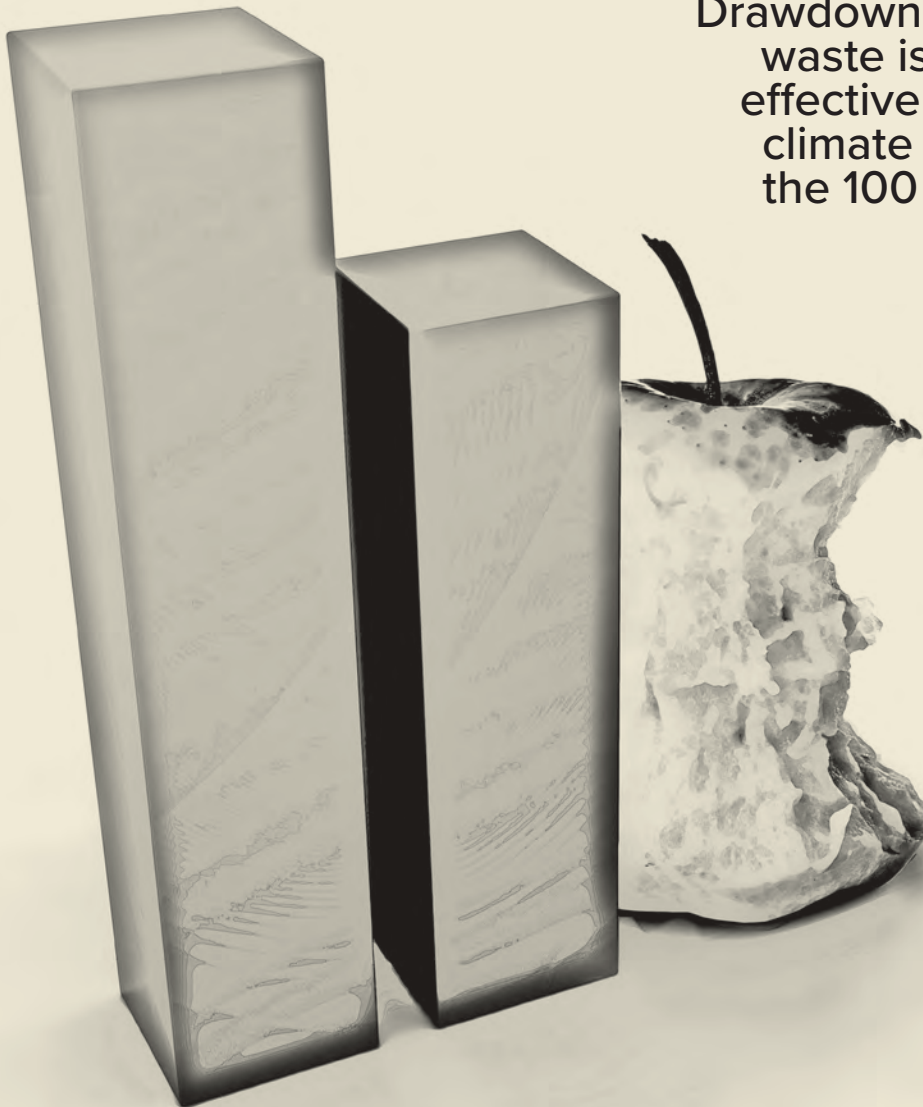


Citywise



According to Project Drawdown, reducing food waste is the third-most-effective way to combat climate change among the 100 strategies they evaluated.

— CITY 101 P.24 ▶



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MEASURE FOR MEASURE

New goals and metrics can help cities manage their waste streams.

AMITY LUMPER CO-PRESIDENT, CASCADIA CONSULTING GROUP

2035

Life Lessons

According to the Environmental Protection Agency, “Sustainable materials management (SMM) is a systemic approach to using and reusing materials more productively over their entire life cycles.” Here in Washington, the state adopted a vision “to reduce or eliminate most wastes and toxics by 2035, and use any remaining wastes as resources.”

SMM seeks to reduce adverse impacts across the life cycle, from upstream extraction, design, and production through consumption and use as well as disposal. See the diagram on page 23 to get a sense of what life-cycle thinking can entail.

MAJOR GLOBAL TRADE shifts are undermining community recycling programs, especially in cities with low waste disposal costs. These challenges include China’s Blue Sky import restrictions (see “Service Returns,” p. 14) as well as US trade policies and tariffs. With China expanding its bans in 2018 and other nations like Vietnam and Thailand following suit, US cities and recycling companies are scrambling to find new outlets to handle the material collected from community recycling programs—and to pay for these programs as market prices for recyclables drop.

This economic challenge has forced a healthy reckoning around why we recycle in the first place and how we can preserve the recycling services our communities rely on. In the waste management industry, we are seeing a shift to more holistic models and frameworks—such as sustainable materials management (SMM), zero waste, and the circular economy—that take into account not only the impacts of disposal and recovery for goods after their use but also the impacts of design, production, distribution, and consumption of these materials.

Across the country and here in Washington, cities, counties, and the state are adopting SMM to inform goal-setting, planning, and investments. The adoption of SMM approaches can mean focusing on waste prevention and measuring impacts beyond material quantities, such as water or power use in production, toxicity of materials, and human health.

One example of how public agencies are incorporating SMM principles was a symposium the City of Seattle hosted in November 2017, which focused on new goal-setting and metrics for the waste industry. After all, we manage what we

measure, and traditional approaches have focused extensively on recycling without taking into account other parts of the product life cycle. Symposium attendees, from government staff and corporations to nonprofits and waste management/recycling service providers, acknowledged the limitations of using a traditional recycling rate as a measure of our success and discussed alternative SMM measures of success including life cycle and greenhouse gas metrics, circularity indices, and material-specific recovery and capture rates.

Cities are increasingly focusing on strategies and materials that reduce the overall impact to the planet. For example, it almost always makes sense for us to reduce and reuse before we recycle a material, due to the resources and energy it takes to produce it in the first place. Various SMM/life cycle studies have shown that reducing, reusing, and recycling the following materials offer some of the greatest opportunities for benefits in our communities.

■ **Food:** The Oregon Department of Environmental Quality lists food as one of the most significant materials from an environmental impact perspective, citing an estimate that 25 to 40 percent of all food produced or imported for consumption in the US is never eaten. Not only does this food waste have environmental impacts from disposal (such as greenhouse gas emissions when food decomposes in the landfill), but it also represents a loss of resources used to produce the food, such as fresh water and energy, along with the costs of distributing and storing the food. Adopting an SMM framework around food means not only working to divert food from garbage to the compost bin but also identifying ways to distribute





excess food to those in need (food rescue), avoid spoilage, and reduce food waste overall.

■ **Textiles:** Clothes and other textiles are resource- and energy-intensive to make, and with the fast-fashion movement we're churning through clothes at an alarming rate. Government and business alike are working to reduce textile waste and disposal through programs such as ThreadCycle (a textiles recycling public education campaign by King County and the City of Seattle). E-commerce options such as Renewal Workshop and ThredUp are also emerging to extend the life cycle of textiles by encouraging resale and reuse of gently used clothing.

■ **Plastics:** Though plastics can have advantages for being lighter weight and durable, their long life raises concerns

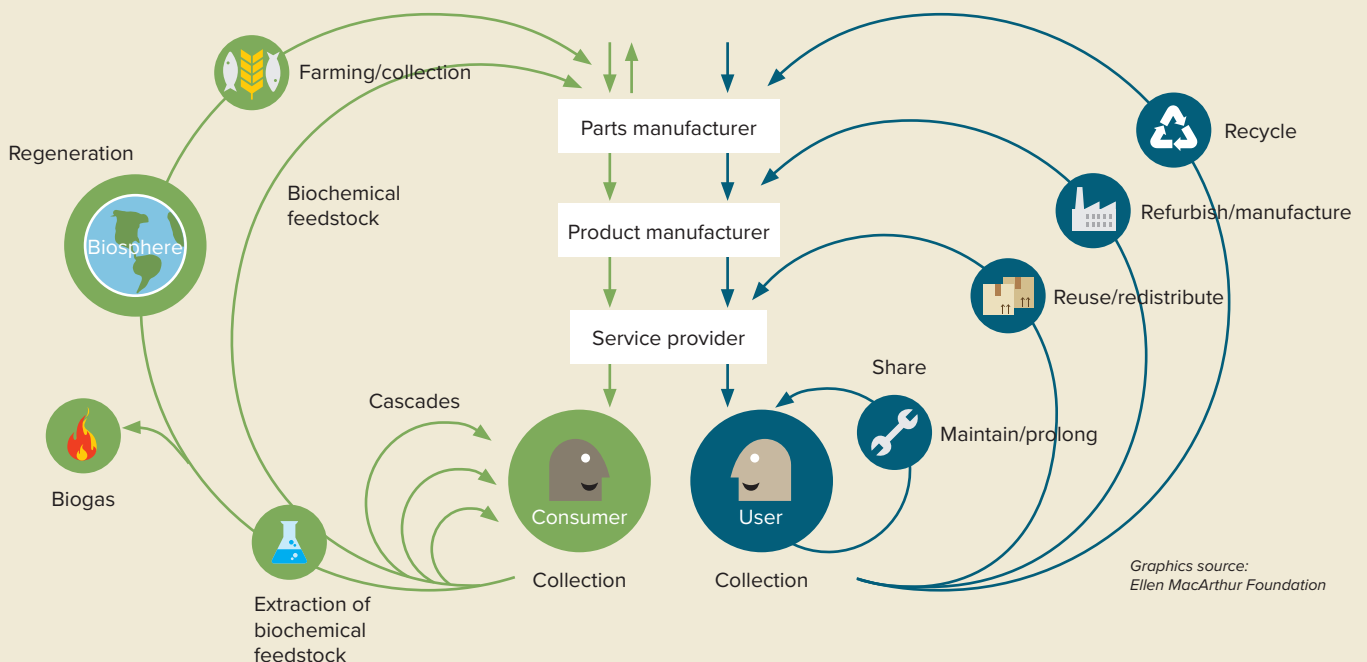
about microbeads in the aquatic food chain and trash in the environment, including the Salish Sea and global oceans. According to the Ellen MacArthur Foundation, there will be more plastic than fish in the ocean by 2050 if we don't start acting now.

In addition to rethinking our materials management goals and measures, attention to environmental justice and social considerations is also growing. In particular, there is discussion about how we can more responsibly manage recycled materials here in the US instead of shipping our wastes to countries with fewer environmental and workforce protections. In addition to working "upstream"—preventing waste and reducing the impacts of production—the SMM framework invites us to examine what we're doing with materials after they are used and disposed and to identify new or higher-value markets

for materials, such as remanufacturing plastic bottles into new bottles or even clothing, rather than a lower-grade plastic product. Some practitioners investing in recycling market development initiatives that create jobs and improve economic resiliency here at home include the Association of Plastics Recyclers' Demand Champions and King County's LinkUp program.

By incorporating sustainable materials management and life cycle thinking into their actions and policies, cities can become more resilient in the face of changing recycling markets, support local jobs, improve equity, and benefit the environment. 🌱

A Washington native with 20 years of experience in the recycling industry, Amity Lumper is the co-president of Cascadia Consulting Group, Inc., and is responsible for the firm's Recycling and Materials Management practice.



Graphics source: Ellen MacArthur Foundation



Progressive Dinner

Innovative wasted food prevention and food rescue programs are sprouting up across the Northwest. These include the use of milk dispensers in schools to reduce milk waste and corporate initiatives like the Starbucks FoodShare Program, which pays local food banks to collect its perishable edible food.

In Washington state, the Departments of Ecology, Agriculture, and Health are working together to provide technical support and funding to expand programs to safely rescue nutrient-dense perishable edible food to distribute to people in need.

At the local level, it all starts with bringing together organizations that generally don't cross paths for a new kind of conversation about food. These include solid waste utilities, food banks, community meal programs, local health departments, school districts, and climate action groups. Potluck, anyone?

FOOD FORWARD

An appeal for treating our bounty as a precious resource.

PETER GUTTCHEN WASHINGTON STATE DEPARTMENT OF ECOLOGY

WITH SO MUCH FOCUS on the recent challenges our cities are having finding recycling markets for their paper and plastics, we've been ignoring a local Whopper-size waste-busting opportunity. To find it, all we have to do is look down at our plates, in our refrigerators, and in the trash containers behind the restaurants, grocery stores, and schools in our communities.

Food is energy, water, and land. In the United States alone, we throw away 63 million tons of food, or about 40 percent of the food we produce, each year. Across the country, consumers, businesses, and farms spend \$218 billion, or 1.3 percent of GDP, growing, processing, transporting, and disposing of food that is never eaten. And the waste doesn't end there. Twenty-one percent of all fresh water, 19 percent of all fertilizer, 18 percent of all cropland, and 21 percent of landfill volume is consumed to grow and dispose of uneaten food.

Wasted food and hunger. In Washington state, we landfill close to 780,000 tons of food each year—about 16 percent by weight of everything we throw away. Almost 350,000 tons, or close to 45 percent, of that food was edible at some point before it was tossed. At the same time, 1.16 million people—about 1 in 6 of those in our state—struggle with hunger.

Food waste and climate change. If international food waste were a country, it would be the third-largest emitter of greenhouse gases after the US and China. The production of methane—a greenhouse gas that's 85 times more potent than CO₂—when food is buried in oxygen-free landfills contributes a sizable part of these emissions, as does the embedded energy consumed by the

food we waste. According to Project Drawdown, reducing food waste is the third-most-effective way to combat climate change among the 100 strategies they evaluated.

All food is local. Powerful global economic and geopolitical forces determine the value of many of the materials we collect for recycling. However, regardless of how food ends up in our stores, restaurants, schools, and homes, once it's in our communities, it's local food. And, unlike paper and plastic, we have more choices and a lot more local control over how we manage it. We can have it hauled away and buried in a landfill. We can compost it. Or we can find ways to prevent and rescue wasted food to help combat climate change, conserve resources, fight hunger, and reduce costs for local businesses, schools, and institutions.

TWENTY-ONE PERCENT OF ALL FRESH WATER, 19 PERCENT OF ALL FERTILIZER, 18 PERCENT OF ALL CROPLAND, AND 21 PERCENT OF LANDFILL VOLUME IS CONSUMED TO GROW AND DISPOSE OF UNEATEN FOOD.

With all of these benefits, it's time to put wasted food prevention and food rescue at the top of our solid waste management, hunger-fighting, and climate change action menus. *Bon Appétit!*

Peter Guttchen is a solid waste planner and financial assistance manager with the Washington State Department of Ecology.





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Tag Team

The Recycling Partnership provides template “oops” tags and guidance for cities implementing a curbside tagging campaign.

Work with your hauler to:

- **Understand** what contamination drivers can see.
- **Identify** priority contaminants for your Materials Recovery Facility (MRF).
- **Assess** their capability to flag accounts for follow-up.
- **Decide** how and when to follow up with residents.

Here are Kirkland’s most recent results (May–Aug 2018):

- **844** total incidences of initial recycling contamination tagging
- **145** total incidences of second-week consecutive tagging
- Repeat contamination rate (week 1 to 2) of **17.2%**

REDUCE, REUSE, RELEARN

Educating residents about recycling in the age of China’s National Sword

TRACY DURNELL
EDUCATION AND OUTREACH
SPECIALIST, CITY OF KIRKLAND

LIFT THE LID OF A RECYCLING cart in your city, and you’ll likely see items that don’t belong: Styrofoam blocks, electrical wires, bagged recyclables, old sheets, plastic laundry hampers, pizza boxes with left-over crusts.

At the beginning of the year, China implemented stricter cleanliness standards for imported recyclables under its National Sword initiative (since rebranded as Blue Sky). National Sword has pushed cities to become proactive about contamination like that depicted above. We need to help our community members learn and follow proper recycling behaviors so that material collected in our cities can continue to be recycled.

China’s National Sword has raised public awareness of recycling, which gives cities an opportunity to provide further education to residents. Many people remember outdated guidelines or guidelines from previous residences. The resulting confusion leads residents to get hung up on minor details like lids. Cities should utilize the current visibility to engage the public around the most important behaviors to change.

Regional guidance can help you prioritize target behaviors. Washington’s Responsible Recycling Task Force Communications Consortium recommends focusing outreach on the key message that all materials must be clean, dry, and empty. The consortium also encourages residents to follow their hauler’s accepted items list.

Once you’ve identified priority behaviors to influence, you will need to develop

a strategy for getting your residents on board. Insights from community-based social marketing can inform your strategy:

- Focusing on one behavior is better than trying to change many behaviors at once.
- The behavior change continuum begins with awareness, but awareness alone doesn’t inspire behavior change.
- Changing behavior is most effective when people are prompted close to the time and place of their behavior.

In Kirkland, we pair outreach and direct feedback to educate residents and change their behavior. Our education emphasizes our priority behaviors—keeping recyclables clean, dry, and empty and not bagging recyclables—and encourages residents to stick to our accepted items list. We design our message to be actionable, to move people along the behavior change continuum by building understanding of the waste system, and to address barriers to behavior change.

This summer, we promoted our priority behaviors through an awareness campaign that utilized a billing insert, social media, and email newsletters. We promote our

DIRECT FEEDBACK AND OUTREACH ARE COMPLEMENTARY STRATEGIES THAT CAN HELP YOU CHANGE YOUR RESIDENTS’ BEHAVIOR.

accepted items list using an annual direct mail Recycling Guide, our website, social media, a recycling hotline, recycling center tours, presentations to neighborhood groups, and outreach tabling at community events where residents practice sorting commonly confused items.

Different mediums and approaches reach different audiences, so using a wide array of tactics can help you connect with a broader demographic range. As with any marketing, multiple exposures to your messaging help residents absorb it. Harmonizing outreach efforts and messaging with neighboring cities that your residents likely visit can also reinforce messaging.



Unfortunately, education alone does not ensure compliance. Direct feedback, through cart tagging, can effectively change single-family-resident behavior. Tags provide a prompt at the time and place where behavior needs to be changed. The feedback from the tag reaches the person who physically handles the recycling, whereas another household member might handle mail. Carts are tagged at the curb, making the behavior public. Social norms encourage people to adapt their behavior to avoid being called out in front of their neighbors.

We redesigned our recycle “oops” tags to reduce the materials listed to the top five problem items that are visible to drivers as they empty carts. We worked with our hauler to develop a recycling cart tagging protocol that minimizes the impact to collection route times and customer service

staff. When the driver notices contamination while dumping the recycling cart, the cart is tagged, indicating the problematic material. On following service days, the driver checks the cart before providing service. If contamination is visible, the material is not collected. The cart is tagged again, and our hauler’s customer service team calls the resident to provide education and request that the contaminants be removed, or else the recycling will not be collected.

Over recent months of the tagging protocol, only 17 percent of customers who received a cart tag were tagged a second time. This indicates that a single point of feedback changed behavior for most. A follow-up phone call to customers who received a second tag also proved effective. Of over 800 residents tagged, only 23 received a third tag and

needed outreach from city staff. Most people were simply unaware of our guideline that recyclables should not be bagged, despite the inclusion of this message in our outreach for the past several years.

Direct feedback and outreach are complementary strategies that can help you change your residents’ behavior. While China’s National Sword is causing many changes to the recycling system behind the scenes, keeping your public messaging focused on the big picture by prioritizing a few key behaviors can help your residents adapt to contaminant-free recycling. **C**

Tracy Durnell is the education and outreach specialist for the City of Kirkland’s Solid Waste Division. Previously, she provided marketing services at a private environmental consulting firm.



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