

Meeting Minutes

Waste Diversion and Recycling Task Force
DEQ Central Office, Third Floor Conference Room
1111 East Main Street, Richmond, Virginia
Tuesday, March 15, 2022

Members Present: Michael Hatfield, Kristi Rines, Tad Phillips, Robbie Pecht, Morgan Guthridge, Mike O'Connor, Jim Taylor, Brian Sernulka, Joe Benedetto, Joe Lerch, Debbie Spiliotopoulos, John Harbin, Craig Coker, Rob Laurent, Greg Evanylo, Jared Stoltzfus, Kenneth Dunford, Kim Hynes, Helen Lee, and Rick Galliher.

Members Absent: Mitchell Smiley, James Gestrich, Rhonda Russell, Dale Bennett, and Tom Benevento.

Other Attendees: Andrew Payton (alternate for Tom Benevento), Mike Smaha, Marshall Hall, and Kathryn Paxton.

DEQ Staff Attendees: Kathryn Perszyk, Craig Nicol, Sanjay Thirunagari, Gary Graham, Melinda Woodruff, Meghann Quinn, and Sharon Baxter.

The meeting convened at 10:02 a.m. The meeting adjourned at 3:54 p.m.
A quorum of the task force members (or their alternates) was present for this meeting.

1. **Welcome, Group Reminders** [Craig Nicol, Kathryn Perszyk, DEQ].
 - a. The draft meeting agenda (Attachment 1), a revised Task Force Member List (Attachment 2), and the following links had been sent to the members prior to the meeting:
 - [HB647 \(2022\) Packaging Stewardship Program and Fund; Stewardship Advisory Committee; established](#)
 - [HB709 \(2022\) Packaging Stewardship Program and Fund; established](#) (identical to HB918)
 - [HB918 \(2022\) Packaging Stewardship Program and Fund; established](#) (identical to HB709)
 - [HB826 \(2022\) Beverage container deposit and redemption program; established; civil and criminal penalties](#)
 - [ReFED's Policy Finder Tool](#)
 - b. Mr. Nicol and Ms. Perszyk reviewed the meeting agenda and presented a meeting introduction (Attachment 3) that:
 - i. Reminded members of the responsibilities of participating in a public body subject to FOIA,
 - ii. Reviewed the consensus process in the context of Task Force decision-making, and
 - iii. Reminded members that DEQ must report the Task Force recommendations to the General Assembly by November 1, 2022.

2. **Overview Bottle Bill State Programs, Q&A** [Mike Smaha, Can Manufacturers Institute]. Mr. Smaha provided a presentation (Attachment 4), and a handout (Attachment 5) in support of the presentation, that reviewed the bottle bill program proposal for Virginia HB 826 and provided the status of bottle bill programs in other states, the types and advantages of various bottle bill programs, the potential cost savings for municipalities, the higher recycling targets possible with bottle bill programs (up to 90%), and the bottle bill program stakeholders. Discussion after the presentation centered on the potential for grants; the success of the Oregon bottle bill; the benefits, impacts, and disadvantages of the bottle bills on local recycling programs and existing material recovery facilities; and concerns about capital costs, space conflicts at seller collecting centers, and the potential for undermining the financial basis for local recycling programs.

3. **Plastic Waste Pollution Advisory Council** [Meghann Quinn, DEQ]. Ms. Quinn provided a presentation (Attachment 6) that introduced the Plastic Waste Prevention Advisory Council, discussed its purpose, reported on the council's 2021 recommendations to the Governor, and outlined the Council's priorities for 2022. The presentation also briefly mentioned the circular economy concept, some beverage container deposit and return programs, and planned topics for future Council meetings. Discussion after the presentation centered on getting updates for the Council's 2021 recommendations for an expanded polystyrene packaging ban and disposable plastic bag tax. The members also briefly discussed expanding the container recycling fees to products that are not recyclable, the fact that deposit programs function better for beverage containers than other types of recycling, the fact that collection programs work better in more densely populated areas, and concerns that collection programs place an undue burden on more rural areas.

4. **Facilitated Discussion & Group Recommendations** [Craig Nicol, Kathryn Perszyk, DEQ].
 - a. Discussions:
 - i. Extended Producer Responsibility (EPR) programs have advantages in removing burden from localities, improving waste stream quality, using the same trucks to deliver product and remove waste, and locating pickup locations where they gather the most waste.
 - ii. Rural communities bear an undue burden under bottle bills and recycling programs. What can be done to minimize this burden? Focus on urban areas. A bottle bill might include reverse vending machines in rural areas even though the return is smaller there.
 - iii. Locating collection facilities nearer users has mixed reviews. Use of parking lots for collection limits parking; point-of-use collection may improve collection in rural areas; dumpster hygiene and runoff are of concern for residential collection boxes; thinking more holistically about point-of-use collection may have benefits for both rural and urban areas; and concentrating on beverage container collection at point-of-sale/point-of-use locations would be best for roadside litter prevention.

- iv. Is a bottle bill program too narrow? Should it be a container program instead?
- v. Do bottle bill programs and EPR programs conflict? A container collection program can morph into an EPR program without a deposit program.
- vi. Do locality-run recycling programs conflict with EPR and deposit programs? Local recycling programs take a financial hit if they co-exist with purer waste stream operations like purple can clubs and EPRs.
- vii. Crushing of containers inhibits success of deposit program collections because the label on the container must remain visible. Time and education can fix this.

b. **Test for consensus.** Proposal: Does the Task Force support a recommendation in the final report for a beverage container deposit/redemption program (e.g. a Bottle Bill program)? **No Consensus achieved.** Concerns that remain include:

- i. A beverage container deposit/redemption program will hurt the more general curbside recycling programs.
- ii. It is unknown whether the current political climate will support such a proposal.
- iii. Such redemption programs are expensive and inefficient.
- iv. Would rather strengthen existing collection programs.
- v. There are sanitation and food safety issues associated with redemption collection.
- vi. Possibility of abuse by redeeming containers brought in from out of state.
- vii. Different container materials (glass, plastic, cans) have different market values. Redemption programs equalize the value of all collected materials without regard to the real market value of the materials.
- viii. Collection costs are still an undue burden in rural areas.
- ix. Redemption programs strip local recycling programs of the most valuable materials, reducing the recycling revenue necessary to run those more general programs.
- x. Generally, there are too many unknowns about these impacts for localities to endorse the proposal.
- xi. The Task Force has no representation from metal recyclers and needs their input.
- xii. There may be consensus if proposals are separated out by material.

5. **Policies tied to Food Recovery Hierarchy, Q&A** [Samantha Goerger, ReFED]. Ms.

Goerger presented a number of policies designed to reduce food waste, including (among others) the 2-label system (i.e., separate quality/safety dates), liability protections, tax incentives (credits, not deductions), recycling for animal feedstock, and organic waste bans (see Attachment 7). Further resources for case studies, data, models, etc. were provided.

6. **EPA Food Waste Resources, Food Waste work in Region 3** [Melissa Pennington, EPA R3].

Ms. Pennington presented an overview of EPA's program for keeping food waste out of

landfills. She emphasized that meeting EPA's waste recycling rate goals (50% by 2030) will be difficult without building additional capacity for organics recycling. Preventing food waste and food waste recycling will be necessary to meet those goals (see Attachment 8).

EPA's recommendations include:

- a. Make food waste a Principle Recyclable Material (PRM) through policy interpretation or changes to 9VAC20-130.
- b. Require compost facilities to be operated by state-licensed operators.
- c. Ban yard waste from being accepted at landfills.
- d. Upgrade existing yard waste composting facilities to accept food waste.
- e. Take advantage of new EPA grant programs.

7. **Facilitated Discussion & Group Recommendations** [Craig Nicol, Kathryn Perszyk].

Discussion points include:

- a. Banning organics from landfills. Generators of more than 2 tons of food waste per week to go to organic recycling and not to landfill, if there is a facility within 25 miles regardless of whether a business or municipality
- b. Making necessary changes so that food waste is included as PRM and can be included in the locality's recycling rate. As an alternative, use Director discretion to include food waste as PRM.
- c. Mandating the composting of food waste.
- d. Clarifying solid waste definitions.
- e. Breaking out a separate category for food waste on the SWIA report for composting facilities.
- f. Facilitating the use of food waste/scrap for use as swine feedstock.
- g. Requiring composting of construction site clearing and road clearing waste, and possibly requiring that the compost to be used for rebuilding the soil profile at construction sites which will also improve water quality run-off.
- h. Hiring a DEQ organics coordinator to review priorities and the need for locating new composting facilities.
- i. Including the management of organics in the agency's strategic planning.
- j. Reviewing composting exemptions for clarity, and add more exemptions for agricultural operations.
- k. Removing barriers to food donations by developing infrastructure with Virginia Department of Health and providing liability protections (such as HB1249).
- l. **Test for consensus.** Proposal: Remove barriers to feeding people and feeding animals while maintaining health and safety. **Consensus achieved.**

8. **Topic Priority, Next Steps, Future Meetings** [Craig Nicol, Kathryn Perszyk]. Ms. Perszyk presented the topic priorities selected by members from the brainstorming session in Meeting 1 (see Attachment 9).

- a. Next Steps:
 - i. Start assembling the tools for writing the DEQ report to the General Assembly. DEQ will generate a template. Craig Coker and Jared Stoltzfus volunteered to assist with the writing and editing. Include hurdles and

challenges in the report. Members proposed getting the Farm Bureau, VDACS, and VDOT reactions and thoughts on the Task Force topics before finalizing recommendations.

- ii. Focus on infrastructure and development – what changes need to happen to expand capabilities with the new grant money discussed in the EPA presentation.
- b. Next Meeting:
- i. Feedback from the Litter Board is requested, noting that resources at the Litter Board are limited.
 - ii. More information on extended producer responsibility (ERP) is requested at the next meeting (more than just the Bottle Bill presentation).
 - iii. Discuss more of the priority items in Attachment 9.
 - iv. Possible dates for the next meeting include Wednesday, April 27 and Tuesday, May 10. Once DEQ settles on potential dates, they will be distributed as a Doodle Poll to members.

Attachments:

1. Agenda.
2. Task Force Member List (revised)
3. Introduction Presentation
4. Bottle Bill Presentation
5. Bottle Bill Handout
6. Plastic Waste Pollution Advisory Council Presentation
7. Policies Tied to Food Recovery Hierarchy Presentation
8. EPA Food Waste Resources, Food Waste work in Region 3 Presentation
9. Priority Ranking Slides

Attachment 1

WASTE DIVERSION AND RECYCLING TASK FORCE
Bank of America Building 3rd Floor Conference Room
1111 East Main Street, Richmond, Virginia

March 15, 2022

10:00 **Welcome, Group Reminders**
Kathryn Perszyk / Craig Nicol

AM Focus: Packaging Stewardship & Bottle Bills

10:15 **Overview Bottle Bill State Programs, Q&A**
Mike Smaha, Can Manufacturers Institute

10:45 **Plastic Waste Pollution Advisory Council**
Meghann Quinn, DEQ

11:00 **Facilitated Discussion & Group Recommendations**
Craig Nicol / Janet Weyland

12:00 **LUNCH BREAK (on your own)**

PM Focus: Policy Options to Target Food Waste Diversion

1:30 **Policies tied to Food Recovery Hierarchy, Q&A**
Samantha Goerger, ReFED (Virtual -- Zoom)

2:00 **EPA's Food Waste Resources, Food Waste work in Region 3**
Melissa Pennington, U.S. EPA Region 3, RCRA Programs Branch (Virtual)

2:30 **Facilitated Discussion & Group Recommendations**
Craig Nicol / Janet Weyland

3:30 **Topic Priority, Next Steps. Future Meetings**
Craig Nicol / Janet Weyland

4:00 **ADJOURN**

Attachment 2
Task Force Member List

Organization	Member	Alternate
Wise County	Michael Hatfield	Bill Dingus
City of Virginia Beach	Kristi Rines	None
Virginia Waste Industries Association	Tad Phillips	None
Virginia Beer Wholesalers Association	Robbie Pecht	None
Virginia Beverage Association	Morgan Guthridge	None
Virginia Petroleum and Convenience Marketers Association	Mike O'Connor	None
Westrock	James (Jim) Taylor	None
O. I. Glass	Brian Sernulka	None
Virginia Recycling Association	Joe Benedetto III	None
Virginia Municipal League	Mitchell Smiley	None
Virginia Association of Counties (VACo)	Joe Lerch	None
Northern VA Regional Commission	Debbie Spiliotopoulos	Scott Macdonald
Hampton Roads Planning District Commission	John Harbin	None
Coker Composting	Craig Coker	None
Landfill Advisory Board Prince William County	James Gestrich	None
Community Member	Rob Laurent	None
Virginia Tech	Greg Evanylo	None
James Madison University	Jared Stoltzfus	None
Tazewell County	Kenneth Dunford	None
SWANA/Central VA Waste Management Assoc. (CVWMA)	Kim Hynes	None
Charles City County	Rhonda L. Russell	None
City of Alexandria	Helen Lee	None
Virginia Trucking Association	Dale Bennett	None
Virginia Bottle Bill Organization	Rick Galliher	Scott Peterson
Virginia Council on Environmental Justice	Tom Benevento	Andrew Payton

Attachment 3

Introduction Presentation



Waste Diversion & Recycling Task Force

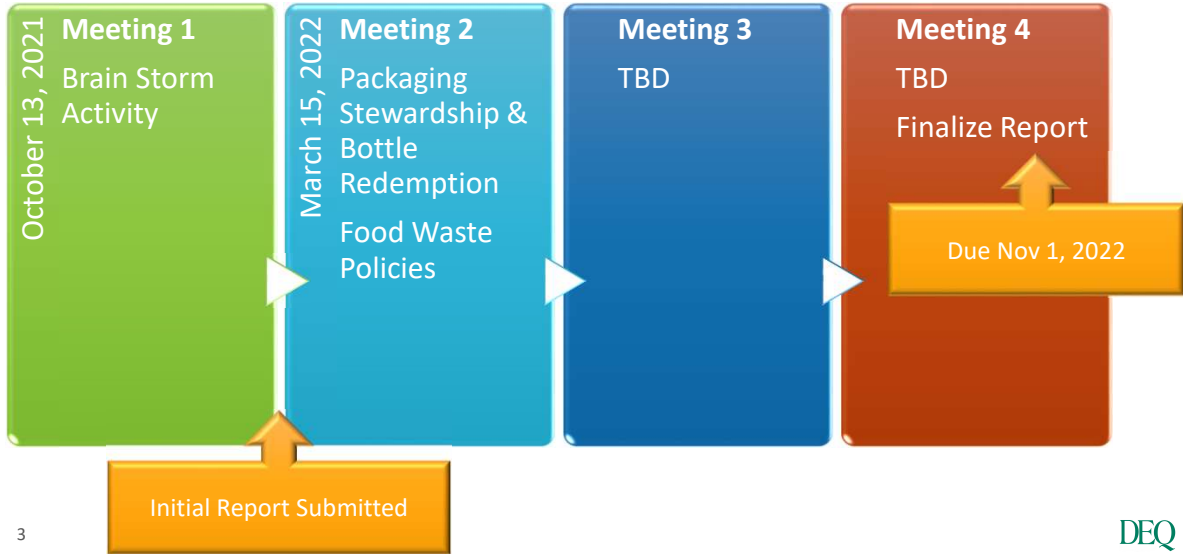
Welcome, Reminders, & Updates

Kathryn J. Perszyk
Director, Land Protection & Revitalization Division
Virginia Department of Environmental Quality
March 15, 2022

WDRTF Reminders

- The Task Force = Public Body
 - All meetings of the group are public meetings, subject to FOIA
 - Goal is to reach a *consensus* on recommendations
 - *Consensus* is defined as a willingness of each member of a group to be able to say that he or she can live with the decisions reached and will not actively work against them outside of the process

Waste Diversion & Recycling Task Force Timeline



Task Force Themes



Meeting 2 Agenda Topics & Speakers

Packaging Stewardship & Bottle Redemption Programs

- Overview Bottle Bill State Programs
Mike Smaha
Can Manufacturers Institute
- Plastic Waste Prevention Advisory Council
Meghann Quinn, DEQ

Policy Options to Target Food Waste Diversion

- Policies tied to Food Recovery Hierarchy
Samantha Goerger, ReFED
- EPA Feedback and Recommendations Regarding WDRTF Brainstorming Activities
Melissa Pennington
U.S. EPA Region 3

Attachment 4

Bottle Bill Presentation



Presentation and Discussion on Beverage Container Deposits

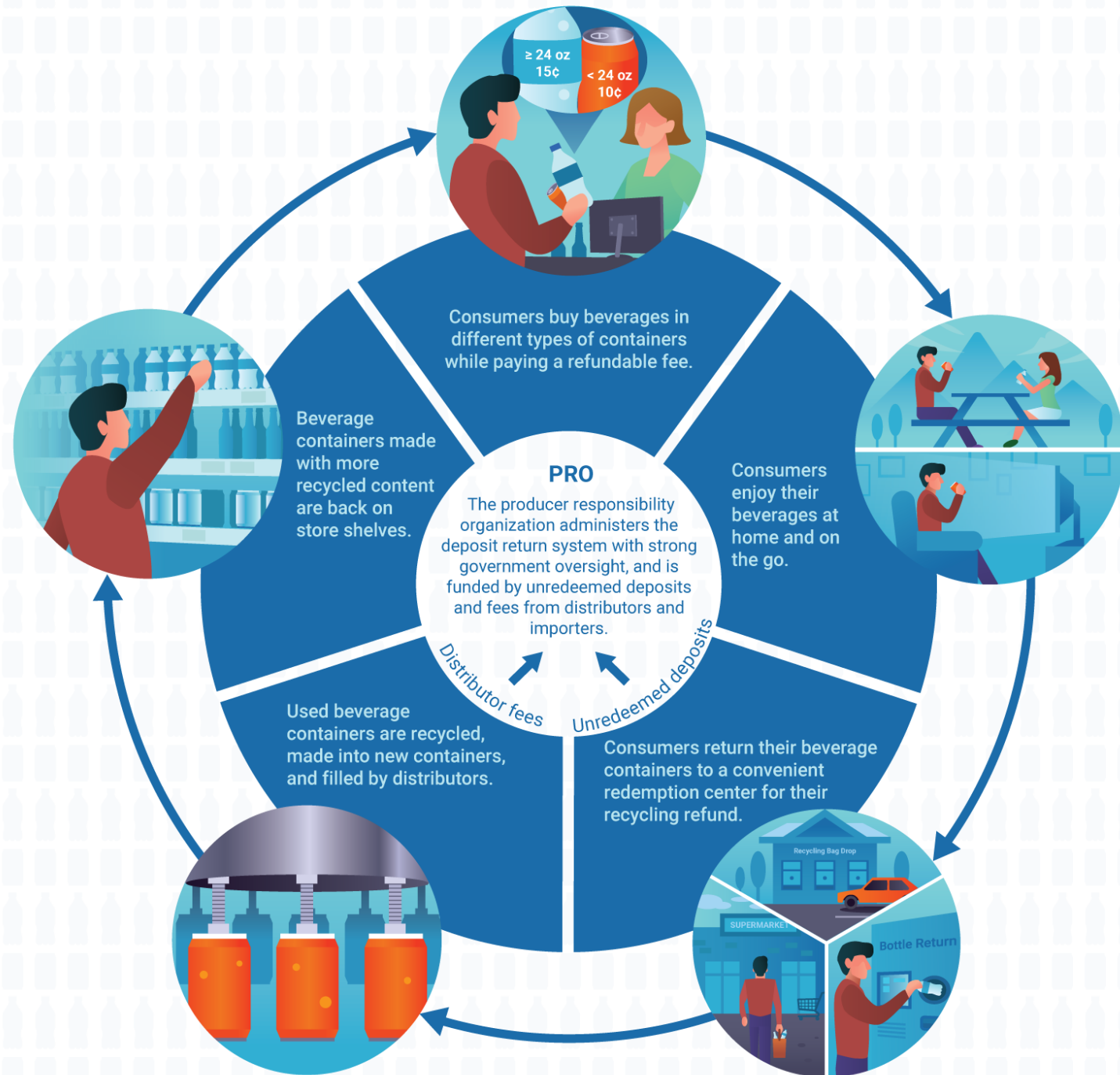
March 15, 2022

Agenda

- How Does a Deposit Return System Work?
- Virginia Deposit Legislation: HB 826 – How We Got Here
- Can Industry Recycling Targets
- Deposits and Their Benefits
- CMI Thought Leadership and Key Elements Development
- Stakeholder Outreach
- Addressing Stakeholder Concerns
- Wrap Up

How Does a Deposit Return System Work?

Buy the Beverage, Borrow the Container



Virginia Deposit Legislation: HB 826 – How We Got Here

- Introduced by Delegate Patrick Hope
- Agriculture, Chesapeake and Natural Resources Committee
- Subcommittee Chairman referral to Waste Reduction and Recycling Task Force for consideration



Aluminum Beverage Can Industry Recycling Rate Targets



Four Pillars of Action to Achieve the Targets

1

Well-Designed
Deposit Systems



CT-HI-IA-ME-MA-NY-VT 5¢
MI-OR 10¢ CA CRV

2

Increased
Household and
Away-From-Home
Recycling



3

Proper Sortation at
Recycling Centers



4

Increased Consumer
Awareness of the
Can's Sustainability
Advantage



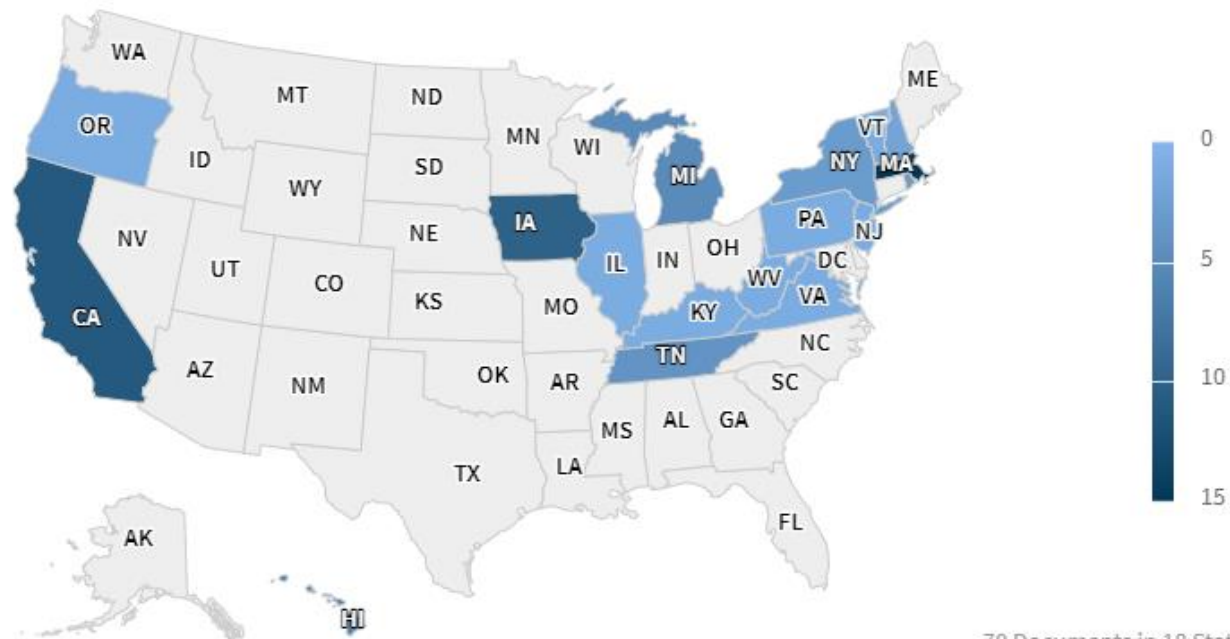
Interest in Deposit Programs Continues!

2022 Deposits Activity

- Discussions on a national beverage container deposit program
- Nine states considering new deposit programs
- Bills introduced in seven of the ten deposit states to amend their programs
- Supply chain pressure on domestic manufacturers continues

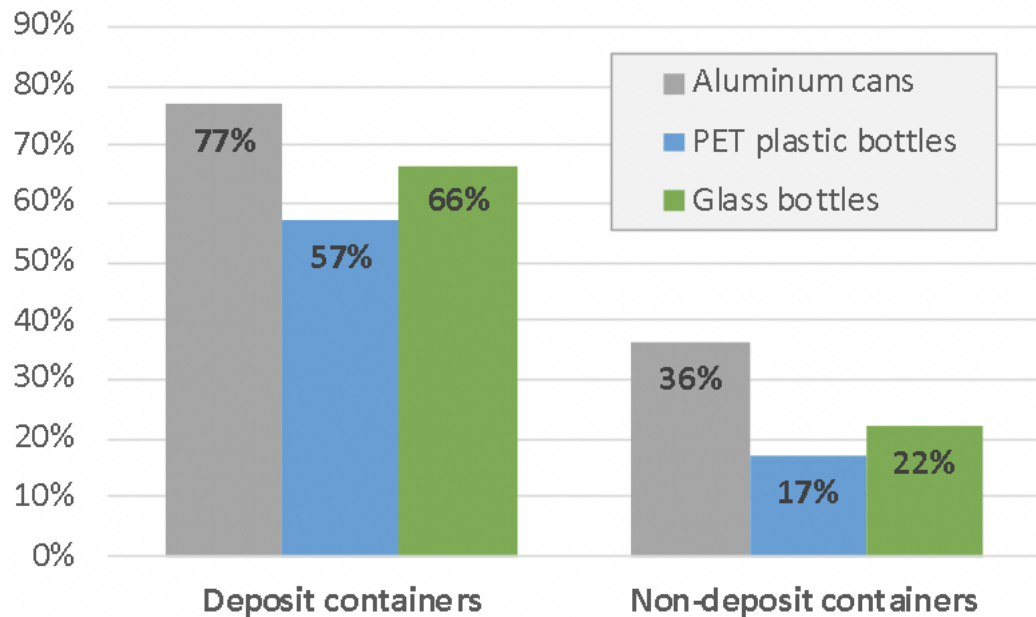
Deposits

M MULTISTATE



Deposits Boost Container Recycling

U.S. Nominal Recycling Rates
by Deposit Status, 2019



"2019 Beverage Market Data Analysis."


© Container Recycling Institute, 2022




40% of all aluminum beverage containers come from the 10 deposit states

Environmental and Economic Impact

U.S. National Beverage Container Deposit Return System Anticipated Impacts

A U.S. national deposit system with a 90% redemption rate would* ...

SOURCE: 

<p>...avoid annually greenhouse gas emissions equivalent to more than 2.37 million cars off the road</p>  <p>CLIMATE</p>	<p>...create a total of 155,478 new jobs</p>  <p>ECONOMIC OPPORTUNITY</p>	<p>...collect annually more than 7.42 million tons of additional recyclable material valued at \$6.1 billion</p>  <p>INDUSTRY</p>
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* Relative to today's recycling system

More info at [Reloop's fact sheet](#)

Benefits for Virginia

23% estimated recycling rate of aluminum cans versus Oregon's 80.8%

\$3.5 million a year on roadway litter cleanup

- VDOT estimates 3/4 comes from conscious littering
- Keep America Beautiful estimates a 2:1 ratio of containers in litter between non-deposit and deposit states

If Virginia had a 90% redemption rate?

- 1.2 billion additional cans recycled
- \$19 million more revenue for recycling industry
- Energy saved would power 475 hundred million homes for one hour

Deposits Can Save Municipalities Money

Fact Sheet
Deposit Return Systems Generate Cost Savings for Municipalities
February 2021



Fact Sheet: Deposit Return Systems Generate Cost Savings for Municipalities

- Reloop analyzed 33 studies that examined the costs and benefits to municipalities of implementing (or expanding) a deposit return system for beverage containers. While different in scope, location, author, and year, **nearly every study reported significant net cost savings to municipalities.**

CMI Has Produced Thought Leadership on DRS and Has a Deposits Part of its Website

MarketWatch

Outside the Box

Opinion: How giving Americans money to recycle bottles and cans would slow climate change and boost the economy

Last Updated: Dec. 31, 2021 at 10:21 a.m. ET
First Published: Nov 11, 2021 at 12:32 p.m. ET

By Elizabeth Balkin, Scott Green and Alan Tronlow

A national deposit system with one set of rules for consumers and companies would increase recycling and help the environment



MarketWatch (November 11, 2021) Published with the circular economy non-profit ReLoop and the advocacy group U.S. Public Interest Research Group

RealClear Energy

Leading Beverage Container Manufacturers Agree: Well-Designed Deposits Are Key to Getting More Containers Back for Recycling

By Robert Budway & Darrel Collier, Scott DeFife
September 13, 2021

The glass, metal and plastic PET container industries agree that deposit systems lead to higher recycling rates, as well as better quality, higher value material enabling circularity. We support efficient, effective deposit systems and are eager to work with lawmakers on how to design and implement such well-designed systems with the principles below.

The data show a stark contrast between recycling rates in deposit states versus the country. According to the Container Recycling Institute, in 2018 in the 10 states with deposit systems, recycling rates for PET bottles, glass bottles and aluminum beverage cans were 62%, 64% and 77%, respectively. A stark comparison to countrywide recovery rates of 28%, 40% and 46% respectively (Figure 1). There is no

Real Clear Energy (September 13, 2021) Published with Glass Packaging Institute and NAPCOR (National Association for PET Container Resources)

More info at
cancentral.com/deposits

Principles for a Modern, Well-Designed Deposit System

- Single entity to manage the system that must meet performance targets
- Appropriate deposit values to avoid market distortion and catalyze high recycling rates
- Unredeemed deposits should enhance the recycling system
- Include all beverage types and containers
- Easy and convenient redemption
- Each material pays its own way
- Use technology and clear labeling to reduce fraud and unfairness

These components are found in HB 826 and should be considered in your final report

Ongoing Stakeholder Conversations

Soft drink brands, beer and spirits industry, distributors, environmentalists, social justice activists, deposit program experts, plastic and glass container manufacturers


Two examples to share...

- Material Recovery Facilities
- Retailers

Virginia HB 826


Roles and Responsibilities in Beverage Container Deposit Return Systems

Various stakeholders would play a vital role in an efficient and effective deposit return system (DRS). The information below details how different stakeholders would participate in and contribute to a successful DRS.




Beverage Brands/Fillers

- Label beverage containers with deposit mark indicating it is redeemable for a refund (10 cents for containers less than 24 oz and 15 cents for containers larger than 24 oz)
- Aluminum, glass, PET and HDPE plastic in program to start and all other material types added the following year. All beverage categories are in the program, except for infant formula, FDA - approved drugs or meal replacement liquids
- May be required to include a barcode for automated identification if elected by the PRO




Beverage Distributors/Importers

- Distributors and importers of beverages into or within Virginia must join the Producer Responsibility Organization (PRO) or pay a nonparticipation fee to the PRO




Retailers Who Sell Beverages

- Charges the consumer the deposit and container recycling fee. The CRF is included on customer receipt
- Accept redeemable containers inside store, or:
 - Provide the PRO space for outdoor redemption options
 - Coordinate with the PRO on deposit voucher options
- Smaller retailers that primarily prepare food for sale or have small annual beverage sales or use vending machines only are exempt from redemption requirements



The Producer Responsibility Organizations (PRO)

- Charges the retailer the deposit and container recycling fee (CRF) on each container delivered. The CRF applies to packaging not made of aluminum, glass or certain plastic.
- PRO can remove CRF once material value increases and end-market demand is created
- Installs, operates and manages reverse vending machines and establishes and operates bag drop redemption centers to ensure consumers have convenient options for redemption
- Keeps unredeemed deposits to support program costs
- Owns material collected through redemption and decides which end-market to sell the material
- Transfers 10% of scrap value to the Virginia Department of Environmental Quality (DEQ) during the first five years to support residential recycling providers
- Meets statutory redemption rate performance targets:
 - 75% by year three
 - 85% after year four
 - 90% starting year eight
- Submits a plan to DEQ if targets are not met
- Posts its own annual performance reports on PRO website
- Responds to an Advisory Committee



The Government (DEQ)

- Legislative obligation to oversee PRO operations
- May raise the deposit value if the redemption rate does not reach 85% for three consecutive years
- Takes control of PRO operations if performance targets are not met for five years
- Determines how to disperse the portion of the scrap value funds provided from the PRO during the first five years of the program to support the collection of household recyclables
- Enforces civil and criminal penalties for redemption fraud or the PRO not meeting its obligations

CAN MANUFACTURERS INSTITUTE

CANCENTRAL.COM/DEPOSITS

MRF Operator Conversations



ambr
Alliance of Mission-Based Recyclers

■ DRS + Curbside = Optimized Recycling Performance

- Highest recycling rates with both DRS and effective curbside programs
- Curbside recycling alone will not reach 90% container recovery
- DRS materials more likely to be recycled back into containers (closed loop)
- Benefits to recycling facilities by removing glass

■ Recyclers Need a Transition Plan to be Supportive

MRF Operator Discussions

- Provide temporary, transitional funding to help MRFs adjust their business models to the new normal. There are several ways this could be achieved including:

- **HB 826 - 10% of scrap value to DEQ during the first five years of the program**

Other ideas...

- Allowing MRFs for a limited term to get part or even the entire deposit value of the containers that flow through the MRF based on:
- Funding based on output quality that meets ISRI material specifications
- Funding based on actual commodity price and market conditions

Retailer Conversations

- Redemption options take up valuable space inside the store
- Empty beverage containers in the store can make it harder to keep the store clean
- Operating redemption options in the store detracts management from their core focus of selling goods in a safe, pleasurable environment
- Broken or inconvenient redemption options can cause consumer annoyance that can lead to them shopping elsewhere or having a negative view of the store.

HB 826 – Retailer Approach

- Retailers can comply with deposit bill requirements simply by making space available to the producer responsibility organization (PRO) to install, service, and operate redemption options (e.g., RVMs, bag-drop locations)
 - This could include making some parking spots available far from the entrance for a bag-drop option
 - **As a result, the retailer can easily comply without needing to make space available in the store, devote any employees to the effort, or pay any money**

Potential Benefits of a DRS for Retailers

After consumers return their containers, they now have new money to spend at the store

Almost three-quarters of Michigan consumers (73%) who participated in a survey said they spend their deposit refund at the store where they returned their containers

Shoppers returning containers across four European countries stated that they spent up to 50% more money during their store visit than those who did not return empty containers

Wrap It Up

A well-designed program should have key elements outlined in the original VA deposit bill and should be included in the recommendations coming out of this task force

Attachment 5

Bottle Bill Handout

Buy the Beverage, Borrow the Container: How a Beverage Container Deposit Return System Works

Well-designed deposit return systems are convenient for consumers and better for the environment because they encourage higher recycling rates, help reduce litter and community expenditures on trash cleanups, and curtail carbon emissions.



Roles and Responsibilities in Beverage Container Deposit Return Systems

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Attachment 6

Plastic Waste Pollution Advisory Council Presentation.





Plastic Waste Prevention Advisory Council

Meghann Quinn
Manager, Office of Pollution Prevention
Virginia Department of Environmental Quality
March 15, 2022

PWPAC's Purpose

*The Plastic Waste Prevention Advisory Council (the Council) is established as an advisory council, within the meaning of § 2.2-2100, in the executive branch of state government. The purpose of the Council is to advise the **Governor on policy and funding** priorities to **eliminate plastic waste impacting** native species and polluting the Commonwealth's environment and to **contribute to achieving plastics packaging circular economy industry standards.***

<https://lis.virginia.gov/cgi-bin/legp604.exe?201+ful+CHAP0798>

Council Members

Legislative

- Delegate Kenneth Plum – Delegate for the 36th House of Delegates District
- Kathy Neilson – Designee of Senator Chap Petersen (34th Senate District)

Non-legislative

- Dr. Rob Alexander – James Madison University
- Jennifer Cole – Clean Fairfax
- Anne Johnson, **Chair** – Resource Recycling Systems, Inc.
- Dr. Jennifer Russell – Virginia Polytechnic Institute and State University

Ex-Officio

- Sharon Baxter – Designee of Director of Virginia Department of Environmental Quality (DEQ)
- Joseph Hilbert – Designee of State Health Commissioner/Virginia Department of Health (VDH)
- Brett Vassey, **Vice Chair** – Virginia Manufacturers Association (Alternate - Adam Peer)
- Morgan Guthridge – Designee of Virginia Chamber of Commerce President

Council's Charge for its First Report

An enactment clause required that the initial report provide recommendations on legislation and other activities to **accelerate the elimination of plastic bags and polystyrene packaging** used or sold in the Commonwealth.

PWPAC in 2021

- 4 meetings
- Topics included:
 - Plastic pollution in Virginia
 - Plastic waste management in Virginia
 - Localities and litter enforcement
 - Recycling landscape in Virginia
 - Review of existing plastic bag and EPS bans
 - Overview of recent plastics-related legislation
 - Draft and finalize report

Recommendations

- **Disposable Plastic Bag Tax**
 - Monitor and Report
 - Education and Outreach
 - Best practices for implementation
 - Guidance for use of revenues
 - Model ordinance language
- **State-wide Expanded Polystyrene (EPS) Ban**
 - Allocation of Fines
 - Tools and Resources
 - Procurement Alternatives
 - Education and Outreach
 - Monitoring and Reporting
 - Continuous Improvement
 - Resources



Loudoun Adopts Plastic Bag Tax



LOUDOUN COUNTY VIRGINIA

- Five cents per bag
- For purchases at grocery stores, convenience stores & drugstores
- Effective 7/1/2022

Plastic Bag Tax

As of January 1, 2022, a 5-cent plastic bag tax will be charged for every bag used in grocery stores, drug stores, and convenience stores.



You can help:

- Reduce waste
- Prevent litter
- Protect our waterways

Thank you for keeping our land and waterways clean and green!

For more information, please visit roanokeva.gov/2706/Plastic-Bag-Tax



Recommendations

- **Waste Characterization Study** - The Council does recommend that the General Assembly authorize a statewide waste characterization study to define the volume and composition of both solid waste and recyclable material streams for the Commonwealth with specific details on the amount and types of plastic waste by resin type. This data is needed to establish and to understand the amount and character of plastic waste in Virginia and develop necessary baselines. To measure the performance of any interventions, comparable data will be needed on a regular basis to determine if recommended interventions are resulting in eliminating plastic waste and growing the circular economy.

Recommendations

- **Waste Characterization Study** - The Council does recommend that the General Assembly authorize a **statewide waste characterization study to define the volume and composition of both solid waste and recyclable material streams** for the Commonwealth with specific details on the amount and types of plastic waste by resin type. This data is needed to establish and to understand the amount and character of plastic waste in Virginia and develop necessary baselines. To measure the performance of any interventions, comparable data will be needed on a regular basis to determine if recommended interventions are resulting in eliminating plastic waste and growing the circular economy.

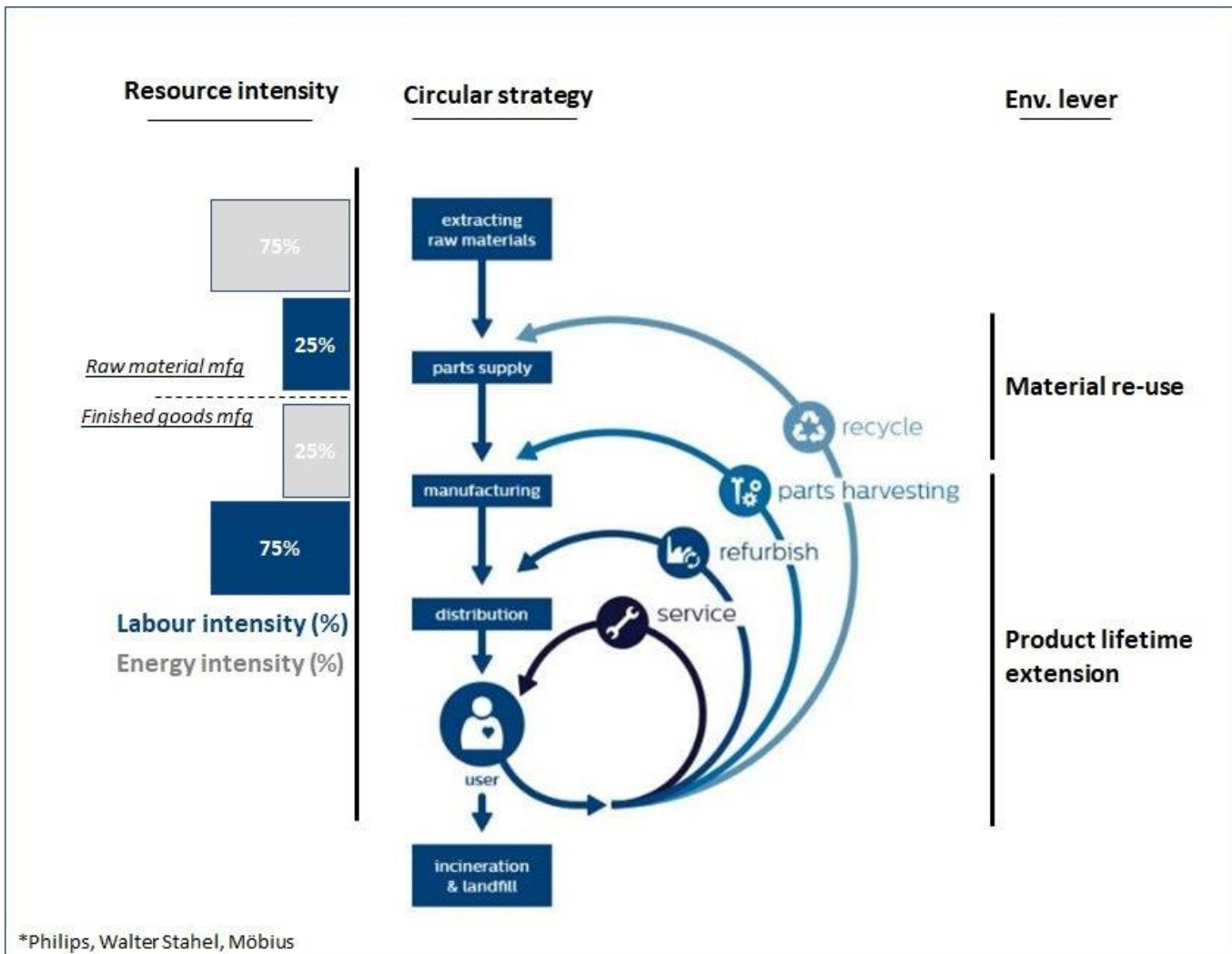
PWPAC in 2022

- 5-6 meetings planned for 2022
- Topics will include:
 - Policy options
 - Non-policy options
 - Infrastructure for recycling
 - Assessment of Virginia
 - Draft and finalize report

PWPAC in 2022

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The Circular economy is grounded on the principles of A “PERFORMANCE ECONOMY” articulated by Walter Stahel



Create greater value by re-circulating products and materials at highest value

Delink economic productivity from consumption of finite resources

Key enablers include:

- System thinking
- Design as critical lever
- New business models (e.g., products of service)
- Reverse logistics
- Collaboration

From A. Johnson's presentation at Feb. 25, 2022 PWPAC meeting.

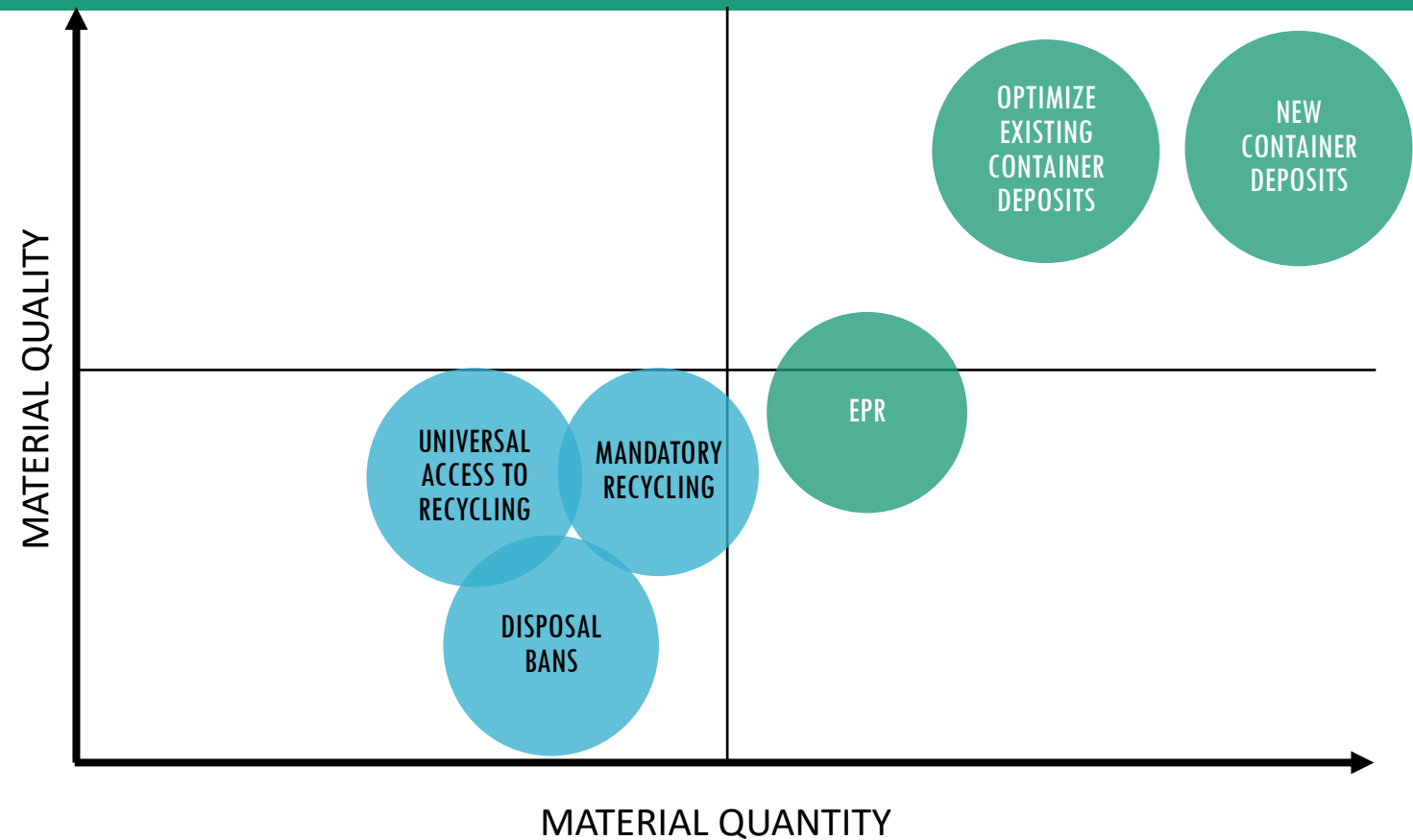
Common State-Level Supply-Side Supportive Policies

POLICY TYPE	DESCRIPTION	IMPACT
DISPOSAL BANS	Prohibits disposal of designated items (e.g., beverage containers) with trash.	Can keep material out of disposal systems and drive consumer recycling participation when coupled with education, infrastructure, and enforcement.
UNIVERSAL ACCESS TO RECYCLING	Requires service providers (public or private sector) to offer recycling everywhere waste collection is provided.	Expands access to recycling, particularly in rural, multi-family, and away-from-home settings; requires processing infrastructure and end markets.
MANDATORY RECYCLING	Requires generators to recycle; requires haulers to provide recycling services; or requires local governments to implement recycling.	Can drive consumer recycling participation when coupled with education, infrastructure, and enforcement.
EXTENDED PRODUCER RESPONSIBILITY (EPR)	Requires producers/brands/retailers to cover some or all of the costs of recycling packaging.	Provides financial support and central coordination/management to recycling system; re-aligns incentives for product and packaging design to ease waste management challenges.
BEVERAGE CONTAINER DEPOSITS	Places a deposit on certain beverage containers that can be redeemed when returned for recycling.	Generates significant quantities of clean, high-quality aluminum, PET & glass that facilitates high-grade end use.

From R. Dimino's presentation at Feb. 25, 2022 PWPAC meeting.

Quantity/Quality Spectrum of Supply-Side Recycling Policies

- This matrix is intended to give a directional sense of the impact of different policy options; exact outcomes will depend on the state targeted and the policy details.



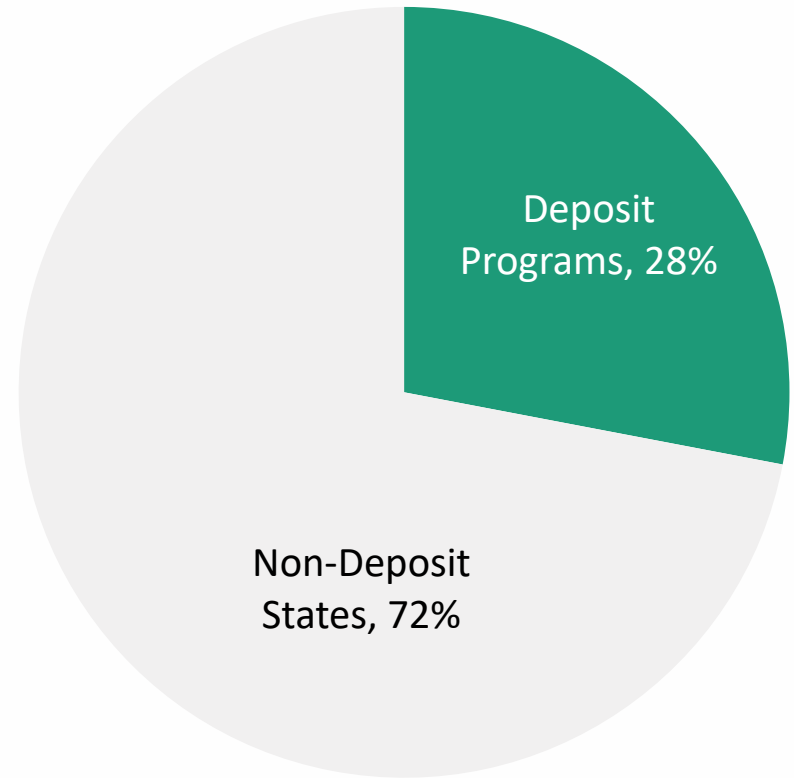
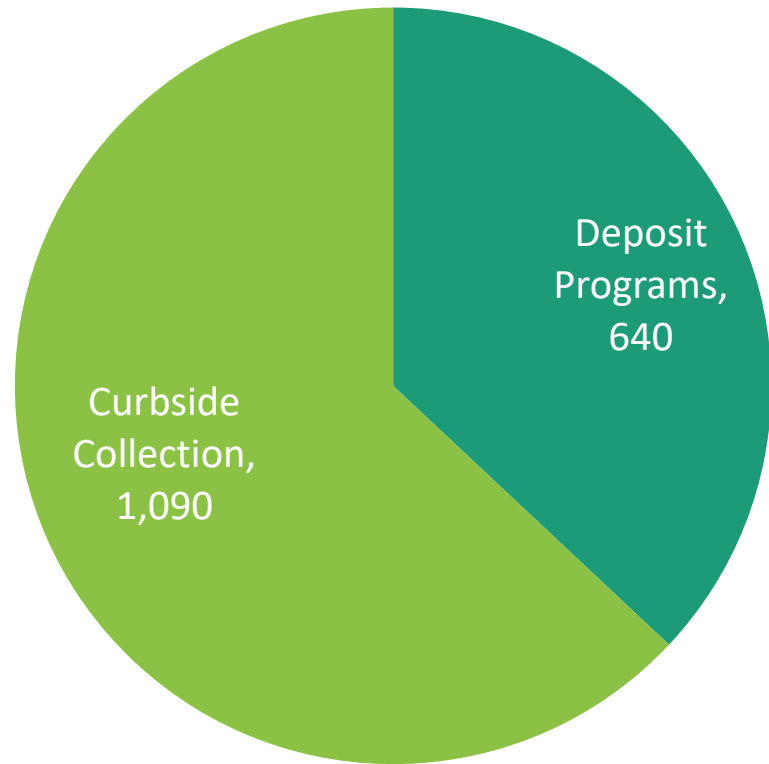
- Responsibility on Government/Public
- Responsibility on Industry

From R. Dimino's presentation at Feb. 25, 2022 PWPAC meeting.

Beverage Container Deposit Return Programs

*From R. Dimino's presentation at Feb. 25, 2022
PWPAC meeting.*

Impact of Deposit Programs on Collection of PET Stream



From R. Dimino's presentation at Feb. 25, 2022 PWPAC meeting.

Materials Included in Each Deposit State

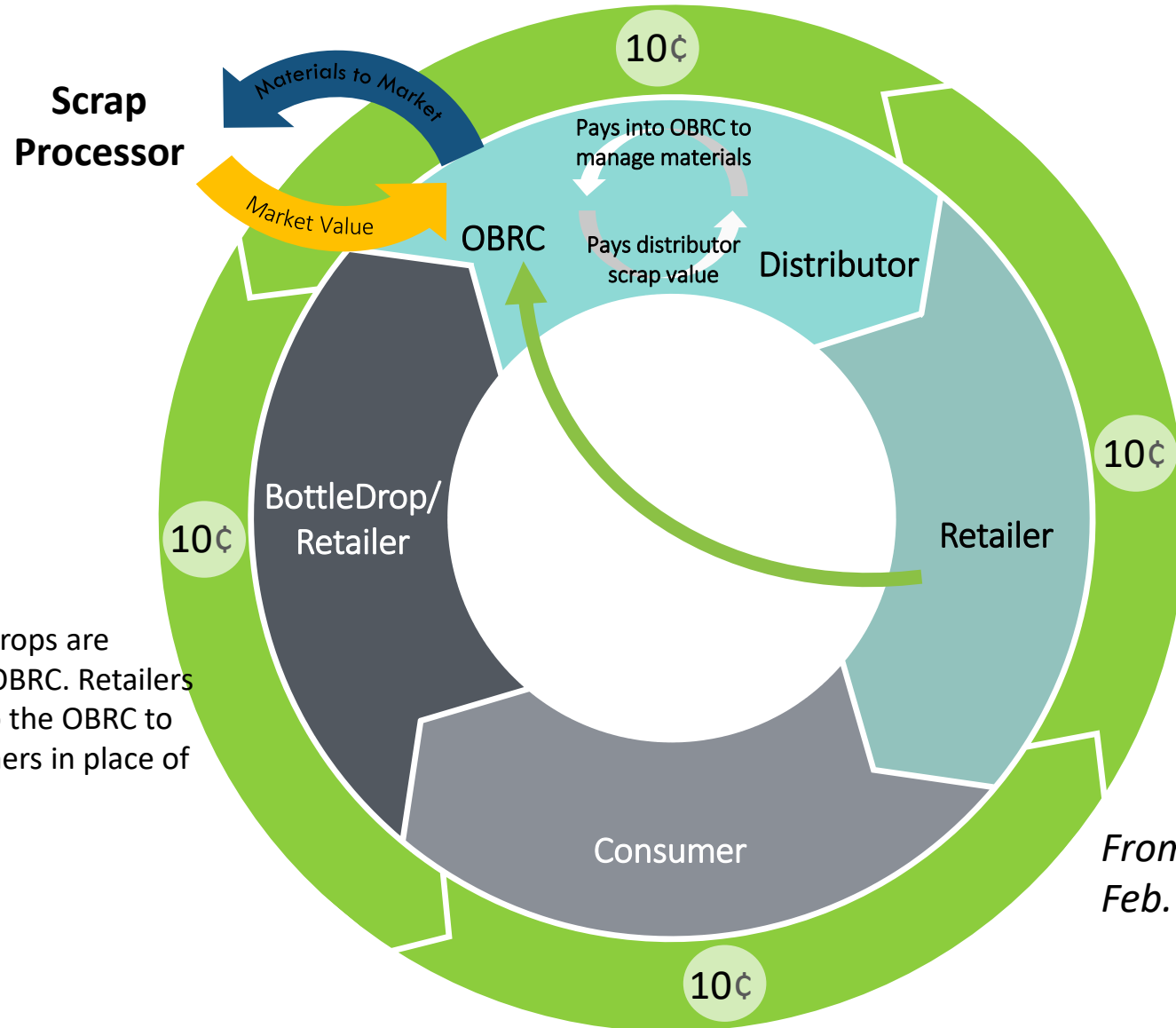
STATE	CSD	Beer & Malt Drinks	Sparkling Water	Non-sparkling Water	Sports Drinks	Energy Drinks	Juice	Tea & Coffee	Wine	Mixed Spirits	Spirits (Liquor)	% of PET Bottles on Deposit
ME	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	~75%
CA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		~75%
HI	✓	✓	✓	✓	✓	✓	✓	✓		✓		~75%
OR	✓	✓	✓	✓	✓	✓	✓	✓		✓		~75%
IA	✓	✓	✓						✓	✓	✓	~17%
VT	✓	✓	✓							✓	✓	~17%
NY	✓	✓	✓	✓						✓		~40%
CT	✓	✓	✓	✓								~40%
MI	✓	✓	✓							✓		~17%
MA	✓	✓	✓									~17%

**TEA AND COFFEE ONLY REFERS TO READY-TO-DRINK PRODUCTS
HARD CIDER NOT INCLUDED IN NEW YORK DEPOSIT**

**MAINE-MADE JUICE AND CIDER NOT INCLUDED IN DEPOSIT
NO STATES INCLUDE MILK, DAIRY PRODUCTS, OR INFANT FORMULA IN DEPOSITS**

From R. Dimino's presentation at Feb. 25, 2022 PWPAC meeting.

Oregon Bottle Deposit System



Oregon BottleDrops are funded by the OBRC. Retailers can pay a fee to the OBRC to redeem containers in place of retailer.

From R. Dimino's presentation at Feb. 25, 2022 PWPAC meeting.

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PWPAC in 2022

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 - Assessment of Virginia
 - **Draft and finalize report**

PWPAC Resources

- Link to 2021 report: <https://rga.lis.virginia.gov/Published/2021/RD628>
- Links for meeting minutes:
 - July 2021: <https://commonwealthcalendar.virginia.gov/Event/Details/52178>
 - Aug. 2021: <https://commonwealthcalendar.virginia.gov/Event/Details/52893>
 - Sept. 2021: <https://commonwealthcalendar.virginia.gov/Event/Details/53262>
 - Oct. 2021: <https://commonwealthcalendar.virginia.gov/File/Index/56004>
 - Feb. 2022: <https://commonwealthcalendar.virginia.gov/File/Index/57086>



Plastic Waste Prevention Advisory Council

Meghann Quinn
Manager, Office of Pollution Prevention
Virginia Department of Environmental Quality
March 15, 2022

Shared Expectations

As a Council, we aspire to authentically listen to one another while responding honestly and directly, particularly when we have a conflict of ideas or values. We will practice systems thinking as we identify effective solutions pertaining to our charge with meaningful consensus. We create broad participation in our work through transparency and authentic stakeholder engagement.

Decision-Making Rule

The Council decision rule requires a quorum present to vote which is a governance requirement. In the case of the PWPAC, this means having at least 6 members present. Presuming that a quorum is present for a vote, decisions are based on the support of a simple majority of the members present (i.e., 4 out of 6 or 6 out of 10). Upon request, the minority opinion is recorded and made part of the meeting record. Council members can only vote if present per state requirement. The decision-rule will be used for legislative and administrative recommendations for the reports.

Attachment 7

Policies tied to Food Recovery Hierarchy Presentation



Policies tied to the EPA Food Recovery Hierarchy

PRESENTED BY

Samantha Goerger

March 15, 2022



EPA Food Recovery Hierarchy

Prevention

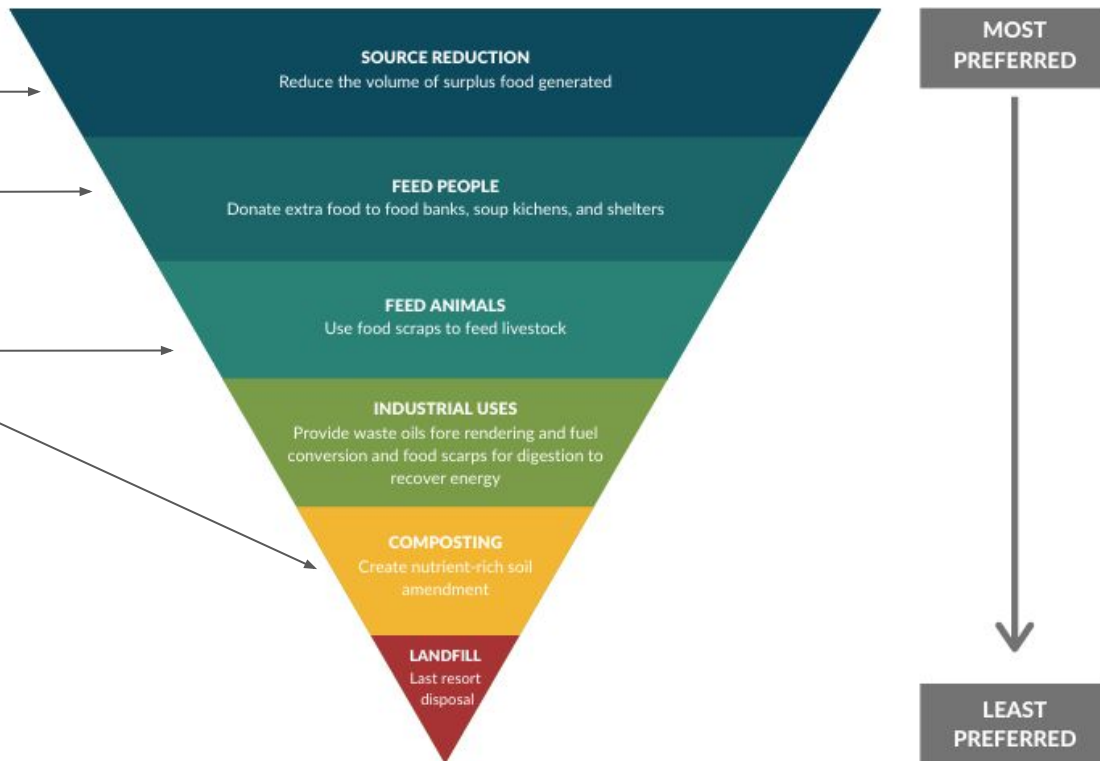
(Reduce)

Rescue

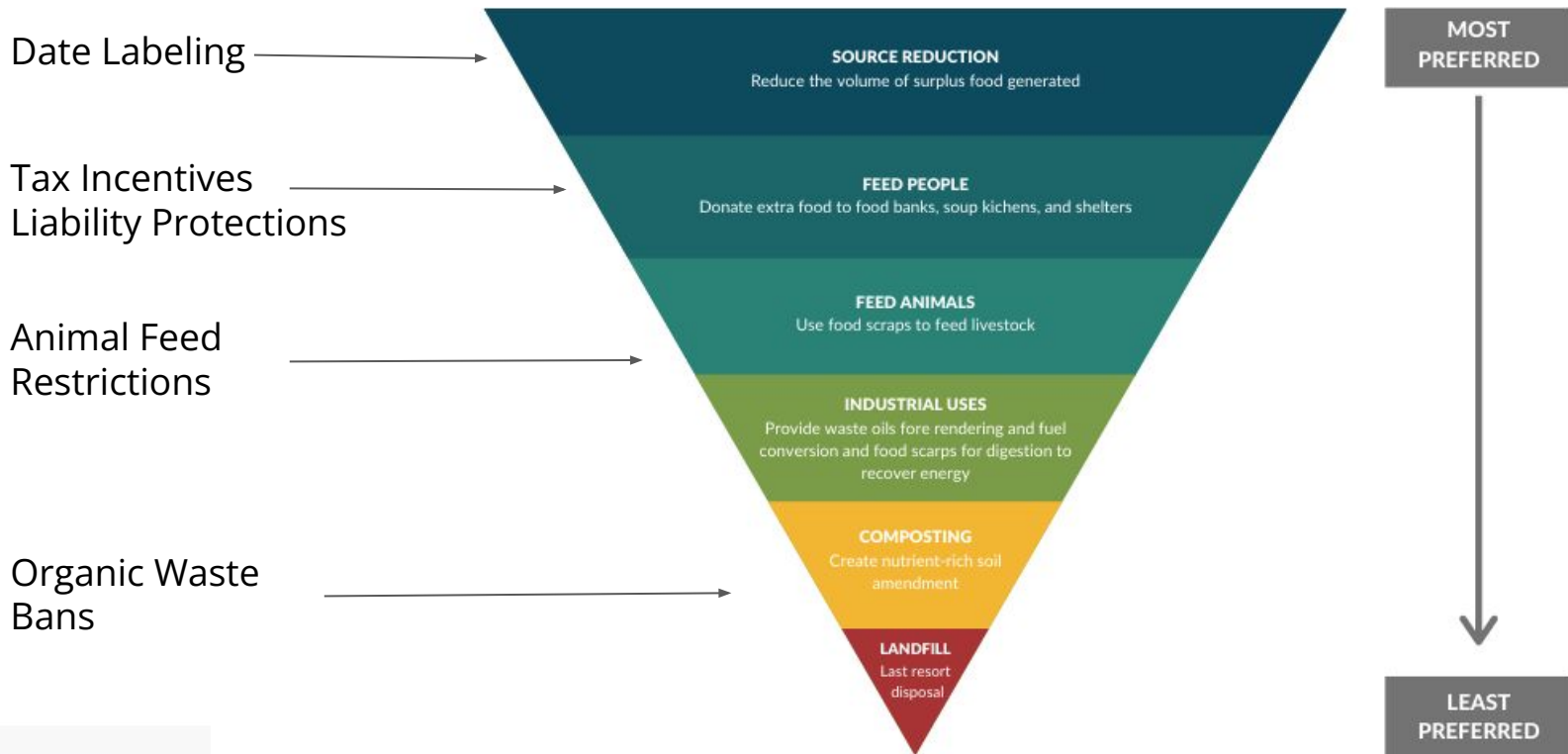
(Reuse)

Recycling

(Recycle)



EPA Food Recovery Hierarchy



ReFED Insights Engine: U.S. Food Waste Policy Finder (2022)

The screenshot shows the ReFED Insights Engine U.S. Food Waste Policy Finder interface. At the top, there is a navigation bar with three tabs: "STATE POLICY", "FEDERAL POLICY", and "ABOUT". Below the navigation bar is a search bar with the text "EXPLORE FOOD WASTE POLICY BY STATE" and a dropdown menu labeled "Choose State". The main content area features a map of the United States. To the left of the map is the ReFED logo and the text "In collaboration with: FLPC FOOD LAW and POLICY CLINIC HARVARD LAW SCHOOL". To the right of the map is the title "U.S. FOOD WASTE POLICY FINDER" and a description: "Use this tool to research current food waste policy at the federal and state levels and to discover best practices and recommendations for policy improvements that will support more food waste prevention, rescue and recycling." On the right side of the interface, there is a sidebar with a "PREVENTION POLICY" section. This section contains a paragraph: "Policy changes related to date labeling have the potential to prevent 582,000 tons of waste per year." Below this paragraph are two checkboxes: "Reveal case studies" (checked) and "Date Labeling" (unchecked). Below the "Date Labeling" checkbox is a link: "View Date Labeling categories". Below the "PREVENTION POLICY" section are two other sections: "RESCUE POLICY" and "RECYCLING POLICY".

Tracks five food waste-related policies at the federal and state levels.

Sample Use Cases:

- **State Policy Makers** can find examples of policies passed in other states that better reduce food waste.
- **Food Businesses, Solution Providers, and Advocates** can read about policies that may affect their operations across several states with the Policy Matrix and Score Sheet.
- **Consumers** can learn about how policies in their own state aid in reducing waste.

Prevention

Food Waste Policy Types

Prevention

Date Labeling

Quality Date:
"Best if Used By"

Safety Date: "Use By"



Model Policy: Date Labeling

California

Cal. Food & Agric. Code § 82000-1 offers guidance on standardizing date labels, but implementation is voluntary.



NJ S418

If passed, would standardize date labels and require an education campaign within New Jersey

Federal Food Date Labeling Act

If passed, would standardize date labels and require a national education campaign

Annual Impact Potential *

-  Net Financial Benefit
\$ 2.41 billion
-  Food Waste Diversion
582k Tons
-  Emissions Reduction
2.73M Metric Tons CO₂e
-  Water Savings
162B gallons

** Incremental potential in addition to what is already happening currently*

Annual Investment Required



Rescue



Food Waste Policy Types

Prevention

Date Labeling

Quality Date:
"Best if Used By"

Safety Date: "Use By"

Rescue

Liability Protection

Direct Donations
Nominal Fee Paid
Past-Date Donations



Model Policy: Liability Protection

New Jersey: N.J. Stat. Ann. § 24:4A-1–A5

New Jersey Good Samaritan Laws protect food donors and distributors in all three aspects beyond the Bill Emerson Good Samaritan Food Donation Act.

Other Recent State Bills

- **Virginia (past-date)**
- **Washington (all areas)**
- Pennsylvania (direct donations & past-date)







Federal Food Donation Improvement Act

If passed, the Food Donation Improvement Act would improve upon the Bill Emerson Good Samaritan Food Donation Act by extending protections in two of the three desired areas - direct donations and those in which recipients pay a nominal fee.



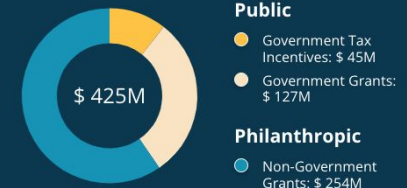
*Donation Education

Annual Impact Potential *

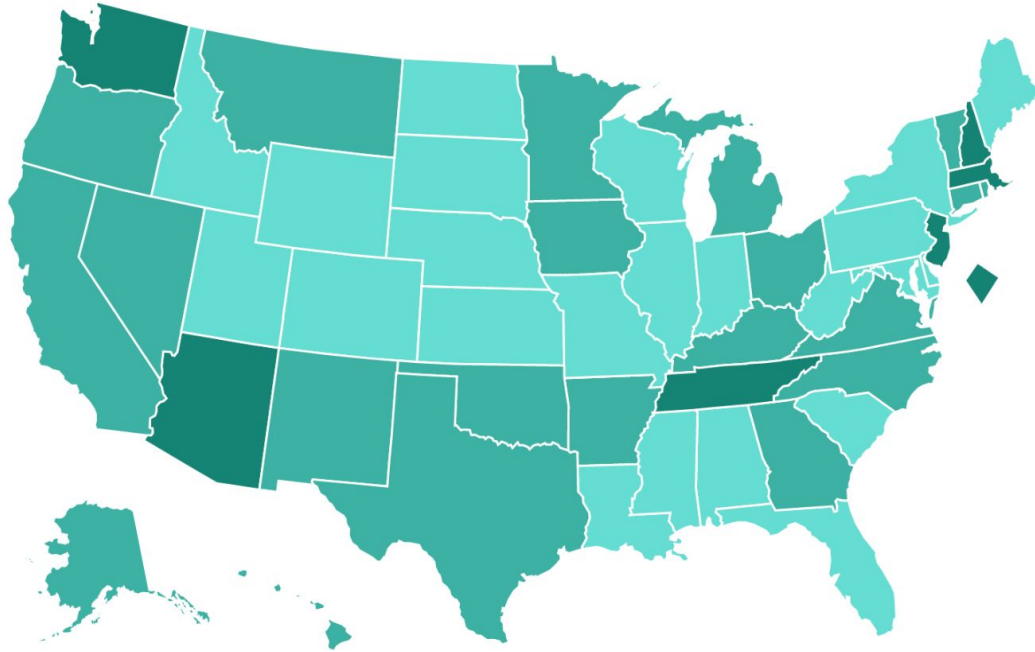
-  Net Financial Benefit
\$ 4.52 billion
-  Food Waste Diversion
1.1M Tons
-  Emissions Reduction
894k Metric Tons CO2e
-  Water Savings
135B gallons
-  Meals Recovered
1.84B
-  Jobs Created
4.11k

** Incremental potential in addition to what is already happening currently*

Annual Investment Required



Food Waste Policy Types: Liability Protection



LEVEL OF STATE LIABILITY PROTECTION FOR FOOD DONATION

FEDERAL POLICY provides a strong baseline of donation liability protection. States shaded above offer additional liability protections within the state (darker shading indicates a greater number of additional protections).



PREVENTION POLICY

RESCUE POLICY

States have the opportunity to spur greater food rescue by enacting stronger policies in both areas.

[+ Best-practice Policies](#)

■ Liability Protection

Reveal states that offer liability protection

[View Liability Protection categories](#) ▾

■ Weak Policy

State-based liability protections for food donation exist but are no broader than the federal-level protections.

■ Moderate Policy

State-based liability protections cover donations directly to needy individuals, or cover donations that are eventually supplied for a small fee, or are otherwise slightly more expansive than the federal-level protections.

■ Strong Policy

State-based liability protections are significantly more protective than the Bill Emerson Good Samaritan Food Donation Act, and apply to donations directly to needy individuals as well as donations that are supplied to the final consumer for a small or nominal fee.

Tax Incentives

Reveal states that offer additional tax incentives beyond federal incentives

[View Tax Incentives categories](#) ▾

RECYCLING POLICY

Food Waste Policy Types

Prevention

Date Labeling

Quality Date:
"Best if Used By"

Safety Date: "Use By"

Rescue

Liability Protection

Direct Donations
Nominal Fee Paid
Past-Date Donations

Tax Incentive

Credit not Deduction
Covers
Transportation



Model Policy: Tax Incentives

California

CAL. REV. & TAX. CODE § 17053.12

Taxpayers engaged in the business of processing, distributing, or selling agricultural products are eligible for a tax credit valued at 50% of transportation costs of donated crops to eligible nonprofits.

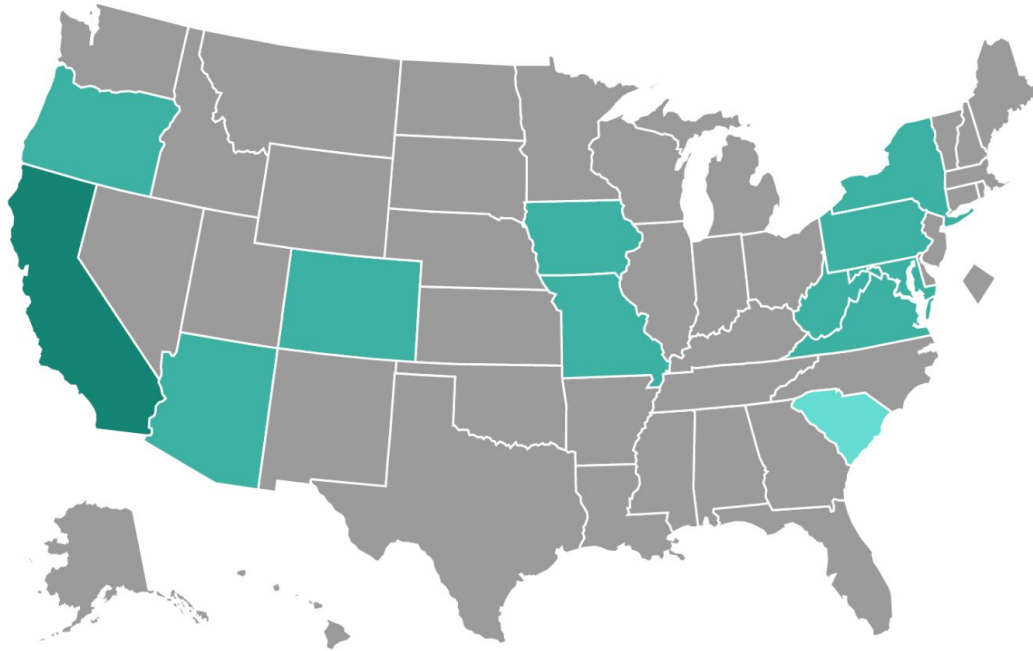
CAL. REV. & TAX. CODE § 17053.88.5

CAL. REV. & TAX. CODE § 17053.88.5 allows qualified taxpayers to claim a tax credit worth 15% of the wholesale market price of donated produce, raw agricultural products, and processed foods to Californian food banks. Qualified taxpayers include farmers and any person responsible for packing, or processing a qualified donation item, provided that person is not a retailer.

Recommendations

- Offer a tax credit rather than a tax deduction.
- Place only reasonable limits on the amount that a business can claim through the tax incentive each year.
- Provide the tax incentive even when nonprofit food recovery organizations charge needy individuals for food.
- Tailor the tax incentive to support donations of the types of foods, or from the types of entities, most applicable to the state.
- Offer additional tax credits for transportation and processing costs associated with donating food.

Food Waste Policy Types: Tax Incentive



STATES OFFERING ADDITIONAL TAX INCENTIVES FOR FOOD DONATION

Federal policy provides businesses with a tax incentive for food donations. States shaded above offer additional tax incentives for food donations.



PREVENTION POLICY

RESCUE POLICY

States have the opportunity to spur greater food rescue by enacting stronger policies in both areas.

Best-practice Policies

Liability Protection

Reveal states that offer liability protection

[View Liability Protection categories](#)

Tax Incentives

Reveal states that offer additional tax incentives beyond federal incentives

[View Tax Incentives categories](#)

- No Policy
There are no tax incentives for food donation.
- Weak Policy
The state offers a very limited tax incentive relevant to donating only one or a very small number of food products.
- Moderate Policy
The state offers a tax incentive for donating food.
- Strong Policy
The state offers tax deductions or tax credits for donating food that offset the costs associated with donation, including transportation.

RECYCLING POLICY

Recycling



Food Waste Policy Types

Prevention

Date Labeling

Quality Date:
"Best if Used By"

Safety Date: "Use By"

Rescue

Liability Protection

Direct Donations
Nominal Fee Paid
Past-Date Donations

Recycling

Tax Incentive

Credit not Deduction
Covers
Transportation

Animal Feed

No further
restrictions on
feeding animals food
scraps



Model Policy: Animal Feed

States can most effectively maximize feeding animals over sending scraps to compost or industrial uses by not restricting the feeding of food scraps to animals further than federal regulations. States which do not further regulate animal feed include: **Alaska, Utah, and Washington, D.C.**

Annual Impact Potential *

-  Net Financial Benefit
\$ -1.5 million
-  Food Waste Diversion
60.4k Tons
-  Emissions Reduction
-817 Metric Tons CO₂e
-  Jobs Created
91.6

** Incremental potential in addition to what is already happening currently*

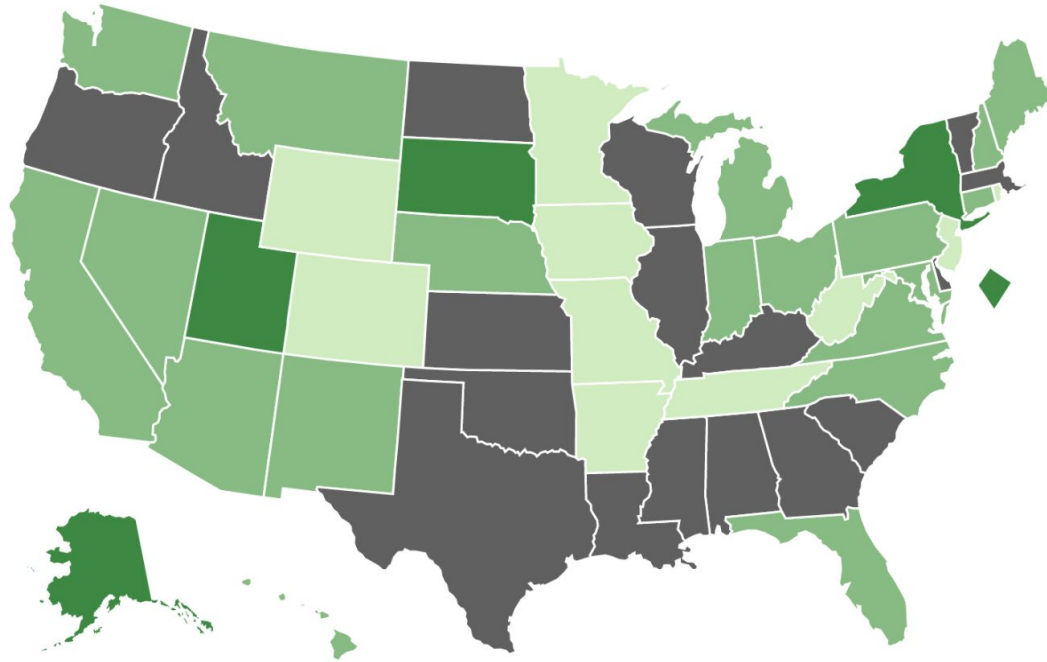
Annual Investment Required



Private

-  Venture Capital: \$ 848k
-  Private Equity: \$ 848k
-  Corporate Finance & Spending: \$ 2.83M
-  Commercial Project Finance: \$ 848k

Food Waste Policy Types: Animal Feed



LEVEL OF POLICY HINDERING FOOD WASTE RECYCLING

FEDERAL POLICY allows for the feeding of food scraps to animals with a few conditions. States shaded above impose additional restrictions, making it harder to feed livestock food scraps. (Darker shading indicates more restrictions.)



PREVENTION POLICY

RESCUE POLICY

RECYCLING POLICY

Increased food scrap recycling can be incentivized by these state and local policies.

[Best-practice Policies](#)

Animal Feed

Reveal state policies that hinder food waste recycling

[View Animal Feed categories ▾](#)

- Negative Policy**
The state prohibits feeding animal and/or vegetable waste matter to livestock.
- Weak Policy**
The state allows the feeding of animal and vegetable food scraps to animals but requires heat treatment for both animal and vegetable food scraps.
- Moderate Policy**
The state does not restrict the feeding of vegetable scraps. Animal-derived food scraps can be fed to animals but must be heat treated, and a state permit for heat treating or for feeding treated animal-derived food scraps must be obtained.
- Strong Policy**
The state does not restrict the feeding of food scraps to animals beyond what is required in federal regulations. Under federal law, food scraps can generally be fed to animals, so long as food scraps with animal derived by-products are heat-treated by a licensed facility before being fed to swine; food scraps containing animal-derived by-products may not be fed to ruminants.

Organic Waste Bans & Waste

Recycling Laws

Reveal states and municipalities that have enacted Organic Waste Bans & Waste Recycling Laws.

[View Organic Waste Bans & Waste Recycling Laws categories ▾](#)

Food Waste Policy Types

Prevention	Rescue	Recycling		
<i>Date Labeling</i>	<i>Liability Protection</i>	<i>Tax Incentive</i>	<i>Animal Feed</i>	<i>Waste Ban</i>
Quality Date: "Best if Used By" Safety Date: "Use By"	Direct Donations Nominal Fee Paid Past-Date Donations	Credit not Deduction Covers Transportation	No further restrictions on feeding animals food scraps	Includes all generators, including individuals



Model Policy: Organic Waste Bans


Vermont

All persons and business entities must separate and recycle organic waste.

California

- All jurisdictions will need to provide organic waste collection services to all residents and businesses.
- Single-family and multifamily complexes are required to recycle both green waste and food waste, as well as other organic waste materials.
- Some food service businesses must donate edible food to food recovery organizations with others starting in 2024.
- Goals
 - Reduce organic waste disposal 75% by 2025.
 - Rescue at least 20% of currently disposed surplus food by 2025 for people to eat.

Annual Impact Potential *

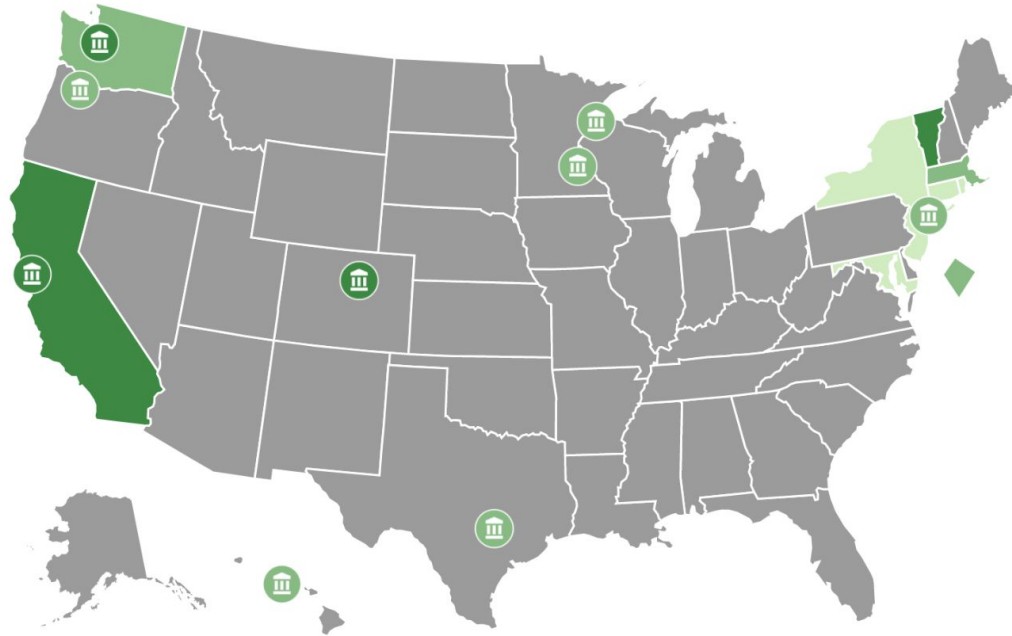
-  Net Financial Benefit
\$ 49.4 million
-  Food Waste Diversion
13.8M Tons
-  Emissions Reduction
4.94M Metric Tons CO2e
-  Jobs Created
14.2k

** Incremental potential in addition to what is already happening currently*

Annual Investment Required



Food Waste Policy Types: Waste Ban



STATES AND MUNICIPALITIES THAT HAVE ORGANIC WASTE BANS & WASTE RECYCLING LAWS

STATES



PREVENTION POLICY

RESCUE POLICY

RECYCLING POLICY

Increased food scrap recycling can be incentivized by these state and local policies.

Best-practice Policies

Animal Feed
Reveal state policies that hinder food waste recycling

[View Animal Feed categories](#)

Organic Waste Bans & Waste Recycling Laws
Reveal states and municipalities that have enacted Organic Waste Bans & Waste Recycling Laws.

[View Organic Waste Bans & Waste Recycling Laws categories](#)

No Policy
No organics disposal bans or mandatory organics recycling laws for food waste has been enacted, and there is no financial incentive structure to encourage food donation or waste diversion.

Weak Policy
Organic waste bans or mandatory organics recycling laws have been enacted but are ineffective due to distance exemptions, limited scope, and/or lack of guidance.

Moderate Policy
Organic waste bans or mandatory recycling laws are imposed on select commercial generators, with few exemptions.

Strong Policy
Organic waste bans or mandatory recycling laws for food waste are enacted and enforced for all commercial generators and all individuals with few exceptions.

Downloadable Policy Handouts

States Regulating Date Labeling

State	Perishable Foods	Potentially Hazardous Foods	Milk/ Dairy	Meat/ Poultry	Shellfish	Eggs	Other
Alabama		x		x			x
Alaska					x		
Arizona						x	
Arkansas					x		
California			x		x		
Colorado						x	
Connecticut			x				
Delaware					x		
District of Columbia*							
Florida			x		x		
Georgia		x	x		x	x	x
Hawaii			x				
Idaho							
Illinois						x	
Indiana					x	x	
Iowa						x	
Kansas						x	
Kentucky			x		x		
Louisiana						x	
Maine					x		
Maryland			x				
Massachusetts	x	x	x	x	x	x	x
Michigan	x		x	x			
Minnesota	x		x		x	x	
Mississippi					x		
Missouri							
Montana			x				

State Laws for Feeding Food Scraps to Swine*

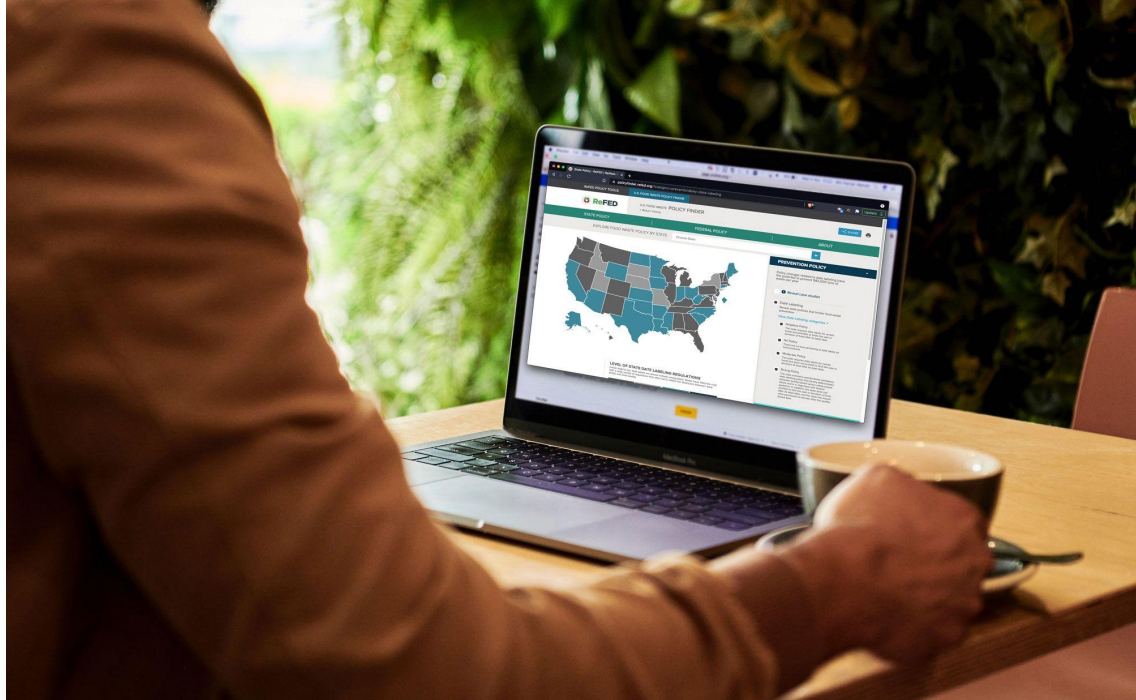
State	Specific Food Bans		Heat-Treatment Requirements		Licensure Requirements		Individual Use Regs.
	Full prohibition on veg. waste	Full prohibition on animal waste	Veg. waste must be treated	Animal waste must be treated	To treat waste	To feed waste to swine	May feed household garbage to own swine
Alabama	x	x					x
Alaska**							x
Arizona				x		x	x
Arkansas			x	x		x	x
California				x		x	x
Colorado			x	x		x	x
Connecticut				x		x	x
Delaware		x					x
District of Columbia**							x
Florida				x		x	x
Georgia	*	*				x	x
Hawaii				x		x	x
Idaho		x					x
Illinois	x	x					x
Indiana				x	x	x	x
Iowa			x	x		x	x
Kansas		x					x
Kentucky	x	x					
Louisiana	x	x					
Maine				x		x	x
Maryland				x		x	x
Massachusetts		*		x		x	x
Michigan				x		x	
Minnesota			x	x		x	x
Mississippi	x	x					x

Policy Finder Demo

policyfinder.refed.org

Tool Resources

- State and Federal Policies
- State Policy Summary Sheets
- Municipal Waste Bans
- Additional Resources



EPA Food Recovery Hierarchy

Date Labeling

Measurement/Reporting
Incentives
Technical Assistance/PPPs
Public education

Tax Incentives

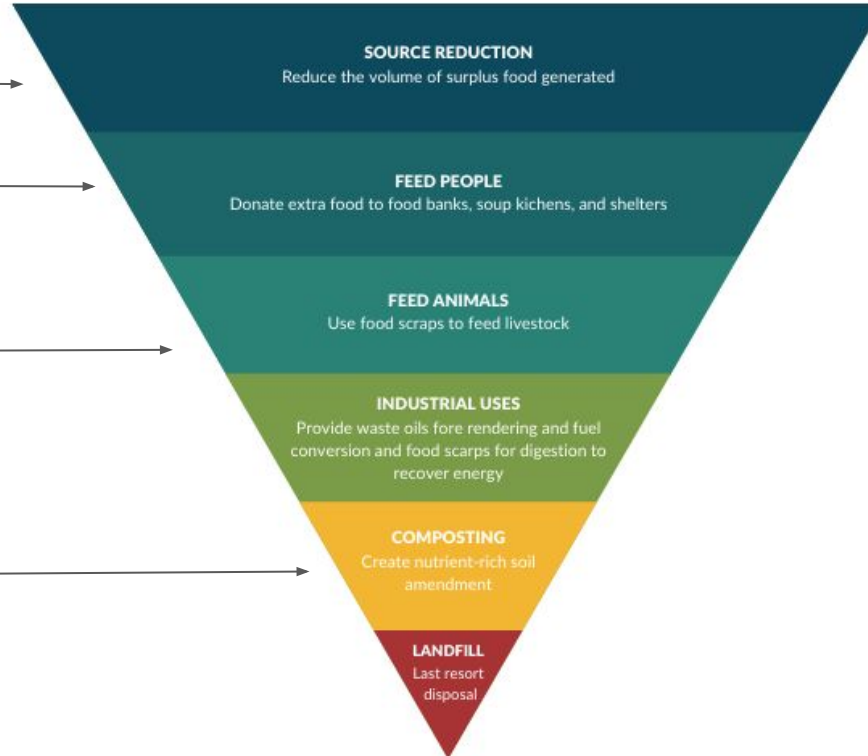
Liability Protections

Farm surplus purchasing
Grant programs/Infrastructure

Animal Feed Restrictions

Organics Bans

Holistic food waste laws
Grant programs
Compost use directives



**MOST
PREFERRED**

**LEAST
PREFERRED**

Your Source for Data and Solutions

A knowledge hub for food loss and waste, designed to provide anyone interested in food waste reduction with the information they need to take meaningful action.

Insights Engine tools let users:

- **Understand the problem:** Find out how much food is being wasted in the US, learn why it's happening, and see where it goes.
- **Explore Solutions:** Learn which food waste reduction solutions are the most relevant for meeting specific goals.
- **Find Solution Providers:** Explore our database of 700+ organizations offering products and services to help you reduce food waste.
- **Impact Calculator:** Calculate the environmental and social impacts of wasted food.

Launch the Insights Engine



A Blueprint for Action

The *Roadmap to 2030* looks at the entire food system and provides a framework to focus waste reduction efforts. Powered by the Insights Engine, the *Roadmap to 2030* is an indispensable resource for reaching our 2030 goal.

7

ReFED outlined seven key action areas for the food system to focus its efforts over the next ten years to *prevent*, *rescue*, and *recycle* food at risk of going to waste.

PREVENTION

RESCUE

RECYCLING



Optimize
The
Harvest



Enhance
Product
Distribution



Refine
Product
Management



Maximize
Product
Utilization



Reshape
Consumer
Environments



Strengthen
Food
Rescue



Recycle
Anything
Remaining

Action Areas



OPTIMIZE THE HARVEST

Avoid over-production, then harvest as much as possible. For wild caught products, source only what is needed.



ENHANCE PRODUCT DISTRIBUTION

Leverage technology to create smart systems that help efficiently move products to maximize freshness and selling time.



REFINE PRODUCT MANAGEMENT

Align purchases with sales as closely as possible and find secondary outlets for surplus. Build out systems and processes for optimal on-site handling.



MAXIMIZE PRODUCT UTILIZATION

Design facilities, operations, and menus to use as much of each product as possible. Upcycle surplus and byproducts into food products.



RESHAPE CONSUMER ENVIRONMENTS

Drive consumers towards better food management and less waste by creating shopping, cooking, and eating environments that promote those behaviors. Shift culture to place more value on food and reduce waste.



STRENGTHEN FOOD RESCUE

Further the rescue of high-quality, nutritious food by increasing capacity, addressing bottlenecks, and improving communication flow.



RECYCLE ANYTHING REMAINING

Find the highest and best use for any remaining food or food scraps in order to capture nutrients, energy, or other residual value.

OPTIMIZE THE HARVEST	ENHANCE PRODUCT DISTRIBUTION	REFINE PRODUCT MANAGEMENT	MAXIMIZE PRODUCT UTILIZATION	RESHAPE CONSUMER ENVIRONMENTS	STRENGTHEN FOOD RESCUE	RECYCLE ANYTHING REMAINING
Buyer Spec Expansion	Decreased Transit Time	Assisted Distressed Sales	Active & Intelligent Packaging	Meal Kits	Donation Coordination & Matching	Centralized Anaerobic Digestion
Gleaning	First Expired First Out	Decreased Minimum Order Quantity	Manufacturing Byproduct Utilization (Upcycling)	Buffet Signage	Donation Education	Community Composting
Imperfect & Surplus Produce Channels	Intelligent Routing	Dynamic Pricing	Manufacturing Line Optimization	Consumer Education Campaigns	Donation Storage Handling & Capacity	Centralized Composting
Partial Order Acceptance	Temperature Monitoring (Pallet Transport)	Enhanced Demand Planning	Edible Coatings	K-12 Lunch Improvements	Donation Transportation	Co-digestion at Wastewater Treatment Plants
Field Cooling Units	Reduced Warehouse Handling	Increased Delivery Frequency	Improved Recipe Planning	Package Design	Donation Value-Added Processing	Home Composting
In-Field Sanitation Monitoring	Advanced Shipment Notifications	Markdown Alert Applications	In-House Repurposing	Portion Sizes	Blast Chilling to Enable Donations	Livestock Feed
Innovative Grower Contracts	Early Spoilage Detection (Hyperspectral Imaging)	Minimized On-Hand Inventory	Precision Food Safety	Small Plates	Donation Reverse Logistics	Waste-Derived Agricultural Inputs
Labor Matching	Inventory Traceability	Temperature Monitoring (Foodservice)	Discount Meal Plates	Standardized Date Labels	High-Frequency Reliable Pickups	Insect Farming
Smaller Harvest Lots	Modified Atmosphere Packaging System	Waste Tracking (Foodservice)	Employee Meals	K-12 Education Campaigns	Established Relationships with Businesses	Rendering
Improved Communication for Planting Schedules	Vibration & Drops Tracking	Low Waste Event Contracts	Larger Quantities for Take Home	Trayless	Culling SOPs	Waste-Derived Processed Animal Feed
Sanitation Practices & Monitoring	Optimized Truck Packing, Loading & Unloading (e.g., Cross-Docking)	Direct to Consumer Channels	Small and Versatile Menus	Home Shelf-life Extension Technologies		Waste-Derived Bioplastics
Optimized Harvesting Schedules	Enforcing Cold Chain SOPs	Online Marketplace Platform	Sous-Vide Cooking	Smart Home Devices		Waste-Derived Biomaterials
On-Farm / Near-Farm Processing	Regular Maintenance on Refrigerated Trucks	Online, Advanced Grocery Sales		Waste Conscious Promotions		Enabling Technologies (e.g. depackaging and pre-treatment)
Local Food Systems	Cross-Docking	Precision Event Attendance		Frozen Value-Added Processing of Fresh Produce		Separation & Measurement
Clear Product Ownership		Repackaging Partially Damaged Products		Customizable Menus/Options		Relationships with Waste Haulers
		Retail Automated Order Fulfillment		To-Go Offerings		Waste Audits by Waste Haulers
		SKU Rationalization		Free Items Offered Upon Request (e.g., bread, chips)		
		Markdowns		Storytelling (e.g. product impact, source, upcycled ingredient components)		
		Optimal Storage				
		Reduced Displays				
		Optimized Walk-In Layouts				

Modeled Solutions

Unmodeled Solutions

Best Practices

Stay Connected



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refed.org
insights.refed.org



Attachment 8

EPA Food Waste Resources, Food Waste work in Region 3 Presentation

EPA Feedback on WDRTF Brainstorming Activities Related to Food Waste and Organics Recycling

**Virginia Waste Diversion and
Recycling Task Force Meeting**



Presented By Melissa Pennington, EPA Region 3 on March 15, 2022

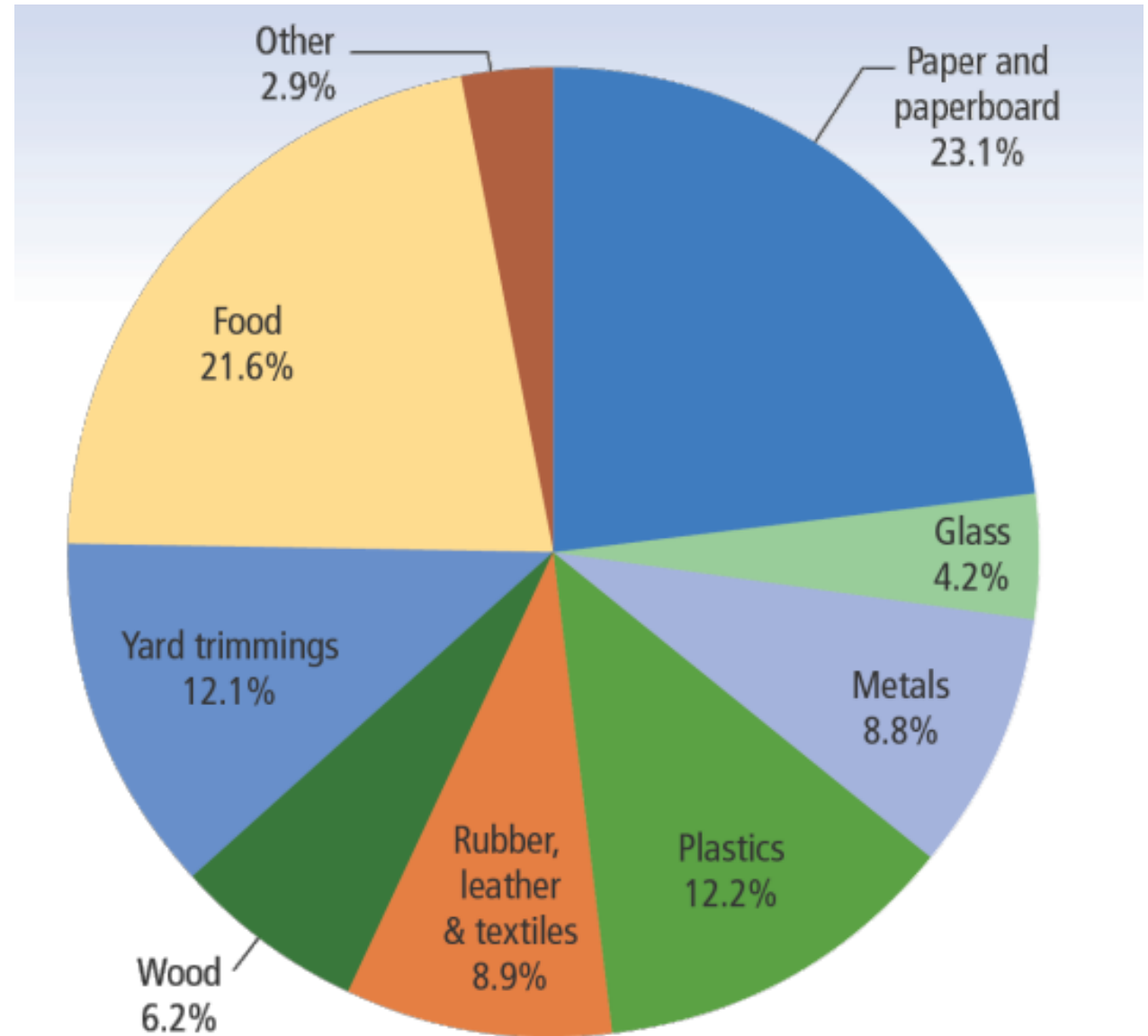
Increase Mandated State Recycling Rate



- VA's Current Recycling Goal = 25%
- National Recycling Goal = 50% by 2030
- How do recycling goals impact organics diversion?

Total MSW Generation (by material)

EPA Facts and Figure Report
December 2020
2018 Data



State Recycling Rate Calculation for CY2020

Principal Recyclable Materials (PRM) Tons			
PRM Material	Tons Recycled		
Paper	782,184	Recycling Residue	596,014
Metal	949,151	Solid Waste Reused	14,851
Plastic	63,415	Non-MSW Recycled	797,373
Glass	30,780	Total Credits	1,408,238
Commingled	842,020		
Yard Waste	596,784	MSW Disposed	Tons
Waste Wood	289,235	Household Waste	4,169,182
Textiles	32,154	Commercial Waste	1,477,348
Waste Tires	61,627	Institutional Waste	87,567
Used Oil	43,314	Other	2,592
Used Oil Filters	3,769	Total MSW Tons	5,736,688
Used Antifreeze	4,449		
Batteries	25,692	Source Reduction Credits	0.93%
Electronics	7,081		
Inoperative Motor Vehicles	1,751		
Other	165,925		
Total PRM in Tons	3,899,330		

What's missing here?

Yard Waste Composting – Path to Food Waste Composting?



**BEST MANAGEMENT PRACTICES (BMPs)
FOR INCORPORATING FOOD RESIDUALS INTO EXISTING
YARD WASTE COMPOSTING OPERATIONS**



**THE U.S. COMPOSTING COUNCIL
RONKONKOMA, NEW YORK, USA**



US Composting
Council

Successful Composting Networks are Comprised of Varying Scales



Assistance for Development of New Composting Infrastructure through Grants

- Grant \$\$\$ for New Facilities
- Funding VADEQ Grant Programs
- Infrastructure Investment and Jobs Act (IIJA):
 - New Federal Grant Programs
 - Eligibility = States, Tribes and Local Govts
 - SWIFR:
 - \$55M/yr for 5 years (total \$275M) – nationally

Infrastructure Investment and Jobs Act (IIJA) Grant Funding

Solid Waste Infrastructure for Recycling (SWIFR):

- Total \$275M – nationally
- \$55M/yr for 5 years

Education and Outreach (E&O):

- Total \$75M – nationally
- \$15M/yr for 5 years
- Model Recycling Program Toolkit to be Developed for States, Tribes and Local Govts



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Attachment 9

Priority Ranking Slides

Priorities for Future Meetings: Top Ranking Items

Reduction & Diversion

- Capacity Analysis for waste and diversion systems
- Move Commonwealth to EPR framework

Recycling

- Statewide education campaign / website
- NVWMB Proposed Policy Solutions [EPR + State & Regional Planning Leadership]
- Statewide bottle recycling infrastructure
- Infrastructure tax reimbursements (machinery & tools)

Litter Grant

- Expand Grants – food waste prevention, compost/AD, deconstruction
- Examine other state grant sources
- Increase Tire Disposal Fee

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DEQ

Priorities for Future Meetings: Top Ranking Items

Food

- Modify §35.1-14.2 to allow non-profit entities and faith-based organizations to donate food to the food-insecure
- DEQ Organics Recycling Coordinator, DEQ Report on Composting / AD / food waste processing vendors
- Mandatory composting for large generators
- Require compost in construction & road work

EV Batteries

- Grant incentives (public & private), for localities to develop public outreach campaigns
- Don't limit to EV batteries, address all batteries, other hard to recycle materials (e.g. solar panels)
- Ban irresponsible disposal
- Extended producer responsibility (EPR)

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DEQ