

Draft Approved Methods for Local Governments

Consultation workshop

Outline

- Who is affected?
- What do they have to report?
- How will this affect facilities?
- Principles for approved methods
- Draft methods
 - ❖ Estimating amount received & leaving
 - ❖ Estimating stockpiles
 - ❖ Estimating bulk densities
 - ❖ Estimating source of waste
- Alternative methods
- Feedback sought



Who is affected?

- ▶ All local governments in Western Australia that provide waste services.
- ▶ All waste and recycling facilities accepting local government waste (will be required to provide data using approved methods)



What do “liable” local governments have to report?

- ▶ Amount of waste collected by type of service - kerbside, vergeside, drop-off, public place (tonnes per annum)
- ▶ Amount of material recycled (tonnes per annum)
- ▶ Amount of waste disposed to landfill (tonnes per annum)
- ▶ Destination / fate of material collected (recycling, waste-to-energy or disposal to landfill)
- ▶ Material category of waste collected, recycled, etc.
- ▶ Source waste stream of waste received (MSW, C&I or C&D)
- ▶ Costs of providing the waste services
- ▶ Charges to residents and business customers for waste services

NB: data requirements will be broadly consistent with current Local Government Census

How does this affect local governments?

- ▶ Need to record or collect data necessary to report
 - ❖ Reporting is based on financial year
 - ❖ Waste collector should provide this information
 - ❖ LGs may need to include data provision in collection contracts
- ▶ Need to keep records
- ▶ Need to compile data in reporting format
 - ❖ CEO-approved format
- ▶ Need to submit annual data report by 1 October each year



Current reporting format - Local Government Census EXCEL Spreadsheet

Section B1 - Domestic kerbside collection services							
<i>Domestic kerbside services are containerised, regular services where waste or recycling are collected from the kerb in front of the residence.</i>							CLICK HERE TO VIEW PHOTOS OF THIS SERVICE.
	Kerbside waste (garbage) collection		Kerbside collection of recyclable materials				Comments / additional information
	Mixed waste collected and transported directly to landfill or transported to landfill via a transfer station	Mixed waste collected and processed in an AWT (or Resource Recovery Facility)	Co-mingled dry recycling	Green waste collection	Recycling - containers only	Recycling - paper & cardboard only	
Does your local government provide this service to your residents?							
If so, is the service run in-house or outsourced to a contractor?							
Percentage of households in the LGA that receive this service (%)							
Resident participation rate (%)							
Type of container							
Size of container							
Colour of container							
Frequency of collection							
Tonnes collected at kerbside for this service in 2016-17							
Tonnes disposed to landfill from this service in 2016-17							
Tonnes recycled in 2016-17		-	-	-	-	-	

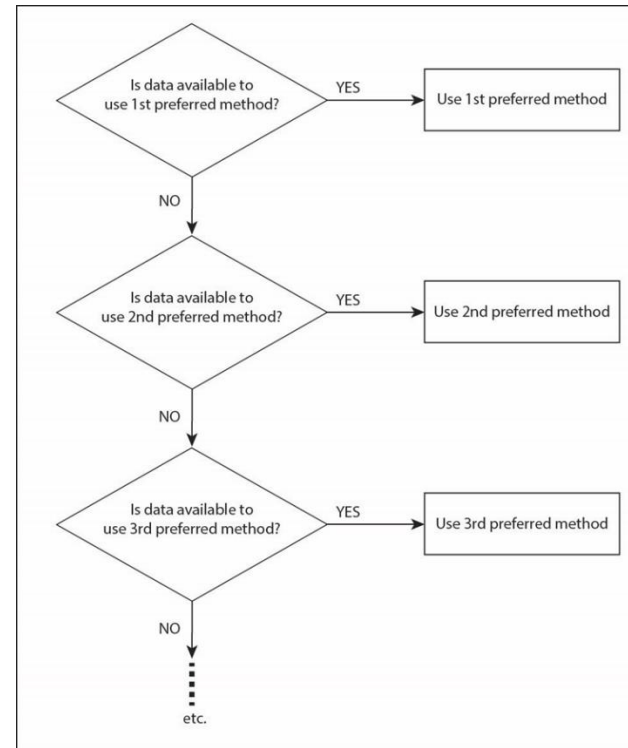
New reporting format

- ▶ A new online reporting format is being developed
- ▶ Data to be reported will be similar to the current Local Government Census
- ▶ Training will be held to assist the transition to the new reporting format

Principles of approved methods

- ▶ Clear identification of the point at which the data is collected (for example, at point of collection, point of disposal, on entry to the facility or on exiting the facility)
- ▶ Consistent (the same methodology should be used to collect the data for the whole year)
- ▶ Repeatable (the method must be able to be repeated).
- ▶ Maximise accuracy (the most accurate method should be used, i.e. the method should be chosen that minimises the error in the data to be reported)
- ▶ Containerised (the volume and weight of material is easier to measure if it is in containers)
- ▶ Fewer assumptions the better (assumptions introduce error).

- Hierarchy of methods
- Use the most accurate method for the information available



Material categories

Material categories	
Paper	Organics - Food organics
Cardboard	Organics - Timber / wood
Plastics	Organics - other organics
Metals - Ferrous	Rubber/tyres
Metals - Non-ferrous	Textiles
Glass	Hazardous - asbestos
Concrete	Hazardous - batteries
Bricks	Hazardous - other
Soil, sand, clean fill	E-waste
Organics - Garden organics	

Draft Methods - Estimating Waste In & Out by weight

1st preferred method - weighing

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



Estimation by weight - data collection

To estimate total waste by weight, the following data must be recorded for each load at the waste facility

- ▶ Source waste stream (MSW, C&I, C&D)
- ▶ Material category
- ▶ Weight of the load - weighed on a weighbridge

Local Governments may be asked to provide information to waste facilities about their waste collections.

Draft Methods - Estimating Waste In & Out by Volume

2nd preferred method - estimation of volume and convert to weight

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



Estimation by volume - data collection

To estimate total waste by volume and convert to weight, the following data must be recorded for each load at the waste facility

- ▶ Source waste stream (MSW, C&I, C&D)
- ▶ Material category
- ▶ Volume of the load
- ▶ Density of the material / load

Draft Methods - Bulk Densities

1. Measure bulk density - average
2. Bulk density survey
3. Use “default values”

Material category	Default bulk density (t/m ³)
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
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	1.3

Draft Default Values - Vehicle Volumes

If volume of load is unknown and too difficult to obtain, default values can be used.

Vehicle type	Assumed volume (cubic metres)	Assumed weight for mixed waste (tonnes)
Car/ute	1	0.3
Small open truck	3	1.2
Large open truck	10	5
Compactor garbage truck	8	5

Default co-mingled composition

If MRF cannot provide a breakdown of recyclables in co-mingled collection, use the default composition

Material category	Composition of co-mingled recycling bin wt% (post-MRF)
Paper	15
Cardboard	15
Plastics	8
Glass	12
Ferrous metal	3
Non-ferrous metal	2
Other / residual	45

Determining source of waste

- ▶ Record information for each load at the gatehouse
- ▶ Infer from / ask regular customers
- ▶ Infer from type of vehicle (e.g. Council recycling truck)
- ▶ Conduct regular surveys (four per year)

Mixed collections

Where MSW and C&I waste is collected together, local governments need to estimate the proportion of MSW vs C&I

$$\textit{Proportion of MSW} = \frac{\textit{MSW annual bin capacity}}{\textit{(MSW + C\&I + PP) annual bin capacity}}$$

$$\textit{Annual MSW} = \textit{Proportion of MSW} \times \textit{Total waste collected}$$

Cost of providing service

Section E - Annual cost and charges for collection / processing / disposal of domestic material (\$)						
Section E1 - Annual cost of collection / processing / disposal (\$/Yr) 2016-17						
<i>Please enter <u>either</u> cost per service <u>or</u> total amounts, depending on the information available in your local government</i>						
Collection Service	Cost (\$/yr)					Comments / additional information
	Kerbside	Vergeside	Drop-off	Public Place	TOTAL	
Waste / garbage (includes AWT or RRF)					\$ -	
Recycling					\$ -	
Hard waste / bulk rubbish					\$ -	
Green waste					\$ -	
Sub-total	\$ -	\$ -	\$ -	\$ -		

Do not fill this table

CHECK

total by waste type	\$	-
total by waste service	\$	-
total direct entry	\$	-

All totals should be equal; otherwise, check your cost entries.

Cost of providing services

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)

Charges

- ▶ Charges generally align with costs
- ▶ Finance section should be able to provided data on costs and charges

Section E2 - Charges for domestic services (\$/yr)							
Collection Service	Charge	Unit	Comments / additional information	Collection Service	Charge	Unit	Comments / additional information
Kerbside & vergeside <u>waste</u> collection per residence		\$ per year		Drop-off <u>waste</u> collection			
Kerbside & vergeside <u>recycling</u> collection (if separate) per residence		\$ per year		Drop-off <u>recycling</u> collection			

Special provisions for local governments with less than 5000 population

- ▶ Can use “indirect” measurement to estimate amounts
 1. Waste audit data - extrapolate
 2. Number of bin lifts x “typical” waste per bin
 3. Extrapolate “typical” per capita waste generation x population
 - ❖ 0.6 tonnes per person per year
 - ❖ 1.47 tonnes per household per year
- ▶ Drop-off
 - ▶ If drop-off facility is unstaffed, conduct quarterly survey
- ▶ Costs
 - ❖ Kerbside collection service - \$200 per household per year
 - ❖ Vergeside collection service - \$15 per household per year
 - ❖ Drop-off and landfill disposal cost - \$215 per tonne received.

Special provisions for local governments with less than 1500 population

- ▶ If the LG doesn't have information, it can provide DWER with details about the types of services provided, and DWER will estimate amounts and costs using default values.

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Does your local government provide this service to your residents?	Yes		Yes			
If so, is the service run in-house or outsourced to a contractor?	In-house		In-house			
Percentage of households in the LGA that receive this service (%)	65%		65%			
Resident participation rate (%)	95%		75%			
Type of container	MGB		MGB			
Size of container	240L		240L			
Colour of container	dark green or black with red lid		dark green or black with yellow lid			
Frequency of collection	Weekly		Fortnightly			
Tonnes collected at kerbside for this service in 2016-17						
Tonnes disposed to landfill from this service in 2016-17						
Tonnes recycled in 2016-17		-	-	-	-	-

Alternative methods

- ▶ Local Governments can propose alternative methods for estimating any parameter, such as
 - ❖ Weight of waste collected, recycled and disposed
 - ❖ Bulk densities
 - ❖ Co-mingled recycling composition
 - ❖ Waste from mixed developments
 - ❖ Costs and charges
- ▶ Any alternative methods proposed must be accurate, repeatable and consistent.
- ▶ Alternative methods must be approved by DWER

Feedback

- ▶ Consultation webpage on DWER website

<https://www.der.wa.gov.au/our-work/consultation/524-open-consultation-approved-method>

- ▶ Email: waste.data@dwer.wa.gov.au

- ▶ Phone: 0400 171 480 (Jill)