
By: Materials Management Program
    Environmental Solutions Division
    Oregon Department of Environmental Quality

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Acknowledgments
The Oregon Department of Environmental Quality’s Materials Management Program conducted the 23rd annual Oregon Material Recovery Survey for calendar year 2014. DEQ extends its appreciation to industry representatives, collection service providers, and landfill administrators and staff for providing recovery and disposal data for 2014 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 disposal and recycling data in the country.

For additional copies or information about this report, please call 503-229-6832 or toll-free in Oregon at 1-800 452-4011, x6832.
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Executive Summary

This is the Oregon Department of Environmental Quality’s 23rd annual report on municipal post-consumer (residential and commercial) material recovery and waste generation in Oregon. DEQ analyzed detailed annual surveys and disposal reports to compute waste recovery amounts for 2014 and estimated energy savings and greenhouse gas benefits from that waste recovery.

Energy savings and greenhouse gas reduction

When using recovered materials, industry can create new products with significantly less energy and lower greenhouse gas emissions compared to using virgin materials.

Energy savings in 2014 from recycling and energy recovery totaled approximately 27 trillion British thermal units — the equivalent of 220 million gallons of gasoline, or roughly 2.7 percent of total energy used (2014) by all sectors of Oregon’s economy.

Greenhouse gas reductions in 2014 from recycling, composting and energy recovery totaled approximately 2.9 million metric tons of carbon dioxide equivalents — equal to tailpipe emissions from 660,000 "average" passenger cars, or roughly 4.5 percent of all greenhouse gas emissions statewide (2014).

Reducing the generation of waste in the first place can achieve even-greater greenhouse gas and energy benefits. Reduction in waste generation likely indicates a reduction in production and use of materials, and a corresponding reduction in emission associated with all stages of the life cycle of materials.

2014 statewide recovery, disposal and generation

Oregonians recovered 2,305,661 tons, or 47.3% percent, of the municipal post-consumer waste generated in Oregon in 2014. This was a decrease from the 49.5% percent recovery rate reported for 2013 (with subsequent corrections). If recovery credits for home composting programs and for reuse programs are included as specified by state statute, the recovery rate, with credits, was 51 percent in 2014, topping Oregon's 50 percent recovery goal for the fourth consecutive year. Most of this decrease was due to a drop in organics recovery (including wood waste, food waste and animal waste). Recovery of electronics, yard debris, asphalt roofing, cardboard, paint and plastics increased; while paper fibers and metals recovery decreased.

A total of 2,572,453 tons of municipal

\[
\begin{array}{c|c|c}
\text{Total Recovered} & = & \text{Recovery Rate} \\
2,305,661 \text{ tons} & & \\
\hline
\text{Total Generated} & & \\
(Total Recovered + Total Disposed) & & \\
4,878,113 & & \\
\end{array}
\]

2014 OR Rate
47.3% without credits
51.0% with credits

---

1. Municipal post-consumer waste includes residential and business material recycled, composted, burned for energy recovery, and disposed materials. It excludes industrial materials.

2. This rate does not include credits. See How DEQ Calculates the Recovery Rate on page 13 of this report for more about credits.

3. This rate has been revised since release of the 2013 report on Dec. 31, 2014.
post-consumer waste was disposed in Oregon in 2014, up 5.5 percent from 2013. Per-capita disposal increased 4.4 percent to 1.298 pounds per person. This is 14.2 percent below the per-capita disposal rate for 1992.

Waste generation is the sum of tons disposed and tons recovered. In 2014, it totaled 4,878,113 tons, a one percent increase over 2013. This equates to 2,462 pounds per person for 2014, a 0.1 percent decrease from per-capita generation in 2013. With these slight changes, the state narrowly missed the state’s waste generation goal of no increase in total generation but met the goal of no increase in per-capita generation. Nevertheless, the state continued a five-year trend of no or negligible increases in total or per-capita waste generation, in sharp contrast to much of the 1990s and early 2000s, when waste generation rose steeply. Significantly, total waste generation in 2014 continued to be nearly one million tons less than at its peak in 2006. This is a drop of nearly 18 percent in total waste generation between 2006 and 2014, or a nearly 27 percent drop in the per-capita amount.

**Individual wastesheds**

Oregon has 35 individual wastesheds, each with its own recovery rate and goal. These include 33 counties, one municipality, and the Portland Metro tri-county area. Eleven wastesheds increased their recovery rates in 2014, and rates in 23 wastesheds remained above their 2009 recovery rate goals.

**Materials recovered in 2014:**

The following are the major categories of materials recovered and their percentages by weight of all material recovered in 2014.

- Yard debris – 22 percent
- Metals – 20 percent
- Cardboard – 16 percent
- Wood waste – 15 percent
- Paper – 12 percent
- Glass – 5 percent
- Plastics – 3 percent
- Food waste – 2 percent
- Electronics – 1 percent
- Other – 5 percent

Of the material recovered, 61 percent was recycled, 24 percent composted, and 15 percent burned for energy recovery. DEQ does not calculate recovery rates by individual material, except when current waste composition data is available.

**Conclusion**

In 2014, Oregon saw its disposal tonnage begin to rise after a number of years of falling. Recycling tonnage also had a small decline last year, while total generation was up slightly. When credits for home composting programs and reuse programs are included, Oregon still topped its 2009 recovery goal of 50 percent for the fourth consecutive year, and waste generation remained substantially below its peak in 2006, by nearly 15 percent. Using the materials collected for recycling instead of virgin materials in manufacturing has resulted in substantial greenhouse gas and energy savings. Energy savings were roughly 2.7 percent of Oregon’s total 2014 energy use, and greenhouse gas emissions reductions were estimated at 4.5 percent of net statewide emissions from all sources in 2014. The benefits of reducing the generation of waste in the first place are even greater.
Introduction and Purpose

This report describes results and methodology for Oregon’s 2014 Material Recovery and Waste Generation Survey. 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 are combined with data gathered from quarterly and annual disposal site reporting forms. Together, recovery and disposal numbers make up the amount of waste generated by Oregonians each year.

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

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

This is the 23rd year that DEQ has used the survey to gather this data. The 1991 Oregon Legislature enacted requirements for this annual survey and set goals for the recycling rate. The state goal is 50 percent recovery of municipal solid waste generation by 2009 (and beyond). Goals for individual wastesheds for 2009 ranged from 10 percent for Lake County to 64 percent for the Portland Metro area. In addition, the 2001 Oregon Legislature established the following waste generation goals for the state:

- For the calendar year 2005 and subsequent years, no annual increase in per-capita municipal solid waste generation; and
- For the calendar year 2009 and subsequent years, no annual increase in total municipal solid waste generation.

Senate Bill 263, passed in 2015, updates the state recovery goals, wasteshed goals, and waste generation goals beginning 2016. The new wasteshed goals now range from 15 percent (Lake County) to 64 percent (Metro and Marion County), but no longer include the option of two percent recovery credits each for 1) waste prevention programs, 2) reuse programs, and 3) home composting programs. This raises the effective rate needed to reach wasteshed goals by two percent each, or six percent total, for the larger communities that currently implement all three. The new statewide recovery goals are 52 percent recovery by 2020 and 55 percent recovery by 2025. These goals also do not include recovery credits, as they did before. The new waste generation goals are that the generation of solid waste in the years 2025 to 2049 shall 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.

<table>
<thead>
<tr>
<th>Total Recovered</th>
<th>2,305,661 tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Generated</td>
<td>(Total Recovered + Total Disposed) 4,878,113 tons</td>
</tr>
</tbody>
</table>

\[
\text{Total Recovered} \quad \text{Total Generated} = \text{Recovery Rate}
\]

2014 OR Rate
47.3% without credits
51.0% with credits
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. Because of the difficulty of separating post-consumer scrap metal from commercial and industrial scrap metal, those companies handling scrap metal 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 amount collected, county of origin, the company they received any transfers from, and where 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. 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. Waste from manufacturing and industrial processes (pre-consumer materials), reconditioned and reused materials, inert materials 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 materials. The major materials for 2014 are:

- **Cardboard**
- **Paper Fiber** – Other paper fiber (combined high-grade paper, newsprint and mixed scrap paper) not including cardboard.
- **Plastic** – Rigid plastic containers, plastic film, other plastics and composite plastic (including carpet pad).
- **Glass** – Container glass and other glass such as windowpanes and ceramics.
- **Electronics**
- **Wood Waste**
- **Metals** – Tinned cans, aluminum and other scrap metals
- **Yard Debris**
- **Food Waste** – Residential and commercial food waste
- **Other** – Tires, used motor oil, antifreeze, used carpeting, batteries of all types, gypsum, asphalt roofing materials, textiles, paint, household hazardous waste/solvents, and animal waste.
Energy Savings and Greenhouse Gas Reduction

DEQ uses information from the Material Recovery Survey to estimate energy savings resulting from recycling and counting energy recovery, as well as reductions in greenhouse gases associated with recycling, composting and counting energy recovery.

Energy

When recycled materials replace virgin feedstock in manufacturing, energy savings are significant. Making aluminum from old beverage containers uses 93 percent less energy than making aluminum from bauxite. Newsprint made from old newspapers requires 46 percent less energy than making newsprint from wood. While the energy conservation benefits of recycling have long been recognized, quantifying these estimates can be difficult. The U.S. Environmental Protection Agency developed a waste reduction model to estimate the amount of per-ton energy savings for recycling for a wide variety of materials. [1]

For 2014, DEQ applied the estimates from EPA’s model to tons recycled and counting tons recovered for energy (composting is not included.) Material categories from Oregon’s survey do not perfectly align with the material categories in EPA’s model, so some assumptions were made in classifying materials. Additionally, EPA’s model is based on national averages, which may not be representative of Oregon’s recycling and energy recovery markets. Regardless, the use of EPA’s model allows for a rough estimate of the energy saved from materials recycled and recovered for energy by Oregonians. Energy recovery includes the conversion of certain wastes to energy via processes such as thermal conversion to electricity, direct combustion for heat, and pyrolysis of waste plastics into synthetic fuels. DEQ estimates that recycling by Oregon households and businesses in 2014 (counting only wastes generated in Oregon, not those generated elsewhere and shipped to Oregon for recycling) led to energy savings of approximately 24.8 trillion British thermal units. The energy produced by energy recovery saved an estimated additional 2.6 trillion BTUs.

To put the energy savings number into context, based on U.S. energy information statistics, total energy use in Oregon across all sectors (transportation, electricity, heating, industry) in 2013 was 254 million BTUs per-capita. If per-capita use remained constant through 2014, then the energy savings from recycling and counting energy recovery equates to a 2.7 percent offset of total energy use. This can also be expressed as equivalent to approximately 220 million gallons of gasoline saved in 2014. These comparisons are not perfect. Many of Oregon’s recyclable materials are exported to other states or countries, so the energy conservation benefits occur elsewhere. The actual energy saved by recycling includes a mix of not only gasoline and other liquid fossil fuels, but also coal, hydroelectric, nuclear and wood. Nonetheless, the energy savings from recycling and, to a lesser extent, energy recovery in Oregon, are significant.

Greenhouse Gases

EPA also publishes greenhouse gas emission factors allowing for estimation of greenhouse gas benefits due to recycling, composting and counting energy recovery. These calculations are relatively involved and use emissions inventory work started in 2004 on behalf of the Governor’s

[1] The methodology for obtaining these estimates has changed several times since 2005. Comparisons should not be made between the results for 2014 and previous years.
Advisory Group on Global Warming and updated periodically. The greenhouse gas benefits include a variety of emissions, carbon sinks and emission offsets, which vary by material, management method and the disposal site if the materials were not recovered. Major categories of sinks and offsets include increased carbon storage in forests when recycled paper displaces wood fiber, reductions in fossil fuel use due to the energy savings of recycling, and reductions in methane emissions at landfills.

Net greenhouse gas reductions associated with materials recycled, composted and burned for energy in 2014 are estimated at 2.9 million metric tons of carbon dioxide equivalents. This includes only materials that are counted in the Material Recovery Survey and excludes any materials generated in other states and shipped to Oregon for handling. An interesting effect of using EPA’s published emission factors and Oregon landfill data for comparison is that composting yard debris is shown to add, rather than reduce, greenhouse gas emissions. This is a small amount, and other benefits of composting outweigh this shortfall. Further, EPA’s emission factors for yard debris composting vs. landfills are believed to contain significant uncertainty, and are the topic of considerable discussion and research.

Net greenhouse gas emissions for Oregon in 2014 (based on an average of 2010 to 2012 per-capita emissions and applying that average to Oregon’s 2014 population), using the state’s “in-boundary” emissions inventory, are projected at 63.8 million metric tons of carbon dioxide equivalents. Thus, recycling, composting and counting energy recovery provide a greenhouse gas offset or “credit” corresponding to approximately 4.5 percent of net statewide emissions (from all sources). Most of the benefit is a result of recycling activities, as opposed to composting or energy recovery. In fact, composting and energy recovery, in total, are believed to slightly increase overall emissions of greenhouse gases.

Comparing recovery-related greenhouse gas reductions (3.2 million metric tons) with statewide emissions (63.8 million metric tons) is potentially misleading because the emission reductions from materials recycled and composted in 2014 occur over multiple years, while the estimated emissions of 63.8 million metric tons are “same-year” (2014) emissions. The reductions from recycling and composting are spread over multiple years because they include avoided methane emissions from slow decay in landfills, as well as an increase in long-term carbon sequestration in forests and agricultural soils treated with compost. However, just as some of the greenhouse
gas benefit from recycling and composting in 2014 will actually occur in subsequent years, some of the greenhouse gas reduction counted for previous years actually occurred in 2014.

Another way to look at the greenhouse gas reductions is to express emission reductions in terms of average cars. Using data from the EPA, Oregon Department of Transportation and Oregon Department of Energy, DEQ estimates that 2.9 million metric tons of carbon dioxide equivalents is comparable to the greenhouse gas benefit of eliminating tailpipe emissions from approximately 660,000 “average” passenger cars (out of the state’s stock of approximately 3.3 million registered passenger vehicles). As with energy savings, the greenhouse gas benefit of recycling is significant. Not generating waste in the first place likely produces even greater greenhouse gas and energy benefits, but these are not estimated here.
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. Individual wasteshed recovery rates include credits wastesheds claim for certain waste prevention and recovery programs that would otherwise not be counted. Part of those credits, which amounts to nearly four percent and is explained below, is also factored into the state recovery rate.

**2014 Statewide Recovery Rate**

In 2014, the state recovered 2,305,661 tons of material. This represented 47.3 percent of the municipal post-consumer waste stream. Including credits for home composting programs and for reuse programs (see below) increased the recovery rate to 51 percent, meeting the statewide goal of 50 percent recovery. Recovered tons decreased 3.6 percent from the previous year surveyed, 2013.

From 1992 through 2005, tons of material recovered increased regularly each year. From 2006 through 2009, recovered tons declined even though recovery rates were fairly flat, as declining consumption of newspapers and magazines, followed by a general decline in consumption from the recession reduced the amount of material available to be recovered. Recovered tons increased again in 2010 to 2013, taking a downward turn in 2014, while recovery rates continued to climb until 2012.

A total of 2,572,453 tons of municipal post-consumer waste from Oregon were disposed in 2014, up 5.5 percent from 2013. This is still well below the peak disposal tonnage in 2007. Per-capita disposal increased 4.4 percent to 1,298 pounds per person. This is 14.2 percent lower than the 1992 figure of 1,513 pounds per person.

Total tons disposed added to total tons recovered equaled 4,878,113 tons of total waste generated in 2014 (see Waste Generation). Total generation rose by one percent; and per-capita generation decreased by 0.1 percent from 2013 levels.

Waste recovery decreased (-86,054 tons) nearly as fast as the increase of disposal (+134,753 tons), resulting in the increase in generation (+48,699 tons). This is in sharp contrast to the yearly increases in both disposal and recovery during most of the period between 1992 and 2006. Waste generation was nearly one million tons less in 2014 than it was at its peak in 2006. This is a drop of more than 17 percent in waste generation between 2006 and 2014, or more than 26 percent if measured on a per-capita basis.

<table>
<thead>
<tr>
<th>Year</th>
<th>Tons Recovered</th>
<th>Tons Disposed</th>
<th>Calculated Rate</th>
<th>Total Rate*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992</td>
<td>839,679</td>
<td>2,263,099</td>
<td>27.1</td>
<td>-</td>
</tr>
<tr>
<td>1993</td>
<td>974,685</td>
<td>2,280,513</td>
<td>29.9</td>
<td>-</td>
</tr>
<tr>
<td>1994</td>
<td>1,118,912</td>
<td>2,312,669</td>
<td>32.6</td>
<td>-</td>
</tr>
<tr>
<td>1995</td>
<td>1,257,204</td>
<td>2,362,146</td>
<td>34.7</td>
<td>-</td>
</tr>
<tr>
<td>1996</td>
<td>1,338,259</td>
<td>2,497,170</td>
<td>34.9</td>
<td>-</td>
</tr>
<tr>
<td>1997</td>
<td>1,462,114</td>
<td>2,633,017</td>
<td>35.7</td>
<td>-</td>
</tr>
<tr>
<td>1998</td>
<td>1,604,985</td>
<td>2,695,903</td>
<td>37.3</td>
<td>-</td>
</tr>
<tr>
<td>1999</td>
<td>1,626,271</td>
<td>2,788,699</td>
<td>36.8</td>
<td>-</td>
</tr>
<tr>
<td>2000</td>
<td>1,765,817</td>
<td>2,778,463</td>
<td>38.9</td>
<td>-</td>
</tr>
<tr>
<td>2001</td>
<td>1,999,085</td>
<td>2,635,072</td>
<td>43.1</td>
<td>46.8</td>
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<tr>
<td>2002</td>
<td>2,029,261</td>
<td>2,723,365</td>
<td>42.7</td>
<td>46.3</td>
</tr>
<tr>
<td>2003</td>
<td>2,116,880</td>
<td>2,796,787</td>
<td>43.1</td>
<td>46.8</td>
</tr>
<tr>
<td>2004</td>
<td>2,317,064\textsuperscript{1}</td>
<td>2,923,462</td>
<td>44.2</td>
<td>48.0</td>
</tr>
<tr>
<td>2005</td>
<td>2,523,367\textsuperscript{1}</td>
<td>3,026,457</td>
<td>45.5</td>
<td>49.2</td>
</tr>
<tr>
<td>2006</td>
<td>2,494,050\textsuperscript{1}</td>
<td>3,235,828</td>
<td>43.5</td>
<td>47.3</td>
</tr>
<tr>
<td>2007</td>
<td>2,437,569\textsuperscript{1}</td>
<td>3,248,126</td>
<td>42.9</td>
<td>46.6</td>
</tr>
<tr>
<td>2008</td>
<td>2,326,146\textsuperscript{1}</td>
<td>2,890,503</td>
<td>44.6</td>
<td>48.2</td>
</tr>
<tr>
<td>2009</td>
<td>2,082,631\textsuperscript{1}</td>
<td>2,586,721</td>
<td>44.6</td>
<td>48.3</td>
</tr>
<tr>
<td>2010</td>
<td>2,163,957\textsuperscript{1}</td>
<td>2,523,808</td>
<td>46.2</td>
<td>49.9</td>
</tr>
<tr>
<td>2011</td>
<td>2,306,124\textsuperscript{1}</td>
<td>2,437,767</td>
<td>48.6</td>
<td>52.3</td>
</tr>
<tr>
<td>2012</td>
<td>2,391,490\textsuperscript{1}</td>
<td>2,424,833</td>
<td>49.7</td>
<td>53.4</td>
</tr>
<tr>
<td>2013</td>
<td>2,391,714\textsuperscript{1}</td>
<td>2,437,700</td>
<td>49.5</td>
<td>53.3</td>
</tr>
<tr>
<td>2014</td>
<td>2,305,661</td>
<td>2,572,453</td>
<td>47.3</td>
<td>51.0</td>
</tr>
</tbody>
</table>

\textsuperscript{1} These rates are including the addition of credit allowances enacted by the 2001 Legislature.

\textsuperscript{1} These tonnage figures are corrected from earlier published values.
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. This determines the total weight of material recovered.

Next, it 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.

In 2001, the Oregon Legislature changed the method of calculating the total recovery rate for the state to include part of the two percent reuse and residential composting credits (but not waste prevention credits) earned by wastesheds. This statutory change requires a more complex series of calculations to determine that part of the wasteshed credit amounts that are added the calculated state recovery rate to obtain the total statewide recovery rate. Note that in 2015, the Oregon Legislature eliminated these credits from being included in the statewide and wasteshed recovery rates. This change takes effect in 2016, reflected in the 2016 report to be completed in 2017.

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, the markets' and end users' estimates are the secondary method used 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 allocates 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.

Since 1997, individual wastesheds have been allowed to claim recovery credits for waste prevention, reuse and residential composting. Each wasteshed must apply for credits as part of its annual Opportunity to Recycle Report submitted to DEQ. DEQ reviews credit applications to determine whether credits qualify under statutory criteria. A wasteshed may claim up to three two percent recovery rate credits, one credit each for reuse, waste prevention and residential composting programs. These credits are added to the calculated recovery rate to obtain the total recovery rate (for example, 40 percent calculated recovery rate + four percent credits = 44 percent).

The statewide total recovery rate is derived by first estimating what is called “adjusted recovery” for each wasteshed. The calculation of adjusted recovery involves calculating the tonnage that would be recovered if the two percent credits earned for reuse and residential composting were included in each wasteshed’s calculated recovery rate, holding disposal tonnage as a constant. For wastesheds where no two percent credits were obtained, adjusted recovery is equal to calculated recovery. For wastesheds with recovery credits, adjusted recovery is higher than calculated recovery because adjusted recovery includes the tonnage attributed to reuse and residential backyard composting.

To obtain the statewide total recovery rate, the adjusted recoveries for all wastesheds are summed together to equal a statewide adjusted recovery amount. This is then added to the actual statewide disposal tonnage to get a new estimate of waste generation (adjusted generation). The statewide total recovery rate is then calculated by dividing the adjusted recovery by the adjusted generation.

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4 The statewide total recovery rate is derived by first estimating what is called “adjusted recovery” for each wasteshed. The calculation of adjusted recovery involves calculating the tonnage that would be recovered if the two percent credits earned for reuse and residential composting were included in each wasteshed’s calculated recovery rate, holding disposal tonnage as a constant. For wastesheds where no two percent credits were obtained, adjusted recovery is equal to calculated recovery. For wastesheds with recovery credits, adjusted recovery is higher than calculated recovery because adjusted recovery includes the tonnage attributed to reuse and residential backyard composting.

To obtain the statewide total recovery rate, the adjusted recoveries for all wastesheds are summed together to equal a statewide adjusted recovery amount. This is then added to the actual statewide disposal tonnage to get a new estimate of waste generation (adjusted generation). The statewide total recovery rate is then calculated by dividing the adjusted recovery by the adjusted generation.
total recovery rate. DEQ uses the total recovery rate to determine whether a wasteshed is achieving its recovery goal.

<table>
<thead>
<tr>
<th>Nineteen Wastesheds Receiving Recovery Credits in 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker</td>
</tr>
<tr>
<td>Benton</td>
</tr>
<tr>
<td>Deschutes</td>
</tr>
<tr>
<td>Douglas</td>
</tr>
<tr>
<td>Hood River</td>
</tr>
</tbody>
</table>

**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 2014, the five materials that could be counted toward the recovery rate when burned for energy were wood, yard debris, used motor oil, fuels and plastics. In 2014, 12,497.8 tons of these materials burned for energy in the county’s incinerator were counted as recovered instead of disposed. DEQ obtained this tonnage by multiplying the quantity of non-industrial, in-county, counting solid waste processed at the facility by the percentage that those six materials make up of Marion County’s municipal solid waste disposal stream. Marion County also recovered 8,449.9 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. Eleven wastesheds increased their recovery rates in 2014, and rates in 23 wastesheds remained above their 2009 recovery rate goals.

The Survey Report Tables listed on page 23 of this report show 2014 recovery rates for each wasteshed (Table 1), tons of materials recovered in 2014 by wasteshed (Table 2), and tons of solid waste disposed by wasteshed in 2014 (Table 3).

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

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5 Recovery rate credits for individual wastesheds are handled differently in determining the statewide recovery rate. (See Footnote 4.)

6 The percentages are from the 2009-10 Marion County waste composition study.
Materials Recovered

Oregon’s material recovery rate for 2014 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-eight percent of the material recovered was recycled, 20 percent was composted and 12 percent was burned for energy.

The chart below shows major categories of materials recovered in 2014 and the percentage of total recovery (by weight) for each category. Specific materials included in these categories are listed on page 7.

The following describes changes in amounts of materials recovered in 2014:

**Metals.** The total amount of recovered metals, after decreasing six percent in 2013, decreased by nearly 11 percent in 2014.

**Paper (including cardboard).** Last year, paper fibers showed nearly a one percent increase from 2012 to 2013. In 2014, paper fibers decreased 0.7 percent in recovered tons from 2013.

**Plastic.** Total plastics recycling increased by nearly ten percent in 2014. The majority of the increase was in “other plastics.” This may be due to recyclers finding new markets for these plastics after China’s crackdown on dirty plastics imports in 2013 reduced recycling.

**Glass.** Glass held steady with only a 17 ton increase from 2013.

**Electronics.** This material showed a two percent increase in total tons recovered in 2014.
Organics. Overall organics (which includes wood waste, yard debris, food waste and animal waste/grease) total recovery decreased by three percent in 2014; including a nearly eight percent decrease in food waste recovery.
The following charts compare the materials recovered by year over the past 23 years.
Waste Generation

The total amount of municipal solid waste generated (materials recovered plus waste disposed) in Oregon remained nearly constant from 2009 to 2014. Oregon generated 4,878,113 tons of municipal solid waste in 2014, an increase of one percent over 2013. This equates to per-capita generation of 2,462 pounds per person (6.7 pounds per day), a slight 0.1 percent decrease from 2,465 pounds per person (6.8 pounds per day) in 2013. The state narrowly missed the state’s goal for no increase in total generation, but met the goal for no increase in per-capita generation. However, total waste generation in 2014 continued to be nearly one million tons less than at its peak in 2006. This is a drop of 17 percent in total waste generation between 2006 and 2014, or a 26 percent drop in the per-capita amount.

Generation is a crude measure of consumption, and for many materials, the environmental impacts of production (the corollary of consumption) are many times higher than the impacts of disposal. For example, EPA has estimated that roughly 40 percent of the country’s greenhouse gas emissions are associated with the production and transportation of goods. The leveling off of waste generation in 2006, the sharp decline in 2007 through 2009, and lack of restoration to pre-recession levels since then suggests that some of the changes in waste generation that occurred during the last recession may be long-lasting, and that the reduction in use of materials is not temporary. Reduction in materials use would, in turn, likely result in a reduction of greenhouse gas emissions associated with all stages of the life cycle of materials. Many other adverse environmental impacts associated with materials likely also decreased.
The following table shows the disposition of the municipal solid waste generated in Oregon in 2014. See Table 9 for individual wasteshed dispositions.

<table>
<thead>
<tr>
<th>Disposition</th>
<th>Percent by weight</th>
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<tr>
<td>Disposed*</td>
<td>52.7</td>
</tr>
<tr>
<td>Recycled</td>
<td>32.1</td>
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<tr>
<td>Composted</td>
<td>9.3</td>
</tr>
<tr>
<td>Recovered for Energy*</td>
<td>5.9</td>
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</tbody>
</table>

*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 13). Other wastes burned at the facility are counted here as disposed.
Conclusion

The energy savings and greenhouse gas reductions from materials recovered for recycling, composting and energy recovery in 2014 were significant. Energy savings were comparable to 216 million gallons of gasoline or roughly 2.7 percent of Oregon’s total 2014 energy use. Reductions in greenhouse gas emissions were estimated at 3.1 million metric tons of CO2 equivalents or 4.8 percent of net statewide emissions from all sources in 2014. Recycling produced most of these benefits.

Reducing the generation of waste in the first place can achieve even greater greenhouse gas and energy benefits than material recovery. Reduction in waste generation likely indicates a reduction in production and use of materials, and a corresponding reduction in emissions associated with all stages of a material’s life cycle.

Oregon recovered 2,305,661 tons of material for recycling, composting and energy recovery, achieving a 51 percent recovery rate including credits (47.3 percent without credits) in 2014. This is the fourth straight year Oregon met its 50 percent recovery goal.

A total of 2,572,453 tons of municipal post-consumer waste from Oregon was disposed in 2014, up 5.5 percent from 2013. Per-capita disposal also increased, but is still lower than it was in 1992 by 14 percent.

Total tons disposed added to total tons recovered equaled 4,878,113 tons of total waste generated in Oregon in 2014. Total generation increased by one percent, while per-capita generation decreased by 0.1 percent; narrowly missing the state goal of no increase in total generation and narrowly meeting the state goal of no increase in per-capita generation. Still, the amount of waste generated in 2014 was nearly one million tons or 17 percent less than the waste generated in the peak year of 2006.

Waste generation peaked in 2006, but fell rapidly in 2008 and 2009, and continues to remain well below pre-recession highs, likely indicating that Oregonians are still buying and consuming less. Ongoing reductions in both per-capita and total waste generation will be needed for the state to achieve its statutory goals.
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 2014 report:**

- 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.

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

- 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.
2014 Survey Report Tables

Links to the data tables one through nine used for this report.

- **Table 1:** Wasteshed Recovery Rates, 2014
- **Table 2:** Amount Recovered in 2014 by Wasteshed
- **Table 3:** Solid Waste Disposed in 2014 by Wasteshed
- **Table 4:** Oregon Calculated Recovery Rates by Wasteshed, 1992-2014
- **Table 5:** Oregon Amount Recovered by Wasteshed, 1992-2014
- **Table 6:** Oregon Solid Waste Disposed by Wasteshed, 1992-2014
- **Table 7:** Oregon Solid Waste Generated by Wasteshed, 1992-2014
- **Table 8:** Oregon Materials Recovered, 1992-2014
- **Table 9:** Disposition of Recovered Materials, 2014
Appendix I: Methodology

Data Sources

In 2014, DEQ collected recycling and disposal data from:

- 224 private companies handling recycled materials, including buy-back centers, intermediate processors, material recovery facilities, yard debris composting facilities, beer and soft drink distributors, and end users
- 160 collection service providers
- 9 scrap metal dealers
- 38 disposal sites or waste exporters handling municipal and construction and demolition wastes.

Data Collection and Management

Recyclers and collection service providers who directly collect material in each county were surveyed. However, since it is not practical to identify and survey each individual generator of recyclable materials (such as all the retail stores in the state), DEQ also surveyed material processors and end users. Survey recipients were asked to return the completed surveys to DEQ by Feb. 28, 2015. Metro and local government officials reviewed metro-area and individual county watershed collection service provider forms for completeness and accuracy before forwarding them to DEQ. As soon as DEQ received the survey information, its staff checked data for completeness and, in many instances, verified information by calling the survey respondent. Once approved, DEQ entered the data into a database and performed a number of quality control checks. The two most important checks were:

Comparing information from different sources. For example, often collectors report sending more material to recyclers (or end users) than the recyclers report receiving. This issue is usually resolved by calling the receiving recycler or both the recycler and the collector to determine the source of the discrepancy. When a discrepancy cannot be resolved by talking to the involved recyclers and collectors, information provided by the end user is used in most cases.

Examining per-capita recycling calculations for unlikely results. For example, occasionally more material is reported as recovered than would be expected in a county, based on estimates using population. DEQ resolves this issue by determining which survey respondents reported collecting or handling the material for the county in question, looking for unlikely results in their reports, and calling the involved recyclers and collectors. Problems in units of measurement used sometimes cause these anomalies.

Quality of Data

DEQ has collected recovery and waste generation rate data for 23 years. Many entities who report have set up their own record-keeping mechanisms to help them provide complete, accurate and timely data. However, each year DEQ staff encounter problems with reported data that need to be resolved. For example, the 2014 surveys included instances of municipal solid waste being improperly reported resulting in non-counting tonnage from a metro facility. Other errors in reporting include composted materials and material burned for energy reported as recycled. Some reporters provided more accurate data on materials they have traditionally handled due to new staff and updating reporting tactics. Other companies did not include data for all facilities they operate or failed to submit a survey form.
Double Counting of Materials

The processing and handling chain for each recyclable material is varied and complex – it can involve multiple companies handling the same material. In addition, DEQ determines recovery rates for individual wastesheds as well as the state as a whole. The potential for double counting of materials in this process is a major challenge. For example, companies collecting materials, processors who purchase the materials from the collectors, and markets and end users of materials are all surveyed and report on the same materials.

Having information on where each collector or recycler sells their material allows DEQ to eliminate the double counting of that material. DEQ’s database can track materials transferred from collector to recycler, collector to collector, or recycler to recycler, accounting for each material a company sold to an intermediate processor, while at the same time keeping track of the county of origin for that material. Thus, no matter where a material is ultimately recycled, composted or burned for energy, DEQ can give proper credit to the wasteshed of origin.

Commingled Collection

Many areas of Oregon collected commingled recyclable materials. A dual stream system is used – glass is kept separate from the other mixed materials. This material is sent to processors or material recovery facilities. DEQ asked these entities to complete an additional commingled survey form. The added information describes individual materials that are sorted out of the commingled collection material mix.

DEQ combines the received commingled amounts into one type – Commingled All. The material recovery facility receipt and sorting data is used to apply back to the companies that collect and transfer commingled materials to the recovery facilities. Individual materials sorted from the Commingled All collections are allocated back to the collecting wasteshed. These allocations are based on sorting estimates for individual materials. All areas sending materials to one processor receive the same sorting percentage allocation, which may not exactly match the actual collections percentages of their commingled mix. The sorted data integrity is “homogenized” and so a bit weakened. To further complicate material tracking, some commingled materials now pass through a transfer operation in between the collection service provider and material recovery facility. The difficulty in identifying specific materials in mixes is an unfortunate outcome of collecting and transferring recyclables in commingled packs. However, the volume of collected materials is greatly increased by this collection method.

Disposal Data

Information on disposal tonnage comes from annual or quarterly reports filed with DEQ by disposal sites for fee collection purposes. Disposal sites report counting waste by county and DEQ uses this amount to calculate the recovery rate. “Counting” waste includes municipal solid waste as well as construction and demolition wastes such as wood waste, asphalt roofing, carpet pad, upholstery foam and gypsum wallboard. Also included in the counting disposal tonnage is animal waste and grease and tires. The following non-counting waste is excluded from this survey: industrial waste from manufacturing processes; sewage sludge; asbestos; petroleum-contaminated soil; and inert waste (full loads only) such as rock and gravel, dirt, concrete, brick and asphalt paving.
# Appendix II: Respondents to the 2014 Material Recovery Survey

**PRIVATE RECYCLING**  
Survey Respondents

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<th>Company Name</th>
<th>Location</th>
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<td>1010 TOWING &amp; RECYCLING</td>
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<td>ACCESS INFORMATION MANAGEMENT</td>
<td>Eugene, OR</td>
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DENTON PLASTICS INC
Portland, OR

DIETRICH TRUCKING
Vancouver, WA

DIRT HUGGER
The Dalles, OR

ECHANIS DISTRIBUTING CO
Ontario, OR

ECOSORT
Eugene, OR

ECS REFINING LLC
Medford, OR

EG METALS INC
Hillsboro, OR

EMERALD SERVICES
Tacoma, WA

ENVIRONMENTAL FIBERS INTERNATIONAL
Portland, OR

ENVIRONMENTAL PROTECTION SERVICES INC
Brooks, OR

ENVIRONMENTALLY CONSCIOUS RECYCLING
Portland, OR

EPSON
Hillsboro, OR

ERICKSONS SENTRY MARKET
Burns, OR

EUGENE MISSION
Eugene, OR

EXIDE TECHNOLOGIES
Portland, OR

FAR WEST FIBERS
Portland, OR

FRED MEYER
Clackamas, OR

FRED MEYER (CORP)
Portland, OR

FREE GEEK
Portland, OR

FULL SAIL BREWERY
Hood River, OR

GARDNER ENTERPRISES INC
John Day, OR

GARTEN FOUNDATION
Salem, OR

GARY GRUNER
CHEVROLET
Madras, OR

GEORGIA PACIFIC CORP
Halsey, OR

GEORGIA PACIFIC CORP
Toledo, OR

GLASS TO GLASS
Portland, OR

GODFREY & YEAGER EXCAVATING
Coos Bay, OR

GOODWILL INDUSTRIES
Eugene, OR

GOODWILL INDUSTRIES
Portland, OR

GORGE SECURITY SHRED
Hood River, OR

GOSPEL RESCUE MISSION
Grants Pass, OR

GRAF PAPER SALVAGE
Portland, OR

GREENWAY RECYCLING
Portland, OR

GRIMMS FUEL CO
Tualatin, OR

HI-SCHOOL PHARMACY
Vancouver, WA

HILTON FUEL
Central Point, OR

HINES NURSERY
Forest Grove, OR

HOOD RIVER COUNTY
Hood River, OR

HOOD RIVER LIONS
Hood River, OR

HOOKER CREEK CO
Bend, OR

INTERNATIONAL PAPER
Beaverton, OR

INTERSTATE PLASTICS
Vancouver, WA

IRAS SALES & SERVICE
Madras, OR

IRON MOUNTAIN
Portland, OR

ITREX LLC
Central Point, OR

JERRY MARKEE
Tillamook, OR

JOHNSON CONTROLS
Canby, OR

K&S RECOVERY
Aloha, OR

K&S RECYCLING INC
Brush Prairie, WA

KB RECYCLING
Canby, OR

KE MCKAYS
Gold Beach, OR

KEYSTONE AUTOMOTIVE INDUSTRIES
Vancouver, WA

KINGSLEY AIR FIELD
Klamath Falls, OR

KIWANIS CLUB
Tillamook, OR

KLAMATH RECYCLING
Klamath Falls, OR

KNEZ BUILDING MATERIALS
Clackamas, OR

LAKESIDE RECLAMATION
Beaverton, OR

LANE FOREST PRODUCTS
Eugene, OR

LAURELWOOD FARMS
Garland, OR

LES SCHWAB WAREHOUSE CENTER
Prineville, OR

LIFESPAN TECHNOLOGY RECYCLING
Denver, CO

MARION RESOURCE FACILITY
Brooks, OR

MARKET OF CHOICE
Eugene, OR

MCFARLANES BARK INC
Milwaukie, OR

MCGOVERN METALS
Roseburg, OR

MCKENZIE RECYCLING
Eugene, OR

MERLIN PLASTICS
Delta, BC

METRO
Portland, OR
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Scappoose, OR
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Milwaukie, OR
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Vancouver, WA
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Walla Walla, WA
WAL-MART STORES
Bentonville, AR
WASTE CONTROL RECYCLING
Kelso, WA
WASTE MANAGEMENT LAMP TRACKER
Phoenix, AZ
WASTE RECOVERY WEST
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WASTE XPRESS
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WEST UNION GARDENS
Hillsboro, OR
WEST VANCOUVER MATERIAL RECOVERY FAC
Vancouver, WA
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Monmouth, OR
WESTERN PULP PRODUCTS
Corvallis, OR
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Boise, ID
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White City, OR
WHITE CITY RECYCLERS
Eagle Point, OR
WILLAMETTE LANDSCAPE SUPPLY COMPOST FACILITY
Salem, OR
WILLAMETTE RESOURCES
Wilsonville, OR
WINCO
Woodburn, OR
WOOD WASTE MANAGEMENT
Portland, OR
WOODCO FUEL
Aloha, OR
WRIGHT CHEVROLET
Fossil, OR
YAMHILL CO SOLID WASTE MANAGEMENT
McMinnville, OR
YAQUINA RECYCLING
Newport, OR

COLLECTION SERVICE PROVIDER
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BAKER SANITARY SERVICE
Baker City, OR
BEAVER HILL INCINERATOR & DISPOSAL SITE
Coquille, OR
BEND GARBAGE & RECYCLING CO
Bend, OR
BRANDTS SANITARY SERVICE
Monmouth, OR
C & B SANITARY SERVICE
Burns, OR
CART’M
Manzanita, OR
CASCADE RECYCLING COMPANY
Bend, OR
CENTRAL COAST DISPOSAL
Florence, OR
CITY OF CANNON BEACH
Cannon Beach, OR
CITY OF HAINES
Haines, OR
CITY OF JUNCTION CITY
Junction City, OR
CITY OF LONG CREEK
Long Creek, OR
CITY OF MILTON FREEWATER
Milton Freewater, OR

SCRAP METAL
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Burchams Metals
Albany, OR
Davis Rs Recycling Station
Clackamas, OR
Hamilton Metals
Klamath Falls, OR
Metro Metals Northwest
Portland, OR
Pacific Recycling
Eugene, OR
RBBG, Inc
Parkdale, OR
Rivergate - Calbag LLC
Portland, OR
Swift & McCormick
Redmond, OR
Winters Salvage
Tigard, OR

CITY OF SENECA
Seneca, OR

CITY SANITARY SERVICE
Tillamook, OR

CLARKS DISPOSAL
John Day, OR

COBURG SANITARY SERVICE, INC
Coburg, OR

CONDON TRANSFER STATION
Condon, OR

CONFEDERATED TRIBES OF THE WARM SPRINGS
Warm Springs, OR

COOS BAY SANITARY SERVICE
Coos Bay, OR

COTTAGE GROVE GARBAGE SERVICE, INC
Cottage Grove, OR

COUNTRYSIDE DISPOSAL SERVICE
Junction City, OR

COUNTY TRANSFER & RECYCLING
Eugene, OR

CROOK COUNTY LANDFILL
Prineville, OR

CROOKED RIVER SANITARY
Terrebonne, OR

CURRY TRANSFER & RECYCLING
Brookings, OR

D & O GARBAGE SERVICE INC
Salem, OR

DESCHUTES RECYCLING
Bend, OR

DESCHUTES TRANSFER CO
Bend, OR

DON G AVERILL RECYCLING INC
Tillamook, OR

DOUGLAS COUNTY PUBLIC WORKS DEPARTMENT
Roseburg, OR

ECOSYSTEMS TRANSFER & RECYCLING
Veneta, OR

ENVIRONMENTAL WASTE SYSTEMS INC
St. Helens, OR

FINLEY BUTTLES LANDFILL
Boardman, OR

HIGH COUNTRY DISPOSAL
Redmond, OR

HOLLIDAY ENTERPRISES
Prineville, OR

HOOD RIVER GARBAGE, RECYCLE & TRANSFER
Hood River, OR

HORIZON PROJECT INC
Milton Freewater, OR

HUDSON GARBAGE
St Helens, OR

HUMBERT REFUSE & RECYCLING (RAHN'S)
Milton Freewater, OR

JEFFERSON COUNTY PUBLIC WORKS DEPARTMENT
Madras, OR

JOSEPHINE COUNTY RECYCLING & TRANSFER
Grants Pass, OR

KLAMATH COUNTY SOLID WASTE MANAGEMENT
Klamath Falls, OR

KLAMATH DISPOSAL
Klamath Falls, OR

KNOTT LANDFILL
Bend, OR

LAKE COUNTY ROAD DEPARTMENT
Lakeview, OR

LAKEVIEW SANITATION
Lakeview, OR

LANE APEX DISPOSAL
Eugene, OR

LANE COUNTY SOLID WASTE DIVISION
Eugene, OR

LES SANITARY SERVICE
Coos Bay, OR

LORENS SANITATION SERVICE
Keizer, OR

MADRAS SANITARY SERVICE
Madras, OR

MALHEUR COUNTY ENVIRONMENTAL HEALTH
Vale, OR

MARION COUNTY PUBLIC WORKS - ENV SERV
Salem, OR

MARION RECYCLING CENTER INC
Salem, OR

MCKENZIE DISPOSAL SERVICE LLC
Walterville, OR

MEL'S SANITARY SERVICE
Tygh Valley, OR

MID OREGON RECYCLING
Bend, OR

NESTUCCA VALLEY SANITARY
Hebo, OR

NORTH BEND SANITATION
North Bend, OR

NORTH LINCOLN SANITARY SERVICE
Lincoln City, OR

NORTH MARION RECYCLING & DISPOSAL
Keizer, OR

OAKRIDGE SANI-HAUL INC
Oakridge, OR

ONTARIO SANITARY SERVICE INC
Ontario, OR

OREGON WASTE SYSTEMS INC
Arlington, OR

PACIFIC SANITATION
Salem, OR

PENDLETON SANITARY SERVICE, INC
Pendleton, OR

R-SANITARY SERVICE
Garibaldi, OR

RECOLOGY ASHLAND SANITARY SERVICE
Ashland, OR

RECOLOGY WESTERN OREGON
Astoria, OR
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Heiberg Garbage Service
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Rockwood Solid Waste Inc
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Drewey Disposal Site
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Hillsboro, OR

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Eugene, OR

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