



Government of Western Australia
Department of Water and Environmental Regulation



Waste and recycling in Western Australia 2020-21

Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace
Joondalup Western Australia 6027
www.wasteauthority.wa.gov.au

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Introduction

This report presents data on, and trends in, waste recovery and disposal in Western Australia (WA) based on the 2020-21 financial year. The report also assesses the state's progress against the targets set out in the Government of Western Australia's *Waste Avoidance and Resource Recovery Strategy 2030* (waste strategy).

Under regulation 18C of the Waste Avoidance and Resource Recovery Regulations 2008 (WARR Regulations), liable persons are required to lodge annual returns containing waste and recycling data to the Department of Water and Environmental Regulation (the department). The data in this report was predominantly derived from annual returns lodged by 256 liable persons for the 2020–21 reporting period, including local governments, recyclers and non-metropolitan landfills. Other data sources are detailed in the methodology (Appendix A).

Only solid waste is required to be reported under the WARR Regulations. Most mining, agricultural and forestry wastes are excluded from this report.

This report is the second report in the series. The latest reports replace two long-running series of reports published by the Waste Authority prior to 2019-20: *Recycling activity in Western Australia* and *The census of Western Australian local government waste and recycling services*. In previous years, recyclers and local governments voluntarily supplied data for these reports. The reporting requirements under the WARR Regulations provide for a more complete dataset compared with previous years under the voluntary reporting scheme.

Data published in the report is also dynamically presented in Power BI reports available on the Waste Authority's [website](#).



Waste and recycling in Western Australia 2020-21

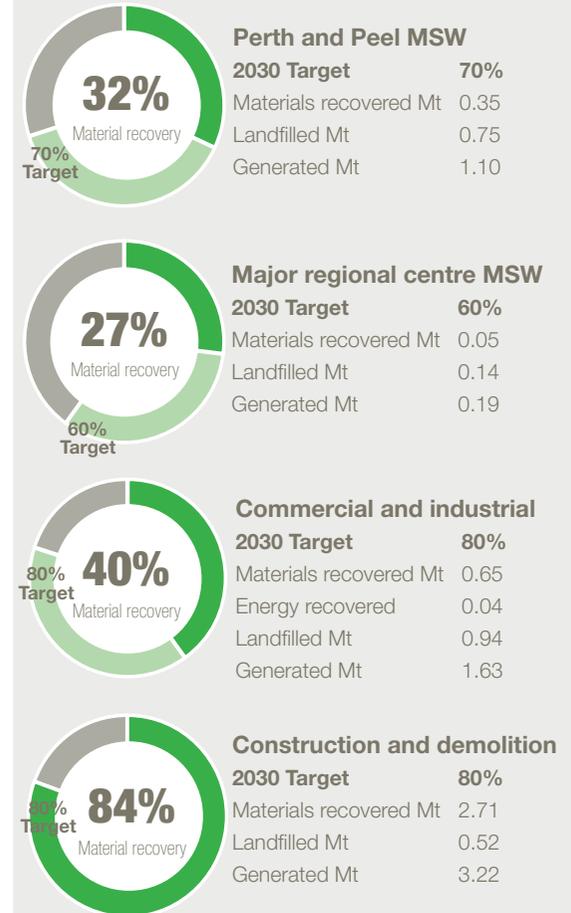


Average kerbside recovery performance*



*Adjusted for service roll out, does not include all service combinations

Waste strategy targets



FOGO in Perth and Peel by 2025



Key findings for 2020–21

Trends

In 2020-21, 6.4 million tonnes of waste was reported as generated in WA, an increase of 553,000 tonnes (9 per cent) from 2019–20. In total, 3.8 million tonnes, or 60 per cent, of the waste generated in 2020-21 was recovered. The amount of waste materials recovered increased by 408,000 tonnes (12 per cent) from 2019–20.

Figure 1 shows the total tonnes of waste reported as generated in 2020–21 was similar to total waste generation in 2014-15 (6.3 million tonnes). During the same period (2014-15 to 2020-21), the recovery of waste materials increased from 42 per cent to 60 per cent. There has been a corresponding decline in waste disposal to landfill, from 3.6 million tonnes in 2014–15 to 2.5 million tonnes in 2020–21.

Figure 1 also shows a pattern of declining waste generation from 2014-15 followed by a return to 2014-15 levels. This pattern is associated with increases to the landfill levy from January 2015 and the introduction of mandatory waste and recycling reporting regulations in June 2019.

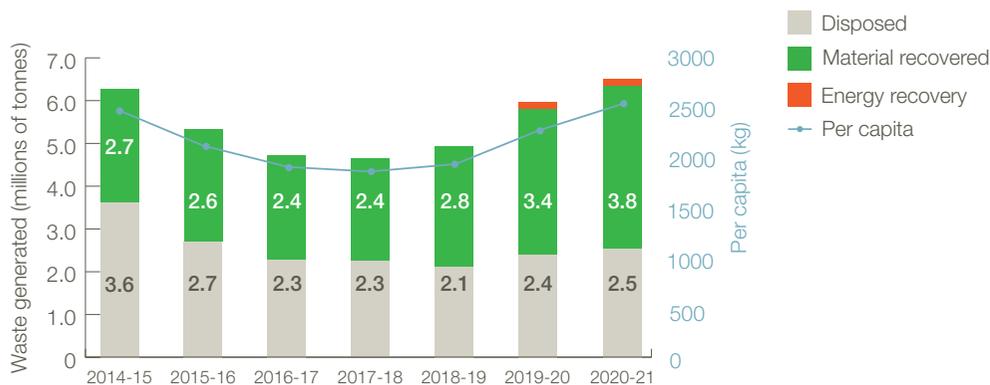


Figure 1: Reported waste generation for WA, 2014–15 to 2020–21. Note: prior to 2019–20, waste recovered as energy was reported as ‘recovered’.

Waste generated in 2020–21 was comprised of:

- 3.2 million tonnes from the construction and demolition (C&D) stream (51 per cent)
- 1.6 million tonnes from the commercial and industrial (C&I) stream (26 per cent)
- 1.5 million tonnes from the municipal solid waste (MSW) stream (25 per cent)

Figure 2 shows the waste stream composition in 2020–21 was similar to that in 2014-15.

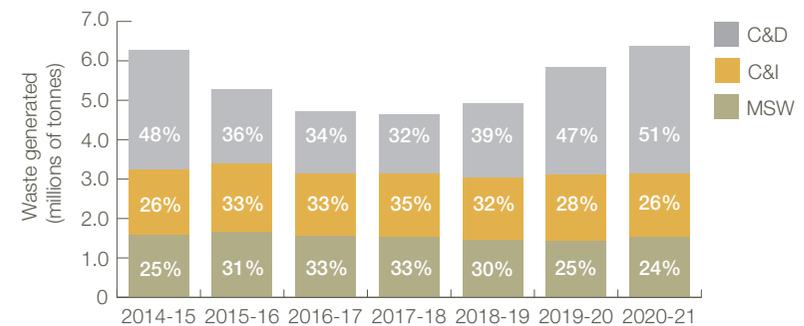


Figure 2: Waste generation composition by waste stream, with labels indicating percentage contribution.

The quantity of materials recovered from the waste stream increased from 2.7 million tonnes in 2014–15 to 3.8 million tonnes in 2020–21. Figure 3 shows that C&D materials were the largest recovered material type in 2020–21, and that the overall increase in material recovery since 2014–15 stems from an increase in the recovery of C&D materials.

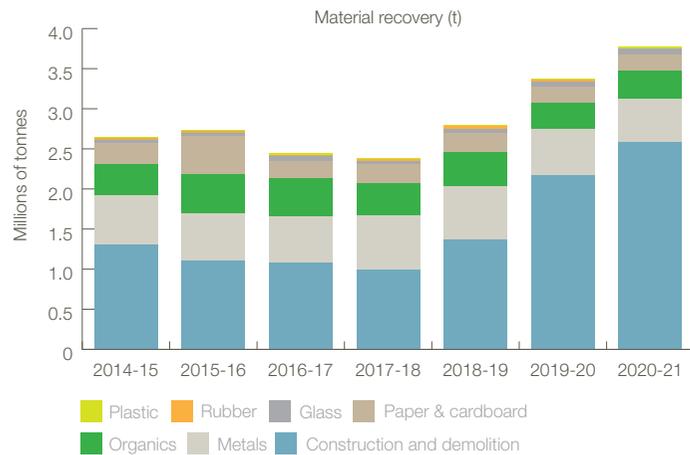


Figure 3: Material recovery (t) by material type

Progress towards waste strategy targets

Overall

The 2025 waste strategy target for statewide material recovery is 70 per cent. In 2020–21, the material recovery rate was 60 per cent, an increase of 17 percentage points since 2014–15. An additional 0.7 million tonnes, or 246 kg per capita, of material recovery is required to meet the 2025 target.

In 2020–21, the total amount of waste generated per capita was 2,342 kg. A further reduction of 133 kilograms per capita is required to meet the 2025 target of a maximum of 2,209 kg per capita.

MSW

The waste strategy includes a 2025 MSW material recovery target of 67 per cent for the Perth and Peel regions. In 2020–21, the MSW material recovery rate for these regions was 32 per cent. There has not been any sustained improvement in the MSW recovery rate since 2014–15. An additional 0.4 million tonnes, or 177 kg per capita, of material recovery is required to meet the 2025 target.

Local governments with three-bin kerbside food organics and garden organics (FOGO) systems recovered up to 66 per cent of their domestic waste in 2020–21. Three-bin FOGO systems provide a pathway to increased MSW material recovery. Five local governments in the Perth and Peel region provided three-bin FOGO systems in 2020–21. One local government introduced a three-bin FOGO system in 2021–22. Another 15 local governments in the Perth and Peel regions have committed to providing a three-bin FOGO system by 2025 in their waste plans.

Waste generation per capita in the MSW stream has reduced by 10 per cent since 2014-15, meeting the 5 per cent reduction target set for 2025.

C&I

The 2025 waste strategy target for C&I material recovery is 75 per cent. In 2020–21, the C&I material recovery rate was 40 per cent. There has not been any sustained improvement in the C&I recovery rate since 2014–15. An additional 0.6 million tonnes, or 209 kg per capita, of material recovery is required to meet the 2025 target. An increase in recovery of plastics, food organics, tyres and paper and cardboard is required to boost recovery rates in the C&I waste stream. Recent investment through the Recycling Modernisation Fund is addressing some of these needs.

Waste generation per capita in the C&I waste stream has reduced by 7 per cent since 2014-15, meeting the 5 per cent reduction target set for 2025.

C&D

The 2025 waste strategy target for C&D material recovery is 77 per cent. In 2020–21, this target was exceeded with a C&D material recovery rate of 84 per cent. Stockpiles of unprocessed waste, which are not included in the calculation of waste generation, are likely to be influencing the reported recovery rate.

Waste generation per capita in the C&D waste stream has decreased by less than one per cent since 2014–15, compared to a 15 per cent reduction target.

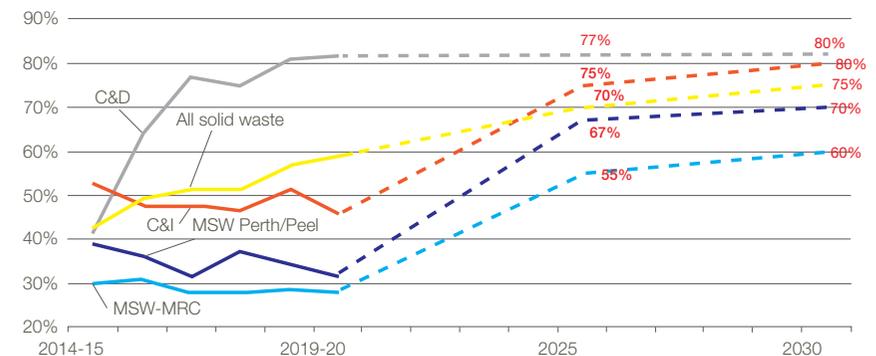


Figure 4: Material recovery rates against the waste strategy targets (red). Note that prior to 2019–20, material recovery rates included waste recovered as energy.

Domestic waste

In 2020–21, local governments in WA collected 1.47 million tonnes of domestic waste from their residents, 35 per cent of which was recovered. The three-bin FOGO system was the best performing kerbside system for material recovery, with an average recovery rate of 57 per cent (highest performing was 65 per cent), compared with an average of only 16 per cent for two-bin systems. In 2020-21, 11 per cent of the population had access to a FOGO bin; 33 per cent had a garden organics (GO) only bin; and 94 per cent had access to a comingled recycling bin.

Performance against waste strategy targets

The state's waste strategy sets out targets for waste avoidance, material recovery, landfill diversion and environmental protection. This includes diverting waste from landfill. The 2014–15 financial year is used as the baseline against which targets for avoidance are measured. Progress against targets for 2020–21 is provided in Table 1.

	Sector	2014–15 baseline	2020–21	Targets 2025 2030
Avoid targets	Overall	2,452 kilograms per capita	2,342 kilograms per capita 4% reduction	10% reduction 20% reduction
	MSW	621 kilograms per capita	560 kilograms per capita 10% reduction	5% reduction 10% reduction
	C&I	642 kilograms per capita	598 kilograms per capita 7% reduction	5% reduction 10% reduction
	C&D	1,188 kilograms per capita	1,184 kilograms per capita 0.3% reduction	15% reduction 30% reduction
Material recovery targets	Overall	42% recovery	60% recovery 2% increase since 2019–20	70% recovery 75% recovery
	MSW (Perth and Peel)	39% recovery	32% recovery 1% increase since 2019–20	67% recovery 70% recovery
	MSW (Major regional centres)	30% recovery	27% recovery 2% decrease since 2019–20	55% recovery 60% recovery
	C&I	53% recovery	40% recovery 4% decrease since 2019–20	75% recovery 80% recovery
	C&D	42% recovery	84% recovery 3% increase since 2019–20	77% recovery 80% recovery
	Perth and Peel	Nil	5 local governments + 1 since 2020–21	All local governments in the Perth and Peel region provide consistent three-bin kerbside collection systems that include separation of FOGO from other waste categories Nil
Protect target	Overall	49%* of Perth regions' waste disposed of to landfill *Peel region data included as non-metropolitan source prior to 2018–19	32% of Perth and Peel regions' waste disposed of to landfill 0.3% decrease since 2019–20	Nil No more than 15% of Perth and Peel regions' waste is disposed of to landfill

Table 1: Performance against waste strategy targets for 2020–21.

Waste generation

Waste generation was reported as 6.4 million tonnes in 2020-21, an increase of 553,000 tonnes on the previous year. In 2020-21, 3.8 million tonnes of this was material recovery, 2.5 million tonnes was disposed of to landfill and 0.04 million tonnes was energy recovery.

Most of the increase in waste generation was in the C&D waste sector, where there was an increase of 487,000 tonnes on the previous year. Almost all (98 per cent) of the additional C&D waste was recovered as C&D waste processing capacity expanded with the start-up of a large recycling facility during 2020-21.

Total reported waste generation per capita increased by 176 kg to 2,341 kg. This represents a 4 per cent reduction in per capita waste generation since 2014-15. The 2025 target of 2,209 kg per capita, which equates to a 10 per cent per capita reduction, had been exceeded in the previous three years.

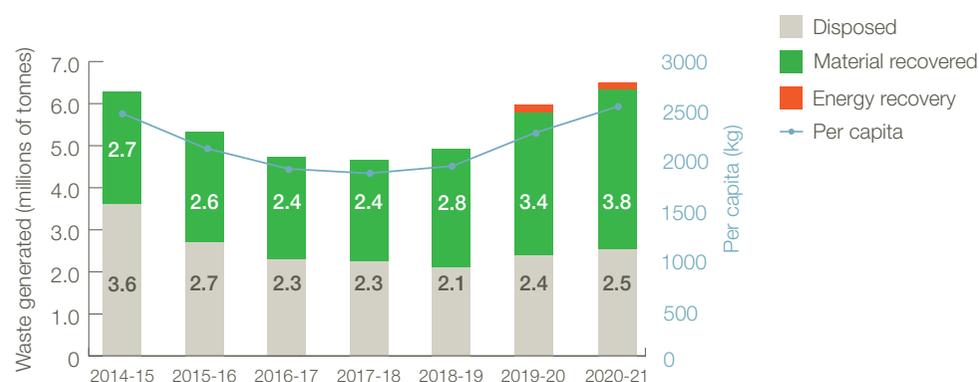


Figure 5: Reported waste generation for WA, 2014-15 to 2020-21. Note: prior to 2019-20, waste recovered as energy was reported as 'recovered'.

Figure 5 shows the trend in reported waste generation between 2014-15 and 2020-21.

The increase in C&D waste generation in 2020-21 is reflected in the waste generation composition shown in Figure 6. The proportion of C&D waste in the waste stream increased by 4 per cent on the previous year to 51 per cent and now exceeds the proportion reported in 2014-15.

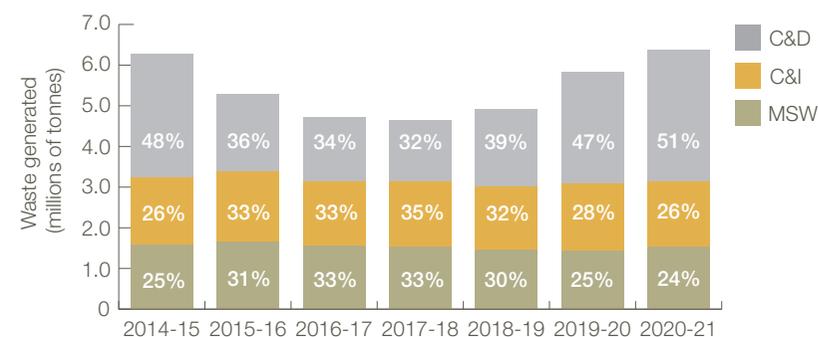


Figure 6: Waste generation composition by waste stream, with labels indicating percentage contribution.

Total waste generation and generation per capita in 2020–21 for the MSW, C&I and C&D waste streams are presented in Table 2 and Table 3. Generation rates per capita were higher in non-metropolitan regions for MSW and C&I, while C&D waste was higher in the Perth and Peel regions.

Waste stream	Perth and Peel regions		Non-metropolitan regions		Western Australia	
	Tonnes	Proportion	Tonnes	Proportion	Tonnes	Proportion
MSW	1,108,490	22%	417,568	30%	1,526,058	24%
C&I	1,000,670	20%	626,568	45%	1,627,238	25%
C&D	2,889,033	58%	335,353	24%	3,224,386	51%
Total	4,998,193	100%	1,379,489	100%	6,377,682	100%

Table 2: Waste generation by waste stream (tonnes and percent), 2020–21.

	Perth and Peel regions	Non-metropolitan regions	Western Australia
Population	2,182,170	540,547	2,722,717
MSW (per capita)	508	772	560
C&I (per capita)	459	1,159	598
C&D (per capita)	1,324	620	1,184
Total (per capita)	2,290	2,552	2,342

Table 3: Waste generation per capita by waste stream, 2020–21 (proportions same as shown in Table 2).

Figures 7 to 9 show the trends in waste generation and generation per capita between 2014–15 and 2020–21 by waste stream. MSW generation per capita has decreased from 621 tonnes to 560 tonnes (10 per cent) since 2014–15, meeting the 2030 target.

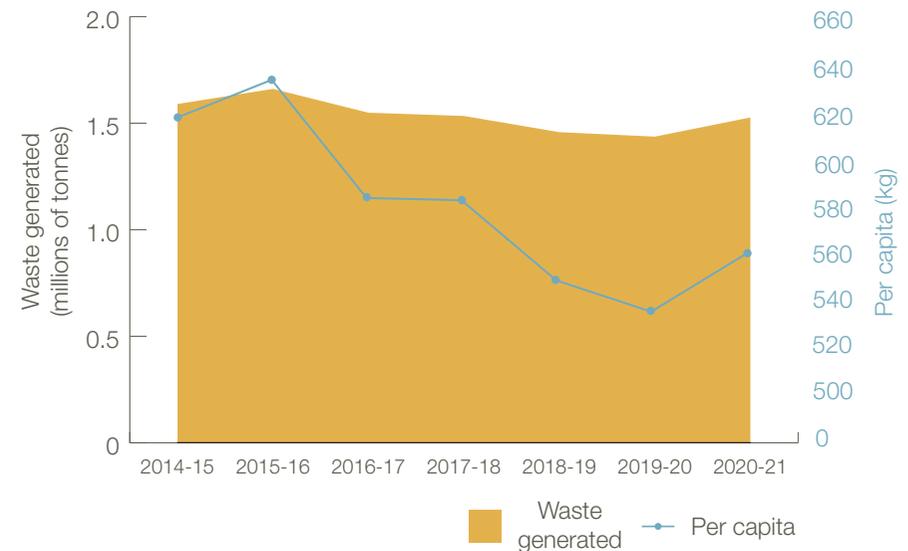


Figure 7: Waste generation and generation per capita for MSW.

C&I waste generation per capita has decreased from 642 tonnes in 2014-15 to 598 tonnes (7 per cent). This exceeds the 2025 target of 610 kg per capita.

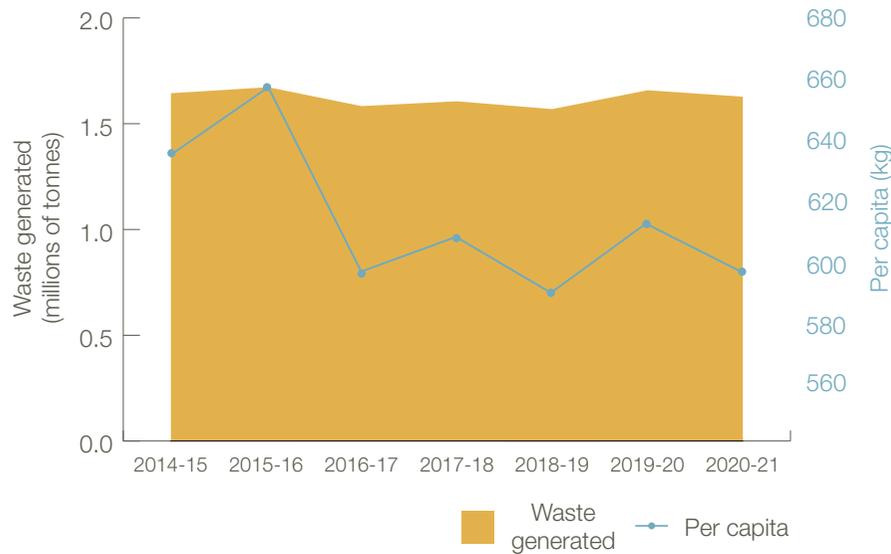


Figure 8: Waste generation and generation per capita for C&I.

C&D waste generation per capita has increased from 2019-20 mostly due to an increase in the recovery of C&D waste materials. Reported C&D waste generation per capita has decreased by 4 kg per capita to 1,184 kg per capita (0.3 per cent) since 2014-15.

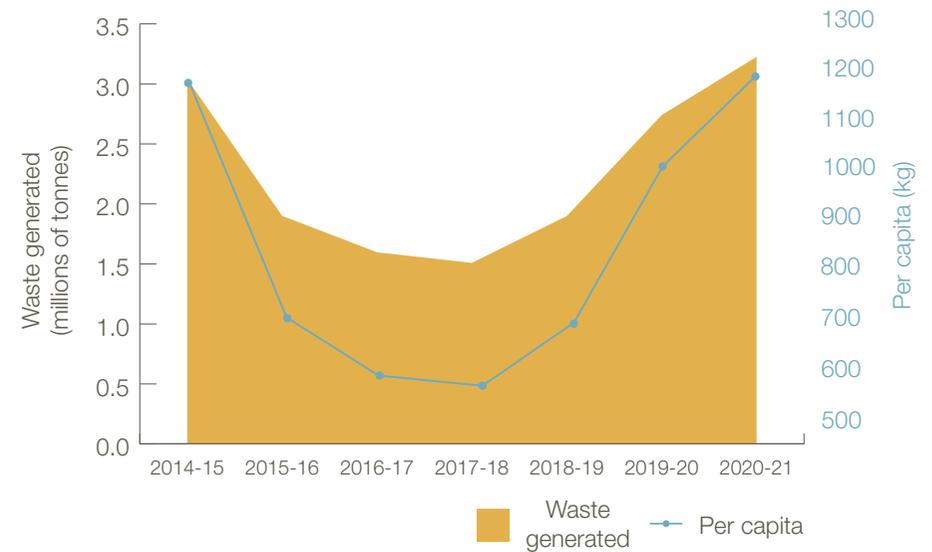


Figure 9: Waste generation and generation per capita for C&D.

Focus on waste generated by disaster events

In 2020-21, WA faced two destructive emergency events. The Wooroloo bushfire in February 2021 and Tropical Cyclone Seroja in April 2021 caused widespread damage to properties, infrastructure and the environment. The collection, disposal and recovery of waste was an essential part of the recovery phase following these emergencies.

The Wooroloo bushfire impacted two local governments and more than 10,000 hectares. Buildings and other assets were destroyed on more than 137 properties, including the loss of 86 homes. The department led the Wooroloo bushfire clean-up activities. The task saw more than 6,700 tonnes of disaster waste disposed of to landfill, including 3,288 tonnes of asbestos and asbestos-contaminated soils. More than 10,000 tonnes of metals and rubble were recovered from the disaster waste.

Cyclone Seroja crossed the WA coast just south of Kalbarri and went on to impact 16 local governments across more than 133,000 km². The department provided on-ground support in the initial clean-up and guided asbestos-risk management. During the early stages of the clean-up, local governments assisted residents by increasing opening hours for waste management facilities and decreasing the cost of waste disposal. During this period, the Shire of Northampton reported large increases in green and other solid waste receipts at its Kalbarri and Northampton landfills.

The clean-up operations stemming from the two emergency events will continue well into 2022. Further information about the Wooroloo bushfire and Cyclone Seroja can be found at www.dfes.wa.gov.au.



Disposal

A total of 2.5 million tonnes of waste was disposed of to landfill in WA in 2020–21. This was an increase of 139,000 tonnes on 2019–20 and mostly due to an increase in MSW disposed of to landfill in the non-metropolitan region and an increase in C&I waste disposed of to landfill in the Perth and Peel region.

The waste strategy target is for no more than 15 per cent of Perth and Peel regions' waste is disposed to landfill by 2030. In 2020–21, 32 per cent, or 1,579,362 tonnes, of Perth and Peel regions' waste was landfilled.

Table 4 shows the waste disposed of to landfill by waste stream for 2020–21. Disposal trends are provided in Figure 10 (note that the Peel region was included in the non-metropolitan region category prior to 2019–20).

Waste stream	Perth and Peel regions		Non-metropolitan regions		Western Australia	
	Tonnes	Proportion	Tonnes	Proportion	Tonnes	Proportion
MSW	752,501	48%	334,871	35%	1,087,372	43%
C&I	519,769	33%	416,609	43%	936,378	37%
C&D	307,092	19%	210,526	22%	517,618	20%
Total	1,579,362	100%	962,006	100%	2,541,368	100%

Table 4: Disposal to landfill by waste stream, 2020–21.

The amount of waste disposed of to landfill has been relatively steady for MSW and C&I since 2014–15. There was a significant decrease in the amount of C&D waste disposed of to landfill from 2014–15 onwards, which coincided with an increase in the waste levy for category 63 (inert) landfills (from \$12 to \$60 per cubic metre) in January 2015.

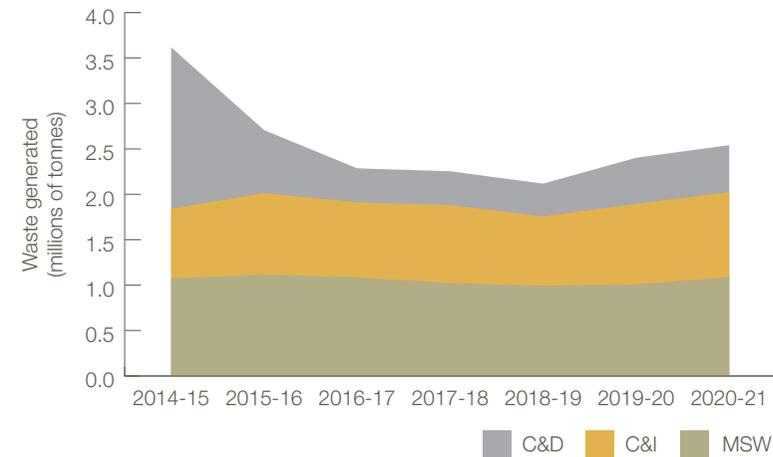


Figure 10: Disposal by waste stream.

Recovery

Overall material recovery and trends

A total of 3.8 million tonnes of waste materials were recovered in 2020–21, which is an increase of 408,000 tonnes from 2019–20. Data on material recovered by waste stream and category in 2020–21 is provided in Tables 5 and 6.

Waste stream	Perth and Peel regions		Non-metropolitan regions		Western Australia	
	Tonnes	Proportion	Tonnes	Proportion	Tonnes	Proportion
MSW	355,836	11%	82,638	20%	438,474	12%
C&I	447,610	13%	204,073	50%	651,683	17%
C&D	2,580,769	76%	124,827	30%	2,705,596	71%
Total	3,384,215	100%	411,538	100%	3,795,752	100%

Table 5: Material recovery by waste stream, 2020–21.

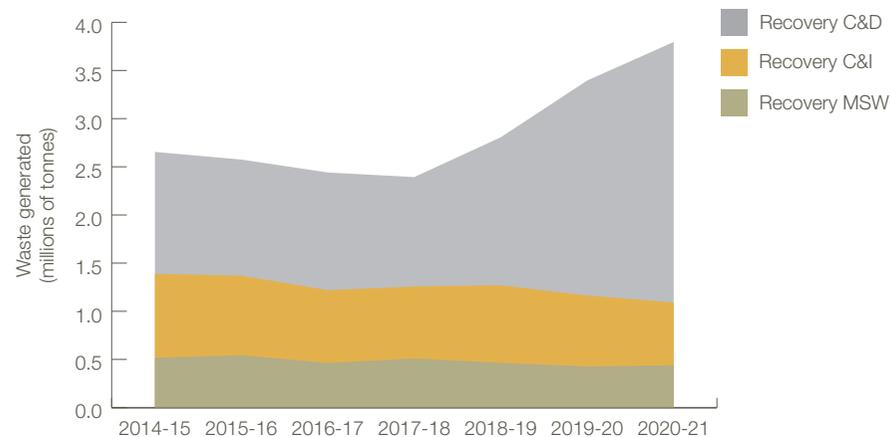


Figure 11: Material recovery (t) by waste stream from 2014-15.

Material category	2019-20	2020-21	Change
	Tonnes	Tonnes	
C&D waste	2,180,756	2,588,915	408,161
Metals	563,970	531,183	-32,787
Organics	335,772	357,612	21,841
Paper and Cardboard	194,317	203,159	8,842
Glass	63,456	69,804	6,348
Plastic	15,484	22,044	6,558
Rubber	14,622	10,285	-4,337
Other	12,875	-	-12,875
Hazardous waste	5,430	6,026	596
Textiles	990	4,229	3,239
Bulky Wastes	22	2,496	2,474
Total	3,387,694	3,795,752	408,058

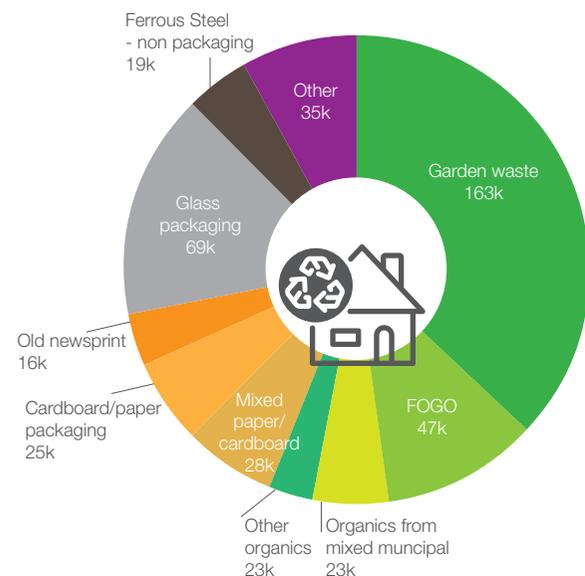
Table 6: Material recovery by category, 2019-20 and 2020–21.

The total amount of material recovered has increased over the past three reporting periods (see figure 11). The most recent increase is attributable to a boost in the amount of C&D waste materials recovered (up by 408,000 tonnes in 2020-21 compared to the previous year).

MSW material recovery

In 2020-21, 438,000 tonnes of materials were recovered from the MSW stream (Figure 12). Organic waste (mostly garden waste) made up 56 per cent of the recovered materials. Glass (16 per cent) and paper and cardboard (16 per cent) were next most recovered materials from the MSW stream.

The quantity of materials recovered from the MSW stream has decreased by 79,000 tonnes since 2014-15. Most of the decline (82 per cent) is associated with decreased reporting of C&D material types in the MSW stream (71,000 tonnes in 2014-15 compared to 3,000 tonnes in 2020-21).



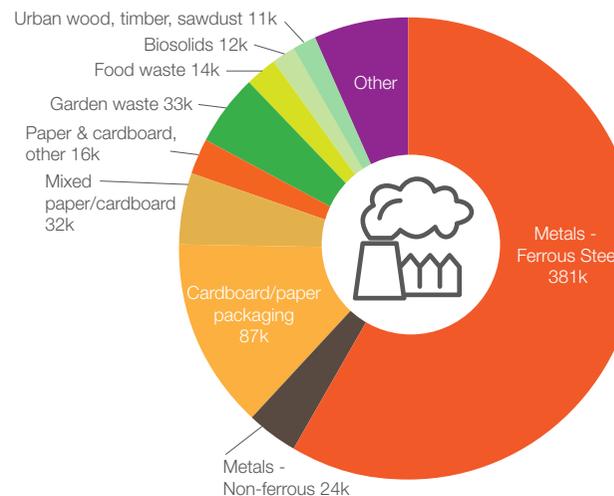
Organics, paper and cardboard represent the largest opportunities for increasing MSW recovery in the future.

Figure 12: Materials recovered (t) from the MSW stream in 2020-21.

C&I material recovery

In 2020-21, 652,000 tonnes of materials were recovered from the C&I waste stream (Figure 13). Metals comprised 62 per cent of the recovered materials. Paper and cardboard (21 per cent) and organics (12 per cent) were the next largest material types recovered from the C&I waste stream.

Material recovery in the C&I waste stream has decreased by 220,000 tonnes since 2014-15. This decline is partly attributable to a reduction in the reporting of C&D material types in the C&I waste stream (130,000 tonnes in 2014-15 compared with 7,000 tonnes in 2020-21). Recovery in the C&I waste stream can be volatile due to the influence of the international market price for scrap metal, which accounts for most of the material



recovery within the C&I waste stream. Metal recyclers reported that, while the market was stable in 2020-21, container availability and increased shipping costs were leading to volatility.

Paper and cardboard, organic waste and plastics represent the largest opportunities for increasing C&I recovery in the future.

Figure 13: Materials recovered (t) from the C&I waste stream in 2020-21.

C&D material recovery

Material recovery in the C&D waste stream totalled 2.7 million tonnes in 2020–21 (Figure 14). Ninety-five per cent (2.58 million tonnes) of this was C&D materials. The largest recovered material types were mixed C&D waste (580,000 tonnes), concrete (567,000 tonnes) and sand/soil (554,000 tonnes).

There was a significant increase in the reported amount of C&D waste recovered over the past three reporting periods, particularly in 2019–20 with the introduction of mandatory reporting requirements. The most recent increase coincides with the start-up of a large C&D waste recycler. C&D waste recyclers have reported an increase in market strength since 2018–19 and 2019–20. It was noted that products such as recycled road base were in high demand, with increased interest from local governments.

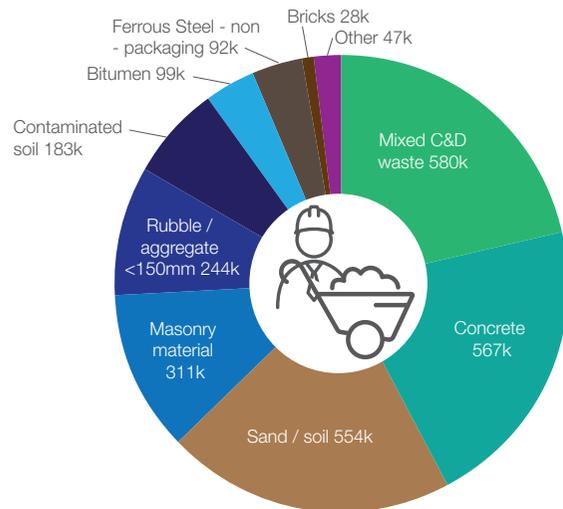


Figure 14: Materials recovered (t) from the C&D waste stream in 2020–21.

Material recovery quantities, sources and destinations can be accessed from the [waste data portal](#) on the Waste Authority website.

Material recovery facilities

Material recovery facilities (MRFs) typically receive comingled recycling collections from households or sort dry recyclables collected from commercial premises. In 2020–21, five MRFs lodged an annual return. Of these, four sorted recyclables primarily from the MSW stream and the other sorted waste exclusively from the C&I waste stream. The MRFs reported receiving and sorting 129,000 tonnes of recyclables from the MSW stream. Figure 15 shows the composition of MSW received and sorted by MRFs in 2020–21.

The MRFs also reported receiving and sorting 20,000 tonnes of recyclables from the C&I stream. The materials most commonly sorted by MRFs from the C&I waste stream were paper and cardboard (56 per cent) and glass packaging (34 per cent).

In 2020–21, MRFs reported 41,000 tonnes of recycling losses. A fire at a large metropolitan MRF in November 2019 contributed to these losses. It resulted in the closure of the MRF for the remainder of the financial year, with recyclables diverted to other MRFs. The rebuilt MRF recommenced full operations in June 2021.

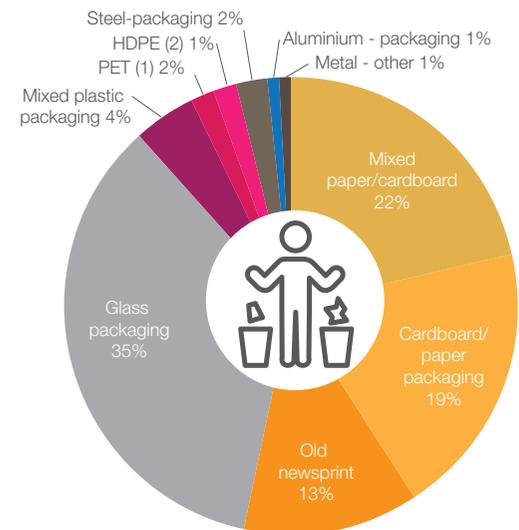


Figure 15: Composition of materials from the MSW stream received and sorted at MRFs in 2020–21.

Destination

Table 7 shows the destination of material recovered from the waste stream in 2020–21. About 79 per cent (3 million tonnes) of recovered waste was reprocessed within the state and 20 per cent (0.79 million tonnes) was sent overseas for reprocessing. Only very small quantities (less than 30,000 tonnes) were sent interstate for reprocessing.

Waste stream	Final processing in Western Australia		Interstate		Exported		All recovered
	Tonnes	% of recovered waste	Tonnes	% of recovered waste	Tonnes	% of recovered waste	Tonnes
MSW	301,079	69%	21,971	5%	114,974	26%	438,024
C&I	90,073	14%	7,487	1%	552,150	85%	649,710
C&D	2,611,745	97%	44	0%	92,770	3%	2,704,559
Total	3,002,897	79%	29,502	1%	759,894	20%	3,792,293

Table 7: Destination of recovered materials by waste stream (tonnes).

The destinations of recovered waste by material type are represented graphically in Figure 16.



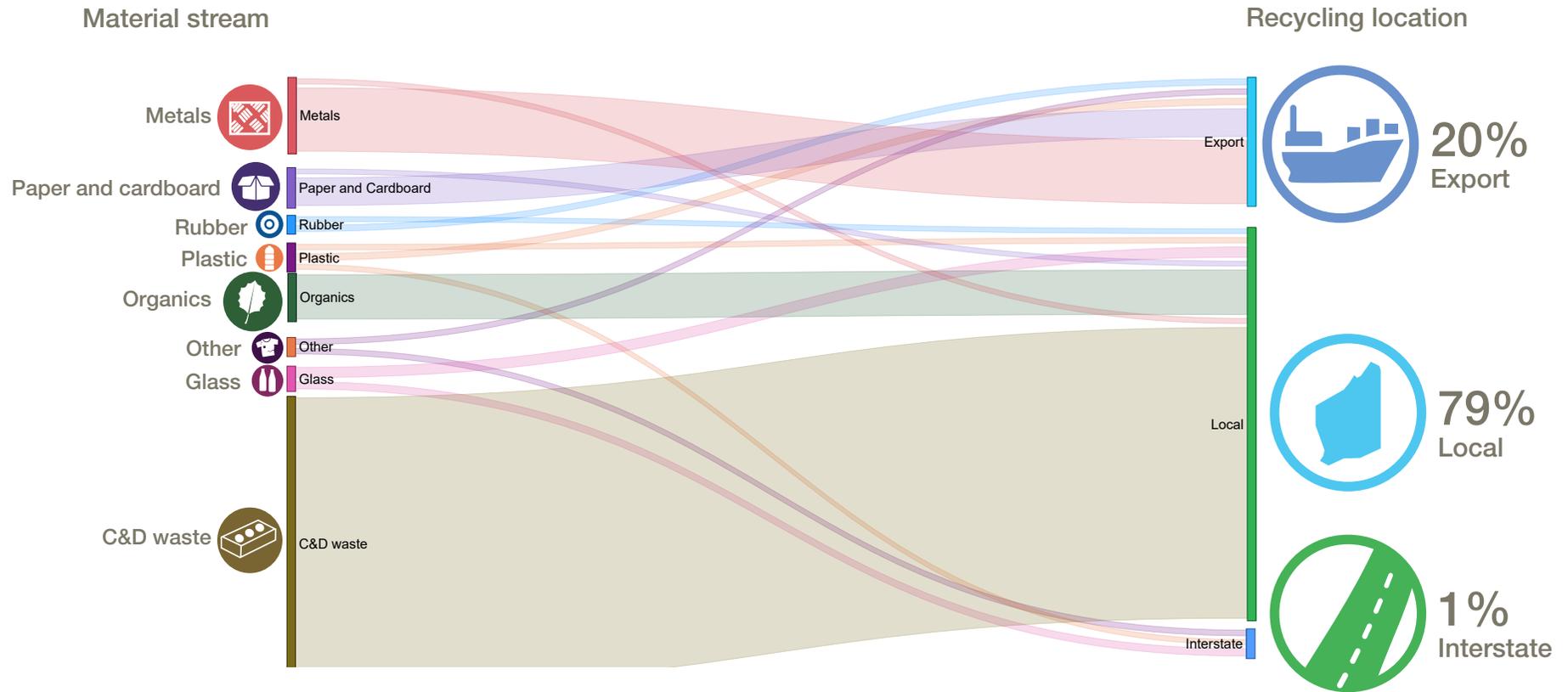


Figure 16: Waste recovery flows by processing destination and material category.

Figure 16 illustrates that in 2020–21, WA was reliant on export markets for some waste types which are subject to phased export bans from 2021. The total reported quantities of these waste types are listed in Table 8.

Waste type	Exported (t)	Commentary
Plastics	15,046	Reported tonnes represent plastics not reprocessed in WA. Note that locally reprocessed plastics may also be exported.
Tyres	28,706	Includes exported tyres reported for recovery as tyre-derived fuel.
Paper and cardboard	202,747	All paper and cardboard types (i.e., includes separated scrap).
Glass	0	

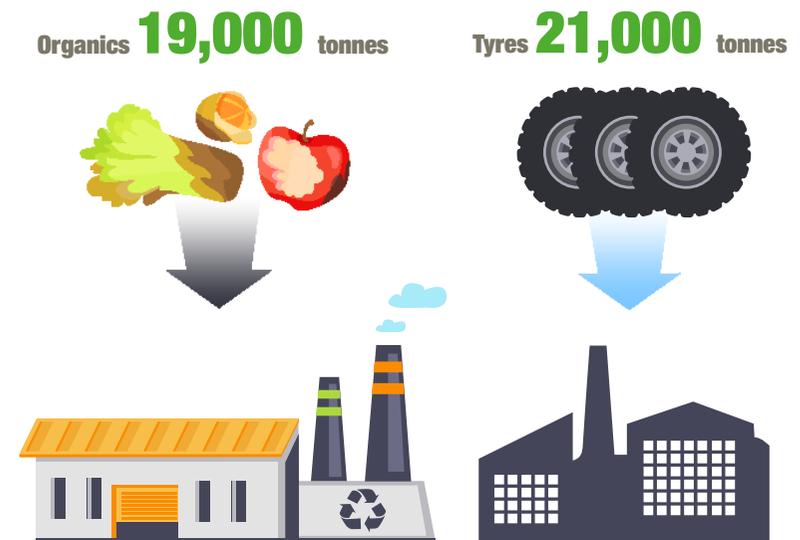
Table 8: Waste plastic, tyres, paper and cardboard directly exported overseas from WA in 2020–21. Not all reported tonnes may be subject to the phased export bans.

Energy recovery

About 41,000 tonnes of waste was recovered as energy in 2020–21. Almost all (97 per cent) of this was sourced from the C&I sector. Around half was recovered as tyre-derived fuel and most of the remainder recovered as biogas.

Waste to energy has not been included as material recovery in the previous sections of this report (except Table 7). It has been included in the calculation of waste generation.

Landfill gas capture has not been included as energy recovery.



Material recovery rate

The material recovery rate for solid waste in WA in 2020–21 was 60 per cent, an increase of two percentage points from 2019–20.

Figure 17 shows the trends in material recovery rates since 2014–15 against the 2025 and 2030 recovery targets in the waste strategy. There has been a rise in recovery rates for the overall waste stream and for the C&D waste stream. Until 2018–19, these increases were driven by falling reported C&D waste disposal amounts rather than reported increases in material recovery.

Reported material recovery has increased with the introduction of mandatory reporting requirements in 2019.

The material recovery rate for the C&D waste stream has exceeded the 2030 target for the last three reporting periods. However, this is most likely influenced by stockpiles of unprocessed waste (as discussed in the stockpiles section).

Material recovery rates in the MSW and C&I waste streams have not shown any sustained improvements since 2014–15. Improvement in material recovery rates in these sectors is required to meet waste strategy targets. The waste strategy's goal to transition all local governments in the Perth and Peel regions to three-bin FOGO systems by 2025 will help improve material recovery rates. For example, following the implementation of a three-bin FOGO system in July 2020, the recovery rate of the Town of Bassendean increased from 18 per cent in 2019–20 to 57 per cent in 2020–21. Local governments with well-established three-bin FOGO systems achieved an overall recovery rate of up to 66 per cent in 2020–21.

The MSW material recovery rates of major regional centres (MRCs) have not shown any sustained improvements. The City of Bunbury was the only MRC implementing a three-bin FOGO system in 2020–21 and achieved a 55 per cent recovery rate. The City of Albany introduced a three-bin FOGO system in the second half of 2021.

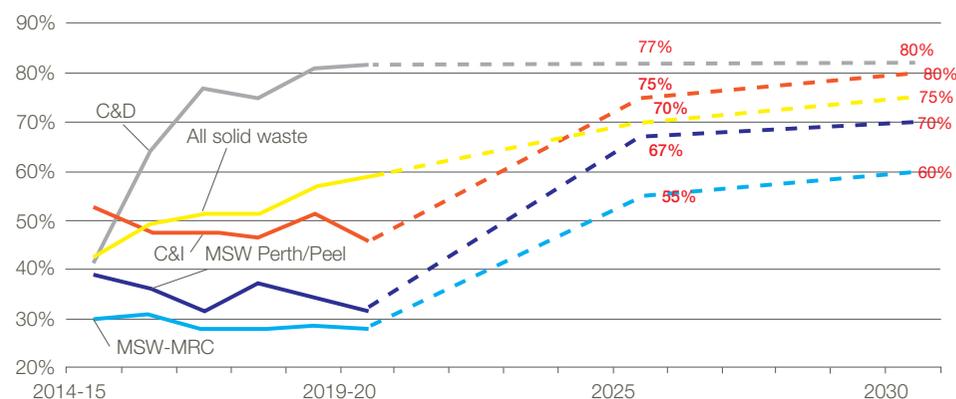


Figure 17: Material recovery rates against the waste strategy targets (red). Note that prior to 2019–20, material recovery rates included waste recovered as energy.

Stockpiles

Recyclers reported stockpiling 2.12 million tonnes of waste as of 30 June 2021 (Table 9). Most of this (88 per cent) is C&D waste. The quantity of waste stockpiled increased from 2019-20. Reprocessed stockpiles grew by 100,000 tonnes while 170,000 tonnes of waste was added to unprocessed stockpiles (Figure 18).

Materials in unprocessed stockpiles are not included in waste generation calculations until they are either processed or disposed. As mentioned in previous sections, these stockpiles may be influencing the C&D waste stream's reported material recovery rate.

Material category	General and organic recyclers		MRF	Total
	Reprocessed	Unprocessed		
C&D waste	935,825	946,236		1,882,061
Organics	123,377	61,824		185,201
Metals	25,755	8,868	78	34,701
Other	6,525	1,310		7,835
Glass	3,297	1,839	288	5,424
Paper and cardboard	713	1,160	1,286	3,159
Plastic	198	153	492	843
Bulky wastes	247	123		370
Rubber		179		179
Total	1,095,937	1,021,692	2,144	2,119,773

Table 9: Stockpiled waste at recyclers as of 30 June 2020 (tonnes).

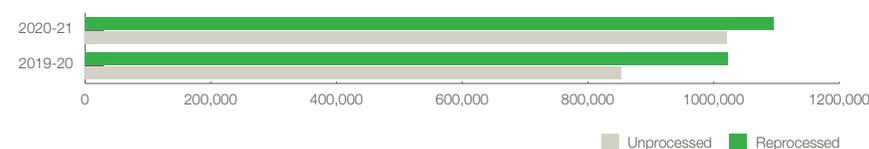


Figure 18: Tonnes of stockpiled materials at the end of each reporting period.

Figure 19 provides a breakdown of the stockpiled C&D material types. The most common stockpiled material is 'mixed C&D waste', with 86,400 tonnes reprocessed and 775,189 unprocessed. Large quantities of reprocessed sand/soil are also stockpiled. Although there is generally a strong demand for recycled C&D waste products, recyclers reported that the market for sand/soil was slow due to buyer hesitancy about the recycled product.

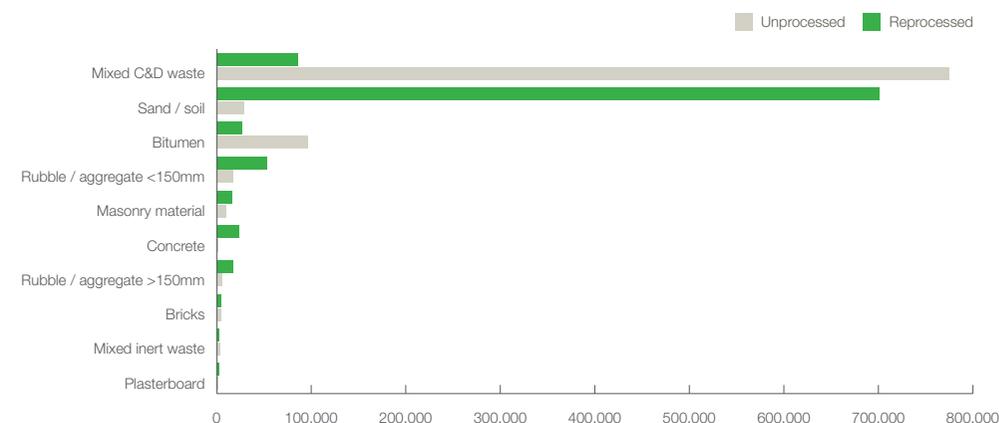


Figure 19: Tonnes of stockpiled C&D materials as of 30 June 2021.

Domestic waste

Domestic waste makes up most of the municipal waste stream. Local governments are the key providers of services to collect and recover domestic waste. In 2020–21, 144 local governments and regional councils in WA reported to the department on the waste services they provided to their residents and the quantities of waste they collected and recovered.

Domestic waste collected and recovered

Local governments reported that providing waste and recycling services to their residents cost them \$359 million in 2020-21.

In 2020–21, local governments collected 1.47 million tonnes of domestic waste from their residents and reported a 35 per cent material recovery rate. Overall, material recovery was higher in the Perth and Peel regions (40 per cent) compared with other regions in the state (24 per cent). The local governments with the highest recovery rates are shown in Table 10.

Local government	Collected	Recovered	Kerbside collection systems ¹	Recovery rate
City of Melville	46,119	30,239	FOGO	66%
Town of East Fremantle	3,501	2,267	FOGO	65%
Shire of Harvey	13,687	7,951	FOGO	58%
City of Fremantle	14,558	8,436	FOGO	58%
City of Stirling	116,605	67,509	GO & MWC	58%

Table 10: Top five performing local governments by domestic waste recovery rates.

¹All systems include comingled recyclable kerbside collections. FOGO = kerbside food organics and garden organics; GO = kerbside garden organics; MWC = mixed waste composting.

The amount of domestic waste collected in WA has remained relatively stable since 2014–15, with a small but steady decline in the amount of domestic waste collected per capita (Figure 20).

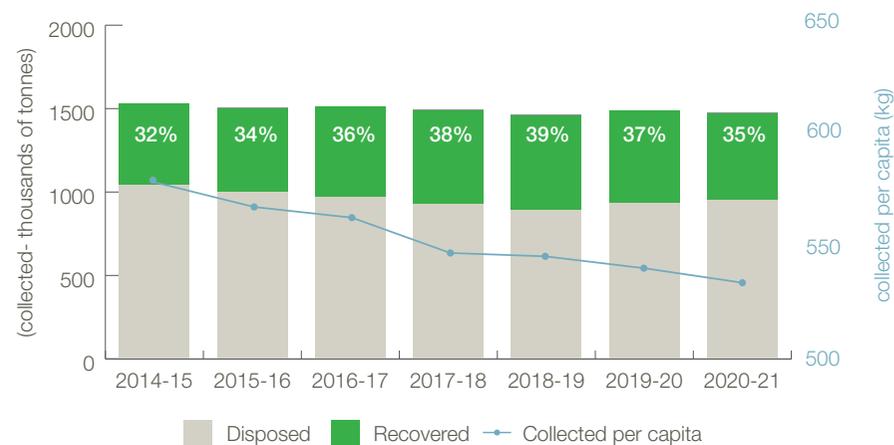


Figure 20: Total domestic waste collected (shown by recovered or disposed fate), per capita domestic waste collected, and recovery rates in WA since 2014–15.

Figure 21 shows that most domestic waste was collected through kerbside services (66 per cent), followed by waste that residents dropped off to specialist collection facilities provided by local governments (24 per cent). Smaller quantities were collected from bulk garden and bulky waste verge services (8 per cent), public place bins and special events services (1 per cent).

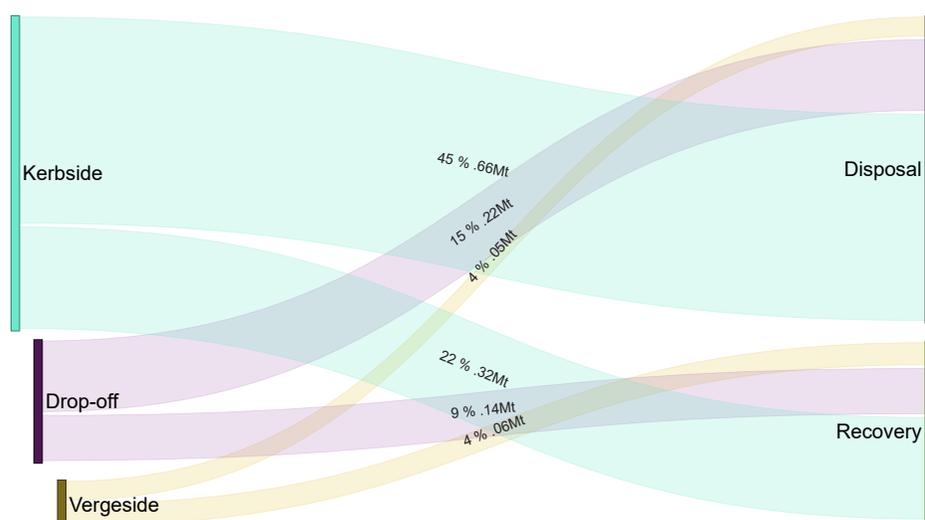


Figure 21: Waste collected and fate by service category. Labels show tonnes of flow and proportion (%) of total collected domestic waste. Waste collected from public places and special events is not shown.

Regional sources of domestic waste

Local governments in the Perth and Peel regions collected 73 per cent of all domestic waste. The recovery of waste per capita was similar across the regions, but disposal to landfill per capita was 87 per cent higher outside the Perth and Peel regions (Table 11).

Region	Domestic waste (kg) recovered per capita	Domestic waste (kg) landfilled per capita	Recovery rate
Perth and Peel regions	195	298	40%
Non-metropolitan regions	180	558	24%
Western Australia	192	349	35%

Table 11: Sources and fates of domestic waste collected by local governments in 2020-21.

Focus on containers for change – impact on local government recovery performance

Containers for Change is WA's container deposit scheme that was launched on 1 October 2020. Under the scheme, eligible drink containers can be taken to refund points for a 10-cent refund per container. The scheme aims to increase the recycling rate of these containers and reduce litter.

In 2020-21, 28,000 tonnes of containers were collected at refund points. All of these containers were recycled. Prior to the introduction of Containers for Change, many of these containers would have been collected through local government kerbside bins and contributed towards local government recovery rates.

Containers for Change has removed some domestic waste from the local government collection and recovery streams. It is estimated Containers for Change has reduced the overall recovery rate for local governments by less than 1 per cent compared to previous reporting periods due to the removal of containers from the kerbside collection system. The impact on the recovery performance of individual local governments will depend on the type of kerbside collection system provided and community access to container refund points.

Kerbside services

Local governments collected 978,000 tonnes of domestic waste through kerbside services in 2020-21 and recovered 320,000 tonnes (33 per cent) of materials from the stream. Kerbside waste collections provide the largest potential for future increases in material recovery (see recovery and disposal by service, Figure 21).

In 2020–21, 98 per cent of the population had at least one kerbside waste service, and 94 per cent were provided with a comingled recycling service (yellow-lid bin). Eleven per cent of the population was provided with a FOGO bin and 33 per cent with a GO bin.

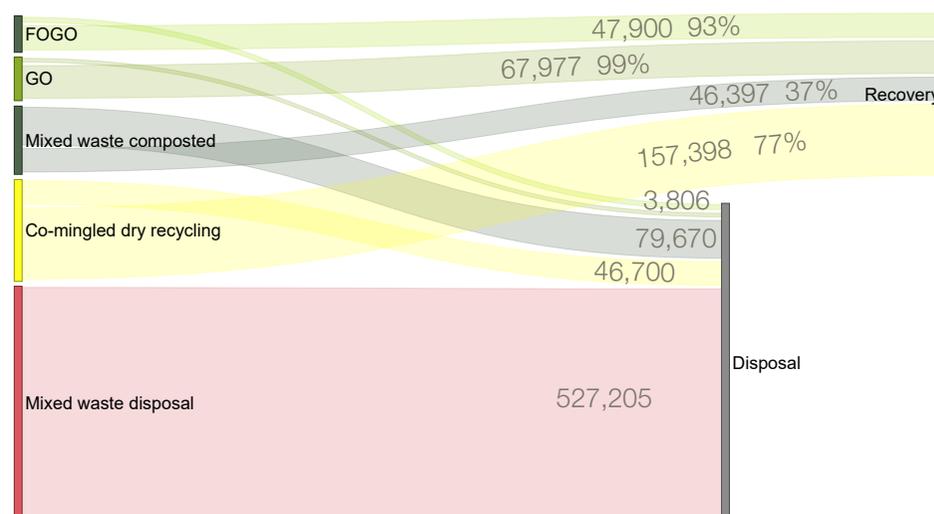


Figure 22: Kerbside services, recovery and disposal, with flow tonnes and recovery rates (%).

Figure 22 shows waste recovery and disposal for each type of kerbside service provided by local governments in 2020–21. Reporting showed 54 per cent, or 527,000 tonnes, of the domestic waste collected from kerbsides was transported directly to landfill (red-topped bin), illustrating the opportunity for further recovery of resources from this service category.

The best performing kerbside systems for material recovery in 2020–21 were those with a third bin for the recovery of FOGO materials. Three-bin FOGO systems had an average recovery rate of 57 per cent, compared with only 16 per cent for two-bin systems without organics composting.

Figure 23 shows the mean and range of reported recovery rates of kerbside systems in 2020–21.

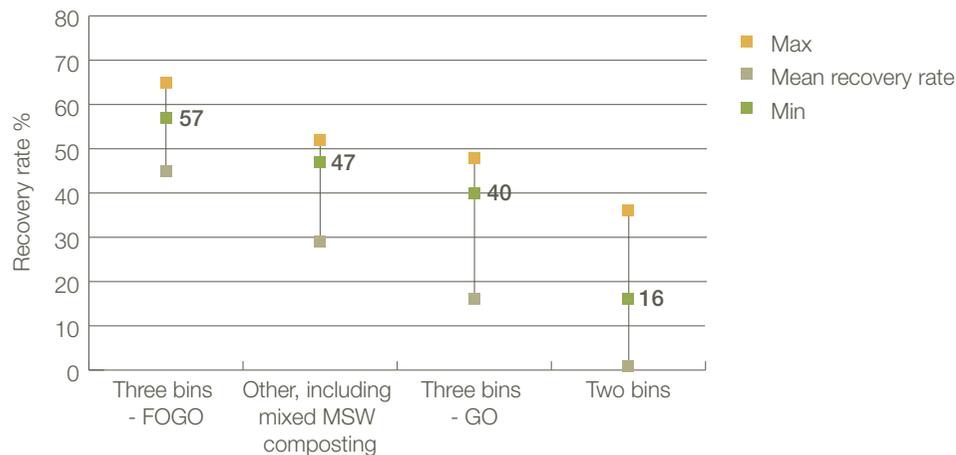


Figure 23: Mean, maximum and minimum reported recovery rates for kerbside systems in 2020–21. Note that “other” systems include any local governments providing mixed MSW composting services and those with combinations of FOGO and GO services. Three-bin system performance includes local governments where not all residents are provided with a third bin (i.e., there is a mix of two- and three-bin collections).

Further information about local government services for domestic waste collection is provided in Appendix B. Performance data for individual local governments can also be accessed from the waste data portal on the Waste Authority website.

Local governments with a three-bin collection system that includes FOGO: Perth and Peel

The waste strategy includes a target for all local governments in the Perth and Peel regions to provide consistent three-bin kerbside collection systems that include separation of FOGO from other waste materials by 2025. The number of local governments in the Perth and Peel regions providing kerbside FOGO collections to some or all of their residents increased from one in 2017–18 to five in the 2020–21 reporting period. One local government introduced a FOGO service in 2021–22. Another 15 local governments in the Perth and Peel regions have committed to providing a FOGO service by 2025 in their waste plans. The remaining local governments in the Perth and Peel regions have committed to assessing the feasibility of providing FOGO services.

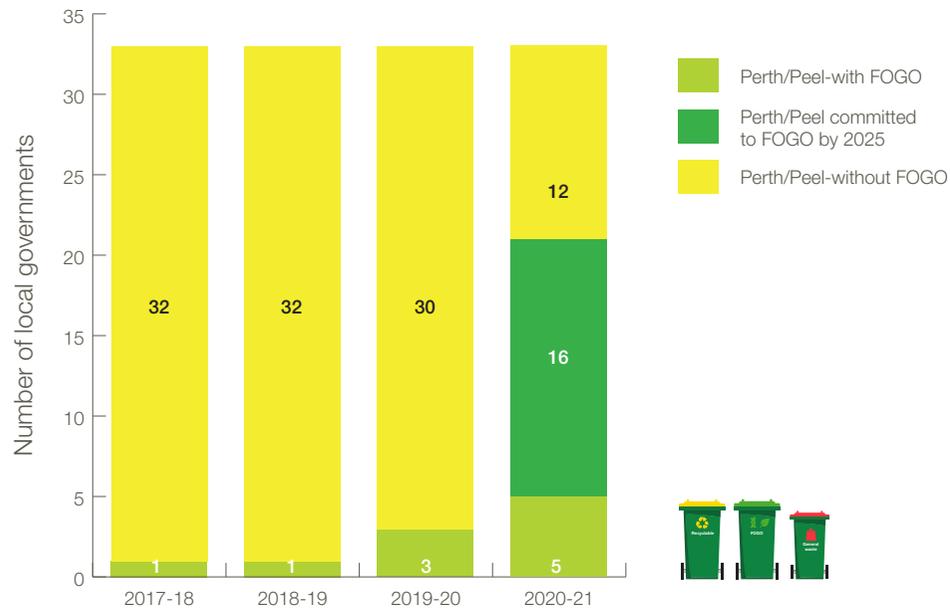


Figure 24: Number of local governments in the Perth and Peel regions that have implemented FOGO, or are committed to delivering FOGO by 2025 in their waste plan or remain uncommitted to delivering FOGO. Waste plans were introduced in 2020-21.

Kerbside services: material types recovered

In 2020–21, the largest quantity of waste recovered from kerbside services by material type was 111,000 tonnes of garden organics. The second largest quantity of waste recovered by material type was 96,000 tonnes of paper and cardboard. Other materials commonly recovered from kerbside services are shown in Figure 25.

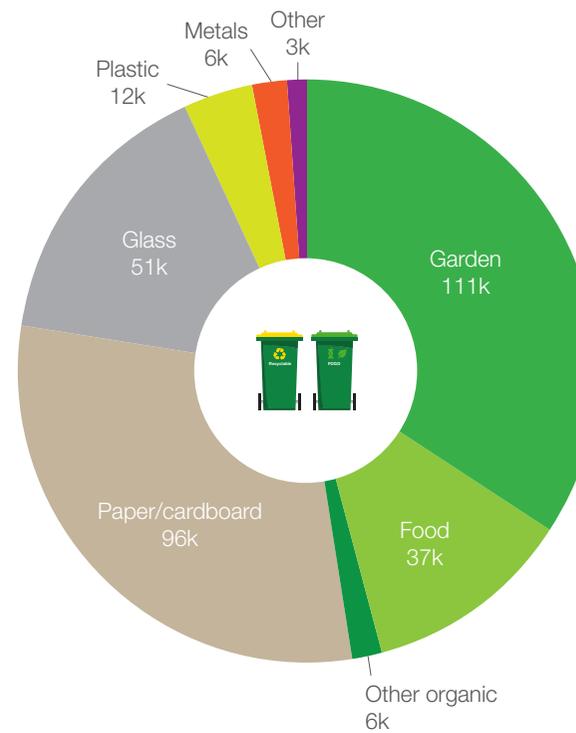


Figure 25: Composition of materials recovered from kerbside services (tonnes).

Glossary

Term	Definition
C&I	Commercial and industrial waste. Waste that is produced by institutions and businesses, including offices, schools, restaurants, retail and wholesale businesses, and industries such as manufacturing. Also includes waste from primary and secondary production, such as mining and minerals processing.
C&D	Construction and demolition waste. Waste produced by demolition and building activities, including road and rail construction and maintenance, and excavation of land associated with construction activities.
Department	The Department of Water and Environmental Regulation.
Disposal	All waste buried in landfill or incinerated without energy capture. This includes waste material used as daily cover at landfills and waste exempt from the waste levy where that waste is used onsite. For the purposes of reporting, this is reported as a wet weight.
Domestic waste	Waste collected by local governments from households.
Drop-off services	These are waste collection facilities where residents can bring their waste or recyclables for disposal or recovery. They are often located at a landfill or transfer station.
Energy recovery	Processes through which wastes are collected, sorted and processed to recover the energy embodied in waste. For the purposes of reporting, this is reported as a wet weight.
FOGO	Food organics and garden organics.
GO	Garden organics.
HDPE	High-density polyethylene, a commonly used thermoplastic.

Term	Definition
Kerbside services	A regular (typically weekly or fortnightly), containerised (for example, wheelie bin) collection service that collects waste from a resident's kerbside.
Liabile persons	Liabile persons are defined under regulation 18B of the WARR Regulations and are required to submit an annual return under regulation 18C of the WARR Regulations.
Local government	A local government defined under section 1.4 of the <i>Local Government Act 1995</i> . For the purposes of waste reporting, the local government provides waste services and includes regional local governments.
Material recovery	The materials extracted from processing waste (does not include recovered energy). Also commonly referred to as recycling.
Material recovery rate	The percentage of material recovery divided by waste generation.
MRC	Major regional council. Includes the cities of Albany, Bunbury, Busselton, Greater Geraldton and Kalgoorlie-Boulder.
MRF	Materials recovery facility. A facility that sorts, aggregates and bales mixed recovered materials (comprising mainly packaging) prior to reprocessing.
MSW	Municipal solid waste. Solid waste generated from domestic (residential) premises and local government activities.
Organic waste	Waste that is derived from biotic processes. Includes food, garden organics, wood and biosolids. Typically excludes paper and cardboard, textiles, rubber, leather and nappies, but may include them under some circumstances.

Term	Definition
Peel region	The Peel region is the area defined by the Peel Region Scheme (May 2013). It encompasses the City of Mandurah and the shires of Murray and Waroona.
Perth metropolitan region	The Perth region, or Perth metropolitan region, is the area defined by the Metropolitan Region Scheme (June 2014).
Recycling	When solid wastes are collected, sorted, processed (including through composting), and converted into a final product or into raw materials to be used in the production of new products. For data reporting purposes, recycling: <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.
Regional council	A regional local government established under section 3.61 of the <i>Local Government Act 1995</i> .
Regional local government	See regional council.
Reportable waste	Waste that is considered solid matter under regulation 18A of the WARR Regulations.
Reprocessing	Secondary processing of waste (generally size reduction) to make raw materials to be used in the production of new products or direct use.
Recovery	The process of extracting materials or energy from a waste stream through reprocessing, recycling or recovering energy from waste. For the purposes of reporting, this is reported as a wet weight.

Term	Definition
Recovery rate	The percentage of recovery divided by the weight of waste generated.
Scrap	A generic term for unprocessed recyclable waste materials.
Stockpiled	Waste or waste products temporarily stored for future sale, resource recovery or disposal.
Vergeside service	Bulk waste services that are infrequent (typically every 4–6 months or on demand), where material is collected from residential vergesides. Can be non-containerised or via a skip bin provided by the local government.
WA	Western Australia.
WARR Regulations	Waste Avoidance and Resource Recovery Regulations 2008.
Waste generated/generation	The sum of waste recovered plus waste disposed.
Waste strategy	Waste Avoidance and Resource Recovery Strategy 2030.

References

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Appendix A: Methodology

Data sources

Waste Avoidance and Resource Recovery Regulations r.18C: annual returns

Regulation 18C of the WARR Regulations requires liable persons to report certain waste and recycling data annually to the department in accordance with approved procedures.

The annual returns are lodged through an online portal.

Ninety-seven liable recyclers, 15 liable landfills, 139 local governments and five regional councils lodged an 18C return for the 2020–21 reporting period.

The approved procedures for liable persons are available from the department's [website](#).

Waste levy data

Data collected by the department through administering the waste levy was used to estimate the disposal of waste generated in the Perth metropolitan region. This data included waste levy quarterly returns, waste levy exemptions and other supporting landfill records.

Waste exports

Waste export data was used to supplement recycling data for the metals and textiles material categories. The export data is available online through the Department of Agriculture, Water and Environment's [website](#).

Plastic recycling

Plastic recycling data was supplemented with data from Envisage Works 2020 (see References).

Population

Population data was sourced from Western Australian Planning Commission 2018 (see References).

The number of domestic premises was sourced from Western Australian Planning Commission 2012 (see References).

Population density was not considered when reporting the percentage of the population provided with a waste service.

Waste material categories

All liable persons under the WARR Regulations reported recycling and landfill data against the waste material categories and types specified in the approved procedures. These categories and types have been consolidated in some figures and tables in the report to improve presentation.

Estimates made for material disposal

The quantity of waste disposed of to landfill by material type was estimated using composition data from the *National waste data 2020* report (Blue Environment 2020), which was applied to reported and estimated disposal data.

Estimates made for waste disposal outside the Perth metropolitan area

The quantity of waste disposed of to landfill outside of the Perth metropolitan area was estimated by calculating per capita waste stream disposal rates for liable non-metropolitan landfills and then applying those rates across the entire regional population.

Estimates made for some local governments

Under the WARR Regulations' approved procedures for liable persons, there are special provisions for non-metropolitan local governments with populations of less than 1,500. Under these special provisions, the department estimated the quantity of waste collected, recovered and disposed of for at least one waste service for 43 local governments. The estimates were based on the defaults in the approved procedures, and averages calculated from data obtained from the local government waste and recycling census which ran prior to 2019–20. The waste and recycling census reports are available for download from the Waste Authority's [website](#).

Exported recyclables

All recyclable materials exported are included as recovered. These quantities may include contaminants subsequently removed at the destination facility.

Waste generation and recovery rate calculation

Waste generation has been calculated as the sum of disposed of waste and recovered waste. No other waste fates, such as long-term storage, have been included.

The recovery rate has been calculated as recovered waste divided by waste generation.

Material recovery does not include waste reported as recovered as energy.

Data quality

Measurement

Liable recyclers are required to report how they measured the quantity of reportable waste. In 2020–21, 34 per cent of reported recovered waste was weighed, 54 per cent was assessed by volume and the remainder was estimated using alternative methodologies.

The quantity of disposed waste arising from the Perth metropolitan region was estimated from records submitted with landfill levy returns. Ninety-eight per cent of this reported waste was weighed.

The quantity of disposed waste arising from the Peel region was determined from liable non-metropolitan landfills. Ninety-seven per cent of waste reported by liable non-metropolitan landfills was weighed. Estimated disposal outside the Perth and

Peel regions was estimated on a per capita basis and is subject to a higher degree uncertainty than directly reported disposal and recovery.

Audits

All annual returns were reviewed by department officers for completeness and consistency. Audits of nine liable recycler 2020–21 annual returns were also completed. The audit findings were incorporated into this report.

Comparability to previous reports

Data collected under regulation 18C of the WARR Regulations for 2019–20 is presented in this report alongside data voluntarily reported to the department prior to 2019–20. The introduction of mandatory reporting has resulted in additional reporters and any increases in tonnes of recovery may represent ongoing activity that was not reported previously.

The definition of disposal includes waste that may be exempt from the waste levy. Metropolitan disposal in 2019–20 includes some waste disposal that was exempt from the levy which may not have been captured in previous years. The magnitude of this is estimated at about 100,000 tonnes of inert materials in 2019–20. Applied to the past four reporting periods, this is equivalent to about a five per cent increase in annual C&D generation.

While the number of reporting local governments has increased with mandatory reporting, the populations of non-reporting local governments under the voluntary surveys were typically small and consequently the domestic waste data presented in this report is considered comparable to data contained in [the census of Western Australian local government waste and recycling services](#) series of reports.

Data gaps

Organic waste is commonly collected, mulched and composted by different recyclers, with the processed materials becoming different ‘products’ at various points of the cycle. The audit process identified additional quantities of recovered garden waste not reported in 18C annual returns. These quantities were incorporated into the data presented in this report.

Waste stream reporting

Under the approved procedures, liable recyclers and non-metropolitan landfills are required to record the source waste stream of waste received. Liable persons are directed, where possible, to record the waste stream from which the waste generated. In practice, the waste stream in which waste is collected is often recorded. The department is developing additional guidance about recording and reporting waste streams.

Stockpiles

Tonnes of stockpiled waste presented in this report only include waste stored at liable persons’ premises. No attempt has been made to estimate the quantity of waste stored elsewhere.

Appendix B: Waste and recycling services provided by local governments to residents

Kerbside services	Region	Collected	Recovered	Recovery rate (%)	Population provided with service (%)
Mixed waste collected and transported to landfill directly or via a transfer station	Western Australia	527,235	30	0	89
	Non-metropolitan (other) region	142,700		0	96
	Peel region	34,984		0	98
	Perth metropolitan region	349,551	30	0	87
Comingled dry recycling	Western Australia	204,098	157,398	77	94
	Non-metropolitan (other) region	31,662	24,027	76	71
	Peel region	9,183	7,642	83	98
	Perth metropolitan region	163,252	125,729	77	100
Garden organics only	Western Australia	68,635	67,977	99	33
	Non-metropolitan (other) region	0	0	N/A	0
	Peel region	66,428	65,905	523	42
	Perth metropolitan region	163,252	125,729	77	100
Combined food organics and garden organics	Western Australia	51,706	47,900	93	11
	Non-metropolitan (other) region	19,391	19,037	98	19
	Peel region	0	0	N/A	0
	Perth metropolitan region	32,315	28,862	89	10
Mixed waste collected and processed in a composting facility	Western Australia	12,6067	46,397	37	25
	Non-metropolitan (other) region	0	0	N/A	0
	Peel region	0	0	N/A	0
	Perth metropolitan region	12,6067	46,397	37	33

Vergeside services	Region	Collected	Recovered	Recovery rate (%)	Percentage of population provided with a service
Domestic green waste vergeside collection services	Western Australia	47,347	46,841	99	79
	Non-metropolitan (other) region	3,316	2,811	85	29
	Peel region	3,260	3,260	100	95
	Perth metropolitan region	40,771	40,771	100	92
Domestic hard waste vergeside collection services	Western Australia	66,201	13,988	21	84
	Non-metropolitan (other) region	4,891	717	15	34
	Peel region	3,175	764	24	95
	Perth metropolitan region	58,134	12,507	22	96
Specific product vergeside collection (e.g. white goods, mattresses, e-waste)	Western Australia	2,885	2,396	83	43
	Non-metropolitan (other) region	150	0	0	3
	Peel region	0	0	N/A	0
	Perth metropolitan region	2,735	2,396	88	56
Public place and special events services	Region	Collected	Recovered	Recovery rate (%)	
Waste (garbage)	Western Australia	19,115	380	2	
	Non-metropolitan (other) region	8,295	55	1	
	Peel region	1,694	0	0	
	Perth metropolitan region	9,126	325	4	
Recycling	Western Australia	569	502	88	
	Non-metropolitan (other) region	117	90	77	
	Peel region	0	0	N/A	
	Perth metropolitan region	452	412	91	

Drop-off services	Region	Collected	Recovered	Recovery rate (%)
Mixed waste drop-off facilities	Western Australia	198,152	11,920	6
	Non-metropolitan (other) region	11,8528	1,251	1
	Peel region	10,201	19	0
	Perth metropolitan region	69,423	10,650	15
Dry recyclables drop-off (includes paper/ cardboard, packaging containers)	Western Australia	11,929	11,107	93
	Non-metropolitan (other) region	3,413	2,591	76
	Peel region	299	299	100
	Perth metropolitan region	8,216	8,216	100
Green waste drop-off	Western Australia	80,663	69,820	87
	Non-metropolitan (other) region	33,939	23,383	69
	Peel region	4,592	4,305	94
	Perth metropolitan region	42,132	42,132	100
Hard waste or bulk rubbish drop-off	Western Australia	54,424	32,002	59
	Non-metropolitan (other) region	25,323	17,933	71
	Peel region	3,757	3,736	99
	Perth metropolitan region	25,344	10,334	41
Container deposit depot	Western Australia	1,178	1,178	100
	Non-metropolitan (other) region	564	564	100
	Peel region	0	0	N/A
	Perth metropolitan region	614	614	100
Waste recovered for sale at a tip shop	Western Australia	6,522	6,451	99
	Non-metropolitan (other) region	1,057	986	93
	Peel region	0	0	N/A
	Perth metropolitan region	5,465	5,465	100
Other	Western Australia	5,666	5,525	98
	Non-metropolitan (other) region	1,535	1,528	100
	Peel region	7	7	100
	Perth metropolitan region	4,124	3,990	97

Appendix C: Waste recovery, disposal, generation in tonnes by year, waste stream and region

Recovery data and non-metropolitan landfill data for 2016-17, 2017-18 and 2018-19 was collected through voluntary surveys and caution should be used when comparing this to data collected under regulation in 2019-20 and 2020-21. Prior to 2019-20 waste to energy recovery data was not captured separately and the non-metropolitan region included the Peel region. From 2019-20 the Peel region is included in the Perth region.

	Voluntary Survey									Regulated data reporting					
	2016-17			2017-18			2018-19			2019-20			2020-21		
	Perth metropolitan	Non-metropolitan	WA	Perth metropolitan	Non-metropolitan	WA	Perth metropolitan	Non-metropolitan	WA	Perth metropolitan	Non-metropolitan	WA	Perth metropolitan	Non-metropolitan	WA
Recovered															
C&D	916,500	305,700	1,222,200	964,200	171,700	1,135,900	1,332,600	204,000	1,536,600	2,039,100	190,800	2,229,900	2,580,800	124,900	2,705,600
C&I	541,100	214,400	755,500	493,500	254,200	747,700	527,500	277,400	804,900	478,800	253,800	732,500	447,700	204,100	651,700
MSW	366,000	97,400	463,400	405,200	104,100	509,300	358,300	106,800	465,100	346,600	78,800	425,400	355,900	82,700	438,500
Total	1,823,500	617,400	2,441,000	1,862,900	530,100	2,393,000	2,218,500	588,000	2,806,500	2,864,400	523,400	3,387,700	3,384,300	411,600	3,795,800
Energy recovery															
C&D										-	-	-	1,200	-	1,200
C&I										28,100	6,200	34,200	33,300	5,900	39,200
MSW										300	100	400	200	100	300
Total										28,400	6,300	34,600	34,700	6,000	40,600
Disposed															
C&D	133,800	240,300	374,100	129,100	243,200	372,300	130,700	231,100	361,700	317,100	190,300	507,300	307,100	210,600	517,700
C&I	409,600	417,600	827,100	441,600	416,200	857,800	411,500	352,200	763,700	481,200	405,100	886,200	519,800	416,700	936,400
MSW	795,400	289,700	1,085,000	691,800	331,900	1,023,800	687,100	305,000	992,000	754,600	254,900	1,009,400	752,600	334,900	1,087,400
Total	1,338,800	947,500	2,286,300	1,262,500	991,300	2,253,800	1,229,300	888,200	2,117,500	1,552,700	850,200	2,402,800	1,579,400	962,100	2,541,400
Generated															
C&D	1,050,300	546,000	1,596,300	1,093,300	414,900	1,508,300	1,463,300	435,000	1,898,400	2,356,100	381,100	2,737,200	2,889,100	335,400	3,224,400
C&I	950,600	631,900	1,582,600	935,100	670,400	1,605,500	939,000	629,600	1,568,600	987,900	665,000	1,652,900	1,000,700	626,600	1,627,300
MSW	1,161,300	387,100	1,548,400	1,097,000	436,100	1,533,100	1,045,400	411,800	1,457,200	1,101,400	333,700	1,435,100	1,108,500	417,600	1,526,100
Total	3,162,300	1,565,000	4,727,300	3,125,400	1,521,400	4,646,800	3,447,800	1,476,200	4,923,900	4,445,400	1,379,700	5,825,100	4,998,200	1,379,500	6,377,700

Appendix D: 2020-21 local government data for the National Environment Protection (Used Packaging Materials) Measure 2011

This appendix presents additional data not in the main report to meet the requirement of National Environment Protection (Used Packaging Materials) Measure 2011 that certain local government recycling data must be published, as part of the National Environment Protection Council's annual report for 2020-21.

Scope

Number of reporting local governments: 139

Percentage of all local governments: 100

Additionally, five regional councils reported about the recycling services they provided to member councils.

Kerbside recycling services

Some local governments provide multiple bin sizes to residents. Only the most commonly provided bin sizes are reported below.

Material type	Bin capacity (L)	Frequency	Local governments
	240	weekly	3
Comingled	240	fortnightly	93
dry recyclables	240	other	2
	360	fortnightly	2
	other	fortnightly	2

Other recycling services

Seventy-five local governments reported providing drop-off recycling services for dry recyclables to their residents. Two regional councils also provided the same service to their residents. Four local governments and one regional council facility reported providing container deposit depots.

Premises in Western Australia

Residential: 1,070,962
([ABS: 2016 Census QuickStats](#))

Commercial: Unavailable

Premises with kerbside recycling services

Residential: 1,076,000

Commercial: 27,000
(includes separated and 'mixed recycling' service types)

Median fee per premises charged by councils for recycling services

Residential: \$115
(based on 25 responses)

Commercial: \$196
(for a single 240L bin recycling service, based on 35 responses)

Median per premises cost to councils for co-mingled recycling services

Residential: \$56
(based on 26 responses)

Commercial: \$208
(based on 37 responses)

Resident participation rate in kerbside recycling services

Eighty-five per cent

Recovery of dry recyclables dropped off by residents at facilities run by local governments

Local governments reported 12,285 tonnes of dry recyclables dropped off by residents were recovered. Recovery by material type is shown in the table below.

Material type	Recovered
Paper and cardboard	5562
Glass	1093
Plastics	116
Recovered – not specified	5,514
Total	12,285

Address: Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace
Joondalup Western Australia 6027

Post: Locked Bag 10
Joondalup Western Australia 6919

Phone: 08 6364 7000

Web: www.dwer.wa.gov.au

Email: primehouse.reception@dwer.wa.gov.au