



PUBLIC HEALTH



Residential Oil and Antifreeze Recycling in Clark County

Solid Waste and
Environmental Outreach

September 2020

The purpose of solid waste management activities in Clark County is to protect and preserve human health, environmental quality and natural resources through efficient, cost-effective programs and services.

Clark County Solid Waste Management Plan, 2015

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EXECUTIVE SUMMARY

As part of a larger study on special wastes in Clark County, Washington, this report evaluates current methods for recycling residential sources of used motor oil and antifreeze. This report describes various challenges involved in collecting used oil and antifreeze with residential curbside recycling. Collections were analyzed through interviews with local recycling route drivers, stakeholders, solid waste professionals and partners of Clark County Solid Waste and Environmental Outreach (SWEO).

This report incorporates available research from peer-reviewed journals, federal authorities and other solid waste jurisdictions to provide recommendations to improve collections and reduce the impacts of motor oil and antifreeze waste. Response options detailed in this report are designed to help Clark County adapt to changing hazardous waste streams and to best employ resources in collecting and managing Household Hazardous Waste (HHW).

Challenges summarized:

- Containers of used oil and antifreeze at the curb have been observed leaking or leaving behind a film of hazardous residue
- Residents have been found to place mixed hazardous wastes at the curb that cannot be collected
- Residents have been found to place opaque or unsealed containers of oil or antifreeze at the curb that cannot be collected
- Multi-family residents do not have access to curbside oil and antifreeze recycling

Response options summarized:

1. **(Priority)** Recycling hauler to provide drivers with plastic bags (4 mil or more) for containers leaking at the curb
2. Maintain curbside collections of used motor oil
3. Recycling hauler to provide customers with containers for curbside oil and antifreeze
4. Clark County to provide annual or biannual mobile HHW collection events in rural county
5. Increase HHW outreach in Clark County
6. Limit collections to used motor oil

These challenges and response options are explored in detail in this report, and Clark County staff will work with regional partners and stakeholders to implement any changes. Recommendations will align closely with updates to the Clark County Solid Waste Management Plan and recycling contracts as applicable.

INTRODUCTION

As part of a larger study on special waste, this report examines the collection of used motor oil and antifreeze for recycling in Clark County, Washington and addresses challenges observed from recycling services. The goal of this study is to provide Clark County residents with safe, efficient and cost-effective services for managing used motor oil and antifreeze. Used motor oil and antifreeze waste are currently collected alongside curbside recycling at single-family households in Clark County.

Motor oil is a fluid produced from crude oil that is used to lubricate internal combustion engines. Antifreeze is a liquid that is made from ethylene glycol or propylene glycol and is used to control temperature in internal combustion engines. Ethylene glycol and propylene glycol are made using ethylene and propene chemical compounds that are by-products of oil refining and natural gas processing.^{2, 20, 21} As motor oil and antifreeze circulate in engines, they pick up contaminants and must be drained and replaced periodically to operate effectively. The used fluids are hazardous wastes that need to be properly recycled to protect public health and the environment.

Curbside collections of used motor oil began in the county in 1992, closely following the 1991 Used Oil Recycling Act that required local governments to include elements of used oil recycling in hazardous waste management plans.^{4, 24} Used antifreeze was added to curbside recycling collections in 2003.⁴ Curbside oil and antifreeze recycling service is only available to single-family homes subscribed to Waste Connections recycling. Waste Connections is Clark County's contracted hauler for residential recycling collections.

To recycle used oil and antifreeze at the curb, residents must package the liquids in separate one-gallon clear plastic jugs to be placed on the ground near their recycling cart on collection day. Recycling route drivers watch for containers and collect them in trays retrofitted to the sides of recycling collection trucks. Curbside recycling collected in Clark County is hauled to Columbia Resource Company's West Vancouver Materials Recovery and Transfer Facility, known as West Van, where materials are sorted and bulked. Recycling drivers unload recyclables at West Van, sorting the collected oil and antifreeze into bulk containers that are emptied weekly by a permitted hazardous waste management company and sent to be re-refined.

Curbside collections of oil and antifreeze have not changed since Clark County began antifreeze collections in 2003. To provide relevant and adaptive service to changing waste streams, this report evaluates oil and antifreeze recycling in the county and identifies challenges observed with managing these hazardous materials. This report provides several response options to reduce hazards in collections, adapt to changing hazardous waste streams, adapt to growing populations, and to maintain recycling accessibility for residents.

CLARK COUNTY DATA

In addition to the curbside option, residents can drop-off oil and antifreeze at the Household Hazardous Waste (HHW) facilities located at the three transfer stations in the county. The HHW facilities provide residents with free drop-off options for all HHW.⁴ Figure 1 is a summary of total HHW collected in 2018. This total includes HHW dropped-off at the fixed facilities, and the used oil, antifreeze, and household batteries collected in curbside programs. In 2018 motor oil made up 18% of all HHW while antifreeze made up just 2% (Figure 1). Figure 2 shows how collections of oil and antifreeze have changed over time. The amount of motor oil collected has fluctuated but has steadily decreased since the last peak in 2010 (Figure 2). The amount of recycled antifreeze has doubled since 2000 without any major fluctuations (Figure 2).

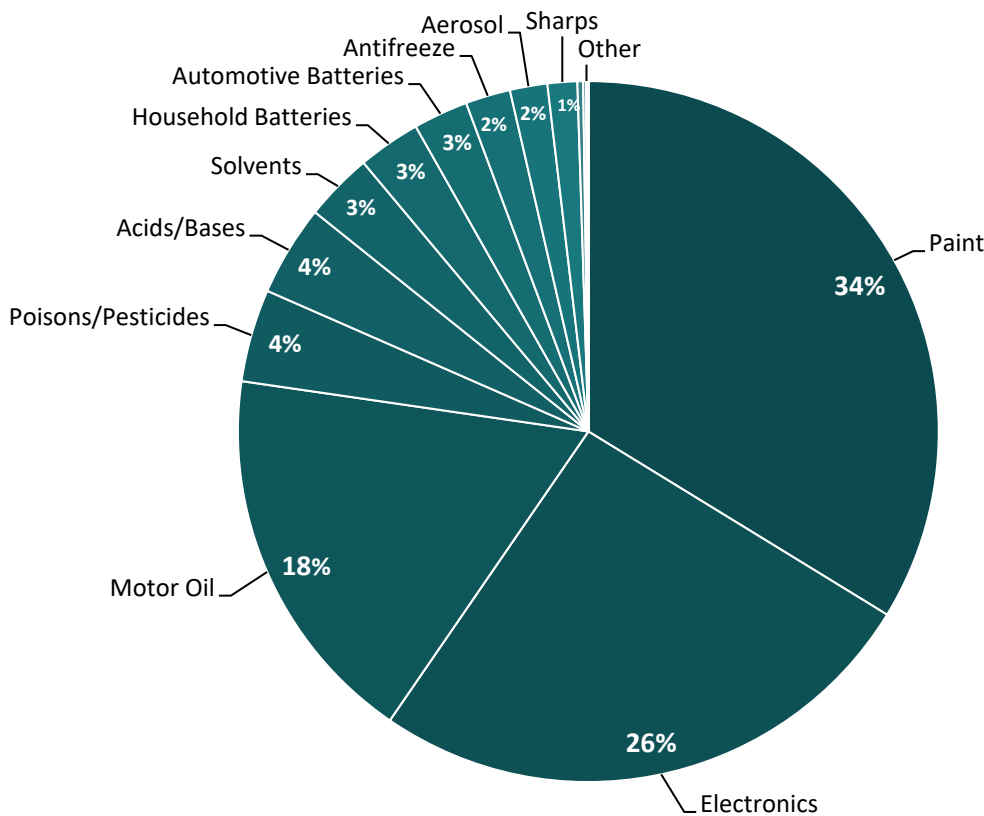


Figure 1: A summary of total HHW collected in 2018 by weight.^a Used motor oil was approximately 18% of all HHW, following the largest categories of electronics (26%) and paint (34%). Antifreeze made up approximately 2%.

^a Data includes materials collected from fixed HHW facilities and curbside collections in Clark County.



Figure 2: Quantities of motor oil and antifreeze recycled in thousands of pounds from 2000 to 2018 in Clark County.^b

From 2000 to 2018, the population in Clark County increased by 28%.¹² Antifreeze collected from residents increased over this time with population growth, likely because the HHW facilities and curbside collections are the only options residents have for recycling antifreeze. Collections of used motor oil did not, on average, increase with population, suggesting residents are using other disposal options, or are doing less oil changes at home. Many automotive stores collect used oil for free because of the Used Oil Recycling Act, providing residents with more recycling options.²⁴

Figure 2 displays two peaks of motor oil recycling in 2005 and 2010. It is the theory of Clark County Solid Waste and Environmental Outreach (SWEO) staff that these peaks were due to economic recessions experienced during those years. SWEO theorizes that increased economic hardship pushed more residents to change oil at home to save money. This trend is important to track because future economic declines may result in increasing quantities of recycled motor oil. This trend could also be connected to overall equity in Clark County to suggest that people with low or fixed incomes are likely to change their own oil on an ongoing basis to save money.

CHANGING HHW TRENDS

The types and quantities of HHW that residents produce have changed in the past twenty years. Used motor oil has always been a large component of HHW collections, though quantities of used antifreeze have remained low over time. Figure 3 shows a summary of all HHW collected in 2003, which was different from today's HHW trends shown in Figure 1. Motor oil was the prominent HHW in 2003, making up 40% of collections, while antifreeze made up just 2%. Today's HHW

^b Data includes materials collected from fixed HHW facilities and in curbside collections of oil and antifreeze.

facilities receive more paint and electronics, demonstrating that waste trends change over time, and that motor oil is becoming less prominent in HHW collections.

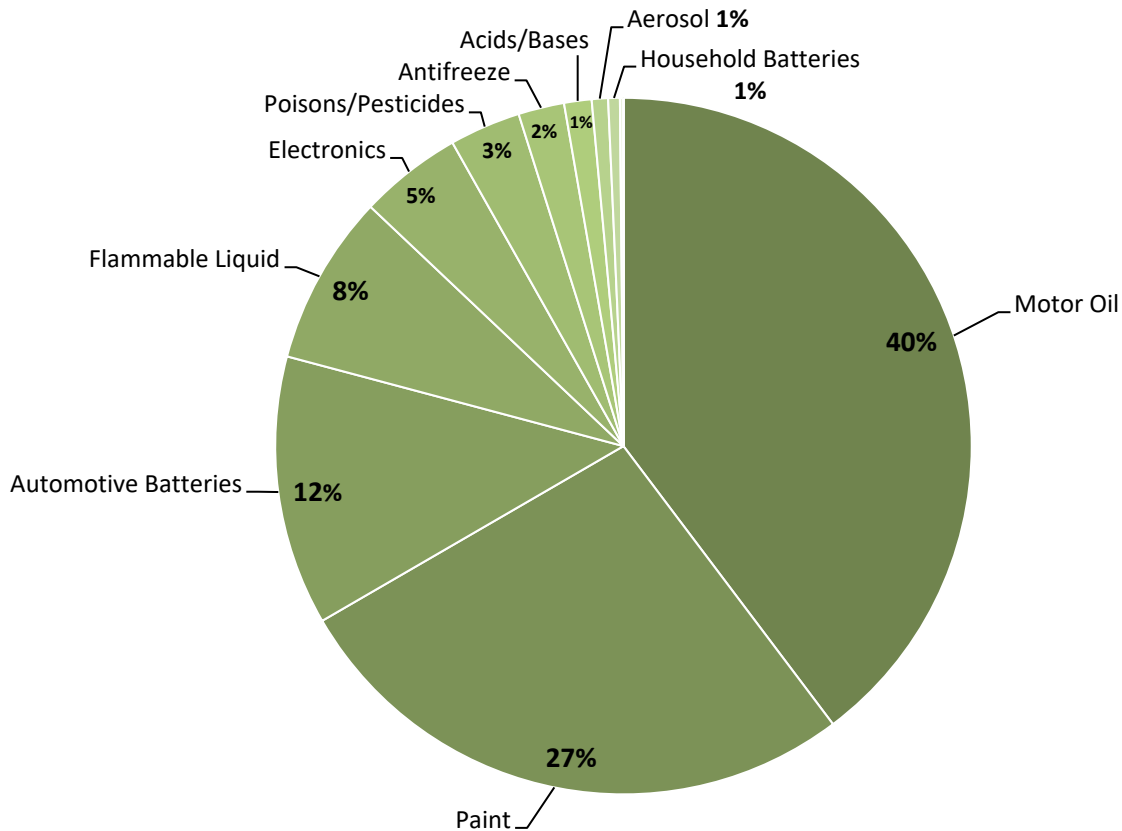


Figure 3: A summary of HHW collected in 2003 by weight.^c Used motor oil was approximately 40% of all HHW, followed by paint (27%) and automotive batteries (12%). Antifreeze made up approximately 2% of all publicly collected HHW.

QUANTIFYING CURBSIDE MATERIAL

Oil and antifreeze collected at the curb are bulked with quantities that residents self-haul to West Van. To measure material collected from the curbside separately from self-hauled quantities, Columbia Resource Company (CRC), the operator of the three transfer stations in Clark County, conducted a one-week case study in October of 2019 measuring the curbside and self-hauled materials separately. During this study, 7% of motor oil and 5% of antifreeze were self-hauled to West Van by residents. Applying these percentages to annual quantities of oil and antifreeze collected at West Van provides an estimate of the impact of the curbside program. Adding self-

^c Data includes materials collected from fixed HHW facilities and curbside collections in Clark County.

haul totals from Washougal Transfer Station and Central Transfer and Recycling provides an estimate of how residents are recycling their oil and antifreeze throughout the county.

This data estimated that 26% of Clark County’s used motor oil was self-hauled by residents to the HHW facilities, and 74% was collected from the curb in 2018 (Figure 4). For antifreeze, 33% was self-hauled by residents to the HHW facilities, and 67% was collected from the curb (Figure 5). This provides a snapshot of collections throughout the county and suggests that many residents rely on the curbside program for oil and antifreeze. This data also shows that oil is collected in higher quantities than antifreeze at the curb (Figure 6).

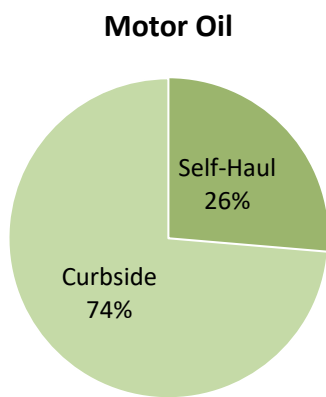


Figure 4: Estimated percentages of motor oil collected at the curb and self-hauled to Clark County transfer stations in 2018 by weight.

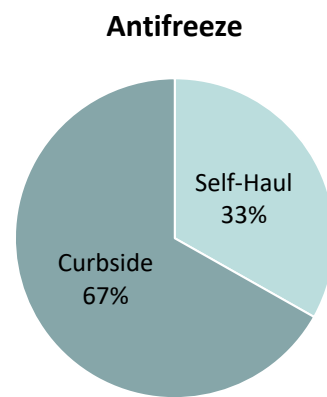


Figure 5: Estimated percentages of antifreeze collected at the curb and self-hauled to Clark County transfer stations in 2018 by weight.

Curbside Oil and Antifreeze

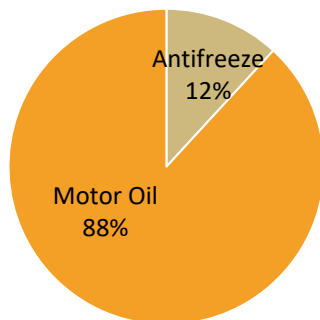


Figure 6: Estimated percentages of motor oil and antifreeze collected at the curb in 2018 by weight.

HEALTH IMPACTS

Exposure to used oil and antifreeze can cause acute and chronic health impacts, though waste handlers have a low risk of exposure when using personal protective equipment (PPE). Used oil and antifreeze are slightly damaging to skin and eyes, causing temporary irritation upon contact.^{16, 17} Fire risks are low in collections because used oil and antifreeze are not classified as Class 3 flammable liquids by the Department of Transportation that regulates the transport of hazardous materials.^{16, 17}

Health impacts can occur with repeated, unprotected exposure to used motor oil and antifreeze due to harmful contaminants that accumulate within engines. Contamination may include lead, arsenic, cadmium, zinc, solvents, polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAHs), halogenated compounds, chlorinated compounds, and others.^{25, 27} Exposure to these contaminants can have varying health impacts though this is preventable in recycling collections with use of appropriate PPE.

Safety concerns arise when waste handlers choose not to use PPE, exposing them to harm when handling hazardous materials like used oil and antifreeze. Waste Connections and CRC staff are provided with gloves and eye protection that protect them from most exposure to used oil and antifreeze, though compliance with PPE requirements is an ongoing topic that management regularly addresses in safety meetings. CRC and Waste Connections provide frequent training for drivers to improve safety practices, including a daily safety meeting with all drivers before starting their routes. Respirators are not standard PPE for waste handlers, though respiratory harm is possible when bulking large quantities of hazardous waste.

The oil and antifreeze bulking area at West Van is a large, well-ventilated space that protects waste handlers from potential volatile hazardous chemicals. Used oil and antifreeze have low volatility, though common contaminants such as solvents or PAHs may evaporate from the waste and cause respiratory harm. Small airborne particles of motor oil known as “oil mist” are highly hazardous, but recycling collection and bulking methods do not agitate the waste enough to create oil mist, so waste handlers are safe from this hazard. Drivers are further protected from respiratory impacts because they typically spend fewer than five minutes in the bulking station unloading the hazardous materials, and only work in this area one to two times a day.

The main hazard faced from used antifreeze and oil is their aspiration toxicity if liquid is inhaled or ingested (Figure 7).^{16, 17} While this is not a concern for recycling collections, it is a hazard for residents that are storing hazardous waste in their homes. It is important for residents to safely remove hazardous waste from their homes to prevent poisoning children or animals, and to prevent spills. Antifreeze is especially dangerous to children and pets because it is light in color and sweet smelling.¹³



Figure 7: Used oil and antifreeze classify as Class 1 hazardous materials due to their aspiration toxicity.^{16, 17, 23}

ENVIRONMENTAL IMPACTS

Used oil and antifreeze placed at the curb for recycling in Clark County have the potential to leak and spill into the environment, polluting stormwater and land. According to interviews with Clark County recycling drivers, it is common to see oily residue that has washed from containers of oil or antifreeze at the curb when it is raining. Hazardous residue washing from containers pollute stormwater. Used motor oil is especially damaging and persistent in the environment because it is insoluble and carries many chemical and metal contaminants.¹⁰ The oil from a single oil change can contaminate one million gallons of fresh water.¹⁰ Antifreeze acts differently in the environment because it is water soluble, but the chemical compounds persist in a diluted state.

If hazardous waste is flushed or poured down drains, the chemical compounds and harmful contaminants present are not removed during the wastewater treatment process.⁸ Wastewater treatment facilities are designed to remove solids and biological matter, so chemical contaminants will persist and be discharged with the treated water.⁸ All of Clark County's treated wastewater is discharged into the Columbia River Basin where hazardous chemicals can cause great damage to ecosystems and water quality. Hazardous materials flushed or poured into septic systems can cause septic systems to fail, and waste may back up into homes or pool to the surface causing wider stormwater pollution and public health risks.⁹ Clark County relies on a sole-source groundwater aquifer that is recharged by surface water, so it is essential to safely manage hazardous waste to prevent pollution and contamination of the county's source of drinking water.⁴

Recycling used oil and antifreeze has a unique environmental benefit because unlike many other hazardous substances, they can be cleaned and reused almost indefinitely through a process known as re-refining.^{7, 10, 26} Re-refining removes contaminants and restores the oil and antifreeze to base forms that can be reused to make new motor oil and antifreeze.^{7, 10, 26} Re-refining increases the lifespan of these non-renewable materials, and allows them to be reused without losing quality in the final recycled product.^{1, 7, 10} This process uses less energy than refining antifreeze and motor oil from virgin material.^{10, 26} This level of recyclability for used oil and antifreeze is beneficial because most other types of HHW cannot be recycled and are instead chemically neutralized, incinerated or sent to hazardous waste landfills.

COLLECTION LOGISTICS

Curbside collections of oil and antifreeze require the recycling route drivers to exit the hauling truck, collect materials by hand, organize them for transport, and then manually sort the materials into bulk containers at West Van. Through all of these steps, safety is the most important factor because when waste collections require the driver to exit the hauling truck, the driver becomes exposed to more risks for injury.¹⁴ According to the United States Department of Labor, "collection is one of the most dangerous activities in the recycling industry."¹⁴ Refuse and recyclable material collectors had the fifth most fatalities by occupation in the U.S. in 2018.²² Driver safety is always a priority and manual collections of waste materials including oil and

antifreeze are not taken on lightly by the recycling hauler. As it stands, waste oil and antifreeze collections at the curb need to be collected manually by recycling drivers, which exposes them to a higher risk of injury.

In this role of collecting used oil and antifreeze on residential routes, the recycling drivers are the best source for observations about the use of the service throughout the county. During interviews with twenty recycling drivers at West Van in February 2020, all drivers indicated they encounter containers of mixed oil and antifreeze or other unidentifiable mixed automotive fluids that are not accepted at the curb. Mixtures are apparent in clear plastic jugs because the oil typically separates from other liquids, and the colors differ from typical jugs of oil or antifreeze. Drivers tag and reject mixed containers at the curb, but will sometimes collect them by mistake, or sometimes intentionally to prevent improper disposal. Anytime material is left behind at the curb, it is vulnerable to being damaged or spilled until the resident retrieves them, sometimes days or weeks later, as observed by some drivers.

Mixtures of various unidentifiable hazardous fluids create new types of hazardous waste that cannot be recycled, and instead are sent for incineration at a higher cost. Processing mixed hazardous waste is time consuming and more expensive than recycling non-mixed materials and could cause recycling rates paid by customers to increase. Incinerating the hazardous waste is also less environmentally beneficial than recycling, so it is important to educate residents to not intentionally mix hazardous waste, and that these mixes are not safe to collect at the curb. Mixed liquids could include wastes other than oil or antifreeze that may have hazardous properties that differ from used oil and antifreeze, such as being flammable, explosive, or corrosive. These unknowns make mixed wastes more dangerous to transport on the recycling collection trucks.

The potential for oil and antifreeze to spill or leak at the curb or in the truck is an additional concern during recycling collections. Full spills from the curbside program are uncommon but are usually caused by unsealed or damaged containers. Residents can prevent spills by using strong sealable containers, and by limiting the amount of time containers spend at the curb where they are vulnerable to being damaged. If a recycling driver encounters a spill, they are trained to use their spill kit to contain it and will notify appropriate emergency personnel if the spill enters storm drains. In the February 2020 interviews of recycling drivers, many indicated that spills are not as concerning as slow, small leaks observed from containers of oil and antifreeze placed at the curb.

According to the drivers, leaking containers are more common than full spills at the curb. The thin plastic milk jugs commonly reused for oil and antifreeze waste are easily punctured as they are reused, often causing the waste to slowly leak out onto the curb. When this is observed, the driver tags the material and does not collect it due to the potential for more leakage during transport. Transporting leaking containers of hazardous waste is not safe, so it is the resident's responsibility to clean up and properly repackage their waste. This causes the container to remain at the curb until the resident returns to retrieve it, though residents might ignore the container and leave it at the curb. This is damaging to the environment as the oil or antifreeze may continue to leak from the container if it is not cleaned up by the resident that placed it there.

Oil and antifreeze that leak during transport are also difficult for the recycling driver to observe. Leaks in transport can be caused by jugs shifting in the trays and spilling from the cap, especially if containers have caps that do not screw into place. The storage trays on the truck contain the liquid, but it can splash out when the truck is moving. Spills in the trays can also cause severe delays in collections because drivers may need to detour to the operations center to be cleaned before completing their route. Leaks observed coming from the recycling truck also reflect poorly on the hauling company and local government in the public eye. For these reasons, containers that are observed to be leaking are left at the curb for the resident to retrieve and repackage.

RECYCLING ACCESSIBILITY

The 1976 Resource Conservation and Recovery Act (RCRA) created the framework for managing hazardous materials, and motor oil was quickly identified as a hazardous waste in need of recycling options.¹⁵ In 1991, the Used Oil Recycling Act worked to increase accessibility to motor oil recycling to handle the large quantities produced by residents, and the act required local governments to establish used oil collection sites and to provide recycling education.²⁴ This resulted in a robust recycling system surrounding used oil, including Clark County's curbside oil collections that began in 1992.⁴ In the state of Washington, only one county and two cities outside of Clark County provide residents with curbside collections for used motor oil, and other regions rely on fixed HHW facilities or mobile collection events.^d

Today, Clark County HHW collections are receiving less motor oil than they did historically, even though population and use of vehicles has increased. This indicates that waste trends are shifting for how residents produce and manage HHW. Increasing availability of private retail drop-offs for used motor oil could account for decreasing quantities collected publicly. In Clark County, there are over twelve private retail stores that accept used motor oil for recycling, and at least one in each population center.^e Residents may also be doing fewer vehicle repairs at home, instead opting to pay for service at automotive repair shops where waste products are handled by the business. Overall, Clark County residents have many accessible options for managing motor oil.

This same recycling system does not exist for antifreeze waste because public collections remain the only recycling options for residents. Antifreeze has less recycling accessibility than motor oil but it is less common, so the HHW drop-off facilities are sufficient for capturing the low quantities. Curbside collections of antifreeze are an added convenience for the residents producing it, though the low quantities being captured suggest the curbside service may not be necessary. In the state of Washington, Clark County is the only region where used antifreeze is collected with curbside recycling.

Residents of multi-family complexes have more limited recycling options than residents of single-family homes because of space limitations and rules set by the property owners. In general, multi-

^d Whatcom County, Kennewick and Seattle offer curbside motor oil collection with varying costs and restrictions.

^e Visit recyclingdoneright.com to search for recycling locations.

family residents cannot recycle oil and antifreeze for curbside collection because the recycling area shared between residents does not have adequate space for setouts of extra material. If there is space for setouts of oil and antifreeze, many property managers limit this activity. Access to this recycling option is one of several barriers that multi-family residents face, as automotive repair is frequently banned by apartment managers, making it harder for multi-family residents to complete their own vehicle maintenance. Residents that can conduct repairs at multi-family homes most often need to self-haul their motor oil or antifreeze to locations accepting the material, such as automotive shops or the HHW drop-off facilities.

OUTREACH AND EDUCATION

Clark County Green Neighbors is a SWEO program to connect with county residents about recycling and waste reduction.⁴ Green Neighbors uses social media, community events, newsletters, blog articles, website content, demonstration gardens, festivals and more to educate residents about recycling and waste reduction. Outreach often includes messaging for reducing use of toxins and how to manage HHW. These resources provide residents with information on how to safely manage their waste oil and antifreeze, among other hazardous products.

Green Neighbors has produced several pamphlets and brochure guides for managing hazardous waste found in the household to keep families and the environment safe. In 2016 Green Neighbors led a large outreach campaign encouraging residents to safely take HHW to the transfer stations. The campaign included online outreach, advertisements and a raffle incentive for trips made to the HHW facility. In 2019 much of the Green Neighbors website, including resources on HHW, was professionally translated into Spanish to make the website more available to Hispanic residents.

SWEO works closely with Waste Connections of Washington, Inc. and the City of Vancouver to provide the community with cohesive messaging on all topics of recycling and waste reduction. They partner to provide recycling, waste reduction and HHW management training for residents through RecycleU and Master Composter Recycler classes.^{3, 5} The City of Vancouver, SWEO and Waste Connections also maintain the RecycleRight app.⁶ The app is a searchable database for recycling and disposal information specific to Clark County, and can be used to send service reminders and outreach information to residents.

Regional stormwater programs, such as Clark County Clean Water, Stormwater Partners of Southwest Washington and the Watershed Alliance of Southwest Washington do outreach in the community to reduce pollution from vehicles and hazardous waste. Stormwater Partners coordinate the “Don’t Drip and Drive” project that identifies vehicles leaking fluids and teaches owners the importance of getting leaks repaired.¹⁸ There are opportunities through these regional programs to continue and expand outreach on HHW management and pollution prevention.

RESPONSE OPTIONS

The following section outlines response options to reduce hazards, improve programs, and increase efficiency of motor oil and antifreeze recycling in Clark County. Clark County will work with partners and stakeholders to determine the best approach to use and determine next steps to carry out any changes to operations and outreach. Priority response options have been identified based on immediate safety concerns and/or relative ease of implementation.

- 1. (Priority) Recycling hauler to provide drivers with plastic bags (4 mil or more) for containers leaking at the curb.** Leaking containers of used oil or antifreeze are commonly placed at the curb for recycling, but they cannot be collected due to the risk of leaking in transit. Recycling drivers currently do not collect leaking containers and will tag them to inform the resident why it was not collected. To address this problem, recycling drivers should be provided with durable plastic bags to place the leaking containers into to provide secondary containment. Plastic bags with at least 4 mil thickness would provide enough puncture resistance to safely package the leaking container. Bags can be custom ordered and branded with educational messages if left at the curb for the resident to repackage. Alternatively, the recycling hauler could collect bagged containers and leave behind an educational tag to correct the resident for the next time they need to recycle oil or antifreeze.
- 2. Maintain curbside collections of used motor oil.** Used motor oil is the third most collected HHW in Clark County, so the curbside program is helping to capture a large quantity of hazardous waste. Though there are many drop-off locations for motor oil recycling, the large quantity being produced justifies additional options for recycling. Removing accessibility to recycling for this common hazardous waste would be damaging to the system and could result in improper disposal of waste oil. Spills and leaks of oil from curbside collections can be prevented and are arguably offset by the large quantities of oil being successfully managed and responsibly recycled through the program.
- 3. Recycling hauler to provide customers with containers for curbside oil and antifreeze.** Providing customers with clear, strong, one-gallon plastic jugs for use in the curbside oil and antifreeze recycling program would reduce the occurrence of opaque and leaking containers being placed at the curb. This method is being used in Dublin, California, where recycling drivers will replace full containers at the curb with new, empty containers.¹⁹
- 4. Clark County to provide annual or biannual mobile HHW collection events in rural county.** The distance needed to travel to the HHW facilities from rural Clark County is a barrier for those residents. Central Transfer and Recycling is the closest transfer station for northern county residents, though the traffic and wait times at this location are additional barriers to visiting the facility. Mobile HHW collection events held annually or biannually in rural communities in Yacolt or Amboy would be beneficial to address these barriers. Current and past mobile collection events have occurred in northern Clark County, but only if city councils

decide to host and fund a clean-up event. It would be beneficial for the county to fund and coordinate mobile collection events in this region if city-organized collections do not continue.

5. **Increase HHW outreach in Clark County.** Due to the high potential harm that HHW can have on health and the environment within households and in the waste collection system, HHW outreach should be among priority messages. SWEO and regional partners should begin by building more widespread awareness of the free HHW drop-off facilities and existing curbside services available. Management of hazardous materials is not a high priority throughout the community so the most effective way to have a wider impact is to ensure all recycling customers know about the services available to them. Safe disposal is incredibly important for hazardous waste, and the community will not be able to access safe disposal if they do not know about the HHW facilities and curbside services available to them.
6. **Limit collections to used motor oil.** Regional solid waste staff should discuss the possible benefits to limiting curbside liquid hazardous waste collections to motor oil. Quantities of residential antifreeze being recycled in Clark County are low, making up only 2% of all HHW collected in 2018 by weight (Figure 1). Providing curbside recycling access for a waste that is produced in low quantities may be unnecessary. The main benefit of removing antifreeze from curbside collections is that it would prevent mixed hazardous wastes from being placed at the curb that can have dangerous properties. Recycling outreach messages would be simplified, reducing confusion on the types of hazardous waste that is collected at the curb.

CONCLUSION

This report explores the county's recycling collections of motor oil and antifreeze and offers six response options to address challenges experienced in collections. Growing populations in Clark County and changes in waste production and recycling options make curbside collections of used oil and antifreeze arguably less necessary than they were when they began in the 1990s and the early 2000s. Today, residents are producing a wider variety of hazardous waste than in the past, and there are now several free and convenient HHW drop-off locations. HHW has changed since curbside collections were designed, justifying consideration of the response options described in this report.

Overall, there is a need to direct residents to use the HHW facilities to properly manage their hazardous waste to prevent unsafe storage and improper disposal. The fixed HHW facilities are the safest, most efficient and environmentally responsible means for collecting and managing HHW. Increased use of the fixed facilities can be accomplished by having more educational campaigns to raise awareness about the facilities, especially for low-income communities that are more vulnerable to the harmful effects of hazardous materials. Clark County will work with regional partners and stakeholders to discuss response options, and final recommendations will align closely with updates to the Clark County Solid Waste Management Plan and recycling contracts as applicable.

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