

## **BIENNIAL REPORT ON SOLID WASTE**

1987 Act 78, codified at 10 V.S.A. §6604(b)

2018 Act 208 §3

2018 Act 209 §3

Submitted to the  
House Committee on Natural Resources, Fish and Wildlife  
and Senate Committee on Natural Resources and Energy

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Agency of Natural Resources  
Department of Environmental Conservation



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# I. INTRODUCTION

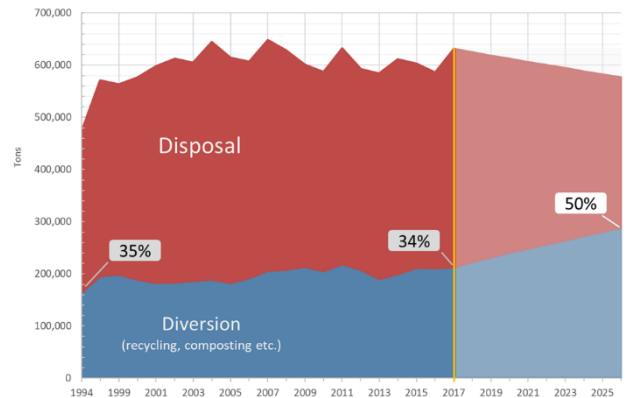
This biennial report on Solid Waste in Vermont, submitted in accordance with Act 78 (10 V.S.A. 6604(b)), enacted in 1987, includes updates on the status of Universal Recycling (Act 148), Extended Producer Responsibility (EPR), Bottle Bill, Household Hazardous Waste, and other solid waste topics and programs. It includes details on the volume, amount and toxicity of Vermont’s solid waste stream. This submission also fulfills the reporting requirements in 2018 Act 208 §3 (organic hauling) and 2018 Act 209 §3 (bottle bill exemption for retailers).

**The Agency of Natural Resources (ANR) would like to recognize the Vermonters who work tirelessly to achieve the state’s waste reduction and recycling/composting goals. Every day they collect, haul, sort, recycle, compost, safely manage, and educate all of us on how to recycle and compost right and safely and sustainably manage our waste for the benefit and protection of Vermont’s people and environment.**

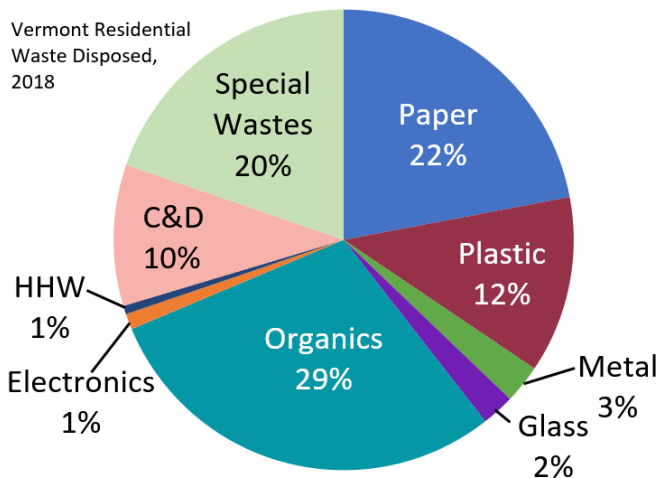
## A. Diversion & Disposal Goals and Vermont’s Materials Management Plan

Vermont law (10 V.S.A. § 6604), requires ANR to adopt a solid waste management plan and revise it every five years. The latest plan, adopted in 2014, was called “Vermont Materials Management Plan (MMP)” to shift away from “waste” towards a sustainable materials management vision that recognizes that materials we no longer need still have value.

The MMP’s 5-year goal is to reduce **Disposal** of municipal solid waste (MSW) in Vermont by 25% from 413,517 tons to approximately 306,772 tons by 2019, the end of the 5-year Plan term. Disposal is the total amount of materials Vermonters put into the trash and that are landfilled each year. ANR proposes to meet the 25% disposal reduction goal through implementation of the Universal Recycling law, and a variety of new and existing efforts to educate and offer services to Vermont citizens and organizations to reduce, recover, reuse, recycle, and compost certain materials. While good progress at decreasing disposal had been achieved by an 8.5% reduction from 2014-2016, it recently increased 11% in 2017.



**FIGURE 1: DISPOSAL & DIVERSION RATES - GOALS**



**FIGURE 2: VERMONT RESIDENTIAL WASTE DISPOSED, 2018 WASTE COMPOSITION STUDY**

The MMP sets a second goal to increase the statewide **Diversion** of all MSW (the amount of material recycled, reused, or composted divided by the amount disposed) from approximately 30-36% to approximately 50% with full implementation of the Universal Recycling law and the MMP by 2020. This goal was developed in part based on the 2013 Waste Composition study, which showed approximately 50% of materials currently being landfilled could be recycled, donated, or composted. The remaining 50% of the waste stream was addressed through a “Beyond Waste” stakeholder process, which determined that up to 66% of the waste stream could be diverted instead of being disposed if material-specific programs were implemented to capture materials such as packaging and print materials, textiles, carpets, and bulky items.

## Vermont's Materials Management Plan and Solid Waste Implementation Plans:

The MMP is an action-oriented document designed to guide reduction of the amount and toxicity of solid waste in Vermont, with performance standards and benchmarks for ANR and Solid Waste Management Entities (SWMEs) across five material streams: recyclables, organics, construction & demolition debris, household hazardous waste and biosolids.

State law requires that SWMEs manage solid waste within their jurisdiction in conformance with the MMP. Since adoption of the MMP in June of 2014, each SWME has submitted and received approval from ANR on their individual solid waste implementation plan (SWIP) and regularly submits annual SWIP Reports to the Agency ensuring their compliance with the minimum requirements of the MMP. Of the 29 SWMEs operating in Vermont, as of December 2018, 10 are chartered solid waste districts, 6 are groups or alliances of towns with formal partner agreements, and 13 are independent towns. **Appendix B** reflects the current map of the SWMEs operating in the state.

Along with the program achievements discussed throughout this report, the 2014 MMP and the resulting Solid Waste Implementation Plans (SWIP) have been very successful at increasing direct outreach to businesses and schools by SWMEs and ANR. Hundreds of visits and hours of technical assistance have been provided to help ensure recycling, composting, and safe disposal of landfill banned items. Additionally, multiple public education campaigns have increased awareness of state recycling and composting laws, and product stewardship and special recycling programs as part of fulfilling both MMP and SWIP implementation goals.

## B. Landfill Disposal Bans

Under Vermont state law, V.S.A. § 6621a(a), “No person shall knowingly dispose of the following materials in solid waste or in landfills”:

1. lead-acid batteries,
2. waste oil,
3. white goods (refrigerators, stoves, etc.),
4. tires,
5. paint,
6. batteries-nickel-cadmium, small sealed lead acid, non-consumer mercuric oxide
7. mercury added products,
8. banned electronic devices,
9. mandatory recyclables,
10. leaf/yard residuals, wood waste, and
11. food scraps after July 1, 2020.

Many of these materials are hazardous materials, whose disposal adds to the toxicity of the waste stream. Some non-hazardous materials are also banned because their diversion can reduce waste, and there are existing cost-effective and convenient options for recycling, collection, and safe end-of-life handling. Among these materials are tires, household appliances, mandated recyclables (aluminum and steel cans, glass bottles and jars, plastic bottles and containers PET and HDPE, cardboard and paper); and leaf, yard and clean wood debris. Food scraps will be added to this list effective July 1, 2020. Additional landfill ban options have been considered by stakeholders, including textiles, and construction & demolition waste, based on the 2015 recommendations of the [Beyond Waste Advisory Group](#).

As waste streams have evolved, DEC no longer prioritizes addressing chlorides in the waste stream, instead focusing on general reduction of toxicity in packaging through waste prevention and consumer education. The primary challenge of product packaging for Vermont today is lack of robust domestic markets, especially for recyclables like glass, mixed paper, and lower grade plastics, as well as the lack of recyclability of a diverse array of packaging, such as Styrofoam and multifilm containers and pouches. See Section II B, Recycling Markets, and Section III B, Future Extended Producer Responsibility Programs, for more information.

## II. UNIVERSAL RECYCLING

### A. Universal Recycling Law

In 2017 Vermonters composted more than any time in the last 10 years. The amount of organic material managed by solid waste facilities increased 9% from 2016 to 2017. In addition, according to several recent surveys—UVM’s [2018 VT Household Food Waste Behaviors Report](#) and the 2018 Waste Composition Study’s [Vermont Food Scrap Survey by Castleton Polling Institute](#)—~50-70% of Vermonters say they separate some of or all of their food waste by backyard composting or feeding animals. UVM’s Vermonter poll also found that 56.1% of respondents strongly agree or somewhat agree that food waste should be banned from disposal in the landfill.

If every Vermonter composted their food waste, it would be the same as taking over 7,000 vehicles off the road each year.

ANR has confirmed via outreach and compliance checks that 108 transfer stations in Vermont are offering food scraps collection, representing 100% compliance with this state requirement.

In 2017, recycling as measured by weight grew slightly and continues to remain stable, which is a positive trend, considering that packaging is now up to 20% lighter than in the past.

Food donation to the VT Foodbank continues to rise and has almost tripled from 2014 to 2017.

Even with this good recycling, food donation, and composting work, 11% more Vermont materials went to the trash in 2017 than in 2016. This reversed decreasing disposal trends seen in 2015 and 2016. Some solid waste managers believe that waste disposal tends to track closely with economic activity. Vermont’s economy has been relatively good in recent years, however state economists suggest that while the economy saw growth in 2017 it wasn’t much higher than in previous years.

Vermont’s most recent draft 2018 Waste Composition study shows a similar percentage of food waste in the waste stream compared with the 2013 study. This reinforces ANR’s support for maintaining the July 1, 2020 ban on food scraps in order to meet long-standing state diversion goals. Further, the premise behind the Universal Recycling law’s food scraps disposal ban is to provide assurance to those who are willing to invest, that food and food scrap material will be available for processing. In fact, several stakeholders have stated the law is part of their business plan and they depend on the ban remaining intact.

At a time when landfill disposal capacity in the Northeast is expected to shrink in the coming years it is imperative that we work on solutions to reduce, donate, reuse, recycle and compost as much material as possible, reducing our dependence on landfiling while also reducing greenhouse gas emissions.

### B. Recycling Markets

**Background:** Vermonters regularly recycle plastic bottles, jugs, and containers, metal cans, glass bottles and jars, and paper and cardboard as required by law. Most of this material is processed by two recycling material recovery facilities (MRFs) in Williston and Rutland; some is processed at smaller facilities in Pownal and Lyndonville or sent to recycling facilities out of state. Over the last year, recycled materials, especially mixed paper (newspaper, office paper, cereal boxes, paper mail, magazines, etc.) and glass have lost value due to over-supply and fewer end markets for these materials. As a result, recycling facilities around the northeast are charging nearly double the amount they were a year ago to accept recyclable materials. To insulate Vermont and other New England states from abrupt changes in global markets, we should work collaboratively to develop more local domestic markets for recyclable materials.

**Recycling, Mixed Paper & China:** Until recently, approximately one-third of U.S. recycling was sent to China, and China was importing about 50% of all U.S. recycled mixed paper (Source: National Public Radio and a July 2018 webinar by Waste Management, Inc.). The Chinese government has taken action to clean up the country's environment and in early 2018, China's National Sword initiative effectively banned the importation of many recyclable materials. This has resulted in a global over-supply of many recycled materials, which has reduced the value of these commodities.

Of the recyclables Vermonters produce, mixed paper is most impacted by China's policies. For example, in May 2018 it cost the Williston single-stream MRF \$57.21 per ton to recycle mixed paper, as opposed to being paid \$87.92 per ton in July 2017.

Not all of Vermont's recycled paper was being exported to China however. Both the Northwest Vermont Solid Waste District (NWSWD) and the Northeast Kingdom Waste Management District (NEKWMD) collect, sort, and bail their own recycled paper. NWSWD sends theirs to the West Rock Missisquoi paper mill in Sheldon Springs, Vermont to be made into food-grade box board like pasta and cereal boxes, while NEKWMD sends theirs to Green Fiber in Pennsylvania for use in cellulose insulation, and some towns in Rutland County send their paper to Canusa Hershman in St. Albans, Vermont.

**Recycled Glass:** Glass from the Rutland single-stream MRF was sent to Strategic Materials' Franklin, Massachusetts, glass processing facility where the material was sorted, cleaned and refined into feedstocks for products like fiber glass insulation and new glass bottles. In the spring of 2018, Strategic stopped accepting recycled glass after the closure of a nearby bottle manufacturing plant. As a result, the regional markets for recycled glass dropped sharply.

**What's Being Done:**

Mixed Paper: In the spring of 2018, the Legislature authorized the ANR Secretary to issue a waiver allowing mixed paper disposal waivers if insufficient recycling markets exist. This provision expires July 1, 2019. To date, no waivers have been requested.

Representatives from ANR, both single-stream MRFs, and the Agency of Commerce and Community Development met with Soundview Holdings Inc. (previously known as Putney Paper) to discuss expanding their Putney paper mill to process recycled mixed paper into paper towels, napkins, and bath tissue. Creating domestic markets for recycled materials will help sustain recycling and retain recycling jobs in the United States and Vermont.

Glass: ANR received a temporary request from Casella Waste Management to utilize recycled glass from the Rutland MRF in road base and construction projects at the NEWSVT landfill in Coventry. ANR granted the request for several months in 2018 and required Casella to submit short and long term plans for managing recycled glass.

Chittenden Solid Waste District has invested in glass processing equipment at their Williston MRF that can process glass to meet construction specifications. ANR has been working with VTrans, Chittenden Solid Waste District and local road crews to utilize processed glass aggregate (recycled glass) in road projects.

ANR has also met with representatives from Glavel—a Vermont based company that creates a foam glass aggregate from recycled glass for use in building and construction projects. Glavel representatives are proposing to build a foam glass aggregate manufacturing facility in St. Albans, Vermont. The facility will use glass powder as a feedstock, and there is the potential that some recycled glass from VT could eventually be used by this facility if it is able to be processed to their specifications.

For more on recycling markets and possible Extended Producer Responsibility (EPR) programs for paper and packaging see Section III B.

## C. Food Scraps Management

Under current law, solid waste haulers will be required to offer collection of food scraps to all customers starting July 1, 2020, the same date when food scraps would be banned from disposal in trash and in landfills. Act 208, passed in 2018, requires the Agency of Natural Resources to seek input from the Universal Recycling Stakeholder Group as to:

- (1) “[Hauler Food Scrap Collection Requirement] whether 10 V.S.A. § 6607a(g) should be amended so that commercial haulers are only required to offer collection of food residuals: (A) in municipalities, solid waste management districts, or other areas based on population, housing, or route density; or (B) based on other appropriate criteria specified by the Stakeholder Group, and;
- (2) [Food Scrap Processing Capacity] whether sufficient regional capacity to process food residuals is available to allow for the collection of food residuals by all commercial solid waste haulers beginning on July 1, 2020.”

Further, Act 208 directs the Agency to provide recommendations to items 1 and 2 in this Biennial Solid Waste Report.

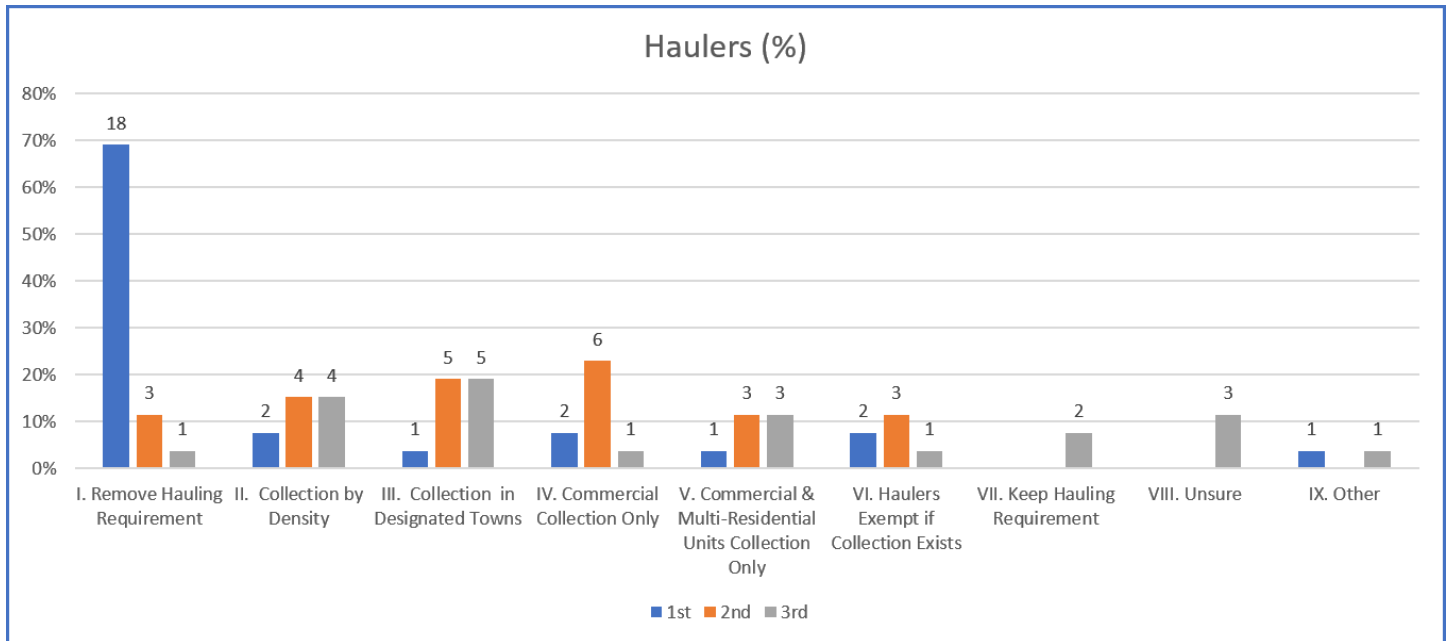
### 1. Hauler Food Scrap Collection Requirement

On July 13, 2018, ANR circulated an electronic survey about the solid waste hauler food scrap collection requirement to 373 stakeholders including 277 solid waste haulers and 96 Universal Recycling stakeholders including 29 solid waste districts, alliances, and independent towns; and a few nonprofits and businesses. The survey asked respondents to rank their top three (3) choices out of nine (9) options regarding possible changes to the hauler food scrap collection requirement. See **Appendix C** to view the survey.

**Survey Results:** Of the 373 survey recipients, 42 responses were received, from 26 haulers (out of 277 total haulers), 13 solid waste management entities (SWMEs) (out of 29 total SWMEs), and three others including two businesses and one non-profit. Survey results are shown in the tables below.

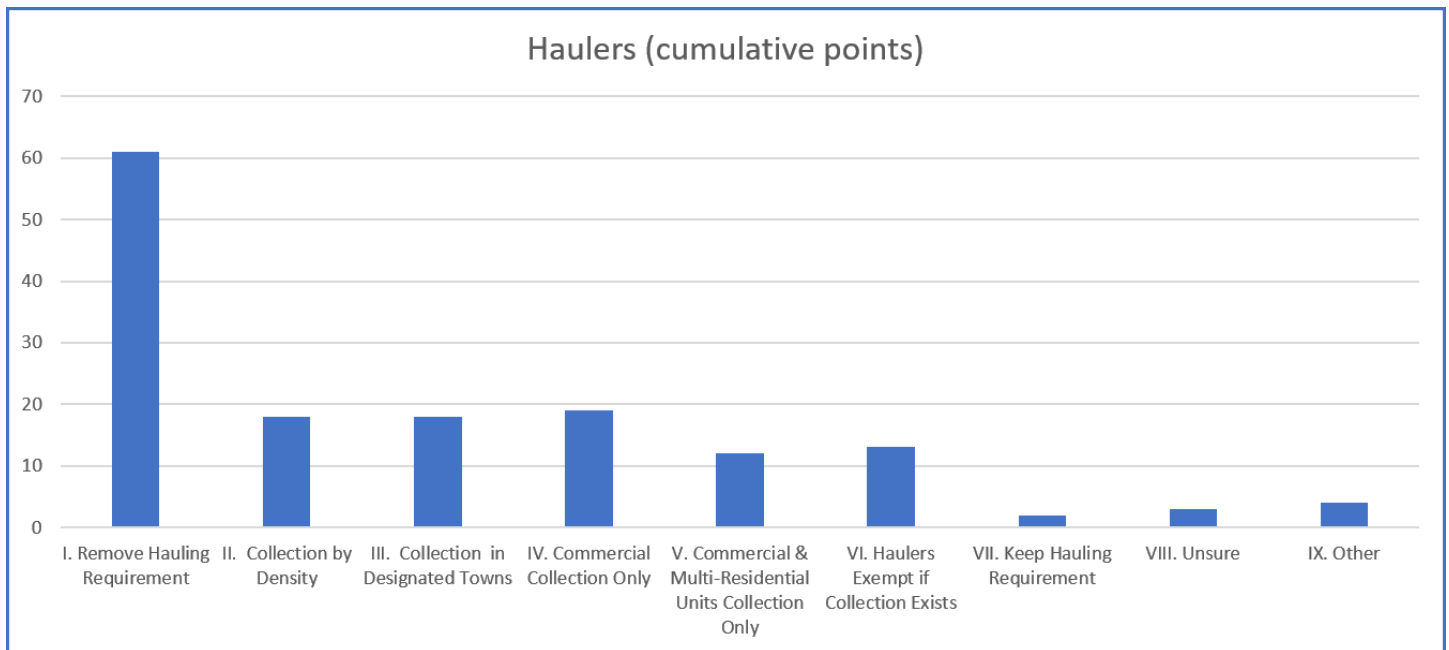
Points were assigned to determine a weighted total and weighted average for each respondent type.





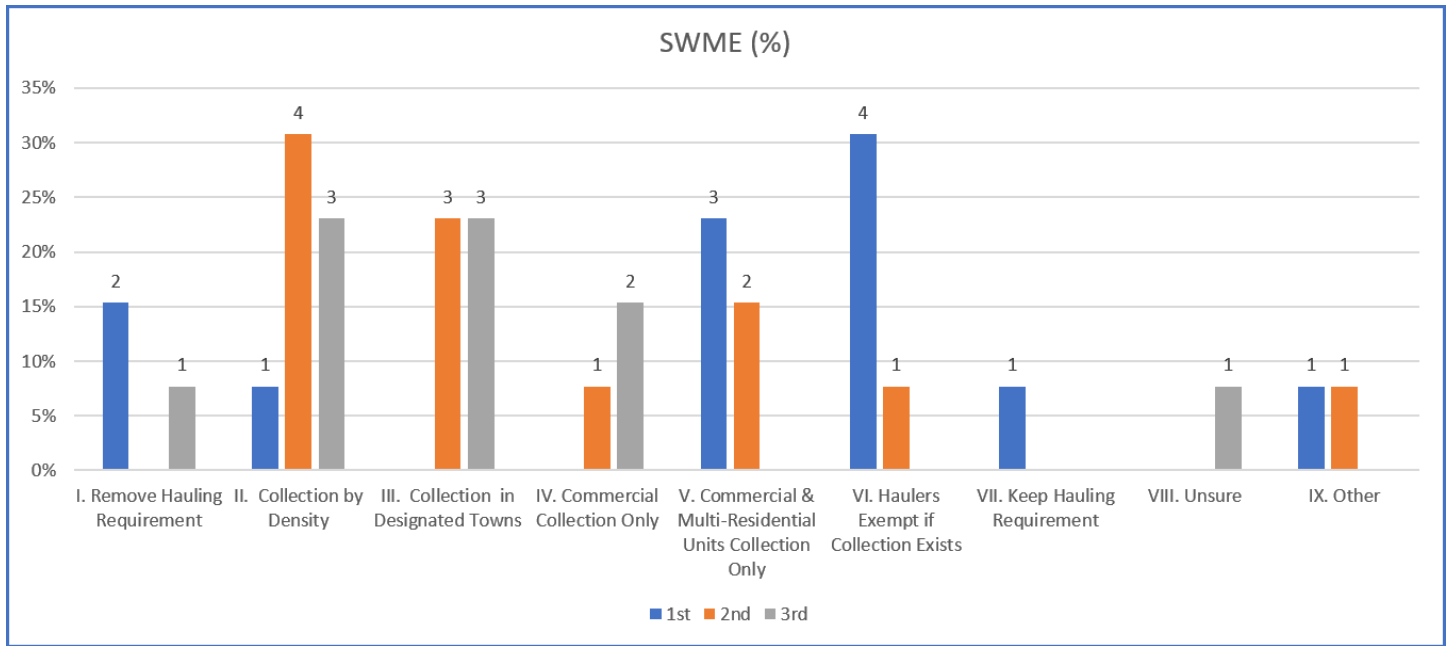
**FIGURE 3: HAULER RESPONSES BY PERCENTAGE**

Figure 3 shows the percentage of solid waste haulers (haulers) that gave a first, second, or third choice for the nine options available. Nearly 70% of haulers that responded to the survey chose Option I as their first choice, which would remove the food scrap collection requirement. Second and third choice options were more evenly spread across the other options.



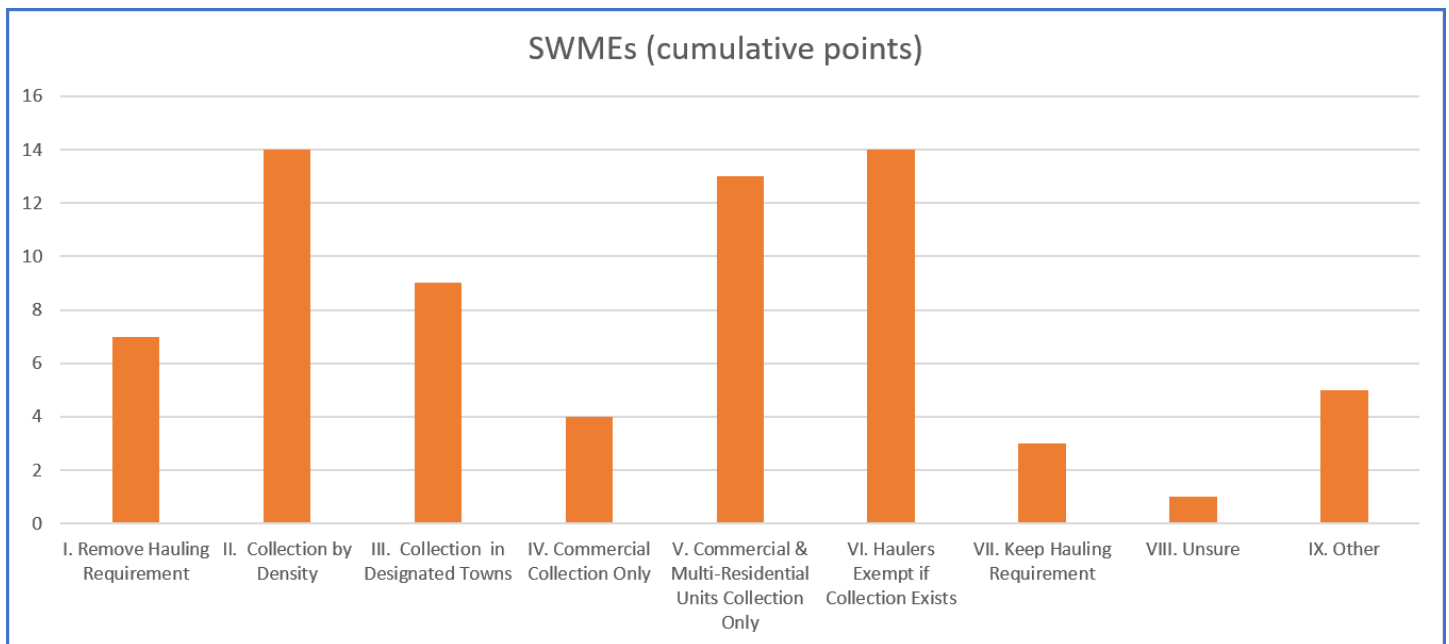
**FIGURE 4: HAULER RESPONSES BY CUMULATIVE POINTS**

Figure 4 applies weighted points to each choice, meaning a first choice was given 3 points, a second choice was given 2 points, and a third choice was given 1 point. Then the cumulative points were added together for each option. Viewing the data in this way shows that haulers that responded to the survey still strongly favor Option I, removal of the hauling requirement, followed by a fairly even distribution of responses for options II-IV, which limited the hauling requirement in various ways.



**FIGURE 5: SWME RESPONSE BY PERCENTAGE**

Figure 5 shows the percentage of solid waste management entities (SWMEs) that gave a first, second, or third choice for the nine options available. SWME responses were more evenly distributed among options, however Option VI was a leading first choice pick, that would exempt haulers from offering food scrap collection if other haulers were providing the service. This choice was followed closely by Option V, that would only require food scrap collection be offered to commercial and multi-residential customers. Second choice votes favored limiting the food scrap collection requirement to dense areas (Option II) or to designated towns (Option III).



**FIGURE 6: SWME RESPONSES BY CUMULATIVE POINTS**

Figure 6 applies weighted points to each choice, meaning a first choice was given 3 points, a second choice was given 2 points, and a third choice was given 1 point. Then the cumulative points were added together for each option. Viewing the data in this way shows that SWMEs that responded to the survey gave a diversity of responses, with top points for collection required in dense areas (Option II), haulers being exempt if other haulers are offering the service (Option VI), and haulers being required to only offer services to commercial and multi-residential customers (Option V).

**ANR Recommendations for the Hauler Food Scrap Collection Requirement:** Most haulers that responded to the survey wish to remove the hauling requirement. SWME’s top three highest ranked responses were:

- a. Collection services in dense areas,
- b. Collection services only to commercial and multi-residential unit customers, and
- c. Haulers be exempt if collection already exists.

Based in part on these results, the Agency recommends the Legislature amend the Universal Recycling law—but maintain the hauler requirement by only requiring haulers to offer collection of food scraps to their commercial customers and multi-residential (4 or more units) customers, unless they can demonstrate another hauler is providing such collection services in that area.

This amendment would:

- a. Exempt all haulers from collecting food scraps from single family residents and multi-residential units of less than 4 units.
- b. Allow the market to work by exempting haulers from offering collection of food scraps from commercial customers (such as businesses) or multi-residential (4 or more units) when they can show that another hauler is collecting in that area. This provides a business opportunity for those haulers that want to pick up food scraps.
- c. Simplify the existing hauler exemption process for food scrap collection which currently requires an amendment by a SWME to their Solid Waste Implementation Plan (SWIP)
- d. Allow haulers to subcontract collection services (as allowed under current law).
- e. Assure food scrap collection services will be provided to businesses and larger multi-residential units that produce the most food waste and who would have the most difficulty composting onsite or self-hauling to nearby drop-off locations.

State statute [10 V.S.A. § 6604 (a)(1)(A) and (D)] requires that the State’s solid waste management plan promote the greatest feasible reduction in the amount of waste generated and the reduction of the State’s reliance on waste disposal to the greatest extent feasible. To achieve this, ANR supports maintaining the July 1, 2020 ban on food scraps in order to meet long-standing state diversion goals.

**ANR Justifications for Recommending Legislative Changes to the Hauler Requirement:**

- A. Residential Options and Hauler Costs:** In addition to stakeholder input that suggested modifications to the hauler food scrap collection requirement, the Agency acknowledges and supports residents in having options for managing food scraps and other organic materials like leaf and yard debris. Unlike recyclables, many Vermonters can, and want to, manage food scraps and leaf and yard debris at home because it saves them money and makes compost for their gardens or is used to feed their animals. The Agency supports an array of residential food scrap “recycling” options including home composting, food scrap drop-off, and curbside food scrap collection. However, having backyard options means that fewer Vermonters may select curbside services. Some haulers have said they don’t want to have to offer this service especially in rural residential areas because it may come at a higher cost. As mentioned earlier, two recent Vermonter surveys (UVM’s 2018 Vermonter poll and Castleton Polling Institute’s 2018 home composting survey conducted for VT DEC) found home composting is common in approximately 50% of Vermont households. It is therefore difficult to both advocate for residents to have available and affordable curbside food scrap collection services and to require haulers to provide services before they really see the demand. The Agency’s recommendation strikes a balance, providing flexibility for haulers while still ensuring that businesses and residents that will have the most difficulty home composting, have services.
- B. Why Require Services to Residences of 4 units or More:** The Agency is proposing that haulers only be required to offer food scrap collection services to commercial customers and residents above 4 units or more for three general reasons;
  - residences of 4 units or more are often considered commercial accounts by haulers and together would produce enough food scraps per week to justify collecting from them similar to a small café or restaurant;

- it is common in municipal waste contracts to exclude residential units above 4 or 5 units such as in the town of Brattleboro, where curbside services are not provided to units above 5 or more; and
- in general, the denser areas of Vermont have more apartments and condos of 4 units or more, making them more efficient to be collected as part of a commercial or even residential collection route.

## 2. Regional Food Scrap Processing Capacity Analysis

**Background:** The Universal Recycling law, Act 148 of 2012, phases in a disposal ban on food scraps beginning July 1, 2020. Since the passage of this law ANR, SWMEs, and other stakeholders have been working to support development of food scrap processing infrastructure. Act 208 (2018) requires the Agency of Natural Resources seek input from the Universal Recycling Stakeholder Group on the regional capacity for processing food scraps. The goal is to assess the degree to which it will be reasonable for all solid waste haulers that collect trash to offer collection of food scraps from their customers beginning on July 1, 2020.

Estimating the projected need for food scrap processing in 2020 as well as the potential capacity is difficult. For example, food scraps fed to animals are not required to be reported to ANR. Current capacities and expected needs vary by facility and region, so ANR, with input from the stakeholder group, has used the best available data to evaluate the regional processing capacity for food scraps.

**ANR's Recommendation and Results for Regional Capacity for Processing Food Scraps:** Based upon ANR's data and surveys of composters and anaerobic digester operators, the results from the 2018 Waste Composition Study, and results from ANR DEC's Organics Infrastructure Grants, the Agency estimates that Vermont will have enough capacity to process food scraps in 2020.

- In 2017 Vermonters diverted over 15,000 tons of food scraps to processing facilities (composting and anaerobic digesters) and residents diverted an estimated 27,000 tons at home. See **Appendix D** for a map of Organics Capacity Regions and Facilities.
- The 2018 Waste Composition Study estimates that 19.4% of trash is food scraps, which amounts to approximately 77,299 tons per year using an average of waste disposed between 2014-2017. According to the study, approximately 38% of this is packaged food.
- It is assumed that 60% of disposed food scraps currently in the trash will be available (similar to recovery rates for other materials) resulting in an estimated 46,000 tons per year of additional food scraps processing capacity that will be needed in 2020. **See Figure 7 below.**
- To address food scrap disposal, diverse options are needed, such as composting, depackaging, anaerobic digestion, and transport to facilities with sufficient capacity. While not every region may have a facility capable of processing all their food scraps, this is less important when the region is served by hauling and larger capacity facilities.
- ANR is in the process of issuing grants that would assist with the construction of up to 46,000 tons per year of additional food scrap processing capacity. Therefore, there should be sufficient food scrap processing capacity by 2020 and the focus should be on ensuring transportation options exist to move this material to available processing facilities.

2018 Waste Composition Study, Estimate of Food Scraps in Trash

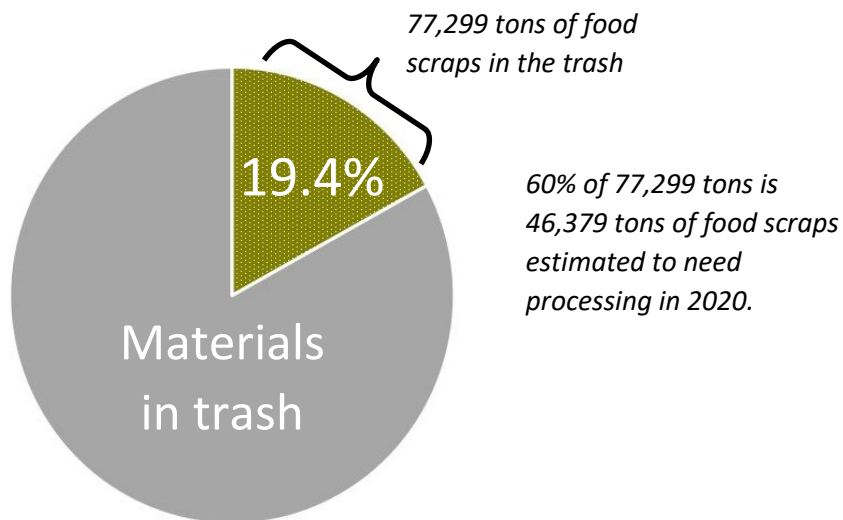


FIGURE 7: 2018 WASTE COMP. STUDY, ESTIMATE OF FOOD SCRAPS IN TRASH

**ANR Justifications for Food Scrap Processing Capacity Assessment:**

Currently trash moves daily from as far away as Manchester and Springfield to the NEWSVT landfill in Coventry. Similarly, recyclables travel from Brattleboro to the recycling Materials Recovery Facility in Rutland or from Newport and St. Johnsbury to the recycling Materials Recovery Facility in Williston. Trash and recyclables move far distances both in and out of state before they reach their final disposal or processing site. Thus, the capacity of a region to process food scraps is proving less and less important to the viability of haulers to provide that service as many trash and recycling haulers are already moving materials between regions. Further, ANR’s recommendation removes the hauler requirement to offer food scraps collection if other haulers are currently offering services within that area.

Vermonters are currently separating an estimated 40% of residential food scraps from trash and mostly through home composting. While these findings are generally positive, the new Waste Composition study found that a similar percentage of food scraps appear in the waste stream as compared with the 2013 study. This may be attributed to a few of the following factors:

1. As discarded packaging has been light-weighted, heavier food waste represents a growing percent of waste;
2. As Vermonters have gotten better at recycling, less heavy recyclable paper is in the waste stream, again increasing the percent of food waste; and,
3. Possibly to a lesser extent, the new study sorted food waste into both packaged food and unpackaged food, which could have a little impact on the increase in food waste. Also, the authors increasingly suspect that the higher consumption of local food in Vermont could produce slightly more food waste rather than it being generated at a frozen food plants out of state.

It is clearer now that packaged food makes up a significant portion of food scraps in the waste stream (approximately 38% of food scraps are packaged according to the study). To build the capacity to process food scraps will require food depackaging equipment. States like Massachusetts have provided multiple grants to incentivize infrastructure for their organics law. Depackaging equipment is expensive, typically over \$200,000 for large volume units, and is unlikely to be sited in multiple regions of Vermont. Recently a hauler from Maine that has depackaging equipment has announced that they will be hauling packaged foods from Vermont grocery stores, and another in-state composting site is considering depackaging equipment.

**ANR’s Organics Infrastructure Grant Results:** Additionally, ANR now has preliminary results from its September 5, 2018 request for proposals (RFP) for up to \$975,000 in grants to solid waste districts and municipalities for food scrap processing projects like expanded composting, anaerobic digestion or organics transfer station facilities. The Agency has selected 5 of the top proposals for grants totaling \$975,000. The 5 proposals in total represent an estimated 47,175 tons per year of food scrap processing capacity.

**Factors that could influence food scrap processing capacity in 2020:**

1. **New/expanded processing capacity could be significant.** Several anaerobic digester (AD) projects and facilities both in and out of state were not part of this analysis. However anaerobic digestion of food scraps will require

pre-processing that does not currently exist in Vermont. Two proposals from ANR's recently released RFP show potential for this pre-processing.

2. **Food waste reduction, food donation, and feeding animals can reduce processing needs.**
  - a. **Waste reduction** is practiced by many Vermont businesses, as it saves money, meets customer expectations, and is part of the mission of many businesses and organizations.
  - b. **Food donation** has almost tripled from 2014 to 2017 according to the VT Foodbank.
  - c. **Feeding animals** is difficult to quantify and not well tracked.
3. **Home composting and community composting may be underestimated.** UVM's 2018 Vermonter poll recently found that 72% of respondents reported that they compost food scraps or feed pets or animals. The 2018 Waste Composition Study concluded that 40% of residential food scraps are being separated by Vermonters for home composting, food scrap drop-off, curbside collection, or to feed animals.
4. **Small farm composting is underestimated and has increased in recent years.**
5. **60% diversion is optimistic.** The 2013 Systems Analysis estimated that by 2020, 60% of previously disposed food scraps would need processing, however study authors acknowledge this is "an extremely aggressive diversion rate and that despite the ban, significant quantities of food residuals and other organics will still be going to the landfill" (p. 60, footnote 71).
6. **Chicken farmers/composters are uncertain about the future** after the Vermont Agency of Agriculture made it clear that feeding unprocessed food scraps to chickens is not an agricultural practice. This changed previous understandings of this practice and puts these composting operations in ANR Department of Environmental Conservation's (DEC's) jurisdiction, which requires these farms to obtain DEC compost registration or certifications. ANR DEC is working with farms to set a course for registrations or certifications to be obtained from the Agency.
7. **More demand for compost products and available wood chips could motivate composters to process more material.** When ANR surveyed composters about their capacity, some said increasing markets for finished compost would directly impact their decision to accept and process more food scraps.
8. **Incentivizing Hauling and Capacity:** To encourage processing capacity and collection services, Vermonters should purchase local compost for their farms, gardens, athletic fields, and soil construction projects. Solid Waste Management Entities (SWMEs) and ANR can continue to support and promote food scrap haulers and processors. ANR will continue to offer free technical assistance services for composters looking to expand, will support the annual Vermont Organics Recycling Summit, and the Agency will continue to work with SWMEs on direct business outreach and compliance to ensure the law is being followed, which creates demand for these services.

### III. EXTENDED PRODUCER RESPONSIBILITY, HOUSEHOLD HAZARDOUS WASTE, AND BOTTLE BILL

#### A. Existing Extended Producer Responsibility Programs

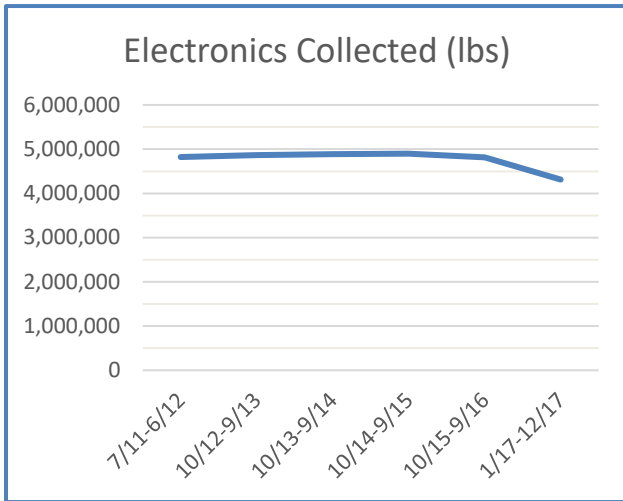
Vermont’s Extended Producer Responsibility (EPR) laws share the cost of recycling and safe materials management between manufacturers and consumers, alleviating financial burdens on municipalities and mitigating environmental impacts from disposal by increasing collection and recycling rates of covered products. Vermont’s EPR programs are effective at collecting these targeted materials largely due to the convenient collection locations throughout the state, efforts by SWMEs and private facilities, and outreach to consumers.

#### Performance of Existing Extended Producer Responsibility Programs

PRODUCT	AMOUNT COLLECTED IN PROGRAM YEAR 2017	CONVENIENCE	IMPACTS
<b>Electronics</b>	4,312,381 lbs of electronics (6.89 lbs per capita)	Over 100 collection sites across the state	<ul style="list-style-type: none"> <li>• Highest per capita collection rate nationally</li> <li>• Lbs declining due to fewer CRTs</li> </ul>
<b>Mercury Lamps (Bulbs)</b>	202,926 lamps	Over 150 collection sites across the state	<ul style="list-style-type: none"> <li>• Highest recovery and per capita collection rates nationally</li> </ul>
<b>Mercury Thermostats</b>	2,468 thermostats	Over 160 collection sites across the state	<ul style="list-style-type: none"> <li>• Highest per capita collection rate nationally</li> <li>• 166.6 lbs of mercury collected since start of program in 2010</li> </ul>
<b>Mercury Auto Switches</b>	244 switches	70 participating collection sites	<ul style="list-style-type: none"> <li>• 5,606 switches and 12.34 lbs of mercury collected since start of program in 2007</li> </ul>
<b>Primary Batteries</b>	133,619 lbs of batteries	98% population within 10 miles of a collection site	<ul style="list-style-type: none"> <li>• Collection of primary batteries has increased by 2,300% since program started</li> <li>• Collection of rechargeable batteries has increased by 43% since program started</li> </ul>
<b>Paint</b>	96,109 gallons of paint (July 2016 - June 2017)	99.5% population within 15 miles of a collection site	<ul style="list-style-type: none"> <li>• Highest recovery rate of all state programs</li> <li>• Collection has increased by an average of 78% since the program started</li> </ul>

TABLE 1: PERFORMANCE OF EXISTING EXTENDED PRODUCER RESPONSIBILITY PROGRAMS

## 1. Electronics



**FIGURE 8: ELECTRONICS COLLECTED**

Electronic waste (E-waste) is a growing and problematic waste stream that can contain toxic materials (such as lead, mercury, and chromium) as well as valuable materials such as precious metals, steel, aluminum, and recyclable plastics.

Since its inception in 2011, the Vermont E-Cycles program has had the highest per capita electronics collection rate of any state program and has collected more than 30 million pounds of electronics since the program began.

In the current program year, 90 registered manufacturers of computers, monitors, TVs, and printers pay 100% of program costs, allowing Vermont residents, small businesses, charities, and school districts to recycle these items along with computer peripherals at no cost.

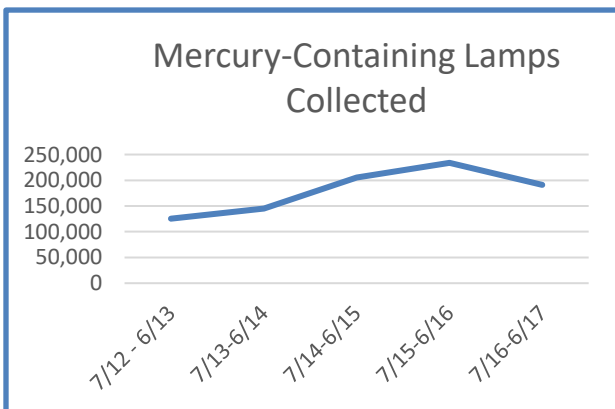
For the first time since the start of the E-Cycles program, 2017 collection weights fell slightly, by 11.6%, which is likely attributable to electronic devices becoming smaller and lighter, especially the decrease in heavy cathode ray tubes (CRTs) from older televisions and computer monitors in favor of flat screens. In earlier years, CRTs represented 65-75% of the total weight of e-waste collected; and currently, CRT televisions represent only about 40% of the materials collected.

Collected electronic devices are disassembled into component materials, chiefly metals and plastics, and recycled through appropriate recycling markets. CRT glass, which contains lead, is ground and used in lead smelters, or treated and then exported for making ceramic tiles.

## 2. Mercury-Containing Lamps (Bulbs), Thermostats & Auto Switches

Mercury is a highly toxic heavy metal that is released into the environment when mercury-containing lamps, thermostats, auto switches, and other devices are broken or discarded. Even a small amount of mercury can damage lakes and streams poisoning fish and wildlife and exposing humans to its damaging effects. Vermont’s Mercury Education and Reduction Campaign (MERC) has undertaken a number of efforts to remove mercury from the solid waste stream.

### Mercury-Containing Lamps (Bulbs)



**FIGURE 9: MERCURY-CONTAINING LAMPS COLLECTED**

Vermont’s mercury-containing lamp recycling program, run by the National Electrical Manufacturers Association (NEMA) since 2012, offers collection and recycling of fluorescent (linear and compact fluorescent) and high intensity discharge (HID) (mercury vapor, metal halide, and high-pressure sodium) lamps at retailers and through solid waste districts and alliances throughout Vermont.

While the number of collected mercury-containing lamps (bulbs) fell slightly in 2016-2017, ANR anticipates collection will remain steady or may even rise as LED bulbs continue to replace large numbers of mercury-containing bulbs currently in use.



Mercury-Containing Thermostats

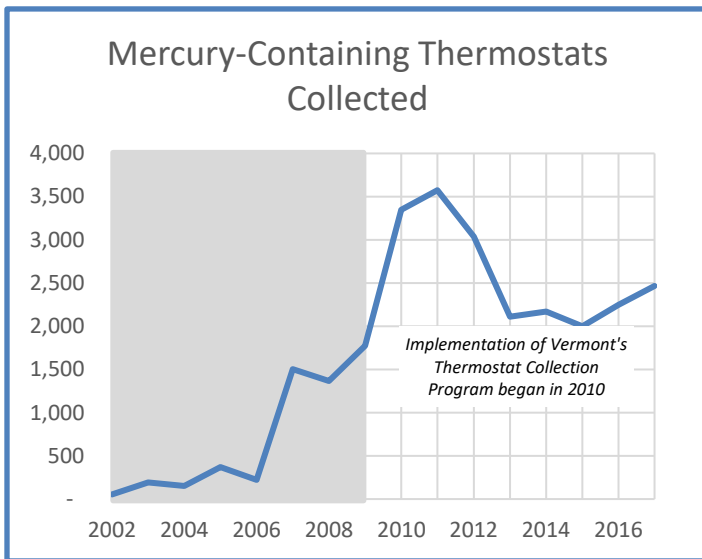


FIGURE 10: MERCURY-CONTAINING THERMOSTATS COLLECTED

Vermont’s mercury-containing thermostat recycling program, run by product stewardship organization Thermostat Recycling Corporation (TRC) since 2010, offers collection and recycling of thermostats with a \$5 rebate for each thermostat collected.

Although Vermont has the highest per capita collection of mercury-containing thermostats of any state, collection numbers dropped in years with less education and outreach to the public, retailers, and wholesalers. While sales of mercury-containing thermostats have been banned in Vermont since 2006, many remain in Vermont’s older housing stock, and ANR anticipates that, with more consistent outreach efforts, mercury-containing thermostat collection and recycling will continue to hold steady.

Mercury Auto Switches

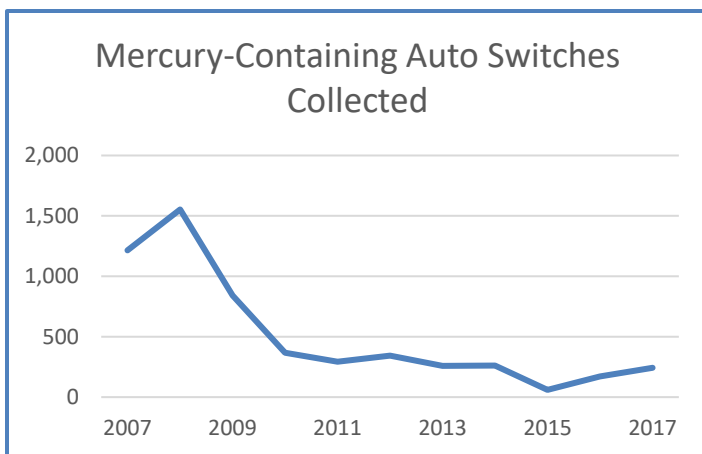


FIGURE 11: MERCURY-CONTAINING AUTO SWITCHES COLLECTED

Vermont’s mercury-containing auto switch recycling program requires motor vehicle recyclers to remove mercury-containing auto switches prior to crushing/shredding. Auto recyclers can send these switches, at no cost, to a national program for proper management. Mercury-containing auto switches were fully phased-out of vehicles after 2003, and collection rates are declining, however, there are still vehicles with auto switches that have not yet reached end-of-life. As a result, the National Vehicle Mercury Switch Recovery Program and the corresponding Vermont legislation implementing collection of mercury-containing auto switches have been extended from their original sunset date to a new sunset date of December 31, 2021. See 2018 Act 168 §§ 15-17.

After collection, mercury-containing lamps (bulbs), thermostats, and auto switches are managed so that all mercury is safely captured before the remaining product components are recycled.

### 3. Primary Batteries

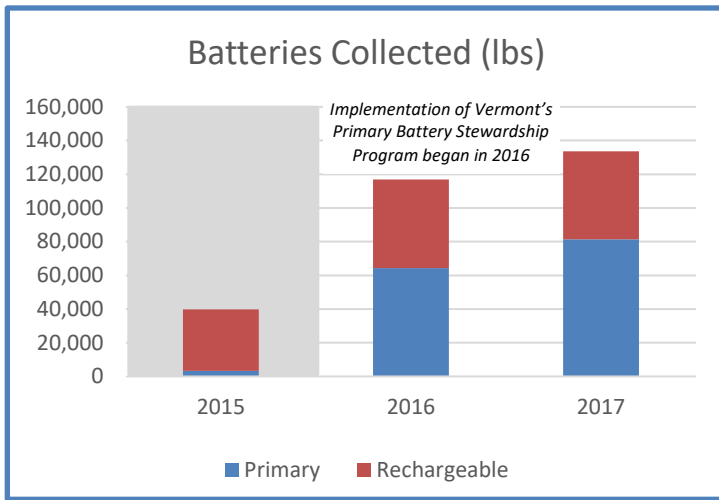


FIGURE 12: BATTERIES COLLECTED

Vermont’s successful and growing Primary Battery Stewardship program, run by Call2Recycle since 2016, offers collection and recycling of non-rechargeable batteries weighing two kilograms or less, including alkaline, carbon-zinc, and lithium metal batteries.

Call2Recycle’s [2017 annual report](#) on Vermont’s program provides further details. Their work with solid waste management entities to make collection sites widely available has significantly increased drop-off collection and recycling of both primary and rechargeable batteries. Collected batteries contain valuable materials, including stainless steel, iron, zinc, nickel, and lithium, which are recovered and recycled into new products.

In January 2019 ANR will submit a progress report to the Legislature [The Report on Battery Stewardship] evaluating implementation of the battery stewardship program and considering whether to add batteries within products to the stewardship program based on sort data (Call2Recycle is required to conduct periodic sorting of batteries collected). It will also discuss possible safety concerns related to increased use of lithium batteries, and what batteries in addition to lead acid batteries might be added to the list of items banned from disposal in Vermont.

### 4. Paint

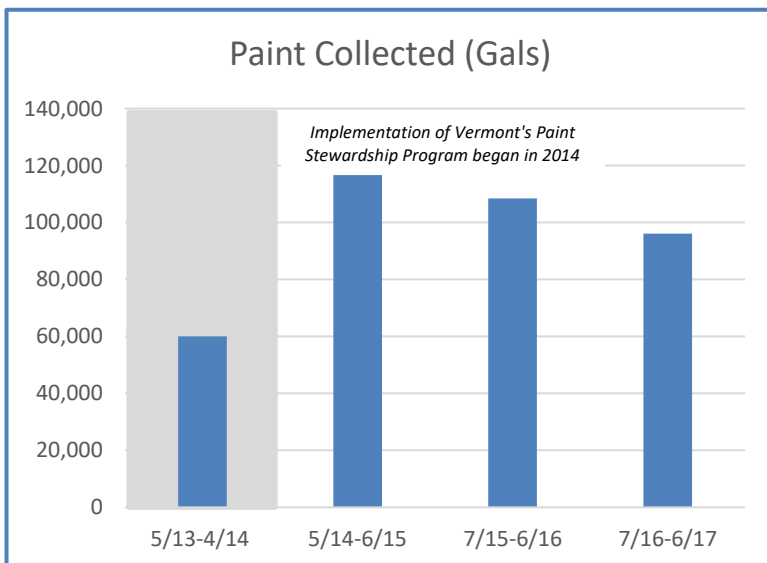


FIGURE 13: PAINT COLLECTED

Vermont’s Paint Stewardship program, run by the product stewardship organization PaintCare since 2014, offers collection and recycling of interior and exterior latex and oil-based paint.

Paint collection has increased by an average of 78% since the start of the stewardship program, with 99% of the oil-based paint collected being used for fuel and 1% for reuse, while 77% of the latex paint was re-blended into new paint. PaintCare estimates 10% of paint sold is leftover. A current 9.7% recovery rate (96,109 gallons collected of 995,193 gallons sold) is significantly higher than anticipated and higher than any other state paint stewardship program. For further detail, click on this link to [PaintCare’s annual reports about Vermont](#).

## B. Future Extended Producer Responsibility Programs

**Packaging and Printed Materials:** With the implementation of the Universal Recycling law (Act 148 of 2012) and EPR programs, Vermonters are recycling and composting more materials by weight today than ever before, resulting in diversion of over 216,033 tons in 2017. That said, there remains a vast amount—more than 150,000 tons per year—of recyclable and non-recyclable packaging and paper-based products that are being disposed. In addition, recycling markets have fallen significantly, forcing both municipal and private recycling managers and haulers to shoulder more costs and increase staff time and equipment to sort recyclables and deal with the high costs of finding recycling markets for mixed paper and glass. Ultimately, these are costs that are passed on to consumers who are now paying more for recycling.

To significantly decrease the amount of materials that are disposed and increase the amount recycled, more must be done to target packaging and printed materials. The Agency is examining how other states, counties, and countries are addressing this portion of the waste stream. Two Canadian provinces and several European countries require EPR programs for packaging and printed materials (paper-based products), where manufacturers of these materials are financially responsible for a program to sustainably manage these materials. Such programs can improve recycling markets by incentivizing packaging and print manufacturers to reduce packaging and use materials that are recyclable. These programs also improve the recovery rate for recycled materials, allow more types of materials to be collected and recycled, and shift the recycling cost burden from consumers and municipalities at end-of-life to manufacturers and consumers at the time of sale.

Other materials that may be considered for potential EPR programs are discussed later in this report, in the Beyond Waste section.

## C. Household Hazardous Waste

Vermont statute requires the DEC Solid Waste Program to address the volume and toxicity of the municipal waste stream, including management of Household Hazardous Waste (HHW)—such as bleach and ammonia, drain cleaners, pesticides/herbicides, and flammables like lighter fluid. Since the early 1990s, Solid Waste Management Entities (SWMEs) in Vermont have been required to include provisions in their Solid Waste Implementation Plans (SWIPs) for the management of HHW. To assist SWMEs with the expense of HHW collection and management, DEC has issued between \$400,000 - \$600,000 in annual “SWIP” grants since 2007. Even with this grant funding, the cost of collecting and managing HHW is expensive and requires significant financial resources from SWMEs. A survey conducted for the HHW Stakeholder Group in 2018 estimated an annual statewide cost of \$1.6 million for operating HHW collection events and facilities.

Households and conditionally exempt generators (CEG) generally have two options for disposing of hazardous waste: (1) fixed, full-time facilities located in several locations throughout the state and (2) numerous, half-day, collection events hosted by SWMEs throughout the year. In recent years the total amount of HHW and CEG Hazardous Waste collected by SWMEs has overall increased, as have participation rates. In 2017, 865 tons of HHW /CEG waste was collected, a slight decline from 2016. The rise of HHW collection beginning in 2014 is likely due, at least in part to increased access to and participation in HHW events and facilities, and increased consumer awareness resulting in part from the 2014 inception of the PaintCare program.

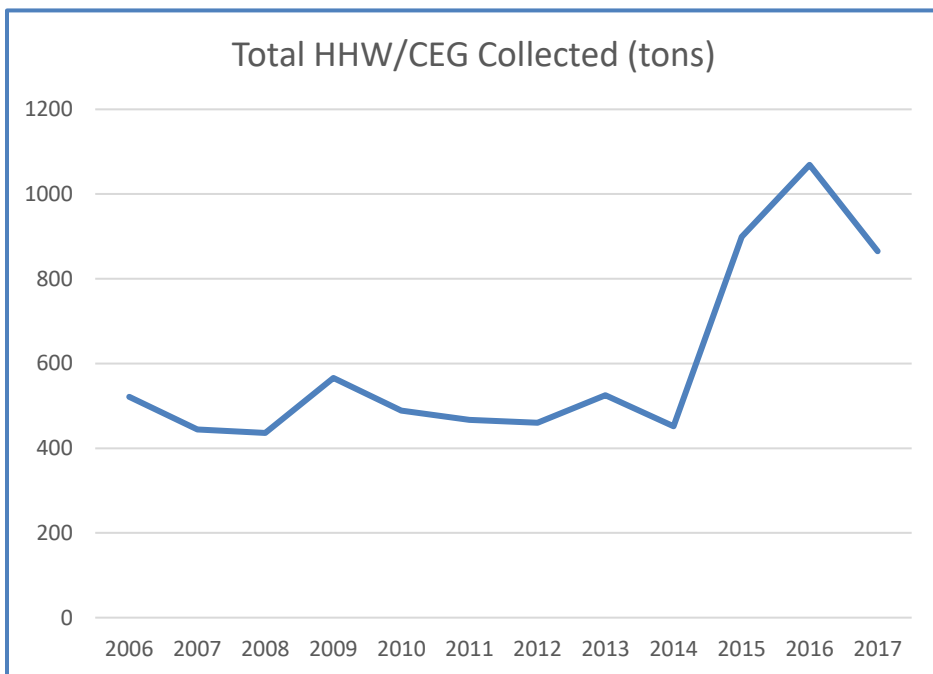


FIGURE 14: TOTAL HHW/CEG COLLECTED

In the summer and fall of 2017, ANR organized a stakeholder group comprised of solid waste districts, towns and alliances, haulers, trade associations, state representatives, hazardous waste contractors and environmental non-profits to discuss the current state HHW and best ways to manage it in VT.

The group recommended a shared network of regional HHW facilities distributed throughout the state with possible rural collection events as the best option to consider and explore further. There was no consensus on the best option for funding this model, but various suggestions were discussed and are listed in the [HHW Stakeholder Group Summary](#).

During the 2018 Legislative session, an Extended Producer Responsibility (EPR) bill for HHW—**H560**—was introduced by the VT Product Stewardship Council and sponsored by Representative David Deen. The bill, which passed the House but not the Senate, would have required manufacturers of HHW products to participate in a stewardship organization responsible for the collection and end-of-life management of their products. The bill proposed a similar EPR model as the Primary Battery law adopted in 2014. More research needs to be done to understand how many manufacturers would be covered by an EPR program for HHW; how many products would be covered; and the implementation costs of such a program. ANR will continue to evaluate an EPR model for managing HHW and other possible strategies to promote and fund an efficient HHW collection system.

## D. Bottle Bill

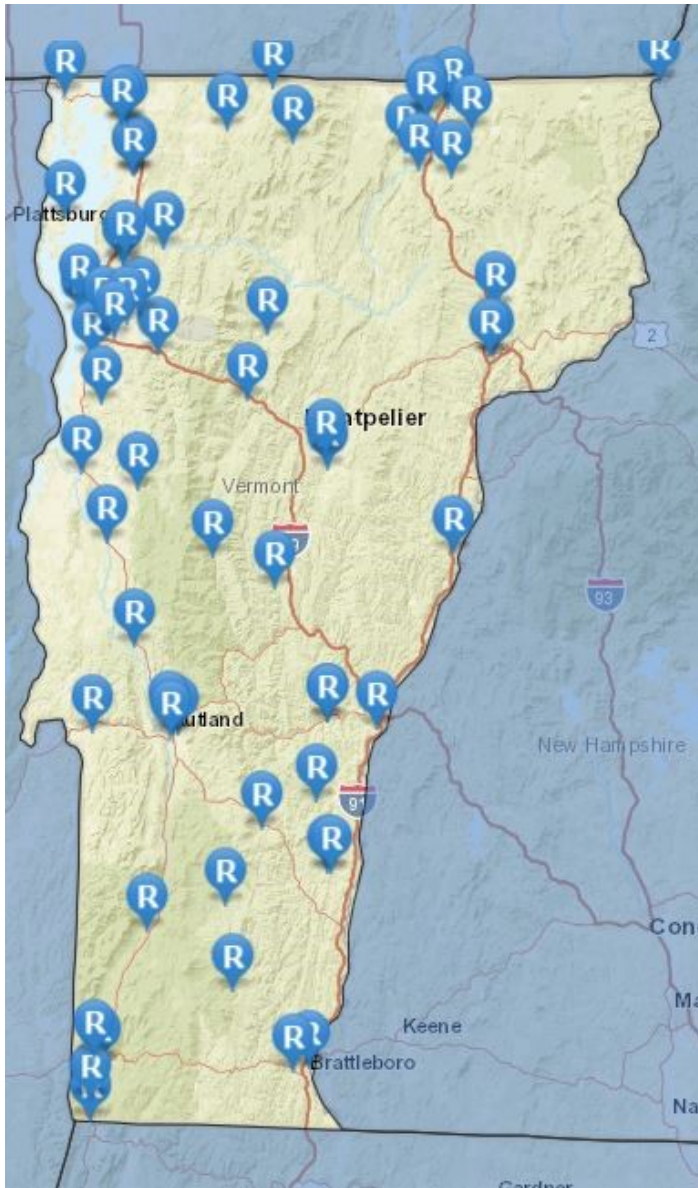


FIGURE 15: MAP OF CERTIFIED REDEMPTION CENTERS

Over the past few years, ANR has been making efforts to modernize and update the 40-year-old beverage redemption “Bottle Bill” program. With input from stakeholders, an online brand registration system was developed. Beginning in July 2018, all manufacturers must register brands via that system, which allows easy updates to a manufacturer’s registration and streamlines administration. Updates to the list of certified redemption centers have been made and a public-facing map has been developed, which will allow customers and retailers to easily find their closest redemption options.

### Exemption Guidance

Vermont’s bottle bill requires retailers to redeem beverage containers unless redemption centers “serve the public need.” [10 V.S.A. § 1523(b)]. In section 4 of 2018 Act 209, the Legislature struck ANR’s requirement that a retailer must show that a redemption center is located within 5 miles in order to obtain an exemption from the collection mandate. The Legislature further directed ANR to recommend changes to its rule.

After receiving comments on drafted exemption criteria from interested parties, including retailers, redemption centers, members of the public (public interest groups), manufacturers/distributors, ANR recommends that an exemption from redeeming containers may be granted if there is an alternative redemption location within 10 road miles of the retailer or demonstrably within the current shopping patterns of community members. Program considerations include the type and capacity of alternate redemption location as well as the volume of sales of the retailer requesting exemption and their proximity to larger volume retailers. See **Appendix E** for recommended criteria.

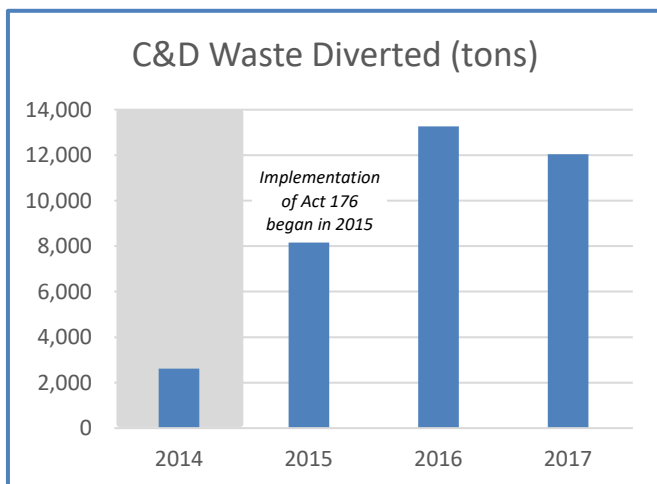
ANR has received and granted two exemption requests since this statute became effective in July 2018.

## IV. Beyond Waste Materials

### A. Construction & Demolition

Although C&D materials make up a significant segment of the waste stream, reuse and recycling is often hindered by a lack of convenient and cost-effective C&D recycling facilities. C&D materials frequently have a low recycling market value and often require sorting, chipping, and grinding before being marketable. Trucking distance can play a big role in recycling cost-effectiveness as national trucking costs have significantly increased due to firmer regulation and tracking of trucker hours and fewer people choosing truck driving careers. Deconstruction can yield the most salvageable, reusable and recyclable materials, but has been slow to grow due to increased costs/time versus demolition.

In 2014 the Vermont Legislature adopted Act 175 that requires the recycling or reuse of six construction and demolition (C&D) materials from large projects within 20 miles of a C&D recycling facility. The six materials include metal, clean wood, asphalt shingles, drywall, and oriented-strand board and plywood.



**FIGURE 16: C&D WASTE DIVERTED**

In Chittenden County, where Myers and Casella have both recently built C&D recycling facilities, the Chittenden Solid Waste District reported C&D recycling doubled from 2014-2017. The combination of more facilities collecting and recycling C&D materials near Vermont’s construction areas with access to better end markets is the only way to make C&D recycling cost-competitive with disposal.

In addition, the Agency of Natural Resources and the Agency of Transportation have been collaborating for years to use asphalt shingles in more and more road projects. ANR’s 2014 Materials Management Plan requires SWMEs to provide or share collection locations in their region for recycling asphalt shingles and clean drywall by July 1, 2020. ANR will continue to consider C&D diversion and recycling opportunities in future Materials Management Plans.

For more detail on C&D collection infrastructure, markets, and outreach see the December 2016 [report to the Vermont Legislature: on 10 V.S.A. §6605m Architectural Waste Recycling \(Act 175\)](#).\*

### B. Tires

ANR estimates that about 625,000 scrap tires are generated each year in Vermont. A 2012 statewide survey identified 62 scrap tire piles, with an estimated 417,000-458,000 problem tires. The Tire Stakeholder group convened in 2015 identified three areas of concern in Vermont: legacy scrap tire piles, ongoing illegally dumping of scrap tires, and lack of recycling markets (see [Report to the Vermont Legislature on Problem Scrap Tire Piles](#) – 2013).

Although ANR believes that most Vermont tires are legitimately managed, the issues identified by the stakeholder group continue to be a concern. A small percentage of scrap tires are illegally disposed, and regional and national markets for scrap tires are weak due to other cheap fuel alternatives. Due to these challenges, establishing a product stewardship program for tires is often considered. Efforts to identify other national markets are ongoing. Tire Derived Aggregate is going to be used as underdrain for two upcoming VTrans projects, and ANR is in preliminary discussions with VTrans about the possibility of using Ground Tire Rubber Hot Mix Asphalt in future road projects.

## C. Textiles

A 2015 stakeholder group on textiles determined that Vermont had been losing some convenient and affordable textile reuse/recycling options, especially in rural areas. While a few textile collectors still serve Vermont, like Goodwill, Salvation Army, and Planet Aid, municipal solid waste managers worry that textile reuse and recycling markets are not strong and remain vulnerable. Textile recycling options in China and Africa are limited, and reuse options are limited by falling quality of textile materials.

From 2014-2017, diversion data reported by solid waste facilities indicates that textiles re-use and recycling has grown steadily.

Year	Tons Diverted
2014	248.4
2015	254.3
2016	303.1
2017	369.6

**TABLE 2: TEXTILE RE-USE & RECYCLING**

The 2018 Waste Composition Study estimated that textiles make up around 6.1% of Vermont’s waste stream—or 11,867 tons annually. The 2013 Waste Composition study estimated textiles made up around 6.8% of the waste stream.

## D. Pharmaceuticals

After passage of the 2016 Act Relating to Combatting Opioid Use in Vermont, the Agency of Human Services, Department of Health has implemented a partial product stewardship program for collecting unused and unwanted prescription drugs. The Department of Health formed a stakeholder group of law enforcement, solid waste professionals, community groups, mental health agencies, environmental groups and others to establish a statewide collection system for unwanted prescription drugs partially funded by prescription drug manufacturers. The Department of Health and its stakeholders continue to manage and evaluate collection to ensure it is sustainable and convenient.

As part of this very successful cross-agency/sector collection program:

- 21 drug disposal kiosks have been funded throughout the state;
- a law enforcement drug disposal pilot begun in August 2017 has collected over 9,000 pounds of medications and has been extended to 2019;
- a Medication Mail-Back Envelope program was launched in June 2018 making envelopes available at town offices, health centers, libraries, veterinarian offices, and other locations across the state, as well as through the DOH website (see DOH Drug Disposal webpage for further information); and
- outreach and resources are being offered to ensure Long Term Care Facilities are properly disposing of unused medications (based on after a survey to Long Term Care Facilities on their drug disposal procedures).

In addition, a Statewide Sharps Disposal Task Force—formed at the recommendation of the Opioid Coordination Council—has developed statewide best practices for sharps disposal and has launched a pilot project in Barre City. The Task Force is also developing a campaign to educate the public about safe collection and disposal of sharps.

## APPENDIX A: Universal Recycling (Act 148) Timeline of Implementation Dates



# Universal Recycling Law TIMELINE

**JULY 1  
2014**

- » Transfer stations must accept recyclables
- » Food scrap generators of 104 tons/year (2 tons/week) must divert material to any certified facility within 20 miles

**JULY 1  
2015**

- » Statewide unit based pricing takes effect, requiring residential trash charges be based on volume or weight
- » Recyclables are banned from the landfill
- » Transfer stations/Bag-drop Haulers must accept leaf and yard debris seasonally (April 1 - December 15)
- » Haulers must offer residential recycling collection at no separate charge
- » Public buildings must provide recycling containers alongside all trash containers in public spaces (exception for restrooms)
- » Food scrap generators of 52 tons/year (1 ton/week) must divert material to any certified facility within 20 miles

**JULY 1  
2016**

- » Leaf, yard, and clean wood debris are banned from the landfill
- » Food scrap generators of 26 tons/year (1/2 ton/week) must divert material to any certified facility within 20 miles

**JULY 1  
2017**

- » Transfer stations/Bag-drop Haulers must accept food scraps
- » Food scrap generators of 18 tons/year (1/3 ton/week) must divert material to any certified facility within 20 miles

**JULY 1  
2020**

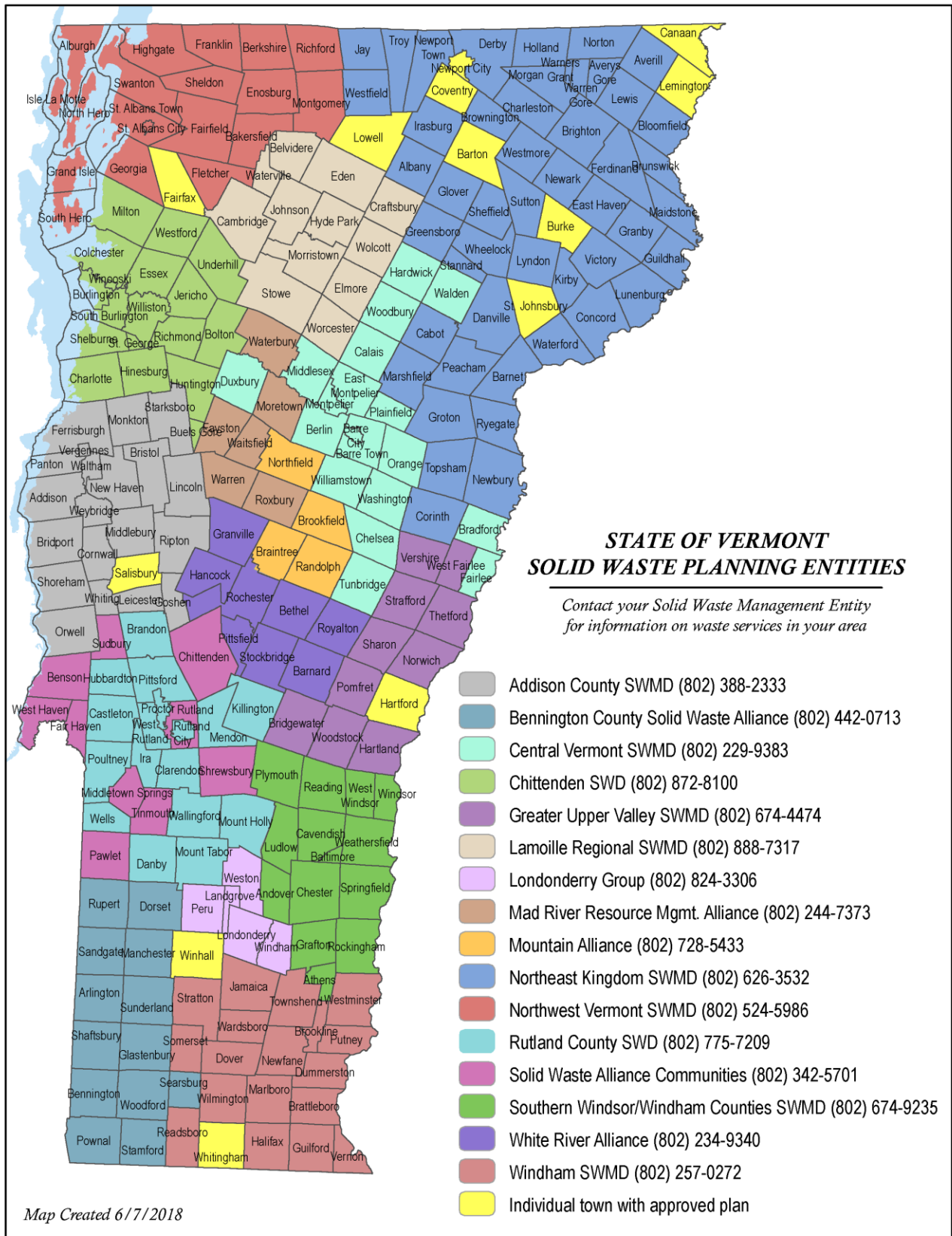
- » Food scraps are banned from the landfill
- » Haulers must offer food scrap collection



» For more information, visit [www.vtrecycles.com](http://www.vtrecycles.com)  
July 2018



# APPENDIX B: Map of Solid Waste Management Entities



## APPENDIX C: Hauler Food Scrap Collection Survey

VERMONT AGENCY OF NATURAL RESOURCES  
SURVEY ABOUT HAULER FOOD SCRAP COLLECTION REQUIREMENT – July 2018

You are invited to fill out this survey regarding food scrap collection. During the spring 2018 session, the Vermont Legislature directed the Vermont Agency of Natural Resources (ANR) to seek input from stakeholders about food scrap collection requirements.

Specifically, the Legislature seeks information on whether food scrap collection should be required based on population, housing type, customer type, route density, or other appropriate criteria.

State law currently requires solid waste haulers to offer collection of food scraps to all commercial and residential trash customers by July 1, 2020. Please note that haulers can subcontract with others to satisfy this requirement.

To complete this survey, please provide your name and affiliation, and then rank the alternatives indicated below. This survey will be open until July 31, 2018.

*\* Asterix denotes required field*

\* Name

\* Organization Name

Email Address

\* Affiliation

- Hauler
- Solid Waste Management District, Alliance or Town
- Environmental Group
- Other (please specify)

\* Please pick your top three choices from the following options by selecting "A" for your first choice, "B" for your second, and "C" for your third choice.

**I. Remove Hauling Requirement:** Amend statute to remove requirement that all haulers must offer food scrap collection services to all curbside customers by July 1, 2020.

**II. Food Scrap Collection by Density:** Amend statute to require haulers to only offer food scrap collection services to curbside customers (commercial and residential) within dense areas above 250 households per square mile. This option may result in only certain dense areas of towns being served.

**III. Food Scrap Collection only in Designated Towns:** Amend statute to require haulers to only offer food scrap collection services to customers (commercial and residential), within specific densely populated towns, such as Bennington, Brattleboro, Bellows Falls, Springfield, Windsor, Hartford and White River Junction, Rutland City and Rutland Town, Middlebury, Vergennes, Shelburne, South Burlington, Burlington, Williston, Essex, Winooski, Colchester, Milton, St. Albans, Swanton, Barre City and Barre Town, Montpelier, Newport City, and St. Johnsbury. With this option, haulers would offer food scrap collection services in each designated town.

**IV. Commercial Only:** Amend statute to require haulers to only offer food scrap collection services to commercial customers, defined as businesses or institutions that generate food residuals.

**V. Commercial and Multi-Residential Units:** Amend statute to require haulers to only offer food scrap collection services to commercial customers, defined as businesses or institutions that generate food residuals, and multi-unit residential customers, defined as apartment buildings or condos of 3 or more units.

**VI. Hauler Exemption:** Amend the Hauler Exemption in statute to allow haulers to be exempt from offering curbside food scrap collection services when other food scrap haulers are present and willing to offer food scrap collection services to customers in that hauling area. This exemption would not require the SWIP process.

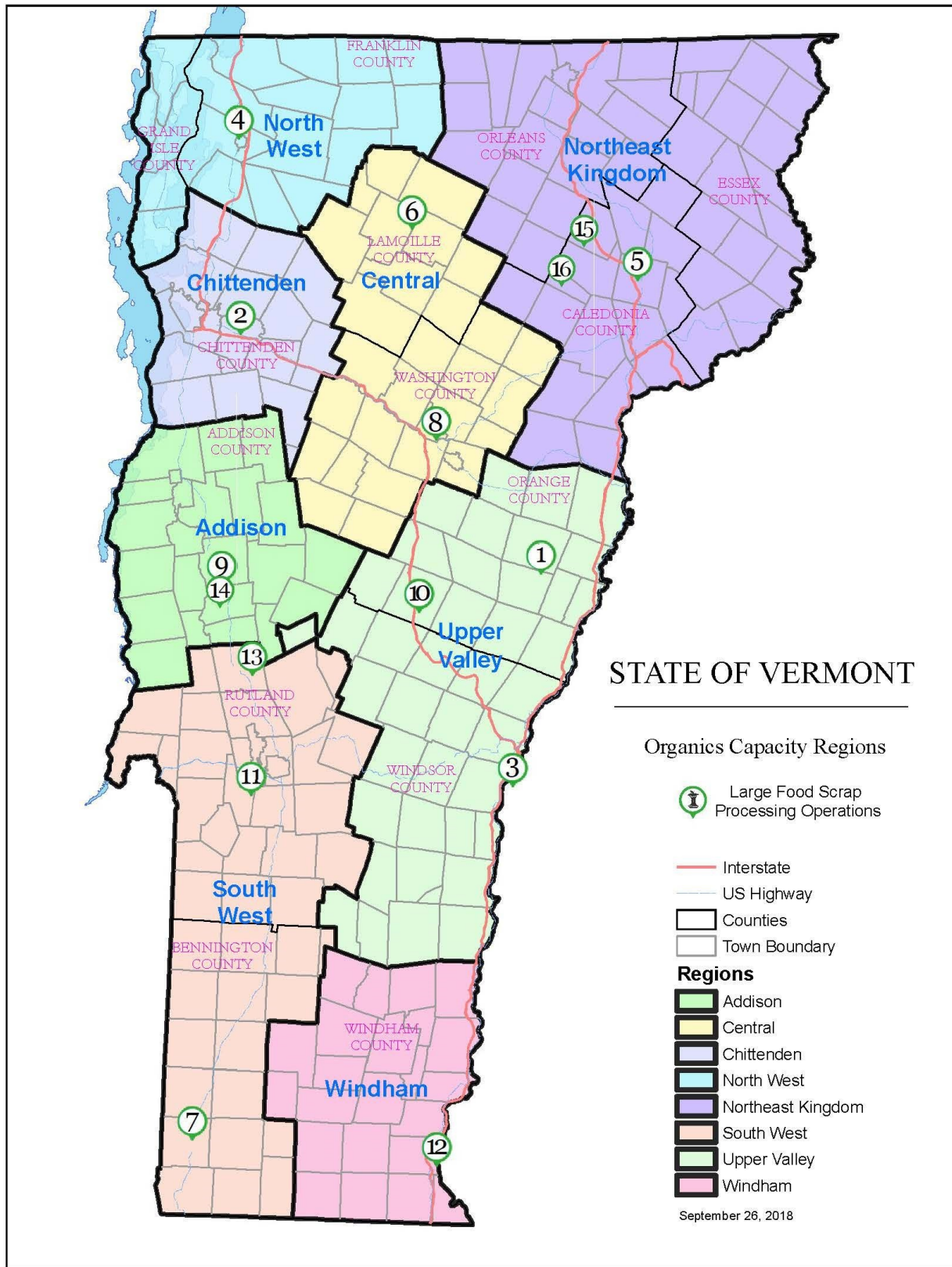
**VII. Keep Hauling Requirement:** No change to statute. Maintain the requirement that all haulers must offer curbside food scrap collection services to customers they provide trash collection services to by July 1, 2020 or subcontract with another hauler for these services.

**VIII. Unsure:** I would like to have another meeting to discuss options.

**IX. Other**

If you selected "Other", please describe:

## APPENDIX D: Organics Capacity Regions Map



**Food Scrap Processing Operations Mapped in Appendix D**

1. Cookeville Compost
2. Green Mountain Compost
3. Grow Compost
4. Hudak Farm
5. Kingdom View Compost
6. Lamoille Soil
7. TAM Organics
8. Vermont Compost Company
9. Vermont Natural Ag. Products
10. VTC Digester
11. Casella Organics Recovery Facility (not operating)
12. Windham SWMD Compost Facility
13. Wyman Frasier Compost Facility
14. Salisbury Digester (under development)
15. Cloud's Path Farm
16. Black Dirt Farm

## APPENDIX E: Bottle Bill Exemption Criteria Recommendation

### **Guidance on Eligibility to Qualify for the Retailer Exemption from Beverage Container Redemption under 10 V.S.A. § 1523b**

**November 20, 2018**

Under statute 10 V.S.A. §, 1523, retailers of beverages covered in Vermont’s beverage redemption law must accept for redemption any containers of a kind, size, and brand sold by that retailer, unless they have prior approval from the Secretary exempting them from this requirement.

In accordance with 10 V.S.A. § 1523(b), for retailers to be exempt from this requirement to redeem beverage containers, the Secretary would need to make the following finding:

A redemption center or centers are established which serve the public need.  
[See, 10 V.S.A. § 1523b]

*The following are proposed criteria to be included in a new procedure that the Secretary would use to evaluate exemption requests:*

1. *Exemption may be granted if there is an alternative redemption location within 10 road miles of the retailer or demonstrably within the current shopping patterns of community members.*
2. *Program considerations when reviewing exemption requests include the following:*
  - i. *Type and capacity of proposed alternate redemption location – acceptable locations must be a certified redemption center or retailer served by TOMRA pick-up (or other third-party pick-up agent)*
  - ii. *Proximity of alternate redemption location to retailer*
  - iii. *Volume of retailer’s sales and proximity to larger volume retailers*
3. *Retailers must apply for exemption—it is not automatic based on exemption criteria.*
4. *Retailers who have received exemption must post exemption status along with alternate redemption location address and contact information.*
5. *Exemption will remain in effect only so long as the designated alternate redemption location continues to operate as a certified redemption center or be served by TOMRA (or other third-party pick-up agent).*

## APPENDIX F: Responsiveness Summary: Guidance on Eligibility to Qualify for the Retailer Exemption from Beverage Container Redemption under 10 V.S.A. § 1523b

Under Vermont’s beverage redemption law [10 V.S.A. § 1523(b)], retailers of covered beverages must redeem any beverage containers subject to the redemption law and of a kind, size, and brand sold by that retailer, unless they have prior approval from the Secretary exempting them from this requirement, based on a finding that “A redemption center or centers are established which serve the public need.”

In 2018, the Vermont Legislature passed a bill repealing Agency of Natural Resource’s Environmental Regulation § 10-105(d) which specified that “A retailer, with the prior approval of the Secretary, may refuse to redeem beverage containers if a certified redemption center operates within a five mile radius of the retailer.” This was done to provide more flexibility for granting waivers, provided there are convenient options to meet the public need.

The Agency of Natural Resources (ANR) was directed to develop recommended changes to the criteria for granting exemptions to retailers that continued to meet the requirements of 10 V.S.A. § 1523(b), and to consult with interested parties on that recommended guidance. On September 13, 2018, the ANR Department of Environmental Conservation (DEC), requested input on draft guidance from beverage distributors, redemption centers, retailers, and consumers.

DEC received comments from several organizations and businesses during the comment period including Beverage Baron, Lamoille Regional Solid Waste Management District, Celtic Marketing Food Brokers, TOMRA, the Vermont Retail & Grocers Association (VRGA), Container Recycling Institute (CRI), Vermont Public Interest Research Group (VPIRG), Conservation Law Foundation, and Vermont Conservation Voters. DEC has organized the comments received into two sections: **Recommendations on the Exemption Criteria** and **General Bottle Bill Recommendations**.

### Recommendations on the Exemption Criteria

- 1. COMMENT:** Some small retailers are not equipped to handle redemption, so exemptions are needed.  
**RESPONSE:** The Agency agrees, and, as exemptions are authorized by law, will continue to consider requests for exemption.
- 2. COMMENT:** Retailers should not be granted exemption without approval of the alternate redemption location (as specified in some older Certified Redemption Center approvals.)  
**RESPONSE:** The Agency recognizes that redemption center capacity can be an issue and will modify the guidance to reflect this by including alternate redemption location capacity in the criteria for consideration.
- 3. COMMENT:** The new requirement would make Vermont one of the most lenient jurisdictions in terms of requirements to provide convenient redemption access for consumers; if the opportunity to be granted an exemption is available, many retailers will take advantage.  
**RESPONSE:** The Agency’s goal is to establish criteria for exemptions adequate to prevent exemptions being granted that will seriously inconvenience consumers.
- 4. COMMENT:** Expanding the number of exempt retailers will weaken the deposit return system (causing a decrease in container return rate) and make the system less convenient for consumers.  
**RESPONSE:** The Agency recognizes that any exemption may mean greater effort from consumers wishing to redeem containers. In writing this guidance, we have attempted to balance convenience for consumers and burden on retailers.

5. **COMMENT:** Proposed Vermont “exclusion zones” of 5 and 10 miles are significantly larger than other states allow, and will make retailers in the majority of the state eligible for exemption.

**RESPONSE:** This revised guidance resulted from the Legislature’s direction for the Agency to consider going beyond the five mile criteria previously in regulation. The Agency has proposed the extended radius along with a number of criteria, including consideration of shopping and travel patterns and volume of retailer sales, to allow sufficient discretion to provide consumer convenience.

6. **COMMENT:** Vermont should not provide blanket exemption for retailers within 5 miles of an alternate location. No other state has a guaranteed exemption within a certain radius. If any automatic-upon-request waiver is to be considered within the five mile radius, it should be for very small retailers only, in order to avoid taking away existing redemption options.

**RESPONSE:** The Agency agrees and will remove the blanket exemption.

7. **COMMENT:** Vermont should use a single ten-mile radius for exemptions, and apply a set of criteria to each retailer requesting a waiver regardless of proximity to a redemption center.

**RESPONSE:** The Agency agrees and will remove mention of the five-mile radius.

8. **COMMENT:** The legislative intent for this rule change was to eliminate the burden of redemption on small and rural stores, where redemption costs have become prohibitive. Therefore, exemption criteria should be based on volume of redemption rather than proximity to a large retailer or certified redemption center.

**RESPONSE:** The Agency recognizes that redeeming containers can be costly for retailers and has included retailer sales volume as part of the criteria for exemption along with proximity to an alternate redemption location, in order to balance the burden to the retailer with the need for consumers to have a convenient place to bring containers.

9. **COMMENT:** Vermont should apply additional criteria for consideration to each retailer requesting exemption, including proximity to redemption center, quantity of beverages sold, difficulty of accepting containers (due to space or other constraints), frequency they are asked to redeem containers (especially by individuals without a motorized vehicle). Retailer should be required to demonstrate that the exemption would not additionally burden consumers.

**RESPONSE:** The Agency considers the criteria included in the draft guidance to encompass the majority of these additional suggested criteria, including allowing Agency to consider shopping patterns, volume of sales, and proximity, and to be adequate to determine a balance between consumer convenience and the burden to the retailer.

10. **COMMENT:** As specified in the criteria, retailers should be required to apply for exemptions, rather than exemptions being automatic based on exemption criteria and of exemption remaining in effect.

**RESPONSE:** The Agency agrees that this is an important factor in providing consumer convenience and will maintain this requirement in the guidance.

11. **COMMENT:** Retailers should be *required* to post exemption status and alternate redemption location information, rather than simply encouraged, possibly with a fine for failure to post

**RESPONSE:** The Agency agrees and will change the guidance to require that retailers post alternate redemption location information.

12. **COMMENT:** As specified in the criteria, exemption should remain in effect only while the alternate redemption location continues to operate, and there must be a process in place for re-verifying continued operation of the alternate location every 6-12 months.

**RESPONSE:** Any exemption granted to not be required to redeem containers would only be valid while the alternate redemption location continues to operate. The Agency has a process in place for verifying continued operation of alternate redemption locations and can notify retailers of such status.



## General Bottle Bill Recommendations

**13. COMMENT:** ANR should work with stakeholders to ensure that communities throughout the state have sufficient access to convenient locations, by ensuring retailer compliance and encouraging quality redemption centers throughout the state.

**RESPONSE:** The Agency agrees that retailer compliance and access to redemption centers are key to the success of the Bottle Bill. As such, the Agency has been conducting outreach to retailers to inform them of their requirements under the law, with assistance from the Vermont Retail & Grocers Association, as well as responding to all complaints received from consumers and working with non-compliant retailers to educate them and bring them into compliance. While we do not have any control over siting of private businesses, we have certified several new redemption centers in recent months, after outreach to prospective locations.

**14. COMMENT:** ANR should look at ways to improve the commingling system (number of sorts growing continually, handling fee needs to be evaluated and adjusted with larger spread between commingling and single sort compensation).

**RESPONSE:** The Agency is aware that there are areas of the current system that are more burdensome than intended. We will continue to solicit feedback from stakeholders, host stakeholder meetings, and discuss options to improve the system.

## APPENDIX G: Report Responsiveness Summary

### To Comments on the Biennial Report on Solid Waste 1987 Act 78, 10 V.S.A. §6604(b)

On October 1, 2018, the Agency of Natural Resources (ANR), Department of Environmental Conservation (DEC) posted the Draft Biennial Report on Solid Waste (the Report) for public comment under public comment requirements. This Report is submitted in compliance with Act 78 (10 V.S.A. 6604(b)), enacted in 1987, by which the Vermont General Assembly charged the Secretary of the Agency of Natural Resources with submitting a Report regarding the volume, amount, and toxicity of the Vermont's solid waste stream. This submission also fulfills the Reporting requirements in 2018 Act 208 §3 (organic hauling) and 2018 Act 209 §3 (bottle bill redemption exemption for retailers). In making recommendations, the Secretary is directed to consider both legislative and voluntary mechanisms for reducing waste, and to post the draft Report for 45 days. In compliance with legislative mandate, a draft of this Report was posted for 45 days prior to filing with the Legislature.

ANR received comments from several organizations during the comment period including Bennington County Solid Waste Alliance, Solid Waste Alliance Communities (towns from Rutland County region), Lamoille Regional Solid Waste Management District, Conservation Law Foundation (CLF), Toxics Action Center, Vermont Public Interest Research Group (VPIRG), Rutland County Solid Waste District, No Waste Compost L3C, Good Point Recycling, Addison County Solid Waste Management District, Casella Resource Solutions, Northeast Kingdom Solid Waste Management District, Central Vermont Solid Waste District, and Chittenden Solid Waste District.

### Hauler Food Scrap Collection Requirement Recommendations

**1. COMMENT:** ANR should provide a more robust justification and deeper explanation of its reasoning behind its recommendation to amend the Hauler Food Scrap Collection requirement. While stakeholder input should certainly be one component of the Agency's review, it should not be the sole data point upon which its recommendation rests. This superficial level of analysis is unacceptable in the face of such a significant potential statutory amendment. We would expect ANR to have done a deeper analysis beyond just ascertaining the preferences of various stakeholders, chief among them the regulated community. A comprehensive analysis of whether to amend the Hauler Food Scrap Collection Requirement should include, at a minimum:

- (1) An investigation into the readiness and willingness of single-family residents and multi-residential units of less than four units to take advantage of curbside composting services;
- (2) An examination of the feasibility of solid waste haulers to provide food scrap collection to all customers, including an approximation of costs (cost figures should factor in offsets, such as costs gained due to reduced disposal needs, as well as increased landfill life through increased diversion);
- (3) An investigation into the availability, feasibility, and efficacy of pilot or existing composting drop-off, curbside collection, or backyard programs tailored towards single-family residential or small-scale multi-residential customers, including both hauler and non-hauler alternatives, such as EarthGirl Composting.

**RESPONSE:** While a more comprehensive analysis was not undertaken nor required for this Report, ANR included a justification section for its recommendation to make legislative changes to the hauler requirement. Specifically, this section explains that ANR considered results of the surveys along with the rural nature of Vermont and the ability/desire of Vermonters to compost at home, which can impact costs for haulers offering food scrap collection services.

**2. COMMENT:** If the Agency is recommending removing a requirement in the Universal Recycling Law for haulers to serve single-family residential homes and small-scale multi-residential dwellings, it should simultaneously recommend potential legislative actions that would strengthen our residential composting programs, such as robust funding, technical assistance, incentive programs, and enforcement of the diversion mandates, to ensure the State moves forward—instead of backward—on our goal to increase statewide diversion of municipal solid waste to 50 percent

contained in the 2014 Vermont Materials Management Plan.

**RESPONSE:** Language has been added the Report stating that ANR supports maintaining the July 1, 2020 ban on food scraps in order to meet long-standing state diversion goals.

**3. COMMENT:** We agree that the requirement for haulers to provide curbside collection of food scraps to residential customers should be removed from the Universal Recycling law. It would be beneficial to the Legislature if the Report explained why haulers wish to remove the requirement, which is a disservice to haulers and a significant oversight. Haulers aren't opposed to providing additional services. Haulers are opposed to providing additional services that no one will be able to afford. Further evaluation of cost to commercial customers, particularly those generating fewer than 18 tons per year, needs to be taken into consideration. Additionally, apartment complexes with four or more units tend to house Vermonters on fixed or low incomes and requiring curbside collection would be an additional cost. Also, contamination (trash mixed in with food scraps) from housing units and how that will be addressed needs to be considered. The ANR recommendations listed on page 8 of 30 do not factor in the cost of these recommendations. In order for any entity to participate in the programs required of Act 148, the costs for doing so need to be at or below the cost of landfilling materials. The merits of the positive impacts on the environment are, unfortunately, not sufficient to increase participation.

**RESPONSE:** An explanation and justification section was added to the Report to help explain why haulers may wish to remove the hauling requirement due to costs and demand for services.

**4. COMMENT:** Vermonters are incurring increased costs for recycling due to the situation that has occurred with China, the lack of glass markets in the Northeast, and an increase in contamination of recycling. MRF tip fees in the Northeast are on the rise and are in some cases more than the cost of disposal. Vermonters ability to continue to pay for additional services should be a deciding factor on whether or not continuing to pursue a state-wide organics ban makes sense at this time or should be delayed until recycling markets can rebound.

**RESPONSE:** ANR is required in state statute with finding ways of reducing Vermont's dependence on landfilling and disposal. At a time when landfill disposal capacity in the Northeast is expected to decrease in the future it is imperative that Vermont move forward with reducing waste, recycling, and composting.

**5. COMMENT:** ANR's data collection effort totally failed to ask respondents questions that could have made survey results meaningful and sparse participation means results are not useful. Anyone trying to interpret your data should be made aware of the following defects/limitations:

- Less than half of SWMEs replied. You didn't identify their jurisdictions or take into account the number of households their authority covers. About 1/3 of SWMEs are independent towns, none of which contain more than 1% of Vermont residential buildings. The largest SWME (Chittenden) contains almost 19% of residences, and several Districts contain more than 10%. Your results do not "weight" views by the relative populations represented by respondents. You didn't identify whether curbside service is even offered by a hauler in a respondent SWME.
- Legislative interest is focused on concerns about the requirement that haulers offer separate food scrap collection in dense areas. Areas where residential structures are densely sited occur in just 28 towns in fewer than half the SWMEs. You failed to identify whether SWME responses represent jurisdictions which include any such areas of density.
- Only one tenth of haulers polled offered you a response, and you failed to report whether or not respondents provide curbside services or -- if they do provide such services -- to how many customers. Licensed haulers vary in size from single actors who provide no curbside pickup to large corporate haulers serving thousands of curbside customers in multiple SWME jurisdictions. You haven't weighted hauler respondents' locations or size of their curbside customer bases.
- To summarize: you do not report the geographical biases or gaps represented in your hauler and SWME respondents. The geographic areas from which responses came – and those for which you have sparse/no responses – reflect real differences in the current disposal resources available to the respondents in different areas.

**RESPONSE:** The ANR Hauler Food Scrap Collection Survey was sent to all members of the Universal Recycling Stakeholders Group as well as all solid waste haulers and municipal solid waste management entities at stakeholder’s request. This directly fulfilled the Agency’s charge by the Legislature to “...request that the Stakeholder Group review...” the hauler food scrap collection requirement. ANR cannot compel haulers or solid waste management entities to respond nor does the Agency have data on the number of customers haulers serve. Survey results are valid since they directly solicited responses from the Universal Stakeholders Group made up primarily of solid waste management entities and solid waste haulers. More detailed data on the size of haulers, their customer base, or the population size or jurisdiction of municipal solid waste management entities would not change choices selected by these key stakeholder groups. Further, two studies surveyed Vermont residents on their home composting habits. First, ANR’s contracted 2018 Waste Composition Study utilized Castleton Polling Institute, who surveyed 3,349 households with 1,006 completed or partially completed survey responses. From the responses an estimated 40% of residential food waste is composted at home. Second, UVM’s 2018 Vermonter Poll surveyed 583 residents and 56.1% strongly agree or somewhat agree that food waste should be banned from disposal in the landfill and 72% reported composting or feeding their food scraps to pets or livestock.

**6. COMMENT:** Three comments suggested that ANR cannot justify recommendations by citing opinions of “most haulers” or say that “SWMEs generally prefer.” There was also a comment, and a word of caution, that the survey was not scientifically designed or administered.

**RESPONSE:** ANR acknowledges that the survey was not statistically significant nor scientifically designed or administered. To address the three comments ANR added clarity to the Report to explain that “most haulers,” were haulers that responded to the survey and that SWME’s top three highest ranked responses were service in dense areas, services only to commercial and residential customers, or a hauler exemption.

**7. COMMENT:** The exemption (recommendation “a”) specified should not be pursued without an effort to justify the 4-unit cutoff. (Why not 2, or 3, or 6?) Work with Vermont landlords or others to answer basic questions about who will be impacted. Where are these 4-unit residences located and how many families live in them? The actual impacts on haulers and residents will differ depending upon any cutoff point proposed. Recommendation “a” shows no understanding of the key economic driver of curbside collections. Financial viability of curbside services for haulers depends on maximizing the number of stops (that is, paying customers) per truck mile or truck hour. Your recommendation will leave the curbside haulers with the cost of offering the service, but require them to offer it to relatively few and sparse customers (i.e. 4-unit landlords). If haulers are required to offer the service to anyone, all efforts should be made to help them to offer services along compact and dense routes.

**RESPONSE:** ANR is proposing that haulers only offer food scrap collection services to commercial customers and residents above 4 units or more for three general reasons: 1.) residences of 4 units or more are often considered commercial accounts by commercial haulers and together would create enough food scraps per week to justify collecting from them similar to a small café or restaurant; 2.) it is common in municipal waste contracts to exclude residential units above 4-5 units or more such as in Brattleboro; and 3.) in general the denser areas of Vermont have more apartments and condos of 4 units or more, making them more efficient to be collected as part of a commercial or even residential collection route. This information will be added to the Report.

**8. COMMENT:** How do haulers “demonstrate” that another hauler is “*providing such collection service in that area*”? To whom do they demonstrate this? What happens if the food scrap hauler drops that service in that area? This creates a crisis situation and the hauler providing trash and recycling cannot reasonably adapt their business to suddenly get in the food scrap collection business. The recommended amendment allegedly will simplify the hauler exemption process. Is this the same as the hauler waiver proposed last year? If the recommended amendment is accepted will exemption/waivers go away completely?

**RESPONSE:** Should the Legislature adopt ANR’s recommendation to amend the hauler requirement, the Agency will work to create a streamlined process that is easy for haulers to navigate to receive an exemption and that works well with the existing hauler exemptions available in state statute.

**9. COMMENT:** The ACSWMD Board of Supervisors considered the recommendations in this section at its meeting last night. Their comments are:

- 1- The ACSWMD supports mandating the existing diversion requirements and the 2020 ban on food scraps generated by the commercial and industrial sector.
- 2- The ACSWMD will consider a proposal to clarify the definition of "commercial business" to "commercial food generators."
- 3- Curbside collection of food scraps is not economical in rural areas. The ACSWMD supports the exemption of all haulers from collection of food scraps from single family residents and multi-residential units of less than 4 units.
- 4- Residents should not be mandated to eliminate food scraps from their trash if haulers are not mandated to offer curbside food scrap collection at the curb. Approx. 65% of residents in the ACSWMD already source separate their food scraps through backyard composting, feeding to animals or at their local drop-offs and the ACSWMD Transfer Station in Middlebury. Those residents who wish to have curbside collection of food scraps will contract with a hauler that offers the service.

**RESPONSE:** Changing the definition from "commercial businesses" to "commercial food generators" will not be easy to define and will lead to difficulty with communicating this hauler requirement and determining which businesses qualify as "commercial food generators."

**10. COMMENT:** Instead of removing the hauler requirement to provide food scrap pickup, we would prefer if haulers would subcontract to our business for residential food scrap pickup. We are not capable of diverting commercial food scraps - strictly residential and very small businesses. We are able to provide subcontracted service to all of Chittenden County if haulers choose to.

**RESPONSE:** Haulers of trash are currently allowed to subcontract with other haulers to provide both recycling and food scrap collection services to their trash customers, however it is not required that they subcontract. ANR supports exempting haulers from offering food scrap collection services when others are providing that service in the area. This may encourage subcontracting.

**11. COMMENT:** On the bar graphs, VI. should be modified from "VT hauler exempt if collection exists" to "VT haulers exempt if collection or drop-off exists".

**RESPONSE:** There was no option in the ANR Hauler Food Scrap Collection Survey to exempt haulers if collection or drop-off exists. The survey's exact language for item number VI. was "Hauler Exemption: Amend the Hauler Exemption in statute to allow haulers to be exempt from offering curbside food scrap collection services when other food scrap haulers are present and willing to offer food scrap collection services to customer in that hauling area. This exemption would not require the SWIP process."

**12. COMMENT:** CSWD does not agree with this recommendation for the following reasons: 1. The three largest haulers in Chittenden County as well as several non- traditional haulers are offering food scrap collection. We believe that as long as the food scrap landfill ban remains in place, most commercial food scrap generators and multi residential units will be offered the service by these haulers without the mandate for the haulers to provide the service. 2. Commercial accounts do not necessarily mean that significant amounts of food scraps are generated at those businesses and requiring haulers to offer the service does not make sense in many cases. 3. A mandate on haulers does not necessarily equal an increase in service. The haulers that want to provide the service (because their customers want it and will pay for it), will offer it. The haulers that are not equipped and don't want to get into the business could price themselves out of the market to avoid providing the service under the mandate. CSWD recommends leaving the requirement for haulers to offer organics collection but to delay the requirement until 2022. This provides the opportunity for the free market to play out once the food scrap landfill ban is in place and the demand is higher. If the food scrap pickup service is being offered without the mandate, which we believe will be the case, the mandate can be removed by the legislature during the 2021/2022 session.

**RESPONSE:** Many of the Universal Recycling Stakeholders asked for relief from the hauler food scrap collection requirement, especially from collecting food scraps from residential customers. Further, while several haulers in Chittenden County have been offering food scrap collection services for many years, other parts of Vermont have fewer food scrap haulers. We acknowledge that not all commercial businesses produce large volumes of

food scraps, however it is difficult to define commercial businesses that produce significant volumes of food scraps and that would require a service be provided.

## Regional Food Scrap Processing Capacity Analysis

**13. COMMENT:** We are concerned that without a strong recommendation for no change to the deadline, the Legislature may act to prematurely (and unreasonably) push back the 2020 deadline for this hauler requirement. Especially given ANR’s understandably inexact analysis showing between 11,500 and 24,000 tons of missing capacity (a number range which may unsettle Legislators who are unfamiliar with solid waste tonnage data), it is important for the Agency to clearly articulate that there is no basis to further extend the 2020 deadline for this Hauler Requirement. This deadline was already pushed back last Legislative session from 2018 to 2020, and we cannot afford more delay if we are to achieve the State’s solid waste reduction goals writ large, and the specific goal of 50 percent diversion by 2020.

**RESPONSE:** ANR has reiterated its recommendation to amend the hauler requirement but added to the Report a recommendation to maintain the 2020 ban on food scraps.

**14. COMMENT:** The Report cites a number of outside surveys conducted by the University of Vermont and the Castleton Polling Institute. If ANR relied on these survey results to formulate its recommendation, this should be clearly noted in the Report. This way, the Legislature may examine the surveys and ask any questions about their underlying methods and assumptions. The undersigned groups assume the Agency has engaged in this type of analysis described above, with the assistance of the Stakeholder Workgroup. However, none of this investigatory research is reflected in the Report. We urge ANR to flesh out the technical or analytical rationale for its recommendation, beyond just citing to the electronic Stakeholder Workgroup survey results. Including this information will benefit the public who read this Report, as well as the Legislature who is tasked with acting based on ANR’s recommendations.

**RESPONSE:** ANR has included a brief explanation of how these surveys have informed and reinforced the Agency’s recommendation to amend the hauling requirement and factored into the processing capacity for food scraps. Both the UVM Vermonter poll and the Castleton Polling Institute’s survey results were shared and discussed with the Universal Recycling Stakeholders group.

**15. COMMENT:** ANR should include a clear recommendation that the Legislature leave in place the requirement that haulers must offer collection of food residuals to all commercial and large-scale residential customers by July 1, 2020, despite the identified gap in food processing capacity. A clear recommendation against any further delays to this deadline is important given the preliminary nature of the gap analysis data.

**RESPONSE:** ANR agrees and has added emphasis into the Report that despite the identified gap the Agency recommends maintaining the hauler requirement, but amending it to only require haulers to offer food scrap collection services to commercial and residential customers above 4 units or more. Further, statements have been added that ANR supports maintaining the 2020 ban on food scraps.

**16. COMMENT:** Using “as it saves money” as a definitive way to say why businesses reduce waste is incorrect as there are many reasons; because it aligns with their mission, because it meets customers’ expectations, because they are invested in doing business for the better cause.

**RESPONSE:** To address this comment ANR added the following language to the Report: “as it saves money, meets customer expectations, and is part of the mission of many businesses and organizations.”

**17. COMMENT:** Do small farms represent an option for food scrap drop-off?

**RESPONSE:** Yes, small farms can and do offer an option for food scrap drop-off. This section highlights the factors that could influence food scrap processing capacity in Vermont. ANR is not aware of how frequent small farms are accepting food scraps for drop off. Small farms that accept and compost mixed feedstocks including food scraps below the 100 cubic yard threshold are not required to obtain a registration or certification or Report to DEC. Therefore, this capacity is not tracked well.

**18. COMMENT:** Three comments were received about the Report’s reference to “Chicken farmers/composters are uncertain about the future.” as part of the factors that influence food scrap processing capacity in 2020. Further it was suggested that these farmers need clarity as soon as possible to allow them to make decisions regarding their expansion.

**RESPONSE:** To address these comments the following language was added to the Report: **“Chicken farmers/composters are uncertain about the future** after the Vermont Agency of Agriculture made it clear that feeding food scraps to chickens is not an agricultural practice. This changed previous understandings of this practice and puts these composting operations in ANR Department of Environmental Conservation’s (DEC’s) jurisdiction, which requires these farms to obtain DEC compost registration or certifications. ANR DEC is working with farms to outline and set a course for registrations or certifications to be obtained from the Agency.”

**19. COMMENT:** This is confusing. Is market stimulation part of the equation here?

**RESPONSE:** When ANR surveyed composters about their capacity, some said increasing markets for finished compost would directly impact their decision to accept and process more food scraps. This information has been added to the Report to improve clarity.

**20. COMMENT:** Suggest for clarity that units (tons per year) be added to the capacity table.

**RESPONSE:** Tons per year notations have been added to the capacity table.

**21. COMMENT:** The ACSWMD will continue to work with the VT Natural Ag Products composting facility to ensure adequate capacity exists in the future for food scraps generated in member municipalities.

**RESPONSE:** The gap ranges by region are solely estimates and are based on interviews with the composters and conservative estimates of future processing capacity, which is often subject to change due to many factors.

**22. COMMENT:** Your assertion that home and community composting “may be underestimated” is doubtful, and that your positive spin should be reserved until better data comes from the 2018 Study. No definition of what people mean by "composting" has been provided. Our surveys of CVSWMDC communities tell us that “composting” includes throwing food scraps out in the woods, feeding wild animals, feeding domestic animals and other practices. The "72% of people composting or feeding livestock” is not equivalent to concluding that such a high percentage of scraps is going into helping feed our fields or animals. CVSWMDC just completed a survey in September in which 66% of residents composted or dropped off at facilities. Your Report should include additional emphasis on the need for continued consumer education, helping more people to responsibly and productively compost.

**RESPONSE:** The 2018 Waste Composition Study found 40% of residential food scraps are estimated to be separated from trash (more than previous residential food scrap surveys from 2001). The Report acknowledges that home composting and community composting is likely underestimated when one considers regional processing capacity for food scraps, but it does not suggest that home composting alone will provide sufficient capacity to meet the need.

**23. COMMENT:** Page 9 reports the availability of grants to expand processing capacity and recommends a future re-assessment. Other than relying on grantee activity, there are no statements about what the State is prepared to do to assure sufficient capacity in areas that lack infrastructure, or recommendations on what other parties can do to help reduce the gap in food scrap processing facilities. The Report should include statements about what the State, businesses, or local governments might do in order to build processing capacity.

**RESPONSE:** To address this comment ANR has added the following language to the Report: **“Incentivizing More Capacity:** To encourage additional processing capacity and collection services, Vermonters can utilize food scrap haulers for sustainable management of their food waste and they can purchase local compost for their farms, gardens, athletic fields, and soil construction projects. Municipalities and Solid Waste Districts can continue to conduct business outreach to promote food scrap diversion using food scrap haulers and processors. ANR will continue to offer technical assistance services for composters looking to expand operations, will support the annual Vermont Organics Recycling Summit where food scrap processors, haulers, and outreach staff come and learn from each other, and the Agency will continue to work with municipal solid waste management entities

(SWMES) to conduct direct business outreach and compliance to ensure the law is being followed, which creates demand for these services.”

**24. COMMENT:** I also want to express my concern that as Casella owns and operates most waste transfer stations, their profits may increase when Vermont generates more landfilling waste. I fear that this conflict of interest is discouraging Casella, our state’s largest waste hauler, from investing in food scrap diversion.

**RESPONSE:** Vermont’s Universal Recycling law provisions, including separate food and food scraps management, are providing business opportunities for those businesses that decide to be involved.

**25. COMMENT:** The mention of anaerobic digestion (AD) ignores the fact that most AD units are not capable of receiving non-homogenous food scraps without a significant investment in pre-processing. Again, what cost are we prepared to incur to divert materials from the landfill? A previous waste composition study indicated the majority of food waste being landfilled originated from residential sources. The draft Report acknowledges the underestimation of home composting efforts statewide (page 9 of 30). Perhaps the State should “pump the brakes” on further initiatives to reduce food waste going to landfills until it is clear what portion of food waste is being generated where and by whom.

**RESPONSE:** Caveats about anaerobic digestion have been included in the Report in response to this comment; however, it is important to note there are benefits to diverting food waste from landfill disposal, including significant reduction in greenhouse gas emissions.

**26. COMMENT:** While the NEKWMD recognizes the importance of a landfill ban on organics, the lack of infrastructure development in our region since the passage of Act 148 has placed us in a position where our Board will need to seriously consider its continued support of the July 2020 landfill ban on organics. The current regulatory landscape eventually requires all food waste generators to divert their materials regardless of the cost and the distance these materials will need to travel. This sounded good at the time of the passage of Act 148, but do we really want these food waste generators to spend whatever it takes to divert these materials from the landfill?

**RESPONSE:** The distance trash travels in Vermont and the Northeast is significant, sometimes the entire length of Vermont before it reaches its disposal point. However, ANR has included an acknowledgement of some of the lack of food scrap collection services in parts of the Northeast Kingdom, specifically in Newport and Derby.

**27. COMMENT:** The Report notes that estimating the projected need for food scrap processing in 2020 as well as the potential capacity is difficult. While adequate capacity (infrastructure) to process food scraps is an element of the organics ban, it does not mean that collection will be cost effective. Additional infrastructure does not lower the cost of collecting and managing organics, it increases the cost. Composting and AD facilities are expensive to build and maintain, they require a certain amount of volume in order to make them economically viable. CSWD recently determined that they need to invest approximately \$1.2 million into their compost facility in order to accommodate additional volume anticipated by the full implementation of the organics ban. The focus should be on source reduction or delaying the ban as opposed to building expensive capacity when volumes and needs are not fully understood.

**RESPONSE:** ANR agrees that source reduction should be a focus of reducing waste overall and reducing disposal of food and food scraps, however there is clearly a need for more food scrap processing capacity—as noted by CSWD’s compost facility investment—which may not necessarily require or result in new facilities, but rather expansion at existing ones. None of the proposals ANR received to its RFP will result in new facilities save for one new small composting site in Ryegate at the town’s transfer station. Further, the premise behind the Universal Recycling law’s food scraps disposal ban is to provide assurance to those who are willing to invest, that the material will be available for processing. In fact, several stakeholders have stated the law is part of their business plan and they depend on the ban remaining intact.

**28. COMMENT:** The UVM VT poll references that 72% of the respondents “compost food scraps or feed to pets or animals,” but it does not quantify the amount that is being composted or used as feed. This data may be difficult to determine since it is not reported, however it is important data to have in determining capacity needs.

**RESPONSE:** The 2018 Waste Composition Study estimates 40% of residential food scraps are separated from trash. This information has been included in the Report.



**29. COMMENT:** It's very difficult to comment on this section without the inclusion of the data from the 2018 Waste Composition Study. How much of the population is currently backyard composting and how does that effect the capacity needs? Additionally, Casella's Organics Recovery Facility is listed however the Report should note that the facility is not accepting material and is not operational at this time. Further modifications to the facility need to be made and the facility is not operational during the winter months. Consider adding to the map in Appendix D the amount of available capacity (permitted vs. operating) for the existing certified facilities.

**RESPONSE:** The Report now notes that the Casella Organics Recovery Facility in Rutland is not operational at this time. ANR did not use permitted capacity in the food scrap processing capacity calculations since it is often not a good measure of true processing capacity. See the above response regarding how much of residential food scraps are being diverted.

**30. COMMENT:** [The projected need for food scrap processing capacity] does not represent supported information due to the large % of residents polled that backyard compost and/or feed food scraps to pets/animals (see previous Page 9 feedback), the need is likely heavily overstated. It may be more appropriate to show how much food scrap was taken at each of the processing operations on Page 11 and determine what unused capacity for each is available before establishing an objective of an additional capacity need of 24,400 to 36,400 tons.

**RESPONSE:** This is the method ANR used to calculate the projected capacity gap. ANR has added an acknowledgement in the Report that the gap was likely an overestimate and included a list of significant factors that may provide additional capacity that is unaccounted for.

**31. COMMENT:** This [gap analysis] page is very difficult to understand and the capacity range for 2020 in the By Region chart is not accurate.

**RESPONSE:** ANR acknowledges the difficulty in providing easily understood methodology of its calculations and further the difficulty in creating accurate capacity range for a region. Further, the capacity range by region was calculated using population of the region rather than on a facility by facility basis to utilize a straightforward and common calculation for each region. However this methodology likely provides basic estimates of capacity in a region at best.

## **Bottle Bill Retailer Exemption Criteria Recommendations**

After receiving feedback in an overlapping comment period, ANR has revised the recommendation criteria for exempting retailers from redeeming beverage containers. The final recommendations appear in **Appendix E** and a Responsiveness Summary to comments can be found in **Appendix F**.

## **Content and Structure of the Report**

**32. COMMENT:** Several comments provided positive feedback about the Solid Waste Report as posted in draft form.

**RESPONSE:** ANR appreciates the time that commenters took to provide responses to this Report.

**33. COMMENT:** A short Executive Summary with the top three priorities or recommendations might be useful to focus the reader and garner attention and interest for reading the entire document.

**RESPONSE:** The focused, succinct Report without an Executive Summary will allow Legislators and other readers to go directly to their topics of interest without repetitive content.

**34. COMMENT:** It would be nice if the Report said something more about the men and women in Vermont who actually touch the stuff and DO the recycling.

**RESPONSE:** ANR added the following language to the Report to address this comment; "The Agency of Natural Resources would like to recognize the Vermonters who work tirelessly to achieve state's waste reduction and recycling/composting goals. Every day they collect, haul, sort, recycle, compost, safely manage, and educate all

of us how to recycle and compost right and safely and sustainably manage our waste for the benefit and protection of Vermont’s people and environment.”

**35. COMMENT:** Consider replacing the word “toxicity” with “characteristics”, “content” or something similar. The word toxicity is too strong and negatively reflects the efforts of the solid waste field (ANR / Solid Waste Districts / private entities).

**RESPONSE:** While ANR recognizes that toxicity can be a loaded term, this Report is required by statute to report on the “volume, amount, and toxicity of Vermont’s solid waste stream,” and the term is used in sections of the Report where toxicity of the materials is a primary consideration.

**36. COMMENT:** The section on MMP is weak. Consider reporting out some of the salient points both achieved by ANR as well as those by SWMEs. This could be number of schools or businesses offered outreach, generation and diversion rates, etc.

**RESPONSE:** ANR has added language to the Report highlighting the achievements of SWMEs especially around direct outreach to businesses and schools.

**37. COMMENT:** Multiple commenters provided helpful clarifications, corrections, and suggested edits to the draft text.

**RESPONSE:** ANR made a number of minor corrections to the draft Report along with format modifications to increase clarity for readers.

## Market Challenges

**38. COMMENT:** While reducing the amount of waste going to landfills is desirable, the current state of recycling around the globe should be cause for reconsideration of some recycling goals and mandates. Now is a good time to carefully examine the impacts of waste related legislation and ensure that future initiatives accomplish goals that can be met in an affordable and convenient manner. We may have to wait several years to see what kind of domestic capacity is developed in our region, then design programs tailored to that capacity. Banning items and hoping markets develop, is not a well thought out strategy.

**RESPONSE:** ANR recognizes that banning materials without strong existing local end markets from the landfill is a challenge for the materials management system. However, in cases where materials represent a large proportion of the waste being generated in Vermont, the Agency believes that efforts to strengthen diversion efforts, whether through bans or through efforts to strengthen end markets or implementation of product stewardship programs is crucial to the success of Vermont’s diversion efforts.

**39. COMMENT:** There is very little the Agency can do to affect markets for recyclables. The State of Vermont needs to realize why local markets don’t exist for recyclables (proximity to inputs and outputs, regulatory landscape, etc.). If collaborative efforts actually yield results they should be included in the Report.

**RESPONSE:** The availability and strength of recycling end markets, especially local and regional markets, is crucial to the success of diversion efforts in the state. While it is difficult for a state agency to affect change in this area, this Report outlines a few efforts by both public and private solid waste managers to help improve domestic markets for recyclables. This is an ongoing effort, and ANR acknowledges that more needs to be done in future.

**40. COMMENT:** Working collaboratively to develop more local domestic markets for recyclable materials is an excellent theme and cannot be over emphasized.

**RESPONSE:** The development of local domestic recycling markets is vital to insulating Vermont from changes to global markets, and ANR intends to continue its collaborative efforts in this area

**41. COMMENT:** Several commenters provided, or requested, additional detail about the status of local recycling markets and potential local and regional end users for mixed paper and glass.

**RESPONSE:** ANR appreciates the additional information on future recycling markets and end users of diverted materials. Due to the changing nature of prospective end markets, and the fact that additional specificity on individual end market possibilities would not offer the Legislature actionable recommendations to consider, this section has not been expanded. The Agency is happy to provide additional information to interested parties.

## Diversion & Disposal Challenges

**42. COMMENT:** Why did the disposal rate rise from 2016 to 2017? Can the source of the increase be identified? Do these numbers include recycling residue? Could lack of EPR be at fault? The Report should explain why this increase occurred, or at least speculate.

**RESPONSE:** The increased disposal rate in 2017 is derived from materials reported to ANR as landfilled or incinerated by management facilities and therefore does include significant recycling residue. ANR suspects that the improved economy is responsible for increased disposal, however the effect of economics on waste generation and disposal is a complicated issue, and the ANR doesn't have adequate information to speculate on specific short-term trends. The lack of any significant changes to established EPR Programs between 2016 and 2017 and the fact that tonnages collected through EPR programs are not included disposal tonnages, suggests that EPR programs are not a factor in this increase in waste disposed.

**43. COMMENT:** While there have been some notable successes relative to diversion that can be attributed to Act 148, the status of the economy will always have an impact on waste generation rates, perhaps more than legislation. In a thriving economy, people purchase more goods and thus generate more waste. This needs to be considered when contemplating additional collection and diversion initiatives.

**RESPONSE:** ANR agrees that improved economic conditions were likely a driver of the higher waste generation rate in 2017 and has included a brief comment on this in the Report. While the Vermont economy has been relatively good recently state economists suggested that 2017 wasn't significantly different than preceding years.

**44. COMMENT:** To say ANR proposes to meet the 2019 25% reduction goal by implementing URL and other initiatives is unrealistic given that MSW disposal is going up. Diversion goals are similarly unrealistic in the given climate and under the current regulatory and market forces.

**RESPONSE:** ANR recognizes that the reduction and diversion goals set in 2014 may not be achieved in 2019. However, there are other indicators, such as a steady and slightly increasing recycling tonnage and a rise in food scrap composting, that are significant and trend in the right direction.

## Program and Material Specific Comments

**45. COMMENT:** The EPR section does not mention what happens to the EPR materials other than being "recycled." The exception to this is Paint which details what the discarded paint is used for. Identification of these uses for paint helps "close the loop" and is a good story to tell, where the other items seem to beg the question of final disposition.

**RESPONSE:** ANR will add language to the Report providing brief detail on how EPR materials are recycled and safely managed.

**46. COMMENT:** The Report states, "In the current program year, 90 registered manufacturers of computers, monitors, TVs, and printers pay 100% of program costs...". For some reason the requirements for reimbursement have become more restrictive over time. It's almost as if the Agency is favoring manufacturers over collectors. There needs to be a closer examination of the state contract when it comes up for renewal. From our perspective it is unclear how much of the actual costs are being covered by the manufacturers.

**RESPONSE:**

The current E-Cycles contract provides for payment of collectors based on site capacity for materials covered by the program, and ANR has received positive feedback on this approach. ANR plans to reach out to this

commenter to determine the issues they are experiencing and whether additional changes may be needed in the upcoming contracting process.

**47. COMMENT:** Our SWME supports a disposal ban on batteries, and implementation must be accompanied by a public outreach campaign to keep the batteries out of the blue bin.

**RESPONSE:** ANR has collaborated with CSWD and MRF operators on a “Recycle Like You Live Here” outreach campaign to educate the public about what materials should and shouldn’t be placed in their blue bins—including keeping batteries and electronics out of recycling bins. ANR will continue to work with Call2Recycle to emphasize proper drop-off recycling of batteries.

**48. COMMENT:** Multiple comments suggested that the future EPR section should address the potential for EPR programs for HHW, tires, mattresses, along with packaging and print materials.

**RESPONSE:** ANR has revised this section to reflect that other potential EPR programs and outlets for diverted materials are discussed in the Beyond Waste section of this Report. ANR chose to highlight packaging and printed materials in this section because this category represents a growing portion of disposed materials, with a direct connection to global recycling challenges.

**49. COMMENT:** Suggesting EPR for packaging shifts cost off from consumers is questionable since the manufacturers will add the cost on somewhere in the sales/distribution chain. This comment also runs contrary to the belief that consumers should be bearing the cost at some level and an awareness of having to pay for what you consume is an important message.

**RESPONSE:** The premise of EPR programs is that manufacturers should be charging the true cost of a product, from the raw materials used to produce the product and its packaging, to shipping costs, to disposal/recycling costs for both product and packaging. Along with encouraging manufacturers to find less material consumptive packaging options, passing along the real costs of a product allows consumers a better understanding of the cost of their purchases. ANR has rephrased this section in order to better express the shift of costs from end-of-life to time of purchase.

**50. COMMENT:** Why was there such a rise in HHW collection rates in 2014?

**RESPONSE:** Although the reason for the rise in HHW collection from 2014 to 2016 is not clear, ANR attributes the rise to increased access to and participation in HHW events and facilities, along with increased consumer awareness resulting in part from the inception of the Vermont PaintCare program in 2014, which added latex paint to the materials collected at HHW events and facilities. ANR has added a notation to this section about this possible cause of increased HHW collection.

**51. COMMENT:** It is important to note the total cost of the current HHW diversion program not just the \$400,000-600,000 from SWIP grants which is a mere fraction of the total cost. Adding total system cost (or best estimates provided by Vermont Product Stewardship group) is a very compelling story.

**RESPONSE:** ANR is aware that the additional financial resources required by SWMEs to meet their HHW collection obligations is significant and has added an estimated total annual HHW system cost to this section of the Report, to reflect that.

**52. COMMENT:** Will the final Certified Redemption Center map show in-store redemption machines such as those at grocery stores?

**RESPONSE:** As reverse vending machines are not considered certified redemption centers and are not registered with ANR, the Agency does not plan to add these locations to the map at the present time.

**53. COMMENT:** Landfill disposal bans should first and foremost focus on materials that are “hazardous” in nature. Most of the banned item list does this with notable exceptions like tires / leaf & yard materials and wood waste / food scrap post 2020. These items, if there is a sustainable, GHG neutral use, although not “hazardous” in nature, should be logically driven, not mandated.

**RESPONSE:** ANR’s charge by state statute is to prioritize reduction in both amount and toxicity of solid waste disposed in Vermont. Materials which are not hazardous, but which make up a sizeable portion of the waste stream, are prioritized in order to move Vermont closer to ANR’s disposal and diversion goals and meet the statutory requirement to reduce dependency on waste disposal. ANR does not consider landfilling of recyclable and compostable materials to be a sustainable or greenhouse gas-neutral use for those materials.

**54. COMMENT:** The April 2015 “Beyond Waste Advisory Group” did not include a private solid waste & recycling representative among its numerous participants.

**RESPONSE:** The Beyond Waste Advisory Group included municipalities, environmental groups, legislators, manufacturing companies, and representatives that have several industry clients. The group had the goal of identifying and narrowing down high-level categories of materials without a well-supported collection program. Subsequent stakeholder meetings on topics identified by the Advisory Group were inclusive of all interested stakeholders, including the curbside hauling sector.

**55. COMMENT:** C&D processing still represents a significant challenge due to lack of volumes to support infrastructure, value added markets, and increasing transportations costs. The value for C&D (AW) waste cannot be mostly supported by disposal avoidance. This is a prime example of where mandating does not make for a sustainable system. Since 2014, when Act 175 was started, no significant in State processing facilities have been added and more importantly, no significant end markets have been developed that were not in place previously. This stems from the original concerns of limited volumes and lower cost materials not supporting the effort previously and at this point in time.

**RESPONSE:** Because C&D materials make up a significant segment of the waste stream, ANR continues to support efforts to decrease disposal of C&D materials, while recognizing that current end markets are lacking, and diversion may not yet be a cost-effective alternative to disposal. For this reason, ANR has not recommended expansion of the law to include a landfill ban or recycling requirements for smaller generators.

**56. COMMENT:** You do not point out that SWMEs are required to have a facility for shingles and drywall by 2019. That statement should be made, and perhaps include brief description of the rationale, projected results, etc.

**RESPONSE:** ANR has added clarification to the Report that Solid Waste Management Entities must offer a recycling collection option for asphalt shingles and clean drywall by July 1, 2020. Further detail on this provision is included in the 2014 State Materials Management Plan.

**57. COMMENT:** Collecting asphalt shingles and gypsum is not in any way challenging, though it requires availability of a covered collection space. However, there is little incentive in most of the state for contractors to separate out materials, there is no ban (most materials would not be subject to Act 175), and markets require development. In many regions, especially those without C&D Recycling facilities, requiring SWMEs to collect shingles and dry wall can be done, but the cost for using the collection facilities will be significantly higher than landfill disposal.

**RESPONSE:** ANR recognizes the potential costs for collecting and recycling drywall and asphalt shingles, however it is also challenging to develop markets to recycle the material if people have no way to easily recycle the material. Some facilities are currently able to offer a lower fee for separation and recycling of drywall and shingles than for landfilling them. ANR will seek comments on the next Materials Management Plan which will likely discuss diversion of C&D materials.

**58. COMMENT:** Pilot projects with VTrans are to be applauded and seem promising yet they require commitment and follow through. Consider adding language that would support a formal adoption of best practices for marrying asphalt, tires, and glass reuse in all state projects.

**RESPONSE:** ANR is committed to working with VTrans and other partners to develop local markets and end uses for materials now and in future. However, the Agency does not plan to recommend a formal adoption of best practices for use of recycled materials in all state projects at this time.

**59. COMMENT:** Are there statewide or regional efforts to create a local market for textiles in light of the failing export markets? Are PFAS concerns with waterproof textiles of note with the few textile collectors now operating in Vermont?

**RESPONSE:** ANR has chosen not include more detail in this section due to the changing nature of prospective end markets, and the fact that additional specificity on individual end market possibilities would not offer the Legislature actionable recommendations to consider. ANR continues to work collaboratively with other states and agencies to assess risks posed by PFAS chemical compounds, including those that may be found in waste streams.

**60. COMMENT:** The speed and success of the pharmaceutical collection program merits special attention as to manufacturer responsibility *and* sister agencies working together as a model for tackling other difficult to manage materials.

**RESPONSE:** The pharmaceutical collection program is notable because of its successful cross-agency/sector collaboration, and ANR has added language to the Report recognizing that.

**61. COMMENT:** There could be more discussion about ... ways to promote pharmaceutical collection days more effectively.

**RESPONSE:** Specific outreach and other program strategies are not addressed in this Report because it is a level of detail beyond the Report's scope and does not offer the Legislature actionable recommendations to consider.

**62. COMMENT:** A determination should be considered and added for some middle ground in the recognition of uses of materials. Even a partial recognition of waste material fuel blends consisting of RAS, TDF, etc. and (not MSW incineration) or other support materials (road base / ADC / drainage medium / etc.) would go a long way in encouraging the efforts toward beneficial use (BUD) of materials that would otherwise go unrecognized or under appreciated. This could be in the form of a % reduction to the Franchise Fee or other incentives and could count toward State diversion goals. A "Win-Win" for all involved.

**RESPONSE:** ANR has given consideration to many of these beneficial uses in the past, however it is longstanding policy that incineration and alternative daily cover constitute disposal and not diversion, unlike other states that may count these toward their recycling goals.