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Legislative Committee Services
State Capitol Building
Salem, Oregon 97301
(503) 986-1813

Background Brief on ...

Recycling

Prepared by: Beth Patrino

Oregon has been a national leader in the area of recycling. The following outlines recycling legislation beginning in 1971.

The Bottle Bill – In 1971, Oregon enacted the “bottle bill” that has been called the most effective recycling program in American history and is the nation’s longest-standing deposit law. Within 2 years of its implementation, more than 90 percent of all carbonated beverage containers were being recycled and more than 80 percent of the roadside container litter disappeared. Container recovery continues to be much higher in Oregon than in states that do not have bottle deposit laws. In 2007, the Legislative Assembly enacted the first significant expansion of the original bottle bill, applying the five-cent container deposit to water and flavored water beverages. Senate Bill 707 (2007) also created the Bottle Bill Task Force to study issues related to the bottle bill and report back to the Legislative Assembly by November 1, 2008.

Opportunity to Recycle Act of 1983 – A perceived shortage of landfill space contributed to passage of Oregon’s first Opportunity to Recycle Act in 1983. This act also established solid waste management policies that recognized the environmental benefits of waste prevention, reuse, and recycling.

The 1983 Act also required wastesheds (usually counties, except for the City of Milton-Freewater that is its own wasteshed, and Metro that comprises parts of Clackamas, Multnomah, and Washington counties) to have recycling depots. It required cities with more than 4,000 in population to provide monthly curbside recycling collection service to all garbage service customers.

How the Laws Evolved

While the 1983 Opportunity to Recycle Act led to many new curbside residential recycling programs and the establishment of recycling depots, Oregon policy makers recognized that there was a lot more to be done. The 1991 Oregon Recycling Act (Senate Bill 66) strengthened and broadened recycling requirements and, for the first time, added activities to develop markets for recycled materials.

The 1991 act:

- Set a statewide recovery goal of 50 percent by 2000 and interim recovery goals for individual wastesheds by 1995

- Expanded the opportunity for recycle requirements to incorporate optional program elements
- Established a household hazardous waste program
- Required recycled content in glass containers, directories, and newsprint publications and set requirements for recycling rigid plastic containers to promote market development
- Established government procurement requirements for recycled products
- Required the Department of Environmental Quality (DEQ) to calculate recovery rates annually to measure progress toward the 50 percent goal and established the Material Recovery Survey of all waste collectors and private recycling companies in Oregon for recovery data collection
- Required DEQ to conduct a waste composition study every other year to determine what materials are being disposed of (results of this study help local governments plan their recycling programs)
- Required DEQ to develop a solid waste management plan
- Required and provided funding to develop a school curriculum on recycling and waste reduction
- Funded programs through tipping fees at landfills, including grants to local governments

To help divert reusable or recyclable materials from Oregon's landfills, the 1991 Act banned from solid waste disposal sites:

- discarded or abandoned vehicles
- large home or industrial appliances
- used oil
- tires (tires chipped to DEQ standards can be landfilled)
- lead-acid batteries

Expanding Resource Recovery

During the 1997 Legislative Session, a coalition of recycling and solid waste management interests came together to expand Oregon's

resource recovery efforts beyond recycling and to find a way to give local governments' recovery rate credit for programs higher up the solid waste management hierarchy. The result was a program of two percent credits for wastesheds that establish and maintain programs in waste prevention, reuse, and backyard composting. The DEQ established guidelines and evaluation criteria for wastesheds that allowed them to earn up to six percent total credits toward their recovery goals for qualifying programs.

Recovery Rate Challenges

Solid waste generation (the total amount of materials counted as "waste," whether they are recycled, composted, or disposed of) grew each year through the 1990s, while the amount of materials recovered also grew steadily. However, by the year 2000, Oregon had not met its ambitious recovery goal of 50 percent, although most wastesheds were meeting their individual goals. Because of this, in 2001, the DEQ confirmed to legislators that the original wasteshed goals, in total, would not produce a statewide recovery goal of 50 percent. Some wastesheds, particularly large ones, would have to do more to enable the state to meet its goal.

This reality was reflected in House Bill 3744, unanimously passed by the 2001 Legislative Assembly. The measure set a statewide recovery goal of 45 percent for 2005 and 50 percent for 2009. In order to help meet the statewide recovery goals, all wastesheds set new voluntary recovery goals for 2005 and 2009 and submitted plans to the DEQ for how they planned to meet their new goals. Wasteshed plans must be updated by Dec. 31, 2006 and Dec. 31, 2010. Metro wasteshed's waste reduction plan meets this planning requirement. If a wasteshed does not achieve its 2005 or 2009 waste recovery goal, the measure requires the wasteshed to conduct a technical review of existing policies or programs and determine revisions to be implemented to meet the recovery goal.

To recognize additional waste reduction efforts that cannot be measured, House Bill 3744 added

three new ways a watershed could qualify for a two percent credit toward its recovery rate. It allows watersheds to apply for more than two percent credit for residential composting programs if they can document that more than two percent of the waste generated is being diverted by the programs. Finally, the measure gave watersheds that burn mixed solid waste for energy recovery some additional credit toward their recovery rates under certain conditions.

New goals: House Bill 3744 set Oregon's first statewide waste generation goals and added waste prevention goal language to ORS 459.015. The waste generation goals are:

- By 2005, there will be no annual increase in per capita municipal solid waste generation
- By 2009, there will be no annual increase in total municipal solid waste generation

In 2005, Oregon failed to meet the first goal, as outlined in the chart at the end of this brief. Per capita waste generation continued to increase, reaching 8.4 pounds per person per day in 2005.

Current Recycling Requirements for Local Governments

To encourage recycling participation and increase the amount of material recovered from the waste stream, the 1991 Oregon Recycling Act enacted a menu of recycling program elements or options (numbers one through eight) and the 1997 Legislative Assembly made changes to some of these program options and added one more (number nine). Oregon Administrative Rules (OAR 340-090-0040) clarify requirements for each of the following program elements:

1. Weekly, residential curbside collection of source-separated recyclable materials, on the same day as garbage service. (If this program element is not implemented, a minimum of monthly curbside collection is still required). Local governments must also give notice to each person of the opportunity to recycle and encourage source separation of recyclable materials through an education and promotion program.
2. An expanded recycling education and promotion program that includes, among other things, recycling collection promotion directed at residential and commercial solid waste service customers and generators at least four times a year.
3. Provision of at least one durable recycling container directly to each residential collection service customer.
4. Recycling collection service provided to multi-family dwelling complexes having five or more units.
5. Residential yard debris collection program for collection and composting of residential yard debris.
6. Regular, on-site collection of source-separated principal recyclable materials from commercial generators.
7. Establishment of an expanded system of recycling depots that are conveniently located to the population served.
8. Garbage collection rates established as a waste reduction incentive, including a mini-can option.
9. A collection and composting program for commercial and institutional food waste, nonrecyclable paper and other compostable waste.

All cities with 4,000 or more residents must provide a minimum of three recycling program elements and basic recycling education and promotion. All cities of 10,000 or more population must provide additional 1 or 2 recycling program elements, depending on the activities chosen. The DEQ can also approve alternative recycling programs that comply with administrative rules adopted by the Oregon Environmental Quality Commission.

Oregon's Recovery Rate

The statewide recovery rate has increased steadily since 1992 when the rate was first calculated. In 2005, Oregon recovered 2,519,344 tons, or 43.8 percent of the actual total "counting" (municipal) waste stream. This is a slight increase in recovery tonnage from 2004, when 2,510,914 tons (45.3 percent of the total

waste stream) were recovered.

The 2006 statewide total rate including 2 percent credit calculations was 47.5 percent, down from 49.1 percent in 2005, but exceeding the statutorily mandated 2005 goal of 45 percent recovery statewide. While recovery generally has increased over the years, so has total waste generation, which is the sum of disposal and recovery. It is a rough measure of the total discards in a watershed. The average per capita waste generation in Oregon during 2006 was 3,118 pounds, up from 3,050 pounds in 2005. In 1992, average per capita waste generation was 2,075 pounds per person.

The DEQ is able to use the results of the Material Recovery Survey to estimate the energy savings resulting from recycling, as well as reductions in greenhouse gases associated with recycling, composting, and “counting” energy recovery.

Energy - When recycled materials replace virgin feedstocks in manufacturing, energy savings can be significant. For example, 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 to make than newsprint made from wood.

The DEQ estimates that recycling by Oregon households and businesses in 2006 (counting only wastes generated in Oregon, not those generated elsewhere and shipped to Oregon for recycling) led to energy savings of roughly 27 trillion British thermal units (**BTUs**). To put this number in context, total energy use in Oregon across all sectors (transportation, electricity, heating, industry) in 2004 was estimated at 1,094 trillion BTUs. If per capita use remained constant through 2006, then the energy savings from recycling in 2006 equates to a 2.4 percent offset of total energy use. Alternatively, the 30 trillion BTU savings can be expressed as equivalent to 214 million gallons of gasoline saved in 2006. Although both of these comparisons are imperfect, the energy savings

from recycling in Oregon are significant.

Greenhouse Gases - Net greenhouse gas reductions associated with materials recycled, composted, and burned for energy in 2006 are estimated at 3.5 million metric tons of carbon dioxide equivalent. This includes only materials that are counted toward the state’s recovery rate and excludes any materials that are generated in other states but shipped to Oregon for recycling. To put this number in context, net greenhouse gas emissions for Oregon for 2006, based on an estimate of 2004 emissions and projections for 2015, are estimated at 67.5 million metric tons of carbon dioxide equivalent. As such, recycling, composting, and “counting” energy recovery provide a greenhouse gas offset or “credit” equivalent to 5.1 percent of net statewide emissions (from all sources).

Another way of thinking about greenhouse gas reductions is to express emission offsets in terms of “average cars.” Using data from the U.S. Environmental Protection Agency, the Oregon Department of Transportation, and the Oregon Department of Energy, the DEQ estimates that the 3.5 million metric tons of carbon dioxide equivalent is comparable to the greenhouse gas benefit of removing 740,000 “average” passenger cars from the state’s stock of 3,250,000 registered passenger vehicles. As with energy savings, the greenhouse gas benefit of recycling, composting, and energy recovery is significant.

Waste prevention benefits - Waste prevention and reuse (as well as recycling) can significantly reduce environmental impacts associated with raw materials extraction, materials manufacturing, and transportation. In many cases, these environmental benefits “upstream” of the consumer may be significantly larger than the “downstream” benefits of waste reduction. Reducing the overall generation of solid waste is not just about saving landfill space. The value of achieving the new statutory waste generation goals was affirmed in 2004 by the Governor’s Advisory Group on Global Warming. In its “Oregon Strategy for Greenhouse Gas Reductions,” the Advisory Group identified

achieving the waste generation (and recovery) goals as a top priority (“Category 1”) recommendation. Achieving the statutory waste generation goals contributes more than 15 percent of the total greenhouse gas reductions projected to result from the advisory group’s entire package of recommendations.

Recent Legislation

Senate Bill 707 (2007) expands the bottle bill law to include water or flavored water containers. Under the measure, dealers must take or pay the refund value of empty containers that held the kind of beverage sold by the dealer, regardless of size or brand. Smaller dealers may refuse empty containers if they are not of the same kind, size and brand that the dealer sells. The bill limits how many empty containers a dealer must accept or refund (i.e., 144 containers per person per day for larger dealers, 50 containers for smaller dealers).

The bill creates the “Bottle Bill Task Force” to study and make recommendations on the collection/refund of beverage containers, including issues like the use of redemption centers, appropriate beverages to recycle, and refund amounts. The report from the task force is due November 1, 2008.

House Bill 2626 (2007) provides for the statewide collection and recycling of televisions, computers, and monitors (“covered electronic devices” or **CEDs**), as of January 1, 2009. Under the bill, manufacturers of CEDs must either manage their own statewide collection/recycling effort or pay into a DEQ-established state contractor program. Under either program, any Oregon household, certain small businesses and non-profits, and those individuals recycling seven or fewer CEDs are exempt from paying fees. Retailers are prohibited from selling CEDs unless the products carry a brand indicating compliance with the new law as of January 1, 2009. The bill forbids any person or disposal site operator from discarding CEDs at solid waste sites as of January 1, 2010.

Staff and Agency Contacts

Wendy Wiles
[Department of Environmental Quality](#),
Administrator, Land Quality Division
503-229-6834

Loretta Pickerell
[Department of Environmental Quality](#)
Manager, Solid Waste Policy & Program
Development
503-229-5808

Palmer Mason
[Department of Environmental Quality](#)
Legislative Liaison, Land Quality Division
503-229-6800

Beth Patrino
[Legislative Committee Services](#)
503-986-1751

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