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2019 Oregon Material Recovery and Waste Generation Rates Report

By:

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Land Quality Division

Oregon Department of Environmental Quality



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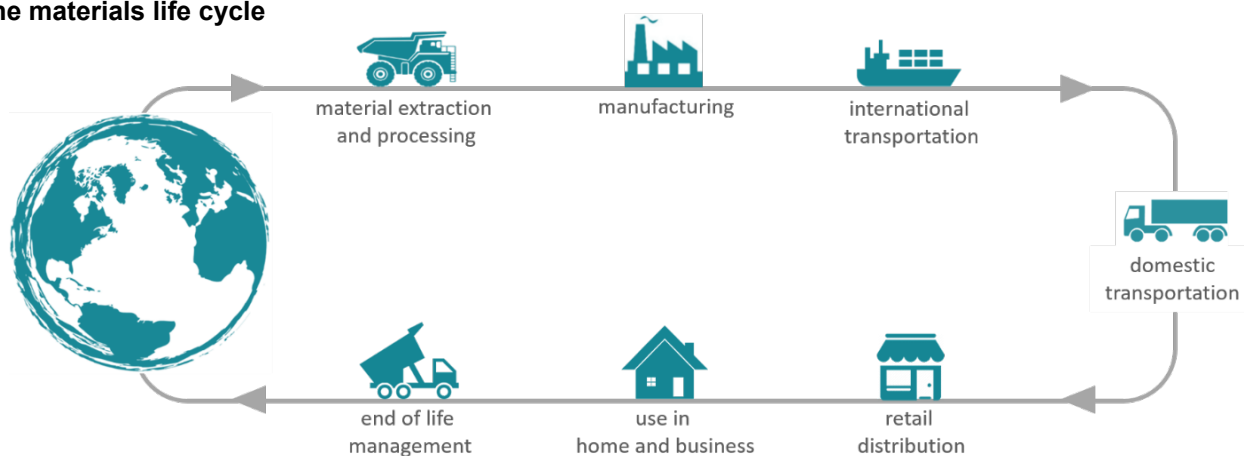
This report provides one of the most complete and accurate collections of state-level disposal and recycling data in the country.

DEQ can provide documents in an alternate format or in a language other than English upon request. Call DEQ at 800-452-4011 or email deqinfo@deq.state.or.us.

Executive Summary

Oregon DEQ's Materials Management program takes a holistic view of environmental impacts of materials. It considers the impacts that occur across the full life cycle of materials, including resource extraction, design and production, use, and end-of-life management, including solid waste disposal and recovery.

The materials life cycle

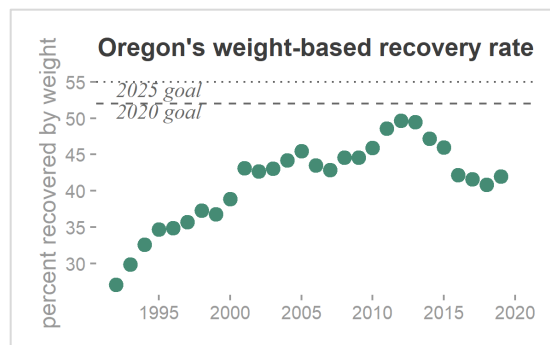
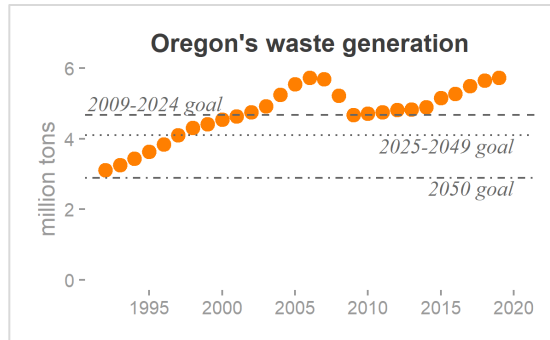


This report focuses on how Oregon manages materials at the end of their useful lives, via disposal and recovery.

- *Disposal* refers to all materials placed in landfills and many materials burned in incinerators.
- *Recovery* refers to recycling, composting and some incineration for energy recovery.
- *Generation* is the sum of disposal and recovery and represents the total tonnage of the waste stream.
- The *recovery rate* is the percentage of generation recovered.

In 2019 people in Oregon:

- Generated 5,728,796 tons of waste, up 1.3 percent from 2018;
- Disposed of 3,322,700 tons into landfills and incinerators, down less than one percent from 2018; and
- Recovered 2,406,095 tons of material, 42 percent of the waste generated. This is a 1.2 percent increase from 2018's 40.8 percent.



The rise in generation was likely the result of a busy economy in 2019 with abundant construction activity and purchasing of consumer goods. Cardboard recycling increased, while the tons of other paper recycled continued its multi-year decline as people continue to move to electronic rather than paper media for communication. There was a continued increase in plastic and aluminum recycled under Oregon's Bottle Bill following the expansion of the Bottle Bill to cover juices, teas, and many other beverages in 2018. The recycling of other rigid plastic containers also increased, but film and other plastic just held steady or declined. Glass recycling tonnage declined, but that was a result of a drop in sales of beverages in glass rather than a reduction in the recycling rate. There was also a notable increase in tonnage of other scrap metal recovered, in spite of lower prices for scrap metal in 2019 as compared to 2018.

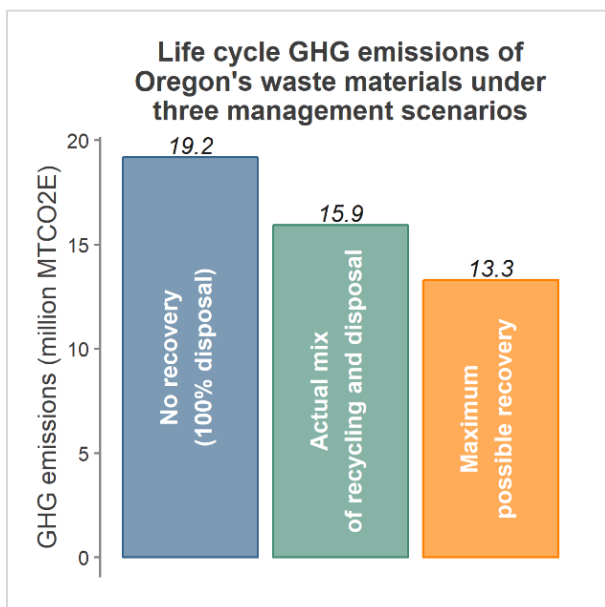
State goals for solid waste:

Waste generation remained well above the goal set for 2009-2024 by the Oregon Legislature. Weight-based recovery rates are lower than the legislated goals set for 2020 and 2025.

Recovery and environmental impacts:

Recovery via recycling and other means has environmental value. DEQ estimates that in 2019 (just as in 2018), material recovery reduced greenhouse gas emissions by 3.3 million metric tons of CO₂ equivalents, compared to a scenario where all waste was disposed. Another 2.6 million MTCO₂E in reductions are possible, if recovery rates could be raised to the maximum possible level.

However, even with maximized recovery, the GHG impacts of materials in the waste system would be considerable, at around 13.3 million MTCO₂E. Oregon's total GHG emissions from all sources exceeded 60 million MTCO₂E in 2018.



Recovery does present an opportunity for environmental impact reductions, but only a limited one. To achieve deeper reductions in the environmental impacts of materials and waste, DEQ and its partners will need to take actions across the entire materials life cycle, for example, by redesigning products and reducing overall materials use.

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Introduction and purpose

This report describes results and methodology for Oregon's Material Recovery Survey for calendar year 2019. "Material recovery" includes all materials collected for recycling or composting, and for a subset of materials, incineration with energy recovery. Each year, the Oregon Department of Environmental Quality compiles data on municipal post-consumer waste recovery. DEQ sends a survey to all collection service providers and private recycling companies that handle materials for recycling, composting and energy recovery. Survey data is combined with data gathered from quarterly and annual disposal site reporting forms. Together, recovery and disposal numbers make up the amount of waste generated by people in Oregon each year.

$$\frac{\text{Total Recovered}}{\text{Total Generated}} = \text{Recovery Rate}$$

2,406,095 tons

5,728,796 tons

(Total Recovered + Total Disposed)

42.0%

DEQ uses this information to estimate energy savings and greenhouse gas reductions, two important environmental benefits from material recovery. DEQ also uses it to calculate material recovery rates and waste generation. The recovery rate is the percentage of the total waste generated in Oregon that is recycled, composted or recovered for energy. Waste generation is the amount of waste recovered plus the amount of waste disposed. Recovery, disposal and generation data, as well as recovery rates, are calculated for the state and for each of Oregon's 35 individual wastesheds¹.

¹ A "wasteshed" is defined in Oregon law as being an area of the state that shares a common solid waste disposal system, or an appropriate area in which to develop a common recycling system. For the most part, individual Oregon counties are designated as wastesheds. Three exceptions are that:

- The greater Portland tri-county area, consisting of Clackamas, Multnomah and Washington Counties, is designated as the Metro wasteshed.
- Milton-Freewater, a city within Umatilla County, is designated as a separate wasteshed.
- For most cities such as Albany that have populations in two counties, the entire city was included in the wasteshed that included the larger portion of the city population. The exception is Salem, where most of Salem is in the Marion Wasteshed, but West Salem is included in the Polk Wasteshed.

Individual wastesheds also use this information to implement and improve their waste prevention and material recovery programs.

This is the 28th year that DEQ has used the survey to gather this data. The 1991 Oregon Legislature enacted requirements (see [Oregon Revised Statute 459A](#)) for this annual survey and set goals for state and local recovery rates. These recovery goals were amended by the Legislature in 2001, and then again in 2015 (effective 2016). Wasteshed goals range from 15 percent (Lake Wasteshed) to 64 percent (Metro and Marion Wastesheds) by 2025. The statewide recovery goals are 52 percent recovery by 2020 and 55 percent recovery by 2025.

In 2001, the Legislature also established statewide goals for reducing waste generation. These goals were revised by the Legislature in 2015. The waste generation goals require that the generation of solid waste in the years 2025 to 2049 be 15 percent below the amount of solid waste generated in 2012, and for 2050 and beyond, the generation goal is 40 percent less than the waste generated in 2012.

Requirement to report

Oregon law requires that all publicly and privately operated recycling and material recovery operations complete a Material Recovery Survey form. This includes landfills, local recycling collectors, private recycling collection companies and depots, transfer stations, material recovery facilities, composters, local governments and any other operation that handles post-consumer recoverable materials. One exception, due to the difficulty of separating post-consumer scrap metal from commercial and industrial scrap metal, are companies handling only scrap metal. These companies are not required to report on privately obtained post-consumer scrap metal, but many do report on a voluntary basis.

The survey requires that companies report all recyclable materials they handle, including the amount of each material collected, the county of origin, the company they received any transfers from, and where or to whom the materials were marketed.

Oregon law further requires DEQ to keep confidential the information reported by private recyclers. This includes customer lists and specific amounts and types of materials collected or marketed by individual companies. For private recyclers, only aggregated information may be released to the public.

Materials included in the analysis

Oregon's analysis of the environmental benefits from material recovery and the recovery rates includes only post-consumer materials generated in Oregon for recycling, composting or energy recovery. Per Oregon's recycling law (ORS 459A.010 (3)(a)), waste from manufacturing and industrial processes (pre-consumer materials), reconditioned and reused materials, material that can be disposed of as clean fill without being put in a landfill such as brick and concrete, and waste originating out of state (but handled in Oregon) are excluded. Some scrap metals,

including discarded vehicles or parts of vehicles and metal derived from major demolition activities handled by scrap metal dealers, are also excluded. Scrap metal collected at disposal sites by collection service providers, at community recycling depots or through municipally sponsored collections events counts as recovered material.

The first Material Recovery Survey for the 1992 calendar year included 30 types of materials. Since then, some new materials have been added and other materials consolidated, so that the survey now contains 33 types of material. The major materials for 2019 are:

- Yard Debris
- Metals – Tinned cans, aluminum and other scrap metals
- Cardboard
- Wood Waste
- Paper Fiber – Other paper fiber (combined high-grade paper, newsprint and mixed scrap paper) not including cardboard
- Other – Including tires, used motor oil, antifreeze, batteries of all types, gypsum, asphalt roofing materials, textiles, paint, and animal waste and grease
- Container Glass
- Plastic – Rigid plastic containers, plastic film, other plastics and composite plastic (including carpet pad)
- Food Waste – Residential and commercial food waste
- Electronics

A complete list of materials recovered is included in Table 8, at the end of this report.

Recovery and reductions in environmental impacts

Summary of analytical results

Oregon's recovery activity in 2019 can be associated with:

- 3.3 million metric tons CO₂ equivalents of reductions in greenhouse gas emissions; and
- 32 trillion British thermal units of savings in energy expenditures.

These savings in energy and greenhouse gas impacts are very similar to the values reported for 2018 (30 trillion BTU and 3.3 MMTCO₂E).

If recovery could be increased from its current rate (about 42 percent by weight) to the currently conceivable maximum rate (80-90 percent by weight), it can be calculated that:

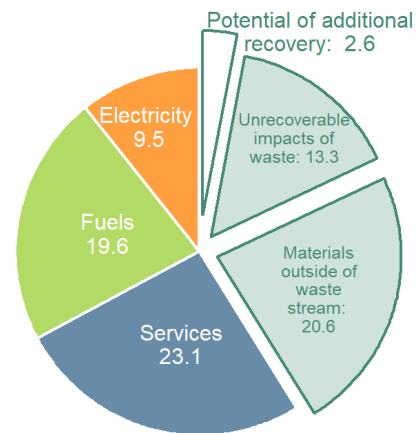
- GHG emissions would decline an additional 2.6 MMTCO₂E; and
- Energy expenditures would decline an additional 33 trillion BTU.

Such savings must be placed within the context of the state's total environmental impacts.

- Oregon's total GHG emissions are more than 60 MMTCO₂E. A recent DEQ report² gives recent yearly totals as 66.2 MMTCO₂E, from a sector-based method, and 88.7 MMTCO₂E, from a consumption-based method. The consumption-based results are illustrated at right.

² Oregon DEQ, "Oregon's Greenhouse Gas Emissions through 2015: An Assessment of Oregon's Sector-Based and Consumption-Based Greenhouse Gas Emissions," May 2018, www.oregon.gov/deq/FilterDocs/OregonGHGreport.pdf.

Potential of maximized recovery to reduce statewide emissions



Sources of GHG emissions in Oregon, in MMTCO₂E, according to the state's consumption-based inventory, combined with results from a life cycle assessment of the solid waste stream. The impact of materials (in dark green) already includes the current benefits of recovery. Additional recovery (above current levels) offers 2.6 MMTCO₂E in possible further impact reductions. The remaining GHG impacts of materials are either not preventable by recovery (13.3 MMTCO₂E), or not represented by the solid waste stream at all (20.6 MMTCO₂E).

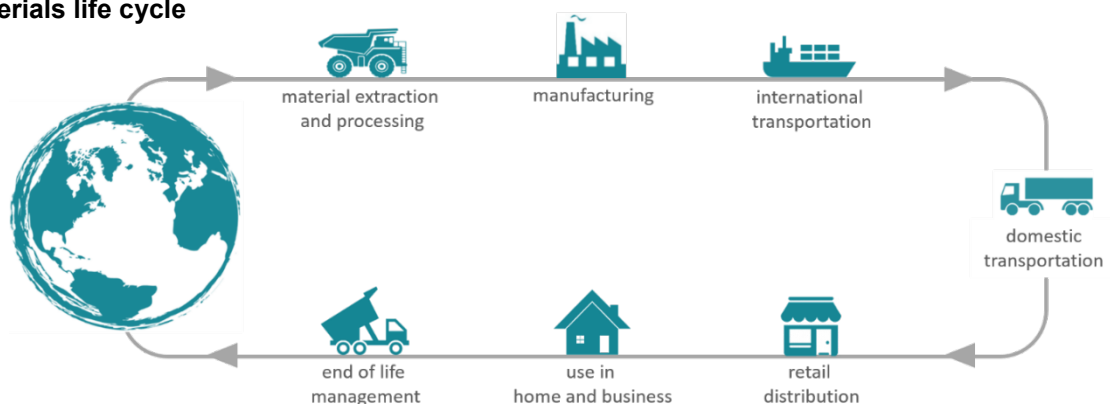
- Oregon’s overall direct energy expenditures are around 1,015 trillion BTU per year, in a recent Oregon Department of Energy report.³

While increased recovery does present an opportunity for environmental impact reductions, the opportunity is limited. Increased recovery, by itself, cannot provide the sizeable decreases in impacts anticipated by the state’s greenhouse gas reduction goals (ORS 468A.205), or the *2050 Vision*.⁴ Achieving greater reductions in environmental impacts of materials will require other materials management strategies, such as the redesign of products and waste prevention.

Understanding impact reductions

All products and materials can be seen within the context of the materials life cycle. Everything people touch or use has been created somehow – usually via “extraction” from the earth or soil, followed by production, distribution, consumption and use, and “end of life” processes such as disposal or recycling. Environmental impacts occur at every stage of this life cycle. For example, extracting ore or operating a farm uses machinery that emits GHGs and expends energy. The sum total of impacts associated with the materials life cycle are called the “life cycle impacts.”

The materials life cycle



Recovery activities such as recycling and composting also create impacts. For example, recycling trucks emit GHGs and expend energy as they collect material, as does processing collected recyclables to create new products.

Where, then, do the “impact reductions” or “savings” associated with recovery come from?

DEQ assumes, as is conventional in the field of life cycle assessment, that use of recovered materials prevents production from newly extracted material, or otherwise prevents some undesired environmental impact. For example, production of a metric ton of glass from recycled

³ Oregon Department of Energy, “2020 Biennial Energy Report,” November 2020, <https://www.oregon.gov/energy/Data-and-Reports/Documents/2020-Biennial-Energy-Report.pdf>

⁴ Oregon DEQ, “Materials Management in Oregon: 2050 Vision and Framework for Action,” 2012, www.oregon.gov/deq/FilterDocs/MManagementOR.pdf.

sources may save about 300 kg of GHG emissions, *compared to the emissions of production from newly extracted material*.⁵ Similarly, while aerobic composting does lead to CO₂ emissions, composting may still represent a savings *compared to the methane emissions that could result from disposal in a landfill*.⁶

Accordingly, “impact reductions” or “savings” are not direct measurements, but *projections* of how impacts could differ if materials had been managed differently at end-of-life.⁷

It is important to note that these impacts may occur spread over time instead of in a single year, and may occur in areas outside of Oregon. Though we associate the materials in the waste stream with a particular place (Oregon) and time (for example, 2018), the life cycle impacts of those materials are not always so localized. An item recycled in 2018 in Oregon may have been created in another state or country in a different year. An item disposed in 2018 may decay in a landfill, but slowly over a period of many years. Environmental impacts, and “savings,” are spread out over time and space.

Methodological details, in brief

DEQ calculates impact reductions through a multi-step process. First it characterizes Oregon’s solid waste stream, which includes both disposed and recovered materials, by weight and end-of-life disposition (for example, recycling, composting or landfilling). Next it links those weights to “impact factors” that convert weights into environmental impacts for both production processes and end-of-life dispositions. Appropriate credits are given for recovery activities when it can be presumed that recovery has prevented some other, greater environmental impact, as described earlier. Then it sums life cycle impacts for three possible management scenarios:

- *Actual*: the life cycle impact of materials in the solid waste stream, given the current mix of recovery and disposal.
- *No recovery*: the life cycle impact of materials in the solid waste stream, if no recovery had taken place and all materials had been disposed.
- *Maximum possible recovery*: the life cycle impact of materials in the solid waste stream, if all recoverable materials had in fact been recovered.

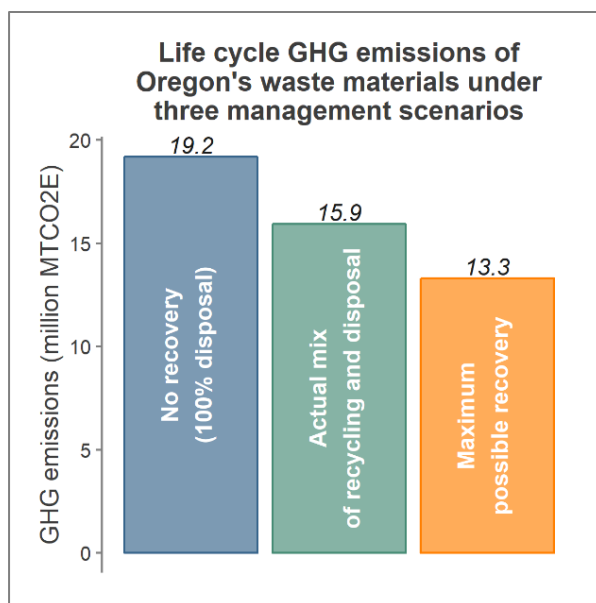
⁵ David A. Turner, Ian D. Williams, and Simon Kemp, “Greenhouse Gas Emission Factors for Recycling of Source-Segregated Waste Materials,” *Resources, Conservation and Recycling* 105, Part A (December 2015): 186–97, <https://doi.org/10.1016/j.resconrec.2015.10.026>.

⁶ US EPA, “Organic Materials Chapters [Documentation for Greenhouse Gas Emission and Energy Factors Used in the Waste Reduction Model (WARM)],” February 2016, www.epa.gov/sites/production/files/2016-03/documents/warm_v14_organic_materials.pdf.

⁷ The assumptions behind such projections are important to note. Such calculations, including DEQ’s, presume that demand for materials is unaltered by the presence of recycled materials, and that collected recyclables actually replace newly extracted materials at a high rate, often 1:1. Authors such as Zink and Geyer question both these assumptions – see [doi://10.1111/jiec.12545](https://doi.org/10.1111/jiec.12545) and [doi://10.1111/jiec.12355](https://doi.org/10.1111/jiec.12355).

Note that in all scenarios, the weights of materials are the same. The scenarios differ only in the end-of-life dispositions of those materials. The *maximum possible recovery* scenario assumes that 80-90 percent of the solid waste stream is recovered. The figure is less than 100 percent, because approximately 10-20 percent of the solid waste stream, by weight, consists of materials which have no currently viable recovery disposition.

Finally, “impact reductions” or “savings” are calculated as differences between the scenarios. The currently realized savings are the difference between the *no recovery* impact and the *actual* impact. The additional savings, which might be realized by maximizing recovery, are the difference between the *actual* impact and the *maximum possible recovery* impact.



For example, the currently realized GHG savings of 3.3 MMTCO₂E, and the additional potential savings of 2.6 MMTCO₂E, were calculated by comparing life cycle emissions for the three scenarios, totaling 19.2, 15.9, and 13.3 MMTCO₂E.

The weight data describing Oregon’s waste stream comes from several sources.

- Quantities and dispositions of recovered materials come from DEQ’s Material Recovery Survey for 2019.
- Quantities of disposed materials are derived by combining the total amount of material disposed in Oregon in 2019, from DEQ’s disposal records, and the Waste Composition Study⁸ for 2016/17, which describes the proportions of disposed waste in various material categories.

Impact factors are copied from the EPA’s WARM model,⁹ version 14, with the following exceptions. DEQ staff modified WARM’s impact factors for wood waste and yard debris based on their own research and analyses. For uncommon materials appearing in Oregon’s waste stream that are not covered by WARM, weighted averages of WARM’s impact factors were used.

For further information about how DEQ calculates impact reductions contact Martin Brown of Oregon DEQ at 503-229-5502, or martin.brown@deq.state.or.us.

⁸ Oregon DEQ, “Statewide 2016 Waste Composition Study: Excel Results Files Updated June 20, 2018 [Sheet P16TOT],” 2018, www.oregon.gov/deq/FilterDocs/A01-StatewideWCS16.xlsx.

⁹ US EPA, *Warm Version 14*, 2016, www.epa.gov/sites/production/files/2016-04/warm_v14.xls.

Recovery rates

The recovery rate is the percentage of total waste generation that is recovered. DEQ calculates both the statewide recovery rate and a recovery rate for each of the 35 individual wastesheds in the state.

2019 statewide recovery rate

In 2019, the state recovered 2,406,095 tons of material. This represented 42.0 percent of the municipal post-consumer waste stream, well below the statewide goal of 52 percent recovery by the year 2020. Recovered tons increased by 4.2 percent from the previous year surveyed, 2018.

From 1992 through 2005, tons of material recovered increased regularly each year. From 2006 through 2009, recovered tons declined even though recovery rates were fairly flat, as declining consumption of newspapers and magazines, followed by a general decline in overall consumption due to the recession, reduced the amount of material available to be recovered. In 2010, Oregon saw an increase in recovery, as the economy gradually recovered from the recession. In 2019 cardboard recovery saw an increase of 12,423 tons and scrap metal increased 51,482 tons over 2018 levels. Paper fibers set a new record low of 193,626 tons recovered and paint saw a decrease of 1,117 tons.

Oregon State Recovered Tons and Recovery Rates

Year	Tons Recovered	Tons Disposed	Calculated Rate ¹⁰
1992	839,679	2,263,099	27.1
1993	974,685	2,280,513	29.9
1994	1,118,912	2,312,669	32.6
1995	1,257,204	2,362,146	34.7
1996	1,338,259	2,497,170	34.9
1997	1,462,114	2,633,017	35.7
1998	1,604,985	2,695,903	37.3
1999	1,626,271	2,788,699	36.8
2000	1,765,817	2,778,463	38.9
2001	1,999,085	2,635,072	43.1
2002	2,029,261	2,723,365	42.7
2003	2,116,880	2,796,787	43.1
2004	2,317,064	2,923,462	44.2
2005	2,523,367	3,026,457	45.5
2006	2,494,050	3,235,828	43.5
2007	2,437,569	3,248,126	42.9
2008	2,326,146	2,890,503	44.6
2009	2,082,631	2,586,721	44.6
2010	2,163,957	2,523,808	46.2
2011	2,306,124	2,437,767	48.6
2012	2,391,490	2,424,833	49.7
2013	2,390,859 ¹	2,513,404 ¹	48.8 ¹
2014	2,307,269 ¹	2,634,653 ¹	46.7 ¹
2015	2,369,080 ¹	2,784,467 ¹	46.0 ¹
2016	2,225,943 ¹	3,050,432	42.2 ¹
2017	2,286,969 ¹	3,207,448 ¹	41.6 ¹
2018	2,307,322	3,345,503	40.8
2019	2,406,095	3,322,700	42.0

¹ These tonnage figures are corrected from earlier published values.

¹⁰ Between 2001 and 2015, Oregon's law specified that "credits" be provided towards the statewide recovery goal for jurisdictions that promoted programs for home composting and for material reuse - programs for which recovery is difficult to measure directly. At the state level, these credits added about 3.6 to 3.8 percent to the statewide recovery rate in those years. Changes in legislation in 2015 eliminated the recovery credits, and so they have been dropped from this table.

A total of 3,322,700 tons of municipal post-consumer waste from Oregon were disposed in 2019. With a decrease of less than one percent from 2018, this marks 2018 as the new peak in disposal. Per-capita disposal was 1,569 pounds per year, surpassing the 1992 figure of 1,513 pounds, but still staying below the 2007 per capita disposal of 1,734 pounds per year.

Total tons disposed added to total tons recovered equaled 5,728,796 tons of total waste generated in 2019 (see Waste Generation on page 12). Total generation increased by one percent, with per-capita generation increasing less than half of a percent from 2018 levels.

Waste recovery increased by 4.3 percent (+98,773 tons) and disposal decreased by less than one percent (-22,803 tons), resulting in the increase in generation (+75,970 tons). Although waste generation has increased steadily since 2010, moving us away from our waste generation goals, total generation in 2019 was just 1,083 tons less than it was at its peak in 2006. This is a slight drop of less than one-tenth percent in waste generation between 2006 and 2019, or 12.9 percent if measured on a per-capita basis.

How DEQ calculates the statewide recovery rate

DEQ combines information about quantities of material collected from privately-operated recycling and material recovery facilities with recovery information from collection service providers and disposal site collections, in a manner that eliminates double-counting of material that is passed on from collectors through processors to end-users. This determines the total weight of material recovered.

Next, DEQ adds the total weight of material recovered to the total weight of material disposed, obtained from disposal site reports. This sum is the total weight of material generated. The total weight of material recovered is divided by the total weight generated. This results in the calculated recovery rate.

How DEQ calculates individual wasteshed recovery rates

The total weight of material recovered is allocated to the wasteshed of origin. Direct collectors of materials are the primary and best information source for the collected materials' wasteshed of origin. When information from direct collectors is not available, or when a survey respondent does not know the wasteshed of origin for the collected materials, DEQ uses information from the companies receiving materials from the collectors in order to allocate material back to wastesheds. Material is allocated back to wastesheds based on population in rare cases when survey respondents and market information is insufficient.

DEQ also uses information from disposal site reporting forms to determine the total weight of material disposed to the wasteshed of origin. For each wasteshed, total weight of material disposed is added to total weight of materials recovered to ascertain the amount of waste

generated in the wasteshed. The total weight of material recovered is divided by the total weight generated to determine the calculated recovery rate for each wasteshed.

Marion County adjustment

As home to the state's only municipal waste-to-energy incinerator, Marion County's recovery and disposal tonnages are revised each year to include certain wastes burned for energy as recovered, as directed by the 2001 Legislature. For 2019, the five materials that could be counted toward the recovery rate when burned for energy were wood, yard debris, used motor oil, fuels, and paint. In 2019, 15,169 tons of these materials burned for energy in the county's incinerator were counted as recovered instead of disposed. DEQ obtained this tonnage by multiplying the quantity of non-industrial, in-county, counting solid waste processed at the facility by the percentage that those six materials make up of Marion County's municipal solid waste disposal stream. Marion County also recovered 7,913 tons of scrap metal from the incinerator ash. DEQ subtracted the scrap metal tonnage from the Marion County disposed tons so that the same tons would not be counted as being both disposed and recycled.

Wasteshed recovery rates

Oregon has 35 individual wastesheds, each with its own recovery rate and goal. Based on the new goals established by Senate Bill 263, six wastesheds are already at or above their goal for 2025.

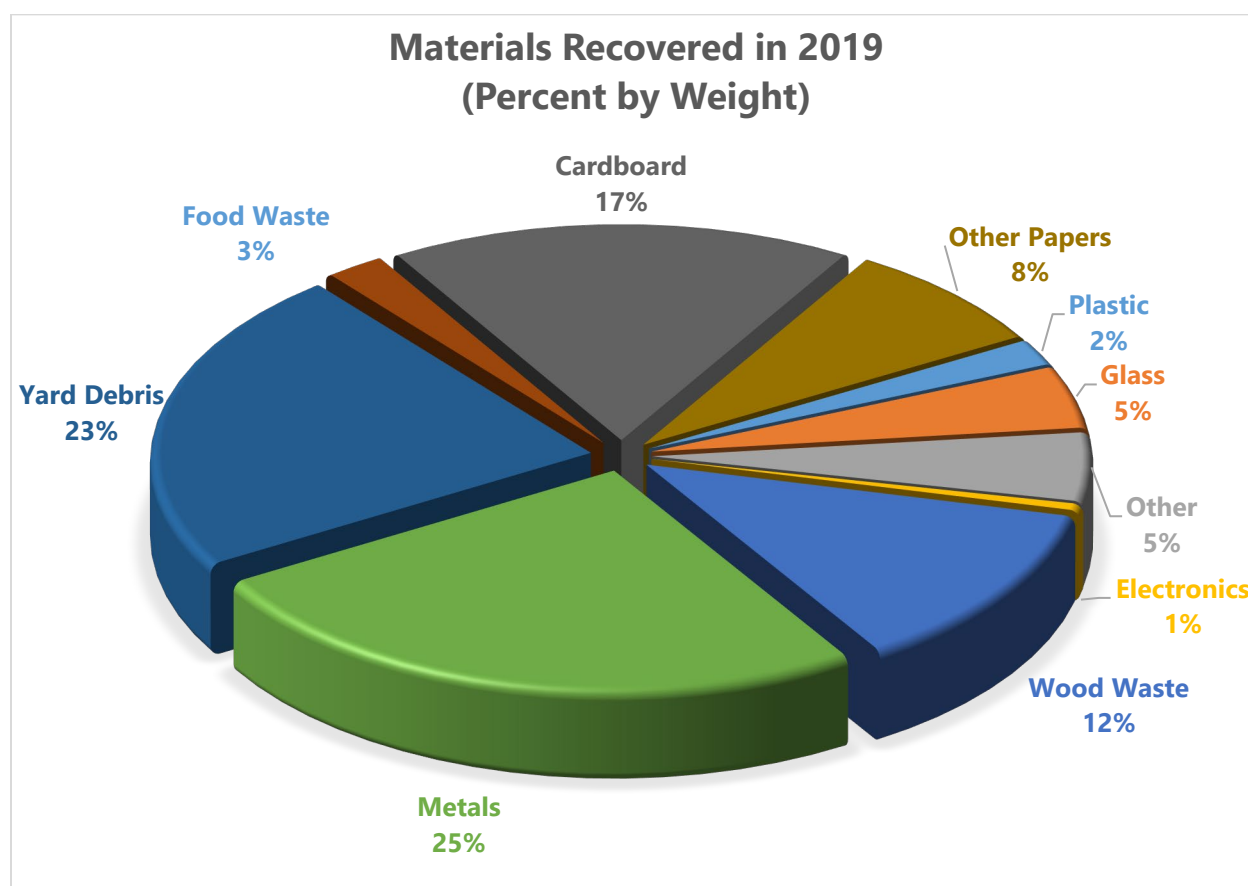
The Survey Report Tables listed on page 21 of this report show 2019 recovery rates for each wasteshed (Table 1), tons of materials recovered in 2019 by wasteshed (Table 2), and tons of solid waste disposed by wasteshed in 2019 (Table 3).

For a historical look at recovery, disposal and generation data in Oregon, see Survey Report Tables 4, 5, 6 and 7, which provide the recovery rates, recovered material tons, disposal tons, and tons of solid waste generated each year since the Material Recovery Survey began in 1992.

Materials recovered

Oregon's material recovery rate for 2019 includes materials that were recycled, composted (including yard debris, food waste and some wood waste), and burned for energy (including tires, fuels, oil-based paint, used oil, wood waste and some yard debris). Sixty-four percent of the material recovered was recycled, 23 percent was composted and 13 percent was burned for energy.

The chart below shows major categories of materials recovered in 2019 and the percentage of total recovery (by weight) for each category. Specific materials included in these categories are listed on page four.



Factors affecting material recovery in 2019

Several material recovery programs saw major changes in 2019, both by design and due to external factors. These include:

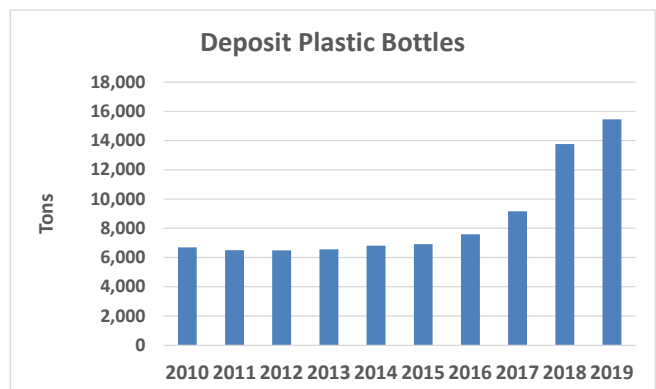
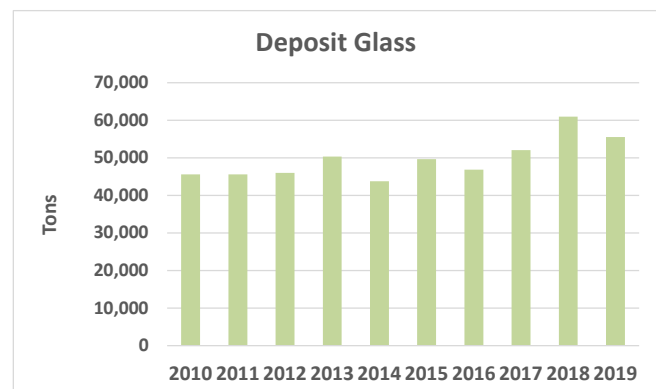
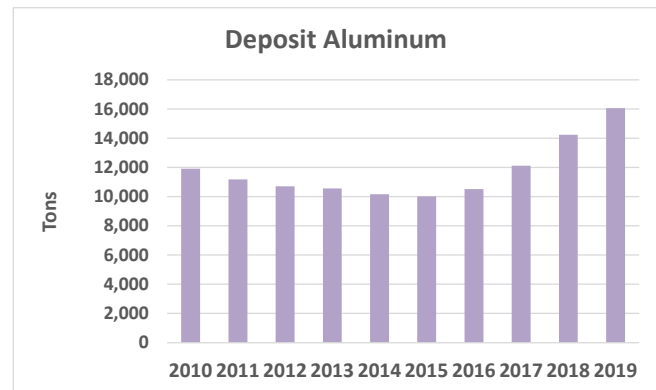
- Continued increase in recycling of beverage containers following the expansion of Oregon's beverage container redemption law ("Bottle Bill") in 2018 to cover juices, teas, sports drinks,

and all other beverages except wine, liquor, milk, and milk substitutes, and the doubling of the refund value to 10 cents in 2017.

- Strong import restrictions by China in 2017 followed by complete bans on post-consumer plastics and unsorted paper in 2018, caused major disruption in recycling markets throughout the world, and have continued to have large impacts on Oregon's curbside recycling programs through 2019. With very low, and even negative, prices being paid for some major recycling commodities.

Bottle Bill expansion and refund value increase

Oregon saw continued increases in both plastic and aluminum beverage containers recycled in 2019, following the doubling of the container refund value to 10 cents in April 2017 and the expansion of the Bottle Bill to include juices, teas, sports drinks, and other beverages except wine, liquor, milk, and milk substitutes in January 2018. The tons of plastic bottles recycled increased by 12.4 percent in 2019 as compared to 2018, closely matching beverage return data compiled by the Oregon Liquor Control Commission that showed an 11.4 percent increase in the number of plastic bottles redeemed for deposit. This is in spite of the fact that the data OLCC compiled showed that the sales of plastic beverage bottles fell by 2.5 percent in 2019 compared to the previous year. Aluminum can tonnage increased by 12.8 percent in 2019, closely matching OLCC's numbers showing a 10.5 percent increase in the number of aluminum cans redeemed. Much of this increase was due to an increase of 7.1 percent in sales of beverages in aluminum cans, according to OLCC data, as many breweries switched more of their production to cans instead of glass bottles. Sales in glass bottles fell by 5.1 percent in 2019 according to OLCC data. The tons of glass recycled under the Bottle Bill fell by nine percent, while OLCC data show only a 3.5 percent drop in redemption of glass containers. The three bar charts to the



right show the tons of aluminum, glass and plastic beverage containers recycled under the Bottle Bill since 2010.

Increases in recycling under the Bottle Bill come from two sources:

- More containers being redeemed instead of being disposed or littered, and
- Containers being redeemed instead of being placed out for curbside collection or recycled at depots.

Moving containers from disposal or litter clearly has major environmental benefits. However, even moving containers from depots or on-route collection also results in a greater tonnage of material recycled, as Bottle Bill recycling is much less contaminated than is true for materials collected commingled, resulting in a higher yield of material actually recycled into new products or packaging.

Impact of China's import bans and 2017-18 recycling market disruption

As discussed in the 2018 Oregon Material Recovery Survey, China implemented a ban on importation of mixed recyclables including almost all post-consumer plastics starting in 2018. Many other Asian countries then took similar steps, strongly limiting the markets for plastics and mixed paper. With the disappearance of markets for these materials, the price of plastic and paper for recycling dropped precipitously, and instead of being paid for commingled recyclable materials, on-route collection companies were having to pay to have their materials accepted by the commingled recycling processing facilities. According to data from *RecyclingMarkets.net*, prices for most grades of paper and plastic continued to decline in 2019, with prices for mixed paper being slightly negative in 2019 compared to slightly positive (but very low) in 2018. Both recycled polyethylene and PET plastics had lower prices in 2019 compared to 2018, although in 2021 the price paid for recycled clear high density polyethylene has climbed to an all-time high. In spite of the low market prices for plastics, the tons of rigid plastic containers recycled climbed in 2019 back to the level seen in 2017, with increases in plastics recycled both under the bottle bill and through other collection programs. Other rigid plastics showed a slight rise in 2019 when compared to 2018, but film plastic continued to fall, dropping to only 8,170 tons, nearly 10 percent lower than in 2018. As recently as 2016, Oregon had recycled nearly 16,000 tons of film plastic.

In response to the market disruption, many jurisdictions dropped plastic tubs and pails, and sometimes other materials such as mixed paper, from their collection programs. Most programs that dropped material in 2018 continued to not collect those materials in 2019, although a few did add back certain items to their on-route programs. Programs in the Portland Metro area, Deschutes County, and Clatsop County did not make any changes to their on-route collection programs in spite of the market disruption, and continue to collect the same materials that they have collected for more than a decade.

Disposal concurrences ended in 2019

Although Oregon's law generally prohibits the disposal of recyclable material, disposal could be allowed if there is no market for the material collected or if the costs to recycle the material is prohibitively expensive. Responding to the market disruptions of 2017, DEQ worked with recyclers and local governments to develop a process whereby collectors or processors could provide information to DEQ to demonstrate that either there is no recycler willing to accept their material, or that the cost of recycling the material is so high that it no longer meets the definition of "recyclable material" in Oregon's statute. If the collector or processor submitted information on their attempts to market the material and the costs involved, DEQ would evaluate that information and then potentially concur if the submitted material demonstrated that DEQ could not require it to be recycled under Oregon's statute.

DEQ concurred that eight companies could dispose of 4,775 tons of material originally collected for recycling in 2017, and with 18 companies for disposal of 10,202 tons in 2018. Concurrences ended in 2019 after the disposal of 1,448 tons of material by six companies. The large majority of this material was commingled recyclables, with some mixed scrap paper and small amounts of separated plastic also included in the total tons disposed. This compares to about 377,000 tons of commingled tons collected and processed in 2017, and about 340,000 tons collected and processed in 2018. The table below shows the approximate tons of each material disposed through concurrences in 2018, had that material been accepted and processed at a material recovery facility. The percentages used to break out individual materials are based on aggregate sorting percentages from Oregon's commingled recycling processors.

Approximate composition of materials disposed through concurrences

<u>Material</u>	<u>2017 Tons</u>	<u>2018 Tons</u>	<u>2019 Tons</u>
Cardboard	1,362	2,507	419
Other paper	2,420	5,679	724
Rigid Plastic	239	566	74
Tinned cans	94	174	29
Aluminum	13	25	4
Other scrap metal	72	132	22
Plastic film*	39	71	12
Glass in commingled*	100	183	31
Residue to be disposed	435	865	133
Total	4,775	10,202	1,448

*Neither of these two materials belong in Oregon's residential commingled recycling carts and bins, but some processors separated them out for recycling while others left them in the residue to be disposed. All figures are in short tons.

Changes in other material collected

Plastics. The low price for paper and plastic also resulted in declines in private sector recycling. Film plastic prices were particularly hard-hit, curtailing many private recycling efforts. Only 8,170 tons of film plastic were collected for recycling in 2019, compared to 9,025 tons in 2018. Rigid plastic containers were also greatly affected, both in public and private recycling programs. In spite of the increase of nearly 4,600 tons of plastic bottles under the Bottle Bill between 2017 and 2018, the total tons of rigid plastic containers recycled increased by 4,001 tons, from 25,856 tons in 2018 up to 29,857 tons in 2019.

Paper (including cardboard). Although there was an overall decrease in recovery for paper fibers by two percent in 2019, cardboard recovery increased by 12,423 tons. Printing, writing, and other paper tons were the primary contributor to the overall decline with 24,426 tons less recovered compared to 2018, continuing a long-term decline as the use of electronics for news and communication increases. Part of this decline in other paper recycling also was caused by the market disruptions and low price of mixed paper for recycling, as well as some loss from concurrence disposal and changes in materials collected for certain programs.

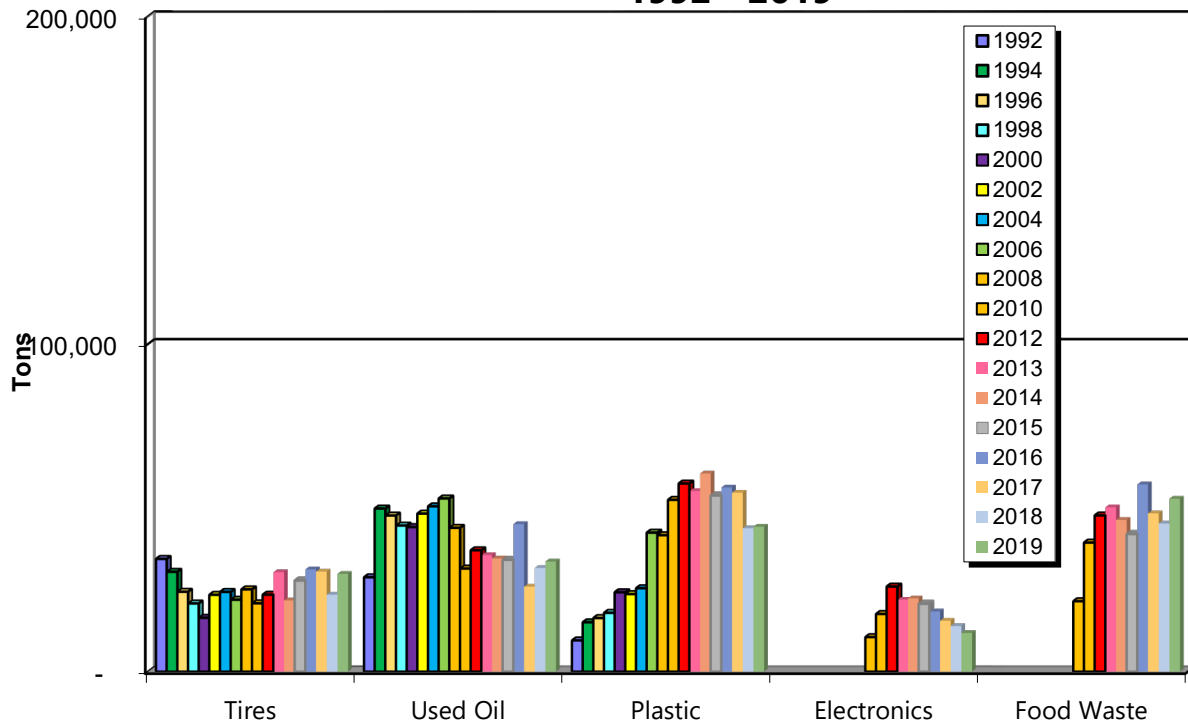
Metals. The total amount of scrap metal increased by 10 percent in 2019 compared to 2018. This increase is in spite of the fact that scrap metal prices were generally a bit lower in 2019 than they were in 2018. Tinned cans saw an increase of over 18 percent.

Electronics. Electronics recovery continued its decline showing a decrease of over 15 percent in 2019 compared to 2018. This is still partially due to the decrease in the number of cathode ray tube monitors and TVs returned for recycling as lighter flat-screen devices replace the heavier CRT devices.

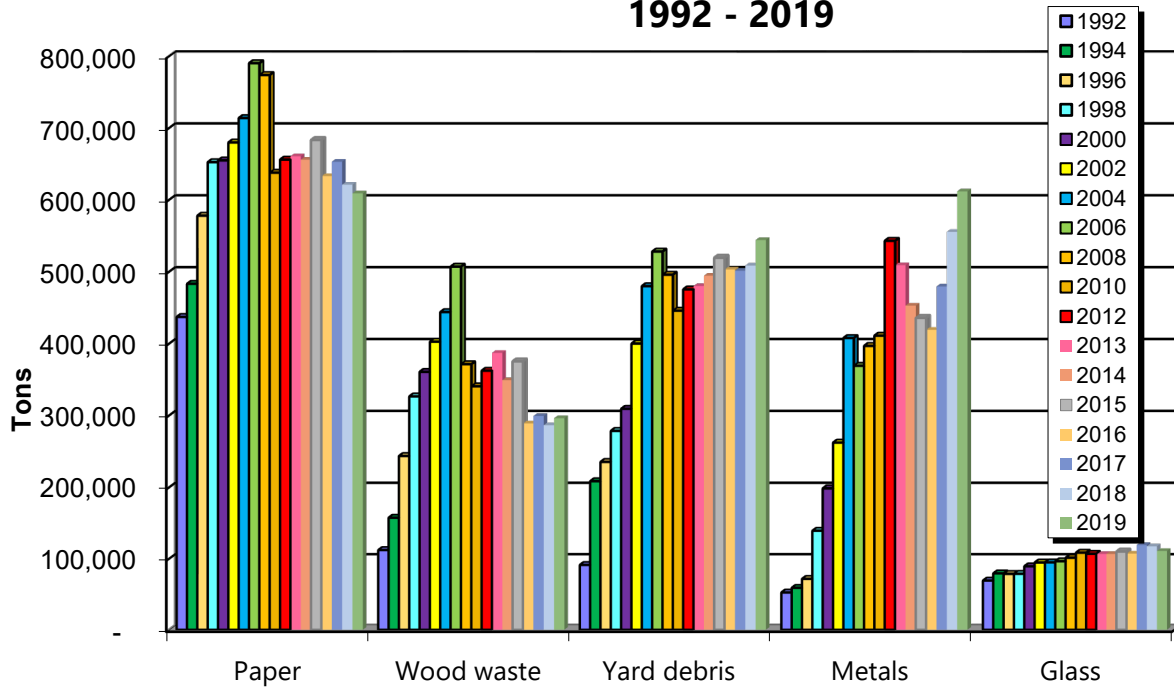
Organics. The total recovery of organics (which includes animal waste/grease, wood waste, yard debris, and food waste) increased by six percent in 2019. This is mainly due to an increase of nearly 17 percent in food waste recovered.

The following charts compare the materials recovered over the past 28 years.

Materials Recovered in Oregon 1992 - 2019

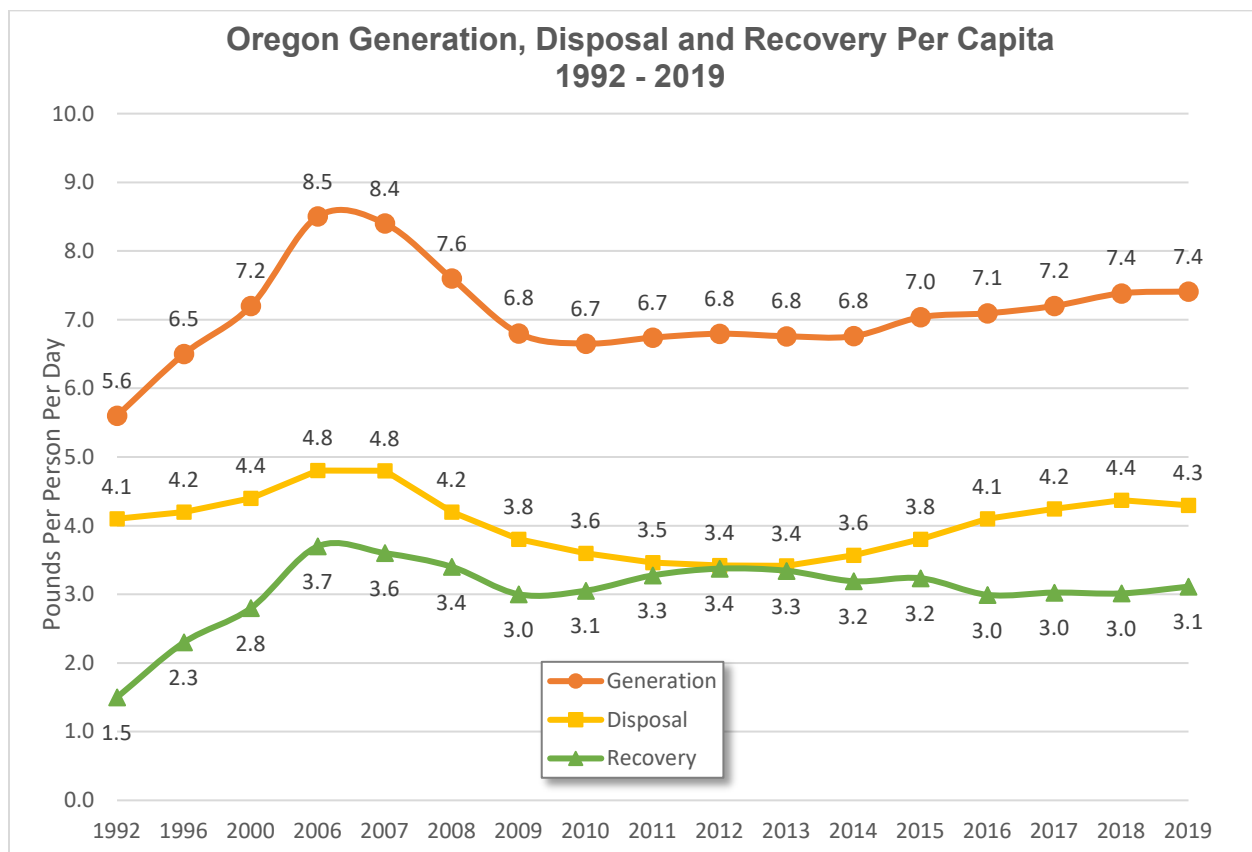


Materials Recovered in Oregon 1992 - 2019



Waste generation

Changes in the total amount of municipal solid waste generated (materials recovered plus waste disposed) in Oregon over time tells an interesting story. From 1992 to 2006, total waste generation increased every year, often steeply. Waste generation then declined slightly in 2007 and sharply in both 2008 and 2009, coinciding with the economic recession. Between 2009 and 2014, waste generation started growing again, but at a very slow pace, averaging less than one percent increase per year. In 2019 Oregon generated 5,728,796 tons of municipal solid waste, an increase of one percent over 2018. This equates to per-capita generation of 2,705 pounds per person (7.4 pounds per day), a less than half percent increase from 2,695 pounds per person (7.4 pounds per day) in 2018. Total waste generation in 2019 was still below (401 tons less) its peak in 2006. This is a drop of one-tenth percent in total waste generation between 2006 and 2019, or a 12.9 percent drop in the per-capita amount.



Generation can be seen as a crude measure of consumption, and for many materials, the environmental impacts of production (the corollary of consumption) are many times higher than the impacts of disposal. For example, EPA has estimated that roughly 40 percent of the country's

greenhouse gas emissions are associated with the production and transportation of goods¹¹. The leveling off of waste generation in 2006, the sharp decline in 2007 through 2009, and lack of restoration to pre-recession levels since then suggests that some of the changes in waste generation that occurred during the last recession may be long-lasting, and that the reduction in use of materials is not temporary. Reduction in materials use would, in turn, likely result in a reduction of greenhouse gas emissions associated with all stages of the life cycle of materials. Many other adverse environmental impacts associated with materials likely also decreased.

The following table shows the disposition of the municipal solid waste generated in Oregon in 2019. See Table 9 for individual wasteshed dispositions.

Disposition of Waste Generated in Oregon in 2019	
Disposition	Percent by weight
Disposed*	58.0
Recycled	27.0
Composted	9.6
Recovered for Energy*	5.3

*For the Marion County's waste-to-energy facility only the portion of waste that counts toward the county's and state's recovery rates is included here in "recovered for energy" (see Marion County Adjustments on page 10). Other wastes burned at the facility are counted here as disposed.

¹¹ Figure ES-1 of Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices. US Environmental Protection Agency, Sept. 2009.

Discussion

The energy savings and greenhouse gas reductions associated with materials recovered for recycling, composting and energy recovery in 2019 were notable. Energy savings were 32 trillion BTUs, and reductions in GHGs were 3.3 MMTCO₂E. There is potential for further savings via recovery. If recovery were increased to the maximum possible level using current technology, another 33 trillion BTUs and 2.6 MMTCO₂E in savings might be realized.

These numbers should be viewed in the context of Oregon's total environmental impacts. Oregon's total yearly energy expenditure is around 1,015 trillion BTUs, and Oregon's total yearly GHG emissions are 66.2 or 88.7 million metrics tons, depending on analytical method. Recovery can reduce impacts, but it cannot reduce them on the scale of the changes anticipated by state goals such as the *2050 Vision*.

Greater impact reductions should be achievable by other materials management strategies, such as reducing the generation of waste in the first place. Unfortunately, overall waste generation in 2019 increased. This likely indicates an overall increase in the use (and production) of materials, with associated increases in emissions across all stages of their life cycle.

In 2015, Oregon adopted new statutory goals of 52 percent recovery by 2020 and 55 percent by 2025. At the time these goals were adopted, we did not anticipate the closure of the paper mill that by far was the largest user of post-consumer wood waste as a fuel, nor the discontinuance of the use of wood by other mills, strongly impacting the ability to recover and use wood. Though much less impactful from the perspective of tonnages of material recycled, we also did not anticipate that Oregon and the world would experience disruptions in the markets for most plastics and for mixed paper, as China, the largest importer of recyclable material in the world, has restricted the importation of these materials and has banned the importation of unsorted paper and all post-consumer plastics in 2018.

Despite these challenges, Oregon recovered 2,406,095 tons of material for recycling, composting and energy recovery in 2019, giving a recovery rate of 42.0 percent, an increase from the 40.8 percent rate in 2018. Other anticipated changes in products and packaging are likely to make it even harder to achieve the state's goals in 2020 and 2025, as products and packaging become increasingly difficult to recycle due to such factors as substituting light-weight non-recyclable packaging for heavier recyclable packaging. Although these changes may make achieving a weight-based recovery goal more difficult, they can often lead to environmental benefits since less material is needed for the packaging, resulting in less energy use and greenhouse gases produced and even less solid waste generated and disposed.

Adjustments to reports from previous years

DEQ continues to review and use survey data even after publishing the final report each year. Occasionally, we encounter and correct errors in previously reported results. Thus, tonnages published in this report for previous years may not match the tonnages originally reported for that year.

DEQ made the following adjustments for the 2019 report:

- A correction to disposal tonnage, the non-reporting of some disposal tons going out-of-state – was made to the 2018 survey period.

DEQ corrected data in previous years, for the following reasons:

- A correction to recovered tonnage of some materials reported by a recycler was made to the 2017 survey period, due to some double counts discovered.
- Based on the recyclers reporting in 2018, some materials were not reported due to unknown markets. These materials will be revised during the 2019 reporting period.
- A correction to recovered tonnage of cardboard was made to the 2017 survey period, due to a double count discovered.
- A revision was made to the breakdown of food waste and yard debris mix from the curbside tons collected and composted. Prior to 2018 reporting, the breakdown was 90 percent yard debris and 10 percent food waste; the revised breakdown is split between metro area collections (89.3 percent yard debris, 9.5 percent food waste and 1.2 percent solid waste) and non-metro area collections (94.1 percent yard debris, 4.8 percent food waste and 1.2 percent solid waste). This breakdown revision resulted in an overall increase of yard debris and an overall decrease in food waste; as well as a slight decrease in overall organic tons by accounting for the 1.2 percent solid waste.
- A significant correction to disposal for several wastesheds, increased the total tons disposed in Oregon and dropped the recovery rate from 42.8 percent to 42.1 percent for 2017. This also resulted in the publishing of a revised 2017 report in March 2019.
- A correction to recovered tonnage of yard debris was made to the 2015 and 2016 survey period, due to a double count discovered.
- A correction was made to some asphalt roofing tons that were found to be used as alternative daily cover at a local landfill but that had been reported as recovered. "Alternative daily cover" - material used to cover garbage daily at a landfill instead of using soil, is

considered to be a form of disposal rather than recovery. This correction was made to 2015 and 2016 data.

- The yard debris and asphalt roofing corrections resulted in adjustments to the previous year's recovery rates; the recovery rate for 2015 dropped from 46.2 to 46.0 percent, the recovery rate for 2016 dropped from 42.6 to 42.2 percent.
- A correction to recovered tonnage of yard waste was made to the 2015 survey period, a reporting facility for 2016 sent in a missing 2015 report.
- In 2016 a correction was made to some "plastic other" and "plastic film" incorrectly converted to tons from pounds, this increased the total recovered for both materials.
- A couple of 2015 disposal reports were revised. This adjustment increased disposal tonnage for 2015; which dropped the state recovery rate from 46.5 percent to 46.2 percent for 2015.
- A correction to recovered tonnage of wood waste in two wastesheds was made to survey years 2014 and 2013, as some tonnage was determined to be pre-consumer material.
- Adjustments were made to 2014 and 2013 animal waste/grease collection amounts, as well as correctly identifying wastesheds of origin, based on revised reporting by an end-user.
- Disposal tonnage was reported for the wrong wasteshed. This adjustment increased disposal tonnage for 2014 for one wasteshed; which changed the wasteshed rate of the two wastesheds involved. This did not affect the state's recovery rate.
- An error in reporting was discovered by one of the recycling processors; a large amount of newspaper was double counted in the previously published 2004 results. The paper was counted both at the processing facility and at the paper mill.
- An enforcement action carried out by Metro showed that most of the brick reported as being recycled by one facility was falsely reported. DEQ subsequently decided that brick more closely resembled other inert materials such as cement and asphalt. Since these are not counted toward the recovery rate, brick was removed from all previous recovery tonnages.
- New information showed that corrections needed to be made to tonnages for roofing and non-container glass in 2003 and 2004, as well as other minor adjustments in other categories.
- Field visits showed that some plastic for 2005 had been reported as 'Plastic Other' and that this material was actually 'Rigid Plastic Containers.' The 2005 numbers have been adjusted for this change, along with a few other minor adjustments.
- Field visits and continued investigation showed that previously reported 'Wood Waste' collections for 2006 were actually collected in three years – 2004, 2005 and 2006. These years are now correct.
- The 2006 and 2007 plastics numbers were adjusted between grades of "Rigid Plastic Containers," "Plastic Other," and "Plastic Film." This may have led to small changes in the recovered tonnages for these materials.
- Investigation of disposal numbers at two landfills led to deductions in the amount of SW disposed – these were really Industrial Waste, non-counting for the purposes of this survey.
- Some changes were made in 2006 and 2007 to disposition of materials. Changes were made to composted, burned for energy recovery and disposed amounts.
- Adjustments were made to the 2007 collection amounts, correctly identifying the wasteshed of origin.

- For 2006 and 2007, some non-counting slaughterhouse material was deleted from the recovered tonnage.
- Sawdust material from manufacturing was deleted for 2006 and 2007.
- Beginning with 2006, material previously identified as "CD – Construction and Demolition" was separated out into individual materials.
- Textiles previously counted were determined to be re-used, which does not count for recovery. 2006, 2007, 2010 and 2011 recovered tonnage was decreased.
- Some gypsum sent for disposal was included in the 2006 and 2007 tonnage – this was removed.
- Bottle bill materials, container glass and aluminum had better reporting for 2009, and DEQ made some adjustments to those materials for 2008.
- Municipal solid wastes from another landfill were determined to be industrial and were deleted from the 2007 and 2008 counting tonnages.
- Minor disposal adjustments were made to two wastesheds for 2006 data with incorrectly reported county of origin.
- Yard debris numbers contained a large double counting for the Metro region – the correction caused a decrease in recovered tons
- Some roofing material was deleted - it was determined to be industrial material.
- Added in disposal tonnages for 2009 and 2010 for material sent out of state for disposal.
- Corrected the disposition methods for food waste and yard debris in 2011.
- Fixed the disposal tonnages originally recorded for the incorrect wasteshed in 2011.
- An error in food waste reporting discovered by DEQ showed a large amount of food waste was double counted in the 2011 and 2012 reports. The food waste was counted both by the composting facility and by the recycling collectors.
- More accurate reporting identified corrections needed in tonnages for used oil, antifreeze, solvents and used oil filters in 2011 and 2012.
- Adjustments were made to 2013 and 2012 collection amounts, as well as correctly identifying wastesheds of origin.
- Municipal solid waste from one landfill was reported incorrectly as out-of-state waste, this adjustment increased the "counting" disposal tonnage for 2013. This in turn adjusted the state recovery rate from 54 percent for 2013 to 53.4 percent.

2019 survey report tables

List of data tables one through nine used for this report.

Table 1: Wasteshed Recovery Rates, 2019

Table 2: Amount Recovered in 2019 by Wasteshed

Table 3: Solid Waste Disposed in 2019 by Wasteshed

Table 4: Oregon Calculated Recovery Rates by Wasteshed, 1992-2019

Table 5: Oregon Amount Recovered by Wasteshed, 1992-2019

Table 6: Oregon Solid Waste Disposed by Wasteshed, 1992-2019

Table 7: Oregon Solid Waste Generated by Wasteshed, 1992-2019

Table 8: Oregon Materials Recovered, 1992-2019

Table 9: Disposition of Recovered Materials, 2019

Table 1: Wasteshed Recovery Rates, 2019

Wasteshed	Tons Disposed	Tons Recovered	Tons Generated	Calculated Recovery Rate ¹	SB 263 Goal ³ 2025
Baker	13,563	2,793	16,356	17.1%	25%
Benton	66,131	36,276	102,407	35.4%	44%
Clatsop	35,031	19,774	54,805	36.1%	53%
Columbia	33,924	10,255	44,179	23.2%	45%
Coos	53,356	16,170	69,527	23.3%	30%
Crook	25,247	7,156	32,403	22.1%	20%
Curry	20,218	6,070	26,287	23.1%	30%
Deschutes	183,593	84,347	267,940	31.5%	45%
Douglas	88,655	31,579	120,233	26.3%	34%
Gilliam	2,439	282	2,720	10.4%	25%
Grant	4,300	848	5,148	16.5%	25%
Harney	4,731	853	5,584	15.3%	25%
Hood River	23,460	7,690	31,151	24.7%	35%
Jackson	196,367	121,982	318,349	38.3%	25%
Jefferson	14,569	3,095	17,664	17.5%	32%
Josephine	83,623	33,785	117,408	28.8%	20%
Klamath	65,986	17,362	83,349	20.8%	20%
Lake	5,398	363	5,762	6.3%	15%
Lane	282,440	346,282	628,722	55.1%	63%
Lincoln	52,567	19,813	72,380	27.4%	37%
Linn	110,453	80,787	191,240	42.2%	45%
Malheur	24,074	5,433	29,507	18.4%	25%
Marion ²	266,209	243,658	509,868	47.8%	64%
Metro	1,324,963	1,134,412	2,459,375	46.1%	64%
Milton-Freewater	4,819	821	5,640	14.6%	25%
Morrow	27,960	5,149	33,109	15.6%	20%
Polk	52,102	46,696	98,798	47.3%	48%
Sherman	1,269	89	1,358	6.6%	20%
Tillamook	29,358	10,273	39,630	25.9%	37%
Umatilla	77,490	43,962	121,451	36.2%	20%
Union	18,901	7,348	26,249	28.0%	25%
Wallowa	6,446	1,790	8,236	21.7%	25%
Wasco	24,085	4,877	28,962	16.8%	35%
Wheeler	385	69	454	15.3%	20%
Yamhill	98,590	53,955	152,545	35.4%	45%
OR Totals	3,322,700	2,406,095	5,728,796	42.0%	

¹ The recovery rate is calculated using the following formula:
1) Tons Disposed + Tons Recovered = Total Tons Generated
2) Tons Recovered / Total Generated = Calculated Recovery Rate
² The Marion County disposal and recovery rates reflect 15,169.06 tons of recyclable materials burned for energy in 2019 (per ORS 459A.010(3)(f)(B)).

Table 2: Amount Recovered in 2019 by Wasteshed

Wasteshed	2019 Tons Recovered	2019 Pounds Per Capita	2019 Wasteshed Population
Baker	2,793	332	16,820
Benton	36,276	843	86,105
Clatsop	19,774	1,006	39,330
Columbia	10,255	389	52,750
Coos	16,170	511	63,290
Crook	7,156	611	23,440
Curry	6,070	528	23,000
Deschutes	84,347	874	193,000
Douglas	31,579	563	112,250
Gilliam	282	283	1,990
Grant	848	230	7,360
Harney	853	232	7,360
Hood River	7,690	604	25,480
Jackson	121,982	1,102	221,290
Jefferson	3,095	260	23,840
Josephine	33,785	779	86,750
Klamath	17,362	509	68,190
Lake	363	90	8,080
Lane	346,282	1,828	378,880
Lincoln	19,813	821	48,260
Linn	80,787	1,197	135,005
Malheur	5,433	339	32,030
Marion*	243,658	1,402	347,560
Metro	1,134,412	1,221	1,858,560
Milton-Freewater	821	202	8,116
Morrow	5,149	812	12,680
Polk	46,696	1,138	82,050
Sherman	89	101	1,770
Tillamook	10,273	775	26,500
Umatilla	43,962	1,204	73,044
Union	7,348	548	26,840
Wallowa	1,790	501	7,150
Wasco	4,877	358	27,240
Wheeler	69	96	1,440
Yamhill	53,955	990	108,950
OREGON TOTALS	2,406,095	1,136	4,236,400

Source for population data is the Center for Population Research and Census, Portland State University, published April 2019. Wastesheds populations are not the same as County populations for the Wastesheds of Benton, Linn, Marion, Metro, Milton-Freewater, Polk, Umatilla. and Yamhill (see OAR 340-090-0050).

*Includes certain Marion County recyclable materials burned for energy (per ORS 459A.010(3)(f)(B)).

Table 3: Solid Waste Disposed in 2019 by Wasteshed

Wasteshed	2019 Tons Disposed	2019 Pounds Per Capita	2019 Wasteshed Population
Baker	13,563	1,613	16,820
Benton	66,131	1,536	86,105
Clatsop	35,031	1,781	39,330
Columbia	33,924	1,286	52,750
Coos	53,356	1,686	63,290
Crook	25,247	2,154	23,440
Curry	20,218	1,758	23,000
Deschutes	183,593	1,903	193,000
Douglas	88,655	1,580	112,250
Gilliam	2,439	2,451	1,990
Grant	4,300	1,168	7,360
Harney	4,731	1,286	7,360
Hood River	23,460	1,841	25,480
Jackson	196,367	1,775	221,290
Jefferson	14,569	1,222	23,840
Josephine	83,623	1,928	86,750
Klamath	65,986	1,935	68,190
Lake	5,398	1,336	8,080
Lane	282,440	1,491	378,880
Lincoln	52,567	2,178	48,260
Linn	110,453	1,636	135,005
Malheur	24,074	1,503	32,030
Marion*	266,209	1,532	347,560
Metro	1,324,963	1,426	1,858,560
Milton-Freewater	4,819	1,187	8,116
Morrow	27,960	4,410	12,680
Polk	52,102	1,270	82,050
Sherman	1,269	1,434	1,770
Tillamook	29,358	2,216	26,500
Umatilla	77,490	2,122	73,044
Union	18,901	1,408	26,840
Wallowa	6,446	1,803	7,150
Wasco	24,085	1,768	27,240
Wheeler	385	535	1,440
Yamhill	98,590	1,810	108,950
OREGON TOTALS	3,322,700	1,569	4,236,400

Source for population data is the Center for Population Research and Census, Portland State University, published April 2019. Wastesheds populations are not the same as County populations for the Wastesheds of Benton, Linn, Marion, Metro, Milton-Freewater, Polk, Umatilla, and Yamhill (see OAR 340-090-0050).

*Excludes certain Marion County recyclable materials burned for energy recovery (per ORS 459A.010(3)(f)(B)).

Table 4: Oregon Calculated Recovery Rates by Wasteshed, 1992-2019

Wasteshed	1992 Rate	1996 Rate	2000 Calc. Rate*	2006 Calc. Rate*	2007 Calc. Rate*	2008 Calc. Rate*	2009 Calc. Rate*	2010 Calc. Rate*	2011 Calc. Rate*	2012 Calc. Rate*	2013 Calc. Rate*	2014 Calc. Rate*	2015 Calc. Rate*	2016 Calc. Rate*	2017 Calc. Rate*	2018 Calc. Rate*	2019 Calc. Rate*
Baker	10%	25%	18%	16.8%	21.9%	20.6%	26.3%	21.7%	22.4%	23.2%	22.7%	28.4%	26.2%	20.0%	17.4%	16.4%	17.1%
Benton	27%	37%	35%	36.2%	38.9%	41.1%	37.9%	38.4%	38.3%	41.4%	41.5%	37.3%	35.3%	35.6%	34.0%	35.3%	35.4%
Clatsop	19%	20%	25%	33.9%	34.0%	36.5%	36.0%	36.0%	38.7%	39.9%	44.3%	37.8%	39.5%	37.8%	41.8%	39.9%	36.1%
Columbia	34%	22%	31%	30.5%	28.5%	29.9%	32.1%	35.8%	35.3%	33.3%	34.7%	28.6%	31.0%	32.5%	23.9%	24.4%	23.2%
Coos	21%	29%	23%	20.8%	19.7%	22.3%	23.0%	35.0%	47.7%	43.7%	40.3%	38.3%	23.5%	22.5%	22.4%	19.8%	23.3%
Crook	16%	23%	27%	25.6%	25.1%	33.2%	31.6%	33.6%	31.5%	34.6%	30.5%	26.1%	20.9%	20.7%	23.1%	19.7%	22.1%
Curry	21%	35%	41%	18.1%	23.7%	21.0%	19.8%	20.4%	27.2%	25.3%	22.8%	26.6%	24.1%	26.7%	21.5%	24.2%	23.1%
Deschutes	15%	23%	31%	27.0%	29.8%	31.1%	39.1%	35.1%	39.3%	38.8%	38.2%	35.8%	36.6%	33.1%	31.8%	31.7%	31.5%
Douglas	26%	26%	26%	23.7%	25.8%	34.4%	28.7%	35.9%	42.9%	41.0%	37.4%	32.8%	30.3%	27.0%	28.6%	28.2%	26.3%
Gilliam	17%	19%	14%	8.5%	12.9%	14.4%	27.0%	20.9%	18.0%	44.2%	41.8%	17.6%	35.4%	13.7%	14.8%	7.1%	10.4%
Grant	18%	16%	19%	21.2%	24.2%	25.1%	22.4%	22.1%	25.0%	21.5%	28.8%	18.4%	24.5%	27.4%	17.2%	16.3%	16.5%
Harney	18%	24%	20%	28.0%	25.2%	33.8%	23.6%	26.2%	31.1%	28.4%	27.3%	27.6%	21.8%	22.3%	23.7%	18.7%	15.3%
Hood River	16%	17%	18%	33.1%	29.5%	28.2%	29.3%	26.5%	34.4%	31.4%	32.2%	28.1%	29.5%	26.9%	21.9%	23.9%	24.7%
Jackson	15%	34%	28%	33.7%	30.4%	32.3%	35.6%	42.0%	41.6%	43.3%	43.1%	40.9%	37.2%	38.6%	35.0%	33.0%	38.3%
Jefferson	21%	24%	27%	27.7%	36.2%	33.7%	30.7%	41.3%	47.2%	44.8%	41.6%	33.2%	24.6%	31.6%	25.9%	22.3%	17.5%
Josephine	14%	38%	33%	38.9%	34.3%	38.9%	37.6%	40.1%	49.0%	49.9%	46.0%	40.3%	34.5%	35.4%	35.2%	31.7%	28.8%
Klamath	13%	15%	18%	33.6%	34.8%	45.4%	32.9%	29.2%	28.1%	33.1%	29.9%	30.9%	22.3%	25.7%	23.5%	20.6%	20.8%
Lake	6%	7%	8%	19.4%	21.8%	34.5%	25.1%	27.2%	28.5%	26.8%	26.3%	16.7%	12.5%	12.1%	8.6%	10.7%	6.3%
Lane	19%	39%	46%	46.9%	46.3%	46.4%	46.1%	51.2%	55.5%	54.7%	50.9%	53.1%	50.4%	50.0%	52.4%	53.8%	55.1%
Lincoln	20%	16%	23%	26.3%	27.6%	30.8%	29.4%	32.6%	32.4%	35.9%	29.2%	32.1%	31.2%	26.3%	22.6%	24.2%	27.4%
Linn	15%	32%	29%	40.5%	37.4%	41.3%	40.5%	43.8%	49.2%	45.0%	44.0%	42.4%	39.3%	38.2%	36.9%	40.2%	42.2%
Malheur	19%	20%	25%	22.8%	22.6%	21.9%	18.9%	23.3%	20.9%	27.3%	27.8%	24.7%	24.2%	26.4%	22.6%	16.6%	18.4%
Marion	26%	28%	38%	**51.9%	**50.4%	**52.4%	**52.2%	**50.1%	**54.7%	**54.4%	**55.2%	**53.8%	**52.2%	**49.4%	**48.8%	**49.7%	**47.9%
Metro	35%	41%	45%	49.6%	48.9%	50.2%	50.4%	51.9%	53.3%	56.3%	57.0%	53.6%	53.0%	47.0%	46.6%	44.7%	46.1%
Milton-Freewater	16%	21%	21%	32.8%	30.8%	43.0%	34.9%	35.3%	37.9%	27.0%	41.2%	39.0%	40.1%	28.7%	35.2%	39.4%	14.6%
Morrow	11%	13%	15%	21.5%	26.4%	24.8%	23.2%	22.0%	23.2%	25.1%	18.3%	20.9%	21.1%	24.4%	21.4%	22.0%	15.6%
Polk	20%	19%	33%	47.9%	46.4%	47.0%	45.9%	45.6%	47.7%	44.2%	43.6%	46.0%	45.1%	45.9%	47.3%	41.5%	47.3%
Sherman	24%	21%	17%	18.5%	16.4%	14.8%	14.3%	11.5%	13.9%	21.9%	14.2%	15.9%	15.9%	11.5%	11.1%	13.5%	6.6%
Tillamook	31%	26%	26%	33.4%	30.6%	31.5%	29.1%	31.2%	33.7%	33.0%	31.9%	29.6%	28.9%	26.1%	27.8%	27.8%	25.9%
Umatilla	14%	20%	26%	35.0%	36.5%	37.9%	31.7%	29.3%	29.3%	31.1%	28.6%	28.1%	29.5%	25.0%	26.9%	28.8%	36.2%
Union	16%	26%	22%	33.7%	31.5%	29.8%	29.3%	28.6%	30.7%	30.5%	30.4%	25.2%	24.8%	25.1%	22.1%	26.9%	28.0%
Wallowa	6%	11%	21%	22.2%	27.4%	24.1%	23.5%	19.4%	23.5%	22.4%	23.7%	26.6%	22.4%	27.0%	24.3%	21.3%	21.7%
Wasco	25%	30%	34%	18.8%	23.0%	23.4%	32.7%	28.0%	31.3%	27.8%	32.0%	28.0%	28.1%	26.2%	19.6%	19.2%	16.8%
Wheeler	7%	20%	14%	23.9%	26.9%	27.1%	20.0%	8.1%	12.9%	8.8%	8.7%	7.3%	15.6%	12.8%	17.5%	26.9%	15.3%
Yamhill	19%	35%	44%	39.0%	35.7%	35.6%	39.7%	34.2%	40.2%	32.8%	38.1%	37.1%	38.3%	30.0%	28.9%	27.9%	35.4%
OREGON TOTALS	27.1%	34.9%	38.9%	43.5%	42.9%	44.6%	44.6%	45.9%	48.6%	49.7%	49.5%	47.2%	46.0%	42.2%	41.6%	40.8%	42.0%

*does not include 2% credits

**does include certain Marion County recyclable materials burned for energy

Table 5: Oregon Amount Recovered by Wasteshed, 1992-2019

Wasteshed	1992 Rvd (tons)	Per Capita (lbs.)	1996 Rvd (tons)	Per Capita (lbs.)	2000 Rvd (tons)	Per Capita (lbs.)	2006 Rvd (tons)	Per Capita (lbs.)	2007 Rvd (tons)	Per Capita (lbs.)	2008 Rvd (tons)	Per Capita (lbs.)	2009 Rvd (tons)	Per Capita (lbs.)	2010 Rvd (tons)	Per Capita (lbs.)	2011 Rvd (tons)	Per Capita (lbs.)	2012 Rvd (tons)	Per Capita (lbs.)	2013 Rvd (tons)	Per Capita (lbs.)	2014 Rvd (tons)	Per Capita (lbs.)	2015 Rvd (tons)	Per Capita (lbs.)	2016 Rvd (tons)	Per Capita (lbs.)	2017 Rvd (tons)	Per Capita (lbs.)	2018 Rvd (tons)	Per Capita (lbs.)	2019 Rvd (tons)	Per Capita (lbs.)	Change in Per Capita 2019-18
Baker	982	124	3,644	438	2,849	340	2,782	338	3,565	434	3,366	409	4,067	494	3,793	469	3,402	420	3,200	395	3,325	408	4,071	499	4,122	502	3,111	377	2,957	353	2,624	313	2,793	332	6.1%
Benton	21,480	626	30,352	830	28,488	779	35,728	921	36,292	922	38,210	966	31,438	789	32,938	832	33,775	852	38,226	955	37,953	939	33,959	832	33,394	807	34,311	820	32,591	768	35,073	819	36,276	843	2.9%
Clatsop	5,148	300	7,118	403	10,586	593	19,576	1,057	19,029	1,017	20,984	1,113	17,584	929	17,440	941	18,366	989	19,465	1,047	23,013	1,235	19,025	1,015	20,973	1,111	20,671	1,082	23,962	1,235	24,443	1,247	19,774	1,006	-19.4%
Columbia	7,894	407	6,258	302	10,361	474	12,940	551	13,647	574	12,968	539	12,001	496	13,729	555	13,386	539	12,703	511	13,254	532	10,273	410	11,730	466	13,786	543	10,032	391	10,443	402	10,255	389	-3.4%
Coos	10,035	323	14,972	472	11,754	374	13,364	425	12,162	386	13,529	428	12,666	402	22,551	716	36,368	1,155	31,613	1,005	27,146	864	26,190	833	13,024	414	13,215	418	14,030	443	12,603	398	16,170	511	28.3%
Crook	1,581	206	3,156	363	5,215	540	7,075	577	7,004	541	7,871	586	6,273	462	7,006	667	7,535	723	6,328	613	6,182	598	5,209	501	4,459	423	5,302	491	6,189	560	5,618	495	7,156	611	23.4%
Curry	2,863	288	6,011	572	10,387	980	4,830	452	6,632	618	5,161	480	4,223	396	4,349	389	6,235	558	5,557	499	4,798	430	5,748	514	5,424	483	6,989	618	5,548	487	6,444	562	6,070	528	-6.2%
Deschutes	12,858	305	30,222	605	49,993	858	69,443	910	75,346	937	64,276	770	75,362	883	62,077	786	72,635	914	72,065	900	74,062	911	72,965	877	83,271	975	79,755	903	84,809	927	83,472	883	84,347	874	-1.1%
Douglas	29,467	614	30,945	621	31,390	625	31,980	616	36,158	691	44,082	838	30,846	585	41,949	779	55,220	1,025	50,342	931	42,333	778	36,263	663	32,335	588	27,725	502	31,635	569	33,216	595	31,579	563	-5.4%
Gilliam	177	205	284	306	266	280	225	239	301	319	370	393	768	815	596	637	462	491	1,684	1,773	1,395	1,434	488	495	1,070	1,084	358	361	354	355	301	303	282	283	-6.6%
Grant	911	232	687	171	791	199	1,055	277	1,342	354	1,325	352	1,098	292	1,105	296	1,338	359	954	256	1,386	373	838	226	1,235	332	1,457	393	852	230	827	223	848	230	3.1%
Harney	600	171	678	188	806	212	1,165	304	1,203	313	1,573	408	944	245	1,122	301	1,327	360	1,414	387	1,307	360	1,360	374	1,084	297	1,156	316	1,285	349	1,056	286	853	232	-19.0%
Hood River	1,855	212	3,333	345	3,403	332	9,200	862	8,365	779	7,479	692	7,466	687	6,404	572	9,541	843	7,785	681	7,847	674	6,701	565	7,783	642	7,437	601	6,502	517	7,214	570	7,690	604	5.9%
Jackson	17,134	221	60,292	707	63,872	701	92,807	935	80,422	795	76,330	744	79,275	766	102,539	1,009	99,579	977	108,893	1,064	105,705	1,025	108,992	1,046	97,326	923	110,460	1,033	101,570	937	96,147	877	121,982	1,102	25.7%
Jefferson	1,269	170	2,667	307	3,661	382	5,506	514	8,132	738	6,217	554	4,475	394	7,300	671	8,641	791	8,244	752	7,305	663	5,400	486	4,046	361	6,161	541	5,296	457	4,610	391	3,095	260	-33.6%
Josephine	7,826	239	21,688	600	26,534	698	42,005	1,036	32,943	800	35,957	863	29,510	705	32,992	797	47,045	1,136	48,567	1,173	43,614	1,053	39,387	948	32,725	782	38,476	909	41,783	976	37,386	865	33,785	779	-10.0%
Klamath	8,827	301	11,171	360	14,070	440	36,650	1,120	34,502	1,048	48,819	1,475	26,256	791	20,571	619	20,751	623	23,432	702	19,793	593	22,134	662	15,183	452	20,055	595	18,157	536	17,442	513	17,362	509	-0.8%
Lake	269	74	601	161	369	99	1,360	361	1,691	447	2,950	778	1,754	461	2,215	561	2,656	674	1,843	465	2,177	548	1,145	287	847	211	897	224	606	149	774	191	363	90	-52.8%
Lane	72,072	493	153,843	992	216,532	1,337	248,599	1,463	237,578	1,385	217,537	1,258	190,877	1,098	237,493	1,349	269,100	1,524	268,429	1,516	229,818	1,291	264,472	1,474	242,830	1,341	258,360	1,412	302,490	1,632	318,392	1,698	346,282	1,828	7.7%
Lincoln	6,886	338	7,823	352	12,192	547	18,030	810	20,035	898	21,355	955	17,010	761	18,810	815	18,520	803	22,104	955	16,915	727	19,940	850	19,827	840	17,012	713	14,868	620	18,511	768	19,813	821	6.9%
Linn	17,232	352	33,201	634	33,830	623	60,754	1,057	51,543	888	54,219	924	56,125	950	62,832	1,016	76,150	1,226	65,299	1,045	61,833	983	60,159	947	59,426	926	60,100	923	62,465	947	74,442	1,113	80,787	1,197	7.5%
Malheur	3,283	237	4,808	319	7,212	454	6,862	433	7,045	446	6,437	406	4,909	310	6,289	401	5,309	338	7,470	476	7,699	490	6,621	421	6,703	426	7,973	503	6,791	426	5,216	327	5,433	339	3.8%
Marion	55,834	462	85,731	645	134,032	937	264,168	1,724	251,673	1,619	239,441	1,522	218,787	1,376	206,398	1,308	235,584	1,482	228,708	1,428	232,540	1,441	238,422	1,463	240,544	1,460	237,150	1,421	248,038	1,463	262,552	1,527	243,658	1,402	-8.2%
Metro	514,747	825	752,470	1,106	970,850	1,338	1,337,848	1,705	1,325,112	1,663	1,234,180	1,529	1,106,279	1,356	1,110,443	1,350	1,122,542	1,355	1,222,024	1,461	1,278,987	1,510	1,182,294	1,377	1,285,248	1,473	1,116,712	1,255	1,116,870	1,233	1,108,857	1,206	1,134,412	1,221	1.2%
Milton-Freew.	908	323	1,186	392	1,317	406	2,612	793	2,351	718	3,598	994	2,319	640	2,346	617	2,567	670	1,615	419	3,103	797	2,674	683	2,846	719	1,884	472	1,375	341	1,147	284	821	202	-28.8%
Morrow	930	227	842	181	1,428	257	2,874	474	3,967	643	3,868	620	3,548	566	3,020	541	3,269	580	3,680	651	2,944	515	4,047	702	4,466	768	5,635	960	5,989	1,007	5,383	906	5,149	812	-10.3%
Polk	4,873	187	6,787	237	18,000	581	38,074	1,155	33,838	1,013	34,828	1,032	32,201	946	33,134	888	34,439	917	30,505	805	29,953	786	34,580	899	35,114	904	39,526	1,002	45,872	1,145	35,972	886	46,696	1,138	28.5%
Sherman	270	278	264	275	217	223	232	249	239	258	256	278	204	222	154	174	194	220	319	362	181	203	219	246	251	281	158	176	151	168	193	216	89	101	-53.4%
Tillamook	4,518	406	5,246	438	6,174	508	12,554	983	11,435	885	11,994	921	9,271	710	10,159	804	10,407	824	10,606	838	9,698	764	9,078	713	9,424	734	9,331	720	10,504	803	10,858	823	10,273	775	-5.8%
Umatilla	6,641	236	12,454	414	20,115	625	35,495	1,082	38,402	1,169	40,616	1,247	30,306	930	27,461	803	27,610	801	28,990	835	26,066	744	26,990	766	29,813	837	24,276	675	28,955	799	33,572	924	43,962	1,204	30.3%
Union	2,525	210	5,203	419	5,062	412	7,518	599	9,180	727	8,102	639	7,119	559	7,159	555	7,823	602	7,991	611	8,031	610	6,350	480	6,691	503	6,916	517	6,375	474	6,979	519	7,348	548	5.5%
Wallowa	433	119	503	135	1,219	336	1,431	401	1,767	496	1,339	376	1,211	341	719	205	954	273	923	263	1,058	300	904	256	1,122	316	1,513	424	1,425	396	1,386	386	1,790	501	29.6%
Wasco	5,443	485	7,519	648	9,194	771	5,131	426	6,650	551	6,545	542	9,236	762	7,089	562	7,682	607	6,688	525	8,158	632	7,062	541	6,863	520	6,892	516	5,416	400	5,435	400	4,877	358	-10.4%
Wheeler	59	82	185	226	100	129	161	206	204	260	166	211	102	129	38	52	62	86	37	52	45	63	29	40	77	107	55	74	80	108	138	191	69	96	-49.5%
Yamhill	11,850	338	26,116	663	53,548	1,242	64,017	1,386	57,816	1,233	50,200	1,056	47,122	982	49,737	992	45,653	907	43,787	864	51,237	1,002	43,277	837	47,808	9									

Table 6: Oregon Solid Waste Disposed by Wasteshed, 1992-2019

Wasteshed	1992 Disposed (tons)	Per Capita (lbs.)	1996 Disposed (tons)	Per Capita (lbs.)	2000 Disposed (tons)	Per Capita (lbs.)	2006 Disposed (tons)	Per Capita (lbs.)	2007 Disposed (tons)	Per Capita (lbs.)	2008 Disposed (tons)	Per Capita (lbs.)	2009 Disposed (tons)	Per Capita (lbs.)	2010 Disposed (tons)	Per Capita (lbs.)	2011 Disposed (tons)	Per Capita (lbs.)	2012 Disposed (tons)	Per Capita (lbs.)	2013 Disposed (tons)	Per Capita (lbs.)	2014 Disposed (tons)	Per Capita (lbs.)	2015 Disposed (tons)	Per Capita (lbs.)	2016 Disposed (tons)	Per Capita (lbs.)	2017 Disposed (tons)	Per Capita (lbs.)	2018 Disposed (tons)	Per Capita (lbs.)	2019 Disposed (tons)	Per Capita (lbs.)	Change in Per Capita 2019-18
Baker	8,419	1,062	10,897	1,310	12,617	1,507	13,770	1,672	12,730	1,549	12,973	1,577	11,391	1,385	13,693	1,692	11,926	1,471	10,610	1,309	11,309	1,389	10,251	1,256	11,585	1,411	12,432	1,506	14,078	1,681	13,420	1,601	13,563	1,613	0.74%
Benton	58,761	1,713	50,840	1,390	53,835	1,472	62,940	1,622	57,109	1,451	54,675	1,382	51,470	1,292	52,945	1,338	54,525	1,375	54,062	1,351	53,516	1,324	57,050	1,398	61,331	1,483	61,999	1,482	63,214	1,490	64,165	1,498	66,131	1,536	2.51%
Clatsop	22,263	1,299	28,671	1,623	31,489	1,764	38,125	2,058	36,874	1,970	36,529	1,938	31,293	1,654	31,036	1,674	29,266	1,576	29,291	1,575	28,969	1,555	31,314	1,670	32,170	1,704	34,076	1,783	33,381	1,720	36,784	1,877	35,031	1,781	-5.08%
Columbia	15,131	780	22,650	1,095	23,201	1,062	29,541	1,258	34,317*	1,443*	30,412	1,265	25,365	1,048	24,616	996	24,614	992	25,400	1,023	24,970	1,002	25,697	1,026	26,130	1,037	28,657	1,128	31,937	1,244	32,376	1,248	33,924	1,286	3.09%
Coos	37,596	1,211	36,436	1,148	39,329	1,253	50,868	1,617	49,459	1,569	47,266	1,496	42,305	1,342	41,862	1,328	39,987	1,270	40,733	1,295	40,287	1,282	42,222	1,343	42,362	1,345	45,445	1,438	48,728	1,539	51,175	1,618	53,356	1,686	4.24%
Crook	8,378	1,091	10,646	1,224	13,841	1,434	20,566	1,677	20,867	1,612	15,827	1,179	13,566	998	13,860	1,319	16,415	1,574	11,978	1,160	14,082	1,361	14,736	1,418	16,902	1,603	20,340	1,885	20,558	1,860	22,949	2,021	25,247	2,154	6.59%
Curry	10,555	1,062	11,121	1,059	14,644	1,382	21,834	2,044	21,404	1,993	19,470	1,810	17,093	1,602	16,982	1,519	16,661	1,492	16,419	1,473	16,289	1,461	15,885	1,421	17,103	1,522	19,222	1,701	20,287	1,779	20,133	1,757	20,218	1,758	0.05%
Deschutes	72,529	1,720	103,397	2,070	111,013	1,904	188,146	2,466	177,543	2,208	142,400	1,705	117,292	1,374	115,030	1,457	112,751	1,419	113,611	1,419	119,682	1,473	130,956	1,574	144,067	1,688	161,087	1,824	182,110	1,991	179,991	1,905	183,593	1,903	-0.12%
Douglas	85,040	1,772	87,325	1,751	89,451	1,780	103,061	1,985	103,772	1,983	84,164	1,599	76,578	1,453	75,047	1,394	73,716	1,368	72,583	1,342	70,763	1,300	74,219	1,357	74,436	1,354	75,054	1,360	79,114	1,423	84,736	1,517	88,655	1,580	4.14%
Gilliam	872	1,008	1,176	1,271	1,663	1,751	2,429	2,577	2,026	2,150	2,197	2,333	2,074	2,201	2,255	2,411	2,108	2,243	2,126	2,238	1,943	1,998	2,285	2,314	1,955	1,980	2,247	2,270	2,038	2,043	3,946	3,976	2,439	2,451	-38.35%
Grant	4,178	1,063	3,492	869	3,441	866	3,918	1,027	4,205	1,109	3,944	1,048	3,798	1,010	3,896	1,044	4,010	1,076	3,473	932	3,421	920	3,730	1,005	3,809	1,025	3,868	1,044	4,089	1,103	4,256	1,150	4,300	1,168	1.58%
Harney	2,650	756	2,126	591	3,160	832	2,999	782	3,578	932	3,080	799	3,058	793	3,153	847	3,043	825	3,563	974	3,484	960	3,576	984	3,886	1,065	4,036	1,103	4,137	1,124	4,582	1,242	4,731	1,286	3.55%
Hood River	9,959	1,139	16,016	1,659	15,741	1,536	18,620	1,745	19,965	1,860	19,035	1,760	17,972	1,655	17,782	1,589	18,221	1,611	17,046	1,490	16,530	1,419	17,175	1,448	18,607	1,535	20,187	1,632	23,135	1,840	23,004	1,818	23,460	1,841	1.31%
Jackson	98,002	1,265	115,011	1,348	165,129	1,813	182,404	1,837	184,062	1,820	159,636	1,555	143,484	1,386	141,765	1,394	139,973	1,373	142,338	1,391	139,677	1,354	157,217	1,509	164,031	1,555	175,856	1,645	188,627	1,739	195,192	1,781	196,367	1,775	-0.35%
Jefferson	4,813	645	8,380	965	9,889	1,033	14,385	1,344	14,248	1,294	12,243	1,091	10,118	891	10,387	955	9,714	889	10,148	925	10,250	930	10,883	980	12,394	1,104	13,348	1,171	15,157	1,307	16,036	1,361	14,569	1,222	-10.22%
Josephine	47,687	1,457	35,873	992	54,033	1,421	66,105	1,630	63,004	1,529	56,445	1,355	49,054	1,173	49,268	1,190	49,130	1,186	48,812	1,179	51,156	1,235	58,277	1,402	62,132	1,484	70,076	1,655	76,898	1,796	80,597	1,866	83,623	1,928	3.33%
Klamath	57,247	1,950	66,874	2,153	64,619	2,023	72,315	2,210	64,641	1,964	58,740	1,775	53,652	1,617	49,933	1,502	53,361	1,603	47,284	1,417	46,506	1,392	49,603	1,483	52,858	1,575	58,112	1,724	59,154	1,748	67,382	1,983	65,986	1,935	-2.40%
Lake	4,364	1,196	7,468	2,002	4,057	1,089	5,651	1,499	6,051	1,600	5,599	1,476	5,244	1,380	5,925	1,502	6,773	1,718	5,025	1,269	6,110	1,539	5,698	1,426	5,926	1,480	6,496	1,621	6,428	1,583	6,467	1,594	5,398	1,336	-16.16%
Lane	302,695	2,072	239,310	1,542	256,205	1,582	281,347	1,656	275,032	1,603	251,260	1,453	223,028	1,283	225,988	1,284	215,728	1,222	222,486	1,256	221,532	1,244	233,477	1,301	239,016	1,320	258,041	1,410	274,805	1,483	273,543	1,458	282,440	1,491	2.23%
Lincoln	27,601	1,355	42,443	1,908	40,406	1,812	50,537	2,270	52,580	2,356	47,876	2,141	40,801	1,826	38,932	1,688	38,810	1,682	39,388	1,702	40,968	1,760	42,098	1,796	43,698	1,851	47,700	1,999	50,903	2,123	58,084	2,410	52,567	2,178	-9.59%
Linn	94,644	1,931	69,506	1,328	83,701	1,540	89,163	1,551	86,370	1,488	76,961	1,312	82,520	1,397	80,589	1,303	78,919	1,270	79,746	1,276	78,590	1,249	81,869	1,289	91,837	1,431	97,379	1,496	106,750	1,618	110,534	1,653	110,453	1,636	-1.03%
Malheur	13,815	996	18,776	1,246	21,338	1,344	23,292	1,468	24,152	1,528	23,008	1,453	21,134	1,333	20,713	1,322	20,176	1,283	19,920	1,269	20,043	1,275	20,201	1,284	20,956	1,331	22,205	1,401	23,262	1,461	26,136	1,637	24,074	1,503	-8.19%
Marion	158,109	1,307	219,182	1,648	222,098	1,552	245,214	1,600	247,331	1,591	217,172	1,380	200,420	1,261	205,923	1,305	195,332	1,229	191,947	1,199	193,571	1,200	204,991	1,258	220,237	1,336	243,107	1,457	263,789	1,556	264,973	1,541	266,209	1,532	-0.61%
Metro	945,634	1,516	1,097,246	1,613	1,207,348	1,663	1,356,955	1,730	1,385,870	1,740	1,223,706	1,516	1,088,580	1,334	1,029,314	1,252	977,769	1,180	946,915	1,132	963,041	1,137	1,022,371	1,190	1,138,552	1,305	1,259,663	1,416	1,281,034	1,414	1,373,608	1,494	1,324,963	1,426	-4.56%
Milton-Freew.	4,642	1,649	4,332	1,431	5,029	1,549	5,349	1,625	5,280	1,612	4,770	1,318	4,321	1,193	4,303	1,132	4,051	1,058	4,367	1,133	4,429	1,137	4,189	1,069	4,242	1,072	4,670	1,169	2,527	628	1,765	437	4,819	1,187	171.71%
Morrow	7,221	1,763	5,883	1,264	8,253	1,487	10,506	1,733	11,024	1,788	11,749	1,882	11,777	1,878	10,734	1,921	10,885	1,932	10,976	1,943	13,146	2,301	15,285	2,653	16,661	2,865	17,477	2,976	22,055	3,710	19,095	3,213	27,960	4,410	37.24%
Polk	19,036	729	28,655	1,000	37,322	1,204	41,453	1,257	39,129	1,172	39,340	1,165	37,985	1,116	39,552	1,060	37,817	1,007	38,564	1,018	38,774	1,017	40,516	1,054	42,734	1,100	46,533	1,180	51,177	1,277	50,788	1,251	52,102	1,270	1.54%
Sherman	876	903	987	1,028	1,031	1,057	1,021	1,095	1,219	1,314	1,478	1,604	1,222	1,335	1,190	1,349	1,203	1,363	1,135	1,286	1,091	1,226	1,160	1,300	1,330	1,486	1,219	1,358	1,213	1,347	1,233	1,382	1,269	1,434	3.77%
Tillamook	9,940	893	15,212	1,271	17,807	1,466	24,988	1,958	25,952	2,008	26,046	1,999	22,600	1,730	22,373	1,771	20,559	1,628	21,556	1,704	20,712	1,632	21,590	1,695	23,130	1,801	26,403	2,037	27,325	2,088	28,233	2,139	29,358	2,216	3.57%
Umatilla	41,059	1,461	51,388	1,709	57,952	1,801	65,980	2,011	66,763	2,033	66,601	2,045	65,260	2,002	66,345	1,940	67,354	1,955	64,341	1,854	65,129	1,858	69,030	1,958	71,374	2,004	72,808	2,025	78,725	2,173	83,104	2,287	77,490	2,122	-7.21%
Union	12,866	1,069	14,676	1,181	18,311	1,492	14,801	1,179	19,923	1,578	19,055	1,503	17,207	1,351	17,841	1,382	17,785	1,369	18,237	1,393	18,425	1,400	18,872	1,425	20,289	1,524	20,625	1,542	22,504						

Table 7: Oregon Solid Waste Generated by Wasteshed, 1992-2019

Wasteshed	1992 Generated (tons)	Per Capita (lbs.)	1996 Generated (tons)	Per Capita (lbs.)	2000 Generated (tons)	Per Capita (lbs.)	2006 Generated (tons)	Per Capita (lbs.)	2007 Generated (tons)	Per Capita (lbs.)	2008 Generated (tons)	Per Capita (lbs.)	2009 Generated (tons)	Per Capita (lbs.)	2010 Generated (tons)	Per Capita (lbs.)	2011 Generated (tons)	Per Capita (lbs.)	2012 Generated (tons)	Per Capita (lbs.)	2013 Generated (tons)	Per Capita (lbs.)	2014 Generated (tons)	Per Capita (lbs.)	2015 Generated (tons)	Per Capita (lbs.)	2016 Generated (tons)	Per Capita (lbs.)	2017 Generated (tons)	Per Capita (lbs.)	2018 Generated (tons)	Per Capita (lbs.)	2019 Generated (tons)	Per Capita (lbs.)	Change in Per Capita 2019-18
Baker	9,401	1,186	14,540	1,748	15,466	1,847	16,552	2,010	16,295	1,983	16,339	1,986	15,457	1,879	17,486	2,161	15,328	1,891	13,810	1,704	14,634	1,798	14,322	1,755	15,707	1,913	15,543	1,883	17,035	2,034	16,044	1,914	16,356	1,945	1.61%
Benton	80,241	2,339	81,192	2,220	82,323	2,250	98,668	2,543	93,400	2,374	92,885	2,347	82,908	2,081	85,883	2,170	88,300	2,227	92,288	2,307	91,469	2,264	91,009	2,231	94,724	2,290	96,311	2,302	95,805	2,258	99,237	2,317	102,407	2,379	2.64%
Clatsop	27,411	1,600	35,789	2,027	42,075	2,357	57,701	3,115	55,903	2,986	57,513	3,051	48,877	2,583	48,476	2,615	47,632	2,565	48,757	2,622	51,982	2,789	50,339	2,685	53,143	2,816	54,747	2,864	57,344	2,954	61,226	3,124	54,805	2,787	-10.78%
Columbia	23,025	1,187	28,908	1,397	33,562	1,536	42,482	1,809	47,964	2,017	43,381	1,804	37,366	1,544	38,345	1,551	38,000	1,531	38,103	1,534	38,224	1,534	35,970	1,437	37,860	1,503	42,442	1,671	41,969	1,635	42,818	1,650	44,179	1,675	1.52%
Coos	47,631	1,534	51,409	1,620	51,083	1,627	64,232	2,042	61,621	1,955	60,794	1,924	54,971	1,743	64,414	2,044	76,354	2,425	72,346	2,301	67,432	2,145	68,412	2,175	55,386	1,759	58,660	1,857	62,757	1,983	63,779	2,016	69,527	2,197	8.99%
Crook	9,959	1,297	13,802	1,586	19,056	1,975	27,642	2,254	27,871	2,153	23,697	1,765	19,839	1,460	20,866	1,985	23,950	2,297	18,305	1,773	20,263	1,959	19,945	1,920	21,361	2,026	25,642	2,376	26,747	2,420	28,567	2,516	32,403	2,765	9.90%
Curry	13,418	1,350	17,132	1,632	25,031	2,361	26,663	2,496	28,036	2,611	24,631	2,290	21,317	1,998	21,332	1,908	22,896	2,050	21,977	1,971	21,087	1,891	21,633	1,935	22,526	2,005	26,211	2,320	25,835	2,266	26,577	2,320	26,287	2,286	-1.46%
Deschutes	85,387	2,025	133,618	2,676	161,006	2,762	257,589	3,376	252,889	3,145	206,676	2,475	192,654	2,257	177,107	2,243	185,386	2,334	185,676	2,319	193,744	2,384	203,921	2,451	227,338	2,663	240,842	2,727	266,920	2,918	263,464	2,788	267,940	2,777	-0.42%
Douglas	114,507	2,386	118,269	2,372	120,841	2,405	135,041	2,602	139,929	2,674	128,246	2,437	107,424	2,039	116,996	2,173	128,936	2,392	122,925	2,272	113,095	2,078	110,482	2,020	106,771	1,943	102,779	1,862	110,749	1,992	117,952	2,111	120,233	2,142	1.47%
Gilliam	1,049	1,213	1,459	1,577	1,929	2,031	2,654	2,816	2,327	2,469	2,567	2,725	2,842	3,015	2,851	3,049	2,570	2,734	3,810	4,011	3,338	3,432	2,774	2,809	3,026	3,064	2,605	2,631	2,392	2,398	4,247	4,279	2,720	2,734	-36.10%
Grant	5,089	1,295	4,179	1,040	4,232	1,065	4,973	1,304	5,546	1,463	5,269	1,400	4,896	1,301	5,001	1,341	5,347	1,436	4,427	1,189	4,807	1,293	4,568	1,230	5,043	1,358	5,324	1,437	4,941	1,333	5,083	1,374	5,148	1,399	1.83%
Harney	3,249	927	2,804	779	3,966	1,044	4,163	1,086	4,782	1,245	4,653	1,208	4,002	1,038	4,274	1,148	4,370	1,185	4,977	1,361	4,791	1,320	4,936	1,359	4,970	1,363	5,191	1,418	5,422	1,473	5,638	1,528	5,584	1,517	-0.68%
Hood River	11,814	1,352	19,349	2,004	19,144	1,868	27,820	2,608	28,330	2,639	26,514	2,452	25,438	2,342	24,186	2,161	27,761	2,454	24,831	2,171	24,377	2,093	23,876	2,012	26,389	2,177	27,625	2,234	29,637	2,357	30,217	2,388	31,151	2,445	2.40%
Jackson	115,135	1,486	175,303	2,054	229,001	2,514	275,210	2,771	264,484	2,615	235,967	2,299	222,759	2,152	244,304	2,403	239,552	2,349	251,230	2,455	245,382	2,379	266,209	2,555	261,357	2,478	286,316	2,679	290,197	2,676	291,340	2,658	318,349	2,877	8.24%
Jefferson	6,082	815	11,047	1,272	13,550	1,415	19,892	1,858	22,380	2,032	18,460	1,644	14,593	1,285	17,688	1,626	18,356	1,681	18,393	1,677	17,554	1,593	16,284	1,467	16,440	1,465	19,509	1,712	20,453	1,764	20,646	1,753	17,664	1,482	-15.45%
Josephine	55,513	1,696	57,560	1,592	80,567	2,119	108,110	2,665	95,947	2,329	92,402	2,219	78,564	1,878	82,261	1,988	96,175	2,323	97,379	2,353	94,770	2,289	97,664	2,350	94,857	2,266	108,552	2,564	118,681	2,771	117,983	2,731	117,408	2,707	-0.89%
Klamath	66,074	2,251	78,044	2,512	78,689	2,463	108,965	3,329	99,143	3,013	107,559	3,251	79,908	2,409	70,504	2,120	74,112	2,226	70,715	2,119	66,299	1,985	71,737	2,144	68,042	2,028	78,167	2,319	77,310	2,284	84,824	2,496	83,349	2,445	-2.07%
Lake	4,633	1,269	8,069	2,163	4,426	1,188	7,011	1,860	7,742	2,047	8,549	2,254	6,998	1,841	8,140	2,063	9,428	2,391	6,868	1,734	8,287	2,087	6,844	1,713	6,773	1,691	7,394	1,845	7,034	1,732	7,240	1,784	5,762	1,426	-20.08%
Lane	374,767	2,565	393,153	2,534	472,737	2,919	529,946	3,120	512,611	2,988	468,797	2,711	413,905	2,381	463,480	2,633	484,827	2,746	490,915	2,772	451,350	2,535	497,949	2,776	481,845	2,661	516,401	2,822	577,295	3,115	591,935	3,156	628,722	3,319	5.16%
Lincoln	34,487	1,693	50,266	2,259	52,598	2,359	68,566	3,080	72,615	3,254	69,231	3,097	57,810	2,587	57,742	2,503	57,331	2,484	61,492	2,657	57,883	2,486	62,038	2,646	63,525	2,690	64,713	2,711	65,771	2,743	76,595	3,178	72,380	3,000	-5.60%
Linn	111,875	2,282	102,707	1,962	117,531	2,163	149,917	2,608	137,913	2,375	131,181	2,236	138,645	2,347	143,420	2,320	155,069	2,496	145,045	2,320	140,423	2,232	142,028	2,235	151,264	2,358	157,480	2,420	169,215	2,565	184,976	2,767	191,240	2,833	2.40%
Malheur	17,098	1,233	23,583	1,565	28,550	1,798	30,155	1,901	31,197	1,973	29,445	1,859	26,044	1,642	27,002	1,723	25,485	1,621	27,390	1,745	27,742	1,765	26,822	1,705	27,660	1,757	30,177	1,904	30,053	1,887	31,352	1,964	29,507	1,842	-6.19%
Marion	213,943	1,768	304,913	2,293	356,130	2,489	509,383	3,324	499,004	3,210	456,613	2,902	419,207	2,637	412,321	2,612	430,916	2,711	420,655	2,627	426,111	2,641	443,413	2,721	460,780	2,796	480,258	2,878	511,827	3,020	527,525	3,068	509,868	2,934	-4.38%
Metro	1,460,380	2,341	1,849,716	2,719	2,178,198	3,001	2,694,802	3,435	2,710,982	3,403	2,457,886	3,045	2,194,860	2,690	2,139,757	2,602	2,100,311	2,535	2,168,939	2,593	2,242,027	2,648	2,204,665	2,567	2,423,800	2,777	2,376,376	2,671	2,397,904	2,647	2,482,465	2,700	2,459,375	2,647	-1.97%
Milton-Freew.	5,551	1,972	5,518	1,823	6,346	1,954	7,961	2,418	7,631	2,330	8,368	2,312	6,640	1,834	6,648	1,750	6,618	1,728	5,982	1,551	7,533	1,934	6,863	1,752	7,088	1,791	6,554	1,641	3,901	969	2,912	721	5,640	1,390	92.74%
Morrow	8,151	1,990	6,725	1,445	9,681	1,744	13,380	2,207	14,992	2,431	15,618	2,502	15,325	2,444	13,754	2,462	14,154	2,512	14,656	2,594	16,090	2,817	19,333	3,355	21,126	3,633	23,112	3,936	28,044	4,717	24,479	4,119	33,109	5,222	26.78%
Polk	23,909	916	35,442	1,237	55,322	1,785	79,527	2,412	72,967	2,185	74,168	2,197	70,186	2,062	72,686	1,947	72,256	1,924	69,068	1,823	68,726	1,803	75,095	1,953	77,848	2,003	86,059	2,183	97,049	2,422	86,760	2,137	98,798	2,408	12.72%
Sherman	1,146	1,181	1,252	1,304	1,248	1,280	1,254	1,344	1,458	1,572	1,734	1,882	1,425	1,558	1,344	1,523	1,397	1,583	1,454	1,647	1,271	1,429	1,379	1,545	1,582	1,767	1,378	1,535	1,364	1,515	1,426	1,598	1,358	1,535	-3.97%
Tillamook	14,458	1,300	20,458	1,709	23,981	1,974	37,542	2,941	37,387	2,893	38,040	2,920	31,870	2,439	32,532	2,576	30,967	2,452	32,162	2,542	30,410	2,397	30,669	2,407	32,554	2,534	35,735	2,757	37,829	2,890	39,091	2,962	39,630	2,991	0.98%
Umatilla	47,700	1,698	63,843	2,123	78,067	2,426	101,475	3,094	105,165	3,202	107,218	3,292	95,566	2,932	93,806	2,743	94,964	2,756	93,331	2,689	91,195	2,602	96,020	2,724	101,186	2,841	97,084	2,701	107,680	2,973	116,676	3,210	121,451	3,325	3.59%
Union	15,391	1,279	19,879	1,599	23,373	1,904	22,319	1,778	29,102	2,305	27,157	2,142	24,327	1,910	25,000	1,937	25,607	1,971	26,228	2,004	26,456	2,010	25,222	1,905	26,979	2,027	27,541	2,059	28,880	2,147	25,923	1,			

Table 8: Oregon Materials Recovered, 1992-2019

Material Type	1992 Tons	1996 Tons	2000 Tons	2006 Tons	2007 Tons	2008 Tons	2009 Tons	2010 Tons	2011 Tons	2012 Tons	2013 Tons	2014 Tons	2015 Tons	2016 Tons	2017 Tons	2018 Tons	2019 Tons
Container glass	69,284	77,231	87,889	95,946	96,926	100,496	108,084	107,830	114,982	107,042	106,840	106,853	110,101	107,100	119,562	117,572	109,488
Other glass	41	1,557	1,578	673	901	999	709	867	840	21	28	32	186	232	1	-	1,531
Total glass	69,325	78,788	89,467	96,619	97,827	101,496	108,793	108,697	115,822	107,062	106,868	106,885	110,287	107,333	119,562	117,572	111,019
Aluminum	18,245	17,815	18,209	21,521	26,932	32,888	30,673	38,495	19,985	23,733	23,176	21,318	19,310	21,566	25,499	30,583	33,861
Scrap metal	26,927	45,271	165,728	339,723	361,152	354,908	332,781	363,805	550,158	511,026	477,097	422,845	408,326	389,347	444,487	516,109	567,591
Tinned cans/aluminum			14,779	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tinned cans	7,400	8,635	-	8,399	10,174	9,177	9,003	8,890	9,298	8,398	8,944	8,747	8,327	8,363	9,611	8,844	10,450
Aerosol cans	0	0	-	1	1	1	1	0	1	0	1	2	1	1	1	1	1
Total metals	52,572	71,722	198,716	369,644	398,260	396,975	372,458	411,190	579,442	543,158	509,217	452,912	435,963	419,276	479,599	555,537	611,903
Cardboard/kraft paper	204,729	304,093	310,776	440,813	444,449	429,703	367,536	368,604	320,162	356,906	361,735	375,097	409,082	365,903	403,392	403,136	415,560
Paper Fiber ⁶	-	-	-	-	348,250	344,119	259,626	269,353	277,353	299,224	299,004	280,888	274,318	267,205	249,753	218,052	193,626
High-grade paper ⁶	67,077	49,298	54,358	47,324	-	-	-	-	-	-	-	-	-	-	-	-	-
Magazines	11,246	17,250	8,375	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Phone books ¹	-	3,103	2,881	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mixed waste paper ⁶	24,012	53,771	91,559	39,347	-	-	-	-	-	-	-	-	-	-	-	-	-
Newspaper ⁶	130,181	141,412	187,108	263,193	-	-	-	-	-	-	-	-	-	-	-	-	-
Fiber-based fuel		9,235	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total papers	437,245	578,161	655,057	790,677	792,699	773,822	627,162	637,957	597,515	656,130	660,739	655,985	683,400	633,109	653,145	621,189	609,186
#1 PET beverage	3,329	5,803	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#1 other	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2 milk jugs	1,940	3,049	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#2 other	1,841	1,331	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#3 PVC	25	144	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#4 LDPE	1,196	2,501	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#5	360	283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#6	471	430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Composite plastic	-	1,077	863	2,004	1,539	1,784	1,823	1,964	2,594	2,311	2,222	2,426	2,346	2,369	1,305	1,182	715
Mixed plastic	300	1,708	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other plastic (P7)	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plastic bottles ²			-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Plastic film			3,969	11,594	9,625	10,739	11,327	12,839	11,747	14,886	14,583	14,831	13,680	15,873	14,755	9,025	8,170
Plastic other			3,718	9,426	9,500	9,302	9,299	9,019	10,167	10,720	9,562	12,507	13,348	13,232	8,761	7,691	8,010
Rigid plastic containers			15,672	19,439	21,990	19,790	23,377	28,599	30,100	29,485	28,740	30,692	24,613	24,697	29,773	25,856	29,857
Total plastic	9,520	16,338	24,222	42,463	42,655	41,615	45,826	52,421	54,608	57,401	55,107	60,455	53,988	56,171	54,593	43,754	46,752
Antifreeze	5	52	424	3,085	2,683	2,720	2,515	6,762	3,060	2,598	2,680	2,719	2,916	2,472	2,545	2,676	2,366
C & D -- roofing ⁷			25,162	10,072	5,980	3,885	7,830	15,803	12,998	18,223	15,895	18,568	21,410	19,769	18,661	14,047	9,219
Carpeting -- used			919	-	645	300	515	1,641	1,807	1,837	1,409	1,355	654	0	-	-	-
Diesel				151	156	152	145	33	32	33	32	33	34	33	-	-	-
Electronics			617	6,345	9,813	10,513	15,174	17,587	19,586	25,957	21,929	22,344	20,696	18,349	15,513	13,881	11,752
Fluorescent lamps	-	7	21	453	514	451	400	620	673	662	600	422	172	364	343	374	311

Table 8: Oregon Materials Recovered, 1992-2019 (cont'd)

Material Type	1992 Tons	1996 Tons	2000 Tons	2006 Tons	2007 Tons	2008 Tons	2009 Tons	2010 Tons	2011 Tons	2012 Tons	2013 Tons	2014 Tons	2015 Tons	2016 Tons	2017 Tons	2018 Tons	2019 Tons
Gypsum wallboard	3,695	9,419	5,300	4,174	2,655	3,126	3,338	2,138	3,364	5,025	4,057	3,819	3,630	4,225	3,862	5,823	8,460
Household Haz Waste			14	143	157	305	436	452	295	338	323	246	276	326	273	264	276
Mixed batteries				120	204	188	218	247	336	436	375	301	259	333	172	265	360
Lead acid batteries ³	176	559	1,184	15,509	12,906	14,602	13,794	15,305	14,467	14,036	14,637	12,562	16,750	17,537	16,758	14,674	19,667
Paint ⁵	120	489	555	1,434	1,730	1,141	1,308	1,931	3,015	3,396	3,652	3,826	4,414	4,263	4,201	4,623	3,506
Porcelain	-	5	-	307	1,258	553	590	327	203	551	960	1,071	840	366	85	258	201
Rubber tire buffings ⁴	-	2,935	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Scrap film (X-ray)	42	68	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solvents ⁵	16	110	188	261	274	526	237	312	406	444	369	480	454	457	475	450	280
Textiles		508	4,033	1,819	1,519	1,244	958	216	232	872	948	1,157	1,186	1,054	681	816	317
Tires ⁵	34,392	24,360	16,420	21,931	20,045	25,091	23,264	20,834	23,361	23,470	30,326	21,711	27,793	31,175	30,504	23,471	29,820
Used Motor Oil ⁵	28,796	47,632	44,114	52,837	43,123	43,871	40,513	31,443	30,052	37,032	35,544	34,516	34,103	45,015	25,916	31,644	33,582
Total other	67,243	86,145	98,969	118,640	103,662	108,668	111,235	115,648	113,885	134,909	133,736	125,129	135,586	145,739	119,989	113,266	120,117
Animal waste/grease	-	22,957	25,670	15,928	13,783	14,512	12,853	11,942	7,680	7,148	7,621	10,491	13,009	15,002	10,923	15,541	13,862
Food waste	-	5,000	3,486	12,430	16,407	21,475	21,949	39,367	42,741	47,665	50,143	46,289	41,991	57,118	48,276	45,174	52,758
Wood waste ⁵	112,425	243,773	360,819	503,967	460,896	371,531	307,005	340,794	368,356	362,448	387,196	349,139	375,462	289,022	299,359	286,561	296,312
Yard debris ⁵	91,348	235,562	309,407	543,683	511,380	496,052	475,351	445,944	426,095	475,578	480,238	492,035	519,561	503,171	501,528	508,709	544,198
Total organics	203,773	507,292	699,382	1,076,008	1,002,466	903,570	817,157	838,047	844,872	892,839	925,198	897,954	950,024	864,312	860,086	855,985	907,131
Adj. rounding/unspecified		2	1														
OREGON TOTALS	839,678	1,338,446	1,765,814	2,494,050	2,437,569	2,326,146	2,082,631	2,163,959	2,306,144	2,391,499	2,390,865	2,299,320	2,369,248	2,225,940	2,286,974	2,307,302	2,406,107

¹Phone books included in mixed waste paper in 1992, 1993 and 2001 and subsequent years.

²About 900 tons of plastic bottles was included with mixed plastics in the 1995 survey.

³Includes only batteries collected at household hazardous waste collection events until 2001.

⁴From 1998 rubber tire buffings were included with tires.

⁵Includes Marion Co. materials in 2001 and subsequent years burned for energy.

⁶In 2007 and subsequent years, Mixed Waste Paper, Hi Grade & Newspaper was combined into Paper Fiber

⁷Asphalt Roofing was included as burned for energy only in years 2001-2006

Data from some years is not shown due to page formatting. Please contact DEQ directly for data from these years.

Table 9: Disposition of Recovered Materials, 2019

Wasteshed	Total Recovered	Recycled	% of Total	Energy Recovery	% of Total	Compost	% of Total	Stock
Baker	2,793	1,374	49%	89	3%	1,190	43%	140
Benton	36,276	21,429	59%	406	1%	14,441	40%	-
Clatsop	19,774	14,207	72%	4,400	22%	1,166	6%	-
Columbia	10,255	8,759	85%	55	1%	1,441	14%	-
Coos	16,170	15,907	98%	31	0%	232	1%	-
Crook	7,156	6,210	87%	422	6%	524	7%	-
Curry	6,070	5,841	96%	109	2%	119	2%	-
Deschutes	84,347	52,461	62%	226	0%	31,660	38%	-
Douglas	31,579	20,082	64%	8,779	28%	2,718	9%	-
Gilliam	282	282	100%	-	0%	-	0%	-
Grant	848	747	88%	39	5%	40	5%	23
Harney	858	766	89%	57	7%	-	0%	36
Hood River	7,690	5,714	74%	48	1%	1,929	25%	-
Jackson	121,982	72,479	59%	19,819	16%	29,684	24%	-
Jefferson	3,095	2,644	85%	286	9%	166	5%	-
Josephine	33,785	18,501	55%	4,676	14%	10,608	31%	-
Klamath	17,362	12,140	70%	3,436	20%	1,786	10%	-
Lake	363	359	99%	4	1%	-	0%	0
Lane	346,282	198,254	57%	56,207	16%	91,821	27%	-
Lincoln	19,813	13,657	69%	2,183	11%	3,973	20%	0
Linn	80,787	65,885	82%	981	1%	13,921	17%	-
Malheur	5,433	4,892	90%	24	0%	515	9%	2
Marion	243,658	139,482	57%	53,995	22%	50,181	21%	-
Metro	1,134,412	761,452	67%	127,771	11%	245,152	22%	37
Milton-Freewater	821	788	96%	9	1%	23	3%	-
Morrow	5,149	5,017	97%	132	3%	-	0%	-
Polk	46,696	19,871	43%	16,360	35%	10,465	22%	-
Sherman	89	84	94%	6	6%	-	0%	-
Tillamook	10,273	8,409	82%	508	5%	1,347	13%	9
Umatilla	43,962	42,169	96%	1,473	3%	316	1%	3
Union	7,348	4,712	64%	493	7%	2,135	29%	8
Wallowa	1,790	552	31%	12	1%	1,000	56%	226
Wasco	4,877	3,748	77%	167	3%	963	20%	-
Wheeler	69	69	99%	0	1%	-	0%	-
Yamhill	53,955	20,978	39%	311	1%	32,666	61%	-
Total	2,406,101	1,549,920	64%	303,513	13%	552,183	23%	484