# 2021 Oregon Material Recovery and Waste Generation Rates Report

By:

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## **Acknowledgments**

The Oregon Department of Environmental Quality's Materials Management Program conducted the 30<sup>th</sup> annual Oregon Material Recovery Survey for calendar year 2021. DEQ extends its appreciation to industry representatives, collection service providers, local governments, and landfill administrators and staff for providing recovery and disposal data for 2021 and working with DEQ staff to complete this report. The survey team also thanks DEQ personnel who contributed to the accuracy and integrity of the information contained in this report:

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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.

#### **Translation or other formats**

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# **Executive Summary**

The Oregon Department of Environmental Quality'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.

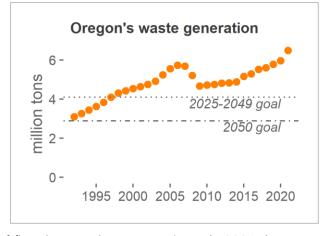
This report details how Oregon manages materials at the end of their useful lives, via disposal and recovery.

- Disposal refers to all materials placed in landfills and many materials burned in incinerators.
- *Recovery* refers to recycling, composting and some incineration with 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 2021 people in Oregon:

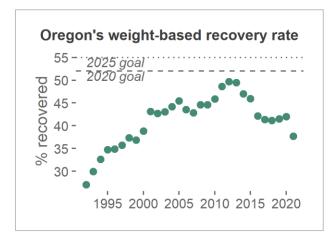
- Generated 6,494,204 tons of waste, up 9.4 percent from 2020;
- Disposed of 4,046,936 tons into landfills and incinerators, up 17.9 percent from 2020; and
- Recovered 2,447,267 tons of material, down 2.2 percent from 2020. The recovery rate is thus 37.7 percent of waste generated.

The largest factor reducing the recovery rate for Oregon was the large increase in disposal,



but much of that increase was due to disposal of fire-damaged structures in early 2021 due to an unprecedented wildfire season at the end of 2020. Although landfills do not report wildfire debris separate from other garbage, DEQ estimated wildfire debris by looking at the increase in disposal quarter by quarter in 2021 compared to the same quarters in 2020 prior to the fire. Based on that analysis, some 435,000 tons of excess disposal was due to fire debris in 2021. The total increase in disposal in 2021 was 614,085 tons, so fire debris accounted for close to 71 percent of the increase in overall disposal. Had that fire debris not been generated in 2021, the recovery rate would have been 40.4 percent in 2021, and the waste generation rate would have only gone up by two percent, not nine percent.

The total recovered tons decreased nearly 55,000 tons in 2021 when compared to 2020. Materials showing the biggest changes in recovery were scrap metal (-68,181 tons) and yard debris (-10,542 tons). Meanwhile, tires and cardboard recovery increased. Used motor oil recovery showed an increase of 6,000 tons when compared to 2020, and gypsum wallboard saw an increase of nearly 2,400 tons. Data reported by recycling collection service providers showed a small increase in the percentage of materials



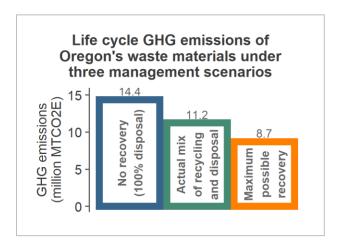
coming from residential sources relative to commercial sources. Such a difference was expected as commercial activities declined due to COVID-19 and many people moved to work at home instead of in an office. Given these changes, DEQ anticipated a larger shift from commercial to residential recycling. However, in 2021, the situation reversed, with the proportion of recycling from commercial sources increasing when compared to residential recycling.

#### **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 2021, material recovery reduced greenhouse gas emissions by 3.2 million metric tons of carbon dioxide equivalents, compared to a scenario where all waste was disposed. Another 2.5 million MTCO2E in reductions are possible if recovery rates could be raised in an optimal fashion for reducing greenhouse gas emissions.



Even with maximized recovery, the GHG

impacts of materials in the waste system would be considerable, around 8.7 million MTCO2E. For context, Oregon's total emissions from all sources exceeded 60 million MTCO2E in 2018.

Thus recovery presents 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, such as 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 the calendar year 2021. 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

Total Recovered

2,447,267 tons

= Recovery Rate

Total Generated

(Total Recovered + Total Disposed) 37.7%

6,494,204 tons

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.

DEQ uses this information to estimate energy savings and greenhouse gas reductions, two important environmental benefits from material recovery. Additionally, this information allows DEQ to calculate material recovery rates and waste generation values. 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 wastesheds<sup>1</sup>.

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

<sup>&</sup>lt;sup>1</sup> 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.

This is the 30<sup>th</sup> year that DEQ has used the survey to gather this data. The 1991 Oregon Legislature enacted requirements (see <u>Oregon Revised Statute 459A</u>) 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. 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 2021 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
- Container Glass
- Food Waste Residential and commercial food waste
- Other Including tires, used motor oil, antifreeze, batteries of all types, gypsum, asphalt roofing materials, textiles, paint, and animal waste and grease
- Plastic Rigid plastic containers, plastic film, other plastics and composite plastics (including carpet pad)
- 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 2021 can be associated with:

- 3.2 million metric tons CO<sub>2</sub> equivalents of reductions in greenhouse gas emissions; and
- 38 trillion British thermal units of savings in energy demand.

These savings in energy and greenhouse gas impacts are similar to the values reported for 2020 (40 trillion BTU and 3.3 MMTCO2E).

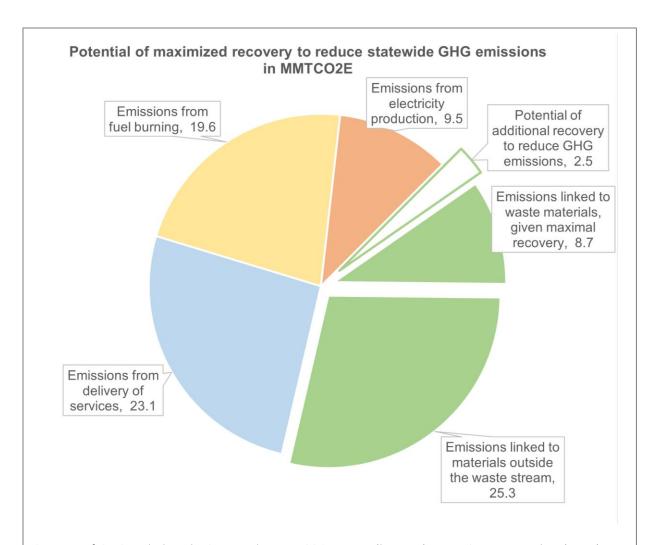
If recovery could be increased from its current rate (about 38 percent by weight) to rate corresponding with a maximum reduction in greenhouse gas emissions (about 64 percent by weight), it can be estimated that:

- GHG emissions would decline an additional 2.5 MMTCO2E; and
- Energy expenditures would decline an additional 52 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 <u>DEQ report</u> gives recent yearly totals as 66.2 MMTCO2E, from a sector-based method, and 88.7 MMTCO2E, from a consumption-based method.
- Oregon's overall direct energy expenditures are around 1,015 trillion BTU per year, in a recent <u>Oregon Department of Energy report</u>.

The pie chart below combines results from the consumption-based emissions inventory with estimates of the impacts of waste. It shows that 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. Achieving greater reductions in environmental impacts of materials will require other materials management strategies, such as the redesign of products and reduced material use.



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 grey-green) already includes the current benefits of recovery. Additional recovery (above current levels) offers 2.5 MMTCO2E in possible further impact reductions. The remaining GHG impacts of materials are either not preventable by recovery (8.7 MMTCO2E), or not represented by the solid waste stream at all (25.3 MMTCO2E).

### **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 material extraction and processing manufacturing international transportation domestic transportation end of life management home and business distribution

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 sources may save about 300 kg of GHG emissions, compared to the emissions of production from newly extracted material.<sup>2</sup> Similarly, while aerobic composting does lead to CO<sub>2</sub> emissions, composting may still represent a savings compared to the methane emissions that could result from disposal in a landfill.<sup>3</sup>

<sup>&</sup>lt;sup>2</sup> 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.

<sup>&</sup>lt;sup>3</sup> 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.

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.<sup>4</sup>

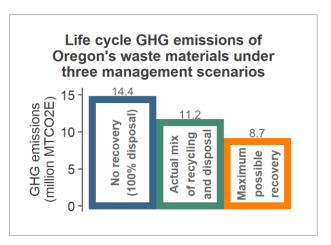
It is important to note that these impacts may occur over multiple years and may occur in areas outside of Oregon. Though we associate the materials in the waste stream with a particular place (Oregon) and time (for example, 2021), the life cycle impacts of those materials are not always so localized. An item recycled in 2021 in Oregon may have been created in another state or country in a different year. An item disposed in 2021 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 materials were recovered in the fashion that reduced total life cycle GHG emissions the most.

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 recovery has been maximized in the way that produces the lowest total life cycle greenhouse gas impacts, which corresponds to a recovery rate of about 64 percent by weight. (The figure is less than 100 percent because some materials have no realistic recycling path, and for others



<sup>&</sup>lt;sup>4</sup> 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 and doi://10.1111/jiec.12355.

recycling does not reduce greenhouse gas emissions.)

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 3.2 MMTCO2E, and the additional potential savings of 2.5 MMTCO2E, were calculated by comparing life cycle emissions for the three scenarios, totaling 14.4, 11.2, and 8.7 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 2021.
- Quantities of disposed materials are derived by combining the total amount of material disposed in Oregon in 2021, from DEQ's disposal records, and the <u>Waste Composition Study</u> for 2016/17, which lists proportions of disposed waste in various material categories.

Impact factors come from Oregon DEQ's new Waste Impact Calculator model. This is a change from reports representing years up to and including 2019, which drew impact factors from EPA's WARM model. The Waste Impact Calculator was created by Oregon DEQ specifically to match assumptions appropriate to Oregon and was independently reviewed by Dr. Christoph Koffler of the life cycle consulting firm Sphera. The WIC model, its documentation, and Koffler's review are available on <a href="mailto:github">github</a>.

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

# **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.

# 2021 statewide recovery rate

In 2021, the state recovered 2,447,267 tons of material. This represented 37.7 percent of the municipal post-consumer waste stream, well below the statewide goal of 52 percent recovery by the year 2020, and the lowest statewide recovery rate since the year 1999. Recovered tons decreased by 2.2 percent from the previous year surveyed, 2020.

From 1992 through 2005, tons of material recovered increased regularly each year. From 2006 through 2009, recovered tons declined even though recovery rates were steady, 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. Recovery rates peaked in 2012 at close to 50 percent, but then fell, leveling off at about 42 percent in 2016 and remaining at that level through 2020 before dropping again in 2021.

# Oregon State Recovered Tons and Recovery Rates

|      | 11000                  | ery nates              |                   |
|------|------------------------|------------------------|-------------------|
| Year | Tons                   | Tons                   | Calculated        |
| Teal | Recovered              | Disposed               | Rate <sup>5</sup> |
| 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              | 2,550,509              | 45.9              |
| 2011 | 2,306,124              | 2,437,767              | 48.6              |
| 2012 | 2,391,490              | 2,424,833              | 49.7              |
| 2013 | 2,390,859              | 2,442,827              | 49.5              |
| 2014 | 2,307,269              | 2,580,933              | 47.2              |
| 2015 | 2,369,080              | 2,784,467              | 46.0              |
| 2016 | 2,225,950              | 3,059,745              | 42.1              |
| 2017 | 2,286,969              | 3,237,214              | 41.4              |
| 2018 | 2,307,545              | 3,295,468              | 41.2              |
| 2019 | 2,402,756 <sup>1</sup> | 3,322,349 <sup>1</sup> | 42.0 <sup>1</sup> |
| 2020 | 2,501,960 <sup>1</sup> | 3,455,294 <sup>1</sup> | 42.0 <sup>1</sup> |
| 2021 | 2,447,267              | 4,046,936              | 37.7              |
|      |                        |                        |                   |

<sup>&</sup>lt;sup>1</sup> These tonnage figures are corrected from earlier published values.

<sup>&</sup>lt;sup>5</sup> 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.

# Changes in disposal 2020-2021 – cleanup of fire debris

A total of 4,046,936 tons of municipal post-consumer waste from Oregon were disposed in 2021. This increase of over 17 percent from 2020 is a record high since the material recovery survey began in 1992. However, much of the increase in disposal came from the cleanup of fire debris from multiple fires that destroyed more than 6,000 buildings in five counties in late 2020. DEQ estimated that about 435,000 of extra solid waste was generated and disposed in 2021 from cleaning up after the fires.

Landfills did not report fire cleanup debris separate from other solid waste, but DEQ estimated the amounts by comparing the tonnages disposed for that county in each quarter in 2021 that was after the fire but that showed a very large increase in disposal when compared to the same quarter in 2020. The table below shows the excess tons disposed in 2021 when compared to equivalent quarters before the fire in 2020, and shows the fires involved and the structures destroyed by each of the fires.

#### **Estimated Tons of Fire Cleanup and Disposal**

| County           | Tons increased | Percent increase | Fire damage   |
|------------------|----------------|------------------|---|
| Jackson (Q1, Q2) | 222,245        | 220.5%           | Almeda Drive and South Oberchain Fires, more than 3,000 structures destroyed            |
| Klamath (Q3, Q4) | 18,461         | 54.3%            | Bootleg Fire in 2021 - put out by August 14, 408 structures and 342 vehicles destroyed. |
| Lane (Q1, Q2)    | 53,289         | 41.2%            | Holiday Farm Fire, 768 structures destroyed   |
| Lincoln (Q1, Q2) | 11,985         | 44.9%            | Echo Mountain Complex fire, 293 structures destroyed                                    |
| Marion (Q1-4)    | 129,592        | 44.9%            | Lionshead and Beachie Creek Fires, 1,603 structures destroyed in multiple counties      |
| Total            | 435,571        |                  |   |

There was a very strong correlation between the number of structures reported destroyed by fires in each county and the excess disposal reported by those counties in the quarters following the fire, with a correlation coefficient of greater than 99 percent.

With the fire cleanup debris still included, per-capita disposal was 1,897 pounds for the year, a 25.3 percent increase above the 1992 figure of 1,513 pounds; surpassing the 2007 per capita disposal peak of 1,734 pounds per year. Subtracting the fire cleanup debris, per-capita disposal was 1,693 pounds per person per year, still under the peak year of 2007.

Total tons disposed added to total tons recovered equaled an all-time high of 6,494,204 tons of total waste generated in 2021 (see Waste Generation on page 25). Total generation increased nine percent, with per-capita generation increasing nine percent from 2020 levels. If the fire debris was not included, the generation estimate would have been 6,058,632 tons – still a record high, but only 2.1 percent higher than the 2020 generation rate.

### 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 2021, two materials that could be counted toward the recovery rate when burned for energy were wood waste and yard debris. In 2021, 13,847 tons of these materials burned for energy in the county's incinerator were counted as

recovered instead of disposed. Marion County also recovered 5,941 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, seven wastesheds are already at or above their goal for 2025.

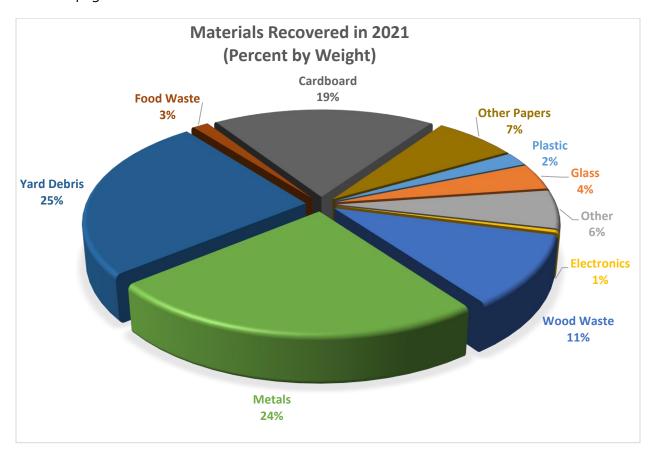
The Survey Report Tables listed on page 31 of this report show 2021 recovery rates for each wasteshed (Table 1), tons of materials recovered in 2021 by wasteshed (Table 2), and tons of solid waste disposed by wasteshed in 2021 (Table 3).

For a historical look at recovery, disposal, and generation data in Oregon, see Survey Report Tables 4, 5, 6 and 7, which provide the most recent and updated 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 2021 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-two percent of the material recovered was recycled, 27 percent was composted, and 11 percent was burned for energy.

The chart below shows major categories of materials recovered in 2021 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 2021

The COVID-19 pandemic continued to have an impact on the generation and recovery of materials in 2021. Data reported by recycling collection service providers showed a small increase in the percentage of materials coming from residential sources relative to commercial sources. Such a difference was expected as commercial activities declined due to the COVID-19 pandemic and many people moved to work at home instead of in an office. Given these changes, DEQ anticipated a larger shift from commercial to residential recycling. However, in

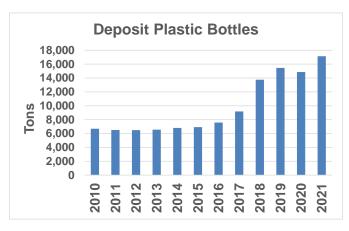
2021, the situation reversed, with the proportion of recycling from commercial sources increasing when compared to residential recycling. Other factors also played a role. Yard debris recovery was up 75,066 tons in 2020 from the previous high in 2019, and only declined 10,541 tons from that high in 2021. This may have resulted from people spending more time at home, and thus having more time for gardening and yard maintenance.

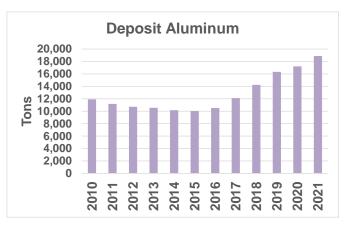
Trends for paper recovery continue the recent patterns. Cardboard recycling increased by 17,047 tons over 2020 reaching an all-time high in terms of absolute tons, but not per-capita tons, despite a likely reduction in commercial activity due to the COVID-19 pandemic and associated quarantine periods. Increase in e-commerce has led to an increase in cardboard generation in residential settings. On the other hand, the recycling of other paper has continued its long, slow decline since its peak in 2007, as newspaper and magazine sales continue to fall as people switch more to electronic media for communication. Recycling of paper other than cardboard was down 6,431 tons (3.6 percent) compared to 2020, and down 81,000 tons (31.9 percent) compared to the average for the previous 10 years.

The COVID-19 pandemic impacted the recovery of beverage containers under the Oregon Bottle Bill. Through much of 2020, most stores discontinued the redemption of beverage containers, as allowed by the Oregon Liquor and Cannabis Commission due to concerns over COVID-19 transmission. Redemption centers remained open, but large parts of the state are not served by redemption centers. At the same time though, the consumption of beverages at home increased

greatly in 2020. So, even though the redemption rate of beverage containers fell from 85.8 percent in 2019 to 77.2 percent in 2020, the absolute number of containers redeemed only fell by one percent. According to data compiled by the Oregon Liquor and Cannabis Commission, redemption rates rebounded in 2021 back to 80.6 percent, and that absolute number of containers redeemed reached an all-time record of over two billion.

Over this period, there was also a continued shift in beer sales from glass bottles to aluminum cans, increasing the tons of aluminum recycled while decreasing the glass. Plastic bottles sales and returns also had a large increase from 2020 to 2021. The three bar charts to the right show the tons of aluminum, glass and plastic beverage containers recycled under the Bottle Bill since 2010.





The large increase in beverage container redemption starting in 2017 and 2018 resulted from the doubling of the refund value to 10 cents in April 2017 and the addition of juices, teas, and many other beverages to the Bottle Bill in 2018. Increases in recycling tonnage 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 and 2019 Oregon Material Recovery and Waste Generation Rate reports, 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 be very low through the late fall of 2020, although the prices of many recyclables skyrocketed in 2021.

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 in 2018. Most programs that dropped material in 2018 continued to not collect those materials in 2021, 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 despite the market disruption and continue to collect the same materials that they have collected for more than a decade.

Plastics recycling tonnage, particularly film plastic, dropped sharply in 2018 due to the market crisis for recycled plastic. Film plastic tonnage increased slightly in 2020 and 2021 but is still 34 percent lower than the record film plastic recycling tonnage in 2016. Rigid plastic recycled tons have increased back to 2014 levels, but only because the increase in tonnage collected under the Bottle Bill replace the tons of plastic tubs and pails lost when many recycling programs dropped tubs and pails from their collection list.

#### Year to year changes in material collected

**Electronics.** Electronics recovery saw an increase of nearly eight percent in 2021 compared to 2020.

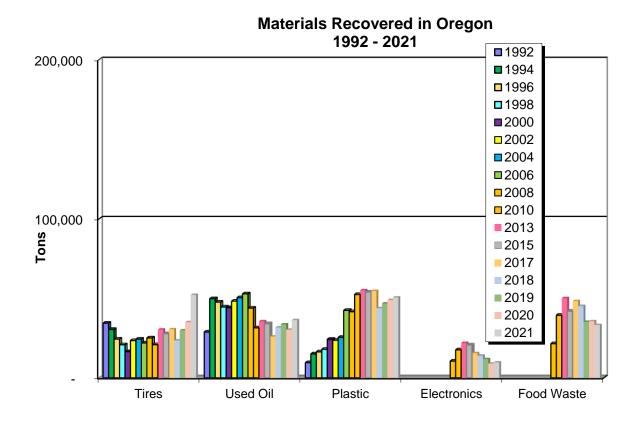
**Paper (including cardboard).** Although there was an overall increase in recovery for paper fibers by nearly two percent in 2021; printing, writing and other papers continued their decline by nearly four percent, a decrease of 6,431 tons from 2020. Cardboard recovery increased by 17,047 tons, nearly four percent up from 2020. It's possible the cardboard increase is still connected to the pandemic and continued increases in the use of mail-order for shopping.

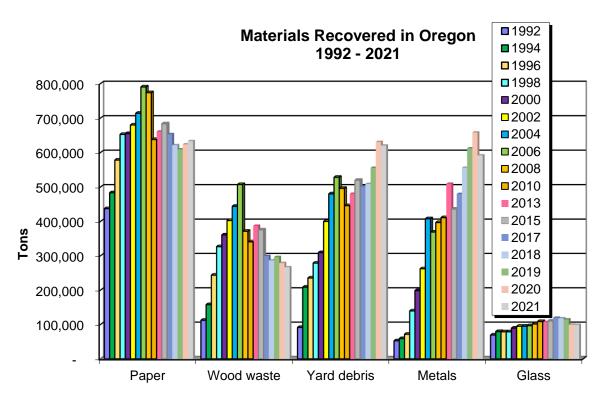
**Plastics.** A total of 31,531 tons of rigid plastic containers were collected for recycling in 2021, compared to 31,165 tons in 2020. Plastic Film increased by 706 tons, from 9,736 tons in 2020 to 10,442 tons in 2021.

**Metals.** The total amount of metals decreased by 10 percent in 2021 compared to 2020. Scrap metal saw a decrease of 11 percent, but it was still the third-highest tonnage of scrap metal recycled since reporting began in 1992. It is odd that scrap metal tonnage peaked in 2020, as prices for scrap metal were much lower in 2020 than they were in 2021 or the few years before 2020. Tinned cans continued to decrease by 980 tons in 2021 from 6,963 tons in 2020, while aluminum saw a nearly eight percent increase to 36,412 tons in 2021.

**Organics.** The total recovery of organics (which includes animal waste/grease, wood waste, yard debris, and food waste) decreased nearly three percent in 2021. There was a decrease of 10,542 tons of yard debris compared to 2020; and a notable decrease in animal waste/grease recovered by nearly 13 percent from 2020.

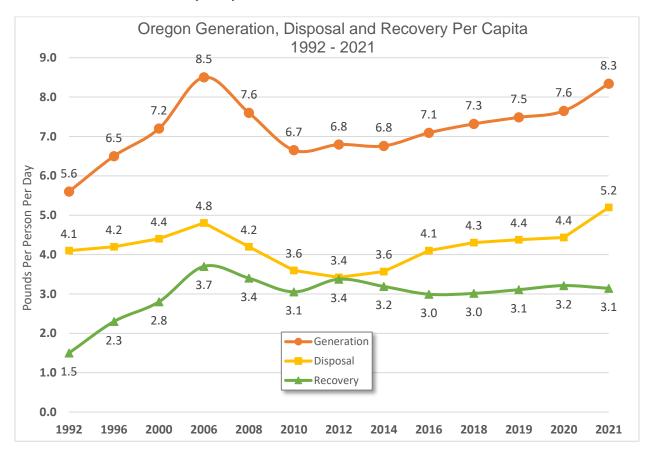
The following charts compare the materials recovered over the past three decades.





# **Waste generation**

Changes in the total amount of municipal solid waste generated (materials recovered plus waste disposed) in Oregon over time tell 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 2021 Oregon generated 6,494,204 tons of municipal solid waste, an increase of nine percent over 2020. This equates to per-capita generation of 3,044 pounds per person (8.3 pounds per day), a nine percent increase from 2,792 pounds per person (7.6 pounds per day) in 2020. Total waste generation in 2021 reached a new high (764,325 tons over) from its peak in 2006. This is an increase of over 13 percent in total waste generation between 2006 and 2020, or nearly two percent increase in the per-capita amount. As discussed above though, a substantial portion of the increase in waste generation was due to the cleanup in 2021 of more than 6,000 structures destroyed by wildfires in late 2020 in five counties.



Note: Some years within the chart above have been hidden for readability.

The following table shows the disposition of the municipal solid waste generated in Oregon in 2021. See Table 9 for individual wasteshed dispositions.

| Disposition of Waste Ge | nerated in Oregon in 2021 |
|-------------------------|---------------------------|
| Disposition             | Percent by weight         |
| Disposed*               | 62.3                      |
| Recycled                | 23.4                      |
| Composted               | 10.1                      |
| Recovered for Energy*   | 4.1                       |

<sup>\*</sup>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 18). Other wastes burned at the facility are counted here as disposed.

# **Discussion**

In 2015, Oregon adopted new statutory goals of 52 percent recovery by 2020 and 55 percent by 2025. Oregon did not meet the 2020 goal, as its 2020 recovery rate was 42 percent, and its 2021 rate 37.7 percent.

Several historical factors contributed to lower-than-anticipated recovery.

- In 2015, DEQ 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.
- Similarly, DEQ 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, restricted the importation of these materials and has banned the importation of unsorted paper and all unprocessed post-consumer plastics in 2018.

Such disruptions motivated a new law, the *Plastics Pollution and Recycling Modernization Act*, which took effect Jan. 1, 2022, and will significantly affect recycling operations starting July 2025. The law has numerous aims and expands the concept of successful recycling beyond the weight-based generation and recovery rates described in this report. The law's goals include making recycling easier for the public to use, expanding access to recycling services, upgrading recycling facilities, and reducing social and environmental harms. In 2025 and beyond, this report may look substantially different.

# 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 2021 report:

- A correction to food waste and yard debris tons recovered in the Metro Wasteshed in 2020 was made due to a formula calculation error.
- A correction to recovered tonnage of some materials reported by a recycler was made to the 2020 survey period, due to some double counts discovered.
- A correction to animal waste/grease tons reported in 2020 and 2019 was made due to a conversion rate error used by the recycler.
- A correction was made to a landfill for allocated tire disposal in 2020.

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

- A correction to food waste reported in 2019 as recovered was revised to "reuse," removing those tons from the total recovered for 2019.
- A correction to disposal tonnage, the non-reporting of some disposal tons going out-of-state and the misreporting of counting solid waste tons was made to the 2019 survey period.
- A correction to disposal tonnage, the non-reporting of some disposal tons going out-of-state was made to the 2018 survey period.
- 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.

# 2021 survey report tables

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

- Table 1: Wasteshed Recovery Rates, 2021
- Table 2: Amount Recovered in 2021 by Wasteshed
- Table 3: Solid Waste Disposed in 2021 by Wasteshed
- Table 4: Oregon Calculated Recovery Rates by Wasteshed, 1992-2021
- Table 5: Oregon Amount Recovered by Wasteshed, 1992-2021
- Table 6: Oregon Solid Waste Disposed by Wasteshed, 1992-2021
- Table 7: Oregon Solid Waste Generated by Wasteshed, 1992-2021
- Table 8: Oregon Materials Recovered, 1992-2021
- Table 9: Disposition of Recovered Materials, 2021

**Table 1: Wasteshed Recovery Rates, 2021** 

| Wasteshed           | Tons<br>Disposed | Tons<br>Recovered | Tons<br>Generated | Calculated<br>Recovery Rate <sup>1</sup> | SB 263<br>Goal <sup>3</sup><br>2025 |
|---------------------|------------------|-------------------|-------------------|--|-------------------------------------|
| Baker               | 14,129           | 3,313             | 17,442            | 19.0%                                    | 25%                                 |
| Benton              | 67,055           | 35,129            | 102,184           | 34.4%                                    | 44%                                 |
| Clatsop             | 42,832           | 19,381            | 62,213            | 31.2%                                    | 53%                                 |
| Columbia            | 35,779           | 11,438            | 47,217            | 24.2%                                    | 45%                                 |
| Coos                | 58,344           | 15,498            | 73,842            | 21.0%                                    | 30%                                 |
| Crook               | 26,257           | 7,360             | 33,617            | 21.9%                                    | 20%                                 |
| Curry               | 22,134           | 5,625             | 27,759            | 20.3%                                    | 30%                                 |
| Deschutes           | 220,125          | 89,304            | 309,429           | 28.9%                                    | 45%                                 |
| Douglas             | 91,146           | 35,055            | 126,200           | 27.8%                                    | 34%                                 |
| Gilliam             | 2,451            | 373               | 2,823             | 13.2%                                    | 25%                                 |
| Grant               | 4,552            | 951               | 5,503             | 17.3%                                    | 25%                                 |
| Harney              | 5,230            | 1,232             | 6,462             | 19.1%                                    | 25%                                 |
| Hood River          | 25,000           | 7,644             | 32,644            | 23.4%                                    | 35%                                 |
| Jackson             | 437,251          | 103,948           | 541,199           | 19.2%                                    | 25%                                 |
| Jefferson           | 18,916           | 4,698             | 23,615            | 19.9%                                    | 32%                                 |
| Josephine           | 94,497           | 43,599            | 138,096           | 31.6%                                    | 20%                                 |
| Klamath             | 88,223           | 21,195            | 109,418           | 19.4%                                    | 20%                                 |
| Lake                | 5,770            | 558               | 6,328             | 8.8%                                     | 15%                                 |
| Lane                | 341,663          | 337,169           | 678,832           | 49.7%                                    | 63%                                 |
| Lincoln             | 64,134           | 24,868            | 89,002            | 27.9%                                    | 37%                                 |
| Linn                | 111,890          | 74,686            | 186,576           | 40.0%                                    | 45%                                 |
| Malheur             | 25,096           | 6,639             | 31,735            | 20.9%                                    | 25%                                 |
| Marion <sup>2</sup> | 425,320          | 289,995           | 715,315           | 40.5%                                    | 64%                                 |
| Metro               | 1,433,959        | 1,137,532         | 2,571,491         | 44.2%                                    | 64%                                 |
| Milton-Freewater    | 5,297            | 2,255             | 7,552             | 29.9%                                    | 25%                                 |
| Morrow              | 28,848           | 5,570             | 34,418            | 16.2%                                    | 20%                                 |
| Polk                | 55,921           | 36,270            | 92,191            | 39.3%                                    | 48%                                 |
| Sherman             | 1,228            | 445               | 1,673             | 26.6%                                    | 20%                                 |
| Tillamook           | 32,416           | 15,836            | 48,251            | 32.8%                                    | 37%                                 |
| Umatilla            | 91,730           | 41,766            | 133,496           | 31.3%                                    | 20%                                 |
| Union               | 20,083           | 6,966             | 27,049            | 25.8%                                    | 25%                                 |
| Wallowa             | 5,340            | 2,114             | 7,454             | 28.4%                                    | 25%                                 |
| Wasco               | 22,128           | 6,097             | 28,225            | 21.6%                                    | 35%                                 |
| Wheeler             | 440              | 73                | 513               | 14.1%                                    | 20%                                 |
| Yamhill             | 121,752          | 52,685            | 174,437           | 30.2%                                    | 45%                                 |
| OR Totals           | 4,046,936        | 2,447,267         | 6,494,204         | 37.7%                                    |                                     |

<sup>&</sup>lt;sup>1</sup> The recovery rate is calculated using the following formula:

<sup>1)</sup> Tons Disposed + Tons Recovered = Total Tons Generated

<sup>2)</sup> Tons Recovered / Total Generated = Calculated Recovery Rate

<sup>&</sup>lt;sup>2</sup> The Marion County disposal and recovery rates reflect 22,443 tons of recyclable materials burned for energy in 2020 (per ORS 459A.010(3)(f)(B)).

<sup>&</sup>lt;sup>3</sup> ORS 459A.010(6).

**Table 2: Amount Recovered in 2021 by Wasteshed** 

| Wasteshed        | 2021 Tons<br>Recovered | 2021 Pounds<br>Per Capita | 2021 Wasteshed<br>Population |
|------------------|------------------------|---------------------------|------------------------------|
| Baker            | 3,313                  | 393                       | 16,860                       |
| Benton           | 35,129                 | 830                       | 84,654                       |
| Clatsop          | 19,381                 | 936                       | 41,428                       |
| Columbia         | 11,438                 | 432                       | 53,014                       |
| Coos             | 15,498                 | 476                       | 65,154                       |
| Crook            | 7,360                  | 578                       | 25,482                       |
| Curry            | 5,625                  | 475                       | 23,662                       |
| Deschutes        | 89,304                 | 878                       | 203,390                      |
| Douglas          | 35,055                 | 628                       | 111,694                      |
| Gilliam          | 373                    | 365                       | 2,039                        |
| Grant            | 951                    | 263                       | 7,226                        |
| Harney           | 1,232                  | 327                       | 7,537                        |
| Hood River       | 7,644                  | 640                       | 23,888                       |
| Jackson          | 103,948                | 929                       | 223,827                      |
| Jefferson        | 4,698                  | 378                       | 24,889                       |
| Josephine        | 43,599                 | 983                       | 88,728                       |
| Klamath          | 21,195                 | 607                       | 69,822                       |
| Lake             | 558                    | 136                       | 8,177                        |
| Lane             | 337,169                | 1,762                     | 382,647                      |
| Lincoln          | 24,868                 | 977                       | 50,903                       |
| Linn             | 74,686                 | 1,067                     | 140,011                      |
| Malheur          | 6,639                  | 415                       | 31,995                       |
| Marion*          | 289,995                | 1,672                     | 346,933                      |
| Metro            | 1,137,532              | 1,229                     | 1,851,024                    |
| Milton-Freewater | 2,255                  | 560                       | 8,052                        |
| Morrow           | 5,570                  | 882                       | 12,635                       |
| Polk             | 36,270                 | 824                       | 87,992                       |
| Sherman          | 445                    | 467                       | 1,908                        |
| Tillamook        | 15,836                 | 1,146                     | 27,628                       |
| Umatilla         | 41,766                 | 1,153                     | 72,471                       |
| Union            | 6,966                  | 530                       | 26,295                       |
| Wallowa          | 2,114                  | 569                       | 7,433                        |
| Wasco            | 6,097                  | 459                       | 26,581                       |
| Wheeler          | 73                     | 100                       | 1,456                        |
| Yamhill          | 52,685                 | 965                       | 109,185                      |
| OREGON TOTALS    | 2,447,267              | 1,147                     | 4,266,620                    |

Source for population data is the Center for Population Research and Census, Portland State University, published April 2020. 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).

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

Table 3: Solid Waste Disposed in 2021 by Wasteshed

| Wasteshed        | 2021 Tons<br>Disposed | 2021 Pounds<br>Per Capita | 2021 Wasteshed<br>Population |
|------------------|-----------------------|---------------------------|------------------------------|
| Baker            | 14,129                | 1,676                     | 16,860                       |
| Benton           | 67,055                | 1,584                     | 84,654                       |
| Clatsop          | 42,832                | 2,068                     | 41,428                       |
| Columbia         | 35,779                | 1,350                     | 53,014                       |
| Coos             | 58,344                | 1,791                     | 65,154                       |
| Crook            | 26,257                | 2,061                     | 25,482                       |
| Curry            | 22,134                | 1,871                     | 23,662                       |
| Deschutes        | 220,125               | 2,165                     | 203,390                      |
| Douglas          | 91,146                | 1,632                     | 111,694                      |
| Gilliam          | 2,451                 | 2,404                     | 2,039                        |
| Grant            | 4,552                 | 1,260                     | 7,226                        |
| Harney           | 5,230                 | 1,388                     | 7,537                        |
| Hood River       | 25,000                | 2,093                     | 23,888                       |
| Jackson          | 437,251               | 3,907                     | 223,827                      |
| Jefferson        | 18,916                | 1,520                     | 24,889                       |
| Josephine        | 94,497                | 2,130                     | 88,728                       |
| Klamath          | 88,223                | 2,527                     | 69,822                       |
| Lake             | 5,770                 | 1,411                     | 8,177                        |
| Lane             | 341,663               | 1,786                     | 382,647                      |
| Lincoln          | 64,134                | 2,520                     | 50,903                       |
| Linn             | 111,890               | 1,598                     | 140,011                      |
| Malheur          | 25,096                | 1,569                     | 31,995                       |
| Marion*          | 425,320               | 2,452                     | 346,933                      |
| Metro            | 1,433,959             | 1,549                     | 1,851,024                    |
| Milton-Freewater | 5,297                 | 1,316                     | 8,052                        |
| Morrow           | 28,848                | 4,566                     | 12,635                       |
| Polk             | 55,921                | 1,271                     | 87,992                       |
| Sherman          | 1,228                 | 1,287                     | 1,908                        |
| Tillamook        | 32,416                | 2,347                     | 27,628                       |
| Umatilla         | 91,730                | 2,532                     | 72,471                       |
| Union            | 20,083                | 1,528                     | 26,295                       |
| Wallowa          | 5,340                 | 1,437                     | 7,433                        |
| Wasco            | 22,128                | 1,665                     | 26,581                       |
| Wheeler          | 440                   | 605                       | 1,456                        |
| Yamhill          | 121,752               | 2,230                     | 109,185                      |
| OREGON TOTALS    | 4,046,936             | 1,897                     | 4,266,620                    |

Source for population data is the Center for Population Research and Census, Portland State University, published April 2020. 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).

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

Table 4: Oregon Calculated Recovery Rates by Wasteshed, 1992-2021

|                  | 1992  | 1996  | 2000  | 2006    | 2007    | 2008    | 2009    | 2010    | 2011    | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    | 2021    |
|------------------|-------|-------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                  |       |       | Calc. | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   | Calc.   |
| Wasteshed        | Rate  | Rate  | Rate* | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | Rate*   | 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%   | 16.2%   | 19.5%   | 19.0%   |
| Benton           | 27%   | 37%   | 35%   | 36.2%   | 38.9%   | 41.1%   | 37.9%   | 38.4%   | 38.3%   | 41.4%   | 41.5%   | 37.3%   | 35.3%   | 35.5%   | 34.0%   | 35.1%   | 35.5%   | 39.3%   | 34.4%   |
| 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%   | 41.5%   | 35.9%   | 36.8%   | 31.2%   |
| 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%   | 23.8%   | 24.4%   | 25.3%   | 24.4%   | 24.2%   |
| 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%   | 23.2%   | 21.1%   | 21.0%   |
| Crook            | 16%   | 23%   | 27%   | 25.6%   | 25.1%   | 33.2%   | 31.6%   | 33.6%   | 31.5%   | 34.6%   | 30.5%   | 26.1%   | 20.9%   | 20.6%   | 23.1%   | 19.7%   | 22.1%   | 22.2%   | 21.9%   |
| Curry            | 21%   | 35%   | 41%   | 18.1%   | 23.7%   | 21.0%   | 19.8%   | 20.4%   | 27.2%   | 25.3%   | 22.8%   | 26.6%   | 24.1%   | 26.6%   | 21.4%   | 24.2%   | 22.9%   | 24.3%   | 20.3%   |
| Deschutes        | 15%   | 23%   | 31%   | 27.0%   | 29.8%   | 31.1%   | 39.1%   | 35.1%   | 39.3%   | 38.8%   | 38.2%   | 35.8%   | 36.6%   | 33.0%   | 31.7%   | 31.6%   | 31.5%   | 33.2%   | 28.9%   |
| 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%   | 25.8%   | 30.7%   | 27.8%   |
| 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%   | 13.7%   | 13.2%   |
| 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%   | 17.4%   | 17.3%   |
| 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%   | 18.3%   | 19.1%   |
| 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%   | 24.4%   | 24.6%   | 23.4%   |
| 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%   | 34.2%   | 19.2%   |
| 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%   | 17.1%   | 19.8%   | 19.9%   |
| 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%   | 28.7%   | 34.8%   | 31.6%   |
| Klamath          | 13%   | 15%   | 18%   | 33.6%   | 34.8%   | 45.4%   | 32.9%   | 29.2%   | 28.1%   | 33.1%   | 29.9%   | 30.9%   | 22.3%   | 25.6%   | 23.4%   | 20.5%   | 20.6%   | 21.9%   | 19.4%   |
| 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%   | 6.4%    | 6.7%    | 8.8%    |
| 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%   | 53.9%   | 49.7%   |
| 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%   | 24.1%   | 27.2%   | 25.2%   | 27.9%   |
| Linn             | 15%   | 32%   | 29%   | 40.5%   | 37.4%   | 41.3%   | 40.5%   | 43.8%   | 49.2%   | 45.0%   | 44.0%   | 42.4%   | 39.3%   | 38.0%   | 36.9%   | 40.1%   | 42.2%   | 46.1%   | 40.0%   |
| 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%   | 16.5%   | 18.5%   | 16.9%   | 20.9%   |
| 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% | **48.3% | **49.7% | **47.7% | **48.4% | **40.5% |
| Metro            | 35%   | 41%   | 45%   | 49.6%   | 48.9%   | 50.2%   | 50.4%   | 51.9%   | 53.3%   | 56.3%   | 57.0%   | 53.6%   | 53.0%   | 46.9%   | 46.1%   | 45.4%   | 46.1%   | 46.5%   | 44.2%   |
| 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%   | 28.8%   | 35.2%   | 17.6%   | 14.4%   | 23.4%   | 29.9%   |
| 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%   | 13.7%   | 16.2%   |
| 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%   | 46.4%   | 39.3%   |
| Sherman          | 24%   | 21%   | 17%   | 18.5%   | 16.4%   | 14.8%   | 14.3%   | 11.5%   | 13.9%   | 21.9%   | 14.2%   | 15.9%   | 15.9%   | 11.8%   | 11.1%   | 13.5%   | 6.6%    | 10.2%   | 26.6%   |
| 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%   | 25.7%   | 30.1%   | 32.8%   |
| 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%   | 29.7%   | 36.2%   | 28.3%   | 31.3%   |
| 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%   | 22.0%   | 26.9%   | 27.2%   | 26.9%   | 25.8%   |
| 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%   | 21.4%   | 21.8%   | 17.5%   | 28.4%   |
| Wasco            | 25%   | 30%   | 34%   | 18.8%   | 23.0%   | 23.4%   | 32.7%   | 28.0%   | 31.3%   | 27.8%   | 32.0%   | 28.0%   | 28.1%   | 26.6%   | 19.6%   | 19.2%   | 16.6%   | 14.8%   | 21.6%   |
| 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%   | 26.0%   | 15.3%   | 16.5%   | 14.1%   |
| Yamhill          | 19%   | 35%   | 44%   | 39.0%   | 35.7%   | 35.6%   | 39.7%   | 34.2%   | 40.2%   | 32.8%   | 38.1%   | 37.1%   | 38.3%   | 29.9%   | 28.7%   | 29.9%   | 35.3%   | 35.8%   | 30.2%   |
| 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%   | 42.1%   | 41.4%   | 41.2%   | 42.0%   | 42.0%   | 37.7%   |

<sup>\*</sup>does not include 2% credits

<sup>\*\*</sup>does include certain Marion County recyclable materials burned for energy

**Table 5: Oregon Amount Recovered by Wasteshed, 1992-2021** 

|                 | 1992          | Per      | 1996          | Per    | 2000          | Per    | 2006          | Per    | 2011      | Per    | 2013          | Per    | 2015          | Per    | 2017          | Per    | 2019          | Per    | 2020          | Per    | 2021          | Per    | Change in              |
|-----------------|---------------|----------|---------------|--------|---------------|--------|---------------|--------|-----------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|--------|---------------|--------|------------------------|
| Wastashad       | Rvd<br>(tons) | Capita   | Rvd<br>(tons) | Capita | Rvd<br>(tons) | Capita | Rvd<br>(tons) | Capita | Rvd       | Capita | Rvd<br>(tons) | Capita | Per Capita             |
| Wasteshed       | (tons)        | (lbs.)   | (tons)        | (lbs.) | (tons)        | (lbs.) | (tons)        | (lbs.) | (tons)    | (lbs.) | (tons)        | (lbs.) | (tons)        | (lbs.) | (tons)        | (lbs.) | (tons)        | (lbs.) | (tons)        | (lbs.) | (tons)        | (lbs.) | 2021-2020              |
| Baker           | 982           | 124      | 3,644         | 438    | 2,849         | 340    | 2,782         | 338    | 3,402     | 420    | 3,325         | 408    | 4,122         | 502    | 2,957         | 353    | 2,621         | 312    | 3,386         | 400    | 3,313         | 393    | -1.9%                  |
| Benton          | 21,480        | 626      | 30,352        | 830    | 28,488        | 779    | 35,728        | 921    | 33,775    | 852    | 37,953        | 939    | 33,394        | 807    | 32,590        | 768    | 36,319        | 844    | 39,470        | 914    | 35,129        | 830    | -1.3 <i>%</i><br>-9.2% |
| Clatsop         | 5,148         | 300      | 7,118         | 403    | 10,586        | 593    | 19,576        | 1,057  | 18,366    | 989    | 23,013        | 1,235  | 20,973        | 1,111  | 23,962        | 1,235  | 19,604        | 997    | 20,593        | 1,044  | 19,381        | 936    | -10.4%                 |
| Columbia        | 7,894         | 407      | 6,258         | 302    | 10,361        | 474    | 12,940        | 551    | 13,386    | 539    | 13,254        | 532    | 11,730        | 466    | 10,032        | 391    | 11,508        | 436    | 11,056        | 415    | 11,438        | 432    | 4.0%                   |
| Coos            | 10,035        | 323      | 14,972        | 472    | 11,754        | 374    | 13,364        | 425    | 36,368    | 1,155  | 27,146        | 864    | 13,024        | 414    | 14,030        | 443    | 16,092        | 509    | 14,781        | 467    | 15,498        | 476    | 1.9%                   |
| Crook           | 1,581         | 206      | 3,156         | 363    | 5,215         | 540    | 7,075         | 577    | 7,535     | 723    | 6,182         | 598    | 4,459         | 423    | 6,189         | 560    | 7,152         | 610    | 7,342         | 626    | 7,360         | 578    | -7.8%                  |
| Curry           | 2,863         | 288      | 6,011         | 572    | 10,387        | 980    | 4,830         | 452    | 6,235     | 558    | 4,798         | 430    | 5,424         | 483    | 5,548         | 487    | 6,003         | 522    | 6,478         | 563    | 5,625         | 475    | -15.6%                 |
| Deschutes       | 12,858        | 305      | 30,222        | 605    | 49,993        | 858    | 69,443        | 910    | 72,635    | 914    | 74,062        | 911    | 83,271        | 975    | 84,808        | 927    | 84,251        | 873    | 98,504        | 1,000  | 89,304        | 878    | -12.2%                 |
| Douglas         | 29,467        | 614      | 30,945        | 621    | 31,390        | 625    | 31,980        | 616    | 55,220    | 1,025  | 42,333        | 778    | 32,335        | 588    | 31,634        | 569    | 30,871        | 550    | 41,786        | 743    | 35,055        | 628    | -15.5%                 |
| Gilliam         | 177           | 205      | 284           | 306    | 266           | 280    | 225           | 239    | 462       | 491    | 1,395         | 1,434  | 1,070         | 1,084  | 354           | 355    | 282           | 283    | 353           | 355    | 33,033        | 365    | 2.9%                   |
| Grant           | 911           | 232      | 687           | 171    | 791           | 199    | 1,055         | 277    | 1,338     | 359    | 1,386         | 373    | 1,235         | 332    | 852           | 230    | 851           | 231    | 946           | 259    | 951           | 263    | 1.8%                   |
| Harney          | 600           | 171      | 678           | 188    | 806           | 212    | 1,165         | 304    | 1,327     | 360    | 1,307         | 360    | 1,084         | 297    | 1,285         | 349    | 856           | 232    | 1,131         | 311    | 1,232         | 327    | 5.2%                   |
| Hood River      | 1,855         | 212      | 3,333         | 345    | 3,403         | 332    | 9,200         | 862    | 9,541     | 843    | 7,847         | 674    | 7,783         | 642    | 6,501         | 517    | 7,584         | 595    | 7,559         | 590    | 7,644         | 640    | 8.5%                   |
| Jackson         | 17,134        | 221      | 60,292        | 707    | 63,872        | 701    | 92,807        | 935    | 99,579    | 977    | 105,705       | 1,025  | 97,326        | 923    | 101,568       | 937    | 121,708       | 1,100  | 115,755       | 1,037  | 103,948       | 929    | -10.4%                 |
| Jefferson       | 1,269         | 170      | 2,667         | 307    | 3,661         | 382    | 5,506         | 514    | 8,641     | 791    | 7,305         | 663    | 4,046         | 361    | 5,296         | 457    | 3,010         | 252    | 4,140         | 343    | 4,698         | 378    | 9.9%                   |
| Josephine       | 7,826         | 239      | 21,688        | 600    | 26,534        | 698    | 42,005        | 1,036  | 47,045    | 1,136  | 43,614        | 1,053  | 32,725        | 782    | 41,782        | 976    | 33,572        | 774    | 46,849        | 1,082  | 43,599        | 983    | -9.2%                  |
| Klamath         | 8,827         | 301      | 11,171        | 360    | 14,070        | 440    | 36,650        | 1,120  | 20,751    | 623    | 19,793        | 593    | 15,183        | 452    | 18,156        | 536    | 17,131        | 502    | 18,989        | 558    | 21,195        | 607    | 8.8%                   |
| Lake            | 269           | 74       | 601           | 161    | 369           | 99     | 1,360         | 361    | 2,656     | 674    | 2,177         | 548    | 847           | 211    | 606           | 149    | 366           | 91     | 425           | 105    | 558           | 136    | 29.7%                  |
| Lane            | 72,072        | 493      | 153,843       | 992    | 216,532       | 1,337  | 248,599       | 1,463  | 269,100   | 1,524  | 229,818       | 1,291  | 242,830       | 1,341  | 302,487       | 1,632  | 346,009       | 1,826  | 331,136       | 1,737  | 337,169       | 1,762  | 1.5%                   |
| Lincoln         | 6,886         | 338      | 7,823         | 352    | 12,192        | 547    | 18,030        | 810    | 18,520    | 803    | 16,915        | 727    | 19,827        | 840    | 14,868        | 620    | 19,639        | 814    | 18,403        | 762    | 24,868        | 977    | 28.2%                  |
| Linn            | 17,232        | 352      | 33,201        | 634    | 33,830        | 623    | 60,754        | 1,057  | 76,150    | 1,226  | 61,833        | 983    | 59,426        | 926    | 62,464        | 947    | 80,581        | 1,194  | 93,476        | 1,376  | 74,686        | 1,067  | -22.5%                 |
| Malheur         | 3,283         | 237      | 4,808         | 319    | 7,212         | 454    | 6,862         | 433    | 5,309     | 338    | 7,699         | 490    | 6,703         | 426    | 6,791         | 426    | 5,462         | 341    | 5,367         | 334    | 6,639         | 415    | 24.1%                  |
| Marion          | 55,834        | 462      | 85,731        | 645    | 134,032       | 937    | 264,168       | 1,724  | 235,584   | 1,482  | 232,540       | 1,441  | 240,544       | 1,460  | 248,035       | 1,463  | 242,932       | 1,398  | 270,386       | 1,550  | 289,995       | 1,672  | 7.9%                   |
| Metro           | 514,747       | 825      | 752,470       | 1,106  | 970,850       | 1,338  | 1,337,848     | 1,705  | 1,122,542 | 1,355  | 1,278,987     | 1,510  | 1,285,248     | 1,473  | 1,116,851     | 1,233  | 1,134,078     | 1,220  | 1,179,512     | 1,257  | 1,137,532     | 1,229  | -2.2%                  |
| Milton-Freew.   | 908           | 323      | 1,186         | 392    | 1,317         | 406    | 2,612         | 793    | 2,567     | 670    | 3,103         | 797    | 2,846         | 719    | 1,375         | 341    | 813           | 200    | 1,523         | 374    | 2,255         | 560    | 49.8%                  |
| Morrow          | 930           | 227      | 842           | 181    | 1,428         | 257    | 2,874         | 474    | 3,269     | 580    | 2,944         | 515    | 4,466         | 768    | 5,989         | 1,007  | 5,151         | 813    | 5,847         | 912    | 5,570         | 882    | -3.3%                  |
| Polk            | 4,873         | 187      | 6,787         | 237    | 18,000        | 581    | 38,074        | 1,155  | 34,439    | 917    | 29,953        | 786    | 35,114        | 904    | 45,872        | 1,145  | 46,727        | 1,139  | 44,774        | 1,080  | 36,270        | 824    | -23.7%                 |
| Sherman         | 270           | 278      | 264           | 275    | 217           | 223    | 232           | 249    | 194       | 220    | 181           | 203    | 251           | 281    | 151           | 168    | 90            | 101    | 142           | 158    | 445           | 467    | 195.5%                 |
| Tillamook       | 4,518         | 406      | 5,246         | 438    | 6,174         | 508    | 12,554        | 983    | 10,407    | 824    | 9,698         | 764    | 9,424         | 734    | 10,539        | 805    | 10,160        | 767    | 13,158        | 992    | 15,836        | 1,146  | 15.6%                  |
| Umatilla        | 6,641         | 236      | 12,454        | 414    | 20,115        | 625    | 35,495        | 1,082  | 27,610    | 801    | 26,066        | 744    | 29,813        | 837    | 28,954        | 799    | 43,877        | 1,201  | 36,704        | 1,001  | 41,766        | 1,153  | 15.2%                  |
| Union           | 2,525         | 210      | 5,203         | 419    | 5,062         | 412    | 7,518         | 599    | 7,823     | 602    | 8,031         | 610    | 6,691         | 503    | 6,375         | 474    | 7,078         | 527    | 7,101         | 529    | 6,966         | 530    | 0.1%                   |
| Wallowa         | 433           | 119      | 503           | 135    | 1,219         | 336    | 1,431         | 401    | 954       | 273    | 1,058         | 300    | 1,122         | 316    | 1,425         | 396    | 1,793         | 502    | 1,304         | 364    | 2,114         | 569    | 56.2%                  |
| Wasco           | 5,443         | 485      | 7,519         | 648    | 9,194         | 771    | 5,131         | 426    | 7,682     | 607    | 8,158         | 632    | 6,863         | 520    | 5,416         | 400    | 4,799         | 352    | 5,022         | 368    | 6,097         | 459    | 24.7%                  |
| Wheeler         | 59            | 82       | 185           | 226    | 100           | 129    | 161           | 206    | 62        | 86     | 45            | 63     | 77            | 107    | 80            | 108    | 70            | 97     | 76            | 106    | 73            | 100    | -5.8%                  |
| Yamhill         | 11,850        | 338      | 26,116        | 663    | 53,548        | 1,242  | 64,017        | 1,386  | 45,653    | 907    | 51,237        | 1,002  | 47,808        | 915    | 41,146        | 768    | 53,718        | 986    | 48,488        | 886    | 52,685        | 965    | 9.0%                   |
|                 |               |          |               |        |               |        |               |        |           |        |               |        |               |        |               |        |               |        |               |        |               |        |                        |
| OR. TOTALS      | 839,679       | 562      | 1,338,259     | 825    | 1,765,817     | 1,028  | 2,494,050     | 1,352  | 2,306,124 | 1,196  | 2,390,859     | 1,220  | 2,369,080     | 1,180  | 2,286,969     | 1,105  | 2,402,756     | 1,134  | 2,501,960     | 1,172  | 2,447,267     | 1,147  | -2.15%                 |
| change in total | •             | -        | 6.45%         |        | 8.58%         |        | -1.16%        |        | 6.57%     |        | -0.03%        |        | 2.68%         |        | 2.74%         |        | 4.13%         |        | 4.13%         |        | -2.19%        |        |                        |
| change in per o | capita from   | previous | year          | 4.40%  |               | 7.25%  |               | -2.74% |           | 6.01%  |               | -0.97% |               | 1.41%  |               | 1.13%  |               | 3.12%  |               | 3.36%  |               | -2.15% |                        |

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

Certain recoverable materials in mixed waste burned at the waste-to-energy facility in Brooks are excluded from Marion County and Statewide recovery in years prior to 2001 but included in 2001 and subsequent years (per ORS 459A.010(3)(f)(B)).

Table 6: Oregon Solid Waste Disposed by Wasteshed, 1992-2021

|                    | 1992      | Per    | 1996      | Per    | 2000      | Per    | 2006      | Per     | 2011      | Per    | 2013      | Per     | 2015      | Per    | 2017      | Per    | 2019      | Per             | 2020      | Per     | 2021      | Per    | Change in                |
|--------------------|-----------|--------|-----------|--------|-----------|--------|-----------|---------|-----------|--------|-----------|---------|-----------|--------|-----------|--------|-----------|-----------------|-----------|---------|-----------|--------|--------------------------|
|                    |           | Capita | Disposed  | Capita | Disposed  | Capita | Disposed  | Capita  | Disposed  | Capita | Disposed  | Capita  | Disposed  | Capita | Disposed  | Capita |           | Capita          |           | Capita  | Disposed  | Capita | Per Capita               |
| Wasteshed          | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.)  | (tons)    | (lbs.) | (tons)    | (lbs.)  | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.)          | (tons)    | (lbs.)  | (tons)    | •      | 2021-2020                |
| - Trastesilea      | ((0))     | (155.) | (10115)   | (1551) | (10115)   | (123.) | (10115)   | (1.55.) | (10115)   | (123.) | (10115)   | (1.55.) | (10115)   | (1551) | (10115)   | (155.) | (10115)   | (123.)          | (10115)   | (1.55.) | (10115)   | (123.) |                          |
| Baker              | 8,419     | 1,062  | 10,897    | 1,310  | 12,617    | 1,507  | 13,770    | 1,672   | 11,926    | 1,471  | 11,309    | 1,389   | 11,585    | 1,411  | 14,078    | 1,681  | 13,563    | 1,613           | 13,940    | 1,649   | 14,129    | 1,676  | 1.66%                    |
| Benton             | 58,761    | 1,713  | 50,840    | 1,310  | 53,835    | 1,472  | 62,940    | 1,622   | 54,525    | 1,375  | 53,516    | 1,324   | 61,331    | 1,483  | 63,214    | 1,490  | 66,131    | 1,536           | 60,970    | 1,412   | 67,055    | 1,584  | 12.20%                   |
| Clatsop            | 22,263    | 1,299  | 28,671    | 1,623  | 31,489    | 1,764  | 38,125    | 2,058   | 29,266    | 1,576  |           | 1,555   | 32,170    | 1,704  | 33,381    | 1,720  | 35,031    | 1,781           | 35,336    | 1,791   | 42,832    | 2,068  | 15.44%                   |
| Columbia           | 15,131    | 780    | 22,650    | 1,025  | 23,201    | 1,062  | 29,541    | 1,258   | 24,614    | 992    | 24,970    | 1,002   | 26,130    | 1,037  | 32,062    | 1,249  | 33,961    | 1,288           | 34,178    | 1,283   | 35,779    | 1,350  | 5.21%                    |
| Coos               | 37,596    | 1,211  | 36,436    | 1,148  | 39,329    | 1,253  | 50,868    | 1,617   | 39,987    | 1,270  | 40,287    | 1,282   | 42,362    | 1,345  | 48,728    | 1,539  | 53,356    | 1,686           | 55,199    | 1,744   | 58,344    | 1,791  | 2.71%                    |
| Crook              | 8,378     | 1,091  | 10,646    | 1,224  | 13,841    | 1,434  | 20,566    | 1,677   | 16,415    | 1,574  | 14,082    | 1,361   | 16,902    | 1,603  | 20,637    | 1,867  | 25,247    | 2,154           | 25,800    | 2,201   | 26,257    | 2,061  | -6.39%                   |
| Curry              | 10,555    | 1,062  | 11,121    | 1,059  | 14,644    | 1,382  | 21,834    | 2,044   | 16,661    | 1,492  | 16,289    | 1,461   | 17,103    | 1,522  | 20,360    | 1,786  | 20,218    | 1,758           | 20,177    | 1,754   | 22,134    | 1,871  | 6.65%                    |
| Deschutes          | 72,529    | 1,720  | 103,397   | 2,070  | 111,013   | 1,904  | 188,146   | 2,466   | 112,751   | 1,419  | 119,682   | 1,473   | 144,067   | 1,688  | 182,649   | 1,997  | 183,593   | 1,903           | 197,979   | 2,010   | 220,125   | 2,165  | 7.70%                    |
| Douglas            | 85,040    | 1,772  | 87,325    | 1,751  | 89,451    | 1,780  | 103,061   | 1,985   | 73,716    | 1,368  | 70,763    | 1,300   | 74,436    | 1,354  | 79,114    | 1,423  | 88,655    | 1,580           | 94,397    | 1,678   | 91,146    | 1,632  | -2.72%                   |
| Gilliam            | 872       | 1,008  | 1,176     | 1,271  | 1,663     | 1,751  | 2,429     | 2,577   | 2,108     | 2,243  | 1,943     | 1,998   | 1,955     | 1,980  | 2,038     | 2,043  | 2,439     | 2,451           | 2,218     | 2,229   | 2,451     | 2,404  | 7.85%                    |
| Grant              | 4,178     | 1,063  | 3,492     | 869    | 3,441     | 866    | 3,918     | 1,027   | 4,010     | 1,076  | 3,421     | 920     | 3,809     | 1,025  | 4,089     | 1,103  | 4,300     | 1,168           | 4,490     | 1,228   | 4,552     | 1,260  | 2.62%                    |
| Harney             | 2,650     | 756    | 2,126     | 591    | 3,160     | 832    | 2,999     | 782     | 3,043     | 825    | 3,484     | 960     | 3,886     | 1,065  | 4,137     | 1,124  | 4,731     | 1,286           | 5,046     | 1,386   |           | 1,388  | 0.11%                    |
| Hood River         | 9,959     | 1,139  | 16,016    | 1,659  | 15,741    | 1,536  | 18,620    | 1,745   | 18,221    | 1,611  | 16,530    | 1,419   | 18,607    | 1,535  | 23,135    | 1,840  | 23,460    | 1,841           | 23,190    | 1,809   | 25,000    | 2,093  | 15.71%                   |
| Jackson            | 98,002    | 1,139  | 115,011   | 1,348  | 165,129   | 1,813  | 182,404   | 1,837   | 139,973   | 1,373  | 139,677   | 1,354   | 164,031   | 1,555  | 189,007   | 1,743  | 196,367   | 1,775           | 222,255   | 1,991   | 437,251   | 3,907  | 96.22%                   |
| Jefferson          | 4,813     | 645    | 8,380     | 965    | 9,889     | 1,033  | 14,385    | 1,344   | 9,714     | 889    | 10,250    | 930     | 12,394    | 1,104  | 15,157    | 1,307  | 14,569    | 1,222           | 16,816    | 1,395   | 18,916    | 1,520  | 8.94%                    |
| Josephine          | 47,687    | 1,457  | 35,873    | 992    | 54,033    | 1,421  | 66,105    | 1,630   | 49,130    | 1,186  | 51,156    | 1,235   | 62,132    | 1,484  | 76,898    | 1,796  | 83,442    | 1,924           | 87,625    | 2,025   | 94,497    | 2,130  | 5.21%                    |
| Klamath            | 57,247    | 1,950  | 66,874    | 2,153  | 64,619    | 2,023  | 72,315    | 2,210   | 53,361    | 1,603  | 46,506    | 1,392   | 52,858    | 1,575  | 59,314    | 1,753  | 66,167    | 1,941           | 67,803    | 1,992   | 88,223    | 2,527  | 26.86%                   |
| Lake               | 4,364     | 1,196  | 7,468     | 2,002  | 4,057     | 1,089  | 5,651     | 1,499   | 6,773     | 1,718  | 6,110     | 1,532   | 5,926     | 1,480  | 6,428     | 1,583  | 5,398     | 1,336           | 5,955     | 1,475   | 5,770     | 1,411  | -4.31%                   |
| Lane               | 302,695   | 2,072  | 239,310   | 1,542  | 256,205   | 1,582  | 281,347   | 1,656   | 215,728   | 1,222  | 221,532   | 1,244   | 239,016   | 1,320  | 274,913   | 1,484  | 282,440   | 1,491           | 283,708   | 1,488   | 341,663   | 1,786  | 20.02%                   |
|                    | 27,601    | 1,355  | 42,443    | 1,908  | 40,406    | 1,812  | 50,537    | 2,270   | 38,810    | 1,682  | 40,968    | 1,760   | 43,698    | 1,851  | 51,009    | 2,127  | 52,562    | 2,178           | 54,616    | 2,261   | 64,134    | 2,520  | 11.43%                   |
| Lincoln<br>Linn    | 94,644    | 1,931  | 69,506    | 1,328  | 83,701    | 1,540  | 89,163    | 1,551   | 78,919    | 1,270  | 78,590    | 1,760   | 91,837    | 1,431  | 106,847   | 1,620  | 110,453   | 1,636           | 109,439   | 1,612   | 111,890   | 1,598  | -0.82%                   |
| Malheur            | 13,815    | 996    | 18,776    | 1,246  | 21,338    | 1,344  | 23,292    | 1,468   | 20,176    | 1,283  | 20,043    | 1,243   | 20,956    | 1,331  | 23,262    | 1,461  | 24,074    | 1,503           | 26,438    | 1,647   | 25,096    | 1,569  | -0.02 <i>%</i><br>-4.75% |
| Marion             | 158,109   | 1,307  | 219,182   | 1,648  | 222,098   | 1,552  | 245,214   | 1,600   | 195,332   | 1,203  | 193,571   | 1,200   | 220,237   | 1,331  | 265,977   | 1,569  | 266,817   | 1,535           | 287,996   | 1,651   | 425,320   | 2,452  | 48.53%                   |
| Metro              | 945,634   | 1,516  | 1,097,246 | 1,613  | 1,207,348 | 1,663  | 1,356,955 | 1,730   | 977,769   | 1,180  | 963,041   | 1,137   | 1,138,552 | 1,305  | 1,306,106 | 1,442  | 1,323,971 | 1,425           | 1,359,794 | 1,450   | 1,433,959 | 1,549  | 6.89%                    |
| Milton-Freew.      | 4,642     | 1,649  | 4,332     | 1,431  | 5,029     | 1,549  | 5,349     | 1,625   | 4,051     | 1,058  | 4,429     | 1,137   | 4,242     | 1,072  | 2,527     | 628    | 4,819     | 1,187           | 4,985     | 1,223   | 5,297     | 1,349  | 7.55%                    |
| Morrow             | 7,221     | 1,763  | 5,883     | 1,431  | 8,253     | 1,487  | 10,506    | 1,733   | 10,885    | 1,932  | 13,146    | 2,301   | 16,661    | 2,865  | 22,055    | 3,710  | 27,960    | 4,410           | 36,964    | 5,764   | 28,848    | 4,566  | -20.78%                  |
| Polk               | 19,036    | 729    | 28,655    | 1,000  | 37,322    | 1,204  | 41,453    | 1,755   | 37,817    | 1,007  | 38,774    | 1,017   | 42,734    | 1,100  | 51,177    | 1,277  | 52,102    | 1,270           | 51,686    | 1,247   | 55,921    | 1,271  | 1.95%                    |
| Sherman            | 876       | 903    | 987       | 1,000  | 1,031     | 1,057  | 1,021     | 1,095   | 1,203     | 1,363  | 1,091     | 1,226   | 1,330     | 1,486  | 1,213     | 1,347  | 1,269     | 1,434           | 1,246     | 1,388   | 1,228     | 1,287  | -7.30%                   |
| Tillamook          | 9,940     | 893    | 15,212    | 1,020  | 17,807    | 1,466  | 24,988    | 1,958   | 20,559    | 1,628  | 20,712    | 1,632   | 23,130    | 1,400  | 27,325    | 2,088  | 29,357    | 2,216           | 30,550    | 2,303   | 32,416    | 2,347  | 1.89%                    |
| Umatilla           | 41,059    | 1,461  | 51,388    | 1,709  | 57,952    | 1,801  | 65,980    | 2,011   | 67,354    | 1,955  | 65,129    |         | 71,374    | 2,004  | 78,725    | 2,173  | 77,490    | 2,122           | 92,834    |         | 91,730    |        | 0.00%                    |
| Union              | 12,866    | 1,069  | 14,676    |        | 18,311    | 1,492  | 14,801    | 1,179   | 17,785    | 1,369  |           | 1,400   | 20,289    | 1,524  | 22,541    | 1,676  | 18,901    | 1,408           | 19,300    | 1,438   |           | 1,528  | 6.21%                    |
| Wallowa            | 6,801     | 1,876  | 4,024     | 1,076  | 4,655     | 1,284  | 5,009     | 1,403   | 3,250     | 929    | 3,402     |         | 3,881     | 1,093  | 4,434     | 1,232  | 6,446     | 1,803           | 6,150     |         |           |        | -16.36%                  |
| Wasco              | 16,760    | 1,494  | 17,480    |        | 18,118    | 1,519  | 22,089    | 1,835   | 17,005    | 1,344  | 17,324    |         | 17,527    | 1,329  | 22,233    | 1,641  | 24,085    | 1,768           | 28,878    |         |           |        | -10.36%<br>-21.32%       |
| Wheeler            | 758       | 1,494  | 763       | 930    | 596       | 769    | 512       | 655     | 417       | 582    | 468       | 655     | 418       | 579    | 378       | 511    | 385       | 535             | 387       | 537     |           | 605    | -21.32%<br>12.64%        |
| Yamhill            | 52,199    |        | 48,909    |        | 67,141    | 1,558  | 99,934    |         | 64,513    | 1,281  |           | 1,628   | 76,900    |        | 102,067   | 1,905  | 98,590    | 1,810           | 86,950    |         |           |        | 40.43%                   |
| Rounding adj.      | 52,199    | 1,490  | 40,909    | 1,241  | 07,141    | 1,558  | 99,934    | ۷, ۱۵3  | 04,513    | 1,201  | 83,241    | 1,028   | 10,900    | 1,412  | 102,007   | 1,905  | 30,330    | 1,010           | 00,950    | 1,508   | 121,/32   | 2,230  | 40.45%                   |
| OR. TOTALS         | 2,263,099 | 1 512  | 2,497,170 | 1 530  | 2,778,463 | 1 617  | 3,235,828 | 1 754   | 2,437,767 | 1 264  | 2,442,827 | 1 2/17  | 2,784,467 | 1 327  | 3,237,214 | 1 562  | 3,322,349 | 1 562           | 3,455,294 | 1,619   | 4,046,936 | 1,897  | 3.23%                    |
| change in total fr | H         |        | 5.72%     |        | -0.37%    |        | 6.92%     |         | -4.42%    | 1,204  | 0.74%     |         | 7.89%     | 1,307  | 5.80%     | 1,503  | 0.82%     | 1,300           | 4.00%     | 1,013   | 17.12%    |        | 3.23/0                   |
|                    |           | •      |           | 3.68%  | -0.57%    |        | 0.92%     |         |           | -4.92% |           |         | 1.09%     | 6 100/ |           | / 1E0/ |           | Λ 1 <i>C</i> 0/ |           | 2 220/  |           |        |                          |
| change in per ca   |           | -      | 11        | 5.00%  |           | -1.62% |           | 5.21%   |           | -4.32% |           | -0.16%  |           | 6.48%  |           | 4.15%  |           | -0.16%          |           | 3.23%   |           | 17.16% |                          |

<sup>\*</sup>includes natural disaster debris

Certain recoverable materials in mixed waste burned at the waste-to-energy facility in Brooks are included in Marion County and Statewide disposal in years prior to 2001 but excluded in 2001 and subsequent years (per ORS 459A.010(3)(f)(B)).

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

**Table 7: Oregon Solid Waste Generated by Wasteshed, 1992-2021** 

|                   | 1992           | Per       | 1996      | Per    | 2000      | Per    | 2006      | Per    | 2011      | Per    | 2013      | Per    | 2015      | Per    | 2017      | Per    | 2019      | Per    | 2020      | Per    | 2021      | Per    | Change in  |
|-------------------|----------------|-----------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|-----------|--------|------------|
|                   | Generated      | Capita    | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Generated | Capita | Per Capita |
| Wasteshed         | (tons)         | (lbs.)    | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | (tons)    | (lbs.) | 2021-2020  |
| Baker             | 9,401          | 1,186     | 14,540    | 1,748  | 15,466    | 1,847  | 16,552    | 2,010  | 15,328    | 1,891  | 14,634    | 1,798  | 15,707    | 1,913  | 17,035    | 2,034  | 16,184    | 1,924  | 17,326    | 2,049  | 17,442    | 2,069  | 0.97%      |
| Benton            | 80,241         | 2,339     | 81,192    | 2,220  | 82,323    | 2,250  | 98,668    | 2,543  | 88,300    | 2,227  | 91,469    | 2,264  | 94,724    | 2,290  | 95,804    | 2,258  | 102,450   | 2,380  | 100,440   | 2,326  | 102,184   | 2,414  | 3.79%      |
| Clatsop           | 27,411         | 1,600     | 35,789    | 2,027  | 42,075    | 2,357  | 57,701    | 3,115  | 47,632    | 2,565  | 51,982    | 2,789  | 53,143    | 2,816  | 57,343    | 2,954  | 54,636    | 2,778  | 55,929    | 2,835  | 62,213    | 3,003  | 5.94%      |
| Columbia          | 23,025         | 1,187     | 28,908    | 1,397  | 33,562    | 1,536  | 42,482    | 1,809  | 38,000    | 1,531  | 38,224    | 1,534  | 37,860    | 1,503  | 42,094    | 1,640  | 45,469    | 1,724  | 45,234    | 1,698  | 47,217    | 1,781  | 4.91%      |
| Coos              | 47,631         | 1,534     | 51,409    | 1,620  | 51,083    | 1,627  | 64,232    | 2,042  | 76,354    | 2,425  | 67,432    | 2,145  | 55,386    | 1,759  | 62,757    | 1,983  | 69,448    | 2,195  | 69,980    | 2,211  | 73,842    | 2,267  | 2.54%      |
| Crook             | 9,959          | 1,297     | 13,802    | 1,586  | 19,056    | 1,975  | 27,642    | 2,254  | 23,950    | 2,297  | 20,263    | 1,959  | 21,361    | 2,026  | 26,825    | 2,427  | 32,400    | 2,764  | 33,143    | 2,828  | 33,617    | 2,638  | -6.70%     |
| Curry             | 13,418         | 1,350     | 17,132    | 1,632  | 25,031    | 2,361  | 26,663    | 2,496  | 22,896    | 2,050  | 21,087    | 1,891  | 22,526    | 2,005  | 25,908    | 2,272  | 26,221    | 2,280  | 26,655    | 2,317  | 27,759    | 2,346  | 1.25%      |
| Deschutes         | 85,387         | 2,025     | 133,618   | 2,676  | 161,006   | 2,762  | 257,589   | 3,376  | 185,386   | 2,334  | 193,744   | 2,384  | 227,338   | 2,663  | 267,458   | 2,924  | 267,844   | 2,776  | 296,483   | 3,010  | 309,429   | 3,043  | 1.10%      |
| Douglas           | 114,507        | 2,386     | 118,269   | 2,372  | 120,841   | 2,405  | 135,041   | 2,602  | 128,936   | 2,392  | 113,095   | 2,078  | 106,771   | 1,943  | 110,748   | 1,992  | 119,525   | 2,130  | 136,183   | 2,420  | 126,200   | 2,260  | -6.64%     |
| Gilliam           | 1,049          | 1,213     | 1,459     | 1,577  | 1,929     | 2,031  | 2,654     | 2,816  | 2,570     | 2,734  | 3,338     | 3,432  | 3,026     | 3,064  | 2,392     | 2,398  | 2,721     | 2,734  | 2,571     | 2,584  | 2,823     | 2,769  | 7.16%      |
| Grant             | 5,089          | 1,295     | 4,179     | 1,040  | 4,232     | 1,065  | 4,973     | 1,304  | 5,347     | 1,436  | 4,807     | 1,293  | 5,043     | 1,358  | 4,941     | 1,333  | 5,151     | 1,400  | 5,436     | 1,486  | 5,503     | 1,523  | 2.48%      |
| Harney            | 3,249          | 927       | 2,804     | 779    | 3,966     | 1,044  | 4,163     | 1,086  | 4,370     | 1,185  | 4,791     | 1,320  | 4,970     | 1,363  | 5,422     | 1,473  | 5,587     | 1,518  | 6,178     | 1,697  | 6,462     | 1,715  | 1.04%      |
| Hood River        | 11,814         | 1,352     | 19,349    | 2,004  | 19,144    | 1,868  | 27,820    | 2,608  | 27,761    | 2,454  | 24,377    | 2,093  | 26,389    | 2,177  | 29,636    | 2,357  | 31,044    | 2,437  | 30,749    | 2,399  | 32,644    | 2,733  | 13.95%     |
| Jackson           | 115,135        | 1,486     | 175,303   | 2,054  | 229,001   | 2,514  | 275,210   | 2,771  | 239,552   | 2,349  | 245,382   | 2,379  | 261,357   | 2,478  | 290,575   | 2,679  | 318,075   | 2,875  | 338,009   | 3,028  | 541,199   | 4,836  | 59.69%     |
| Jefferson         | 6,082          | 815       | 11,047    | 1,272  | 13,550    | 1,415  | 19,892    | 1,858  | 18,356    | 1,681  | 17,554    | 1,593  | 16,440    | 1,465  | 20,453    | 1,764  | 17,578    | 1,475  | 20,956    | 1,739  | 23,615    | 1,898  | 9.14%      |
| Josephine         | 55,513         | 1,696     | 57,560    | 1,592  | 80,567    | 2,119  | 108,110   | 2,665  | 96,175    | 2,323  | 94,770    | 2,289  | 94,857    | 2,266  | 118,681   | 2,771  | 117,014   | 2,698  | 134,475   | 3,107  | 138,096   | 3,113  | 0.18%      |
| Klamath           | 66,074         | 2,251     | 78,044    | 2,512  | 78,689    | 2,463  | 108,965   | 3,329  | 74,112    | 2,226  | 66,299    | 1,985  | 68,042    | 2,028  | 77,470    | 2,289  | 83,298    | 2,443  | 86,792    | 2,550  | 109,418   | 3,134  | 22.91%     |
| Lake              | 4,633          | 1,269     | 8,069     | 2,163  | 4,426     | 1,188  | 7,011     | 1,860  | 9,428     | 2,391  | 8,287     | 2,087  | 6,773     | 1,691  | 7,034     | 1,732  | 5,764     | 1,427  | 6,380     | 1,580  | 6,328     | 1,548  | -2.04%     |
| Lane              | 374,767        | 2,565     | 393,153   | 2,534  | 472,737   | 2,919  | 529,946   | 3,120  | 484,827   | 2,746  | 451,350   | 2,535  | 481,845   | 2,661  | 577,401   | 3,116  | 628,449   | 3,317  | 614,844   | 3,224  | 678,832   | 3,548  | 10.04%     |
| Lincoln           | 34,487         | 1,693     | 50,266    | 2,259  | 52,598    | 2,359  | 68,566    | 3,080  | 57,331    | 2,484  | 57,883    | 2,486  | 63,525    | 2,690  | 65,877    | 2,747  | 72,201    | 2,992  | 73,019    | 3,023  | 89,002    | 3,497  | 15.67%     |
| Linn              | 111,875        | 2,282     | 102,707   | 1,962  | 117,531   | 2,163  | 149,917   | 2,608  | 155,069   | 2,496  | 140,423   | 2,232  | 151,264   | 2,358  | 169,311   | 2,567  | 191,034   | 2,830  | 202,916   | 2,988  | 186,576   | 2,665  | -10.80%    |
| Malheur           | 17,098         | 1,233     | 23,583    | 1,565  | 28,550    | 1,798  | 30,155    | 1,901  | 25,485    | 1,621  | 27,742    | 1,765  | 27,660    | 1,757  | 30,053    | 1,887  | 29,536    | 1,844  | 31,805    | 1,981  | 31,735    | 1,984  | 0.12%      |
| Marion            | 213,943        | 1,768     | 304,913   | 2,293  | 356,130   | 2,489  | 509,383   | 3,324  | 430,916   | 2,711  | 426,111   | 2,641  | 460,780   | 2,796  | 514,012   | 3,033  | 509,750   | 2,933  | 558,381   | 3,201  | 715,315   | 4,124  | 28.84%     |
| Metro             | 1,460,380      | 2,341     | 1,849,716 | 2,719  | 2,178,198 | 3,001  | 2,694,802 | 3,435  | 2,100,311 | 2,535  | 2,242,027 | 2,648  | 2,423,800 | 2,777  | 2,422,957 | 2,675  | 2,458,049 | 2,645  | 2,539,306 | 2,707  | 2,571,491 | 2,778  | 2.64%      |
| Milton-Freew.     | 5,551          | 1,972     | 5,518     | 1,823  | 6,346     |        | 7,961     | 2,418  | 6,618     | 1,728  | 7,533     | 1,934  | 7,088     | 1,791  | 3,901     | 969    | 5,632     | 1,388  | 6,508     | 1,597  | 7,552     | 1,876  | 17.45%     |
| Morrow            | 8,151          | 1,990     | 6,725     | 1,445  | 9,681     | 1,744  | 13,380    | 2,207  | 14,154    | 2,512  | 16,090    | 2,817  | 21,126    | 3,633  | 28,044    | 4,717  | 33,111    | 5,223  | 42,810    | 6,676  | 34,418    | 5,448  | -18.40%    |
| Polk              | 23,909         | 916       | 35,442    | 1,237  | 55,322    | 1,785  | 79,527    | 2,412  | 72,256    | 1,924  | 68,726    | 1,803  | 77,848    | 2,003  | 97,048    | 2,422  | 98,829    | 2,409  | 96,460    | 2,327  | 92,191    | 2,095  | -9.95%     |
| Sherman           | 1,146          | 1,181     | 1,252     | 1,304  | 1,248     | 1,280  | 1,254     | 1,344  | 1,397     | 1,583  | 1,271     | 1,429  | 1,582     | 1,767  | 1,364     | 1,515  | 1,358     | 1,535  | 1,388     | 1,546  | 1,673     | 1,754  | 13.41%     |
| Tillamook         | 14,458         | 1,300     | 20,458    | 1,709  | 23,981    | 1,974  | 37,542    | 2,941  | 30,967    | 2,452  | 30,410    | 2,397  | 32,554    | 2,534  | 37,865    | 2,893  | 39,517    | 2,982  | 43,708    | 3,295  | 48,251    | 3,493  | 6.01%      |
| Umatilla          | 47,700         | 1,698     | 63,843    | 2,123  | 78,067    | 2,426  | 101,475   | 3,094  | 94,964    | 2,756  |           | 2,602  | 101,186   | 2,841  | 107,679   | 2,973  | 121,367   | 3,323  | 129,538   | 3,532  | 133,496   | 3,684  | 4.30%      |
| Union             | 15,391         | 1,279     | 19,879    |        | 23,373    |        | 22,319    | 1,778  | 25,607    | 1,971  | 26,456    | 2,010  | 26,979    | 2,027  | 28,916    |        | 25,979    |        | 26,401    | 1,967  | 27,049    | 2,057  | 4.58%      |
| Wallowa           | 7,234          | 1,996     | 4,528     |        | 5,874     |        | 6,440     | 1,804  | 4,204     | 1,202  | 4,460     | 1,266  | 5,004     | 1,409  |           | 1,628  | 8,239     | 2,304  | 7,453     | 2,082  |           | 2,006  | -3.66%     |
| Wasco             | 22,202         |           | 24,999    |        | 27,312    |        | 27,220    | 2,262  | 24,687    | 1,952  | 25,482    | 1,975  | 24,390    | 1,850  |           | 2,040  | 28,883    |        | 33,900    | 2,484  | 28,225    |        |            |
| Wheeler           | 817            | 1,135     | 948       |        | 696       | 898    | 673       | 860    | 479       | 668    | 513       | 718    |           | 686    |           | 620    | 455       | 631    | 463       | 643    | 513       | 704    | 9.61%      |
| Yamhill           | 64,049         |           | 75,024    |        |           |        | 163,951   | 3,549  | 110,166   | 2,188  | 134,478   | 2,630  | 124,708   |        | 143,214   | 2,673  |           |        |           | 2,474  |           |        | 29.17%     |
| OR. TOTALS        | 3,102,776      |           |           |        |           |        | 5,729,878 | 3,105  |           | 2,459  |           | 2,467  |           |        | 5,524,183 | 2,668  |           |        |           | 2,792  |           | 3,044  | 9.05%      |
| change in total f | •              | -         | 5.97%     |        | 2.93%     |        | 3.24%     |        | 0.62%     |        | 0.36%     |        | 5.43%     |        | 4.51%     |        | 2.18%     |        | 4.05%     |        | 9.01%     |        |            |
| change in per ca  | apita from pre | vious yea | ar        | 3.93%  |           | 1.65%  |           | 1.59%  |           | 0.09%  |           | -0.56% |           | 4.09%  |           | 2.88%  |           | 1.19%  |           | 3.28%  |           | 9.05%  |            |

hange in per capita from previous year 3.93% 1.05% 1.05%

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

**Table 8: Oregon Materials Recovered, 1992-2021** 

| Material Type                  | 1992    | 1996    | 2000    | 2006    | 2011    | 2013    | 2015    | 2017    | 2019    | 2020    | 2021    |
|--------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                                | Tons    |
| Container glass                | 69,284  | 77,231  | 87,889  | 95,946  | 114,982 | 106,840 | 110,101 | 119,561 | 113,052 | 98,590  | 97,927  |
| Other glass                    | 41      | 1,557   | 1,578   | 673     | 840     | 28      | 186     | 1       | 1,531   | 661     | 808     |
| Total glass                    | 69,325  | 78,788  | 89,467  | 96,619  | 115,822 | 106,868 | 110,287 | 119,562 | 114,583 | 99,251  | 98,736  |
| Aluminum                       | 18,245  | 17,815  | 18,209  | 21,521  | 19,985  | 23,176  | 19,310  | 25,499  | 33,861  | 33,778  | 36,412  |
| Scrap metal                    | 26,927  | 45,271  | 165,728 | 339,723 | 550,158 | 477,097 | 408,326 | 444,487 | 567,617 | 617,258 | 549,077 |
| Tinned cans/aluminum           |         |         | 14,779  | -       | -       | -       | -       | -       | -       | -       | -       |
| Tinned cans                    | 7,400   | 8,635   | -       | 8,399   | 9,298   | 8,944   | 8,327   | 9,611   | 10,450  | 6,963   | 5,983   |
| Aerosol cans                   | 0       | 0       | -       | 1       | 1       | 1       | 1       | 1       | 1       | -       | 0       |
| Total metals                   | 52,572  | 71,722  | 198,716 | 369,644 | 579,442 | 509,217 | 435,963 | 479,599 | 611,929 | 658,000 | 591,472 |
| Cardboard/kraft paper          | 204,729 | 304,093 | 310,776 | 440,813 | 320,162 | 361,735 | 409,082 | 403,392 | 415,560 | 443,030 | 460,077 |
| Paper Fiber <sup>6</sup>       | -       | -       | -       | -       | 277,353 | 299,004 | 274,318 | 249,753 | 193,626 | 179,400 | 172,969 |
| High-grade paper <sup>6</sup>  | 67,077  | 49,298  | 54,358  | 47,324  | -       | -       | -       | -       | -       | -       | -       |
| Magazines                      | 11,246  | 17,250  | 8,375   | -       | -       | -       | -       | -       | -       | -       | -       |
| Phone books <sup>1</sup>       | -       | 3,103   | 2,881   | -       | -       | -       | -       | -       | -       | -       | -       |
| Mixed waste paper <sup>6</sup> | 24,012  | 53,771  | 91,559  | 39,347  | -       | -       | -       | -       | -       | -       | -       |
| Newspaper <sup>6</sup>         | 130,181 | 141,412 | 187,108 | 263,193 | -       | -       | -       | -       | -       | -       | -       |
| Fiber-based fuel               | ,       | 9,235   | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Total papers                   | 437,245 | 578,161 | 655,057 | 790,677 | 597,515 | 660,739 | 683,400 | 653,145 | 609,186 | 622,431 | 633,047 |
| #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   | 2,594   | 2,222   | 2,346   | 1,305   | 715     | 685     | 1,185   |
| Mixed plastic                  | 300     | 1,708   | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Other plastic (P7)             | -       | 12      | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Plastic bottles <sup>2</sup>   |         |         | -       | -       | -       | 1       | -       | -       | -       | -       | -       |
| Plastic film                   |         |         | 3,969   | 11,594  | 11,747  | 14,583  | 13,680  | 14,755  | 8,170   | 9,736   | 10,442  |
| Plastic other                  |         |         | 3,718   | 9,426   | 10,167  | 9,562   | 13,348  | 8,761   | 8,010   | 7,327   | 7,380   |
| Rigid plastic containers       |         |         | 15,672  | 19,439  | 30,100  | 28,740  | 24,613  | 29,773  | 29,857  | 31,165  | 31,531  |
| Total plastic                  | 9,520   | 16,338  | 24,222  | 42,463  | 54,608  | 55,107  | 53,988  | 54,593  | 46,752  | 48,913  | 50,538  |
| Antifreeze                     | 5       | 52      | 424     | 3,085   | 3,060   | 2,680   | 2,916   | 2,545   | 2,366   | 2,480   | 2,018   |
| C & D roofing <sup>7</sup>     |         |         | 25,162  | 10,072  | 12,998  | 15,895  | 21,410  | 18,661  | 9,219   | 25      | 30      |
|                                |         |         |         |         |         |         |         |         |         |         |         |

**2021 Oregon Material Recovery and Waste Generation Rates Report** 

| Material Type                     | 1992    | 1996      | 2000      | 2006      | 2011      | 2013      | 2015      | 2017      | 2019      | 2020      | 2021      |
|-----------------------------------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                                   | Tons    | Tons      | Tons      | Tons      | Tons      | Tons      | Tons      | Tons      | Tons      | Tons      | Tons      |
| Diesel                            |         |           |           | 151       | 32        | 32        | 34        | -         | -         | -         | -         |
| Electronics                       |         |           | 617       | 6,345     | 19,586    | 21,929    | 20,696    | 15,513    | 11,752    | 8,920     | 9,630     |
| Fluorescent lamps                 | -       | 7         | 21        | 453       | 673       | 600       | 172       | 343       | 311       | 278       | 269       |
| Gypsum wallboard                  | 3,695   | 9,419     | 5,300     | 4,174     | 3,364     | 4,057     | 3,630     | 3,862     | 8,460     | 6,185     | 8,573     |
| Household Haz Waste               |         |           | 14        | 143       | 295       | 323       | 276       | 273       | 276       | 289       | 285       |
| Alkaline batteries                |         |           |           | -         | -         | -         | -         | -         | -         | -         | -         |
| Mixed batteries                   |         |           |           | 120       | 336       | 375       | 259       | 172       | 360       | 254       | 433       |
| Lead acid batteries <sup>3</sup>  | 176     | 559       | 1,184     | 15,509    | 14,467    | 14,637    | 16,750    | 16,758    | 19,667    | 22,052    | 20,550    |
| NiCad batteries                   |         |           | -         | -         | -         | -         | -         | -         | -         | -         | -         |
| Paint <sup>5</sup>                | 120     | 489       | 555       | 1,434     | 3,015     | 3,652     | 4,414     | 4,201     | 3,506     | 3,483     | 3,744     |
| Porcelain                         | -       | 5         | -         | 307       | 203       | 960       | 840       | 85        | 201       | 565       | 533       |
| Rubber tire buffings <sup>4</sup> | -       | 2,935     | -         | -         | -         | -         | -         | -         | -         | -         | -         |
| Scrap film (X-ray)                | 42      | 68        | 21        | -         | -         | -         | -         | -         | -         | -         | -         |
| Solvents <sup>5</sup>             | 16      | 110       | 188       | 261       | 406       | 369       | 454       | 475       | 280       | 111       | 80        |
| Textiles                          |         | 508       | 4,033     | 1,819     | 232       | 948       | 1,186     | 681       | 317       | 207       | 197       |
| Tires <sup>5</sup>                | 34,392  | 24,360    | 16,420    | 21,931    | 23,361    | 30,326    | 27,793    | 30,504    | 29,820    | 34,995    | 52,141    |
| Used Motor Oil <sup>5</sup>       | 28,796  | 47,632    | 44,114    | 52,837    | 30,052    | 35,544    | 34,103    | 25,916    | 33,582    | 30,216    | 36,278    |
| Total other                       | 67,243  | 86,145    | 98,969    | 118,640   | 113,885   | 133,736   | 135,586   | 119,989   | 120,117   | 110,060   | 134,763   |
| Animal waste/grease               | -       | 22,957    | 25,670    | 15,928    | 7,680     | 7,621     | 13,009    | 10,923    | 13,226    | 21,470    | 18,750    |
| Food waste                        | -       | 5,000     | 3,486     | 12,430    | 42,741    | 50,143    | 41,991    | 48,276    | 35,157    | 36,182    | 33,186    |
| Wood waste <sup>5</sup>           | 112,425 | 243,773   | 360,819   | 503,967   | 368,356   | 387,196   | 375,462   | 299,359   | 296,312   | 275,187   | 266,601   |
| Yard debris⁵                      | 91,348  | 235,562   | 309,407   | 543,683   | 426,095   | 480,238   | 519,561   | 501,528   | 555,494   | 630,560   | 620,019   |
| Total organics                    | 203,773 | 507,292   | 699,382   | 1,076,008 | 844,872   | 925,198   | 950,024   | 860,086   | 900,189   | 963,399   | 938,556   |
| Adj. rounding/unspecified         |         | 2         | 1         |           |           |           |           |           |           |           |           |
| OREGON TOTALS                     | 839,678 | 1,338,446 | 1,765,814 | 2,494,050 | 2,306,144 | 2,390,865 | 2,369,248 | 2,286,974 | 2,402,756 | 2,502,054 | 2,447,110 |

<sup>&</sup>lt;sup>1</sup>Phone books included in mixed waste paper in 1992, 1993 and 2001 and subsequent years.

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

<sup>&</sup>lt;sup>2</sup>About 900 tons of plastic bottles was included with mixed plastics in the 1995 survey.

<sup>&</sup>lt;sup>3</sup>Includes only batteries collected at household hazardous waste collection events until 2001.

<sup>&</sup>lt;sup>4</sup>From 1998 rubber tire buffings were included with tires.

<sup>&</sup>lt;sup>5</sup>Includes Marion Co. materials in 2001 and subsequent years burned for energy.

<sup>&</sup>lt;sup>6</sup>In 2007 and subsequent years, Mixed Waste Paper, Hi Grade & Newspaper was combined into Paper Fiber

<sup>&</sup>lt;sup>7</sup>Asphalt Roofing was included as burned for energy only in years 2001-2006

**Table 9: Disposition of Recovered Materials, 2021** 

| Wasteshed        | Total     | Recycled  | % of  | Energy   | % of  | Compost | % of<br>Total | Stock |
|------------------|-----------|-----------|-------|----------|-------|---------|---------------|-------|
| vvastesneu       | Recovered | Recycled  | Total | Recovery | Total |         |               |       |
| Baker            | 3,313     | 2,347     | 71%   | 184      | 6%    | 783     | 24%           | 0     |
| Benton           | 35,129    | 21,132    | 60%   | 620      | 2%    | 13,377  | 38%           | 0     |
| Clatsop          | 19,381    | 14,733    | 76%   | 3,923    | 20%   | 726     | 4%            | 0     |
| Columbia         | 11,438    | 9,037     | 79%   | 69       | 1%    | 2,332   | 20%           | 0     |
| Coos             | 15,498    | 15,129    | 98%   | 314      | 2%    | 56      | 0%            | 0     |
| Crook            | 7,360     | 6,605     | 90%   | 320      | 4%    | 435     | 6%            | 0     |
| Curry            | 5,625     | 5,464     | 97%   | 160      | 3%    | 2       | 0%            | 0     |
| Deschutes        | 89,304    | 51,844    | 58%   | 6,253    | 7%    | 31,207  | 35%           | 0     |
| Douglas          | 35,055    | 26,217    | 75%   | 8,137    | 23%   | 701     | 2%            | 0     |
| Gilliam          | 373       | 373       | 100%  | -        | 0%    | -       | 0%            | 0     |
| Grant            | 951       | 838       | 88%   | 51       | 5%    | 60      | 6%            | 2     |
| Harney           | 1,232     | 1,164     | 94%   | 64       | 5%    | -       | 0%            | 4     |
| Hood River       | 7,644     | 5,483     | 72%   | 182      | 2%    | 1,980   | 26%           | 0     |
| Jackson          | 103,948   | 60,534    | 58%   | 8,376    | 8%    | 35,038  | 34%           | 0     |
| Jefferson        | 4,698     | 4,522     | 96%   | 35       | 1%    | 136     | 3%            | 6     |
| Josephine        | 43,599    | 24,900    | 57%   | 6,084    | 14%   | 12,615  | 29%           | 0     |
| Klamath          | 21,195    | 17,179    | 81%   | 3,037    | 14%   | 979     | 5%            | 0     |
| Lake             | 558       | 546       | 98%   | 2        | 0%    | -       | 0%            | 10    |
| Lane             | 337,169   | 195,176   | 58%   | 57,423   | 17%   | 84,571  | 25%           | 0     |
| Lincoln          | 24,868    | 17,283    | 70%   | 877      | 4%    | 6,707   | 27%           | 1     |
| Linn             | 74,686    | 58,924    | 79%   | 1,637    | 2%    | 14,125  | 19%           | 0     |
| Malheur          | 6,639     | 5,967     | 90%   | 31       | 0%    | 641     | 10%           | 0     |
| Marion           | 289,995   | 155,612   | 54%   | 58,482   | 20%   | 75,889  | 26%           | 12    |
| Metro            | 1,137,516 | 707,828   | 62%   | 96,991   | 9%    | 332,695 | 29%           | 3     |
| Milton-Freewater | 2,255     | 2,060     | 91%   | 14       | 1%    | 181     | 8%            | 0     |
| Morrow           | 5,570     | 5,284     | 95%   | 276      | 5%    | =       | 0%            | 10    |
| Polk             | 36,270    | 19,258    | 53%   | 9,187    | 25%   | 7,825   | 22%           | 0     |
| Sherman          | 445       | 412       | 93%   | 33       | 7%    | -       | 0%            | 0     |
| Tillamook        | 15,836    | 13,445    | 85%   | 666      | 4%    | 1,720   | 11%           | 5     |
| Umatilla         | 41,766    | 37,203    | 89%   | 3,459    | 8%    | 1,105   | 3%            | 0     |
| Union            | 6,966     | 5,310     | 76%   | 54       | 1%    | 1,602   | 23%           | 0     |
| Wallowa          | 2,114     | 1,204     | 57%   | 10       | 0%    | 900     | 43%           | 0     |
| Wasco            | 6,097     | 4,988     | 82%   | 244      | 4%    | 865     | 14%           | 0     |
| Wheeler          | 73        | 72        | 99%   | -        | 0%    | -       | 0%            | 1     |
| Yamhill          | 52,685    | 23,098    | 44%   | 492      | 1%    | 29,095  | 55%           | 0     |
| Total            | 2,447,252 | 1,521,170 | 62%   | 267,682  | 11%   | 658,347 | 27%           | 53    |