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Washington State Recycling Contamination Reduction and Outreach Plan (CROP)

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2020 Washington State Contamination Reduction Outreach Plan

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Washington State Recycling Contamination Reduction and Outreach Plan (CROP)

By

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Executive Summary

When China shut the shipping container door on accepting what they call *yang laji,* or foreign trash, our state could no longer hide how much garbage was in the materials collected for recycling. The days of exporting large quantities of highly contaminated material to Asian and other export markets are over. It's now time to clean up the mess that was being shipped oversees.

To address this challenge, the Washington State legislature passed and Governor Inslee signed House Bill 1543 in 2019. The act created the Recycling Development Center to expand regional markets for recycled commodities and products, and required the Department of Ecology to create and implement a Statewide Recycling Contamination Reduction and Outreach Plan (CROP) based on best management practices. The State CROP fulfills this mandate.

The act also requires most counties and some cities in the state to include a CROP in their local Solid Waste Management Plans (SWMP). To assist local governments in meeting this requirement, the State CROP includes a Local CROP Template that jurisdictions can modify and include in their SWMPs or use as a framework to develop their own CROP. Along with the template, Ecology developed and assembled a robust set of resources for local governments to help them customize and implement their CROPs. This includes the creation of a Recycling Contamination Reduction Resource Library.

The State CROP includes a statewide action plan to reduce recycling contamination. It outlines Ecology's next steps to assist local governments in their anti-contamination efforts. These steps include:

1. Promoting alignment and harmonization across recycling programs statewide.
2. Encouraging and supporting regional solid waste planning and aligned or joint contracting for services.
3. Gathering and sharing more comprehensive data to measure the performance of the recycling system.
4. Pursuing legislative, funding, and policy solutions**.**

Addressing the challenge of reducing recycling contamination presents a unique opportunity to develop the kind of public-private partnerships needed to build a more sustainable future. A future where recycling contamination is a thing of the past. Developing the State and local CROPs is an important next step in creating that future.

Introduction

Context and Background

The context for drafting and releasing the State Contamination Reduction and Outreach Plan (CROP) is so extraordinary that it needs acknowledgement right up front. These are uncertain and turbulent times with little visibility into what the future of our communities, economy, and institutions will look like. Of course, all of this applies to our recycling system as well. A system already trying to recover from the shock of export bans, confounding levels of contamination, and consumer confusion.

Due to the COVID-19 pandemic, local and state governments face precipitous declines in tax and fee revenue and increasing costs for all public services, including solid waste management. Washington state and the local governments who are the primary audience for the State CROP were hit particularly hard. In that context, making progress on reducing contamination may be limited in the near-term. However, even though resources are constrained right now, this is the time to begin working together on a strategy to reduce recycling contamination. Planning now allows for quick action as soon as the fog lifts and the economy improves.

The State CROP is a roadmap to identify opportunities to reduce recycling contamination, build community support, and secure the needed resources. These include opportunities to:

- Rethink and reimagine our recycling system.
- Build more aligned, integrated, and effective recycling programs and services.
- Create a more sustainable funding model where the costs, burdens, and benefits of recycling are more equitably distributed and shared.

The Dirty Truth is Out

When China shut the shipping container door on accepting what they call *yang laji,* or foreign trash, there was no more hiding how much garbage was in the materials collected for recycling in the state, country, and in other developed nations around the world. The days of exporting large quantities of highly contaminated bales of material to Asian and other export markets are over. The mess sent overseas is now ours to clean up.

See Resource Recycling's From Green Fence to red alert: A China timeline and CNBC's Why China Stopped Buying U.S. Recycling. For a local perspective, read the Seattle Times April 26, 2020 article on "Recycling's dirty truths exposed"

Why a State Crop?

In 2019, the Washington State legislature and Governor Inslee passed House Bill 1543 to address sustainable recycling issues. The act created the Recycling Development Center to expand regional markets for recycled commodities and products, and required the Department of Ecology to "create and implement a statewide recycling contamination reduction and outreach plan based on best management practices." Drafting the State CROP is Ecology's fulfillment of this mandate. In addition, the act requires Ecology to provide technical assistance and guidance to help local jurisdictions understand contamination in their regional recycling, and to develop their own local CROPs. The State CROP serves as a foundation for guidance and support.

Counties with a population of more than 25,000 must include a CROP in their Solid Waste Management Plan (SWMP) by July 1, 2021. The requirement also applies to cities with independent plans within these counties. The Guide to Local CROPs section includes a Local CROP Template that jurisdictions can adopt in lieu of developing their own CROP or revise and customize for their SWMP. See provisions of the act in RCW 70a.205.045(10) and RCW 70A.205.070.

See Who Needs to Prepare a CROP for a list of all jurisdictions required to include a CROP in their Solid Waste Management Plan.

Why Now?

Chinese export bans like National Sword, and similar bans imposed by other foreign markets, forced a reckoning over recycling in the state and around the world. Washington is at a crossroads, and smack in the middle of the intersection are choices about how to manage recycling contamination.

Reducing recycling contamination helps:

- Develop more robust domestic recycling markets and remanufacturing supply chains.
- Fully realize the significant environmental, public health, social, and economic benefits of recycling.
- Open up exciting new opportunities to create a more circular, sustainable, and resilient materials management system and economy.

Not addressing recycling contamination and continuing business as usual, puts the future of recycling programs at risk and results in:

- Higher costs to local governments and consumers.

- Increased risk of injury to collection and processing workers.
- Reduced utilization of a large source of domestic feedstocks to manufacture new products.
- More environmental harm including higher greenhouse gas emissions.

Creating a brighter future for recycling in Washington requires producing a consistently clean recycling stream. That's the purpose of the State CROP, and why Ecology is providing assistance to local governments to develop and implement their own CROPs.

State CROP Basics

Whom is the State CROP For?

The State CROP serves as a guide for cities and counties in Washington to collaborate with residents, businesses, haulers, material recovery facilities (MRF), and other participants in the recycling system to reduce the costs and impacts of contamination on their recycling programs.

What is Recycling Contamination?

For the purposes of the State CROP, and per the RCW, recycling contamination is anything collected for recycling that's not accepted for recycling in a given community's recycling program. Or material that is too wet or dirty for processing into new products and ends up in the garbage. More broadly, recycling contamination is anything collected with materials meant for recycling that could create negative environmental, financial, or health and safety impacts anywhere in the recycling system including collection, processing, remanufacture, or disposal.

What Contamination Does the State CROP Address?

The State CROP addresses contamination of the traditional recycling stream from single-family and multi-family residences, drop box collection sites, and commercial recycling programs. Traditional recyclables include printing paper, paper packaging, cardboard, metal cans, glass bottles and jars, and plastic bottles and jugs. The CROP does not directly address the contamination of organics,

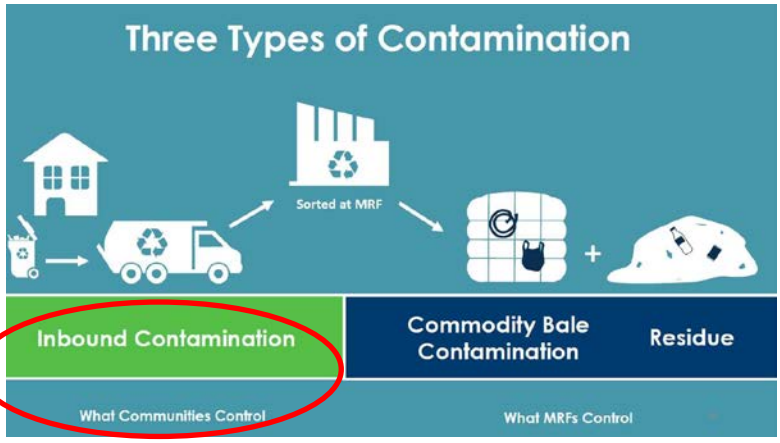

Figure 1: The State CROP focuses on reducing inbound contamination. Graphic from the *TRP 2020 State of Curbside Report*.

construction and demolition debris (C&D), commodity bale contamination or residuals controlled by MRFs, or material removed by remanufacturers from their secondary material feedstock.

Because the primary audience is local government, the State CROP focuses on reducing ***inbound*** recycling contamination. This is the material delivered primarily to MRFs for processing on its way to an end market. Residents, businesses, communities, and haulers control this material. If a recycling program hauls some of its material directly to an end market, the strategies included in the State CROP would also apply.

What's Not Included in the State CROP

1. ### Organics and C&D Debris Contamination Reduction Strategies

   The State CROP does not include specific strategies to reduce contamination in other material streams, including organics and C&D debris. However, jurisdictions can use the basic contamination reduction strategies provided in the CROP to develop targeted strategies for all collection programs. Local governments are encouraged, but not required, to address these streams in their local CROPs. As resources allow, Ecology will assist communities in this work.

2. ### A List of Materials Communities are Required or Not Required to Collect for Recycling

   Ecology strongly encourages local governments located in the same MRF-shed or region to harmonize their acceptable materials list. The State CROP provides some guidance on what to consider in deciding what materials to collect. However, it is up to local jurisdictions to decide what should and should not be included in their recycling programs. Local community values and partnerships with haulers, MRFs, and end markets should guide these decisions.

3. ### Initiatives to Reduce Contamination at MRFs and End Markets

   The focus of the State CROP is on cleaning up *inbound* contamination. It only addresses one part of what will need to be a system-wide strategy to create a consistently clean recycling stream in the state. MRF operators and end markets are deploying new sorting strategies and investing millions of dollars in new technology to clean up the material delivered to them for processing or remanufacture. These investments are critical to creating long-term solutions to contamination woes, but are outside the scope of the State CROP.

4. Market Development Initiatives

The legislation calling for the State CROP also created the Recycling Development Center (RDC) to expand and create markets for recyclables collected in Washington State. Creating a consistently clean recycling stream makes it easier for the RDC to achieve its goals.

5. Initiatives Addressing Plastic Waste and Pollution

Ecology and many other organizations are working to address the growing environmental and public health problems caused by the plethora of plastic products produced and consumed in our country and around the world. The State CROP does not directly address these issues, except by supporting strategies ensuring better management of plastics in residential and commercial recycling programs.

However, Ecology is in the process of implementing two important pieces of legislation passed in 2019 to reduce plastic waste. These will also boost efforts to reduce recycling contamination. They are:

- A Statewide Single-Use Plastic Bag Ban**:** When it goes into effect in 2021, this ban eliminates one the most vexing sources of recycling contamination in the state.
- The Plastics Packaging Evaluation and Assessment Law: This law sets the goal that all packaging in the state is 100% recyclable, reusable, or compostable and contains at least 20% percent postconsumer recycled content by 2025. The first step was completing a study on the impacts of plastic packaging in Washington.

Principles and Assumptions

The principles and assumptions below embed the critical work of reducing recycling contamination in the context of the overall goals of reducing waste and creating a sustainable materials management system. They serve as the foundation for the contamination reduction strategies and recommendations included in the State CROP.

Prevention First

Producing less stuff is key to realizing the full environmental, social, and public health benefits of a more sustainable approach to materials management. Even though recycling is preferable to disposal, it comes with its own set of financial, social, and environmental costs. Any product that isn't produced is one less product that may end up contaminating the recycling stream or needs somewhere to go at the end of its useful life.

Recycling is a Means to an End

Environmental, social, public health, and community development goals and values should drive decisions about designing the recycling system and what materials to collect. Right now, the primary driver of what ultimately gets recycled is its market value. Defining and measuring the impact of recycling more broadly will be important in identifying how best to reduce contamination and improve the performance of the recycling system.

Contamination Flows Downstream

Recycling contamination is fundamentally a design problem. Most product and package designs do not meet end market specifications, causing higher recycling program costs and increased contamination. The Association of Plastic Recyclers April 2020 bulletin on the use of shrink sleeve labels and their impact on the recyclability of plastic bottles is just one example of how design choices can increase contamination. Designing products and packaging with recycling in mind would solve many of the contamination problems addressed in the State CROP.

Good Data is Foundational

Recycling contamination is a serious problem, but there isn't reliable, consistent collection of local, regional, or statewide data on the nature and scope of the problem. Without good data, it's hard to know if efforts to reduce contamination and achieve larger materials management goals are working. Investing in a more robust, aligned, and coordinated system to collect datum on metrics like the composition of the recycling stream is key to successfully reducing contamination.

Recycling is Not Free and its Costs Should Not Be Hidden

Making responsible choices about what materials to collect and process in community recycling programs requires accounting for their environmental, financial, and other benefits and costs. The costs of recycling should not be hidden in the rates charged for garbage collection. Making it appear that recycling is free encourages "wishful recycling" and increases recycling contamination. In part because people might put excess garbage in their recycling bin if their garbage bin is full.

Collection and Processing is not Recycling

Collecting materials and processing them *for* recycling is not recycling. The environmental, and other, benefits of recycling are only realized when the material collected for recycling replaces virgin feedstocks to produce new products. It's inefficient, costly, and causes unnecessary environmental harm when MRFs have to sort and haul non-recyclable or contaminated material to a disposal site or when end markets have to sort that material out of their feedstocks.

Both Quality and Quantity Are Possible

The choice between quality and quantity is a false one. A successful contamination reduction program that lowers consumer confusion about what can and cannot be recycled can also increase the capture rate of recyclable materials. The capture rate is the percentage of available material in a given community recovered at collection. The capture rate for some commonly collected materials with reliable long-term and sometimes high-value markets are low.

The Recycling Partnership's 2020 State of Curbside Recycling Report estimates nationwide residential curbside collection programs capture (by weight) only:

- 53% of aluminum cans,
- 55% of PET bottles,
- 60% of mixed paper, and
- 79% of cardboard

Regional Planning and Coordination is Key

Optimizing the recycling system and dramatically reducing contamination requires integrating and aligning all parts of the system. One primary cause of contamination is the lack of coordinated regional planning, program design, and education and outreach. Our state needs robust regional planning, program standardization, and harmonized messaging to achieve long-term, meaningful reductions in contamination. The State CROP includes data and resources to support these kinds of initiatives.

The Root Causes of Recycling Contamination

There are many root causes of recycling contamination and they go back decades. Most efforts to reduce contamination, other than those implemented by MRFs and end markets, focus on the consumer and their decisions about what to put in their recycling containers and how to prepare materials for collection. Although it's true that consumers need to be part of the solution, they are not the primary source of the problem.

In the bigger picture, recycling contamination is a symptom of a mostly linear and broken materials management system. It results, in part, from decisions made upstream from the consumer. These include decisions made by manufacturers, brand owners, product and packaging designers, and retailers. It also results from decisions made by haulers and local governments. These include what and how to collect materials for recycling, how to promote services, and the metrics used to measure program success.

In this context, it's important to ensure the root causes of contamination that created today's problems are not ignored. Without reducing recycling contamination, it will not be possible to realize the full environmental, social, and economic benefits of recycling. Making substantial

reductions in recycling contamination requires all parts of the system work together in more aligned and accountable ways. Long-term success depends on learning the lessons of the past and not repeating the same mistakes.

Candy Castellano's presentation Recycling at the Curb – A Brief History (1975-2018) provides a local history. She presented this at WSRA's 2018 ContaminationFest.

Below is an exploration of some of the root causes of recycling contamination, and how they contribute to consumer confusion and erosion of trust in the recycling system. These include complacency, complexity, and commingling.

Complacency

In 2004, the Northern California Recycling Association (NCRA) produced a short video titled *Point of Return: Oakland's Place on the Pacific Rim*. It advocates for the economic development opportunities and environmental benefits of using recyclables to manufacture new products in California. The video highlights the rapid growth in the shipment of materials collected for recycling in U.S. cities to countries in Asia, especially from west coast ports. Those countries, many with significantly lower labor costs, few worker protections, and lax environmental standards, would use this scrap to manufacture products to sell back into the U.S. In this 16-year-old video, Nina Butler, NCRA's Vice-President at the time, and now President of More Recycling, made this prophetic statement:

"The export market, while it is strong and may continue for a long time, is also volatile and puts us in a pretty vulnerable state."

Events in recent years revealed just how vulnerable the U.S. was. Many in government and in the recycling industry chose to ignore the many obvious signs that major disruptions to the recycling system were coming and failed to prepare for them. The relatively high prices some countries paid for materials, combined with their low quality standards and the easy, cheap access to foreign markets caused complacency. This complacency is one of the root causes of the high levels of recycling contamination seen today in recycling programs.

Today, the economic development opportunities highlighted in the NCRA video are reemerging. All over the country, new remanufacturing plants are being built, existing ones are expanding, and old ones are restarting. One of the keys to ensuring the continued growth and long-term viability of these new domestic markets is supplying them with a consistently clean recycling stream. The purpose of this CROP, and other initiatives like the Recycling Development Center, is to get our state ready to fully seize these opportunities and make our region's recycling system more resilient and durable.

Complexity

The rapidly increasing complexity and scale of consumer packaging types and designs is far outpacing the capacity of local recycling programs, MRFs, and secondary material industries to adapt. The pace of change in the types of packaging on the market is accelerating. This is another major root cause of recycling contamination. As the How2Recycle Program noted in their April 2020 Insights report:

"How2Recycle has issued labels to over 75,000 products in the Member Platform, reflecting around 25,000 different packaging designs. For those different packaging designs, How2Recycle has issued over 3,500 custom How2Recycle labels—which represents not only the massive diversity of packaging design in the marketplace but also the complexity of certain package designs. On average, How2Recycle issues labels for 225 products every day."

The How2Recycle program does critical and important work to increase the recyclability of packaging in what they call the consumer product goods (CPG) space. Their recommendations to improve packaging design are making some progress in increasing the recyclability of some kinds of packaging. However, they currently only represent about 34% of the CPG industry. Although 44% of their member packaging is currently recyclable, they estimate only 18% is optimally designed for recycling. Clearly, there is a lot of room for improvement. In the big picture, a more integrated, circular approach to designing products and packaging is required to achieve sustainability goals and to make long-term and substantial reductions in recycling contamination.

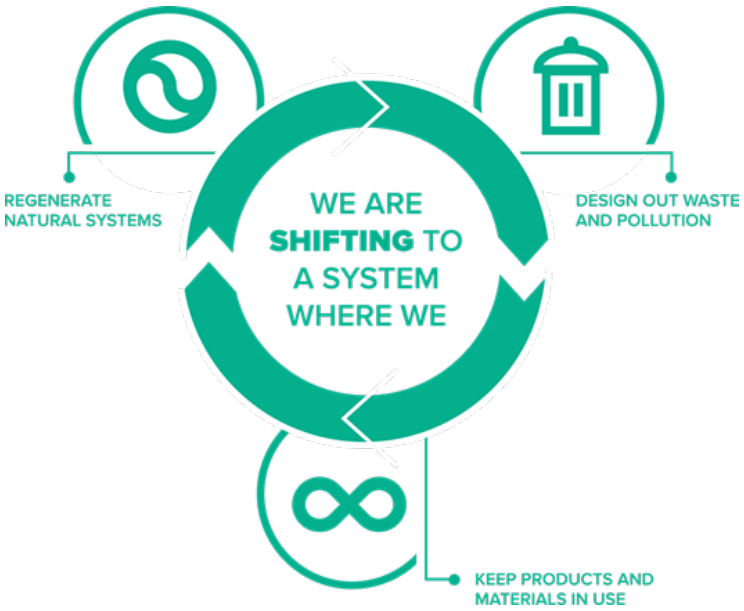

Figure 2: A truly circular economy designs waste and recycling contamination out of the system. Ellen MacArthur Foundation – The Circular Economy in Detail.

Commingling, Landfill Aversion, and the Diversion Trap

Curbside recycling programs took off in the late 1980s when some parts of the country, especially on the East coast, began to worry about running out of landfill space. The issue made national headlines in 1987 when the infamous garbage barge called the Mobro left New York with more than 6 million pounds of trash bound for a landfill in North Carolina. This unsuccessful early effort to export trash gave birth to the modern recycling movement by focusing attention on the growing amount of stuff consumed and landfilled or burned in our country.

Figure 3: Mobro's journey is a fascinating tale. Listen to Planet Money's two-part podcast called A Mob Boss, A Garbage Boat, and Why We Recycle. A PBS Frontline Retro Report called The Garbage Barge That Fueled a Movement also profiled it.

This gave rise to a large increase in the number of communities offering curbside collection of recyclables across the country. In Washington, it started in cities like Seattle and Olympia that began their citywide curbside programs in 1988 and 1989 respectively. Today, according to ZeroWaste Washington's 2019 report on the State of Residential Recycling and Organics Collection in Washington State, there are 168 curbside programs statewide. According to Ecology's 2020 Plastic Packaging Study report, around 2.8 million or 89 percent of Washington's 3.2 million households, have access to residential curbside collection of recyclables. Nationally, The Recycling Partnership's 2020 State of Curbside Recycling Report estimates that 59% of all U.S. households, or about 69.8 million homes, had access to curbside recycling in 2019.

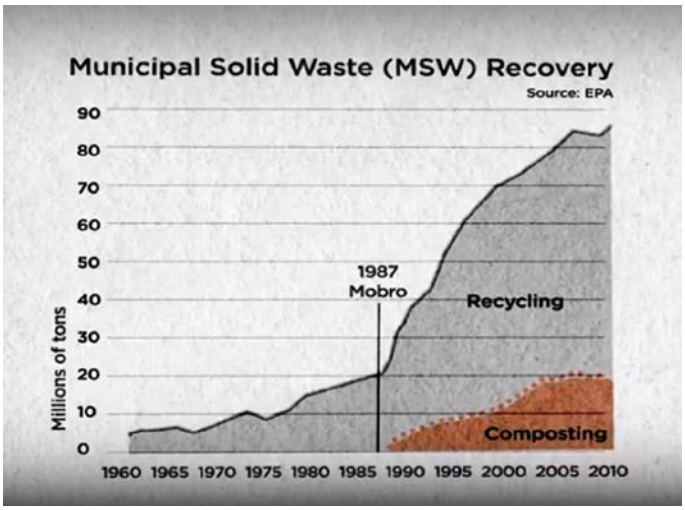

Figure 4: The number of recycling programs and the amount of material collected for recycling skyrocketed after the Mobro hit the high seas.

Landfill Aversion

The initial focus on recycling as a solution to a landfill crisis is a stubborn legacy of the Mobro journey and continues to hinder current efforts to shift to a more circular economy and a more sustainable materials

management system. The legacy is so strong that David Allaway with the Oregon Department of Environmental Quality calls it "landfill aversion." The aversion some people feel to throwing stuff in the garbage contributes to recycling contamination because it results in "wishful recycling." Wishful recycling is the act of tossing items in the recycling bin believing they should be recyclable and with the hope they will be recycled. This aversion can also make it difficult for some people who are convinced they know how to recycle right to change their behavior and admit they might be making some mistakes about what they put in their recycling bin.

See David Allaway's Rethinking Recycling presentation to the NE Recycling Coalition on March 19, 2020.

More importantly, landfill aversion, as David Allaway points out, turns recycling into a solution to a "waste problem" and appears to deactivate and undermine solutions" further upstream like reuse and waste prevention. The goal becomes recycling more, not generating less. Communities and individuals feel like they've done their part by simply putting stuff in bins for recycling collection. This dynamic results in paying less attention to larger goals of protecting public health and the environment, and results in making less responsible choices about what is produced and consumed.

The Diversion Trap and a Dearth of Data on Contamination

In 1989, Washington set a goal to achieve a recycling rate of 50%. Many communities around the state set similar or more ambitious goals and have increased those goals over time. Using this metric, the weight of material collected *for* recycling measured the success of recycling programs instead of how much was *actually* recycled into new products. This diversion trap, partly caused by defining recycling as a solution to a waste problem, had the perverse effect of counting all the stuff collected in recycling bins as diverted from disposal. A growing percentage of that material was actually landfilled or burned here or in the countries where it was shipped to be recycled.

To measure more than simply what is collected *for* recycling, our state needs information on "real" recycling. However, that requires gathering accurate, credible data on contamination levels in all parts of the recycling system regardless of where the material ends up. This data hasn't been collected, consolidated, or tracked in any consistent way because it wasn't considered important and is very difficult to gather. The goal was to collect more material for recycling and increase recycling rates. With China and other export markets taking almost everything in the bales sent to them, and paying relatively well for the material, there were few economic incentives to reduce contamination. In addition, it's unknown how much of the exported material was recycled and how much was disposed.

After China's export ban went into effect, the costs to manage recycling contamination rose dramatically while the blended value of the materials collected for recycling plummeted. Today, The Recycling Partnership (TRP) estimates that contamination costs the U.S. recycling system more than $300 million each year.

Figure 5: China's export ban shifted the costs of handling low-value and contaminated material onto local communities and MRFs, and caused a dramatic decline in market value. [TRP's 2020 State of the Curbside Report](#).

TRP is beginning to collect recycling contamination data in communities across the country including data on contamination in Washington. Their support to local governments to improve their data collection systems includes providing resources like their [Municipal Measurement Program.](#)

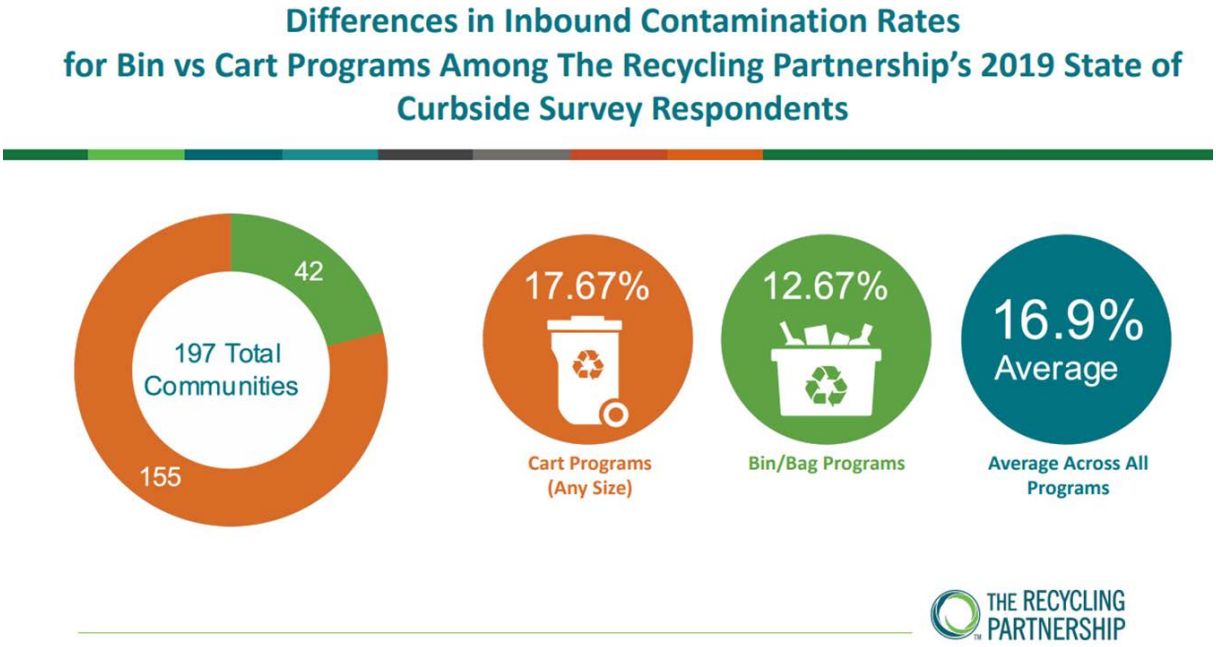

Figure 6: TRP's 2019 survey of 196 MRFs across the country found an average contamination rate of 16.9%. It also revealed that what they call Bin/Bag programs or dual- or multi-stream programs had a contamination rate about 5% lower than for single-stream cart programs.

Although we don't have a clear picture of the levels of recycling contamination statewide, some local governments are gathering data on their own to help reduce contamination in their communities. The data collected used different methodologies and in some cases are a bit dated. However, they do provide insight into contamination at the local level and reveal significant differences over time and across programs.

The list below shows just how much the data varies.

Detailed information on these local studies and audits are located in the local resources section of the Resource Library.

- A 2019 survey of seven Washington State MRFs conducted by the TRP as part of their West Coast Contamination Initiative found inbound levels of contamination from commingled recycling collection programs ranging from 5% to 20% by weight.
- City of Seattle's 2015 Recycling Composition study revealed an estimated 10.5% contamination by weight. Seattle's first Recycling Composition study done in 2000-2001 found only 3.7% contamination by weight.
- Recycling composition studies in Kitsap County showed 9.5% contamination in 2015 and 9.0% contamination in 2013 by weight in their single-family curbside recycling programs. Major contaminants found in 2015 included non-recyclable plastics (bags, film, toys and garden hoses), food soiled paper, and food scraps.
- Single-family curbside recycling composition studies conducted in 2015 in Clark County found 26% contamination by weight. Clark County has a dual-stream program and collects glass in a separate bin. Two percent of the contamination by weight came from glass bottles. Other contaminants included non-recyclable paper, non-program plastic packaging, plastic bags, bags of garbage, e-waste, clothing, and wood. A follow-up composition study measuring the impact of an outreach campaign showed contamination levels decreased to 20% by weight.
- 2019 Lid Lift Audits in Olympia showed contamination rates that varied significantly by neighborhood. The audit found ranges from just under 10% to over 40% by weight.
- Clallam County's drop box recycling audits revealed an average of 30% contamination by volume (not weight).
- In 2018, Northwest Recycling reported an impressively low contamination rate of 1%. They attributed this to Whatcom County's three-bin collection system that requires residents to separate paper from glass, metal, and plastic containers.

Effectively reducing recycling contamination statewide requires developing a much more robust system to consistently gather, track, and analyze recycling contamination data. The fact that this kind of system is not in place today is an unintended consequence of falling into the

diversion trap. According to TRP, nationally only 35% of the communities they surveyed in 2019 knew the contamination rate for their curbside programs. Gathering this data did not happen because the amount collected for recycling was being used to measure success. More was usually better, whether it got recycled or not.

Figure 7: Nationally, 65% of communities surveyed in TRP's 2019 State of Curbside Survey did not know their inbound contamination rates.

Commingling and the Myth That Recycling is Free

As curbside recycling's popularity grew and the costs of manual collection increased, haulers looked for ways to operate more efficiently, reduce worker injuries, and increase diversion and program participation. This led to the use of larger carts, more automated collection systems, and in many communities, the adoption of single-stream commingled collection programs. During this shift, many programs also expanded the types of materials on their accepted materials list.

At the same time, many communities decided to embed the costs of recycling in their garbage rates, making it seem like recycling was free. The intent was to increase participation in recycling, get people to put more stuff in their recycling bins, and to increase the recycling rate. These changes resulted in increased recycling contamination levels. However, this didn't seem like a problem at the time because a lot of that contamination went to Asia. In many cases, exporters were paid for it. On top of that, it made programs look more successful than they actually were because the trash they shipped overseas counted as recycling.

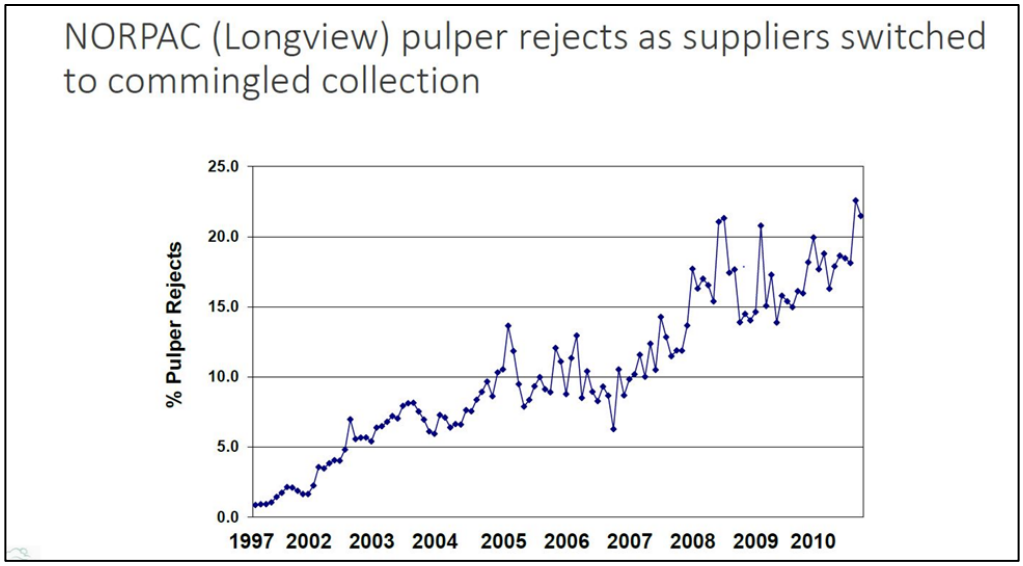

Figure 8: The shift to commingled collection dramatically increased the amount of inbound contamination received at MRFs causing pulper rejects at mills like NORPAC in Longview, WA. *From David Allaway's Rethinking Recycling presentation*.

Consumer Confusion, Doubt, and Good Intentions

As mentioned earlier, the roots of our current recycling contamination woes are deep. And out of them, a jungle of individual, separate, and unique local recycling programs was born. Many of these programs have different collection systems, accepted materials, and education and outreach strategies. Some programs like Whatcom County's three-bin system produce a very clean stream. However, overall, the wide diversity of local community recycling programs, combined with the increasing variety of new plastic and multi-material packaging has created a very big mess.

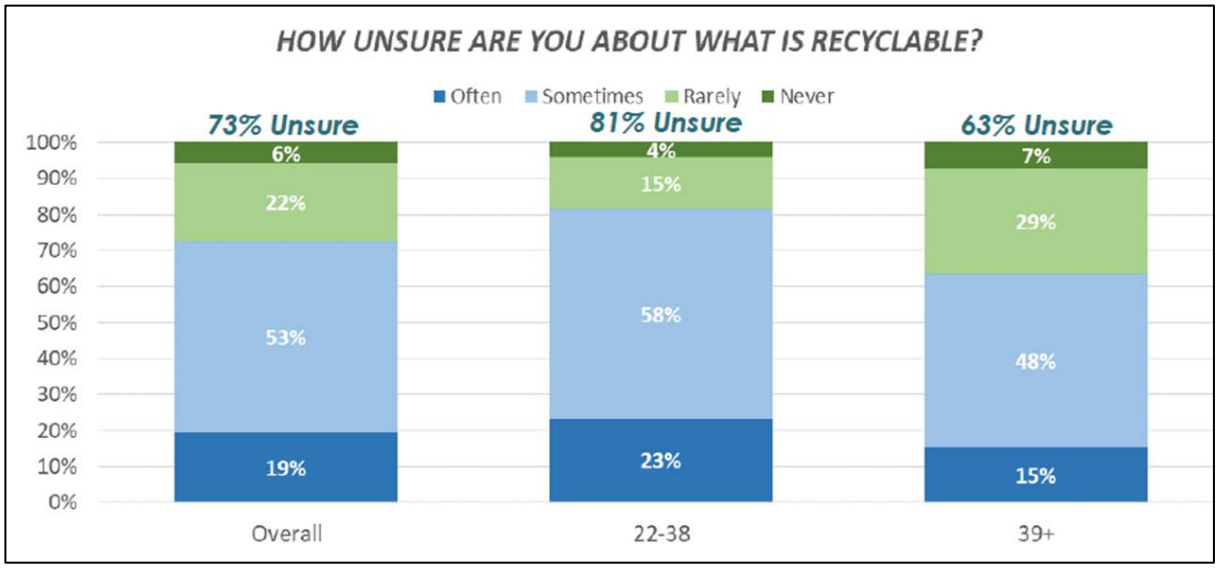

Figure 9: TRP's 2019 national survey found high levels of confusion about recycling in their communities.

No wonder consumers are confused. A recent TRP national consumer research survey found 73% of consumers were unsure about what is recyclable, with millennials being most unsure. Although there is still strong support for recycling, many people are not recycling right despite their good intentions. The recent news about export bans and landfilling material collected for recycling sowed doubts about whether the effort to sort and prepare material properly is worth it. Because of the focus on increasing recycling rates, many people think if recycling is good then more recycling must be better. Therefore, some people think the responsible thing to do is to put more in the recycling bin even if they have doubts about whether it will be recycled. The message "when in doubt throw it out" is a hard one for many people to hear and follow. For many years people learned that landfilling is bad and now it's being encouraged.

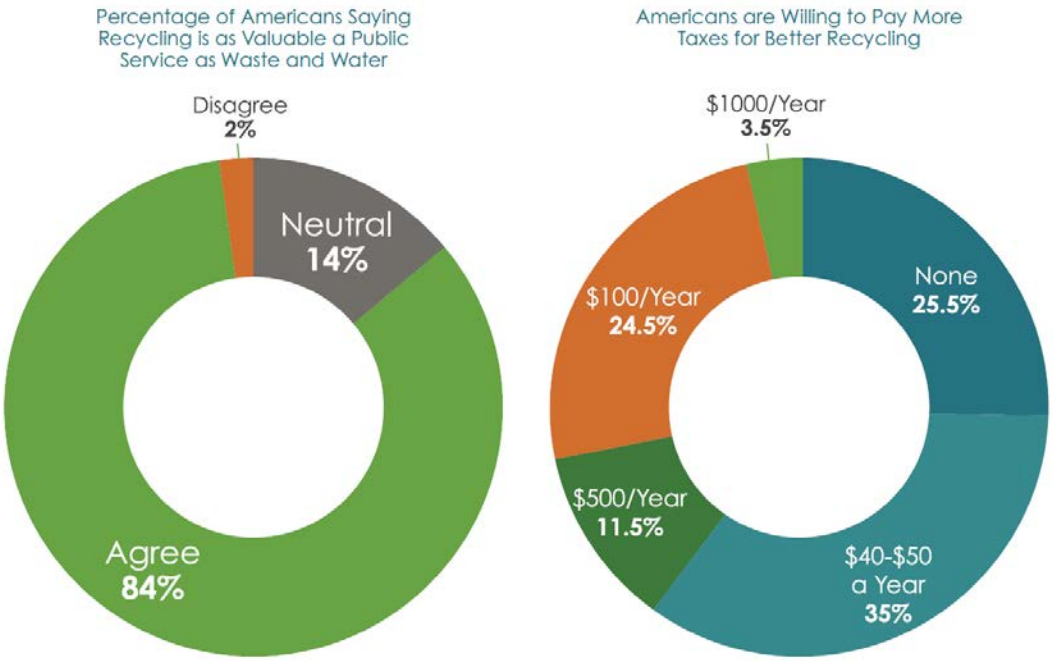

Figure 10: TRP found there is still strong support for recycling and that people are willing to pay more to make recycling work better – *2020 State of Curbside report*

Cleaning the Stream

Unfortunately, until some of the root causes of contamination are addressed fully and effectively, the costs of reducing contamination will continue to be borne primarily by local governments and ratepayers. That is why this initial CROP focuses primarily on reducing contamination in the parts of the recycling system that communities and ratepayers control.

Some things local governments can control, especially those communities providing their own collection services, include:

- Program design
- Accepted materials lists
- Educating residents and businesses
- What and how to charge for services

See King County Responsible Recycling Task Force's excellent guide on Using Contract Language to Improve Recycling.

Making changes to individual programs in these areas can help reduce contamination. However, as noted above, one of the root causes of contamination is the lack of alignment and harmonization of recycling programs regionally and statewide. To address this challenge, local governments need to work together differently and let go of some local control. This means doing a different kind of regional planning, making compromises, and leveraging the collective power of local governments to enter into joint agreements or contracts for collection and MRF processing services. This allows local governments to build programs that cost less, include incentives to reduce contamination, and more effectively achieve a community's larger sustainability goals.

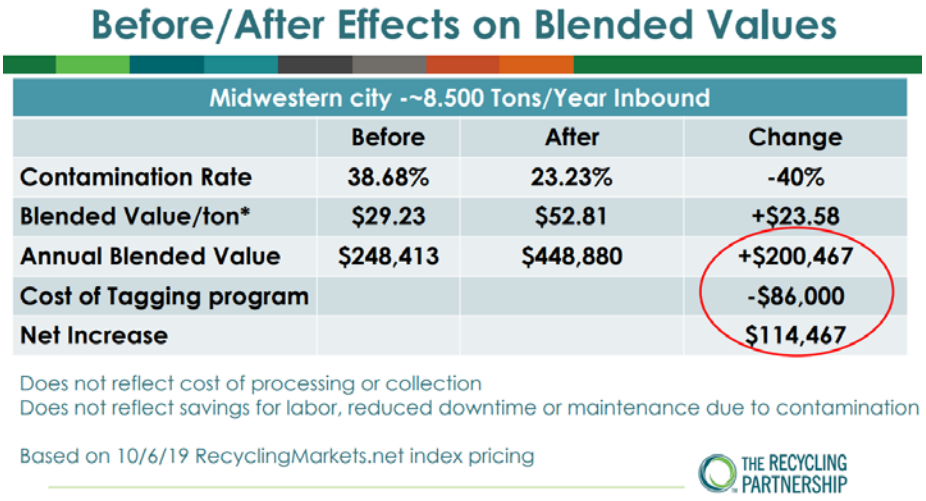

Figure 11: Well-crafted contracts rewarding communities for cleaner materials can pay large dividends. This data comes from TRP's How to Build a Better MRF Contract presentation. Their MRF contracting BMP guide provides more detail.

Efforts to get local governments to cooperate comes with many challenges. However, the consolidation of the recycling industry over the last twenty already resulted in a regionally managed recycling system beyond the curb. This provides opportunities for local governments to pursue and adopt regional and aligned strategies more easily.

Industry Consolidation and Funneling of Recycling

Although there are a large number of diverse recycling programs, once material is collected at the curb, it's funneled into trucks owned by a small number of haulers that deliver material to an even smaller number of MRFs. This system can undermine the efforts of residents and businesses who recycle right and keep their streams clean. Their material may mix with material collected from other customers and communities during processing. As a result, and to varying degrees depending on the MRF, the dirtiest loads determine the overall quality of material processed at a MRF.

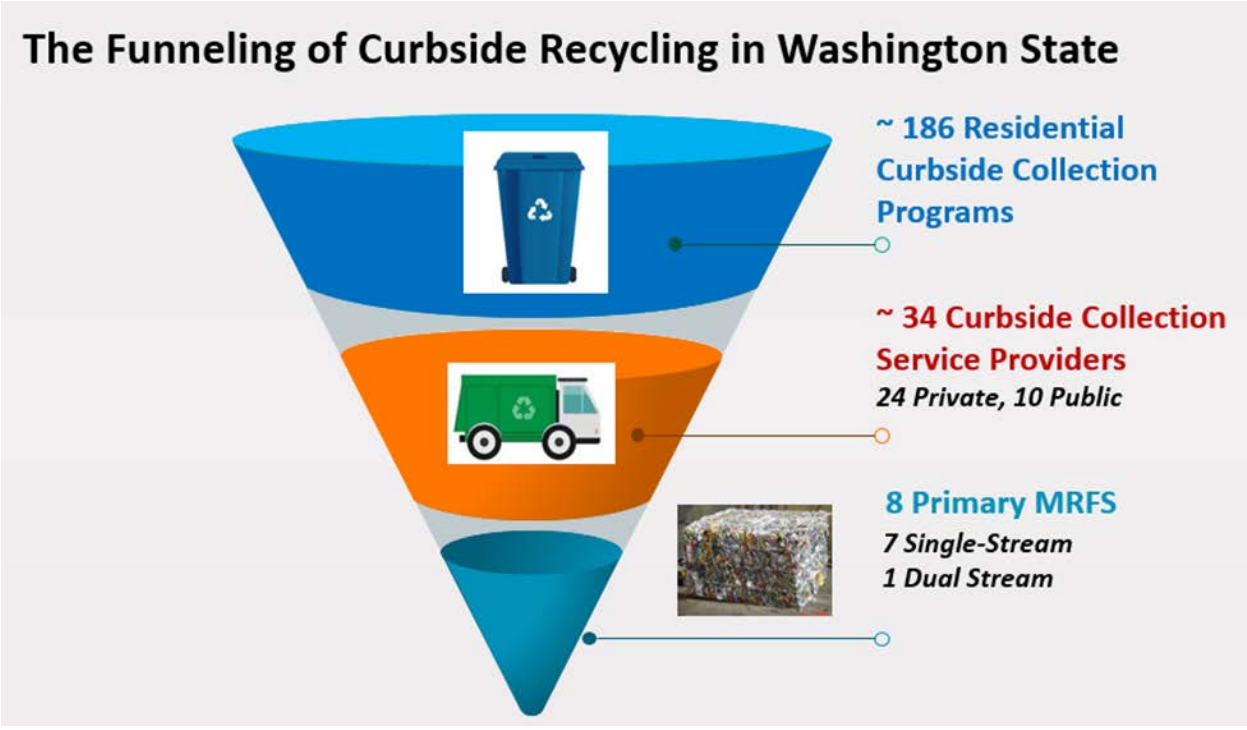

Figure 12: Approximately 186 residential curbside collection programs in Washington funnel to 34 curbside collection service providers and 8 MRFs. Beyond the curb, the recycling system is already managed at a regional level. Data from Zero Waste WA - The State of Residential and Organics Collection Washington State.

Taking a statewide view, where people live and the number of curbside collection programs in the Puget Sound region amplify this effect. According to Zero Waste Washington's report, 96 or just over half of the curbside recycling programs in the state are in the Puget Sound waste

generation area (King, Snohomish, Pierce, Kitsap and Thurston counties). Sixty-six percent of the curbside material collected for recycling statewide comes from King, Snohomish and Pierce counties.

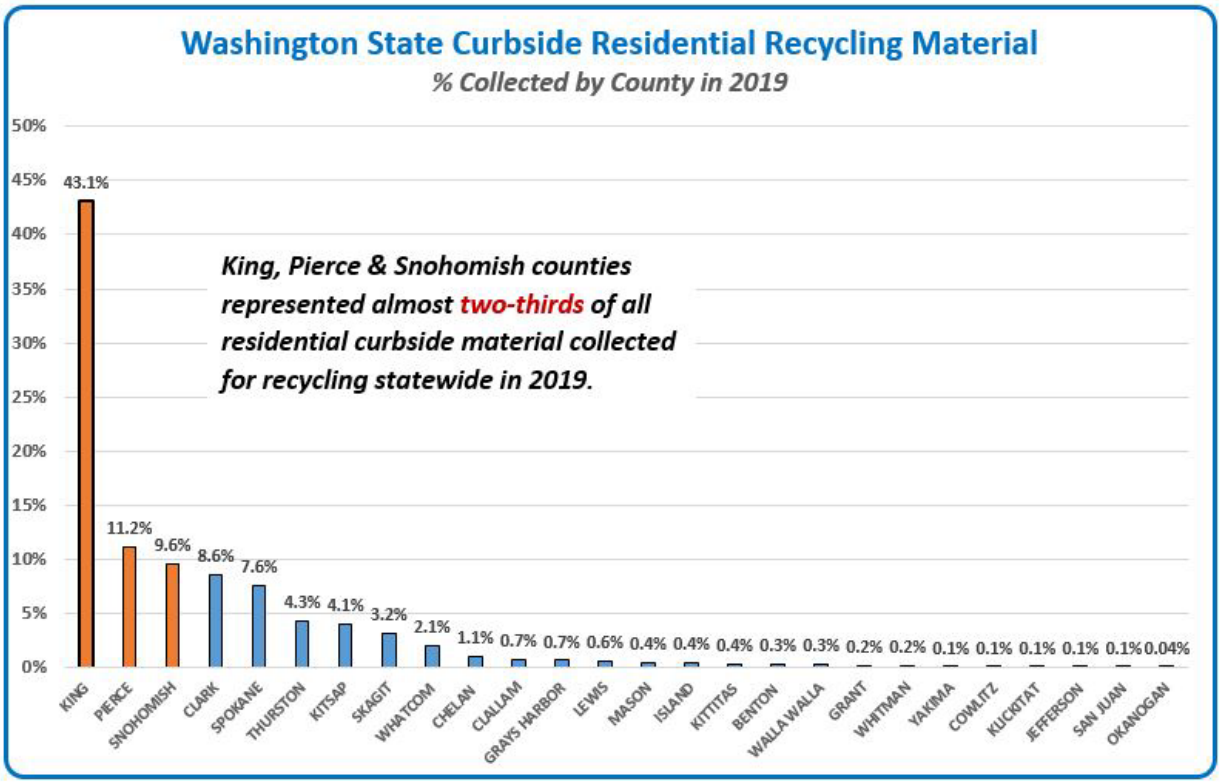

Figure 13: Most materials from smaller counties are processed at the same MRFs as the largest counties. This underscores how important it is for all communities across the state to work together to reduce contamination. *Data from Ecology's 2019 solid waste facility database.*

The privately owned collection companies providing curbside collection services to the highest number of service areas in 2019 were:

- Waste Connections (62)
- Waste Management (61)
- Republic Services (32)
- Recology CleanScapes (10)

Together these haulers served 165 or 89% of all the areas provided with residential curbside collection statewide.

See Zero Waste Washington's November 2019 – The State of Residential and Organics Collection Washington State. The report also includes a downloadable database with local collection program details.

The same kind of industry consolidation exists for the sorting and processing of the materials collected for recycling as illustrated below.

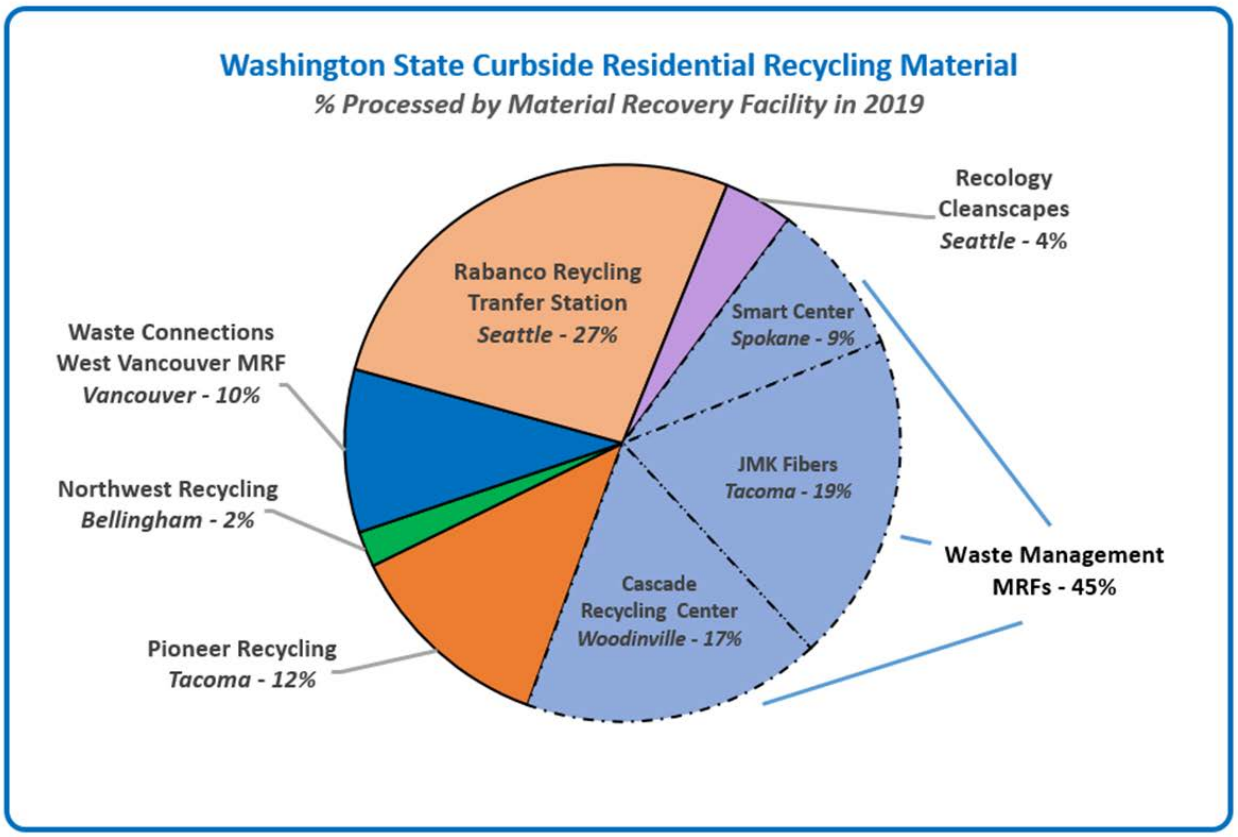

Figure 14: Three of the 8 MRFs in the state are owned and operated by Waste Management, and handle 45% of all the commingled residential material collected for recycling statewide. *Data from Ecology's 2019 solid waste facility database.*

The Commercial Haul

This CROP, the media, and many of our local government education and outreach programs focus on increasing the amount of clean traditional recyclables collected from residential sources. As mentioned above, traditional recyclables include printing paper, paper packaging, cardboard, metal cans, glass bottles and jars, and plastic bottles and jugs. However, when looking at the state's recycling system more broadly; commercial sources generate and recycle significantly more of these materials. In 2017, according to Ecology's annual recycling reports and surveys, approximately 59% of the traditional recyclables collected statewide came from commercial sources. The remaining 41% comes from residences. This is the primary reason why the legislation requiring the development of the State and local CROPs includes a focus on reducing contamination from commercial locations.

Overall, the commercial recycling stream is typically cleaner than the residential stream. In part because more commercial recyclables are collected using source-separated systems like cardboard-only bins. However, MRFs processing contaminated residential material also process a large amount of commercial material. The eight MRFs shown in Figure 14 processed approximately 27% of all of the commercially generated traditional recyclables reported to the state in 2017. At these eight MRFs, 37% of all the materials they processed came from commercial sources. The remaining 63% came from residences.

Commercial recycling takes different forms. These include big stores that bale and market their own materials. There are also MRFs that accept, process, and market materials from multiple commercial sources. SeaDruNar Recycling, a nonprofit commercial recycler in Seattle, is one example of this type of MRF. SeaDruNar serves customers in four counties, but recent years brought increasing challenges. These include a drop in commodity prices and the need to collect more marginal materials to stay competitive.

Even though local governments have less direct control over commercial recycling than they do over residential services, there are opportunities for them to implement strategies, in partnership with haulers, MRFs, business organizations, and other community groups, to reduce contamination from commercial sources. Some of these strategies are in the Best Management Practices Section.

The Harmonization Choir

The funneling and consolidation of material once it leaves the curb offers a compelling opportunity to reduce recycling contamination regionally and across the state.

To seize this opportunity, everyone needs to start singing the same tune about what to accept for recycling, how to prepare it, and the messaging used to educate residents and businesses. Of course, that's easier said than done. However, there is already wide agreement on the need for more alignment and harmonization across programs. Since China's export ban, a consensus is emerging on the priority materials to include in residential curbside programs.

These priority materials are what in Lincoln County they call *The Recycling Gang*.

- Paper (office and notebook paper, newspaper, mail, catalogues, magazines, and cereal or cracker boxes)
- Cardboard
- Plastic Bottles and Jugs (clear, colored, and natural)
- Steel and Aluminum Cans

Since 2018, the choir of voices calling for the harmonization of recycling programs across the state continues to grow. Members of the choir now include:

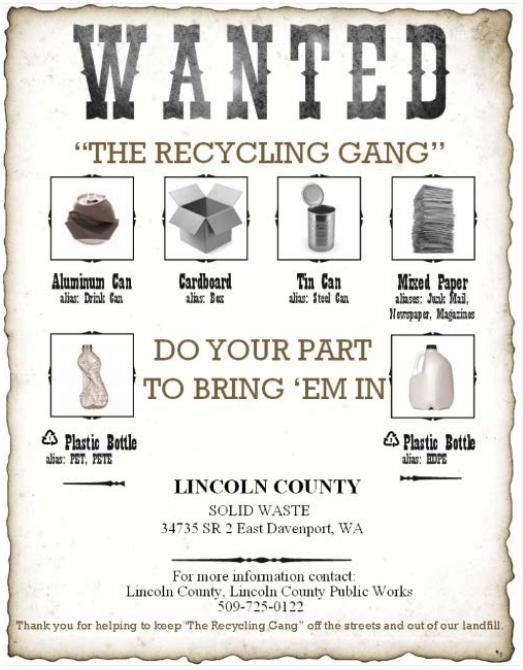

Figure 15: Lincoln County's drop box recycling program only collects the priority materials on Ecology's, WACSWM's, and WRRA's suggested acceptable material lists.

- **Department of Ecology**
  Beginning in 2009, well before China's export ban, Ecology began working with local governments and other stakeholders across the State to reduce recycling contamination. The agency's most recent initiative includes the 2019 statewide Recycle Right campaign. This campaign featured one common message about how to prepare recyclables, and the same list of priority materials included in the *Recycling Gang*. It also includes a toolkit with outreach materials that local programs can customize for their communities. In 2018, in response to the export ban, Ecology published its Best Management Practices Guide for commingled residential recycling. It includes the same *Recycling Gang* list of priority acceptable materials, as well as criteria to help communities make informed decisions about what materials to collect in their recycling programs.

- **Washington Association of Counties Solid Waste Managers Affiliate** (WACSWM)
  In response to the crisis caused by China's export ban, WACSWM released their Commingled Recycling Guidance to support local governments to make informed decisions on what to accept for recycling to help ensure the long-term sustainability of their collection programs. This guide also includes the same *Recycling Gang* list of priority materials.

- **Washington State Refuse and Recycling Association** (WRRA)
  In 2019, WRRA produced a suggested List of Materials to Include in Comingled Recycling Programs developed by their member Material Recovery Facilities. The WRRA also called for more uniformity in program design and for statewide campaigns to reduce contamination. This list also identifies the same priority materials that are included in the *Recycling Gang.*

- **King County Responsible Recycling Task Force**
  Two of the primary elements of the task force's framework for creating a responsible recycling system call for the adoption of regional polices and harmonized messaging.
    - **Regional Policy Alignment:** Recycling systems benefit from regional coordination and policy alignment around the collection and processing of materials. Such alignment optimizes sorting and processing, reduces contamination, and leads to maximized marketability of materials.
    - **Harmonized Messaging:** Reduce contamination by using consistent messaging across the region or state to reduce confusion for the public around what should and should not be recycled.

In the Bin or Out

There is an ongoing debate about what types of materials, other than the members of *The Recycling Gang*, should be included on the accepted materials list for recycling programs in Washington. Some argue that establishing a priority list of accepted materials is akin to taking a "lowest-common denominator" approach that could restrict the development of recycling markets, stifle innovation in product design, and limit flexibility as types of products and packaging changes.

One of the principles and assumptions underlying this CROP is that recycling is a means to an end, not an end in itself. For this reason, it's important for a community to be clear about *why* it invests in and supports recycling, and to make decisions on what to collect based on its values and priorities.

Recently, many communities had to make these kinds of difficult decisions. In most cases with limited information. Examples of materials that some communities have recently had difficulty deciding whether to continue to accept for recycling in their curbside programs include glass, polycoat and aseptic containers, and non-bottle plastics.

Many of these materials did not appear to be a problem when China was taking it all and even paying for it. Now much of that has changed. Some communities, especially in western Washington, continue to collect these materials in their curbside recycling programs. However, as some markets collapsed, and collection and processing costs increased, other communities in the state decided to remove some or all of these materials from their accepted materials lists. One city even suspended their recycling service altogether.

These were not easy decisions to make. Removing materials from a recycling program is unpopular and can be challenging and sometimes costly to implement. Especially if a hauler is raising collection rates at the same time. In addition, simply removing a product from the list of materials accepted for recycling on brochures and websites will not stop people from

continuing to put them in their carts. Old habits are hard to break. Getting these changes to stick requires a long-term and multi-pronged education and outreach strategy. On top of all these issues, adding these materials back on to the list of accepted recycling in the future could be equally as difficult. However, even knowing the many challenges, these communities determined if they continued with business as usual, the long-term viability of their recycling programs were at risk.

For all these reasons, the CROP does not include recommendations on what local governments and haulers should and should not collect for recycling beyond the broadly agreed upon priority materials that make up *The Recycling Gang.* Instead, to help communities make better-informed decisions on what to accept for recycling, the CROP includes suggested decision-making criteria. It also includes resources like MRF-shed maps and information and tools to assess the benefits and costs of recycling specific materials.

For example, in the Best Management Practices (BMPs) & Resources document and the Resource Library, there is information on Life Cycle Analysis and other tools to help calculate the environmental and other benefits and costs of recycling. An example of this kind of data is contained in the graph below, which shows the relative difference between the amounts of greenhouse gases reduced when different materials are recycled.

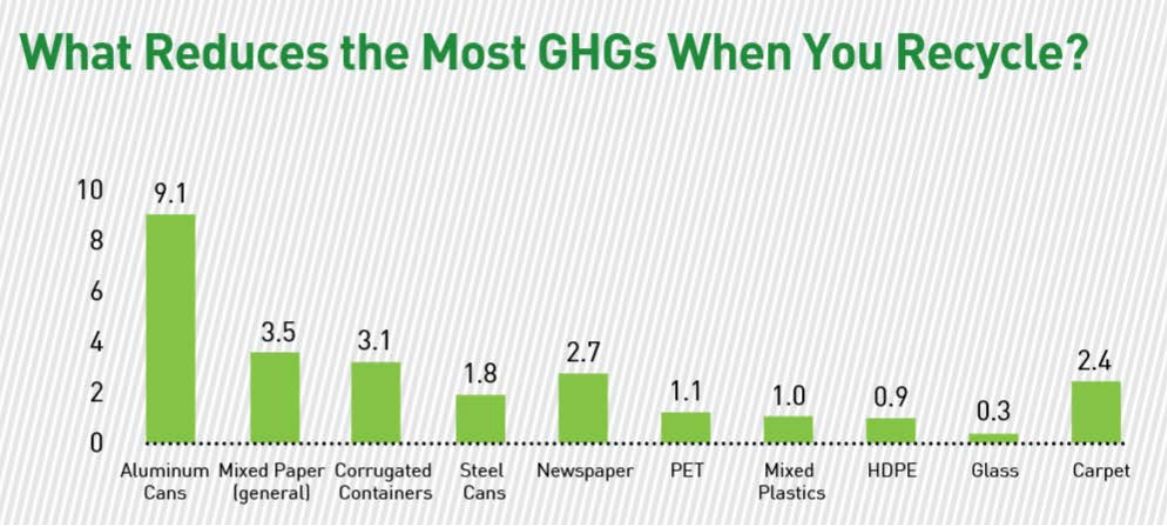

Figure 106: **Same weight, different impacts.** Using data on tons recycled to calculate environmental impacts can help a community make better-informed choices about what to include on their accepted materials list. The graph shows equivalent metric tons of CO_2 reduced for each ton recycled. Taken from the 2018 Waste Management Sustainability Report (pg.31). Data calculated using EPA's WARM model.

Other resources in the BMPs and the Resource Library include information on polycoat and aseptic carton recycling from the Carton Council, and information on glass recycling from the Glass Packaging Institute and others. There are also resources like Ecology focus sheets highlighting the environmental and economic benefits of recycling in Washington.

Regional and MRF-shed Planning

Like a watershed, MRF-sheds have streams of materials flowing from communities and haulers into larger rivers of materials flowing into one massive ocean of stuff for sorting. As mentioned earlier, ZeroWaste Washington's November 2019 report on The State of Residential and Organics Collection in Washington State listed 186 residential curbside collection programs operating across the state. These represent a dizzying array of collection systems, acceptable material lists, and education and outreach programs even among programs offered in the same counties by neighboring jurisdictions. As noted above, even just one contaminated stream can significantly increase the costs of processing and decrease bale quality and the commodity value of cleaner streams of materials delivered to the same facilities.

The shocks caused by China's export ban revealed just how much this highly fragmented, inconsistent, and uncoordinated approach puts the long-term viability of recycling programs at risk. If a more coordinated and aligned system is not developed, even successful community-level contamination reduction programs will only have a limited impact on the overall rates of recycling contamination regionally and statewide.

Regionalization and MRF-shed level planning has many benefits beyond reducing recycling contamination. These include:

- Shared costs between jurisdictions for equipment, transportation, education and outreach, and operating and capital costs for facilities.
- Increased volumes of recyclables that open new market possibilities.
- Cooperative marketing possibilities that could increase revenues.

To support more regional and MRF-shed planning, the CROP includes MRF-shed maps and a sortable spreadsheet for counties to identify other counties sending material to the same MRFs. The spreadsheet also includes contact information for each of the primary MRFs in the state. The MRF-shed maps are also downloadable as a PDF. In addition, Ecology created an interactive Municipal Solid Waste flow map showing the quantities of waste flowing to landfills from each county in the state.

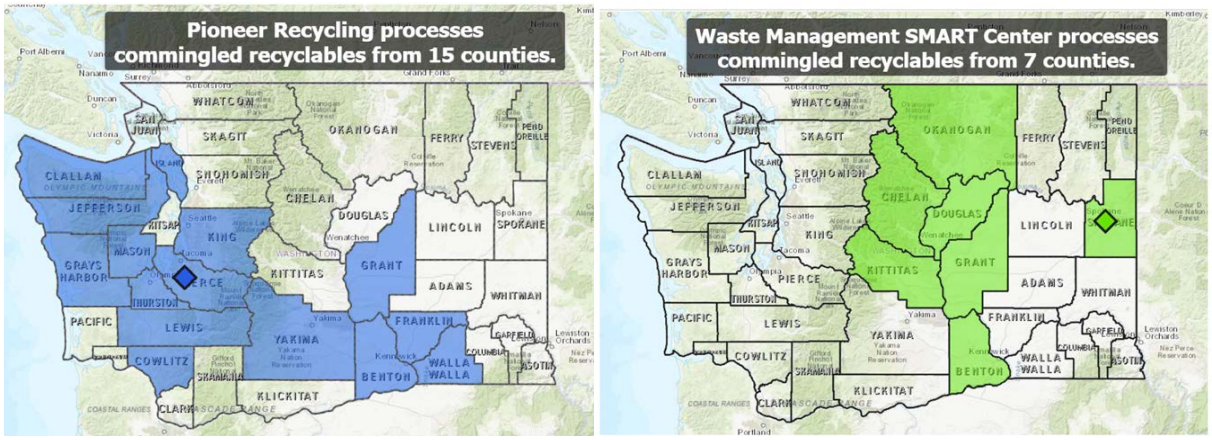

Figure 17: MRF-shed maps help identify opportunities for regional partnerships to lower costs, reduce contamination, and reduce recycling program costs. *Data from Ecology's 2019 solid waste facility database.*

Taking Control of the Future

To varying degrees, local governments gave away control of their recycling programs to the large companies that own and operate most of the system. Many of these companies express the same frustrations and concerns about contamination and the impacts of disjointed and uncoordinated local programs on system costs and performance. They also strongly support more aligned and harmonized programs statewide.

Addressing the challenge of reducing recycling contamination presents a unique opportunity to develop the kind of public-private partnerships needed to build a more sustainable future. A future where recycling contamination is a thing of the past. Developing the State and local CROPs is an important next step in creating that future.

The State CROP and new Resource Library include resources to help realize that future, including MRF-shed maps, BMPs for reducing recycling contamination, and lots more. The statewide action plan below, and the Local CROP Template, can help with the initial steps on that journey.

The Statewide Action Plan

This action plan outlines some of the steps Ecology will take to reduce recycling contamination and support local governments in successfully developing and implementing their CROPs. Implementation of this statewide plan began with completing the State CROP, launching the Recycling Contamination Reduction Resource Library, creating MRF-shed maps, and developing other regional planning resources. Implementing other items in the plan, like extending and enhancing the Recycle Right campaign and conducting recycling characterization studies, is on hold until funds become available to support that work.

1. Promote alignment and harmonization of recycling programs statewide

- Support the Recycling Steering Committee, the Recycling Development Center, and other groups working to develop more aligned and harmonized regional and statewide recycling programs.
- Promote the use of a priority list of materials accepted for recycling statewide.
- Enhance existing resources to support communities to make better-informed decisions on what to accept in their recycling programs. This includes recycling market data and data on the environmental and social costs and benefits of recycling specific materials.
- Expand and continue to support statewide contamination reduction campaigns like Recycle Right.

2. Encourage and support regional solid waste planning and aligned or joint contracting for services

- Enhance and maintain MRF-shed and MSW flow maps, and other resources, to assist in identifying opportunities for regional collaboration.
- Convene regional meetings to explore joint planning and program development opportunities.
- Share MRF processing and collection contracting resources to assist local governments in their efforts to reduce recycling contamination and improve the overall performance of their recycling programs.

3. Gather and share more comprehensive data to measure the performance of the recycling system

- Conduct recycling characterization studies to gather data on recycling contamination and other key metrics like the capture rate for recyclables. Ideally, these studies would

be on the same schedule as Ecology's waste characterization studies. In the future, these studies could include organics and other streams.

- Develop and maintain an easily accessible and searchable database on local recycling programs across the state.

4. Pursue legislative, funding, and policy solutions

- Work to secure increased state and federal funding for local government solid waste programs, including restoring funding for the Local Solid Waste Financial Assistance program.
- Forge new and enhance existing public, private, and non-profit partnerships to support local recycling contamination reduction programs.
- Evaluate targeted legislative and policy options that may help achieve the state's recycling contamination reduction goals and strengthen the recycling system. There are pros and cons to each of these approaches. They are included to encourage additional research into their potential impacts and effectiveness. They include:
    - Extended Producer Responsibility that places more responsibility for end-of-life material management, including contamination reduction, on the producers of products and packaging.
    - Product bans and restrictions to reduce recycling contamination and protect public health and the environment.
    - Recycled-content legislation and policies to increase demand for recycled feedstocks.
    - Right-to-repair legislation and policies to reduce overall waste generation.

Guide to Local CROPS

Who Needs to Develop a CROP

RCW 70A.205.045(10) requires all counties with a population of more than 25,000 to include a Contamination Reduction and Outreach Plan (CROP) in their Solid Waste Management Plan (Plan) by July 1, 2021. This requirement also applies to cities with independent Plans in counties with more than 25,000 people.

Counties and Cities Required to Include a CROP in Their Solid Waste Management Plans

Benton	Grant	Skagit
Chelan	Grays Harbor	Snohomish
City of Cheney	Island	Spokane
City of Liberty Lake	Jefferson	Stevens
City of Seattle	King	Thurston
City of Spokane Valley	Kitsap	Walla Walla
Clallam	Kittitas	Whatcom
Clark	Lewis	Whitman
Cowlitz	Mason	Yakima
Douglas	Okanogan	Stevens
Franklin	Pierce	Thurston

Counties Where CROPS are not Required:

Adams	Garfield	Pend Oreille
Asotin	Klickitat	San Juan
Columbia	Lincoln	Skamania
Ferry	Pacific	Wahkiakum

How to Develop a Local CROP

What the Law Requires

Under RCW 70A.205.045(10), a local jurisdiction's CROP must include the following elements:

1. A list of actions to reduce contamination in existing recycling programs for single-family and multi-family residences, commercial locations, and drop boxes.
2. A list of key contaminants identified by the jurisdiction or Ecology.
3. A discussion of problem contaminants and their impact on the collection system.
4. An analysis of the costs and other impacts to the recycling system from contamination.
5. An implementation schedule and details on conducting outreach. Contamination reduction outreach may include sharing community-wide messaging through newsletters, articles, mailers, social media, websites, community events, educating drop box customers about contamination, and improving signage.

A local CROP template (Template) is included in the next section to assist jurisdictions in meeting the requirements above. Under RCW 70A.205.070, Ecology is required to prepare a CROP, grounded in best management practices, for any local jurisdiction to include in their SWMP in lieu of creating their own.

Ecology developed the Template so any jurisdiction – regardless of size, local conditions, and resources – has the option to include a CROP written for them in their SWMP rather than developing their own. For this reason, the action steps in the Template cover a wide variety of local conditions, programs, and needs across the state. It does not specify which action steps or strategies jurisdictions could or should pursue.

The Template provides jurisdictions with a menu of action steps and strategies to choose from. Jurisdictions can choose those that best meet their local needs and conditions, and are realistic and feasible for them to implement, while still meeting the requirements of the law.

Options for Meeting the Requirements

Jurisdictions have three primary options to develop their local CROP. The options are not mutually exclusive. A jurisdiction can combine elements from each to prepare their CROP to meet or exceed the requirements of the law. Details on each option and a table comparing them are included below. There is also example language, pulled from the Template, that a jurisdiction can include in their CROP to meet the minimum requirements of the law.

Option 1 – Full Template in lieu

This option allows a local jurisdiction to include the complete Template written by Ecology in their SWMP in lieu of creating their own. If a jurisdiction chooses this option, they are not committing to implementing every one of the action steps and strategies in the Template. The expectation is they will refine their CROP as their planning progresses and as resources allow.

Under this option, the only modifications to the Template that need to be made are to include the jurisdiction's name where noted and to identify the three years covered by their local CROP. A jurisdiction that includes the complete Template in their CROP would exceed the minimum requirements of the law.

Option 2 – Customized Template

If a jurisdiction chooses this option, they would choose only the action steps and strategies from the Template that address their local needs and conditions. By taking this approach, a jurisdiction would meet the minimum requirements and could:

- Select and/or modify the action steps and strategies from the Template that reflect local conditions and would be feasible for them to implement.
- Resequence the order of the action steps they choose to include in their CROP to reflect the status of their recycling programs and plans.
- Develop their own initial implementation schedule.
- Include more or different data that better represents local conditions.

Option 3 – Develop a custom CROP

Under this option, a jurisdiction would develop a fully customized set of action steps, data, or additional content tailored to meet their unique local needs, challenges, and opportunities. A custom CROP could include steps and strategies included the Template, or a jurisdiction could develop their CROP using a different format and approach. This option would meet or exceed the minimum requirements.

Whatever option a jurisdiction chooses, they are strongly encouraged to work closely with their regional Ecology Planner to avoid unnecessary delays.

Comparing Local CROP Development Options

Local CROP Options	**Option 1: Full Template in lieu** *Exceeds minimum requirements*	**Option 2: Customized Template** *Meets minimum requirements*	**Option 3: Custom CROP** *Meets or exceeds minimum requirements*
Required Element #1 List of Action Steps to Reduce Contamination	All steps in the Template	Select, modify, and/or resequence action steps and strategies from the Template to reflect local needs	Create a customized set of steps tailored to meet local conditions and needs
Required Element #2 List of Key Contaminants	Step 7 in the Template	Must include at least the minimum content excerpted (below) from Step 7 in the Template	Must include at least the minimum content excerpted (below) from Step 7 in the Template
Required Element #3 Discussion of problem contaminants & impacts on collection	Step 7 in the Template	Must include at least the minimum content excerpted (below) from Step 7 in the Template	Must include at least the minimum content excerpted (below) from Step 7 in the Template
Required Element #4 Analysis of costs and other impacts on recycling system	Step 7 in the Template	Must include at least the minimum content excerpted (below) from Step 7 in the Template	Must include at least the minimum content excerpted (below) from Step 7 in the Template
Required Element #5 Implementation Schedule & details on conducting outreach	Step 8 and Implementation Schedule in Template	Must include at least the minimum content excerpted (below) from Step 8 & Schedule in the Template	Must include at least the minimum content excerpted (below) from Step 8 & Schedule in the Template

Example Language Meeting the Minimum Requirements

This language is an excerpt from Step 7 in the Template and meets required elements two, three, and four.

In recent surveys, such as the one conducted by the The Recycling Partnership (TRP) in 2019, MRFs and cities in Washington identified the following recycling contaminants as the most problematic and costly to manage:

- *Plastic bags and film*
- *Tanglers including rope, cords, chains, and hoses*
- *Food and liquids*
- *Shredded paper*
- *Bagged garbage*
- *Non-program plastics*
- *Hypodermic needles*

These contaminants can:

- *Slow down the sorting and processing of materials.*
- *Reduce the quality and value of secondary material feedstocks.*
- *Result in costly shutdowns.*
- *Damage collection, processing, and remanufacturing equipment.*
- *Cause serious injuries to collection and processing facility staff.*

According to TRP, the greatest costs associated with managing a contaminated recycling stream at MRFs nationally come from the following and represent 80% of total contamination-related costs:

- *40% for disposal of residuals*
- *26% in value lost from contaminated recyclables*
- *14% in labor to remove contamination from sorting equipment, etc.*

The following language is an excerpt from Step 8 and the Implementation Schedule in the Template and meets requirement five. To meet the minimum requirements, a jurisdiction chooses the education and outreach strategies that make the most sense for them. The list can include some or all the strategies below, or other strategies identified by the jurisdiction.

(Jurisdiction Name) *will develop and implement education and outreach strategies based on best practices. Depending on the type of recycling program, outreach and education strategies may include, but are not limited to:*

- *Moving toward uniformity in cart and container colors (or at least lids)*
  - *blue for recycling, gray or black for garbage, and green for organics*
- *Visual, easy-to-understand signage using photos and universal pictures and symbols*
- *Cart-tagging and cart rejection*
- *On-route monitoring tools, including apps and cameras*
- *Pairing right-sized recycling and trash bins*
- *On-site assistance and outreach at drop-off sites*
- *Up-to-date, and easy-to-find and access websites with clear, consistent messaging*
- *Social media posts, campaigns, mailings, brochures, and other communications*
- *Online apps for residents and businesses to get answers to their recycling questions*
- *Community presentations, tabling, and activities at community events*
- *School presentations and activities focused on recycling right*
- *Translation and transcreation of educational materials and campaigns to ensure recycling information is clearly understood by all audiences*
- *Social marketing campaigns to effectively promote long-term behavior change*

To meet requirement five, a local CROP must also include an implementation schedule that, at a minimum, lists all of the action steps in the CROP and the year a jurisdiction expects to complete them.

CROP Implementation Schedule *(Example from Template)*
Year 1 (Insert date)

Step 1: Inventory current recycling collection services and programs
Step 2: Develop scope of work with stakeholders
Step 3: Prioritize the recycling program(s) to focus on first
Step 4: Establish acceptable materials list

Year 2 (Insert date)

Step 5: Define what data to collect to determine baseline levels of recycling contamination
Step 6: Gather baseline recycling contamination data
Step 7: Identify key contaminants and their costs and impacts

***Year 3** (Insert date)*

Step 8: Develop and implement education and outreach strategies to reduce contamination

Step 9: Evaluate the effectiveness of anti-contamination strategies and set next steps

Step 10: Explore contamination reduction strategies beyond education and outreach

The Local CROP Template

The Template (beginning after the blue line below) is an example of a local CROP that meets – and if adopted completely – exceeds the requirements of the law. It includes ten action steps and a 3-year implementation schedule.

The Local CROP Template is also available for download in Ecology's Contamination Reduction Resource Library.

The Template includes a diverse set of contamination reduction strategies to choose from for your local CROP. The Contamination Reduction Best Management Practices and the Contamination Reduction Resource Library include additional ideas and information to help identify strategies that best meet your specific needs. The following How to include a CROP in your Solid Waste Management Plan section provides additional guidance and details how to submit your CROP to Ecology for review.

Action Steps in the Local CROP Template:

1. Inventory current recycling collection services and programs
2. Develop scope of work with stakeholders
3. Prioritize the recycling program(s) to focus on first
4. Establish acceptable materials lists
5. Define what data to collect to determine baseline levels of recycling contamination
6. Gather baseline recycling contamination data
7. Identify key contaminants and their costs and impacts
8. Develop and implement contamination reduction education and outreach strategies
9. Evaluate the effectiveness of anti-contamination strategies and set next steps
10. Explore contamination reduction strategies beyond education and outreach

(Jurisdiction's Name)

Recycling Contamination Reduction and Outreach Plan (CROP)

The goal of the CROP is to reduce contamination of the materials collected in **(Jurisdiction Name)**'s single-family, multi-family, drop box, and commercial recycling programs. This, in turn, helps **(Jurisdiction Name)** more fully realize the economic, environmental, social, and public health benefits of these programs. The CROP does not specifically include strategies to reduce contamination of other material streams such as organics or construction and demolition debris. However, many of the same strategies apply to these streams and may be included in future CROP updates.

The CROP intends to meet the requirement in RCW 70A.205.045(10) that counties with a population of more than 25,000, and cities within these counties with independent Solid Waste Management Plans (SWMP), include a CROP in their SWMP by July 1, 2021.

This CROP includes ten action steps and is a framework for developing a more detailed and customized implementation plan in the future. In addition, it also identifies the need to align the CROP with the SWMP, and secure and allocate funding for ongoing planning and implementation.

Step 1: Inventory current recycling collection services and programs
(Jurisdiction Name) will inventory single-family, multi-family, drop box, and commercial collection programs to identify what is accepted for recycling, where and how it is collected and by whom, and how it should be prepared for recycling.

This inventory may include, but is not limited to the following:

- Designated recyclables list in the SWMP
- Collection methods (single- or multi-stream, carts or stackable bins, etc.)
- Number of tons collected for recycling and customers for each type of program
- Types of materials accepted for recycling in each type of program
- Cart or container colors
- Minimum service-level or other ordinances, resolutions, or interlocal agreements
- Collection or material processing contracts
- Local government and recycling collector websites and social media sites

- Stickers and signs on containers, in businesses, etc.
- Brochures, newsletters, information shared at community events, etc.
- Recent media coverage

(Jurisdiction Name) will identify differences or inconsistencies across contracts and agreements for recycling programs, and in the information provided to residents and businesses about what to recycle and how it should be prepared for collection. **(Jurisdiction Name)** will use this data to identify opportunities for more consistent and aligned programs. The data will also be used to help determine what specific contamination reduction strategies to implement.

Step 2: Develop scope of work with stakeholders

(Jurisdiction Name) will work with key stakeholders to develop a scope of work for the CROP addressing the specific challenges and opportunities associated with local recycling contamination. To begin this scoping process, the information learned in Step 1 will be shared with the Solid Waste Advisory Committee (SWAC) and the SWAC's role in

These stakeholders may include, but are not limited to:

- SWAC members
- Elected officials and key staff from other local governments, including potential regional partners in the same MRF-shed
- Garbage and recycling collection companies and their front-line staff
- Organizations representing homeowners, tenants, and multi-family and business interests
- Material recovery facilities (MRF) and transfer station operators
- End markets for recovered materials
- **(Jurisdiction Name)**'s Ecology Regional Planner and grant manager
- Non-governmental organizations and community groups
- Regional, statewide, and national organizations that can provide technical assistance and/or financial support.

Step 3: Prioritize the recycling program(s) to focus on first

Together with key stakeholders, **(Jurisdiction Name)** will identify what recycling collection program(s) to focus on first. Driving this decision could be current knowledge of contamination levels and their estimated impact on costs and material quality, the number of customers, total quantity of material collected, etc.

Step 4: Establish acceptable materials lists

Starting with the highest-priority program(s), **(Jurisdiction Name)** will establish lists of acceptable materials. This effort will be coordinated with the SWAC, MRF operators, collectors, end markets, and other key stakeholders. Criteria for determining the acceptable materials lists may include, but are not limited to:

- Alignment with the SWMP mission and goals, and community values
- Degree of uniformity across local programs, regionally, and statewide
- Diversion potential
- Cost to collect and process relative to other management options
- Strength and long-term viability and stability of end markets
- Environmental, social, and other benefits and costs
- Potential to cross-contaminate or lower the value of other materials
- Potential to cause customer confusion

The Washington State Association of Counties Solid Waste Managers Affiliate, the Washington State Refuse and Recycling Association, and the Department of Ecology have supported the establishment of regional, and if possible, statewide uniformity in what materials are accepted for recycling and how they should be prepared. More harmonization across programs reduces customer confusion and contamination. To that end, they identified these four priority materials for statewide recovery:

1. Paper (including office and notebook paper, newspaper, mail, catalogues, magazines, and cereal or cracker boxes)
2. Cardboard
3. Plastic bottles and jugs (clear, colored, and natural)
4. Steel and aluminum cans

The resources and guidelines developed by these organizations to establish their list of priority materials will help guide the development of **(Jurisdiction Name)**'s acceptable materials list. Ecology's Resource Library contains this information and, along with Ecology's Best Management practices (BMPs) and Resources document, includes other resources to assist in developing an accepted materials list. This includes information on the specific challenges and opportunities associated with collecting glass and aseptic and polycoat containers, which some recycling programs in Washington accept.

Step 5: Define what data to collect to determine baseline levels of recycling contamination
Starting with the highest priority program(s), and based on the review completed in Step 1, **(Jurisdiction Name)** will identify what the acceptable materials are and what is considered contamination for the purposes of establishing a baseline recycling contamination rate. This data will also inform decisions about what, if any, changes to make to the accepted materials list in the future.

Step 6: Gather baseline recycling contamination data
Starting with the highest-priority program(s), **(Jurisdiction Name)** will establish baseline levels and types of recycling contamination. Recycling contamination rates can vary significantly across different programs and communities. Nationally, The Recycling Partnership (TRP) estimated an average contamination rate of about 17% across 197 programs that participated in their 2019 State of Curbside Survey. In Washington State, TRP's 2019 survey of seven MRFs found inbound levels of contamination from commingled recycling collection programs ranging from 5%-20% by weight. Recent drop-off programs and cart lid-lift audits in Washington showed rates as high as 40%. For this reason, it is important to gather data on local recycling contamination levels.

In discussions with stakeholders, and building on the information in the State CROP and Ecology's Resource Library, and on the work completed in Step 5 **(Jurisdiction Name)** will identify and develop ways to track specific contaminants. For example, tracking the number of carts containing plastic bags may be a more useful metric than an estimated overall percentage of contamination by volume.

Data collection methods may include, but are not limited to:

- Recycling stream composition studies
- Survey of transfer stations and MRF operators
- Tracking contamination using on-board truck or container-mounted cameras
- Drop box composition studies or visual audits
- Container lid-lift audits for residential, multi-family and commercial accounts
  Legal questions have been raised about lid-lift audits. The Measurement and Reporting section of Ecology's BMPs *provides more details.*

Step 7: Identify key contaminants and their costs and impacts
Based on the data collected in Step 6 and collaborating with key stakeholders, **(Jurisdiction Name)** will identify the most problematic and costly contaminants starting with the highest-priority program(s). Although the types and impacts of contamination don't vary as much as the

levels of contamination across different communities and programs, it is still important to gather locally specific data. This data is critical to designing outreach campaigns and other strategies targeting the most problematic materials. It can also be helpful in calculating the economic and other benefits of removing problematic materials from the recycling stream.

In recent surveys, such as the one conducted by the TRP in 2019, MRFs and cities in Washington identified the following recycling contaminants as the most problematic and costly to manage:

- Plastic bags and film
- Tanglers including rope, cords, chains, and hoses
- Food and liquids
- Shredded paper
- Bagged garbage
- Non-program plastics including clamshells and polystyrene foam
- Hypodermic needles

These contaminants can:

- Slow down the sorting and processing of materials.
- Reduce the quality and value of secondary material feedstocks.
- Result in costly shutdowns.
- Damage collection, processing, and remanufacturing equipment.
- Cause serious injuries to collection and processing facility staff.

According to TRP, the greatest costs associated with managing a contaminated recycling stream at MRFs nationally come from the following and represent 80% of total contamination-related costs:

- 40% for disposal of residuals
- 26% in value lost from contaminated recyclables
- 14% in labor to remove contamination from sorting equipment, etc.

Step 8: Develop and implement education and outreach strategies to reduce contamination
(Jurisdiction Name) will develop and implement education and outreach strategies based on best practices. This starts with addressing any inconsistencies in recycling information and

messaging identified in Step 1. All new outreach materials and messages will be aligned and consistent across all platforms.

Depending on the type of recycling program, outreach and education strategies may include, but are not limited to:

- Moving toward uniformity in cart and container colors (or at least lids)
  - blue for recycling, gray or black for garbage, and green for organics
- Visual, easy-to-understand signage using photos and universal pictures and symbols
- Cart-tagging and cart rejection
- On-route monitoring tools, including apps and cameras
- Pairing right-sized recycling and trash bins
- On-site assistance and outreach at drop-off sites
- Up-to-date, and easy-to-find and access websites with clear, consistent messaging
- Social media posts, campaigns, mailings, brochures, and other communications
- Online apps for residents and businesses to get answers to their recycling questions
- Community presentations, tabling, and activities at community events
- School presentations and activities focused on recycling right
- Translation and transcreation of educational materials and campaigns to ensure recycling information is clearly understood by all audiences
- Social marketing campaigns to effectively promote long-term behavior change

Where possible, free and customizable resources will be utilized, including Ecology's Recycle Right campaign materials and The Recycling Partnership's Anti-Contamination Kit. Ecology's Contamination Reduction Best Management Practices & Resources document and Resource Library have examples of successful anti-contamination programs.

Step 9: Evaluate the effectiveness of anti-contamination strategies and set next steps
(Jurisdiction Name) will conduct periodic assessments on the effectiveness of recycling contamination reduction programs and strategies, and share the results with key stakeholders and the public. These assessments will use, at least in part, the same methodology used in Step 6 to establish baseline contamination levels.

The assessment results inform what is working and what adjustments to make for better results. This includes reducing contamination in other recycling programs that were not a focus during the initial CROP implementation.

Step 10: Explore contamination reduction strategies beyond education and outreach
As part of a statewide effort, **(Jurisdiction Name)** will work with Ecology and other partners to explore strategies and solutions beyond education and outreach. These could address regional planning, operations and collection, contracting, incentives, pricing, policies, mandates, enhanced data collection, etc. Based on this evaluation, **(Jurisdiction Name)** will identify and pursue the most promising initiatives.

These options may include, but are not limited to:

- Regional planning and aligned or joint contracting for services to harmonize messaging, lower program costs, and improve program performance.
- Evaluating the costs and benefits of operational changes, including collection frequency, level of source-separation at the curb, and innovative drop-off container designs on contamination levels and overall program performance.
- Product bans or restrictions.
- Strengthening contracts with haulers and MRFs to include provisions focused on reducing contamination, collecting and reporting data on program performance and ensuring materials on the accepted materials list are responsibly recycled. Consult The Recycling Partnership's BMPs for MRF contracting and their supporting materials for guidance.

Ensure alignment of the CROP and SWMP and secure and allocate funding to implement the CROP: This work will occur throughout the process as needed. Updates to the CROP can occur during SWMP revisions, including the required five-year revision process.

This work includes involving key stakeholders in reviewing, and if necessary, updating related elements in the SWMP to ensure they are aligned and consistent with the contents of the CROP and implementation work. This information may include, but is not limited to:

- Designated recyclables list
- Recycling facilities including transfer stations, drop-off sites, and MRFs
- Recycling collection services and providers, and collection systems and fees
- Waste reduction and recycling education and outreach strategies
- Funding sources and mechanisms for recycling programs and services

During this process, (**Jurisdiction Name)** will also work with Ecology and other key stakeholders to identify and secure new and/or allocate existing funding, and forge partnerships with agencies and organizations to provide technical and financial assistance.

The State CROP and Ecology's Resource Library are tools to get started on implementing the CROP. The library includes contamination reduction best management practices, contracting guides, MRF-shed maps, materials from successful programs in Washington State and across the country, and more.

An initial 3-year implementation schedule for all ten steps in the CROP is included below. As **(Jurisdiction Name)** clarifies and defines the scope of work, and identifies the resources to complete the work, a more detailed and refined implementation plan, schedule and budget will be developed.

CROP Implementation Schedule

Year 1 (Insert date)

Step 1: Inventory current recycling collection services and programs
Step 2: Develop scope of work with stakeholders
Step 3: Prioritize the recycling program(s) to focus on first
Step 4: Establish acceptable materials list

Year 2 (Insert date)

Step 5: Define what data to collect to determine baseline levels of recycling contamination
Step 6: Gather baseline recycling contamination data
Step 7: Identify key contaminants and their costs and impacts

Year 3 (Insert date)

Step 8: Develop and implement education and outreach strategies to reduce contamination
Step 9: Evaluate the effectiveness of anti-contamination strategies and set next steps
Step 10: Explore contamination reduction strategies beyond education and outreach

Ensure alignment of the CROP and SWMP and identify and secure or allocate funding to implement the CROP – These are steps that will be addressed throughout the process as needed.

How to Include a CROP in Your Solid Waste Management Plan

This section includes information on how to include a CROP in your Plan and how to submit it to Ecology for review. There is specific guidance for jurisdictions that are and are not in the process of revising their SWMP.

How to include a CROP in your Plan

If you are not in the process of a Plan revision:

You should amend your Plan to include a CROP by July 1, 2021. Your Plan likely already includes a defined amendment process. This is the process you should follow and document to include a CROP in your Plan. If you do not have a defined amendment process, contact your regional Ecology Planner. They will work with you to come up with an approach.

If you are in the process of a Plan revision:

You still need to prepare a CROP and submit it to Ecology by July 1, 2021. Even if you are still working on your Plan. You should submit a copy of your draft Plan, including your CROP, along with your expected timeline for completing your Plan revision. If you choose to modify and adopt the Local CROP Template in lieu of preparing your own, you can still revise and refine your CROP while revising your Plan.

To avoid unnecessary delays, you are strongly encouraged to share your CROP with your regional Ecology Planner before taking official action to amend your Plan or drafting a CROP to include in your draft Plan revision. This would include taking action to adopt the State CROP in lieu of your preparing your own.

How to request a review by Ecology to ensure you've met the requirements

By July 1, 2021, you must send an email to your regional Ecology planner requesting a review of your CROP. The email should include the following:

See a list of regional Ecology Planners here.

If you are not in the process of a Plan revision, your email should include:

1. Documentation that you amended your Plan to include a CROP following your Plan's amendment process or a process developed with your regional Ecology Planner.
2. A copy of your Plan that includes your CROP.

If you are in the process of a Plan revision, your email should include:

1. An estimated timeline for completing your Plan revision, including when you expect to submit a preliminary draft to Ecology for review.
2. A copy of your draft Plan revision that includes your CROP.

Ecology will not request the Utilities and Transportation Commission or the Washington State Department of Agriculture to review your CROP. Additionally, there is no requirement that you include a completed SEPA checklist with your CROP. These only apply if you are submitting a full draft of your Plan for a formal preliminary review.

How you know you met the requirements

Upon receipt of the materials listed above, Ecology will:

1. Send you an email acknowledging receipt of your request for a review of your CROP.
2. Within 15 business days, send a letter to you confirming that your CROP meets the requirements under RCW 70A.205.045(10); *or*
3. Send a letter to you describing what changes you need to make to meet the requirements. As noted above, to avoid having to go back and edit your CROP, it is strongly encouraged that you to share it with your regional Ecology planner before you submit it for a formal review.

Where to include the CROP in your Plan

If you are in the process of revising your Plan, you are encouraged to include your CROP in the Waste Reduction and Recycling chapter or a related chapter. If you are not in the process of revising your Plan, you could include your CROP as an Appendix and integrate it into one of the chapters in your Plan during your next update.

How often you need to update the CROP in your Plan

You are required to revise your Plan every five years and submit it to Ecology for approval. You should review your CROP, and update if needed, during your Plan revision. After July 1, 2021, Ecology will not be able to approve Plans for those jurisdictions covered under RCW 70A.205.045(10) that do not include a CROP.

Contamination Reduction Best Management Practices

Overview

The Best Management Practices (BMP) section provides strategies and references to studies, toolkits, and websites to support local governments with their ongoing contamination reduction goals. This section is a work in progress and Ecology will continue to add additional resources and strategies over time. Currently, the Education and Outreach section is the most defined.

Ecology published this entire section as a separate document for ease of updating, while also maintaining a permanent link. See the Contamination Reduction BMPs & Resources document located in Ecology's Publications and Forms library by following the link above.

There are many different types of recycling collection programs, and each present their own unique challenges. Collection programs addressed in the BMPs include:

- Single-Family Residential
- Multi-Family Residential
- Commercial
- Drop box
- Glass

Reducing the amount of contamination in any program is a multi-step process involving many different strategies. Five focus areas organize the contamination reduction strategies, which local governments can piece together for their programs.

The strategic focus areas are:

Communications & Outreach

Operations & Collection

Policies & Mandates

Measurement & Reporting

Incentives & Pricing

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Glossary, Acronyms, and Abbreviations

Acronyms and Abbreviations

ADA	Americans with Disabilities Act
ADC	Alternative Daily Cover
BMP	Best Management Practice
C&D	Construction and Demolition Debris
CPG	Consumer Product Goods
CROP	Contamination Reduction and Outreach Plan
Ecology	Washington State Department of Ecology
EPR	Extend Product Responsibility
LCA	Life Cycle Analysis
LSWFA	Ecology's Local Solid Waste Financial Assistance program
OCC	Old Corrugated Containers (cardboard)
RCW	Revised Code of Washington
RDC	Recycling Development Center
SWMP	Solid Waste Management Plan. Counties and municipalities must participate per RCW 70A.205.040.
TRP	The Recycling Partnership
WAC	Washington Administrative Code
WACSWM	Washington Association of Counties Solid Waste Managers affiliate
WGA	Waste Generation Area
WRRA	Washington Refuse and Recycling Association

Glossary

Accepted Materials List (also known as Acceptance list): The most recent list published/promoted by a jurisdiction and/or its hauler for residential recycling services that guides residents on what materials they can put in their recycling containers. Because commercial recycling is an open market, lists may vary by hauler within a jurisdiction. The acceptance list should mirror closely the designated recyclables list found in the Solid Waste Management Plan that the jurisdiction participates in.

Adopt: To adopt a CROP, a local government must formally add its CROP to its SWMP either by way of the locally defined or Ecology-approved amendment process, or via a revision and the standard local resolutions of adoption by all SWMP signatories as done in the regular SWMP revision process. In either case, Ecology's subsequent approval of the adopted document is the final step of the process.

Alternative daily cover (ADC): Cover material other than earthen material placed on the surface of the active face of a municipal solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging.

Amendment: A minor alteration (update) of an existing Solid Waste Management Plan following the process described in the Plan itself, or a process agreed upon with Ecology.

Aseptic containers: Boxes made from paper layered with polyethylene and aluminum that contain shelf-stable consumables such as milk, soup, and tomatoes.

Cardboard: Contains a wavy middle layer. Paper mills use old corrugated containers to make new recycled-content shipping boxes and more. Also known as Old Corrugated Containers (OCC).

Cartons: Packaging for food and beverage products, both shelf-stable and refrigerated. Aseptic cartons (defined above) are often used for shelf-stable applications. Gable-top cartons are commonly used in refrigerated applications, such as milk and juice.

China's export ban: Enacted in March 2018 after the previous year's announcement during the National Sword customs contamination enforcement action (which the ban is sometimes erroneously referred to). Both the ban and National Sword are placeholder terms to describe the outsized economic impact of this large export market disruption (estimated at a fifth of all commodities markets).

Commercial recycling: Recycling collected from commercial (business), institutional or industrial sources. (Multi-family is residential recycling, not commercial.)

Commingled Recycling: Mixing recyclable materials for the purposes of efficient collection. This term is synonymous with single-stream recycling, in which the aggregated recyclables are in a single container such as a wheeled cart with a lid that ranges from 32-90 gallons in capacity, or a multi-yard container, or a drop box. However, it is also technically possible for commingled recycling to be a part of a dual-stream or multi-stream system. An example is a system where commingled recyclables without glass are collected in a cart, and glass is collected in a separate bin placed next to the cart.

Contamination: Per RCW 70A.205.070(4)(b) "Contamination means any material not included on the local jurisdiction's acceptance list." More broadly, recycling contamination is anything collected with materials meant for recycling that could create negative environmental, financial, or health and safety impact anywhere in the recycling system including collection, processing, remanufacture or disposal.

Contamination Reduction and Outreach Plan (CROP): The element that must be included by July 1, 2021 in local solid waste management plans per RCW 70A.205.045(10). This local CROP intends to improve the uniformity, marketability, and environmental benefits of recyclable material

streams. The Local CROP Template is included in the State CROP. Ecology prepared a State CROP to assist local governments in preparing and implementing their local CROPs.

Drop box (or drop off) recycling: Recycling collection sites for residential and sometimes commercial recyclables where residents can drop off materials to be recycled. Could be an alternative for a community that does not offer curbside collection of recyclables.

Dual-stream: One type of a commingled collection system in which some recyclable materials are placed in a cart or bin at the curb, and one or more different materials are placed in another cart or bin (or, less frequently, in different sides of a divided cart). Examples: all materials except glass in one cart, and glass in a bin next to the cart; all fibers in one cart and all containers in another cart.

End User, End Market, or mill: The facility that first uses recycled material to manufacture a new product. The product of an end user, end market or mill may be further converted into other value-added products, such as a sheet of boxboard from a paper mill that's converted into a box.

Extended Product Responsibility (EPR): EPR is a mandated policy that shifts the responsibility for end-of-life management of products and packaging upstream to producers – rather than the public sector – and creates incentives for producers to incorporate environmental considerations into the design of their products and packaging. *Definition from the King County Responsible Recycling Task Force report - EPR Policy Framework and Implementation Model*

Life Cycle Analysis (LCA): LCA is a method used to evaluate the environmental impact of a product through its life cycle encompassing extraction and processing of the raw materials, manufacturing, distribution, use, recycling, and final disposal.

Materials Management: A systemic approach to using and reusing materials more productively over their entire lifecycle. Materials management is focused on knowing and reducing the lifecycle impacts across the supply chain, using less material inputs (reduce, reuse, recycle), and using less toxic and more renewable materials.

Mixed Waste Paper (MWP): Mixed paperboard, magazines, and catalogs. Mills use mixed paper to produce paperboard and tissue, as a secondary fiber in the production of new paper, or as a raw material in a non-paper product such as gypsum wallboard, chipboard, roofing felt, cellulose insulation, and molded pulp products such as egg cartons. Typically not used for molded pulp products due to the contamination level and risk of damage to food. Also used for production of medium used in corrugated containers.

Materials Recovery Facility (MRF): Pronounced "merf," is a facility that accepts, sorts, processes, and bales different types of recyclables for sale to an end-user.

MRF-shed: The geographic area that includes the communities that send the material they collect for recycling to same MRF for processing.

Multiple- or multi-family recycling: recycling collection from multiple-family residences such as apartments or generally any buildings containing four or more habitable units.

Plastic bottles and jugs: Plastic containers of any resin type that have a narrower opening than its body (i.e. a "neck").

Plastic film: A thin flexible sheet of plastic, which does not hold a particular shape when unsupported.

Polycoat: A type of fiber packaging that contains an outer layer of plastic coating to protect the fiber from breaking down in wet and freezing conditions.

Recyclable materials: Those solid wastes separated for recycling or reuse, including, but not limited to, papers, metals, and glass that are recyclable material pursuant to a local comprehensive solid waste plan. For the purposes of a local CROP, these materials do not need to include organics or construction and demolition waste.

Recycling: means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration.

Revision: An alteration (update) of an existing Solid Waste Management Plan (or Combined Solid and Hazardous Waste Management Plan) by way of reviewing and adjusting as necessary every element of the Plan, cover to cover. A revision goes through the full review and adoption process, and restarts the 5-year "review and revise as necessary" timeline in RCW 70A.205.075.

Right to Repair: "Right to repair" laws refer to legislation that requires manufactures to give owners or independent repair shops access to data needed to repair their products.

Single-family recycling: recycling collection from single-family homes or generally from buildings up to four habitable units.

Single-stream: One type of a commingled collection system in which all recyclable materials go in one container at the curb.

Sustainability: Sustainability focuses on meeting the needs of the present without compromising the ability of future generations to meet their needs. The concept of sustainability is composed of three pillars: economic, environmental, and social—also known informally as profits, planet, and people.

Transcreation: The merger of two words: translation and creation. It's an intricate form of translating a message from one language to another, while maintaining its intent, style, tone, and context. A successfully transcreated message evokes the same emotions and carries the same implications in the target language as it does in the source language.

Update: An alteration of an existing Solid Waste Management Plan by way of either an amendment or a revision with the intent of bringing the Plan into compliance, or to reflect a change in current conditions.

Waste generation areas (WGA): Geographic areas within the state that have similar economic, environmental, and social characteristics and are dependent upon similar material transport networks. Other variables, such as waste composition, methods of waste collection and disposal, and the availability of recycling and commodity markets, are also considered in the determination of WGAs. *From Ecology's 1988 Best Management Practices for Solid Waste – Volume 1, page 1.*

Wishful recycling: The act of tossing items in a recycling bin believing they should be recyclable and with the hope that they will be recycled.

Appendix A: Public Comments

The public comment period for the draft CROP took place August 7-31, 2020. Ecology received 18 comments from the following stakeholders during this period through the Ecomments portal.

First Name	Last Name	Submitted By (with link to comment in the document)
Meggan	Uecker	Clallam County
Karen	Hultgren	Pierce County Planning and Public Works
Preston	Peck	City of Tacoma Solid Waste Management
Brenda	Blanchfield	Chelan County
Walter	Sobchak	
Rick	Hlavka	Green Solutions
Paul	Jewell	Washington State Association of Counties
McKenna	Morrigan	Cascadia Consulting
Derric	Brown	Carton Council of North America
Rod	Whittaker	Washington Refuse & Recycling Association (WRRA)
Heather	Trim	Zero Waste Washington
Phelis	Katus	Lewis County
Caitlin	Newman	Kitsap County
Stephanie	Schwenger	Seattle Public Utilities
Cameron	Reed	City of Shoreline
Annie	Kolb-Nelson	King County Solid Waste Division
Kris	Major	Spokane County
Henry	Allen	City of Spokane Valley

Clallam County - Meggan Uecker

Aside from the CROP itself, the Resource page is really helpful and already stimulating great conversation.

CROP
Appreciate the very thorough background, informative graphics and links to excellent presentations and reports that really help paint a complete contamination picture and capture all that I've been learning about contamination around the region over many years. Amusing puns!

Figure 15 Incorrect listing for Clallam Co.
The CROP template itself is helpful for imagining what a CROP could look like. From initial conversations with fellow stakeholders, one challenge so far is differentiating what is required by law from what is presented within the template, however useful.

Thorough examples and resources in the Regional Recycling section.
•P. 53 Incentives and Pricing: Dropbox Recycling could include fee for dropbox recycling. It is something that has been an ongoing recommendation in Clallam's SWMP, but not considered at length. However, it seems like charging for recycling at drop boxes could offer opportunity to discuss the value of recycling with councils, etc. and help pay for contamination reduction strategies like local sorting, monitoring, etc. and is more equitable towards citizens that have mandatory garbage or recycling service/fees.

•P. 55 Measurement and Reporting: Know Your Weight: While Ecology Recycling reports, transfer stations and MRFs track by weight, volume has been a more accessible way to measure (using the containers at hand 90 gallon, 3 yd, 30 yd) etc. in our initial contamination studies. The measurement suggestions here are great; interested in getting standardized, but there remains issue in garbage of volume v. weight. E.g. most recycling & garbage is collected by volume, but paid for in weight ultimately, so is heavier contamination more detrimental on the system or how does that affect the economics? Thinking out loud here and maybe this is worth noting in the CROP somewhere as another issue.

Pierce County Planning & Public Works – Karen Hultgren

Feedback on the Washington State Recycling Contamination Reduction and Outreach Plan Draft

Pierce County will be required to include a CROP in our Solid Waste Management Plan. While the August 2020 Washington State Recycling Contamination and Outreach Plan contains some very useful elements such as the MRF-shed maps, we have some concerns about what is being set out for our County to achieve.

Many of the activities listed in the Local CROP template are beyond our current operations and cost money, which essentially makes them unfunded mandates. It needs to be stated very clearly in this document that if our locally developed CROP addresses the five bulleted items then it is complete, even if it does not adhere to the template.

In general, the CROP needs to be flexible enough to apply to the public/private partnership model Pierce County uses for waste collection which makes the County's access to specific contamination cost information difficult, if not impossible, to obtain.

After reviewing the bulleted list of 5 items that must be included in our county's CROP (page 27) we feel like we could put together something that addresses 4 of the 5 points.

> **"A local jurisdiction's CROP must include the following:**
>
> - A list of actions to reduce contamination in existing recycling programs for single-family and multi-family residences, commercial locations, and drop boxes.
> - A list of key contaminants identified by the jurisdiction or Ecology.
> - A discussion of problem contaminants and their impact on the collection system.
> - An analysis of the costs and other impacts to the recycling system from contamination.
> - An implementation schedule and details on conducting outreach. Contamination reduction outreach may include sharing community-wide messaging through newsletters, articles, mailers, social media, websites, community events, educating drop box customers about contamination, and improving signage."

List of Actions - A list of actions to reduce contamination in existing recycling programs for singlefamily and multi-family residences, commercial locations, and drop boxes.

1. **Feedback**: Our County does not have jurisdiction over commercial recycling since it is an open market. This issue is discussed later in the draft CROP (page 43). Since we do not have jurisdiction over this area it does not seem appropriate for the County to be forced to develop a list of actions to reduce contamination in commercial recycling

programs. The only way we would be able to address this is by creating outreach pieces and providing technical assistance for commercial locations, which we plan to do but have no current timetable due to limited staff and resources.

List of Contaminants - A list of key contaminants identified by the jurisdiction or Ecology.

2. **Feedback**: Our County has annual Waste Trends and Recycling Trends data that documents what goes into our landfill and our recycling stream and we intend to use these two sources of data to determine our baseline recycling contamination levels. Suggested methods in the draft Local CROP template such as tracking contamination using on-board truck or container-mounted cameras and conducting lid-lift audits cost money and take resources our County does not currently have.

Discussion of Problem Contaminants - A discussion of problem contaminants and their impact on the collection system.

3. **Feedback**: We would be able to do this in a general way.

Costs from Contamination - An analysis of the costs and other impacts to the recycling system from contamination.

4. **Feedback**: This section would be impossible for us to do in any meaningful way. Our system relies on private partners and the County does not have access to specific cost information. In general, this draft CROP feels like it was written thinking that we have more direct control and access to cost information than we do.

Implementation Schedule - An implementation schedule and details on conducting outreach. Contamination reduction outreach may include sharing community-wide messaging through newsletters, articles, mailers, social media, websites, community events, educating drop box customers about contamination, and improving signage."

5. **Feedback**: This would be doable.

Other Feedback:

6. There are multiple references throughout the document to moving toward uniformity in cart and container colors. The instructions are "blue for recycling, gray or black for garbage, and green for organics". Our County has done quite a bit of work on moving toward container color consistency and labeling, but the colors are not going to change to that recommendation without a large grant from the state to replace existing containers due to the sheer number of carts in service throughout the County and owned by various service providers. While moving to that color scheme statewide might be ideal, we are constrained by what is currently on the ground in service.

7. The section on “The Root Causes of Recycling Contamination” missed the major single reason contamination become a problem. After these programs started in the early 1990’s the idea quickly became “more is better” and the municipalities that strived to divert the most material were able to claim the “best recycling program”. In an effort solely to increase diversion tonnages, programs went from source separated clean scenarios to contaminated co-mingled scenarios. The management of these programs ignored any evidence as to whether the diverted materials where actually being recycled.

City of Tacoma Solid Waste Management's – Preston Peck

The City of Tacoma Solid Waste Management (SWM) would like to provide comments regarding implementation of the Contamination Reduction and Outreach Plan (CROP) set forth in the Washington Department of Ecology's State CROP.

SWM recognizes the importance of a thorough community stakeholder education and outreach plan to discourage contamination in Tacoma's recycling stream. We have, and continue to, provide direct education opportunities to both our residential and commercial customers using a variety of mediums. These interactions have helped to forge meaningful relationships in our community as we encourage our residents to "recycle right" and help us to reduce contamination.

Throughout our increased education and outreach efforts, we continue to build on our relationships with our partners, including Pierce County, as we seek increased collaboration and harmonization across our MRF-Shed. Through increased collaboration and communication, we also recognize that there are differences across our operations. While some of the challenges of implementation of a CROP are similar, we would like to highlight how some differences could pose different challenges in adopting the "Local CROP Template" for municipal haulers (SWM) versus counties (or municipalities) that contract with third party haulers.

"A list of actions to reduce contamination in existing recycling programs for single-family and multifamily residences, commercial locations, and drop boxes."

Unlike SWM's residential recycling program (i.e. single-family homes and duplexes), SWM's commercial recycling program, which includes triplex residences and above as well as businesses, competes on the open market for customers against other haulers. While the State CROP acknowledges this dynamic and provides some useful tips on collaboration, the CROP included in Pierce County/Tacoma's Solid Waste Management Plan will be the responsibility of Pierce County. We feel that the government entities should not be setting standards for how other haulers should be conducting education and outreach efforts as we do not have jurisdiction over these haulers, nor the enforcement authority.

We recommend eliminating "commercial" from the scope of this plan, or specifically calling out "commercial" entities which fall under the jurisdiction of the government agency. This could increase clarity and feasibility of enforcement.

"A list of key contaminants identified by the jurisdiction or Ecology."

While establishing baseline data is extremely important in understanding the scope of contamination, and therefore the goals of reducing it in the recycling stream, this work does come at a cost. SWM intended to conduct a waste composition study in the Spring of 2020, however, due to the budget impacts of COVID-19 we were forced to put this approximately $500,000 study on hold. The last waste characterization study that SWM conducted in collaboration with Cascadia Consulting Group was completed in 2015 as part of our Sustainable Materials Management Plan.

We would like to recommend that Ecology, or other stakeholders, provide opportunities to local jurisdictions to help fund the time and resources that these comprehensive baselines require.

"An analysis of the costs and other impacts to the recycling system from contamination."

SWM believes that to understand the full cost of contamination would be extremely difficult, if not impossible, to establish without the full cooperation and transparency of our MRF. Given that our MRF accepts materials from all over the region, we would need to know how much contamination is coming into the system overall, from which jurisdiction, the type of contamination, end markets, labor costs from all stakeholders, etc. Since the private entities that own MRFs classify much of this information as proprietary to their business, we feel that to identify the "cost" of contamination would be incomplete at best.

If we are to accurately gather this information, we would need a requirement of cooperation across the entire industry to provide their cost. We do not feel this is practical in the immediate, but it would be highly desirable in the long run.

"Moving toward uniformity in cart and container colors (or at least lids)"

SWM agrees that uniformity in cart color would be helpful in reducing confusion across jurisdictions, however, our more than 200,000 carts are City assets and it would come at a high cost to replace them with new colors. Under the proposed colors of "*blue for recycling, gray or black for garbage, and green for organics*" we would need to replace over two thirds of our cart inventory. This is not to mention the large communications and outreach campaign that would need to be conducted to inform residents of the changes and provide support to our residents in this transition. Under current budget constraints and scrutiny this would not be feasible.

SWM recommends letting local jurisdictions within the same MRF-Shed discuss how they would like to coordinate their collections system to minimize up-front costs for harmonization. Alternatively, Ecology or other stakeholders, could propose funding for the transition to shared bin colors.

Chelan County – Brenda Blanchfield

The Template should reflect only the RCW 70.95.090(10) requirements, and be clear on the suggested work. For instance Step 2: Develop an Implementation plan and secure funding and assistance is NOT in RCW 70.95.090(10) but it does state "(e)an Implementation Schedule and how outreach is to be conducted". This is very different and will require Counties to fund the program. I suggest all the Steps in the Template better align with the RCW. If developing funding for implementation is a concern, than the state should include how it will secure funding in this plan.

The implementation deadline of 4 years is not in the RCW 70.95.090(10). Why 4 years? Rather the Solid Waste Management Plan already has a requirement to address financing capital and operational expenses of the solid waste system. The CROP should be in consolidation with the SWM Plan requirement, and not add random deadlines such as 4 years.

Step 11 requires the evaluation of the effectiveness of anit-contamination strategies. Periodic evaluations are not required in the RCW 70.95.090(10). I agree that this will be helpful, but to formally conduct an evaluation that must be distributed and reviewed with the stakeholders and public at a later time is further work that the Counties may struggle to accomplish. The state may find that with all the submitted plans and data, they will be better informed to evaluate the successes and failures of these messaging.

Walter Sobchak

Currently, planning jurisdictions are in the middle of developing budgets for 2021. An abbreviated review period on a document with large implications to our work, comes at an inopportune time.

Larger jurisdictions with multiple staff available may not be as impacted by the timing of this request. However, smaller jurisdictions that are still required to comply with the new ruling are impacted by the "new" timeline that Ecology chose. It is unfortunate that Ecology could not adhere to its own prescribed timeline concerning the CROP. And, if Ecology knew they were going to veer astray from their prescribed timeline (in January or February), advanced notification should have been given instead last minute, weekly updates.

Initially, planning jurisdictions were promised to be included in a stakeholder process to help develop the CROP. Early in 2020, communications and collaboration with Ecology ceased. Then, a mere attempt was made, somewhat at the last minute, to work with a small group of planning jurisdictions. While this may satisfy the requirement in 70.95.100(4), it certainly does not reflect one that local planning jurisdictions prefer or one that Ecology initially agreed.

With what our agency was able to review, this document goes back and forth between silliness and seriousness. As well, the fact that this document is late in being developed, it is not clear the level of importance Ecology really has toward this topic and this document. Suggestion would be to polish the grammar mistakes peppered throughout the document and to limit or remove all contractions and certainly remove all the puns. It begins to appear that Ecology was more focused on having fun than producing something on time, succinct, and meaningful.

The template included in the CROP includes items that well exceed the statutory requirements. If Ecology feels the need to include these "good to have" items, please clearly identify or separate them from the required elements. Instead of placing a blanket statement that not all strategies are required within the template, clearly segregate the required items that are supported by statute.

While the new resources are a good addition, it is uncertain whether Ecology will be able to sustain them in the end. Ecology has a record of creating new, helpful items but not sustaining them over time. Examples include recent survey of changes to recycling programs across the state, the LSWFA performance monitoring form (ours was only completed once this biennium), regional commingled workgroups, creating and sharing regional recycling market data, statewide tipping fee map, and curbside recycling maps.

Rather than issuing a new, separate set of guidelines and state CROP template, Ecology should have considered updating a cohesive package of planning guidelines. Currently, Ecology has older, outdated Solid Waste Planning Guidelines, Hazardous Waste Planning Guidelines, and now a hurried set of CROP guidelines. Keep in mind, planning jurisdictions must also consult a set of guidelines from the UTC (though brand new) to complete another required element in the planning process. This somewhat piecemeal approach does not benefit the planning jurisdictions and is a reflection of a broken planning system. It reinforces the earlier notion regarding the

importance Ecology places on this topic and on planning in general. Among the other planning jurisdictions we were able to connect with recently, half have plans that are out of date, some woefully too. A separate set of CROP guidelines does nothing in addressing a more fundamental issue regarding planning that may exist across the state. At the release of the draft statewide CROP, how many planning jurisdictions are out of compliance in maintaining their Plans in the timeframe provided under statute? Planning jurisdictions are likely hungry for technical assistance to be able to use their plans as a tool to address the numerous issues we are confronting. Rather, we are being told to introduce more material inside an already daunting administrative exercise.

The encouragement in the document to enter into contracts with sorting facilities and collectors is somewhat tone deaf to the current climate and out of touch with the private industry. Our local MRF has expressed a reluctance to engage with our jurisdiction in a formal agreement given the uncertainty in market fluctuations and security in end-markets. This has been a theme existing before 2020 and Covid-19 implications. There is also an order preventing Ecology from entering into new contracts because of the financial downturn. Therefore, to suggest that other entities engage in joint agreements for processing services during a huge financial downturn, with the effects still trickling in, is tone deaf. This document also glances over the complexities of procurement among numerous planning jurisdictions in the state and simply instructs us to "let go of some control", and "make compromises". When in fact, procurement methods for services are extremely prescriptive in certain areas, especially for entities operating under a Public Works authority. This may be the case in other areas of the country where the Recycling Partnership has a greater footprint but likely not one in Washington, aside from King County.

Green Solutions – Rick Hlavka

August 31, 2020
Peter Guttchen
Ecology Statewide Lead Planner Olympia, WA

RE: CROP Plan

Dear Peter:
I am providing the following comments on the draft Washington State Contamination Reduction and Outreach Plan (CROP Plan). Overall I feel that the CROP Plan is great and I have only minor comments on the bulk of it, but I do think the template needs further work and significant revisions. My comments on the template include:

- The template describes an entirely new and different process for creating local CROP plans, but this is really unnecessary and awkward given that the CROP plans are intended to be part of local solid waste plans. Many of the local CROP plans will probably be treated as an attachment to solid waste plans, at least initially, and possibly now or later some counties will weave these into the plan itself, but either way it should be the plan's amendment process that is followed. All local solid waste plans should have an amendment process described in them, although unfortunately not all plans have done this (note that all plans that Green Solutions has assisted with have an amendment process in them, and not all of these are the same).

- The template is all about process and does not lead to meaningful actions until the 3rd year of the process. It's really not so much of a plan but a plan to make a plan later. As a result, the template does not lead to improvements in recycling programs until 2023 or later. Quicker action is needed to solve this pressing issue.

- Another disconnect with the established solid waste planning processes is represented by Step 1 of the template. The need to create a new committee of stakeholders is an unnecessary burden and delay given that most counties already have a committee with the appropriate representation: the solid waste advisory committee (SWAC). The few cities with their own solid waste plans may need to make special arrangements, at least for the smaller cities without an active SWAC, but for most the use of an existing SWAC (with possibly a few additional guests invited) will greatly streamline this process.

- Step 2 of the template is misplaced: how can local government seek funding for a plan that has not been developed yet? This should be combined with Step 9.

- Another disconnect with the solid waste planning process is represented by Step 8. Many of the solid waste plans (again, at least for plans that we have assisted with) already have a list of acceptable materials in the form of the list of designated recyclable materials. This list should be re-visited and modified if necessary, but in doing that the process for modifying that list should be followed (and again, every plan should already describe a

process for revising the list of designated recyclable materials).

- In addition, Step 8 should be conducted much sooner in the process. I am unclear as to how a county can measure contamination without first deciding what are the acceptable materials (and hence what are the unacceptable materials)?

- Step 6 needs to occur much earlier in the process, preferably about six months into the CROP implementation. I understand that data collection can be challenging and expensive, but there are a variety of ways to accomplish this. Plus, I believe that this data already exists in many cases and it could be as simple as asking for it. Many of the recycling collection companies and MRF's are conducting "audits" of recycling loads and so already have this data. Regardless, until a municipality knows the types and amounts of contamination in their area, it will difficult or impossible to move forward with a plan to reduce it.

- The inventory shown in Step 3 is good, but more emphasis should be put on gathering data on the number of tons and/or customers for each type of program (single family curbside, multi-family, commercial and drop box); the types of materials collected by each program; and a survey of all of the educational materials distributed in an area with an evaluation of any inconsistencies in the messages about the types of materials and preparation methods.

- The discussion in Step 8 and other parts of the CROP Plan appears to assume that changes in recycling programs, such as no longer allowing people to put glass in their curbside recycling carts, is as simple as modifying brochures. There should be some recognition as to the difficulties in getting people to change their behavior and to stop putting materials in carts that they were once allowed to recycle. This will require a huge amount of publicity and outreach. This concern applies to the concept of harmonization too.

- Step 9 contains a number of good ideas, and every county should be strongly encouraged to use almost all of these ideas. In addition to having websites with clear and consistent messaging, the haulers' websites should clearly show all rates for both garbage and recycling.

- Step 10 should be a statewide effort; there is no need for every county (and cities with plans) to research new strategies. Ecology should develop a list of possible options (the statewide CROP Plan already contains a good start on this), with the counties evaluating the applicability of those at a later date, perhaps as part of the evaluation of the first round of anti-contamination strategies.

- Another disconnect for the template versus the solid waste planning process is the timing of the amendment or revision to the local solid waste plans. The counties (and some cities) are supposed to accomplish this by July 1, 2021. Except for the few counties already engaged in a revision process, it is already too late to accomplish the more extensive

revision process by that date, so most will need employ the simpler (and quicker) amendment process. The template is unclear as to when in the process this should be done. Even following a relatively simple amendment process, it is likely that many counties will miss the July 1 deadline, due in part of course to the delay in the release of the State CROP Plan.

- I have attempted to rearrange the action steps in the CROP template to flow more logically, and would suggest the following:
    1. Inventory current recycling collection services and programs (what was Step 3), this needs to be done first so that it can be shared with the SWAC.
    2. SWAC meeting (what was Step 1). The SWAC should be provided with the information gathered in the previous step so that they can assist with the next 3-4 steps.
    3. Prioritize which recycling program(s) to focus on first (what was Step 4).
    4. Establish acceptable materials lists (what was Step 8).
    5. Define what data to collect to determine baseline levels of recycling contamination and how this will be accomplished (a modified version of what was Step 5).
    6. Compile the results of the first five steps into a plan that can be incorporated into the solid waste plan, then proceed with a solid waste plan amendment.
    7. Gather baseline recycling contamination data (what was Step 6).
    8. Evaluate results for contamination and the costs and impacts of it (a modified version of what was Step 7).
    9. Develop and implement contamination reduction education and outreach strategies, and secure or allocate funding and assistance (what were Steps 2 and 9).
    10. Evaluate the effectiveness of anti-contamination strategies and determine the next steps, including considering contamination reduction strategies beyond education and outreach (what were Steps 10 and 11).

I also have a few minor comments about other parts of the CROP Plan:

- On page 12, about mid-page, the CROP Plan notes that some local studies have been conducted but then rejects these. I would maintain that local data is better than national data and more attention should be given to the studies that have been conducted by Clark County, Kitsap County and others, even though many of these studies are a few years old.

- Harmonization is mentioned on page 16 and in other places, and this page includes some ideas on how to achieve this, but overall the CROP Plan lacks a clear directive as to how this could be achieved. Do you really expect some communities to either remove or add specific materials to achieve harmonization? Furthermore, as mentioned above, removing a material is not as simple as not listing it in brochures any longer, and it will require an extensive outreach program to inform residents about such changes. The CROP Plan should include more recognition of this problem. Finally, I would note that such changes

will increase the apparent contamination rate, at least to the extent that specific items are no longer considered acceptable materials and hence would need to be measured as a contaminant.

- The list of strategies that begins on page 40 is a great list of possible actions. For the second bullet on page 40, it would be good to add that the haulers' and municipal websites need to include a clear and comprehensive list of rates and can sizes for recycling as well as garbage. Some hauler's websites already do this and others do not include much or any information. Residents and businesses need this information to make the right choices, and the haulers should be required to provide this.

- On page 43, the first line under "Commercial Recycling" makes the statement that haulers have a monopoly for residential recycling in unincorporated areas. This is not entirely true, since counties have the authority to contract for this service if they choose to do so.

- Visual assessments are mentioned on page 55 as a potential measurement technique. I agree that this can be a viable approach, but it should also be noted that visual methods are notoriously imprecise and hard to replicate later. It should be noted that the use of a visual method requires some practice and training beforehand, and also careful documentation of the procedures used so that it can be repeated later (assuming that it's being used for a before-and-after analysis).

Thank you for the opportunity to comment on this important work. Please do not hesitate to call or email with any questions about my comments.

Sincerely,

Rick Hlavka
Green Solutions

Washington State Association of Counties – Paul Jewell

August 28, 2020

Peter Guttchen
Statewide Lead Planner – Solid Waste Management Program
Department of Ecology, State of Washington
PO Box 47600
Olympia, WA 98504-7600

Dear Mr. Guttchen,

The Washington State Association of County Solid Waste Managers (WACSWM), an affiliate organization of the Washington State Association of Counties, serves as the collective voice for leadership professionals working in county solid waste programs throughout Washington. Please accept this letter as our official comments for the August 2020 draft of the Washington State Recycling Contamination, Reduction, and Outreach plan (CROP).

Overall, the plan is well-organized and thoughtful. It meets the requirements in RCW 70.95.090 (10). Finally, we appreciate the local CROP template portion of the plan as it may be a valuable tool in assisting counties in developing their own CROP or adopting the state version. However, the template does include some elements that exceed the requirements of RCW 70.95.090 (10). While we appreciate the statement included at the beginning of the template that "jurisdictions are not required or expected to implement all of the specific strategies present in the template", it is important to point out that with certain strategies included, the incorporation of the template as written by a local government would not just satisfy the requirements of RCW 70.95.090 (10), but far exceed them. The template should state as such.

For instance, Step 2 of the template discusses incorporating actions to secure funding for the CROP and obligates the adopting county to do that work. Such a requirement is not included in RCW 70.95.090(10). While funding for this work will be necessary, placing the burden for funding should not be thrust upon counties.

We have great concern regarding the costs to do the work necessary to implement local CROPS. As the legislature was considering E2SHB 1543 we made clear the incorporation of a local CROP into county comprehensive solid waste management plans and the implementation of the CROP by counties was an unfunded mandate. State support for local solid waste management programs has declined over 62% since 2013. Meeting the data collection and analysis requirements and conducting outreach necessary to implement local CROPS will be expensive. Placing the burden for funding implementation on the county is not required by the law and should not be included in the template unless the template clearly states that such inclusion exceeds legal requirements.

Other clear examples where the template exceeds the requirements contained in RCW 70.95.090 (10) are found in Step 11 of the template and the implementation schedule. As written, Step 11 obligates the county to "conduct periodic assessments on the effectiveness of recycling contamination reduction programs and strategies and share the results with key stakeholders and the public." Such a requirement is nowhere to be found within RCW 70.95.090 (10) and will demand funding. Additionally, the implementation schedule contained in the template imposes a four-year implementation requirement. The specificity of a four-year implementation schedule is not in the RCW. Again, these examples far exceed what is necessary to meet a county's obligation according to the law.

Finally, the data collection efforts included in the various steps within the template, particularly Step 6, may be valuable in efforts to reduce contamination. However, most counties will not likely be able to complete such a robust data collection program without significant new resources. Additionally, some of the proposed data will require cooperation with private haulers. Such cooperation may or may not be realistic, especially as our experience suggests that some private haulers may consider much of this information or the methods to obtain it as a violation of proprietary interests. Regarding MRF sheds and regional service providers, it may also be very challenging to gauge the reliability of data sets even if they can be provided. Data collection as described here is not a requirement under RCW 70.95.010 (10) and, again, should be clearly noted within the template.

All steps within the template which exceed requirements should be amended, or the template should clearly identify them as exceeding the legal requirements. The statement at the beginning of the template mentioned prior that "jurisdictions are not required or expected to implement all of the specific strategies…" should also be strengthened to clearly state that several strategies exceed legal requirements.

It is also important to point out as stated in our previous letter to Laurie Davies, Program Manager, Solid Waste Management, dated 6/30/2020, we remain disappointed that we were not included as a stakeholder during the development of the statewide CROP. This draft was created primarily by Ecology with little input from counties until late in the process. We received no notice that Ecology was changing its process and that we were not to be included until after the decision had been made. While our limited engagement towards the end of this project likely meets the minimum necessary to comply with RCW 70.95.100 (4) that requires Ecology to "create and implement a statewide recycling contamination reduction and outreach plan on best management practices for recycling, developed with stakeholder input by July 1, 2020" (emphasis added), it is not the process to which we looked forward and to which Ecology had previously agreed.

While we understand that Ecology is reacting to a requirement passed by the legislature in developing the statewide CROP, it should be noted that this is an addition to planning guidance for solid waste that otherwise hasn't been updated in a decade. Given the recent and significant impacts from various events on the solid waste industry in Washington State, and the requirement for regularly updating local comprehensive solid waste management plans, a

more comprehensive guidance modernization effort should be undertaken to harmonize all pertinent solid waste planning materials provided by Ecology. We look forward to such an effort and we stand ready to assist.

Unfortunately, the release of this draft is poorly timed for most of our members. Many local programs are deeply involved in developing their annual budgets for 2021. Considering current circumstances and the uncertainties associated with trying to create reliable predictive models in an ongoing pandemic, budget development is particularly challenging.

Additionally, this is only the first draft of the statewide CROP that was to be adopted and implemented by Ecology no later than July 1, 2020. Delays by Ecology in creating the statewide CROP are placing greater pressure on local county programs who must adopt a local CROP or adopt the statewide CROP by July 1, 2021.

Ecology staff have stated that the delay in complying with the deadline in RCW 70.95.100 will be considered by the agency as it oversees the county adoption process and that the July 1, 2021 deadline will not be strictly enforced. We support Ecology's position in that regard and request notification if it changes or if we have been misinformed. Of course, this would not be an issue if the creation of a local CROP or adoption by the state CROP were in concert with a county's regular plan update cycle as we had originally requested during the development and consideration of the enabling legislation (E2SHB 1543).

We appreciate the opportunity to review this draft and to provide comments. We sincerely hope that you will find them useful as you finalize the statewide CROP. We appreciate your consideration in making the minor amendments requested prior to publishing the final version. If you have any questions regarding our comments or would like to discuss them further, please contact Paul Jewell, Policy Director, WSAC via email pjewell@wsac.org.

Sincerely,

Brenda Blanchfield	Matt Zybas
WACSWM Co-Chairman	WACSWM Co-Chairman

Cascadia Consulting - McKenna Morrigan

I LOVE this CROP! Way to go with a great product. I have a few comments and suggested revisions (mainly grammatical/editorial, a few data corrections), which I have included as comments on the attached PDF. Feel free to follow up with me if you need any clarification on my comments. Thanks so much for your great work on this.

Page: 8
Author: McKenna Subject: Sticky Note No hyphen needed here.
Author: McKenna Subject: Sticky Note No need for a hyphen here.

Page: 15
Author: McKenna Subject: Sticky Note Extra space before the period.

Page: 16
Author: McKenna Subject: Sticky Note "chose"
Author: McKenna Subject: Cross-Out

Page: 17
Author: McKenna Subject: Sticky Note Should be "...Garbage Boat..." (not Garage)

Page: 18
Author: McKenna Subject: Cross-Out
Author: McKenna Subject: Sticky Note Should be 186 programs (not 168)
Author: McKenna Subject: Highlight
Author: McKenna Subject: Sticky Note Consider replacing or supplementing this stat with the WA-specific data now available from the Plastic Packaging Study Task 1 Report (p.40): "Around 2.8 million (89 percent) of Washington's 3.2 million households have access to residential curbside collection of recyclables, either as a universal service provided alongside (and paid for through) garbage collection service (embedded), a mandatory subscription service, or an optional subscription service."

https://www.ezview.wa.gov/Portals/_1962/Documents/PlasticsPackaging/Plastic%20Packaging%20in%20Washington_08052020.pdf

Author: McKenna Subject: Sticky Note Extra quotation mark here

Page: 24
Author: McKenna Subject: Sticky Note I think it is important to use the term "ratepayers" here, as residents and businesses pay these costs in their role as ratepayers, not directly linked to their role as consumers (since producers don't bear any costs under the current system and therefore don't pass them on to consumers).
Author: McKenna Subject: Highlight

Author: McKenna Subject: Highlight

Page: 25
Author: McKenna Subject: Sticky Note I notice that SeaDruNar isn't included in the list of primary MRFs. If this report is intended to cover both residential and commercial recycling, I think their participation in the market should be reflected in some way throughout the report (they are Commercial only but collect materials from commercial customers in four counties).

Page: 31
Author: McKenna Subject: Sticky Note No need for hyphen here.

Page: 63
Author: McKenna Subject: Sticky Note I would strongly encourage this to be rephrased as "Recycling Characterization Studies" or "Waste and Recycling Characterization Studies" -- make it clear that resources put towards studies must include recycling stream if they are to be useful for contamination reduction tracking.
Author: McKenna Subject: Highlight

The Carton Council of North America – Derric Brown

To: Washington Department of Ecology
Solid Waste Management Program

From: Derric Brown, Vice President of Sustainability
The Carton Council

Date: August 31, 2020

Re: Comments on Washington's Draft Contamination Reduction and Outreach Plan (CROP), publication 20-07-021.

On behalf of the Carton Council of North America, please consider the following comments on Washington's Draft Recycling Contamination Reduction and Outreach Plan (CROP) of August 2020.

First and foremost, we would like to state that we strongly support Washington Department of Ecology's efforts to address contamination to build stronger and more efficient recycling systems. The Carton Council has long been an advocate of policies that enhance recycling programs, and we have worked since 2009 to advocate for policies and best practices that strengthen recycling programs. We have also worked to expand markets for cartons, a packaging type that has many environmental benefits. As an organization that has shown dedication and commitment to recycling not just cartons but all materials, we would like to offer the following suggestions for the Recycling CROP.

1. Include cartons as an accepted material and include on list of priority material types.

Cartons are an environmentally preferable form of packaging. For example, according to a recent Oregon DEQ study of packaging attributes, aseptic packaging has lower environmental impacts than recycled glass and aluminum containers having the same volume, even if the aseptic cartons are landfilled (https://digital.osl.state.or.us/islandora/object/osl:473053). Cartons often extend the shelf life of food and beverages and, for some products, eliminate the need for refrigeration, thereby reducing food waste as well as energy use.

Cartons are a valuable source of fiber with several markets seeking carton feedstock in the US and Mexico as well as in selected overseas markets. We understand there is an end-market in Washington State that accepts cartons. Domestic and foreign markets for cartons are strengthening, particularly as mills face declining quantities of office paper and other types of recovered fiber supply. In addition, there is a perspective carton end-market considering locating in Washington State. Not including cartons on the acceptable materials list would undermine efforts to establish this end market in the State. Cartons are accepted in many Washington recycling programs, including Seattle/King County, Vancouver, Bellevue, Kent, and Renton, which demonstrates the availability of end markets and carton recyclability. Including

cartons on the priority list provides an opportunity to increase the overall tonnage of recovered cartons collected, which in turn will make sorting of cartons more cost-effective for MRFs and will increase the availability of this valuable source of fiber for product manufacturing.

2. Remove "polycoat and aseptic containers" as an example of packaging types to consider excluding in the "In the Bin or Out" section of the CROP.

As is stated above, cartons provide environmental benefits over the course of the packaging's life. Further, many cities and counties in Washington are already successfully recycling cartons, and end markets for cartons are expanding.

As always, the Carton Council of North America is dedicated to expansion of strong, sustainable recycling infrastructure and markets. Our comments are offered in this context. Please don't hesitate to contact us.

Sincerely,
Derric Brown
Vice President of Sustainability Carton Council

Washington Refuse & Recycling Association (WRRA) – Rod Whittaker

August 31, 2020

Solid Waste Management Program
Department of Ecology
300 Desmond Drive SE
Lacey, WA 98503

Solid Waste Management Program:

The Washington Refuse and Recycling Association (WRRA) is the oldest Solid Waste Trade Association operating on the West Coast of the United States, founded 73 years ago. WRRA represents the private sector solid waste and real recycling industry in Washington, from curbside collection service, state of the art recycling facilities, to landfills. WRRA member companies and the solid waste industry serve a vital role in public health, safety, and environmental protection.

Our members work in their communities every day and provide essential services. Washington's solid waste system is a successful public-private partnership. Washington's regulated and municipal solid waste collection system provides for excellent service, has consistently beat the national recycling rate by double digits, and maintain family wage jobs in every community in which we operate— all at a transparent and affordable price. We have an obligation to serve and to provide universal service as directed by the state and local governments.

Thank you for the opportunity to comment on the state Contamination Reduction and Outreach Plan (CROP). Many of the recommendations and best management practices represent time-tested and common sense approaches. The opening sections of the report represent a surprisingly political document for a government report intended to assist local governments on a crucial issue. WRRA offers the following comments on the CROPS:

Contamination Reduction & EPR Advocacy:

HB 1543, the legislation that created the recycling development center and mandated CROPs, received wide stakeholder support. However, the report contains policy positions, statements of public and stakeholder positions and commentary, all unsupported by citations or evidence. This commentary and advocacy goes beyond the scope of the 2019 legislation. Page 8 of the report states:

> No one is happy with the status-quo and there is broad agreement that our recycling system needs to change in fundamental ways to thrive over the long-term. This presents

us with a unique opportunity to develop the kind of public-private partnerships needed to build a more sustainable future.

There is not broad stakeholder agreement on this issue and the report makes sweeping claims without support or citation. Recycling is not broken and Washington's excellent solid waste system has produced recycling rates that beat the national average by double digits. Later, on page 33, the report encourages local governments to evaluate Extended Producer Responsibility systems. Contamination reduction is a critical issue for the health of our recycling system and it is disappointing that the Department has prioritized advocacy for Extended Producer Responsibility in this report.

Material Lists & Life-cycle analysis:

WRRA supported a unified material list for the state in our 2019 legislation. WRRA's list was developed by working directly with Municipal Solid Waste Material Recovery Facility Operators (MSW MRF). WRRA's list identifies materials in the waste stream that have strong value and result in significant greenhouse gas reductions when used as a feedstock in manufacturing. It is disappointing that the CROP does not make a firm recommendation to local governments on materials that should not be included.

For example, Plastics #3, #4, #6, and #7 lack markets but represent less than 1% of the waste stream by weight and less than 0.1% of greenhouse gas (GHG) reductions from recycling. Nearly 90% of GHG reduction benefits from recyclables collected through municipal solid waste systems are from fiber (including paper and old corrugated cardboard or OCC). The increased system costs of collection and processing marginal materials requires substantial investment with little measurable environmental benefit (See 2018 Waste Management Sustainability Report).

The CROP should direct local governments to use Sustainable Materials Management principles and life-cycle analysis to make informed decisions about what is contamination.

When in Doubt, Throw it Out:

WRRA has supported the slogan "when in doubt, throw it out," because it is better to throw away a questionable recyclable than risk contaminating an entire load of recyclables. The CROP states at page 15:

> The message "when in doubt throw it out" is a hard one for many people to hear and follow. They've been taught for many years that landfilling is bad and now it's being encouraged.

If "when in doubt throw it out" is difficult to hear, the alternative message used in the Department's public education campaign, "when in doubt, find out" is difficult to expect. Consumers are unlikely and often unable to stop and find out for every item. Washington has

been a national leader on recycling for decades and our residents want to recycle better. It is better to educate consumers on the value of recyclables, and how contamination can destroy that value, rather than create an unrealistic obligation to research every item.

Cart-tagging:

The CROP recommends that local governments consider cart-tagging or rejection programs. In Washington, these programs operate under the high standard of privacy set by Art. I §7 of the Washington Constitution. *State v. Boland (1990)*, found that privacy right extends to garbage placed out at the curb and other cases have elaborated on that right over time. Recently, a superior court found that enforcement of a Seattle cart-inspection ordinance violated the constitution in *Bonesteel v. City of Seattle (2016)*. The Department should include or develop guidance for local government to operate these programs without violating Washingtonian's constitutional rights.

Respectfully submitted,
Brad R. Lovaas
Executive Director

Zero Waste Washington – Heather Trim

August 31, 2020

Great job overall. Easy read.

Page v. Since this was highly negotiated in leg session, I suggest you spell out the actual cutoff threshold here: "The act also requires most counties and some cities in the state to include a CROP in their local Solid Waste Management Plans (SWMP)."

Page 1. Rather than "plummeting," I suggest using something more like "challenging." From what I understand, some of the commodities are no longer totally plummeted: "plummeting commodity prices." (and also, understand that markets have swung up and down dramatically in the past…)

Page 2, bottom. I would add a bullet along the lines of "reduce the amount of material that goes to the landfill as residuals"

Page 3. I would add "For purposes of this CROP, Recycling contamination is anything collected for recycling that's not accepted for recycling in a given community's recycling program, or is too wet or dirty for processing into new products and ends up in the garbage." Otherwise, on first reading, it was a bit confusing.

Page 5. Correction: "Ecology is, however, in the process of implementing two important pieces of legislation passed in 2019 and 2020"

Page 6. I would add: "Making it appear that recycling is free encourages "wishful recycling" and increases recycling contamination because people might put excess garbage in the "free" recycling bin, if needed."

Page 9, top. Suggest that you do mention concerns about toxic chemicals here.

Page 10, top. Thank you for citing our report. Wanted to let you know that I am putting up a slightly updated version next weekend. Will try to remember to send you that link.

Page 11. Correction: "That data hasn't been collected…" should be "Those data haven't been…" [same comment in the middle of page 12 and elsewhere. "Data" is a plural word]

Page 13, bottom. My understanding is that the change was also driven by the haulers…

Page 15, bottom. I would add something about the added confusion that people are hearing that "recycling is broken" related to plastics and are projecting that in their mind for all materials. I have to respond to this all the time when I am out giving talks.

Page 15, end of section. I feel like you are missing a major root cause – the lack of an EPR program or other mechanism that would incentivize producers to improve recyclability of their materials and re-design products.

Page 21, middle. There is a counterargument that I feel you should include. Should we go to the least common denominate OR should we have a harmonized list that is not so restrictive, as in RecycleBC. An EPR program would allow for a harmonized list but it would not be so restrictive and over time would grow, potentially. (some materials might not be curbside but would still be in the inbound system). You kind of touch on this at the bottom of page 22…. But not quite. Until you get to page 25. I feel this should be a bit more incorporated earlier (like middle of page 21) as it otherwise is not giving full picture…

Page 29, middle. Would like to see you include ngos (representing public or environmental interests) on the list of potential stakeholders.

Page 40. I feel like you are missing an important strategy and something I think you could provide for the state. When doing our report, we found that the descriptions and images used for the *exact same things* were different from location to location. If you could provide a set of uniform descriptions and images that all providers/jurisdictions could use across the state, that would be a step towards reducing consumer confusion (especially if you work in a location different than your home, for example).

Page 48, bottom. There is an additional option. Switching to dual stream, every other week. There is a jurisdiction in California that just made this switch. Same number of trucks, truck trips and yet you get cleaner material. Two bins for the residents, but each only collected every other week.

Page 50. You don't address the issue of some multi-family building managers requiring bags.

Lewis County – Phelis Katus

CROP Comments

- The resource library is a helpful collection of material since county staff can't easily research any more how other jurisdictions have used their grant money to reduce contamination.

- We appreciate the effort that was put forth to create this document, but in reviewing the language stated in the state law, many directives or suggestions in the CROP do not follow the new law. For example, there are five items delineated in the law, but the CROP lists 11 and the template lists 11.

- We are concerned about the four-year timeline of the CROP. The problems with the recycling systems are terrible now, and need to be corrected now. The CROPs should call for immediate action.

- It isn't clear whether a county or city could actually just cut and paste the template. It shows where to insert the county's name, but if a county does this, then will they be obligated to all 11 action steps?

- There is a lot of editorializing, and extra words. It just needs to be a report and a plan of action.

- Is the State Action Plan a list of actions the state wants to pursue or are the actions directed at local jurisdictions? It is not clear.

- Early on in the plan, on page V, the explanation of how the bill became a law is incorrect. The Legislature passed the bill, Gov. Jay Inslee signed it into law. He didn't pass it. His full name should probably be included.

- All 11 steps will take a lot of staff time and money, which will be a real strain for smaller jurisdictions. Some examples…Step 2: Secure funding source; Step 3: suggests recycling stream composition studies; Step 10: Explore beyond education and outreach…regional planning, etc.

- On the concept of regional planning, how do jurisdictions share costs as mentioned on page 22?

- The first bullet on page 1, should it be reimagine, not reimage? Also, there shouldn't be a period in the subhead.

- On page 4, No. 4 states that the Recycling Development Center will be called The Center. Later, it is referred to as RDC, which can be confused with the Regional Disposal Company.

- On page 5, the CROP is explaining contamination issues that arise upstream, not downstream.

- On page 43, it is incorrect to say that residential recycling is a monopoly in the unincorporated areas. Counties can issue an RFP for residential hauling, and then enter into a contract with the successful bidder. Garbage has to be collected until the g-certificate, not recycling.

- On page 48, in the discussion regarding the advent of commingled. It was instituted pretty much state-wide because that's what haulers decided to go with and told counties that they couldn't/wouldn't/didn't want to offer source-separated any more. The reference to Whatcom's low contamination is because they are still source-separated. The public understands that. It is easy to understand plastic bottles and jugs only. It is very confusing to the public to say mix your recycling all together and someone will sort it out, please include plastics.

- The use of the word dumpster in the plan makes one think of garbage. Usually recycling is collected in bins, roll-offs, containers, carts.

- MRFs are the only end markets. Material that is source separated can go directly to a market.

Kitsap County – Caitlin Newman

Page 6: Recycling Has Costs, and They Shouldn't Be Hidden: This seems like common sense, but is there research to support this claim? If so, please include.

Page 13, paragraph 1: "According to TRP, only 34% of the communities they surveyed in 2019..." I think this is the first in-text reference to the 2019 TRP study; please detail it here or clarify this was a national survey.

Page 45, bullet #4: I'm curious, is there any data showing signs with physical objects are better than 2D signs?

Seattle Public Utilities – Stephanie Schwenger

August 31, 2020

Peter Guttchen, Statewide Lead Planner
Solid Waste Management Program WA State Department of Ecology
peter.guttchen@ecy.wa.gov

RE: Comments on the Washington State Recycling Contamination Reduction and Outreach Plan Draft

Dear Mr. Guttchen,

In general, Seattle Public Utilities (SPU) thinks that a statewide product packaging stewardship extended producer responsibility (EPR) law could more comprehensively accomplish many of the same "anticontamination" objectives as the State Contamination Reduction and Outreach Plan (CROP). Product packaging EPR would provide a legislative solution to ensure consistent recycling access, service levels, and funding across the state, while moving the financial burden for recycling upstream to producers. However, in the absence of product packaging EPR, the CROP provides a useful framework for improving recycling quality in Washington. We have outlined our comments on the Washington State CROP Draft according to the three sections identified below.

Introduction, Cleaning up the Stream, and the Statewide Action Plan

In the "Executive Summary," it would help to define who "we" is, so that the reader understands who or what is narrating the CROP. Despite confusion about who is narrating the CROP, we appreciated the background provided in the first two chapters, "Introduction" and "Cleaning the Stream." As additional context in the CROP, we encourage Ecology to include information about how Washington's inbound contamination rates compares to other states' (to gauge the severity of the contamination problem), as well as how inbound contamination compares relative to outbound contamination rates (to determine how much contamination MRFs are capable/incapable of removing).

The CROP assumes "recycling contamination is a serious problem," but does not detail the specific environmental, human health, or financial impacts of contamination. In the absence

of such data, it would be useful to provide as much detail as possible on who or what is affected by recycling contamination. If possible, we would also like to see the CROP include suggestions of how to measure contamination, both inbound and outbound, and how to set realistic goals around reducing it.

Guide to Local CROPs

We noticed that the current CROP template exceeds the requirements of the law. Jurisdictions required to develop a CROP may have limited use and/or ability to follow an 11-step action plan when the law contains only five required elements. We encourage Ecology to clarify that the "Action Steps in the Local CROP Template" are recommended or suggested rather than required.

Best Management Practices (BMPs)

Our recycling program managers have provided the following comments, organized by topic, on other information that would be useful in the BMPs.

- **Communications and outreach:**
    - Recycle stream: The messaging should be as simple as possible. Since the steam is only as clean as the worst-performing contributor, this audience should be front and center when we put out regional guidelines.
    - Garbage stream: The discussion and guidelines are focused on what items belong in the recycling. To decrease contamination, we need to pay more attention to our communications about the garbage stream.
        - There is a lot of work that needs to be done to reverse the "landfill aversion" that our customers have. Many residents feel guilty disposing of things in the garbage and we need to "give people permission" to put dirty and non-recyclable items in the garbage.

          For example:
            - Consumers can make decisions before items enter the home, the decision to purchase is the moment to prevent materials from going to the landfill.
            - Create a list of materials that once they enter your home, they should go to the landfill, if you want to dispose of them through home delivered services.
    - Key strategies for multifamily recycling**:**
        - Provide, if possible, onsite customized assistance to the buildings that need it or would benefit the most (larger properties and properties that have the largest barriers toward participation). The on-site assistance can

help to identify ways to improve convenience for residents (see Operations & Collections below).
        - Use metrics (such as service levels per week per dwelling) to help guide proactive outreach.

- **Operations and collections**:
    - Suggest leveraging the collective power of multiple jurisdictions working within the same MRFsheds to create more uniformity in materials collected (to reduce confusion at the customer level) and materials that can be processed (advocate for operational adjustments to capture new materials or capture them better).
    - Add more information on drop box infrastructure and how such operations are supported.
    - Include more practical logistics of how to create and sustain a regional effort.
    - <u>Key strategies for multifamily recycling</u>**:**
        - Provide multifamily residents with convenient access to solid waste containers is perhaps the most significant improvement in multifamily recycling, as was clearly quantified and demonstrated by DiGiacomo et al (Convenience improves composting and recycling rates in high-density residential buildings, 2017).
        - Use the exact same size of containers (whether there are dumpsters or carts) to collect both garbage and recycling helps improve participation and decrease contamination as they are both equally convenient (or inconvenient, if they are very large dumpsters).
        - Using smaller rather than larger dumpsters improves recycling convenience for multifamily residents. Even a 2-cubic yard dumpster can be hard to use as it requires some level of strength and coordination (residents need to open a heavy lid far enough to be able to dump material inside with the other hand).
        - As residents approach an enclosure or solid waste area, the most accessible container should be the garbage one. This helps protect the recycling container from contamination. People that want to quickly get rid of random items will place them in the garbage. People that took the time to sort out their recyclables inside their apartment, will have the motivation to walk a couple more steps to the recycling container.

- **Incentives and pricing**:
    - It is important to have a better understanding of the methods used by property managers to calculate how much apartment residents pay for solid waste. That

understanding could be helpful in figuring out how apartment residents could directly benefit from the pricing incentives for waste prevention and recycling. While in singlefamily the benefit is very direct, that is not the case in multifamily, where the solid waste costs of an individual household are essentially independent of the amount of garbage they produce.

Thank you for opportunity to comment on the draft CROP. We appreciate you taking our suggested changes under consideration. Please feel free to reach out to me at stephanie.schwenger@seattle.gov if you have any questions about our comments.

Sincerely,
Stephanie Schwenger
Solid & Hazardous Waste Lead Planner
Seattle Public Utilities

City of Shoreline – Cameron Reed

Thank you for the opportunity to review and provide feedback on the draft of the Washington State Recycling Contamination Reduction and Outreach Plan. Although some portions of the document (Guide to Local CROPs section) are not as directly applicable to our agency, since we will be covered under King County's plan, the best practices and resources sections are each very helpful and will inform our efforts to reduce contamination and improve recycling in our community.

The emphasis on MRF-shed and regional harmonization is also appreciated, as this has been identified as a primary way to improve the recycling system within King County. We believe a concerted regional and statewide push toward harmonization of both policies and messaging will help reduce contamination in our community and bolster our existing efforts at public education on this front.

The introduction section, especially the subsection on "the root causes of recycling contamination" will also be a very useful resource to reference with our elected officials as context for local and regional measures.

King County Solid Waste Division – Annie Kolb-Nelson

Good afternoon. Thank you for the opportunity to review the Washington State Department of Ecology's Contamination and Reduction Outreach Plan. I am submitting comments on behalf of King County's Solid Waste Division in the form of an uploaded PDF file. If there are any questions or concerns, please feel free to contact me directly via email, or by phone at 206-477-5373.

Kind Regards,
Annie Kolb-Nelson, Communications and Records Supervisor
King County Solid Waste Division

King County Solid Waste Division Comment Form: Washington State Department of Ecology Contamination Reduction and Outreach Plan DRAFT August 2020		
Page Number	**Topic or Issue**	**Comment**
General	Report and resources provided	A well-written report with a lot of great resources provided!
page 5+	Principles and Assumptions	Good to lay out the principles and assumptions
page 5	Recycling contamination is a design problem	It would be good to provide concrete examples of common products that are not designed with recycling in mind and that lead to contamination.
page 7+	The Root Causes	A good analysis of the root causes of recycling contamination
page 22	Aseptic cartons	The Carton Council claims that polycoated and aseptic cartons are recyclable. Ecology's Best Management Practices suggest differently. Confusing to have both.
page 25	Legislative, funding, and policy solutions	The policy options, e.g. EPR, product bans, recycled content, etc., should be explained more - what is it? what would it do? pros and cons

page 26+	Guide to Local CROPS	There should be some statewide collection of data on local CROP activities and data. Ecology should review the implementation of CROPS and share best practices and benchmark performance.
page 40+	Communications & outreach	Have a program that targets schools and children, where they learn about waste prevention and correct recycling. Kids can then teach their parents how to recycle properly.
page 41	Direct mailing to all customers	"Consider the effectiveness of direct mail pieces to reduce contamination." This should be targeted for the individuals and communities that need it, e.g. no access to internet, etc.
page 41	Inform residents how, where, and why to recycle	Include on the bins
page 44	Recycling programs at work places	If people learn to recycle right at work, they tend to also do so at home (if the list of recyclables are the same)
page 46	Operations and Collection	Consider adding technical solutions to multi-stream collection / source separation, e.g. colour-coded bags conveniently sized to fit within household kitchen or utility room cupboards, in order to separately collect the following waste fractions (example: https://optibag.nu/en/optibag/); multi-compartment containers such as the Quattro Select System in Sweden, etc.
page 53	Dropbox recycling	Ecology, counties and cities should work with major retail chains to encourage them to set up dropbox locations for specific, common and valuable recyclable materials, e.g. glass, paper, cardboard, beverage containers, etc. In this way customers can conveniently drop-off and sort a major part of their recyclables and contribute to clean recycling. The collection of these materials could be offered for free by the city or county, or would even be a

		revenue source for retailers. Other locations were people pass by often could also be considered, e.g. schools, libraries, parks, etc.
page 54	Policies and mandates	"Specify the use of contamination-reducing containers" - what are these?
page 55	Visual Assessments and Lid-Lift Audits	It would be great to share resources on how this is done, the costs and the effectiveness of these programs
page 57	Commercial recycling	"For incorporated areas, consider removing commercial recycling from municipal waste hauling contracts." - Why?
page 57	Glass recycling	Please define "Alternative Daily Cover" for the reader.
page 57	Measurment and Reporting: Commercial Recycling • For incorporated areas, consider removing commercial recycling from municipal waste hauling contracts.	This statement is confusing and needs more detail. It is under the section on measurements but it doesn't explain why remvoing commercial recycling from muni contracts hinders measurment/reporting. Needs more detail and explanation.

Spokane County – Kris Major

This is very helpful information and I appreciate the efforts put into generating this tool for local governments. My only comments are

1) at first glance, 85 pages seems monumental and could be off-putting for someone picking it up to look through. The executive summary is good, but anyway to break it up and make it look like less to read could make it more approachable.
2) If authors want this report/instruction manual to have longevity, editing the first part to could be helpful. China Sword and subsequent declining markets are just contributing factors to a long line of other issues that set the context this report. There will be other issues as well in the next year or two. Maybe not date the publication by emphasizing that so much? Just my thoughts.

City of Spokane Valley – Henry Allen

Page 3, top - another result of not addressing contamination is the waste of a material resource (feedstock) for making new items because the contamination results in good recyclables being landfilled.

Page 3, middle - recommend putting the definition of what is recycling contamination at the very beginning of the document to set the context.

Page 5, bottom - in the section about recycling being a means to an end there is a list of items that should drive decisions about the recycling system and what to collect. What we have been told and have read is that, yes, those items "should" be drivers but they are not. The market is the main driver. To be transparent, also mention that currently the actual determiner of what should be on the recyclables list is what is marketable.

Page 31 - In the Local CROP Template Step 6, there is mentioned in the Data collection methods portion the activity of "Container lid-lift audits". Is this referring to someone actually lifting the lid of a recycle cart at curbside and checking out the contents prior to emptying it into a truck? If so, we have concerns about citizens considering this an invasion of their privacy. PLEASE provide the source of a jurisdiction's authority to implement this sort of activity for collecting data. We anticipate the challenge to this will be coming.