

Recycling in Oregon

Recycling has been around as long as garbage itself – back in the “horse and cart” collection days, if there were materials of value in the garbage, someone pulled them out and sold them to a market. Over time, the system evolved to what we have today; the biggest changes happened more than 25 years ago with the 1991 Oregon Legislature’s passage of the law requiring curbside recycling collection in every Oregon community of 4000 people or more. Oregon was one of the first states in the nation to pass such comprehensive legislation, and has been a leader in recycling programs since, meeting goals to recover waste for recycling while also looking ahead to find the best ways to manage materials for greater sustainability for our future.

The Recycling Process

Oregon state law requires that citizens have the opportunity to recycle. For most residents and businesses, this opportunity is offered through curbside collection programs. Throughout most of Oregon, city and county governments determine the curbside program elements, service standards and the fee customers will pay for the service. In most Oregon cities and counties, franchised solid waste and recycling companies implement the programs and provide the collection services to customers. As a part of the curbside service, customers receive carts and bins for recycling, instructions about recycling, and collection on a regular schedule. Once collected, the materials are delivered to recycling processors that use a combination of mechanical equipment and people to sort the materials into separate commodities. The processors then package the clean and marketable commodities into bales of materials (paper, tin, plastic, etc.) and deliver them to markets that use the recycled materials to make new products.

Recycling Laws and Regulation

Oregon’s recycling laws and rules begin at the state level. The [Oregon Department of Environmental Quality](#) implements relevant state laws, found in ORS Chapters 459 and 459A. Among other important standards, the law sets forth the economic test for recycling at [ORS 459.005\(19\)](#), which states that “recyclable material means any material or group of materials that can be collected and sold for recycling at a net cost equal to or less than the cost of collection and disposal of the same material.” If this test is not met, then the material is not recyclable.

Cities and counties have the authority to establish recycling collection programs, including the materials that will be recycled in their communities. If they choose to set recycling collection service standards, they must also set rates that cover the costs of collectors to provide the service. That requirement is found at [ORS 459A.085\(8\)](#). In addition, in the Portland area, the Metropolitan Regional Government plays a role in solid waste management.

The majority of Oregon’s cities and counties have chosen to franchise their solid waste and recycling collection services, working with solid waste and recycling businesses to implement the collection programs for their citizens. A “franchise” used in this context is different than what is commonly thought of; it is a legal agreement between a city or county and a business whereby the business implements the city or county’s solid waste and recycling program. Many Oregon franchised businesses are small, family-owned companies, while others are the locally-operated arms of regional or national companies. All of these businesses deliver recycling

collected in their local programs to processing businesses. Many of these companies – both collection and processing - are members of ORRA.

Recycling Collection and the Markets

As recycling collection has evolved, so have the recycling markets. When recycling programs began, the biggest component of collection was fiber – newspaper, cardboard, and other paper – and the markets for these materials were domestic, and often even local to Oregon. Oregon's recycling fed paper mills, locally and regionally. Over the past 25-30 years, much of the world's manufacturing has shifted to China, and now China is the largest manufacturing nation in the world. As a result of this shift, domestic manufacturing declined, Oregon mills closed, China grew, and the Chinese market for recycling materials expanded as well. Ships arriving from China with goods were delivered into West Coast ports, and those empty containers were ready to be filled with recycling and shipped back to China - at a lower cost and with higher prices paid to Oregon processors than a domestic manufacturer would pay for the same material. China became the market for 60% of the world's recycling, and recyclable materials became the sixth largest U.S. export to China.

Over this time, recycling collection changed as well. Most recycling programs in Oregon and in the rest of the United States moved to commingled collection carts – almost all recycling is placed in one cart, instead of separated into specific materials at the curb. The change was an effort to allow for the collection of more diverse materials with greater convenience to customers while also offering increased worker safety and reducing the potential for back-related lifting injuries for employees. Commingled collection did in fact lead to improved worker safety and it increased collection volume and more material recovery – on average, 30% more material is collected. However, it also increased contamination – both from well-meaning but misguided people who didn't follow the program guidelines and from those who intentionally throw garbage in their recycling carts. Efforts have been ongoing to try to curb this contamination, which hovers at about 9%, but with limited success (9% is a very good number when comparing to other states, but before commingling, the number was under 5%). Despite increased contamination, the Chinese market continued its demand for material, so while troubling and less acceptable in domestic markets, the contamination was not catastrophic to recycling programs.

Current Market Crisis

China's government has been signaling its intent to make environmental cleanup and protection a priority, stating it no longer would accept "foreign garbage." Implementing "National Sword" on January 1, 2018, China banned the import of some commonly recycled items, such as mixed scrap paper and all plastics that are numbered 3-7. In addition, the National Sword set a new contamination standard of no more than 0.5%, a number that is far below any existing international or domestic standard. The standard is all but unachievable with existing curbside contamination rates and with current equipment and system costs. As a result, no Oregon recycling has been delivered into China in 2018. The loss of the largest, most stable market is forcing Oregon processors to search for uncertain, less stable "spot" markets in order to move materials

Even if markets can be found, the cost to deliver recyclables to processors continues to rise. At this point, commingled recycling programs around the state are failing the economic test (it costs

more to recycle than it does to dispose), so cities and counties and their collection partners are considering hard choices: some are using limited storage to hold collected recycling while others (in accordance with Oregon state statutes) have delivered material for disposal; some have stopped or limited recycling programs; others are continuing, but are faced with increased rate implications for customers and concern from collectors who are footing the bill until the rates are adjusted to reflect the costs. And even if rates are raised so programs can continue, it cannot be guaranteed that the material collected for recycling can actually be recycled, so how can the public's trust be protected and maintained?

If materials can be cleaned to meet the Chinese standard, another uncertainty is what China's level of demand will be. The Chinese government issues import licenses for recycling materials. China issued only 108 import permits in the first round of 2018, compared to 2,937 import permits in the same period for 2017. China is ratcheting down on its polluting mills by limiting supply; of the 2,400 mills in China, only the 200 that meet modern manufacturing and environmental standards are expected to stay in business. As these facilities close, there will be continuing market uncertainty. Finally, another factor that must be considered is China is ramping up its efforts to build its own domestic recycling streams; once local collection infrastructure is in place, overall demand for imported recycling will decrease.

China has proven it is willing to cause major market disruption to further its efforts to clean up its environment, and that market disruption is having a drastic effect on recycling programs worldwide. Oregon needs to acknowledge this means a hard "re-set" of collection programs, and look for ways to find the opportunity in this challenge. It is right that China is cleaning up; how can Oregon programs do the same?

Call to Action

Having been at the forefront of recycling for decades, Oregonians are well poised to successfully navigate necessary changes through this period of market transition. Here are some steps to consider to reduce negative effects of the changed recycling market.

- Make smart purchases and consider the packaging choices of what is purchased – can the item be recycled? Could it be reused instead of recycled?
 - Establish a Life Cycle Analysis of packaging choices. Some packaging has other outstanding benefits (shelf-stable products that don't require refrigeration and avoid food spoilage), so disposing of it at the end of its life due to lack of viable markets may well be the best, and most environmentally-protective choice.
- Recycling programs should limit the list of acceptable materials for commingled recycling and use the reduced list as basis for an all-out education campaign to Oregonians to reset their recycling habits in general and follow the list in specific.

- Add enforcement and continued follow up to programs to increase compliance. Funding is key and the effort will require cooperation of government and business partners, but customers must get feedback and some must have incentives (or disincentives) to “recycle well,” in order to decrease curbside contamination.
- Encourage customers to evaluate their service needs during this period; they may need to right size their garbage cart. Likewise, jurisdictions need to evaluate whether they have appropriate collection services (every other week garbage pick-up, every other week recycling pick up, etc.)
- **Processors’ role:** equipment changes or other innovations that allow them to sort for streams of materials with market demand?
- Consider whether expanded use of central recycling depots would be beneficial in certain areas and for specific materials.
- Try a pilot program of “dual stream” collection with existing equipment – fiber one week, containers the next, and see how the processors do. Use information as a basis for discussing how collection should look in the future.
- What is a market? Convene interest group and set criteria and a format to follow before adding new items to curbside programs.
- Domestic markets – what can be done to renew traditional markets and establish new markets?