

Cityvision

THE ASSOCIATION OF WASHINGTON CITIES MAGAZINE



AWC
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CITIES

SEP/OCT 2018
wacities.org

Cities seek outlets for a
surging waste stream

It's time to get clear on recycling.

New policies in China are challenging all of us to adapt to ensure the success of local recycling programs.

Waste Management continues to champion recycling, and we're working hard to keep local programs sustainable. The key is a simple, clear approach to recycling and open dialogue about the rising costs of recycling.



Need a partner with a clear plan for sustainable recycling in your city? Let's talk.

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CITYVISION MAGAZINE VOL. 10 / NO. 5

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Association of Washington Cities Inc.
1076 Franklin St. SE
Olympia, WA 98501
360-753-4137
800-562-8981
Fax: 360-753-0149
wacities.org



It is still hard to believe that seemingly overnight, the recycling business model that we have operated under for many years has been turned on its head. It is a fundamental economic supply-and-demand problem: recyclables are

up, and the demand for recyclables as a commodity has taken a nose dive.

At the City of Kennewick, we contract our waste hauling services and have already been in discussion with our contractor on the current impacts. Our recycled items go to a regional recycler that sells to local markets, and the glut of recyclables has drastically depressed prices. The regional average price paid to recyclers for a ton of mixed paper has plummeted from approximately \$70 to just \$5 since China's announcement of its import ban last July. Additionally, only 35 percent of our curbside recycling currently has a positive value.

For all of us, these issues are a catalyst for change. In meeting with our contractor, we have already identified that we will need to partner to develop a new recyclables list—one that is both practical and economically viable. We also need to start educating the community on the necessity of reducing contamination in the recycling stream. The main effort for us at the city will be outreach and

messaging: We can't just recycle. We have to recycle right!

It is also time for us to think about what practical changes we may need to make to our curbside collection system. For example, items that are now commingled may need to be separated to help ensure that only viable items are placed for collection. We also need to consider how we will define goals and performance measures for determining recycling success going forward.

As with everything we do, we will only be truly successful through good partnerships. The good news is that many businesses and residents desire to be good stewards and make a difference in the community. We all need to harness that desire as we work together to reframe our recycling messaging.

Sincerely,

Don Britain
Mayor, Kennewick

Cityvision

9/10.18



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Managing the waste stream, from all-access recycling to biochar processing to wastewater mitigation. And in our popular **NOTED** feature, we give a rundown on the state's new drug take-back program.

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SERVICE RETURNS

Amid tectonic upheaval in the recyclables market, Washington cities look local to find waste-stream solutions that will work for, and even benefit, their communities.

BY TED KATAUSKAS

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Expert perspectives on recycling education, food as a resource, and sustainable materials management.

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Banding together locally to confront a waste-stream predicament with global reach

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Bellingham Public Works
Director Ted Carlson,
photographed at
Northwest Recycling in
Bellingham
SERVICE RETURNS,
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Partnership Matters

Republic Services has proudly served Northwest communities since the 1930's. Our state-of-the-art recycle facility in Seattle is the largest in the Northwest and recycles more than 200,000 tons of material each year. That's the equivalent weight of nearly 500 fully-loaded Boeing 747 airplanes. Our long-standing partnerships with cities like Seattle, Bellevue, Kent, and many more, helped turn Puget Sound's green dreams into a reality. We believe that, together as a community, we can change the way society recycles, make a lasting, positive impact in our communities and ensure the long-term viability of recycling for future generations.



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Citybeat



Brew Values

Stevenson taps community input to manage beverage byproducts.

TWO YEARS AGO, the City of Stevenson was forced to confront a vexing dilemma: a boomlet of craft beer and hard cider breweries and bottlers and other businesses driving the local economy were overwhelming its 1971-vintage wastewater treatment plant. The plant, built to process a maximum biological oxidation demand (BOD) of 612 pounds of organic material per day, had exceeded that limit seven times in 2016, violating its wastewater discharge permit. Overwhelmed with so much effluent, Stevenson's oxidation pond on peak days looked and smelled like a fermentation tank, an industrial-size concrete pint glass capped with a heady froth of foam.

In response, Stevenson put a moratorium on new commercial sewer connections and hired an engineering firm to propose a solution. Its recommendation: upgrade the plant's BOD processing capacity fivefold at a cost of \$12 million to \$14 million, an astronomical figure for a system supported by only 440 customers. One rate study proposed a hefty BOD surcharge that would have crippled the city's homegrown specialty beverage industry.

"That would have hit all the businesses really hard if those were imposed," says City Administrator Leana Johnson Kinley. "We could've put them **CONTINUED ON P.10** ▶



FRESH
IDEA

A Char Is Born

A Spokane company sees potential in agricultural leftovers.

BY CARTER MOHS

“BIGGER, BETTER BUDS”: it’s a tagline you might expect to see at your local dispensary. But for a company selling soil?

Well, not soil per se, but biochar, a soil amendment generated by clean-technology company AgEnergy Solutions’ Integrated Biomass Platform (IBP). The portable gasification machine, housed in 20-foot shipping containers, converts agricultural waste—everything from wheat straws to walnut shells—into two byproducts: syngas (a blend of combustible gases that can be converted to electricity or refined to hydrogen) and biochar. Soon after testing the machine, AgEnergy realized they had something very valuable

on their hands in the fertilizer-like substance.

“While the primary focus was energy, we realized the biochar adds another element to the overall system,” says David Drinkard, president and CEO of AgEnergy. “We gave the biochar to a cannabis grower to try, and he came back with, ‘You guys have got to see this!’ That was fun, to go out and see these huge plants with 50 percent yield improvement.”

While gasification and biochar aren’t new concepts, AgEnergy’s IBP, first developed in 2015, is innovative in its full automation and portability. “Instead of growing biomass to convert to electricity, we’re promoting taking ag waste and


eliminating it in a clean and responsible method that creates both energy and biochar,” Drinkard notes. And all jokes about marijuana-oriented taglines aside, in the cannabis industry AgEnergy has found another upstart willing to experiment with its products. Working with more than 100 licensed growers in Washington and Oregon, Drinkard says the biochar users are seeing an increase of between 10 and 70 percent in crop yield—and even an increase in THC content in the plants.

But AgEnergy’s partnerships go far beyond pot. The company has worked with Washington State University to increase tomato crop yields by up to 30 percent (Drinkard reports they also tasted sweet-

“BY RUNNING WASTE THROUGH THE IBP INSTEAD, YOU CREATE ENERGY [FROM THE SYNGAS] AND BIOCHAR THAT THEN GOES BACK INTO THE GROUND AND IS STABLE FOR THOUSANDS OF YEARS.”

er), as well as with Oregon State University, the Food and Drug Administration, the US Forest Service, and Waste Management. Given the limited availability of hydrogen sources, Drinkard also sees major potential on the horizon for converting syngas into hydrogen to fuel electric cars.

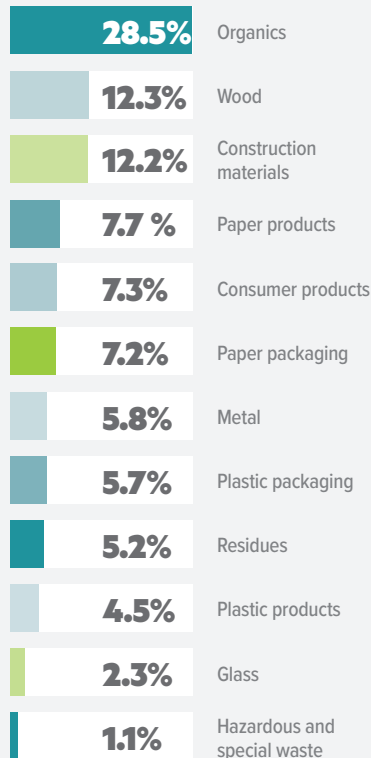
For cities in particular, Drinkard emphasizes biochar’s status as a high-quality activated charcoal applicable for water filtration by absorbing toxins in ground water. One proposal envisions placing the machines along roadways to minimize the leaching of heavy metals into waterways. And more broadly, as a carbon-negative option (i.e., it removes more CO₂ from the atmosphere than it creates), the IBP system offers a solution for disposing of agricultural waste—an increasingly vexing issue due to EPA regulations banning the burning of waste, Drinkard says.

“When plants die or are burned, CO₂ goes back into air,” he explains. “By running waste through the IBP instead, you create energy [from the syngas] and biochar that then goes back into the ground and is stable for thousands of years. Right now, it’s 100 percent going the wrong way into the atmosphere.” 

CAST AWAY

A recent comprehensive statewide study will help municipalities and public and private solid waste managers design targeted material recovery programs.

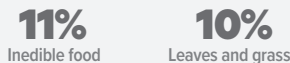
Overall statewide waste stream, 2015–16



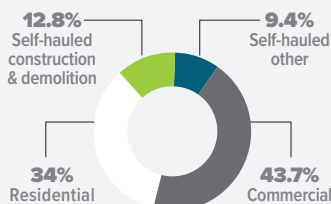
209,214

Tons disposable diapers

Most prevalent residential waste



Estimated waste by sector



Source: 2015–16 Statewide Waste Characterization Study, Cascadia Consulting & WA State Dept of Ecology



ALL ACCESS

Federal Way turns its focus to multifamily recycling.

BY CARTER MOHS

JEANETTE BRIZENDINE, the solid waste and recycling project manager for the City of Federal Way, likes to compare recycling to flossing. “There are some people who are very committed, and some who don’t even want to participate,” she says. “But the majority of people know it’s the right thing to do.” With this in mind, Brizendine takes a realistic approach to encouraging residents of multifamily complexes to recycle.

“I always joke that recycling is the ‘gateway drug’ for increased sustainable behaviors and practices,” Brizendine says. “Multifamily residents comprise nearly 40 percent of our city’s population, but historically they were underserved by a lack of access to recycling services and education.”

She notes that because some maintenance staff aren’t trained to differentiate between recycling and garbage, outreach to facility personnel and support for property managers are important, as is co-locating recycling and garbage so they are equally convenient. And with high turnover among both residents and management, it takes diligence and repeat outreach to keep people engaged and aware.

“I ALWAYS JOKE THAT RECYCLING IS THE ‘GATEWAY DRUG’ FOR INCREASED SUSTAINABLE BEHAVIORS AND PRACTICES.”

Other creative solutions include utilizing slotted lids that fit on top of recycling dumpsters to prevent garbage being put in the wrong container.

At the start of Brizendine’s 11-year tenure with the city, less than half of Federal Way’s multifamily residents had access to on-site recycling. Now, every multifamily complex within city limits has recycling on-site that residents can access—and rates of recycling have grown, from 5.5 percent of all apartment waste a decade ago to 11.2 percent today.

This past summer, Brizendine collaborated with the King County Solid Waste Division and Waste Management on a pilot program working to provide equitable access to waste management resources and information. The program focused on the Spanish-speaking community, partnering with Latino community advocate group Facilitadores de Reciclaje (Recycling Facilitators) funded by the King County Recicla Más initiative. They chose Parkway Apartments, a complex that was already doing everything they could to promote recycling, as their pilot location.

Property Manager April Ochoa welcomed the opportunity. “The major barrier we had was knowledge and education,” she says. “We thought that if we could educate tenants in their own language, we could do better.” The Facilitadores did just that, delivering bilingual recycling guidelines door-to-door, and as soon as the following day recycling started going up and contamination between containers started going down.

And while recycling is undeniably important, Brizendine has even loftier goals. “We start with people recycling their bottles, then introduce the idea of refilling the bottle once, then move to a refillable bottle, and so on,” she explains. Because when it comes to sustainability, there’s no time to waste.”



For more information:
cityoffederalway.com



DRUG TAKE-BACK PROGRAM

CHAPTER 69.48 RCW

Although the Legislature's focus in passing the drug take-back law during the 2018 session was on drug abuse, fatal overdoses, and poisonings, lawmakers also cited improper medicine disposal as a cause of water pollution.

This law is an example of a product stewardship policy—laws designed to shift the responsibility of end-of-life management of products from governments to the producers of the products.

This is legalese for the consumer who buys over-the-counter or prescription medicine. The program is designed to benefit them.

Findings. RCW 69.48.010

(3) A safe system for the collection and disposal of unused, unwanted, and expired medicines is a key element of a comprehensive strategy to prevent prescription drug abuse, but disposing of medicines by flushing them down the toilet or placing them in the garbage can contaminate groundwater and other bodies of water, contributing to long-term harm to the environment and animal life.

(4) The legislature therefore finds that it is in the interest of public health to establish a single, uniform, statewide system of regulation for safe and secure collection and disposal of medicines through a uniform drug "take-back" program operated and funded by drug manufacturers.

Definitions. RCW 69.48.020

(5) "Covered entity" means a state resident or other nonbusiness entity ...

(6) "Covered manufacturer" means a person, corporation, or other entity engaged in the manufacture of covered drugs sold in or into Washington state. ...

This is the third product stewardship law in Washington; we also have programs for electronics and mercury-containing lights. British Columbia has 17 programs, on everything from paint to packaging!

This simply means the drug manufacturer who is selling products into the state. They will create and fund the take-back program.

Collection system. RCW 69.48.060

(1)(a) At least one hundred twenty days prior to submitting a proposal under RCW 69.48.050, a program operator must notify potential authorized collectors of the opportunity to serve as an authorized collector for the proposed drug take-back program. A program operator must commence good faith negotiations with a potential authorized collector no later than thirty days after the potential authorized collector expresses interest in participating in a proposed program.

(b) A person or entity may serve as an authorized collector for a drug take-back program voluntarily or in exchange for compensation, but nothing in this chapter requires a person or entity to serve as an authorized collector.

It's up to the product manufacturers to set up a statewide, convenient collection system for unwanted medications.

Collection sites such as hospitals and pharmacies can choose to participate, but ultimately the responsibility is on the manufacturers to ensure there are sufficient collection locations.

(3)(a) A drug take-back program's collection system must be safe, secure, and convenient on an ongoing, year-round basis and must provide equitable and reasonably convenient access for residents across the state.

(d) A program operator must establish mail-back distribution locations or hold periodic collection events to supplement service to any area of the state that is underserved by collection sites, as determined by the department, in consultation with the local health jurisdiction. The program operator, in consultation with the department, local law enforcement, the local health jurisdiction, and the local community, must determine the number and locations of mail-back distribution locations or the frequency and location of these collections events, to be held at least twice a year, unless otherwise determined through consultation with the local community. ...

A key piece of product stewardship laws is that they must provide convenient collection to everyone in the state—an important component for our rural cities who would otherwise not get service due to transportation costs.



THE QUESTION

HOW IS YOUR CITY REACTING TO CHANGES IN THE MARKET FOR RECYCLABLE MATERIALS?



Cheney operates a source-separated recycling facility where citizens drop off separated recycling products. These recycling products are clean compared to other recycling disposal companies that separate commingled recycling products as a service for “blue bin” customers. In our case, finding vendors for clean recycled products within a reasonable travel distance is still a challenge.

—CHRIS GROVER
Mayor, Cheney



Ephrata has a unique public-private partnership for sanitation and recycling. In consultation with our contractor, we have discontinued the recycling of plastics in town, due to the higher expense; we have provided educational outreach for our citizens to reduce their purchase and use of plastic containers; and we are upgrading our recycling center to improve recycling overall and reduce cross-contamination.

—WES CRAGO
City Administrator, Ephrata



More than ever, high-quality recyclables are key to accessing dependable markets. Vancouver and its regional partners continue to strengthen the resilience of local recycling systems; recent changes have slowed processing to improve sorting and removal of contaminants. Our RecyclingRight app, return-to-retail plastic WRAP program, social media outreach, and community classes help our constituents know what goes in the cart and what does not.

—TANYA GRAY
Solid Waste and Recycling Supervisor, Vancouver

TRAININGS

OCT

18 Member Expo

Chelan

18 Regional Meeting

Everett

22 Regional Meeting

Tumwater

23–25 IACC Conference

Wenatchee

24 WAPELRA Autumn Training

Lacey

24 Regional Meeting

Kalama

25 Regional Meeting

Snoqualmie

NOV

1 Regional Meeting

University Place

13 Regional Meeting

Anacortes

13 RMSA Elected Officials

Training

Almira

27 WorkSafe Employer

webinar

TRAINING HIGHLIGHTS

CITY ACTION DAYS

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- Discover how the legislative process works and how you can help shape a bill.
- Learn about AWC’s priorities and the points you need to communicate to your legislators.
- Hear from legislative and executive branch leaders to share your city story and get answers to your questions.

AWC SMALL CITIES SCHOLARSHIP

The Small City Scholarship program assists small cities and towns that need financial assistance to attend AWC events. To be eligible, a city or town must have a population of 5,000 or less and have a financial need. The scholarship covers the cost of registration only. Scholarships are limited to one per city, per event, with up to four per city, per year, and are based on available funds. AWC reserves the right to limit the number of scholarships used on a single event.

WASHINGTON CITIES SCHOLARSHIP

The Washington Cities Scholarship program assists cities over 5,000 in population in attending AWC trainings. This scholarship will reimburse a city for 50 percent of the registration fee. The scholarship funds are not available for major AWC conferences, but may be used for pre- and post-conference workshops.

Both scholarships can be requested when registering for an event.



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Citybeat

Brew Values *continued from page 5*

out of business, because they wouldn't have been able to pay their sewer bills."

Backwoods Brewing, a brewpub headquartered in nearby Carson that in 2016 had opened a 1,500-square-foot production brewery in Stevenson, faced a \$50,000 spike in its utility bill.

"It would have crushed us," says CEO Steve Waters, adding that Backwoods initially considered leaving Stevenson. "We're part of this community—we wanted to help—but this would have been overly burdensome. . . . Instead of making this about us versus them, the city said, 'We're all in this together.'"

"INSTEAD OF MAKING THIS ABOUT US VERSUS THEM, THE CITY SAID, 'WE'RE ALL IN THIS TOGETHER.'"

Working with the Skamania County Economic Development Council, the city secured a planning grant from the state Department of Ecology and partnered with InfrastructureNEXT, a federally funded initiative that helps rural communities consider innovative approaches to conventional infrastructure projects. In early June, InfrastructureNEXT hosted a daylong value-planning charrette in downtown Stevenson, at which 20 representatives from local businesses, wastewater engineers, and local and state government spent eight hours workshopping alternative solutions to the city's wastewater treatment crisis.

"It's mutually empowering," says Steven Moddemeyer, a principal at Collins Woerman, a Seattle consulting firm that manages InfrastructureNEXT's workshops. "These charrettes put everyone on the same side and recognize that it takes collaboration among businesses, community members, the city, and technology providers to come up with an integrated approach that solves as many problems as possible."

Stevenson's brainstorming session articulated many compelling alternatives. By "sidestreaming" organic waste (incentivizing brewers to find alternative uses for byproducts, like spent grain as feed additives for local farms), using satellite treatment systems (mini plants that pretreat waste at or near the source), and even perhaps redeveloping its industrial waterfront with a botanical garden that filters wastewater, the city might need to merely triple (rather than quintuple) the BOD processing capacity of its primary treatment plant, reducing that investment from as much as \$14 million to perhaps less than half that amount.

"The value-planning process has been a very good tool for us, because everybody is invested in solving this issue," says the city's Kinley.

"Your ratepayers are pretty smart," adds Backwoods' Waters. "What's the quickest and easiest isn't always the best solution." —*Ted Katauskas*



Cityscope



Q&A

Green Machine

Spokane Mayor David Condon talks about how Washington's second-largest city made its public utilities a global model of environmental and economic sustainability.

Spokane Mayor
David Condon

What's your backstory?

I'm a Spokane native, the youngest of nine kids. I went to school at Boston College through an Army ROTC scholarship. With a degree in finance and military science, I went into the Medical Service Corps in the Army. . . . I finished my active-duty time at Fort Lewis, then I came back to Spokane and spent a couple of years in the reserves, and then ran a couple of small businesses. One was a tugboat company.

You skippered tugboats?

No, I was on the business side; I don't know the first thing about driving tugboats! I was an Army guy, and here I had a 12-ship navy!

What'd you do after that?

I ran my dad's dental clinic for a couple of years, then left to be deputy chief of staff for Cathy McMorris Rodgers, who is our Fifth Congressional congresswoman. I was her deputy chief of staff for seven years.

CONTINUED ON P.12 ▶



What led you to local government?

I've often said that federal government drove me to local politics! I was just starting my family, and like you hear from a lot of politicians, I didn't think the way we were going with our city was the right way, so I decided to run. I took office in 2012, when I was 37 years old. My message was: "back to the basics of local government." It was focusing on public safety, infrastructure, and quality-of-life issues. At the time, and still today, public safety is a top priority of our citizens.



Spokane Mayor
David Condon

As is environmental sustainability. What was the genesis of that?

When I came on board, the number one issue was water rates: they had been increased by 16 percent, and that was not going to be an option for our citizens, who make on average \$45,000 a year. So we went back and readjusted our water rates, and then went further to write a new integrated plan to comply with the Clean Water Act, which reduced costs to improve the Spokane River by about \$150 million. We then committed to increases in water and wastewater that were roughly on par with inflation—2.9 percent, when other cities are seeing multiyear, double-digit increases.

A Spokane delegation was recently invited to Scandinavia on a knowledge exchange trip focused on sustainable infrastructure. What success story does Spokane have to share?

We're the only city government in this state—and perhaps the world—that owns a waste

“WE ACTUALLY PRODUCE MORE GREEN ENERGY IN TOTAL THAN WE CONSUME, AND THAT INCLUDES ALL SOURCES OF ENERGY—ELECTRICITY, NATURAL GAS, AND FUEL FOR OUR FLEETS.”

energy plant and a hydroelectric dam. We actually produce more green energy in total than we consume, and that includes all sources of energy—electricity, natural gas, and fuel for our fleets. There's that piece of it, and there's also the clean water piece.

What's that story?

Our \$340 million investment in the river includes our combined sewer overflow (CSO) system, which is part of the largest infrastructure development ever undertaken by the city. It's a network of underground tanks designed to hold millions of gallons of runoff temporarily during storm events to prevent stormwater from flooding the treatment system and flushing untreated wastewater into the Spokane River. A good portion of that CSO network was funded through the sale of green bonds. At the time [2014], the

\$200 million financing was the largest green bond sale in the nation.

In addition to being net energy positive, Spokane reduced its CO2 emissions by 660 metric tons by converting its fleet of garbage trucks from diesel to natural gas.

As part of that initiative, we're converting our solid waste fleet to compressed natural gas from diesel—when that conversion is completed in 2025, that will greatly reduce our carbon emissions throughout the city. We're also capturing the methane from our wastewater treatment facility, utilizing that as part of the energy platform to run and heat our wastewater treatment facility.

What are some initiatives on the horizon?

In Scandinavia, we'll be looking at some waste energy plants,

zero-waste-stream initiatives and what they're doing there, because we're hoping to partner with the private sector and find ways we might utilize ash from our waste energy plant so that doesn't go to the landfill. With Waste Management—they run our materials reclamation facility (MRF)—we'd like to create a public development authority that includes our MRF and our waste energy plant. We'd hope to attract other businesses and do a circle economy there, in which we use some of the outflow of those two facilities in a way that can provide products back to the community.

What are you most proud of when you look back on your tenure as Spokane's mayor?

We have been by far the most environmental administration in recent years, with a keen eye on affordability for our citizens.

Spokane

Cityvision looks at how Spokane turns green strategies into quality of life.

POPULATION

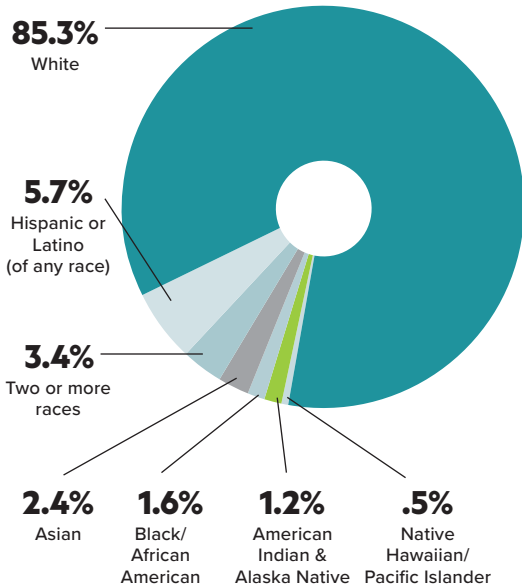
POPULATION DATA FROM THE 2010 US CENSUS, UNLESS OTHERWISE INDICATED

2010 208,916

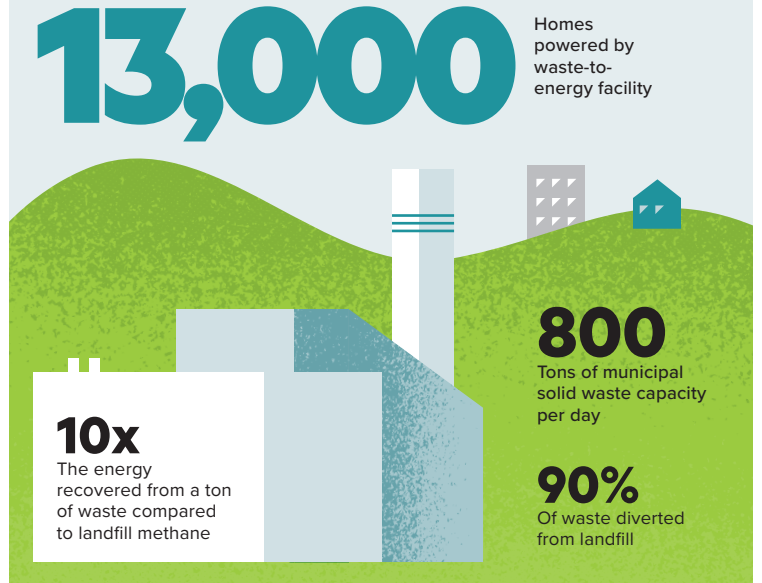
2017 217,300

2017 SOURCE: WA OFM

DEMOGRAPHICS

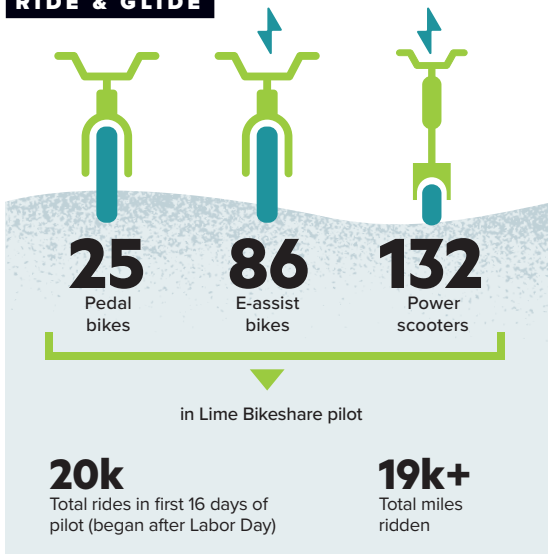


ENERGY BOOST



SOURCE: CITY OF SPOKANE

RIDE & GLIDE



WASTE NOT

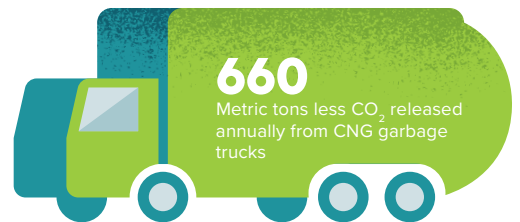
100%
Of green bin waste locally composted



SWEET FLEET

32%
Of solid-waste trucks converted to compressed natural gas

100%
Goal by 2025



SOURCE: CITY OF SPOKANE

Amid tectonic upheaval in the recyclables market, Washington cities look local to find waste-stream solutions that will work for, and even benefit, their communities.

By Ted Katauskas

Service Return

Bellingham Public Works Director Ted Carlson next to a bay of resident-sorted bottles and cans at Northwest Recycling in Bellingham

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The City of Bellingham's

curbside residential recycling program proudly traces its roots to 1982, when a group of ecologically minded volunteers began making the rounds of the Birchwood neighborhood in pickup trucks, delivering materials residents had presorted into curbside boxes to a student-run recycling center at Western Washington University.

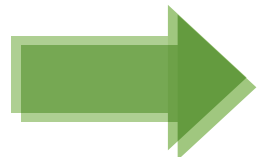
By 1989, when the city added curbside recycling to its residential hauling contract with Sanitary Service Company, Bellingham Community Recycling, with routes in 10 neighborhoods serving two-thirds of all households, was the largest volunteer-run recycling program in the nation. Since it worked so well, Sanitary Service replicated the system Bellingham Community Recycling had pioneered, introducing a trio of red, white, and blue plastic stackable bins to replace the ad hoc containers residents had been using.

"It's really kind of cool that it started as a community effort," says Ted Carlson, Bellingham's public works director. "Folks said, 'We want to have curbside recycling,' and they just started doing it on a neighborhood-by-neighborhood basis without city involvement. . . . Because you had this strong community ethic for recycling, the idea of self-sorting was just sort of ingrained."

Even today, Bellingham residents still sort recyclables into three bins (red for newspapers; white for mixed paper; blue for cans, glass, and plastic) that are collected at the curb every week. A Sanitary Service driver dumps the contents of each colored bin into the appropriate hopper of a compartmentalized manual loader. If the driver finds a contaminant—a garden hose, beer cans bundled in plastic grocery sacks, a glass jar smeared with peanut butter—the nonrecyclable item is left in the bin with a tag explaining the problem (which is typically remedied by the next collection), and the driver moves on to the next house. At a Materials Recovery Facility (MRF) operated by another Bellingham company, Northwest Recycling, the truck's compartments are emptied into three bays. In the first two bays, front-loaders scoop newsprint and mixed paper directly into balers. In the third, glass, cans, and plastic are fed onto a conveyor that segregates the mix into multiple streams (tin, aluminum, plastics, and four types of glass) funneled into bins or compactors.

"For better or worse, our process has stayed relatively low-tech," says Rodd Pemble, Sanitary Service's recycling and safety manager. "Our customers do the sorting for us, so we eliminate most of the processing that goes on with other programs, and we're not facing the high amortization costs of large MRFs that put in expensive tech-based sorting systems."

More than a decade ago, many cities began abandoning or eschewing labor-intensive, curb-sorted, three-bin recycling programs like Bellingham's in favor of a mechanized commingled (also known as single-stream) process that has become the municipal standard. Commingled recycling programs, which allow residents to combine all recyclables into one large roll cart, are popular with customers who no longer have to deal with the bother of presorting everything and with the clutter of multiple bins. It's also easier for drivers, who, instead of stooping and lifting and emptying three bins into multiple





Kevin Moore, CEO of Northwest Recycling in Bellingham

“IT’S HARDER FOR US TO GET RID OF OUR MATERIAL THAN IT WAS A YEAR AGO, AND IT’S 10 TIMES HARDER FOR SOMEONE WITH A HIGHER CONTAMINATION RATE.”

—KEVIN MOORE CEO, NORTHWEST RECYCLING, BELLINGHAM

compartments at every stop, can simply roll one cart up to a truck equipped with a hydraulic lifting arm that empties it into a combined hopper that also compacts the material, dramatically increasing the volume that can be collected per truck while reducing the time and effort needed to do so. At the MRF, each truckload is fed into a sophisticated mechanical sorter, a disassembly line that automatically separates paper, glass, metal, and plastic and packages it for transport to market.

However, all the time and effort saved curbside with a single-stream system comes with a significant cost: contamination. Curb-sorted systems like Bellingham’s yield exceptionally low contamination rates (Bellingham’s is less than 1 percent). Single-stream trucks have mirrors and cameras that can flag contaminants as carts are dumped, but realistically the only hope of removing the contaminant is that it gets caught during sorting at the MRF. And that gets to the fundamental challenge of single-stream systems: separating recyclables once they’ve been commingled.

“By the time it comes to us, everything is mixed up,” says Dave Claugus, vice president of Pioneer Recycling Services, which operates an MRF in Tacoma that processes single-stream recyclables for cities across the state. “It’s like trying to unscramble a scrambled egg.”

Compacting recyclables during collection increases the probability of contamination, especially when broken glass is added to the mix. Something as humble as discarded wet coffee grounds can contaminate an entire truckload of mixed paper, reducing its market value or rendering it worthless. By volume, typically 25 percent of all single-stream recycling ends up being landfilled due to contamination. From what is recovered, the best single-stream programs yield 5 percent contamination rates, but rates of 15 percent or higher are more common.

Nevertheless, in 2016, Bellingham, one of the last dual-stream holdouts in the state, felt compelled to adopt the industry standard.

“We thought we should consider single-stream because maybe our recycling rates and our landfill diversion rates would go even higher,” says Carlson, who notes that the city’s recycling program diverts 40 percent of its waste from the landfill (an added priority now that the city must ship its trash to eastern Washington due to the closure of its local landfill). “But ultimately we said, ‘We’ve got this system; it’s kind of unique. But look at this great, clean recycling commodity we’re getting that’s yielding higher revenues, and we’re seeing less contamination so less is going to the landfill. If our ultimate goal is to reduce what we’re sending to the landfill, let’s stick with this system.’”



Curbside recycling bins on a residential street in Bellingham



A recycling truck unloads at a station at Northwest Recycling in Bellingham.

Bellingham's decision couldn't have been much better, because as it turns out, the timing for a conversion to single-stream couldn't have been much worse.

Unable to compete with overseas export markets with fewer environmental regulations, domestic processors had disappeared. Since it cost more to truck a load of baled paper and plastic from Tacoma to Portland than it did to ship the same load to Shanghai, cities on the West Coast had been filling China-bound cargo ships with those recyclables. Hungry for raw materials to feed its factories, China overlooked rates of contamination that only increased as more cities adopted single-stream recycling programs. But with contamination rates surging as high as 30 percent, in an effort to address the environmental impact of its processors and create a market for its own domestically collected recyclables, China last year announced that it would only accept imported bales of mixed paper and plastic with contamination rates of 0.5 percent or lower, an all-but-impossible standard to achieve.

Dubbed National Sword and often referred to as China Sword, the import ban was rebranded as Blue Sky when it went into effect on January 1, 2018. Although the price of domestically processed, high-value items like aluminum and tin cans remained unaffected, the bottom dropped out of the recycling market for mixed paper and plastics. Municipal programs continued to churn out tons of that material as they always had, but suddenly, the world's primary consumer of those commodities wasn't buying anything. With an ever-increasing supply and dwindling demand, prices plummeted.

The fallout was especially devastating to recycling programs in King County, which before the ban had been the West Coast's largest supplier of baled paper and plastic to China. In this buyer's market, recyclers have been put on notice: only the cleanest material sells, if it sells at all.

"People want the best, but as clean as our material is, it's harder for us to get rid of our material than it was a year ago, and it's 10 times harder for someone with a higher contamination rate," says Kevin Moore, CEO of Northwest Recycling, Bellingham's MRF. "The reality is, if you still have the same inflow of material but you can't get it to China, it has to go somewhere. Companies don't have the space to warehouse, so it's being disposed of at cost. One processor in the greater Seattle area is landfilling tens of thousands of tons of mixed paper. No promises about the future, but so far

Cleanup Hitter Q&A DYLAN DE THOMAS

The Recycling Partnership's Dylan de Thomas on why cities can't afford to scrap recycling programs and how improving what's collected at the curb can benefit the whole community.



What is the Recycling Partnership?

We are a national non-profit dedicated to making it easier for households across the country to recycle better. Leading brands like Coke and Pepsi, retailers like Target and Amazon, and packaging producers like Sunoco and Dow Chemical that make the products people put in carts or trash cans fund us to transform the US recycling system and create a sustainable future.

What's in it for Coke and Pepsi?

They want the material back—they need more recycled PET [polyethylene terephthalate, the plastic in water and soda bottles] and aluminum to create their products. In general, our 42 funders also understand that our country's recycling infrastructure needs help, they want to be part of that help, and we are the one national organization that is delivering that help on the ground, every day, to communities across the country to improve recycling.

How does the Recycling Partnership work with cities?

The Recycling Partner-

ship supports cities by 1) providing grants for recycling carts; 2) educating city residents on what—and what not—to recycle; and 3) delivering best practices, expert technical assistance, and free online tools to help communities across the country improve their recycling programs long-term.

What's the fundamental recycling issue cities need to address?

One of the primary reasons we're in the mess that we're in is that the recycled materials we were sending overseas were not clean enough. Cities need to clean up their recycling, and the way you do that is at the curb; you educate your residents so they don't put something in the cart that doesn't belong there. Our free, downloadable (at recyclingpartnership.org) Recycling Contamination Kit provides the steps, tools, and resources for cleaning up residential recycling streams.

What's the payoff?

Before China started taking all of these materials, we had local markets. Some of these still exist, but they haven't been buying

CONTINUED ON P.19 ►

we have not had to send anything to the landfill.”

Last year, Northwest Recycling received \$30 to \$40 for every ton of mixed paper it sent to Asia; now it’s paying that much or more to ship the material overseas. But even at a loss, it’s still cheaper for Northwest to send Bellingham’s curb-collected paper across the Pacific than to truck it to a landfill in eastern Washington. Bellingham increased residential solid waste recycling fees by 4 percent to help offset commodity increases at Northwest Recycling, adding about \$1 a month to the average customer’s bill.

Bellingham is no outlier; in King County and all across the state, cities are now being asked to adopt recycling surcharges to offset the downturn in the commodities market; increased costs to ship materials to alternate markets; and, in the case of single-stream processors, the addition of new sorting equipment and hiring of more line sorters to reduce contamination.

“The economics of recycling have changed,” says Kevin Kelly, general manager of Recology CleanScapes, a Seattle MRF that processes recyclables for several King County cities, including SeaTac. “We have had to increase costs to produce a higher-quality material at the same time our revenues have been dropping because the demand for material has plummeted.”

At press time, the City of SeaTac’s council was set to vote on a three-pronged approach to address Recology’s most pressing challenges, primarily applying a “sustainability adjustment” that would add \$1.35 to the average monthly residential bill in the short term. Additionally, SeaTac would remove from its recycling stream plastic film, which fouls sorting equipment and, defying separation, contaminate bales of paper and plastic. The city also planned to adopt a “contamination enforcement standard” that would allow Recology to landfill the contents of recycling containers at large commercial and multifamily residential complexes found to be repeatedly contaminated with more than 10 percent of garbage or other nonrecyclable waste.

“The actions we’re taking today hopefully will be able to help us get through the next five years,” says Mason Giem, SeaTac’s public works program coordinator, of the proposed measures. “We’re also working with Recology to be more impactful in creating longer-term strategies for solutions. . . . We need to be looking at a full closed-loop system on these kinds of materials.”

Both Giem and Kelly are members of the Responsible Recycling Task Force, a coalition of 10 King County cities, county leaders, and three major recyclers that has been meeting monthly since April with the goal of releasing a report by October that will recommend short-, medium-, and long-term strategies for addressing the National Sword crisis.

One early task-force discussion revolved around the concept of “Responsible Recycling,” a regionwide holistic approach promoting quality over quantity of materials collected, a unified and prioritized list of the most economically viable materials to be recycled, recognition that the economic benefits of recycling have a financial cost, and keeping all stages of the recycling process as close to home as possible—as cities already do with municipal compost programs.

“China has created a catalyst for rethinking recycling,” explains task force member Emily Newcomer, a Waste Management public sector solutions manager working with the cities of Duvall, Kirkland, Redmond, Seattle, and Snoqualmie. “All across the state, dedicated municipal staff are wrestling with the new reality. The old way of recycling doesn’t work anymore.”



City of Walla Walla
Public Works Director
Ki Bealey

Nobody has to explain that to

Ki Bealey and Nabel Shawa of Walla Walla, a city of 32,000 that operates its own landfill, garbage collection, and a community recycling program that over the past year went from solidly black to hemorrhaging red ink.

“We are on the front lines of impacts due to the China Sword policy,” Shawa, Walla Walla’s city manager, wrote on an AWC survey polling Washington cities about the impact that the Chinese import ban has had on municipal recycling programs. “After losing tens of thousands of dollars in the past year, we were forced to raise our recycling fee by \$3.50 per month on top of the \$6 monthly fee already in place. Many citizens are outraged and questioning the value of recycling. . . . We cannot continue to operate indefinitely given the cost/pricing volatility we are currently experiencing.”

Consider Walla Walla’s balance sheet. In a typical month, the city’s single-stream curbside service, with 9,000 residential customers, collects around 130 tons of recyclables, material Walla Walla Recycling bales and trucks five hours west to its MRF, Tacoma’s Pioneer Recycling Services. In early 2017, before China officially announced its National Sword import ban, those recyclables generated a profit of \$40/ton, which the city applied to its Sanitation Fund as a hedge against market volatility. In September 2017, what was once an asset became a liability, netting Walla Walla a loss of \$20/per ton. That downward spiral only accelerated after January 1, 2018, when National Sword took effect.

“It was an incredibly dramatic change at the beginning of the year,” recalls Pioneer Recycling’s Dave Claus. “When I came to work on January 2, our phones started ringing, and by the end of the day all of our export orders were canceled. The good news is, we have been able to find movement for all of the materials we are collecting.”

The bad news: transportation costs to alternate markets in Southeast Asia have skyrocketed, and prices for baled paper and plastic are the lowest they’ve ever been. By April, Pioneer was charging Walla Walla \$100 per ton for its recyclables, a loss of \$12,200 per month for the city, which was rapidly burning through

its Sanitation Fund. By year's end, the city estimated that its recycling program, which previously had generated a tidy annual income of \$60,000 or more, would drain \$156,000 from its coffers.

"Cities, including Walla Walla, must find a new way to cover the costs of recycling," says Walla Walla Public Works Director Ki Bealey. "That's why we had to institute the surcharge."

Assuming the commodities market for recyclables doesn't erode any further, Bealey says the surcharge should help the city address what has become a volatile expense, the new normal for Walla Walla and cities everywhere.

"WE NEED TO TAKE A LOOK AT THE SYSTEM WE'VE CREATED, TAKE IT APART, AND FIND OUT HOW TO DO IT BETTER."

**—KI BEALEY PUBLIC WORKS DIRECTOR,
CITY OF WALLA WALLA**

"I feel very stuck by that," confesses Bealey. "We've spent decades getting ourselves into this situation. . . . We need to take a look at the system we've created, take it apart, and find out how to do it better."

Bealey would like to find local or regional end-markets for the city's recyclables, which would stabilize volatility and address one of the program's major hurdles: transportation costs. While Walla Walla sends its garbage to a landfill within city limits, it pays \$20 per ton to ship baled recyclables to Pioneer Recycling in Tacoma (out of the \$100 per ton it now pays Pioneer for processing the materials); from Tacoma, Pioneer ships the city's paper and cardboard overseas to Asia and its plastic to processors in California and Canada, which adds to Pioneer's costs for processing.

If George Brady had his way, Walla Walla's curb-collected plastic would be processed in Pateros, a city too small and remote to support a municipal curbside recycling program. (In Pateros, residents drop off their recyclables at a county collection site downtown.) But what Pateros does have is a 16-acre industrial park with access to cheap hydropower, a major highway, and a railroad main line. Brady, a Pateros city councilmember and its former mayor, has developed a proposal to build a state-of-the-art factory in Pateros that would process one of the most valuable and bountiful sources of city-collected plastics (#1 PET, used in water and soft-drink bottles) and convert the material into pellets used as feedstock for the manufacturing process. Modeled after a successful operation in Rome, Georgia (which expanded from 20 to 200 workers in 10 years and has incubated 10 spinoff businesses), Brady envisions the plant spawning related manufacturing operations at his city's industrial park that perhaps would process PET pellets back into water bottles (ideally for Issaquah's Costco, one of the state's largest bottled-water retailers) or even recycled fleece jackets (say, for Kent outdoor retailer REI).

Like those China-bound cargo ships that once filled their empty holds with King County's recyclables, once-empty tractor trailers calling on Pateros to load apples would arrive in Okanogan County loaded with recycled plastic from cities in Washington, Oregon, and British Columbia to feed its PET-1 processing plant and mills.

from domestic sources because our recycling wasn't clean enough. If you do clean up your system, then some of those local markets may be able to take your material. That's certainly the hope.

How is the domestic processing market responding to this crisis?

I'm seeing increased investment with plastics recyclers beginning to invest in capacity here in the US. They're building giant PET facilities that can take thousands of tons in capacity in California, Texas, and Pennsylvania, as well as planned expansions here in the Pacific Northwest with talk of facilities being able to partner up across state lines.

What about scrap paper processors?

There are existing paper mills in the Pacific Northwest that are looking to reinvest in their facilities to take in more of this material, and there are companies outside the region that see this feedstock and potentially want to be able to do something good with it. That's the silver lining in the cloud: you're seeing investment in and attention to processing these materials here at home.

Closing the loop. Isn't that the way it really should be, given the environmental impact of shipping all of this material overseas?

Life-cycle analyses I've seen show that you can move recycling a good distance and still have environmental benefits, but it is way better not

to have that negative impact on the environment, and the great thing too is that when you're recycling here, you're supporting jobs and the economy here at home.

Is it fair to ask ratepayers to cover the costs of recycling?

As citizens, we don't ask for other essential resident services to pay for themselves; those services come at a cost. So does recycling, and most Americans expect and want to be able to recycle. It costs money to have parks, it costs money to have firefighters, it costs money to have recycling.

Why should recycling be a priority when cities already are strapped to provide essential services like public safety?

I'm not meaning to say that you should have recycling instead of a firefighter. The fact is, these materials have to be managed in some way. You can either throw them away, or you can pay for a service just like you pay for trash pickup where you're saving greenhouse gases and you're saving resources, plus you're going to have 10 times the positive impact on the economy than you would if you just land-filled it.

Bottom line?

If you're a politician, this is a slam dunk. You're giving residents and businesses something they both want, and in doing this you get to support the local economy and jobs. It's a win for all.

All that's needed is an investor (perhaps backed by economic development incentives) willing to spend \$10 million to \$20 million to build it.

"The City of Seattle pays \$13 million for a mile of bike lane," says Brady, who in September traveled to Wenatchee to present his proposal to an aide to Sen. Maria Cantwell. "With two miles of bike lane, we can virtually solve a quarter of all the recycling problems we have in the state of Washington.... Instead of sending all that plastic to [Asia and elsewhere], it makes much more sense to recycle that plastic here, to make new products out of it here, to make industry here and jobs here."

The same could hold true for paper, almost all of which must likewise be shipped across the Pacific due to a dearth of domestic processors, since mills in Washington and elsewhere in North America were mothballed once the market shifted to Asia.

"I love hearing that there's a domestic drive for plastics, but it needs to be more than just plastics," says Bealey. "What is the plan for domestic paper? We need to be reaching out to some of the MRFs—they are the ones dealing with this commodity, they know where the markets are, they would be a really good source for what needs to change."

Since the city switched from a curb-sorted three-bin program like Bellingham's in 2009, the volume of recyclables Walla Walla collected increased, but so did contamination, which typically hovers around 15 percent. Reverting to a three-bin system isn't an option, given the investment the city has made in its current system—an automated single-stream collection truck costs more than a quarter-million dollars. Nor is asking its citizens to revert to a program that requires them to do more work while asking them to pay more for the service. What the city can do is help its citizens become better recyclers, and to do that, they need to understand how single-stream recycling works—like most residents, they're "wishful recyclers" who believe that anything that's put into a recycling container has intrinsic value and can magically be recycled, whether or not there's an actual market for it.

"We've created this illusion that someone at the city is going through everybody's container determining what goes where and making sure there are actually places for all of it to go, which really isn't the case," says Bealey. "We created this culture of, 'I think it might be recyclable, so I'm going to put in the cart, and someone will figure it out.'"

And that needs to change.

"We've done a really good job of brainwashing everybody that everything needs to be recycled," Bealey adds. "What we really should be saying is, 'Don't be afraid to put it in the trash.' I have a heck of a time with that myself. It's really hard to do."

Getting that message out is the job of Communications Manager David Brauhn.

In January, Brauhn created a simple Facebook survey, listing 50 recyclable and nonrecyclable items and asking respondents to



City of Walla Walla
Communications
Manager David Brauhn

click "Throw it in" or "Throw it out," and e-mailed a link to the city's 9,000 recycling customers. As an incentive, anyone who scored 85 percent or better would be eligible to win a free "We Love Our Walla Walla" T-shirt. ("People will do almost anything for a free T-shirt," laughs Brauhn.) Sure enough, 1,037 took the survey, and most had to take it more than one time before they passed. Some questions gave Brauhn hope (96.4 percent correctly voted that strands of Christmas lights did not belong in the recycling cart), while others elicited a facepalm (the two residents who would put soiled diapers in

their bins, and the eight who would add medical waste to theirs).

"We weren't trying to reach the ones who don't recycle; we wanted to reach those who do recycle but don't do it correctly," explains Brauhn. "This is not a one-and-done deal. It's an ongoing campaign. We're talking about changing people's habits."

The bottom line?

"The big lesson is that the world is a much smaller place: things that happen overseas can have a big impact even on a little city in eastern Washington like Walla Walla," he adds. "We're hoping to ride it out because once you get rid of recycling infrastructure, it's really hard to start it again. It's less expensive to just keep it going."

A good example of that is

Bellingham, where the grassroots organization that founded its recycling program in 1982 has evolved into a nonprofit, RE Sources for Sustainable Communities, that, among other environmental initiatives, has designed a waste reduction experiential learning program for Whatcom County middle and high schoolers. In that program, students conduct waste audits at their lunch rooms to determine "how well their school sorts landfill-bound waste, compostables, and recyclables" and are encouraged to "brainstorm ways to help promote correct sorting and waste reduction in their schools."

"Kids who were in third or fourth grade in the 1980s [when the city started recycling] are now teaching their kids, 'This is how Bellingham does it,'" says Sanitary Service Company's Rodd Pemble. "We've had close to 30 years of consistent year-after-year education. There aren't a lot of communities that have had that kind of continuity."

That, Pemble believes, is why people in Bellingham just seem to get recycling.

"In the end, I keep coming back to the importance of building a relationship with your community," he adds. "Relationship-building helps the community feel like it has ownership of the program, that they can be proud of it, and then they're more likely to do as good a job as they can. That's something everybody can focus on—it's not a high-cost item. It takes persistence and having a clear vision of how you want the program to move forward."

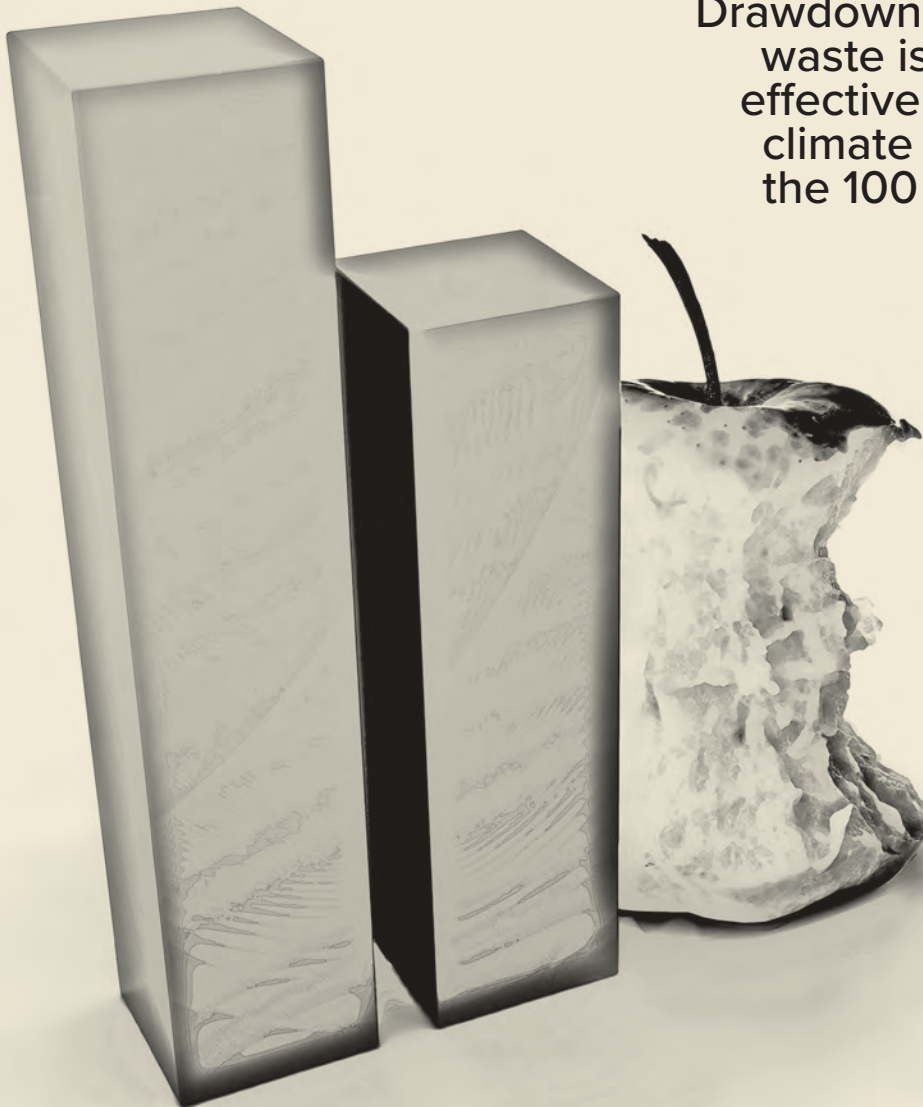
And succeed. 

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

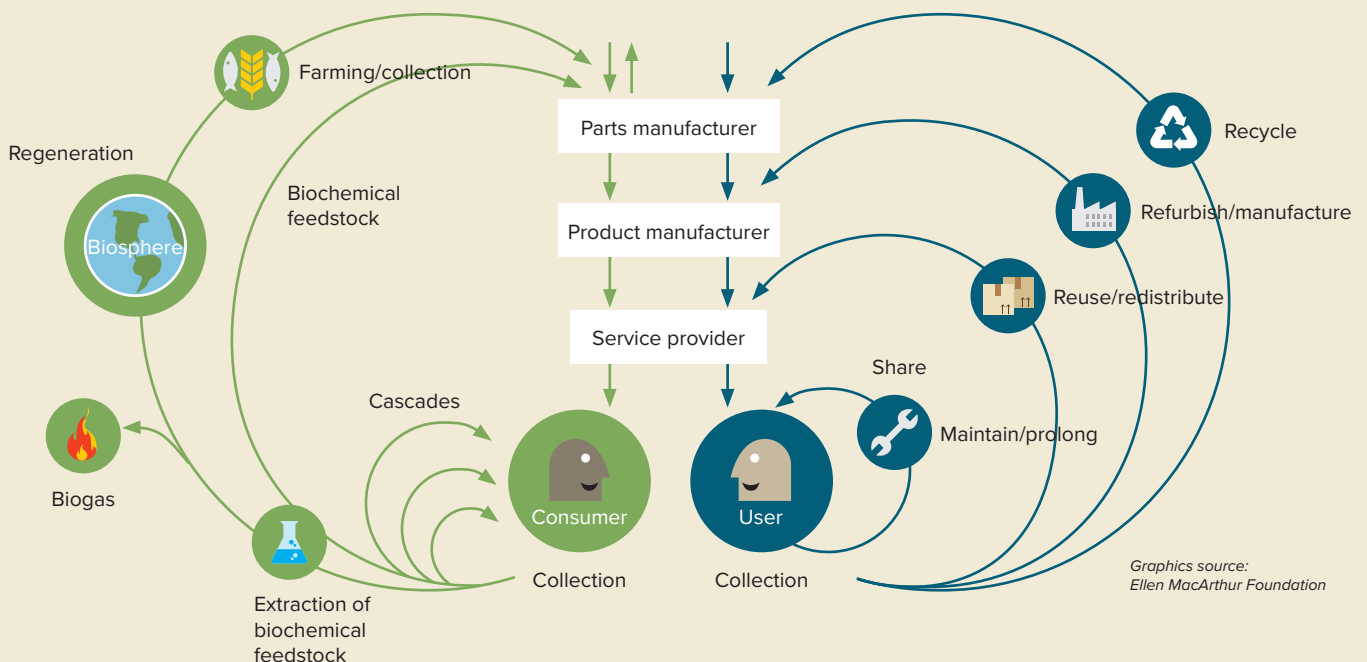
about microbeads in the aquatic food chain and trash in the environment, including the Salish Sea and global oceans. According to the Ellen MacArthur Foundation, there will be more plastic than fish in the ocean by 2050 if we don't start acting now.

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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Cityscape



Common Cause

Banding together at a local level to confront a waste-stream predicament with global reach.

WHEN IT CAME TIME to support the troops during World War II, the civic message was simple: contribute your aluminum. Today, we're accustomed to treating metals as a community resource.

When someone has a great message, it needs to be recycled. Dave Claugas, vice president of Pioneer Recycling Services, had the perfect perspective for this issue's Cityscape at the fall Washington State Recycling Conference. With a little paraphrasing, here's what he said:

It's time to avoid denial and accept responsibility for change. All of the recycling stakeholders have work to do. Processors accept that machinery is no longer adequate and invest in new sorting equipment. Haulers realize they are part of the quality

chain and work with cities to develop cart feedback programs. Cities recognize that their message delivery systems aren't working and simplify the acceptable materials list, sponsor and pay for cart audits, and ban plastic bags. Residents concede that wishful recycling is not recycling—and learn to listen and sort correctly. Manufacturers acknowledge that some packaging real-ly is not recyclable and choose viable solutions.

As an economist, Claugas believes recycling will survive. Markets are dynamic; in the next 12 to 36 months, they will reset to a point where all recyclable materials generated can be sold at the market price. Until then, cities can lead with a time-tested message: Your community needs you. Let's confront our challenges honestly and work together for everyone's benefit. **C**

It's time to prepare for the 2019 legislative session.

01 | 14 | 19

Establish relationships with your legislators before January.

This fall:

- ✓ Adopt your city's legislative agenda and share it publicly with media and legislators.
- ✓ Educate your community about what your legislators do to help cities.
- ✓ After the election, meet with incoming and reelected legislators and tell them your city story.
- ✓ Plan to attend City Action Days February 13-14, 2019 in Olympia.

Share your city's story with the public and legislators early and often. Your work this fall will help establish a strong relationship with your legislators during session.

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