

24th May 2019

Project Manager
Waste Avoidance and Resource Recovery
Department of Water and Environmental Regulation (DWER)
Locked Bag 10
JOONDALUP DC WA 6619
BY EMAIL: waste.data@dwer.wa.gov.au

Dear Sir/Madam,

DWER's Approved methods for mandatory reporting under the Waste Avoidance and Resource Recovery Regulations 2008

This consultation response document has been prepared in relation to the DWER's request for feedback on the three papers relating to the *Draft approved methods for mandatory reporting under the Waste Avoidance and Resource Recovery Regulations 2008* (Draft Approved Methods) that were released for public and stakeholder consultation in April 2019.

Talis Consultants Pty Ltd (Talis) has been working with numerous local governments within Western Australia on waste management projects for many years. Talis understands the challenges that Local Government Authorities (LGAs) face in relation to waste management including management of waste data and reporting, particularly in regional areas. Talis commends the DWER's actions in moving towards mandatory waste data reporting in Western Australia.

Talis has reviewed each of the three method papers, namely local governments, recyclers and large regional landfills and has outlined comments in relation to each document in turn.

1 Local Government

Talis is in broad agreeance with the proposed methodology in the Local Government paper. However, there is some concern that these estimation methods will result in an overstating of waste tonnages. A key aim of the Waste Strategy 2030 is "*Data improvement to address accuracy issues..*". Talis has included a number of proposed refinements below with the aim to addressing these potential data inaccuracies.

Question 1: Is the annual Local Government Waste and Recycling Census (LG Census) template an appropriate reporting template?

Talis believes that the current LG Census template is generally fit for purpose. There are a number of additions that the DWER could include such as:

- inclusion of a Volume to Weight calculator, similar to the Government of South Australia's Waste and Recycling Reporting Template, to assist LGAs in converting materials in a consistent, easy to use manner;
- Inclusion of Reuse/Tip Shop data – including tonnages and waste diversion rates, where relevant; and
- Retain the littering/illegal dumping information tab, which has not been discussed within the content of mandatory data reporting.

Question 2: Are the proposed material categories practical and appropriate for local governments?

Talis has no specific comments in relation to the material categories proposed.

Question 3: Are the proposed calculation methods to estimate the weight of waste received, disposed, leaving and stockpiled at your site clear? If not what further clarification is required?

In Table 3 (Data to be collected for estimation by volume), the current proposed estimate for each load is default of 100%. Talis is concerned that a default of 100% will be likely to result in an overstating of tonnages. Talis would suggest that this default is adjusted from 100% to 80%.

There does not appear to be any detail currently provided in the consultation papers on the proposed calculation methods to estimate stockpiles of materials within the Local Government document. Additionally, it does not appear to state that LGAs are required to report on stockpiling or on materials leaving their sites. Talis would suggest that the DWER includes similar information to that provided within the Large Regional Landfills document relating to these calculation methods.

In relation to section 9.1.3.1 of the consultation paper, Talis suggests that rather than depending on estimates, the DWER could assist in funding some or all of the following initiatives in order to improve the data quality for estimating volumes of waste at unstaffed sites, such as:

- Video monitoring of the gatehouse and/or main tip face to capture vehicle type, load volume and where possible waste type. This could have the added benefit of assist LGAs with policing illegal dumping at these sites;
- Handheld data recording devices with pre-set fields for vehicle and waste types and conversion rates;
- Traffic counter (similar to the standard drive over traffic counters); and
- Talis note the requirement to undertake quarterly audits to monitor the site. For sites where there isn't funding to implement permanent video monitoring, the DWER could consider providing funding for a staff member on a schedule for the quarterly reporting to have a kit including a temporary weighbridge and a handheld data recorder.

Question 5: Are the proposed default material densities and other default values appropriate for Western Australian local governments?

Talis identified a number of potential refinements that DWER could make to the existing default values within Appendix B to improve data reporting accuracy. These are detailed in the tables below.

Table 1-1 sets out the current default values for 'Volume by vehicle type' published in the consultation document and Talis' proposed refinements. The proposed refinements are based on other jurisdictions' waste density conversion factors including New South Wales (NSW) and Victoria.

Table 1-1: Appendix B Default Values – Volume by vehicle type

Vehicle type	Assumed volume (cubic metres)	Assumed weight for mixed waste (tonnes)	Proposed refinement
Car/ ute	1	0.3 0.15	The average contents of a 240L MGB is at (at a high estimate) 35kg therefore 1m ³ of MSW should be 140-150kg. NSW Commercial & Industry (C&I) methodology uses 87kg for 1m ³ of mixed waste in bags.
Ute/trailer/van (<i>New category</i>)	2	0.3	Include new separate category for ute/trailer/van – which are more common at 2m ³ – they could be 300kg.
Small open truck	3	1.2	-
Large open truck	10	5	-
Compactor garbage truck (Perth Metro)	8	5	An 8m ³ compactor truck has been used as an example. 8m ³ is the lowest of the range, compactor trucks can be up to 21m ³ .
Large compactor garbage truck (Regional)	15	11	In a regional area a 13m ³ -18m ³ would seem more likely therefore recommend increasing this to a 15m ³ truck at 11 tonnes.

With regard to the default bulk densities, Talis reviewed the values and proposes a number of refinements to make them consistent with other jurisdictions in Australia (Table 1-2). The bulk density values proposed were derived and refined from a range of disposal based audits as published in the *EPA NSW's Methodology for the 2014 C&I Waste Stream Audit in the Regulated Areas in NSW*. Alternatively, three sets of density factors (low, medium and high) could be included to allow for more accurate data recording.

Table 1-2: Default bulk densities with Talis comments and proposed amendments

Material Category	Current Default bulk density (t/m ³)	Comment	Proposed refinement
Paper (<i>Compacted</i>)	0.2	The current value used appear to be compacted weight.	Propose inclusion of uncompacted paper density of 0.055.
Cardboard (<i>Compacted</i>)	0.1	The current value used appear to be compacted weight.	Propose inclusion of uncompacted density of 0.076.
Concrete	1.5	NSW C&I density factors quotes 0.83. Potential for overestimate of tonnages based on current values.	0.83
Brick	1.2	NSW and Victoria use 0.83. Potential for overestimate of tonnages based on current conversion factor.	0.83
Garden Organics	0.15	Current published density may overestimate.	0.09
Food Organics	0.5	Current published density may overestimate. Change to be consistent with NSW and Victoria.	0.343 – low density packaged and unpackaged.
Wood	0.19	Current published density may overestimate. Medium density for NSW - covers timber, pallets, medium density fibreboard (MDF) at 0.15.	0.15
Textiles	0.15	Current published density may overestimate. Change to be consistent with NSW and Victoria.	0.09
Other Mixed Inert	1.3	Current published density may overestimate.	0.83

Within Appendix B, the composition of recycling collections (post-Materials Recovery Facility) (MRF) data are detailed. Based on Talis' industry knowledge, currently stated diversion rates from two metropolitan MRFs are 83-87%, which would equate to a residual rate of between 13-17%. Whilst Talis recognises that there is likely to be a downwards adjustment resulting from the instability in the international recycling markets, Talis feels that the current default figure understates the recycling rate of operating MRFs. The following composition, based on MRF and waste audit data, is felt to be more typical.

Table 1-3: Composition of recycling collections (post-MRF) with comparison material composition

Material	Published composition	Comparison composition
Cardboard	15%	9%
Mixed paper	15%	37%

Material	Published composition	Comparison composition
Glass	12%	30%
All Plastics	8%	4%
- HDPE	-	1.5%
- PET	-	1%
- Other plastic	-	1.5%
Aluminium cans	2%	0.5%
Steel	3%	2%
Other	45%	17.5%

1.1 Further general comments

A further reporting requirement could be photographic evidence of the active tip face and stockpiles on the same day each calendar month to be compiled and provided to the DWER with each annual report return.

2 Recyclers

Talis is broadly content that the Draft Approved Method for recyclers is fit for purpose. In relation to the specific questions outlined in the consultation paper.

Question 1: Are the proposed material categories practical and appropriate for the Western Australian recycling industry?

No additional comments - see Section 1 of this response.

Question 2 - Are the proposed calculation methods to estimate the weight of waste received, disposed, leaving and stockpiled at your site clear? If not, what further clarification is required?

Talis is broadly content that the Draft Approved Method for recyclers is fit for purpose.

Question 3 - Are there any barriers that would prevent your organisation from using these calculation methods? If so, what are they and how can they be overcome?

Talis has not specific comment in this regard.

Question 4 - Are the proposed default material densities appropriate for the Western Australian recycling industry?

Please refer to Table 1-1 and Table 1-2 for Talis' proposed refinements to the default values. The three sets of density factors used in NSW and Victoria would be more suitable due to the nature of loads received at recycling facilities.

2.1 Further general comments

The mechanism to apply for an alternative method (Section 11) is important as recycling facilities required to submit data will include a wide range of types of facilities including e-waste recycling, C&D, dirty MRFs, clean MRFs, mattress recyclers etc.

3 Large Regional Landfills

Consistent with earlier sections, Talis encourages the DWER to change the default vehicle volumes to more accurately reflect the types of vehicles that enter landfill facilities, the NSW C&I methodology contains a more suitable list of vehicle types. Based on industry knowledge, most utes, trailers, vans should be considered to have a capacity of 2m³ rather than the 1m³ currently cited in Appendix A – Default values.

If you have any additional questions or require further clarification, please do not hesitate to contact me.

Yours sincerely



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