material categories are been provided in Appendix B. These default values can be used where facility-specific data is not available.

8 Special provisions for non-metropolitan local governments with a population of less than 5,000

As an acknowledgement that smaller non-metropolitan local governments may not have the resources or the capability to report in accordance with the above approved methods for local governments, special provisions have been made for liabe non-metropolitan local governments with a population of less than 5,000.

8.1 Estimating weight of reportable waste collected, recycled and disposed

8.1.1 Direct measurement

Direct measurement, either by weight or volume, is the preferred approved method for measuring reportable waste, as described in clauses 5.1.1 and 5.1.2. However, if a liabe non-metropolitan local government with a population of less than 5,000 does not have the capacity to measure reportable waste directly, then the following indirect measurement methods may be used.

8.1.2 Indirect measurement

In circumstances where the amount of reportable waste collected is not directly measured, liabe non-metropolitan local governments with a resident population of less than 5,000 may use alternative methods for estimating the amount of reportable waste collected and disposed.

8.1.2.1 *1st approved method - Waste generation rates as determined by a collection service audit*

Where a relevant waste collection service audit report is available, the average generation rates estimated from the audit data may be extrapolated to estimate the total weight of reportable waste

collected during the financial year. Where the reportable waste is disposed directly to landfill, the extrapolated waste audit data can also be used to estimate the total weight of waste disposed to landfill during the financial year.

The average generation rates can be on a per capita, per household or per bin lift basis.

8.1.2.2 2nd approved method - Number of bin lifts by typical bin weight (containerised services only)

The amount of reportable waste collected is assumed to be the total number of bins collected during the year multiplied by a typical weight of a bin just before being emptied. Approved default material densities that may be used to calculate the estimated weight of each bin are provided in Appendix B. Local governments can request to use alternative weight per bin figures (see clause 10).

8.1.2.3 3rd approved method - Population by typical per capita waste generation rate (all MSW)

The weight of reportable waste generated in a local government area may be estimated by multiplying the number of residents in the local government by a per capita waste generation rate. This method is only suitable as an alternative method for liable local governments that do not provide a kerbside collection service and do not have a staffed landfill.

8.1.3 Drop off collections - additional guidance

Each load of dropped off reportable waste should be assessed for source (domestic or commercial) and waste type. The weight of waste should be weighed, or volume assessed, according to the approved direct measurement methods described in clauses 5.1.1 and 5.1.2.

8.1.3.1 Unstaffed drop-off site (no weighbridge or volume estimates)

Where a liable local government operates an unstaffed drop-off site, and direct measurement of the amount of reportable waste collected is not possible, data must be collected through an annual survey and extrapolated for the whole year. It is recommended that the data is collected for a week at time at four separate occasions over the year to reflect seasonal differences; for example, March, June, September and December.

8.2 Estimating the cost of providing waste and recycling services.

Where a liable non-metropolitan local government with less than 5,000 population is unable to estimate the costs of providing a service, it may use the following default amounts:

- Kerbside collection service - \$200 per service per household per year
- Vergeside collection service - \$15 per service per household per year
- Drop-off - \$215 per tonne received

9 Special provisions for non-metropolitan local governments with a population of less than 1,500

DWER acknowledges the limited resources of non-metropolitan local governments with a low population. Therefore, where accurate information is not available on the amount of reportable waste collected, liable non-metropolitan local governments with an estimated resident population (ERP) of less than 1,500 may choose to only report on the services they provide; they can elect

not to report the amount of reportable waste collected in each service. DWER will estimate the amount of waste generated and recycled, based on the population or number of households, using the approved default values in Appendix B).

10 Alternative methods

Liability local governments may propose alternative methods for the following if these are more accurate than the methods set out above:

- estimating the amount of reportable waste received, removed and disposed
- estimating the bulk density
- estimating the reportable waste composition
- estimating the source waste stream

Any alternative methods proposed must be accurate, repeatable and consistent.

Liability local governments may also propose alternative default values to those listed in Appendix B. Liability local governments must submit alternative methods or default values, with relevant substantiating information, to DWER at waste.data@dwer.wa.gov.au for consideration and approval prior to use in the annual return.

11 Glossary

Acronym / symbol	Definition
Σ	Sum of
t	Tonnes
m ³	Cubic metres
C&I	Commercial and Industrial waste - Solid waste generated by the business sector, State and Federal Government entities, schools and tertiary institutions
DWER	Department of Water and Environmental Regulation
ERP	Estimated resident population published in <i>ABS catalogue 3218.0 – Regional Population Growth</i>
Landfilled waste	All waste buried in landfill. This includes waste material used as daily cover.
MSW	Municipal solid waste - Solid waste generated from domestic (residential) premises and local government activities
Peel Region	The Peel region is the area defined by the Peel Region Scheme (May 2013).
Perth Metropolitan Region	The Perth region, or Perth metropolitan region, is the area defined by the Metropolitan Region Scheme (June 2014).
Recycling	<p>Recycling: A waste fate in which solid wastes are collected, sorted, processed (including through composting), and converted into raw materials to be used in the production of new products. For data reporting purposes, recycling:</p> <ul style="list-style-type: none"> • excludes materials in stockpiles of unprocessed waste materials • includes all materials processed for recycling, whether they are quickly sold or used, or stockpiled for later sale or use • excludes residuals that are sent to landfill or otherwise disposed of.
Reportable waste	Means waste that is solid matter under regulation 18A of the <i>Waste Avoidance and Resource Recovery Regulations 2008</i>
Resource Recovery	The process of extracting materials or energy from a waste stream through re-use, reprocessing, recycling or recovering energy from waste.
Stockpiling	Temporary storage of waste or waste products for future sale, resource recovery or disposal. Materials are not to be stored on-site for a period of more than 2 years.

Appendices

Appendix A – Approved reportable waste material categories

Table 1: Approved reportable waste material categories

Category (Tier 1)	Sub-category (Tier 2)	Sub-category description
Paper	White office paper	High quality white office paper
	Old Newsprint (ONP)	Newspapers
	Magazines	Magazines and booklets
	Liquid Paperboard (LPB)	Milk and juice cartons made from liquid paperboard
	Paper – mixed	Combination of the above categories
Cardboard	Cardboard / paper packaging	Corrugated and flat cardboard. Excludes non-recyclable waxed and coated cardboard.
Mixed paper/cardboard	Mixed paper/cardboard	Paper and cardboard collected together.
Glass	Glass packaging – mixed	Glass jars and bottles
	Glass – construction	Glass windows and tiles
	Glass - other	Wine glasses, etc.
Plastic *	PET (1)	Polyethylene terephthalate
	HDPE (2)	High Density Polyethylene
	PVC (3)	Poly-vinyl Chloride
	PE-LD/LLD (4)	Low Density Polyethylene
	PP (5)	Polypropylene
	PS (6)	Polystyrene (hard form)
	PS-E (6)	Polystyrene (expanded form / foam)
	ABS/SAN (7)	Acrylonitrile Butadiene Styrene
	PU (7)	Polyurethane
	Nylon (7)	Nylon
	Mixed plastic packaging	Recyclable plastic packaging (PET, HDPE, PVC, etc.)
	Hard plastic (not packaging)	Mixed hard plastics
Plastics – other or mixed	Mixture of the above and/or unmarked plastics	
Metals	Metals - Ferrous Steel – packaging	Cans
	Metals - Ferrous Steel – Steel – non-packaging	Bars, pipes, etc.
	Metals – Non-ferrous - Aluminium – packaging	Cans and foil
	Metals – Non-ferrous - Aluminium – non-packaging	Bars, tubes, etc.
	Metals – Non-ferrous - Other metals	Copper, zinc, etc.
Organics *	Food waste	Kitchen scraps, unsold food products (unpackaged)
	Garden waste	Leaves, branches, grass clippings, foliage, flowers
	Food and garden organics (FOGO)	Combined food and garden waste collected in kerbside collections (FOGO)

Category (Tier 1)	Sub-category (Tier 2)	Sub-category description
	Organics from mixed municipal waste	Organic outputs from the mechanical biological treatment of mixed putrescible waste
	Forestry waste	Barks and sawdust (from forestry activities)
	Agricultural waste (excluding manure)	Includes animal bedding, animal mortalities, paunch and straw.
	Manures	Raw, untreated animal manure
	Biosolids	Solid organic outputs from processing sewage
	Urban wood, timber, sawdust (also C&D waste)	Wood / timber / sawdust from commercial and industrial activities or construction and demolition activities
	Fats & grease	Waste fats, grease, greasetrap sludge, biodegradable sludges, waste cooking oil, etc.
	Product – Composted Soil Conditioner	Pasteurised material resulting from the controlled microbiological transformation of compostable organic waste under aerobic and thermophilic conditions for not less than six weeks.
	Product – Pasteurised Soil Conditioner	An organic product that has undergone pasteurisation but is relatively immature and lacking in stability
	Product – Composted Mulch	Dry green waste that has been processed by way of chipping, shredding or similar mechanical process, but does not contain putrefying material. Composted mulch has undergone a full composting process.
	Product – Pasteurised Mulch	Mulch that has only undergone a pasteurising process.
	Product – Raw mulch	Dry green waste that has been processed by way of chipping, shredding or similar mechanical process, but does not contain putrefying material. Has not undergoing any further processing.
	Product – Manufactured Soil	Soil that has been specially prepared by blending or additives to achieve set specifications.
	Product – Potting Mixes	Potting mix (or potting soil) is soil that is specially prepared to help plants to grow, especially in containers.
	Product – Playground Surfacing	Recycled organic material that meets the specification in AS/NZS 4422:1996 Playground surfacing - Specifications, requirements and test method.
	Product – biogas	Biogas from processing, used for heat and/or electricity production
	Product – solid biofuel	Processed organic waste sold as solid fuel
	Product – Composted manures	Animal manures that have undergone a full composting process.
	Product – Aged / raw manures	Animal manures that have not undergone a composting or pasteurisation process.
	Other organic materials	Other biodegradable organic waste not already listed (please specify).
Rubber	Tyres	All rubber tyres. Does not include metal rim or hub-caps
	Other rubber, including conveyor belts	All other rubber
C&D waste *	Sand / soil	Clean sand or soil
	Rubble / aggregate <150mm	Stones, etc. also includes clean, processed C&D recycled product less than 150mm in diameter
	Rubble / aggregate > 150mm	Stones, etc. also includes clean, processed C&D recycled product more than 150mm in diameter

Category (Tier 1)	Sub-category (Tier 2)	Sub-category description
	Bricks	Whole or broken bricks
	Concrete	Concrete or cement
	Bitumen	Waste bitumen or asphalt
	Plasterboard	Plasterboard or gypsum
	Masonry material	Mixed concrete, brick, etc.
	Mixed C&D waste *	Mixed construction and demolition waste, sometimes referred to as “inert” waste
	Mixed inert waste *	Type 1 inert waste as defined in Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)
Textiles	Mixed textiles	Cloth, rags, clothes
	Leather	Items mainly leather
	Foam rubber	Includes polyurethane or latex.
	Carpets	Carpets
	Mattresses	Mattresses
Mixed putrescible waste *	Mixed putrescible waste – domestic (household) *	Mixed putrescible waste – domestic (household)
	Mixed putrescible waste – Commercial & Industrial *	Mixed putrescible waste – Commercial & Industrial
		Mixed putrescible waste – Commercial & Industrial – Wet (with food)
		Mixed putrescible waste – Commercial & Industrial – Dry (no food)
Mixed putrescible – other *	Putrescible waste as defined in Landfill Waste Classification and Waste Definitions 1996 (as amended 2018)	
Mixed dry recyclables *	Co-mingled recycling *	Containers, paper and cardboard collected from households and commercial premises.
	Mixed industrial recyclables	Dry recyclable material collected from commercial and industrial premises. Includes mixed cardboard / plastic film collections. Includes mixed timber / steel / cardboard collections.
Bulky Wastes	Electric & electronic goods	Televisions, computers and associated electronics (printers, DVD players, etc.) Electric tools, vacuum cleaners, etc.
	Mattresses	Mixed steel, foam and cloth mattresses
	Whitegoods	Fridges, washing machines, dryers
	Furniture	Mixed material furniture, e.g. lounge chairs
Hazardous	Batteries	Personal and car batteries
	Paint	Recovered paint – may include containers
	Household chemicals	Household chemicals recovered through Household Hazardous Waste collections
	Fluorescent lights	Include CFLs and fluorescent tubes
	Waste Oil	Waste oil collected through waste oil collections and through Household Hazardous Waste Collections, such lubricating oil, mechanical oil.
	Asbestos	Includes asbestos fencing, pipes, insulation.
Contaminated soil	Clinical waste	Includes all medical and veterinary waste
	Contaminated soil	Soil from a contaminated site, as defined by the <i>Contaminated Sites Act 2003</i> .
Other*	Fly ash	Ash produced by burning of coal or other materials
	Other	Waste not otherwise specified (please specify)

*Only use denoted category for waste received, collected and/or disposed. Denoted category not to be used for recycled products.

Appendix B – Default values

Note: Liable local governments must use facility-specific values where this information is available. The default values provided can be used where facility-specific data is not available.

Table 1: Volume by vehicle type

Vehicle type	Assumed volume (cubic metres)	Assumed weight for mixed reportable waste (tonnes)
Single axle trailer, ute, car and van	1	0.3
Small open truck	6	1.8
Large open truck	20	6
Compactor garbage truck	10	4.25

Table 2: Default bulk densities

Reportable waste material category	Default bulk density (t/m³)
Paper	0.2
Cardboard	0.1
Plastics	0.14
Metals – Ferrous	0.5
Metals – Non-ferrous	0.14
Glass	0.347
Concrete	1.5
Bricks	1.2
Soil, sand, clean fill	1.3
Organics – Garden organics	0.15
Organics – Food organics	0.5
Organics – Timber / wood	0.19
Organics – other organics	0.3
Rubber/tyres	0.3
Textiles	0.15
Hazardous – asbestos	0.31
Hazardous – other	0.2
Mixed co-mingled recyclables (uncompacted)	0.063
Other / mixed - putrescible	0.3
Other /mixed - inert	1.1
Mixed building waste in skip bins	0.7

Table 3: Default composition of recycling collections (post-MRF)

Note: this default composition is only to be used if the information is not available from the liable local government’s recycling facility. Liable local governments should request a breakdown of materials recycled from co-mingled collection from their recycler(s), if relevant, to fulfil their reporting obligations.

Reportable waste material category	Composition of co-mingled recycling bin wt% (post-MRF)
Paper	20
Cardboard	20
Plastics	10
Glass	10
Ferrous metal	3
Non-ferrous metal	2
Other	35

Source: Compiled from several WA waste audits and historical Local Government Census data.

Default waste generation rates

Where a liable non-metropolitan local government is using the waste estimation method outlined in clause 8.1.2.3, the following default waste generation rates may be applied:

- 0.6 tonnes per person per year
- 1.47 tonnes per household per year

Table 4: Local Government Default Cost Data

Where a liable non-metropolitan local government with less than 5000 ERP cannot estimate its costs, it may use the following default values for the purposes of reporting.

Kerbside collection cost	\$200 per service per household per year
Vergeside cost	\$15 per household per service
Rural drop-off cost	\$215 per tonne received

Appendix C – Worked examples

Example 1 - Combined bin collections

Example - Kerbside collection service collects from households (domestic), small businesses (commercial) and public place reportable waste collected together.

Households have 7,000 weekly collections of 240L MGB, commercial premises have 200 weekly collections of 240L MGBs and 400 twice-weekly collections of 240L MGBs, public place has 25 weekly collections of 240L bins.

Proportion of domestic

$$= \frac{\text{domestic annual bin capacity}}{(\text{domestic} + \text{commercial} + \text{public place}) \text{ annual bin capacity}}$$

Annual domestic premises bin capacity is

$$\text{Domestic bin capacity (L)} = 7000 \times 240 \times 52 = 87360000$$

Annual commercial premises bin capacity is

$$\text{Commercial bin capacity (L)} = (200 \times 240 \times 52) + (400 \times 240 \times 52 \times 2) = 12480000$$

Annual public place bin capacity is

$$\text{Public place bin capacity (L)} = 25 \times 240 \times 52 = 312000$$

TOTAL annual bin capacity is 100,152,000 L

The relative proportions for each waste stream are

Domestic	87%
Commercial	12%
Public place	0.3%

Example 2 - Recycling

Example – Amount recycled from green waste collection

During the year, City of HUK collected 245 tonnes through its kerbside greenwaste collection, with a contamination rate of 15%. It also collected 67 tonnes through its annual green waste vergeside collection and 83 tonnes via its green waste drop-off facility.

$$\text{Amount of green waste recycled} = 85\% \times 245 + 67 + 83 = 358.25$$

$$\text{Amount of disposed as contamination} = 15\% \times 245 = 36.75$$

References

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