

Environment and Transportation Committee Workgroup on Waste Reduction and Recycling

Agenda

Thursday, October 8, 2020

9:30 a.m.

Virtual Briefing

I. Opening Remarks

Delegate Kumar Barve

Chair, Environment and Transportation Committee

Delegate Brooke Lierman

II. Plastics and Recycling

Craig M. Cookson

Senior Director, Recycling & Recovery, Plastics Division, American Chemistry Council

Andrew R. Hackman

Principal Lobbyist, AMERIPEN

Zachary Taylor

Director, American Recyclable Plastic Bag Association

Michael Gonsior

Ph. D., Associate Professor, University of Maryland Center for Environmental Science

Jennie Romer

Legal Associate, Plastic Pollution Initiative, Surfrider Foundation

Baani Behniwal

Policy Analyst, Californians Against Waste

Richard Keller

Recycling Marketing and Promotional Manager, Baltimore County Department of Public Works
Bureau of Solid Waste Management – Recycling

III. Composting and Organics Recycling

Steven Birchfield

Field Operations Supervisor, Food Composting Operations, Maryland Environmental Service

Anne Draddy

Sustainability Coordinator, Baltimore City Office of Sustainability

Chaz Miller

Miller Recycling Associates

Member, Maryland Recycling Network Board of Directors

Peter Ettinger

Chief Development Officer, Bioenergy Devco

Linda Norris-Waldt

U.S. Composting Council

Justen Garrity

Founder/President, Veteran Compost

Marvin Hayes

Baltimore Compost Collective Program

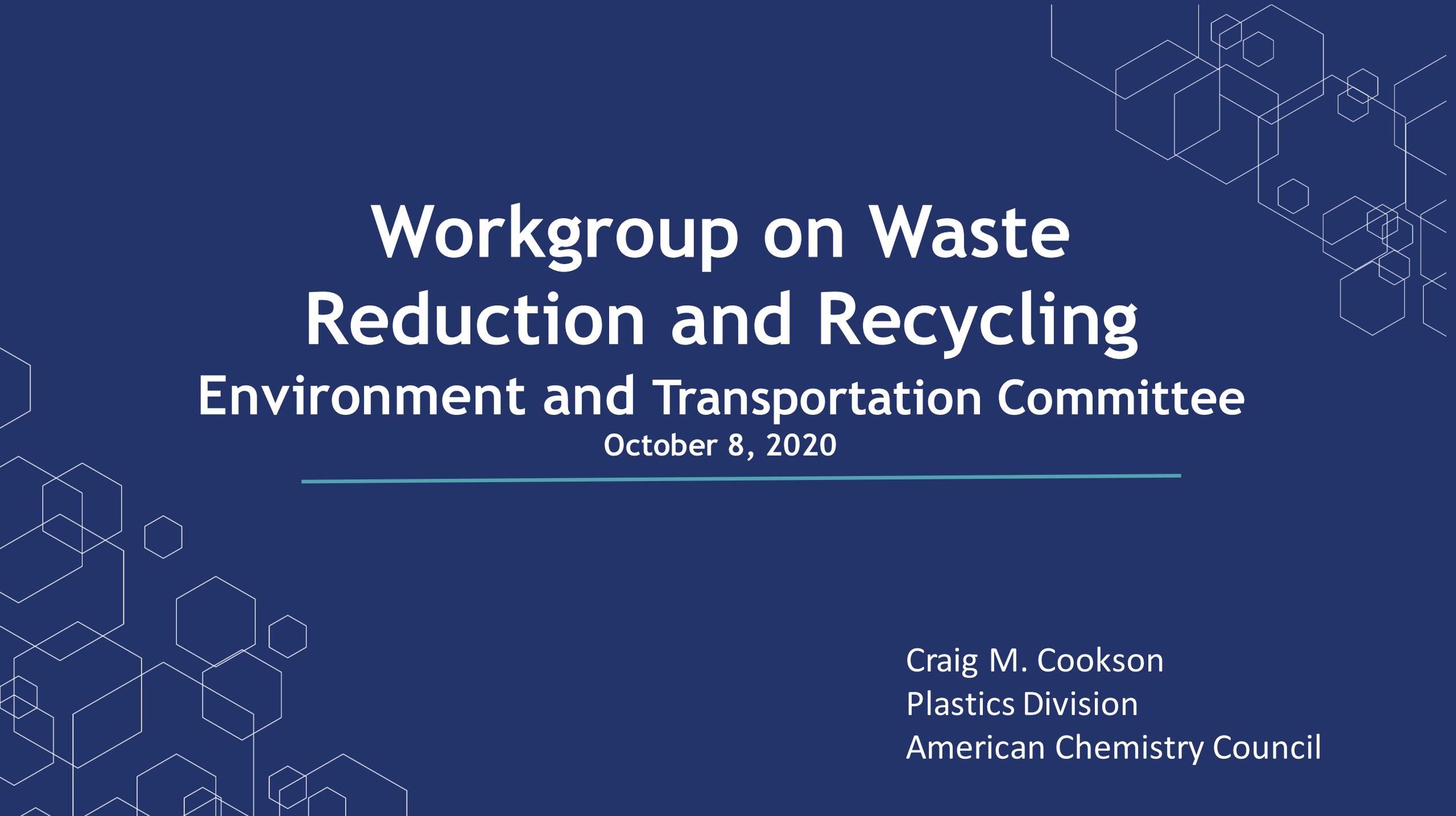
Ben Parry

Chief Executive Officer, Compost Crew

Mark Hollak

Mundea

V. Closing Remarks and Adjournment



Workgroup on Waste Reduction and Recycling

Environment and Transportation Committee

October 8, 2020

Craig M. Cookson
Plastics Division
American Chemistry Council

Plastics Division Members



Plastics Packaging Reduces Food Waste

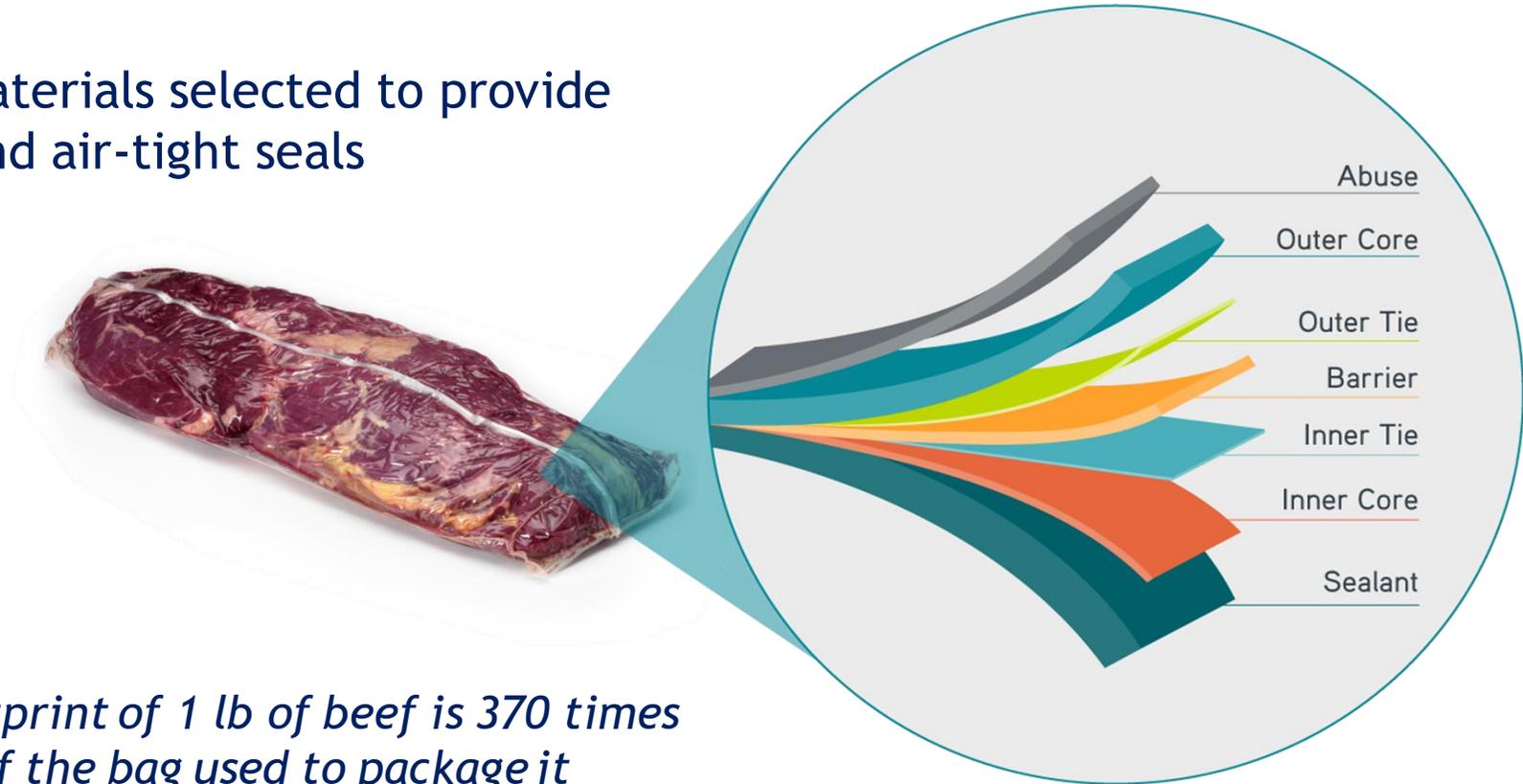
- Saves money
- Reduces environmental effects
- Keeps foods fresh and sanitary



Packaging Designed for Performance

Optimizing the design of packaging to prevent waste and minimize resources

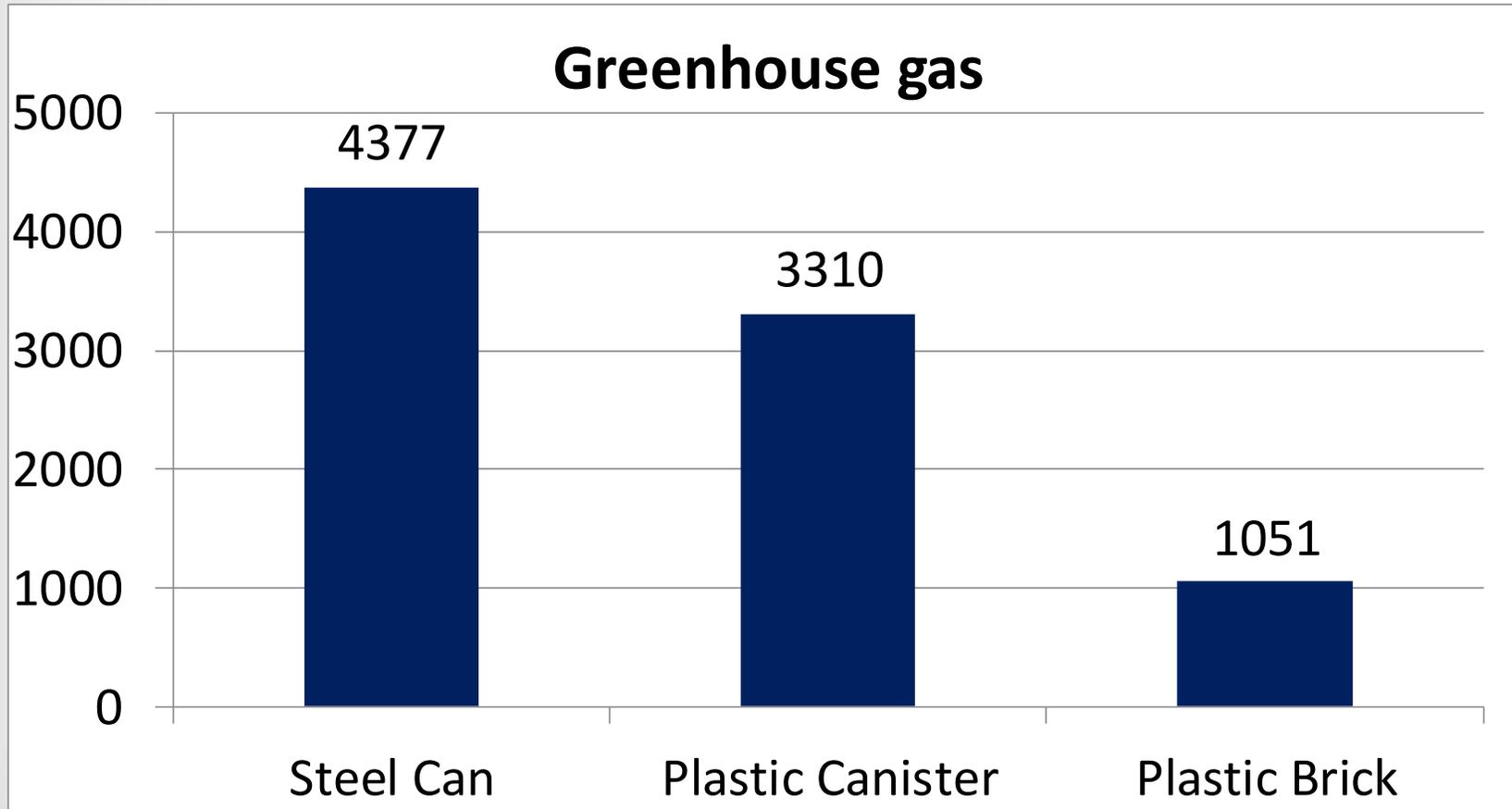
Multiple layers of materials selected to provide barrier, toughness and air-tight seals



Note: The carbon footprint of 1 lb of beef is 370 times the carbon footprint of the bag used to package it

Films typically 1.5 - 3 mil

Plastic Packaging Reduces Impacts



Source: Franklin Associates, September, 2008

U.S. Resin Manufacturer Sustainability Goals

A photograph of three children participating in a recycling activity. A boy in the center is holding a clear plastic bottle, a girl on the right is holding a pink bottle, and a boy on the left is holding a blue bottle. They are all looking towards a large blue recycling bin in the foreground. The bin has the text 'WE RECYCLE' and a recycling symbol on it. The background is a bright, outdoor setting with green foliage.

✓ 2040 Goal

- 100% of plastics packaging is reused, recycled or recovered

✓ Interim Goal (2030)

- 100% of plastics packaging is recyclable/recoverable

✓ Best practice goal

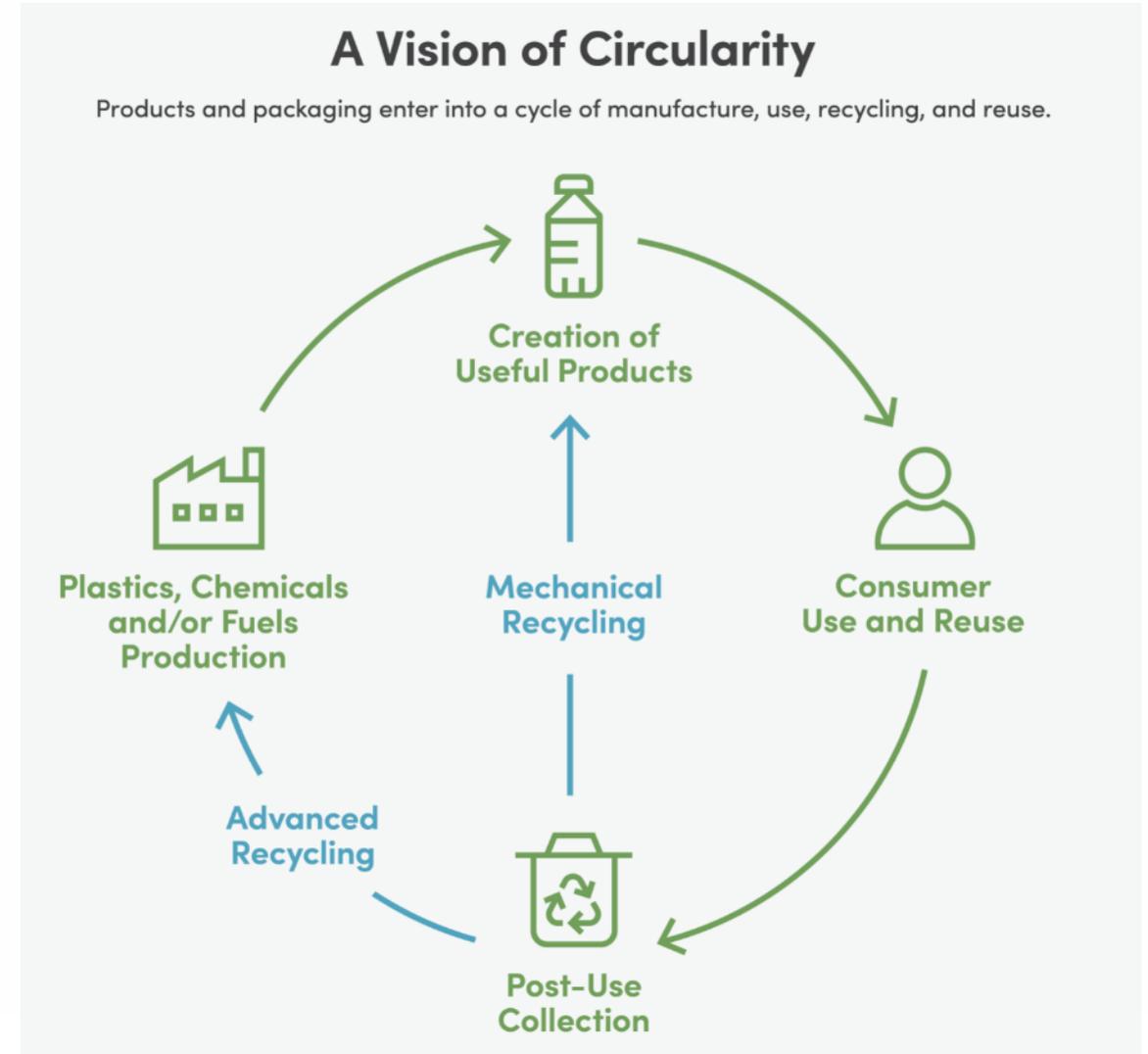
- 100% of Division's U.S. manufacturing sites participate in Operation Clean Sweep Blue by 2020, with all North American sites by 2022

What is Advanced Recycling?

Leveraging chemistry to convert post-use plastics into valuable products which extend the life of the plastic

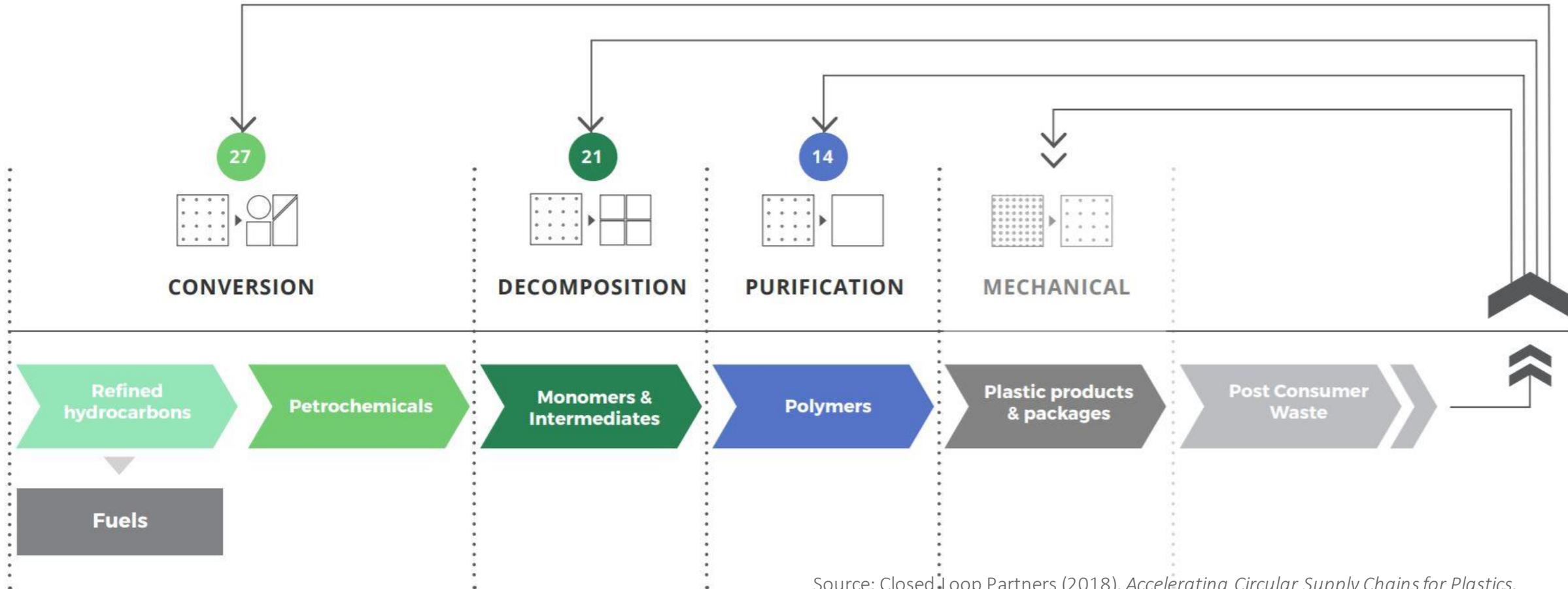
Outputs:

- Basic building blocks for new chemicals
- Feedstocks for new plastics
- Plastic additives (e.g. for asphalt roads, roofing)
- Waxes
- Lubricants
- Fuels



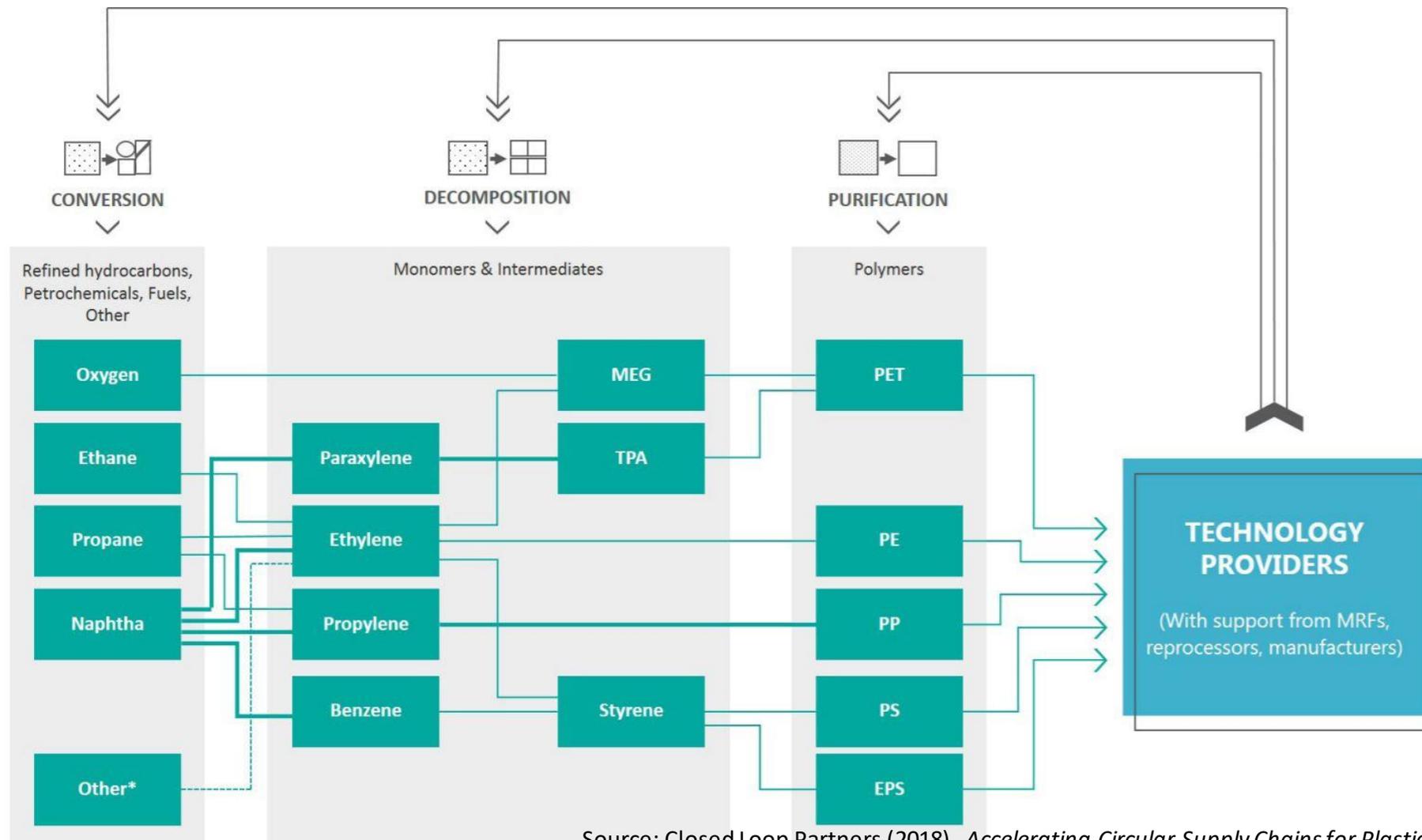
Types of Advanced Recycling

C L O S E D
L O O P partners



Source: Closed Loop Partners (2018). *Accelerating Circular Supply Chains for Plastics*.

Products of Advanced Recycling



Source: Closed Loop Partners (2018). *Accelerating Circular Supply Chains for Plastics*.

EMF Recycled Content Commitments



Investments & Commitments



1M tons of plastic waste annually used in global chemical plants by 2025



EASTMAN



lyondellbasell

Produce and market 2M tons recycled and renewable-based polymers annually by 2030



INEOS
STYROLUTION

Craig Cookson
Senior Director, Recycling and Recovery
ACC Plastics Division
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@Adv_Recycling



Advanced Recycling Alliance for Plastics

Recycling Policy and Packaging Recovery in the U.S.

Maryland Working Group on Waste
Reduction & Recycling
Environment & Transportation
Committee

October 8, 2020



Informed Packaging Decisions Start Here™

ABOUT AMERIPEN



AMERIPEN is the only trade association focused exclusively on public policy for the entire U.S. packaging industry in order to promote the best use, benefits and functions of packaging.

We develop and advocate positions on issues related to packaging and the environment, using sound science and a philosophy of material neutrality.

Our membership represents the entire packaging supply chain, including materials suppliers, packaging producers, consumer packaged goods companies and end-of-life materials managers.

Our **VISION** is to enable informed decisions about packaging and the environment.

Our **MISSION** is to lead the packaging industry through advocacy based on science and enhance understanding of the role packaging plays in a more sustainable society, economy, and environment.

Understanding Recycling Realities

- Increased perception of packaging as waste – however, the value of packaging is real:
 - Food waste reduction
 - Greenhouse gas reductions
 - Health and sanitary needs
 - Product protection (consider ecommerce)
- Impact on material and recovery markets (China Sword)
 - Some commodity values are down and others lack supply to meet brand commitments for recycled content
- Contamination in single-stream recycling system is a significant challenge
- Dramatic impacts on state and local budgets for 2020-21
- Voluntary Industry goals 100% recyclable, reusable or compostable packaging with increased recycled content
- **AMERIPEN** response = Financial Mechanisms Taskforce to develop industry model

AMERIPEN Concerns with Traditional EPR Systems

- Inefficient allocation of funding
- New administrative costs
- Lack of incentives to modernize the recycling system
- Lack of transparency of use of funds
- Who controls the solid waste system? Producers? Haulers? Local Governments?
- Reimbursement for landfilling of materials

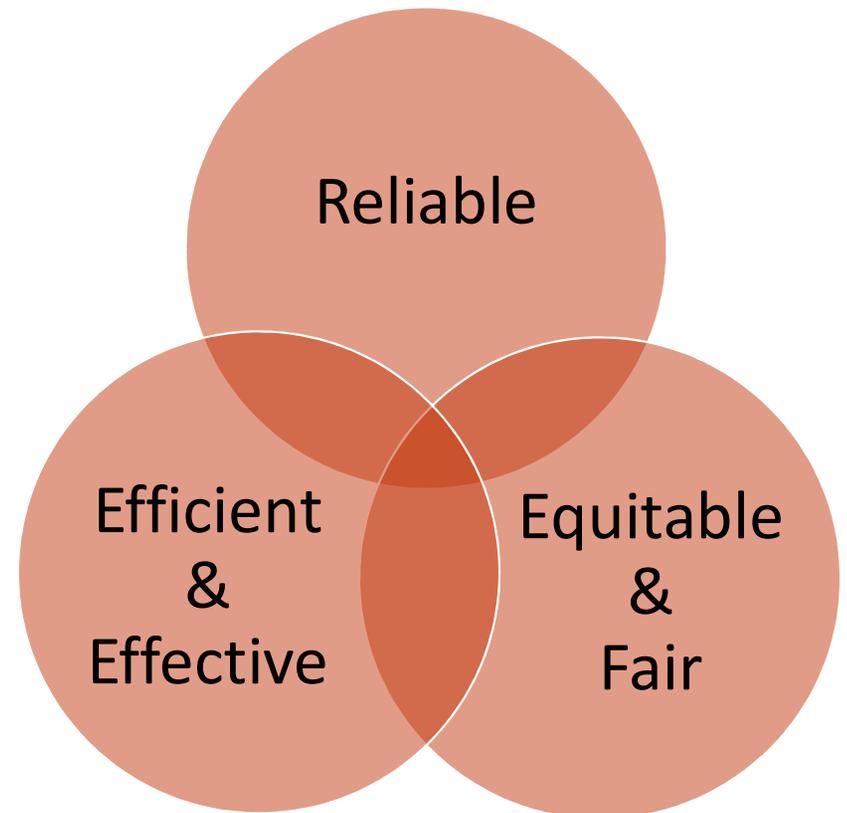
PRINCIPLES FOR FINANCING

Reliable – can withstand market volatility; unlikely to be diverted; expected to provide needed levels of revenue for certain timeframe/objective.

Efficient and Effective – reasonable administration costs; incentivize positive behavior; fund desired element.

Equitable and Fair – allocation of costs perceived as fair among all contributing; free riders only by design.

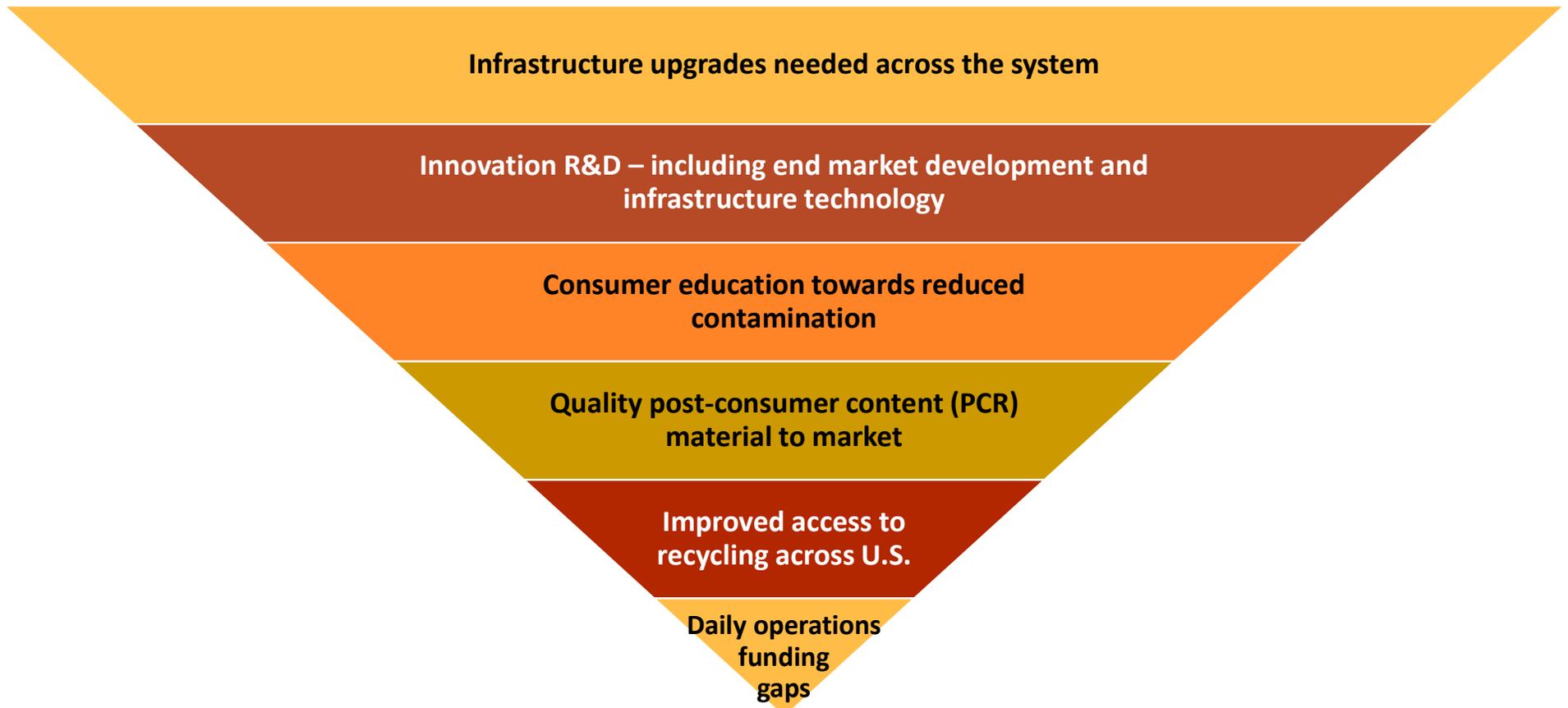
(adapted from Carton Council “Moving the Needle”)



OBJECTIVES FOR FINANCING

1. Industry funding directed towards initiatives that increase packaging recovery
2. Industry funding must work at state level but be managed at national level
3. Industry funding should be managed by industry; caps on administrative costs
4. Industry funding should be tied to best practices for packaging recovery
5. Industry funding should not compete or duplicate successful initiatives and programs
6. Industry funding should support the future of packaging – not just immediate needs
7. Industry funding phase out should be allowed after reaching thresholds (TBD)
8. Funding should not go to a state government managed fund or the General Fund

PREFERRED HIERARCHY OF INVESTMENT



AMERIPEN Next Steps Toward State Solutions

1. Created structure for financing principles and objectives
2. Dialogue with stakeholders on common ground and areas of concern
3. Finalize agreement with various stakeholders on structure of a program and model
4. Create a functional national structure for financing with state level opt-in elements
5. Work with states on local implementation and integration

THANK YOU!

Andrew Hackman
Serlin Haley LLP – on behalf of AMERIPEN
ahackman@serlinhaley.com



Informed Packaging Decisions Start Here™

October 8, 2020

Chair Brooke Lierman
Workgroup on Waste Reduction and Recycling
House Office Building, Room 311
6 Bladen St.
Annapolis, MD 21401

Madam Chair and Members of the Workgroup:

On behalf of the American Recyclable Plastic Bag Alliance (ARPBA), which represents America's plastic bag manufacturers and recyclers, as well as their employees, I appreciate the opportunity to submit comments to the Environment and Transportation Committee's Workgroup on Waste Reduction and Recycling related to a potential ban on plastic retail bags in Maryland.

Like this workgroup, we share a commitment to sustainability and plastic waste reduction in Maryland and across the country. For ARPBA and our members, sustainability is at the forefront of everything we do, which is a key reason our members are pioneers in the plastic film recycling field and committed to meeting standards for recycled content in their products.

As the workgroup deliberates policy approaches to promote sustainability in Maryland, ARPBA and its members stand ready to serve as a resource. We encourage you to review the data and considerations outlined below, which seek to underscore the unintended consequences plastic retail bag bans can create for communities and consumers, without clear benefits for the environment or sustainable practices.

Ironically, the preferred alternatives promoted by these policies have worse environmental profiles, require significantly more resource and energy input, and account for more greenhouse gas emissions than plastic retail bags. More importantly, banning plastic retail bags in Maryland will reward overseas manufacturers based in some of the world's worst-polluting countries at the expense of American manufacturing jobs, including 160 jobs in Howard County.

With this in mind and given the ongoing uncertainty surrounding the COVID-19 public health crisis and its negative economic repercussions, ARPBA urges the workgroup to reconsider a ban on these products and evaluate alternative approaches to achieve Maryland's sustainability objectives. Thank you for your time and consideration.

Recycling is a key priority for plastic retail bag manufacturers, and it is working.

At many grocery stores and major retail chains, you will find a bin for recycling plastic bags and other types of plastic wraps and films. Our members – the companies who make plastic bags – established early on that they did not want to see their products going directly to the landfill after one use, so they invented a way to recycle plastic bags.

After plastic bags are returned to grocery and retail stores, ARPBA members and other companies buy those plastic bags back from the retailer (along with other polyethylene wraps and films) and transport them to recycling facilities where they are eventually turned into new bags, railroad ties, composite lumber, asphalt, and much more. Today, ARPBA members are not only in the manufacturing business but also in the recycling business, recycling hundreds of millions of pounds of plastic bags and film each year.

Recycling plastic bags and film is a core part of our business – and it works. While we often hear that recycling is ineffective because China and other countries stopped taking our waste and recycling, this doesn't apply to plastic bags and film. In 2018, 75% of plastic bags and film returned for recycling at U.S. retail stores [were reclaimed](#) by U.S. and Canadian recyclers.

Plastic retail bags are the most sustainable option at the checkout counter – as long as they are disposed of properly.

Every life cycle assessment of carryout bags has found that plastic is the best option at the checkout counter in terms of sustainability and resource efficiency. For example, [Recyc-Québec](#) released a study in December 2017, which found that the overall lifecycle of the plastic bag—from its production to the end of its life—has far less environmental impact compared with other bags. Additionally, in a February 2018 study, [Denmark's Environmental Protection Agency](#) concluded that lightweight plastic carrier bags provide “the absolute best environmental performance.”

Plastic retail bags make up a tiny percentage of both municipal solid waste and litter. Banning them will not have a meaningful impact on either category.

Many suggest plastic retail bags are filling up landfills and the environment, but this simply isn't true. [U.S. Environmental Protection Agency data](#) shows that all plastic “bags and sacks” combined make up 0.3% of the nation's municipal solid waste. Plastic retail bags account for an even smaller fraction of waste, despite common misperceptions about their prevalence in waste streams or elsewhere.

Additionally, two recent statewide litter studies, done in nearby [New Jersey](#) and [Pennsylvania](#), found that branded plastic retail bags make up very small percentages of litter in each state: 0.8% and 0.7%, respectively. In addition, [2020 Ocean Conservancy data](#) found that plastic grocery bags make up only 1% of beach cleanup material in Maryland. Make no mistake: this number should be zero. Plastic bags do not belong in the environment and should always be disposed of properly, either through reuse or recycling at supermarket drop-off bins.

Given that plastic retail bags comprise such a small share of litter and waste, a bag ban will not meaningfully address either of these valid concerns. However, a ban will drive consumers to less sustainable options with worse consequences for the environment, while undermining U.S. manufacturers and Maryland jobs.

Plastic retail bags are reused at high rates. Banning them means that people will need to buy products that use more plastic and have a greater carbon footprint.

According to [Recyc- Québec](#), a government recycling agency based in Canada, nearly 78% of people reuse their “single-use” plastic bags, most often as a small trash can liner or to pick up pet waste. In other words, “single-use” is a misnomer.

Ironically, research from the [University of Sydney](#) found that after California's plastic bag ban, the sales of thicker, more resource-intensive plastic trash bags skyrocketed. Once plastic bags were banned, Californians started buying trash bags for their everyday use instead of reusing the shopping bags that they previously relied on.

The same study found that California's plastic bag ban led to an increase in carbon emissions—one of the strongest indicators that these policies have unintended consequences and do not always have a positive environmental outcome once everything is accounted for. Policies designed to promote sustainability should promote more sustainable behaviors or products, not drive consumers to less sustainable choices.

Plastic retail bags support American workers, including many right here in Maryland. Banning them will reward overseas manufacturers in some of the worst-polluting countries in the world.

Contrary to popular belief, the vast majority of conventional plastic retail bags are manufactured domestically, supporting thousands of manufacturing jobs. In fact, there are 160 employees at a facility in ElkrIDGE in Howard County manufacturing the plastic bags that Maryland may ban. And as previously noted, U.S. plastic bag manufacturers are also major recyclers of plastic films: in 2017, 75% of plastic bags and film returned for recycling at U.S. retail stores [were reclaimed](#) by U.S. and Canadian recyclers.

However, the vast majority of reusable totes, such as the kind commonly available for \$1-2 at the grocery store checkout counter, are made overseas in some of the worst-polluting countries which are responsible for much of the world's marine debris, primarily China and Vietnam.

While many think that addressing single-use plastics in the United States will have an impact on marine debris, the fact is that 88-95% of the world's river-based plastic pollution [comes from](#) 10 river systems: eight in Asia and two in Africa. In addition, the Great Pacific Garbage Patch is [comprised](#) of mostly fishing equipment, with fishing nets accounting for 46% of the trash and the majority of the rest composed of other fishing gear. We share the committee's desire to make a positive impact on marine debris; however, it is unlikely that a bag ban in the United States would meaningfully address this problem.

A plastic bag ban in Maryland could exacerbate supply chain disruptions and leave retailers without workable carryout bag options.

Most reusable "cloth" bags in the market today are made of either woven or nonwoven polypropylene (a type of plastic) and manufactured in Southeast Asia. Polypropylene is in extremely high demand since it is also used in a variety of personal protective equipment, such as N95 masks, surgical masks, and disinfecting wipes.

The pandemic has led to significant increases in demand for these products, leaving little polypropylene for the manufacture of reusable bags. This means that retailers across the United States are having a difficult time obtaining an adequate supply of reusable bags and, when available, the prices have skyrocketed.

A plastic bag ban in Maryland would seek to promote the reusable bags that retailers are having more and more difficulty obtaining for a reasonable price. Combined with a [well-documented paper bag shortage](#), there is a risk that if Maryland passes a plastic bag ban, retailers won't have *any* bags to offer their customers. The ongoing supply chain issues for paper and reusable bags underscore the complicated and unintended consequences outright bans impose on small businesses and consumers.

A plastic bag ban would create unnecessary risk for frontline retail workers.

As a result of the pandemic, retail and grocery workers became frontline employees almost overnight. Time and again, these essential employees have raised concerns with their employers about the bags that this policy intends to promote as a preferred alternative, leading many states and localities to suspend their bans or prohibit the use of reusable bags—a step many individual businesses have taken on their own.

The reasons behind these concerns and the reactions are straightforward. [Study](#) after [study](#) has shown that reusable bags can harbor bacteria and viruses that neither frontline workers nor consumers want to be exposed to, especially during a health crisis like COVID-19. While some suggest that proper bag hygiene can mitigate these risks, other [research](#) has shown that 97% of people admit to never washing or disinfecting their reusable bags.

While no studies have been done on COVID-19 transmission through reusable bags, it is clear consumers and frontline workers, as well as policymakers, recognize and appreciate the certainty that plastic retail

bags provide in the current environment. ARPBA believes that as we continue our fight against the pandemic, small businesses and consumers deserve the flexibility and opportunity to choose the products that best meet their needs, particularly at the checkout counter as Americans are shopping at grocery stores more than ever.

Bans on plastic bags create significant burdens for small businesses and consumers.

Implementing a ban on plastic bags is costly for retailers, especially small businesses and grocery stores who operate on razor-thin profit margins. For example, when San Francisco implemented its plastic bag ban in 2012, large grocery stores reported \$80,000 per year in extra costs. In 2019, large grocery stores in Maryland reported more than \$200,000 per year in increased costs for each store when a plastic bag ban is implemented.

Due to the reusable bag supply chain disruptions discussed below, as well as plastic bag bans going into effect around the country, there continues to be significant upward price pressure on reusable totes. This burden would fall most heavily on small businesses who will be forced to spend a great deal of money purchasing bags in bulk. This cost will inevitably be passed onto consumers in the form of higher prices.

With America still dealing with the pandemic and retailers and consumers reeling, policymakers should focus on legislation that reduces costs and burdens for businesses – not new regulations that make doing business in Maryland more complicated and expensive during an ongoing global health crisis.

To conclude, we would welcome the opportunity to provide more details about this issue, discuss potential policy solutions, and do our part to help Maryland achieve its sustainability goals. ARPBA and its members stand ready to work with you on solutions that protect the state’s unique environment, increase recycling, decrease litter and waste, and reduce marine debris without placing a burden on residents or the business community or moving manufacturing jobs overseas.

As you work through this process, please consider us a resource, and don’t hesitate to reach out with any questions.

Sincerely,



Zachary Taylor
Director, American Recyclable Plastic Bag Alliance





Surfrider Foundation is dedicated to the protection and enjoyment of the world's ocean, waves and beaches through a powerful grassroots activist network.

SURFRIDER – NORTH AMERICA NETWORK

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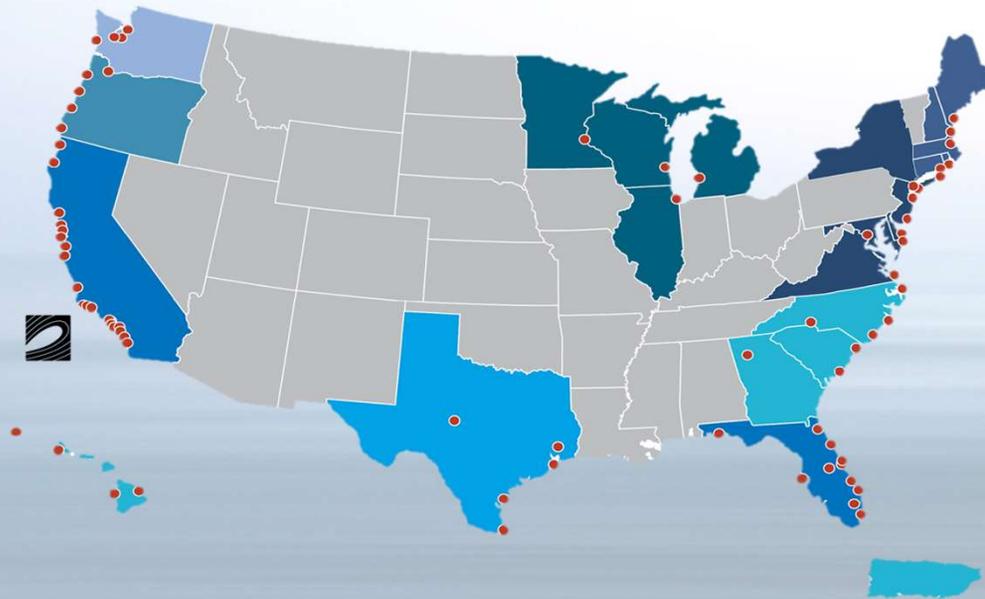
REGIONS

82

CHAPTERS

95

YOUTH CLUBS



10,000+
ACTIVISTS



50,000+
MEMBERS



1,000,000+
SUPPORTERS

1984

ESTABLISHED

PLASTICS LEGISLATION

THE TRIFECTA OF SIMPLE PLASTICS LAWS

PLASTIC CARRYOUT BAGS

- Statewide bags laws adopted in eight states*
- 500+ local bag laws adopted

TYPES OF BAG LAWS

Best Practice: Include a fee component so all bag types are addressed and increase in overall bag use is discouraged.

Recommended Structures:

Bag Fee: Fee mandated for all carryout bags

"Second Generation" Ban or "Ban/Fee Hybrid": Ban on thin plastic bags, fee for all other carryout bags (paper, reusable, compostable)

Non-Recommended Structures:

"First Generation" or "Straight" Ban: Ban on thin plastic bags only

PLASTIC BAG LAW ACTIVIST TOOLKIT 2019



Measuring the Effectiveness of Plastic Bag Laws

Are the laws working? This [comprehensive spreadsheet of effectiveness data](#) was prepared by Scientist Action and Advocacy Network ([ScAAN](#)) in partnership with PlasticBagLaws.org. The Effectiveness Spreadsheet is linked in [Surfrider Foundation's Plastic Bag Law Activist Toolkit](#), and the toolkit features summaries of the findings from U.S. studies currently available.

	Locati...	Summary	Type	¢	Study Author	Date of...
+	San Jose, CA	In under one year in San Jose, CA, a ban on thin plastic bags, coupled with a 10-cent fee on paper reduced bag litter in rivers to less than a third of the pre-ordinance levels. Neighborhood plastic bag litter from plastic bags dropped by more than half. The prevalence of reusable bags increased from 4% to 62% post-ordinance and the prevalence of customers not using a bag increased from 19% to 43% post-ordinance. The major recycling collection company in San Jose cut the time spent untangling plastic bags from their machines nearly in half.	Hybrid	10	City of San Jose	2012
+	Washington, DC	After implementing plastic bag fee in Washington, D.C., 80% of residents reported using fewer bags each week and more than three-quarters of businesses report providing fewer bags to customers. Plastic bag litter decreased, with two-thirds of residents and businesses reporting seeing few plastic bags around the neighbourhood. Additionally, 53% of residents and 63% businesses expressed support for the ban.	Fee	5	Opinionworks	2013
	Washington, DC	The Alice Ferguson Foundation surveyed how common plastic bags were during Washington DC's annual clean up before and after the	Fee	5	Alice Ferguson Foundation	2015

THE TRIFECTA OF SIMPLE PLASTICS LAWS

EPS FOAM FOODWARE (a.k.a Styrofoam™)

- Statewide EPS foam foodware bans adopted in four states*
- Hundreds of local EPS foam foodware bans adopted
- Many local jurisdictions have also banned other EPS products



THE TRIFECTA OF SIMPLE PLASTICS LAWS

PLASTIC STRAWS

- Statewide straws laws adopted in two states
- Hundreds of local straws laws adopted
- Straws “upon request” is a best practice



CONTAINER DEPOSIT

Beverage Container Deposit

- Container deposits have been adopted in 10 states and Guam
- Oregon's bill is considered the best model



BREAK FREE FROM PLASTIC POLLUTION ACT

BREAK FREE FROM PLASTIC POLLUTION ACT



BREAK FREE FROM PLASTIC POLLUTION ACT

The Break Free From Plastic Pollution Act will:

- Require producers of packaging, containers, and food-service products to design, manage, and finance waste and recycling programs.
- Create a nationwide beverage container refund program.
- Ban certain single-use plastic products that are not recyclable.
- Ban single-use plastic carryout bags and place fee on the distribution of remaining carryout bags.
- Establish minimum recycled content requirements for beverage containers, packaging, and food-service products.
- Spur massive investments in U.S. domestic recycling and composting infrastructure.
- Prohibit plastic waste from being shipped to developing countries.
- Protect state and local governments that enact more stringent standards.
- Place a temporary pause on new plastic facilities until EPA updates and creates important regulations on those facilities.



BREAK FREE FROM PLASTIC POLLUTION ACT

Ban on Export of Plastic Waste

- Ban on export of plastic waste to non-OECD countries
- Requires prior informed consent for export to OECD countries
- Some waste haulers, including Waste Management, have already made commitments to ban export of plastic waste outside of North America



BREAK FREE FROM PLASTIC POLLUTION ACT

Extended Producer Responsibility

- Packaging must meet certain criteria and other optional criteria are incentivized
- Producers must pay into a fund for the cost of recycling/disposal and clean-up of a product's packaging
- Money from the fund manages or reimburses local governments for the cost of recycling/disposal and clean-up
- Shifts responsibility from local governments to the producers & drives end markets for recycled plastic



BREAK FREE FROM PLASTIC POLLUTION ACT

Pause on Permits for New Plastics Facilities

- Temporary pause on permits for new polymer production facilities under the Clean Air Act and the Federal Water Pollution Control Act
- Study by National Academy of Sciences and the National Institutes of Health, includes analysis of planned expansion and the environmental justice and pollution impacts
- Requires new source performance standards for certain facilities





SURFRIDER
FOUNDATION



Plastics Legislation in CA

Baani Behniwal
Californians Against Waste
October 8, 2020

ABOUT CAW

Founded in 1977, **Californians Against Waste** is a non-profit environmental research and advocacy organization that identifies, develops, promotes, and monitors policy solutions to pollution and conservation problems posing a threat to public health and the environment.



Recent History

California's Bag Ban

- → SB 270 (Padilla, 2015)
Proposition 67 (2016)



Ban on Microbeads

- → AB 888 (Bloom, 2015)

Straws Upon Request

- → AB 1884 (Calderon, 2018)



Minimum Content Standard

- → AB 793 (Ting, 2020)

SB 54 (Allen) & AB 1080 (Gonzalez)

The California Circular Economy and Plastic Pollution Reduction Act

Establish statewide goals

Require all single-use packaging and products (foodware) sold or distributed in California be reduced or recycled by 75 percent by 2032

True recyclability

Require all single-use packaging and products to be effectively recyclable, compostable or reusable by 2032

Close the loop

Instruct CalRecycle to develop incentives and policies to encourage in-state manufacturing using recycled material generated in California



Ballot Initiative

The California Recycling and Plastic Pollution Reduction Act



For more information visit: plasticsfreeca.org

Source Reduction

Reduce the amount of single-use plastic sold in CA by no less than 25% by 2030

Ban EPS in Foodware

Phase out the use of Expanded Polystyrene takeout containers

True Recyclability

Require the remaining single-use plastic packaging and foodware to be recyclable, compostable, or reusable by 2030

Polluters Pay

Assess a fee on plastic producers that will help fund the state's recycling and composting infrastructure, and restore natural environments negatively impacted by plastic pollution

THANK YOU.

Baani Behniwal | baani@cawrecycles.org



**Californians
Against Waste**

Presentation on Market Development
House Environment and Transportation
Committee
Workgroup on Waste Reduction and Recycling
October 8, 2020

Richard Keller
Baltimore County Bureau of Solid Waste
Management, Recycling Division

Importance of Recycling Markets

- Recycling is a three-step process – collection and processing, manufacturing new products, and using the new products. We are trying to create a circular economy
- We generally do a good job at collection and processing, but need more attention to manufacturing new products and buying recycled products
- For recycling to reach full potential, all three elements must be in balance. Collection alone is not recycling

House Bill 1452 (2020)

- Baltimore County drafted House Bill 1452 on behalf of the Maryland Recycling Network
- Bill was introduced by Delegate Stein and passed the House Environment and Transportation Committee and the House unanimously
- Bill did not pass the Senate due to COVID-19

House Bill 1452 (2020) Key Provisions

- Provide leadership via the Department of the Environment, Office of Recycling
- “Promote the development of markets for recycled materials and recycled products in the state”
- Evaluate markets and make recommendations to improve markets
- Reduce contamination critical to offering large quantities of quality materials

House Bill 1452 (2020) Key Provisions

- Identify materials that are largest portion of the waste stream and those needing markets
- Identify businesses that use recycled materials (including reuse, repair, and remanufacturing)
- Identify opportunities for existing businesses
- Offer methods to attract new recycling businesses, including financing
- Campaign slogan – “Maryland is Open for Recycling Business”

House Bill 1452 – MDE Coordination

- Department of Commerce (expanding use in existing businesses and attracting new businesses)
- Department of General Services (expand state buy recycled efforts)
- Department of Transportation (use recycled materials in road projects)
- Maryland Environmental Service and Northeast Maryland Waste Disposal Authority (develop new recycling projects)

Conclusion

- While we need to collect more clean recyclables, supply alone will not increase recycling
- We need to determine the options for current Maryland businesses and new businesses to use more recycled materials
- We need the state, local governments, institutions and private businesses to use more recycled products
- Only through these efforts can Maryland expand recycling. We need to pass the 2021 version of HB 1452 and make Maryland “Open for Recycling Business”

Contact Information

Richard Keller

rkeller@baltimorecountymd.gov

Cell 410-812-3155

Prince George's Organics Composting Facility



Yellow - Pinks -
Green - Orange



MARYLAND
ENVIRONMENTAL
SERVICE

So What is Compost?



USCC Definition:

Compost – is the product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon such that it is beneficial to plant growth. Compost is typically used as a soil amendment, but may also contribute plant nutrients.



Prince George's County
Maryland



**MARYLAND
ENVIRONMENTAL
SERVICE**

What is Compost? ...its closing the loop



Closing the loop:

- Compost feed stocks such as grass, leaves, brush and food scraps are collected by the generator (you!); hauled to the compost facility either by contract hauler or self hauled; Processed in an aerobic hot composting process; tested; sold; utilized as a high quality soil amendment to grow new food for the consumer who becomes the generator!



Prince George's County
Maryland



MARYLAND
ENVIRONMENTAL
SERVICE

Why compost?



Why not?

- Food scraps comprise 43.1% of compostable material and 14.9% of the total waste generated. The next largest portion of waste generated are paper products at 26.6%. In Maryland, this translates to an estimated 2.32 million tons of compostable materials and 998,630 tons of food waste generated each year. – MDE
- Finished high quality compost that is added to soil not only adds depleted nutrients, but builds soil fertility and higher crop yields.



Prince George's County
Maryland



MARYLAND
ENVIRONMENTAL
SERVICE

Facility History... Then:



Prince George's County Yard WASTE Facility:

- The Maryland Environmental Service has maintained and operated the county's compost facility since 1990 making the product Leafgro.
- Traditionally accepting yard trim only, feed stock materials arrived loose or in plastic bags.
- Plastic residuals were screened out at the end of the process and hauled to the landfill.



Prince George's County
Maryland



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Facility History... Now:



Prince George's County ORGANICS Composting Facility:

- Utilizing GORE cover technology, the facility can now process 32,500 Tons of food scraps per year.
- Food Scraps are collected by private and contract haulers from Prince George's, Charles, Baltimore, Montgomery counties and the District of Columbia.
- Compostable films and products are accepted comingled with the food.



Prince George's County
Maryland



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How the process works:



You can't speed up composting...or can you?

- The yard trim is processed in long open rows called windrows. This is a 8 month process from start to finish.
- Food scraps w/ yard trimmings are processed in 10 weeks! Using the new Gore cover composting process.
- Decreased processing time decreases costs and increases production while using a smaller foot print.



Prince George's County
Maryland



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What can be composted?



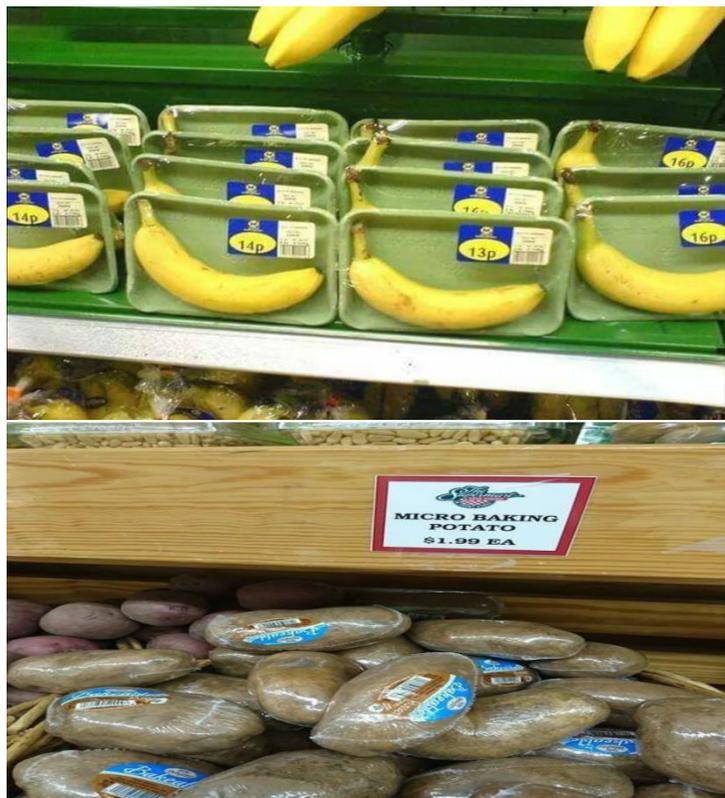
Compostable does NOT mean Biodegradable:

- Maryland Environmental Service has developed “Acceptables” lists for products and brands that meet our requirements to be properly broken down during the compost process.
- Customers and haulers are provided these lists, and are required to abide by them to prevent contamination at the compost facility.
- Biodegradable film and products are being introduced to the market with false claims and no regulations. Buyer beware!



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Stopping the Contamination



At the compost facility:

- Once non compostable items arrive on site, they are removed and placed back on the haulers trucks. If the material is too contaminated, then the whole load is rejected.

Consumers:

- Buying less food = Wasting less food
- Think “Renewable” instead of “Landfillable.”
- Buying products that use compostable packaging.

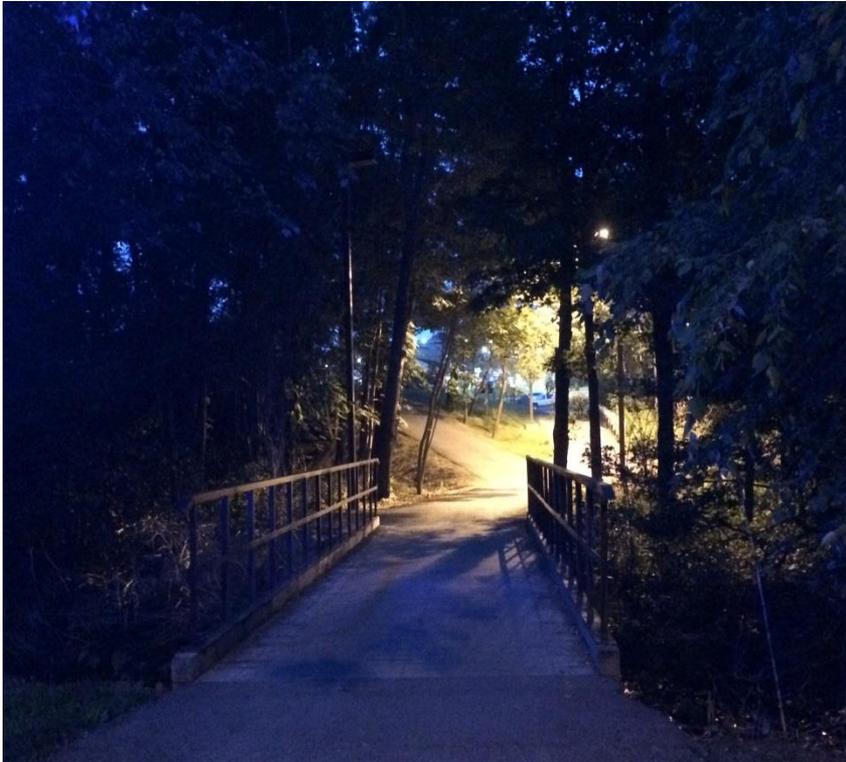


Supporting a Sustainable Future



MARYLAND
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SERVICE

Zero Waste Goals:



The light at the end of the tunnel:

- The compost facility has played a major role in getting Prince George's County to be number 1 in Maryland for waste diversion for the last 3 years in a row.
- Plastic Bag ban of 2014 – Banned the use and drop off of non compostable plastic bags at the compost facility.
- The facility has reduced its own waste stream by leaps and bounds and now reuses the “overs” from the screening process.



**MARYLAND
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Interested in Knowing More?



Prince George's County Organics Composting Facility:

6550 Maude Savoy Brown RD
Upper Marlboro MD, 20772

Maryland Environmental Service:

www.menv.com

Steven Birchfield

Email - Sbirc@menv.com

Cell – (240)-712-1021

Office – (301)-627-6388



Prince George's County
Maryland



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Thank you!



Prince George's County
Maryland



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Testimony of Chaz Miller, President Miller Recycling Associates
Maryland House Environment & Transportation Committee
Workgroup on Waste Reduction & Recycling
Panel 2 Composting & Organics Recovery
October 8, 2020

Thank you for the opportunity to testify today about the power of composting and organics recovery in Maryland. I am Chaz Miller. I have been involved in recycling and organics recovery since I was hired by the US EPA in 1976 to join its nascent recycling program.

I am here to speak specifically about the findings of Montgomery County's Aiming for Zero Waste Task Force in regard to the importance of organics recovery in reducing the amount of materials going to disposal. The Task Force was a seven-member group appointed by then County Executive Isiah Leggett to advise the County as it developed its new solid waste plan. I chaired the Task Force. We made our final recommendations in April of this year. Our recommendations can be found on our web page at <https://www.montgomerycountymd.gov/SWS/master-plan.html>. I have attached a copy of the recommendations to my comments.

As part of the planning process, the county's consultant benchmarked Montgomery County against five of the most progressive recycling programs in North America. They are King County in Washington state, Austin, Minneapolis, San Francisco, and Toronto.

Montgomery County currently has a 42 percent recycling rate, excluding waste-to-energy ash recycling. We discovered that even the most aggressive recycling programs struggle to reach a 50 percent recovery rate. Only King County exceeded 50 percent. Along with its largest city, Seattle, it is falling short of achieving its 60 percent recycling goals. Yet all five of those programs are focusing on curbside and commercial organics collection to increase diversion from disposal.

While Montgomery County has an outstanding yard waste collection and composting program, it does not collect food waste at the curbside or require from businesses. That is why the County lagged behind the benchmarked programs. One of our key recommendations was to require mandatory residential and commercial

organics collection and diversion while ensuring a processing infrastructure is being developed. We specifically endorsed funding the purchase of two collection trucks for commercial and residential recovery pilot programs. I am happy to say those trucks were included in the budget adopted by the County in June.

As an experienced recycler, I wish to stress that recycling is not rocket science. I wish it was. Unfortunately, it is people science. Truly successful recycling programs create a social norm so that people will recycle wherever they are. We do well in single-family housing, but poorly in multi-family housing, public spaces and smaller businesses.

Food waste collection and processing has its own unique challenges. Getting people to put aside their food waste and store it for a week is not as easy as getting people to put their trash or their recyclables on the curbside. Food waste can be smelly and attract pests. But if the experience of my family is any indicator, these challenges can be overcome. Along with many of our neighbors, we have been customers of Veterans Compost for over a year and are very happy with their performance. I would add that Compost Crew is also successfully collecting in our neighborhood.

Successful organics recovery and processing requires a strong state regulatory structure. I am happy to say that MDE has done an excellent job establishing those regulations.

It also requires a strong processing infrastructure. Montgomery County will send its pilot program food waste to the Prince George's County composting facility. The county will need to develop its own infrastructure when it establishes its countywide programs. Siting these facilities is always a challenge. We can expect objections over truck traffic, noise, odors and other issues. The County must ensure that these challenges are met.

The state of California has set aggressive organics recovery goals. It is also faced with a tremendous shortfall in composting and anaerobic digesting facilities. In spite of great efforts, that state is falling behind in meeting its goals to establish a processing infrastructure and a viable end market. We have much to learn from California's experience.

Successful organics recovery also requires markets for its end products. MES has been successful with its Leaf Gro product. We will need to add to that success with our food waste recovery products.

As one final note, I am on the Board of the Maryland Recycling Network. We supported HB 589 in the last session. We look forward to legislation in the upcoming session focused on expanding organics recovery and end markets.

Thank you for the opportunity to testify. I will be happy to take any questions.

Chaz Miller Bio: Chaz Miller's career in waste and recycling spanned four decades with stints at the US EPA Office of Solid Waste and the agency's original recycling programs, the Glass Packaging Institute and the National Waste and Recycling Association. He testified on waste and recycling issues at Congressional and state hearings and spoke at conferences throughout North America. He was on the plenary keynote panel at the UN Zero Waste Conference in Tokyo in 2012. He is a member of the Maryland Recycling Network Board and an ex officio member of the Board of the Northeast Recycling Council.

Although he is now retired from full time work, he consults and continues to write his "Circular File" column for Waste360 and to speak at waste and recycling conferences. He chaired the Montgomery County Aiming for Zero Waste Task Force as it advised the County on its 2020 Solid Waste plan updates.

TO: Montgomery County Executive Marc Elrich
Montgomery County Council

FROM: Montgomery County Integrated Waste Systems Strategic Task Force/Zero
Waste and Strategic Plan Task Force
Chaz Miller, Chair

SUBJECT: Recommendations and Summary of Activities

DATE: May 7, 2020

Executive Summary:

This document summarizes the work and recommendations of Montgomery County's Integrated Waste Systems Strategic Plan Task Force/Zero Waste and Strategic Plan Task Force ("Task Force"). The Task Force was formed in May, 2018 to "provide advice and guidance on how best to maximize waste reduction, reuse, recycling, and sustainable management of all materials across the entire integrated waste management system, including all programs, facilities, operations, initiatives and services."¹

In developing its recommendations, the Task Force also evaluated those actions the County and the Council will need to consider, assuming the County Executive recommends closing the Resource Recovery Facility (RRF) as part of the proposed update of the County's Comprehensive Solid Waste Management Plan. That facility's contract expires in 2026. If the Plan forwarded to the Council includes closure of the RRF, the County Council, which is responsible for approving this policy change to that Plan, will need additional analysis of the costs and benefits of changing the County's primary waste disposal before making such a decision. If closure is approved by the Council, the County will need to move forward expeditiously with all of the transition work needed to meet a 2026 closure date.

The following is a summary of the Task Force's final recommendations:

The Council will need an analysis of additional diversion of recyclables and organics achievable by 2026 in order to properly calculate the amount of material going to disposal in 2026 and succeeding years. In addition, in order to make the best determination of alternative disposal options, the County should expand the analysis of the environmental impact of disposal that was undertaken in the HDR study along with an analysis of health and social justice issues related to potential alternatives.

¹ Memorandum to Hans Riemer, President, Montgomery County Council to Isiah Leggett, County Executive, Subject: Task Force on County's Integrated Waste System Strategic Plan", dated May 30, 2018.

Finally, the Council will need to analyze potential impacts of all of these various strategies on the Solid Waste Charges.

To ensure a successful transition to land disposal, the County staff will need to design, and the County Council will need to approve, funding of additional infrastructure including changes to the Transfer Station and Recycling Center, a new organics collection and processing infrastructure, and a modified transportation system to ship county waste to an alternate disposal site. Individually, each of these is a multi-year project. To meet the 2026 timeline, Montgomery County will need to begin work on several major projects in FY 2021 and sustain those efforts and funding through completion.

These projects include the following:

- Upgrading the County's available recycling processing capacity is a critical priority. The current facility has not been upgraded in two decades, yet the volumes and composition of materials collected for recycling have changed dramatically as has processing technology. County staff and the County Council can choose to upgrade capacity by rebuilding the current facility, siting a new facility, increasing contracts for capacity outside of the County, or some combination of those options. However, the Task Force views this upgrade as foundational to making any significant progress in towards achieving improvements to the County's collection, recycling and diversion goals.
- Mandating residential and commercial collection and diversion of organics including funding pilots and pursuing innovative public private partnerships for both in the FY2021 budget. Organics represent 43 percent of the waste generated in the County.
- Continuing funding of source reduction activities.
- Increasing collection and recycling of cardboard boxes which constitute 29 percent of the paper generated in the county.
- Increasing recycling rates for construction and demolition waste and enforcement of those requirements along with promoting salvage and reuse markets.
- Expanding recycling education efforts and increasing enforcement of recycling requirements to ensure that County residents recycle correctly.
- Adopting pay-as-you-throw as part of the funding mechanism in conjunction with the county Solid Waste Charges.
- Consolidating Subdistrict B residential waste collection services with those in Subdistrict A to increase uniformity in residential waste and recycling service provision throughout Montgomery County

The process by which the Task Force came to these recommendations as well as a more complete discussion of each recommendation is included in this memorandum.

Introduction:

The Task Force believes that Montgomery County has one of the best recycling programs in the country. However, it can and must improve. Doing so should be part of a larger sustainable materials management program that does not rely on recycling alone for addressing the County's needs. We must consider and take action to reduce what enters the recycling and waste disposal streams through source reduction and reuse opportunities along with organic recovery options such as composting, anaerobic digestion and other means for managing organic wastes. This is particularly true if the County is to advance closer to Zero Waste and to decrease its reliance on disposal.

Montgomery County had a 56.99 percent recycling rate in FY 2019 and a diversion rate of 61.99 percent under the methodology in the Maryland Recycling Act (MRA).² The recycling rate includes more than 150,000 tons of ash from the RRF that is beneficially reused and considered recycled under the MRA. This adds 14.99 percent to the County's recycling rate. The diversion rate includes a 5 percent "source reduction credit". Without ash recycling and the source reduction credit, Montgomery County has a recycling rate of 42.65 percent. Construction and demolition recycling is not included in those rates. Montgomery County's current recycling goal, which includes ash and the source reduction credit, is 70 percent by 2020. The County is not likely to reach that goal.

We discussed what could be an achievable goal for recovery when our recommendations are implemented. We did not set a target, although based on the results of the benchmarking study (see below), achieving a 60 percent recycling and organics recovery rate would rank Montgomery County at the top of North American programs. That 60 rate does not include either the beneficial reuse or RRF ash or the source reduction credit. This is an aspirational rate based on current and potential participation, collection and processing technology for both recyclables and organics. No North American jurisdictions have achieved this goal, although one is very close.³

Nor will it happen immediately. Success depends upon a number of factors including:

- Awareness and education programs that result in behavioral change
- Changes in the County's processing capabilities which will require capital improvements to equipment and facilities.

Both will take time and investment of County funds. To succeed, the County must shoot for excellence and persevere through a steady increase in recycling and organics recovery. This is a major challenge, but is one the County can and must achieve.

² MDE provides information on recycling rate and diversion rate calculation at: <https://mde.maryland.gov/programs/LAND/RecyclingandOperationsprogram/Pages/recyclingrates.aspx>. The FY2019 data cited above was provided by DEP.

³ Comparing recycling rates across the county and between nearby jurisdictions can be highly misleading. No standard uniform system exists for calculating these rates or for what materials and actions are included. As a result, it is important to understand how each jurisdiction calculates its recycling and diversion rates in order to make a real world comparison.

Background:

On May 31, 2018, County Executive Isiah Leggett appointed a seven-member Task Force to *“work closely with the Department of Environmental Protection (DEP) throughout the strategic planning process to provide advice and guidance on how best to maximize waste reduction, reuse, recycling, and sustainable management of all materials across the entire integrated waste management system, including all programs, facilities, operations, initiatives, and services...The overarching goal is to set the course for sustainable materials management across the integrated waste management system for the next 25 years.”*⁴

Task Force members have a broad range of experience and expertise in issues and programs relevant to the County’s integrated solid waste management program. The County Council added an ex-officio non-voting member to this group. Task Force members are:

Sara Bixby
Peter Ettinger
Lauren Greenwood
Ken Lavish
Keith Levchenko (ex-officio)
Chaz Miller
Caroline Taylor
Robin Wiener

At our first meeting, the Task Force elected Chaz Miller to be its Chair.

Meetings and Presentations:

The Task Force met 16 times, starting on June 6, 2018 and ending on April 15, 2020. We started with a thorough explanation by DEP staff of the existing recycling and solid waste operations. Task Force members also toured the county’s solid waste and recycling infrastructure including the transfer station, recycling facilities, composting, and resource recovery facilities. The Task Force also received an assessment of the physical status and operating conditions of those facilities from HDR, the consulting firm that drafted the report on “The Future of Responsible Waste Management in Montgomery County” for DEP. HDR’s output, provided in a series of task reports, also included recommendations for improving those conditions. A major part of the Task Force’s work effort was to provide input to HDR and DEP on the draft HDR task reports before they were finalized.

The Aiming for Zero Waste web site at <https://www.montgomerycountymd.gov/SWS/master-plan.html> has a complete list of

⁴ Leggett transmittal memorandum May 30, 2018

Task Reports from HDR, meeting minutes, presentations including power points from Task Force meetings and other relevant resources.

The Task Force heard presentations on

- The results of the benchmarking study.
- “Pay-As-You-Throw” systems in which residents pay for waste and recycling services, based, in part, on the amount of material they separate for recycling and organics recovery.
- Takoma Park’s food waste collection system.
- EPA’s Waste Reduction Model and the “Measuring Environmental Efficiency Calculator” for an understanding of ways to look at the environmental impact of different waste management, recycling and organics recovery technologies.
- Biogas systems such as anaerobic digestion of organics and organics composting such as the in-vessel aerated static pile (positive aeration system) such as that used in Prince Georges County.

The Task Force provided Montgomery County DEP with extensive comments and recommendations in response to the delivery of the following reports by HDR:

- Task Two: North American local government recycling and organics recovery programs to be used as benchmarks for Montgomery County’s recovery efforts
- Task Three: Stakeholder, Citizen and Expert Engagement Plan
- Task Four: logos and branding
- Task Five: improvements to the current diversion/recycling system outline
- Task Eight: review of existing facilities
- Task Nine: “what to do with what’s left”

Task Two, the benchmarking exercise, was particularly illuminating. The Task Force selected five local governments: Austin, TX, King County, WA, Minneapolis, MN, San Francisco, CA, and Toronto, ON. Those five programs were chosen because they provide a good demographic comparison with Montgomery County and because of their reputation for successful recycling programs. The goal was to compare waste management services and techniques used to increase recovery in the County with those in the benchmark communities. Of course, none of the communities, including Montgomery County, had identical programs. In particular, the County did not have pay-as-you-throw or an organics recovery program and used dual stream to collect recyclables. The contractor was tasked with creating an “apples to apples” comparison, using the Maryland Recycling Act methodology for determining a recovery rate excluding source reduction points. The results were revealing. Montgomery County’s Calculated Recycling rate was 55.9 percent. Austin was 45.4 percent, King County, 59.6 percent, Minneapolis, 45.4 percent, San Francisco, 47.5 percent and Toronto, 48.1 percent. Subtracting ash recycling lowers Montgomery County to 41.9 percent.

In the review of Task Five, improvements to the current diversion/recycling system, education and enforcement, Pay-As-You-Throw, food waste recovery and consolidation

of Subdistrict B emerged as key strategies deserving additional analysis by HDR. A reuse center, textile recycling, multi-family recovery and C&D debris separation and recovery also emerged as areas worth additional consideration. The Task Force voted unanimously to support continuing to collect recyclables in a dual stream system. It was also clear from Task Eight, review of existing facilities, that the Shady Grove Recycling Facility desperately needs modernizing.

Final Recommendations:

Proposed Closure of the Resource Recovery Facility by 2026

Closing the Resource Recovery Facility by 2026, as proposed by the County Executive, poses a significant challenge for Montgomery County. The County Council, which is responsible for approving this policy change to the County's Comprehensive Solid Waste Management Plan, will need additional analysis of the costs and benefits of changing the County's primary waste disposal. If approved by the Council, the County will need to move forward expeditiously with all of the transition work needed to meet a 2026 closure date.

Recommendation: The Council will need an analysis of additional diversion of recyclables and organics achievable by 2026 in order to properly calculate the amount of material going to disposal in 2026 and succeeding years. In addition, in order to make the best determination of alternative disposal options, the County should expand the analysis of the environmental impact of disposal that was undertaken in the HDR study along with an analysis of health and social justice issues related to potential alternatives. Finally, the Council will need to analyze potential impacts of all of these various strategies on the Solid Waste Charges.

To ensure a successful transition to land disposal, the County staff will need to design, and the County Council will need to approve, funding of additional infrastructure including changes to the Transfer Station and Recycling Center, a new organics collection and processing infrastructure, and a modified transportation system to ship county waste to an alternate disposal site. Individually, each of these is a multi-year project. To meet the 2026 timeline, Montgomery County will need to begin work on several major projects in FY 2021 and sustain those efforts and funding through completion.

Address Processing Facility (MRF) Needs

The existing MRF is 20 years old and out-of-date. It could be retrofitted or replaced by a new facility. Failure to take action will jeopardize the County's recycling programs.

Recommendation: Addressing MRF needs is a critical priority. County staff should determine which option is best in terms of cost and timing. The County Council and Executive must make this facility a priority.

Organics

Organics recovery, with an emphasis on food waste, is essential for decreasing disposal. Both mandatory residential and commercial food waste separation requirements are necessary as is processing capacity. The proposed budget includes funding for both commercial and residential organics recovery pilots.

Recommendation: The County Council should fund the pilot programs. It should require mandatory residential and commercial organics collection and diversion while ensuring a processing infrastructure is being developed. These steps can be taken in parallel with the pilot program.

Source Reduction

The Draft of Task Nine listed a number of source reduction activities at the top of the timeline (see Figure 2-1, page 3 of the Draft Task Nine). These include a food waste reduction campaign, a ReUse center and several other options.

Recommendation: Montgomery County should proceed with the recommendations of HDR Task 9, Figure 2-1, pages 3-4, which include numerous source reduction planning and implementation efforts. These efforts will lower the size of the waste stream while increasing awareness of the importance of creating less waste.

Increased Recycling of OCC

Cardboard boxes (known as Old Corrugated Containers, or “OCC” in the recycling industry) are one of the most common paper products found in households. They are also one of the more valuable recyclables, easily recoverable through Montgomery County’s dual stream collection program. Recycling of this product can be increased through targeted education efforts.

Recommendation: A targeted education campaign explaining to residents the ease and importance of recycling cardboard boxes.

Construction & Demolition (C&D) Waste

Construction and demolition waste represents 20 percent, by weight, of the waste generated in Montgomery County. Source reduction measures, as well as enhanced recycling and reuse programs, are a critical part of our waste reduction efforts, would reduce greenhouse gas emissions and create jobs in the reuse and salvage industries.

Recommendation: Montgomery County should adopt appropriate ordinances to require higher C&D diversion rates than currently exist and promote C&D salvage and reuse markets through education of the building community.

Education & enforcement

Education and enforcement are crucial to increasing participation and lowering contamination. The County completed an enforcement pilot program which through the use of educational flyers, recycle bin inspections, and warning notices, reduced contamination from 40 percent to 20 percent

Recommendation: Montgomery County should expand its education and enforcement efforts based on the results of the pilot program. This will include additional FTEs to aid in enforcement. The County needs to continue to update and expand its education efforts to ensure that all county residents can recycle correctly. In addition, the County should explore efforts to work with non-profits and other groups to enhance recycling education efforts.

Pay-As-You-Throw

“Pay-as-you-throw” payment systems have proven effective in increasing recycling and organics recovery and reducing the amount of material sent to disposal. This will require modifications to Montgomery County’s existing Solid Waste Fee. That fee can continue to provide a financially secure base for fixed costs while also requiring generators to pay variable fees that reflect the amount of material disposed. Making this change will require a study of how to create a new system that will both encourage more recovery and less waste while preserving the county’s ability to have a financially secure base.

Recommendation: Montgomery County should institute a pay-as-you-throw system as part of the Solid Waste Charges. It is further recommended implementing the system with an emphasis on its ability to increase recycling and organics recovery and lower waste generation.

Subdistrict B

A majority of Montgomery County residents now live in Subdistrict B. Failure to have a unified waste and recycling collection system hampers overall progress toward zero waste goals.

Recommendation: Montgomery County should consolidate Subdistrict B with Subdistrict A in order to have a uniform waste and recycling system in the county that optimizes recovery potential.



DELIVERING RENEWABLE
NATURAL GAS
AND HEALTHY SOILS

Maryland Workgroup on
Waste Reduction
and Recycling

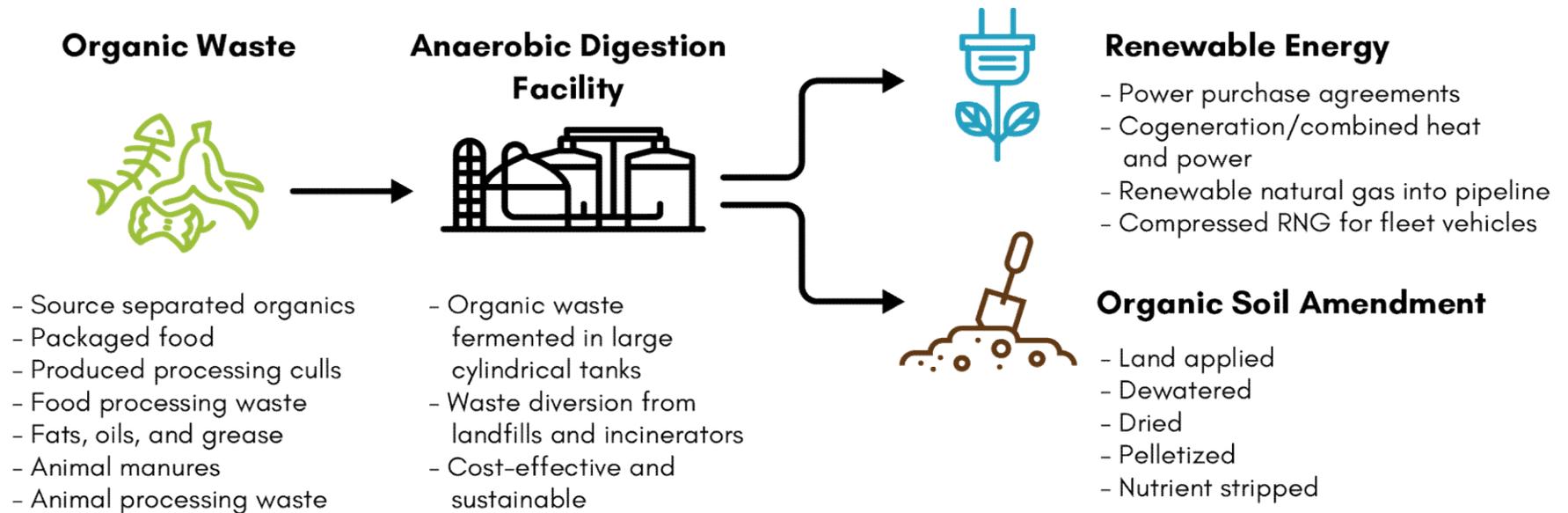
PROPRIETARY AND CONFIDENTIAL

ABOUT US

A GLOBAL LEADER IN THE
FINANCE, DESIGN, BUILD AND
OPERATION OF ANAEROBIC
DIGESTORS



WHAT IS ANAEROBIC DIGESTION?



OUR STRATEGIES



Recycle Excess Organics Headed for Landfills or Incineration Reducing Greenhouse Gases

Change how cities, states, agricultural entities, corporations and academic institutions efficiently manage the more than 1.4 billion tons of manure, organics and processing materials that are currently land-applied



Produce Truly Renewable Natural Gas from Organic Waste

Provide a sustainable means to creating zero waste and treating organic matter and waste in an economical yet clean, rapid, efficient, profitable and sustainable way



Use Natural Fermentation vs. Incineration: A Natural Scientific Methodology

Much like a cow's stomach on an industrial scale, anaerobic digestion is nature's fermentation process and is the best methodology/technology to recycle organic matter into clean renewable energy and organic soil amendment



Ensure Business Efficiency and Environmental Effectiveness

Present a turnkey plan to finance, develop, and scale an anaerobic digestion solution using our proven 20-year success record with more than 220 plants built throughout the world using our BTS technology

WASTE DIVERSION LEGISLATION IN MARYLAND



Food waste has emerged as an increasing point of focus in promoting environmentally responsible waste management and addressing food insecurity



Food system and environmental advocates and legislators have embraced organic waste bans and waste diversion as a policy tool for addressing this issue. state and local level.

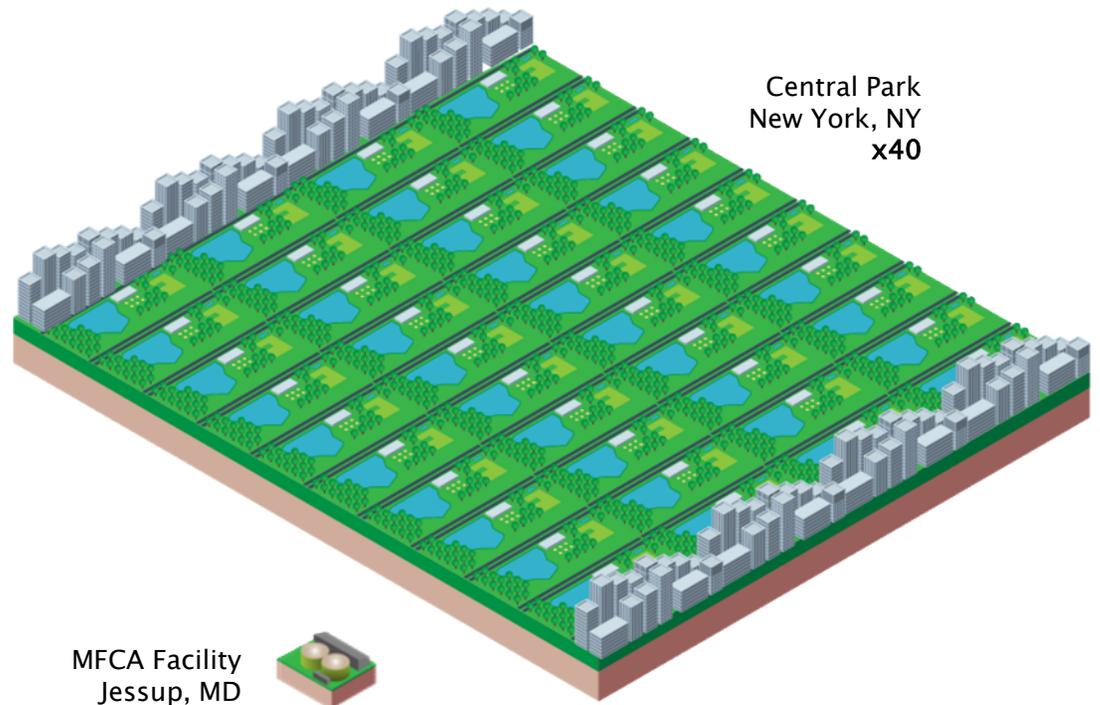


House Bill 589, Solid Waste Management – Organics Recycling and Waste Diversion – Food Residuals

Introduced in 2019, the bill would have required food waste generators that produce 2 tons a week of organic waste must take the waste to a organics recycling facility. The tonnage requirement for waste diversion reduces in half each year over four years. This standard applies to generators that are within 30 miles of an organics recycling facility.

THE IMPACT OF ANAEROBIC DIGESTION AND WASTE DIVERSION

Our MFCA facility will save about 26,000 tons of CO₂e_q from the atmosphere each year – the same environmental impact that a forest area 40 times the size of Central Park can provide!



STRONG RETURNS TO THE COMMUNITY

- Increases the lifespan of a local landfill, reducing percolates, increasing water quality
- Reduces odor as organic waste is deposited into sealed tanks
- Shrinks waste transport costs and associated environmental impact
- Reduces greenhouse gases and enables CO₂ and methane capture and use
- Reduces pathogens and antibiotic use in the environment as digested waste is effectively pasteurized and dried digestate can be used as bedding material
- Creates both direct and indirect jobs to construct and manage the facility as well as attend to the resulting offtake use and distribution

PROPRIETARY AND CONFIDENTIAL



CURRENT PROJECTS



OUR 2020 ANAEROBIC DIGESTORS IN ENGINEERING AND CONSTRUCTION



Maryland Food Center Authority (MFCALogomark: The letters 'mfca' in a stylized, lowercase font, with 'MARYLAND FOOD CENTER AUTHORITY' written in smaller text below it.)

- **Location:** Jessup, MD
- **Feedstocks:** 100,000 tons/year of food waste, FOG, and dairy DAF
- **CI Score:** (46.07)
- **Gas Production:** 275,000 mmBTU/year
- **Target Operation Date:** Q4 2020

Bioenergy Innovation Center

- **Location:** Blades, DE
- **Feedstocks:** Up to 200,000 tons/year of poultry DAF, waste activated sludge, and hatchery waste
- **CI Score:** (75)
- **Gas Production:** 350,000+ mmBTU/year
- **Target Operation Date:** Q2 2021

MARYLAND FOOD CENTER AUTHORITY

Location: Jessup, MD
Feedstocks: 100,000 tons/year of
food waste, FOG, and dairy DAF
CI Score: (46.07)
Gas Production: 275,000
mmBTU/year
Target Operation Date: Q4 2020



BIOENERGY INNOVATION CENTER

FORMERLY PERDUE
AGRIRECYCLE

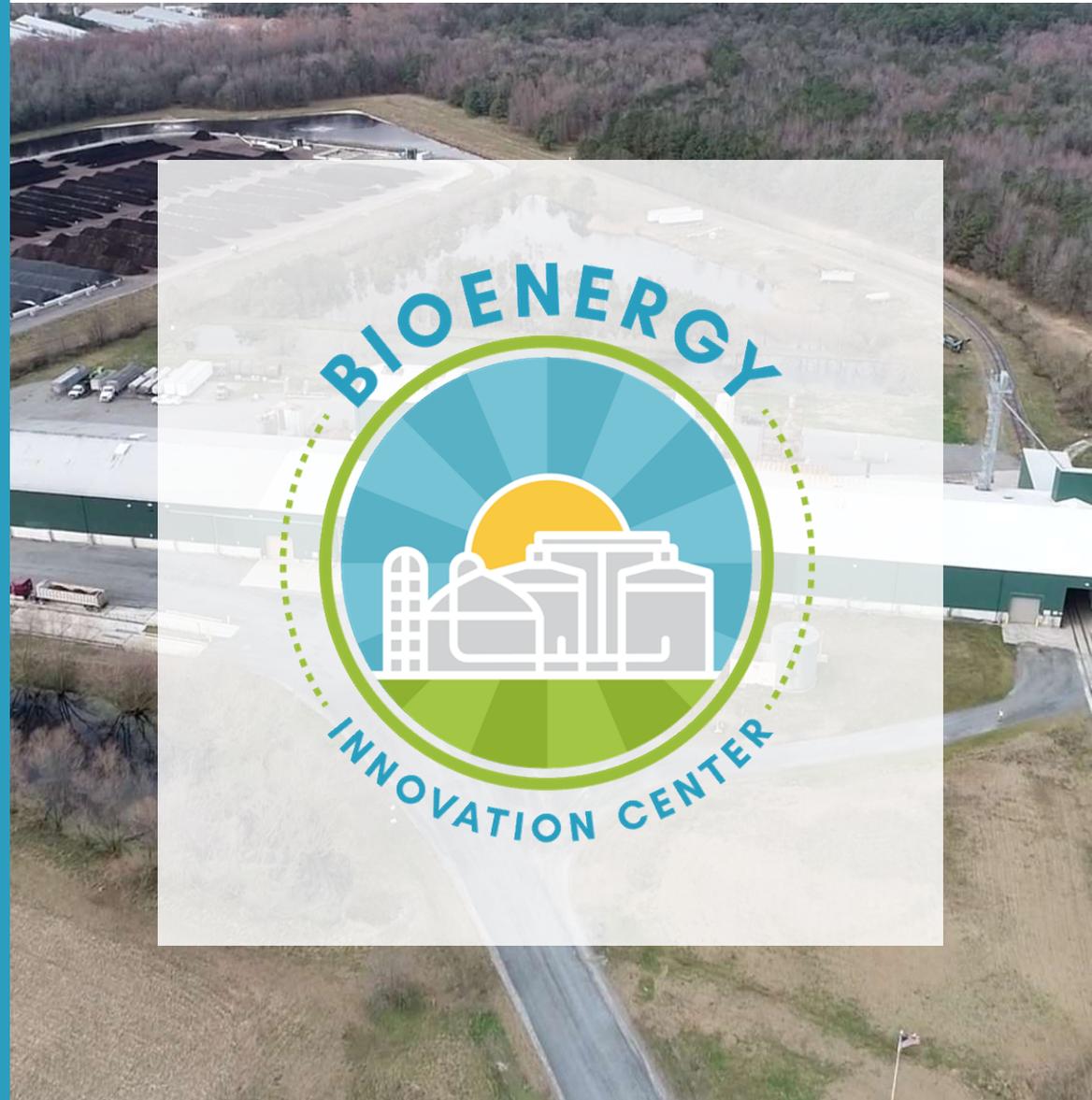
Location: Blades, DE

Feedstocks: Up to 200,000 tons/year
of poultry DAF, waste activated
sludge, litter and hatchery waste
from Perdue and other waste
providers

CI Score: (75)

Gas Production: 350,000+
mmBTU/year

Target Operation Date: Q2 2021





**THANK
YOU!**



US Composting
Council®

Advocate • Connect • Educate • Market



US Composting
Council®

Our Mission

The US Composting Council advances compost manufacturing, compost utilization, and organics recycling to benefit our members, society, and the environment.

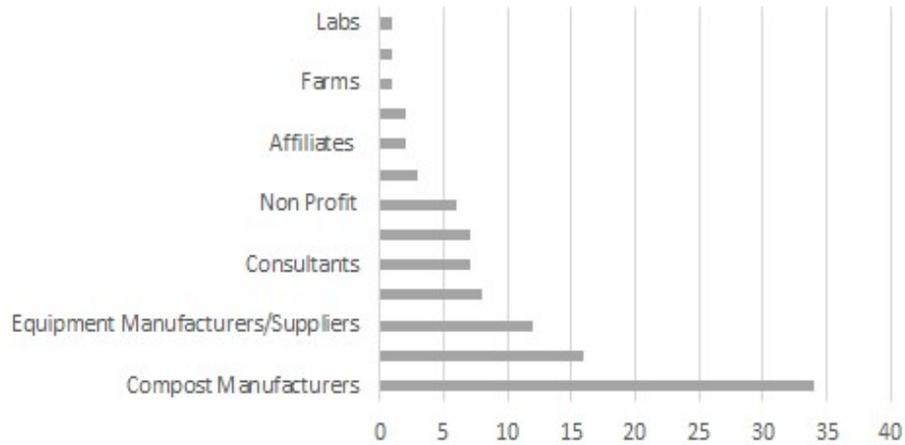
Our Vision

We believe compost manufacturing and compost utilization are central to creating healthy soils, clean air and water, a stable climate, and a sustainable society.



US Composting Council®

USCC Members 2019-20
% by Member Type



Membership: 770 organizations
(representing 1,200 individuals)

Maryland:
35 Members representing 57
individuals

Nationally:

- Producing approximately 14.1M CY compost
- Value at \$369M retail price (*Composting News* published prices)
- 320 STA Certified Compost products producing over 10M cubic yards of compost per year in 37 states



Target Organics™

SUPPORTING LOCAL ORGANICS PROGRAMS

National Composting Priorities

Infrastructure

92% looking to USCC for more help & 85% want USCC support to grow infrastructure



Bans

79% are not subject to a municipal landfill organics ban & 56% are not subject to a state landfill organics ban



Support

67% have high interest in having composting programs & 49% have community support for maintaining composting options



Capacity

70% want to increase composting capacity & 45% say they are currently limited in their capacity to compost

Funding

68% say some private funding is necessary to increase capacity & 57% of respondents say funding is a challenge



2019 Survey results

IMPROVING EXISTING PROGRAM

- 39% Improve Marketing & Outreach
- 32% Increase Participation
- 32% Increase Capacity

TOOLS NEEDED

- 33% Best Practices Guide
- 32% Private/Public Case Studies
- 27% BMP for Contamination
- 26% Public Outreach & Education
- 16% Financial and cost modelling
- Event Facilitation

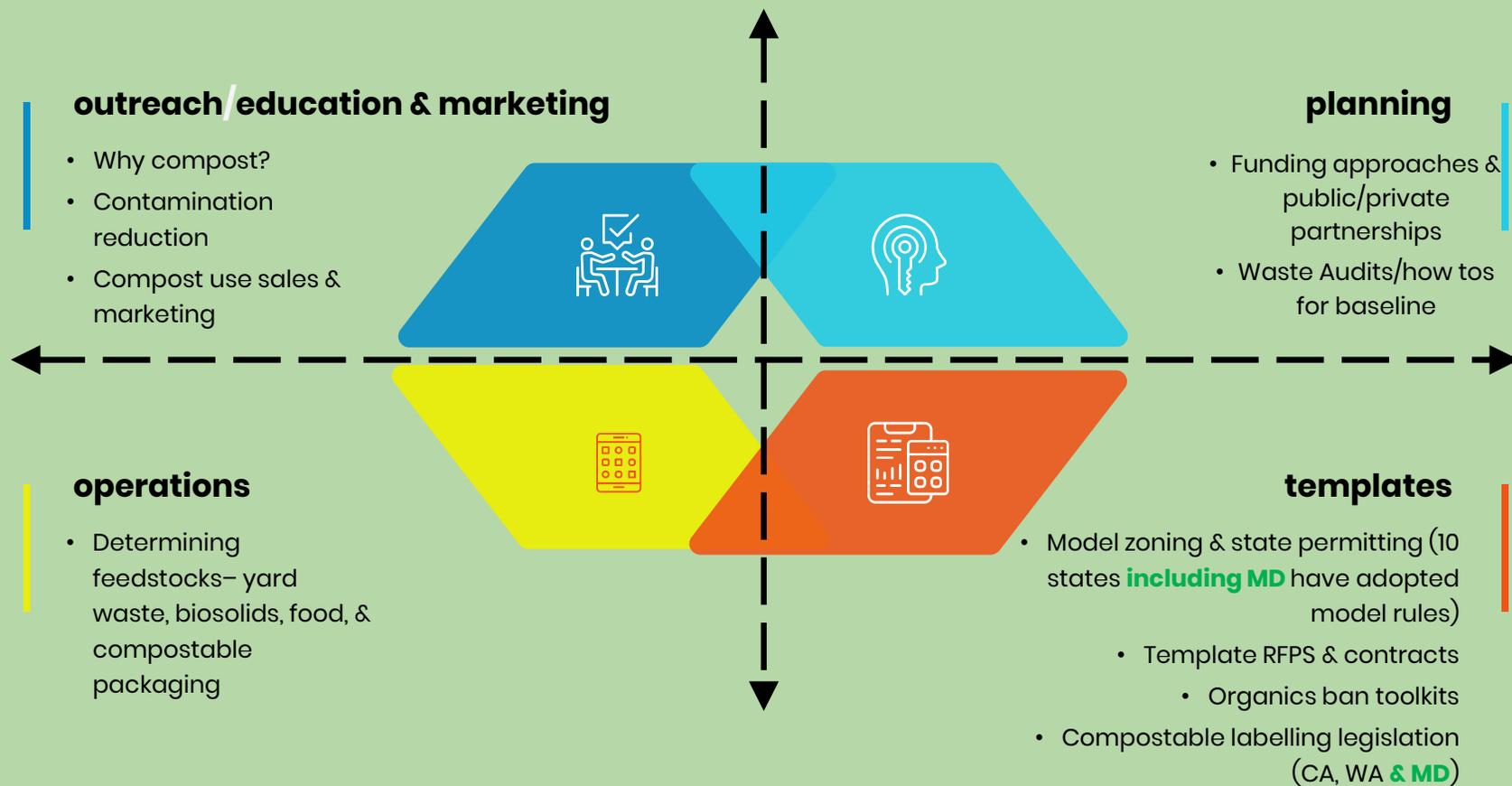
LIMITATIONS

- 47% Contamination Physical & Chemical
- 28% Demand for Finished Compost
- 27% Lack of Political Support for Programs

How do you want to improve your organics collection & processing program?	# Responses
Increase or improve marketing & outreach to general public	31
Expand customer base/increase participation	26
Increase compost facility capacity	25
Increase hauling capacity	6
Other: Reduce Contamination , More processing and infrastructure options and increased efficiencies, Ability to expand smaller pilots into larger scale programs	

Target Organics Hub

Beta version Q2 2021



MD-DC Chapter, USCC



- 2014: SB 814 State Highway Administration - Compost and Compost-Based Products - Specification
- HB 1349 Compostable, Degradable, and Biodegradable Plastic Products - Labeling
- 2018-HB171 Yard Waste, Food Residuals, and Other Organic Materials Diversion and Infrastructure - Study
- 2020: HB589
- HB589-Organics Recycling and Waste Diversion - Food Residuals



**US Composting
Council®**
Proud Member
I'm a Soilbuilder!



Thank You!

www.compostingcouncil.org

Linda Norris-Waldt, Advocacy & Chapter Relations
Director,

lnorriswaldt@compostingcouncil.org

240.315.8876

Veteran Compost

- Built first compost pile in July 2010
- Proud to be only company in Maryland collecting and composting food scraps
- 2 compost facilities – Aberdeen, MD and Alexandria, VA
- 3rd site Lothian, MD - stuck in permitting
- 25 full-time employees



Issues We Face

- Unfair competition from municipalities and MES
 - Tip fees are too low, often give away compost
 - Request they conduct market pricing analysis
- Lack of land to build compost facilities
 - NIMBY from same folks who support zero waste
- Local/State permits, zoning and regulations
 - Our Lothian project is a good example, 5 years and still not open.
- **A Food Waste Ban would negatively affect our Compost Business**



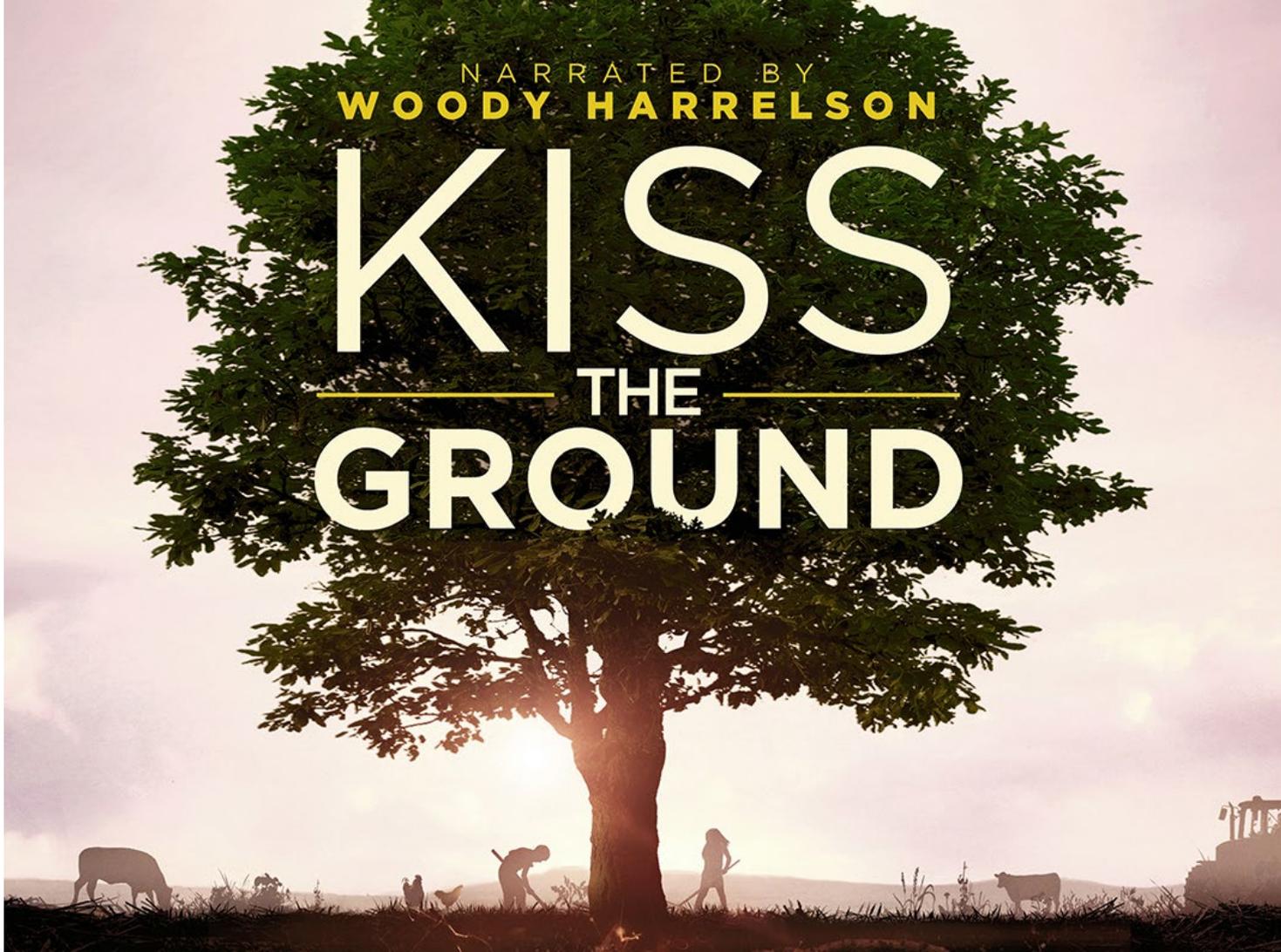
Zero Waste Healthy Soils



October 2020
MD House Environment
& Transportation
Committee

NARRATED BY
WOODY HARRELSON

KISS — THE — GROUND



About Us



OUR TEAM



Ben Parry

CEO

Head of Operations, Terraform Global; launched Azure Power, pioneer in India's solar industry



Kristie Blumer

ORGANIC SOLUTIONS

Environmental consultant and remediation specialist; BS Environmental Science



Cornell Sadler

OPERATIONS

Started a recycling & waste removal business; held leadership positions in multiple waste mgmt companies



Jacquie Anderson

CUSTOMER SERVICE

Experienced customer service and sales manager with strong track record at USA Today



Dan Israel

MARKETING

Head of Government Marketing at Google; General Manager at Vlocity

WHITE PAPER

compostcrew.com/localgov/

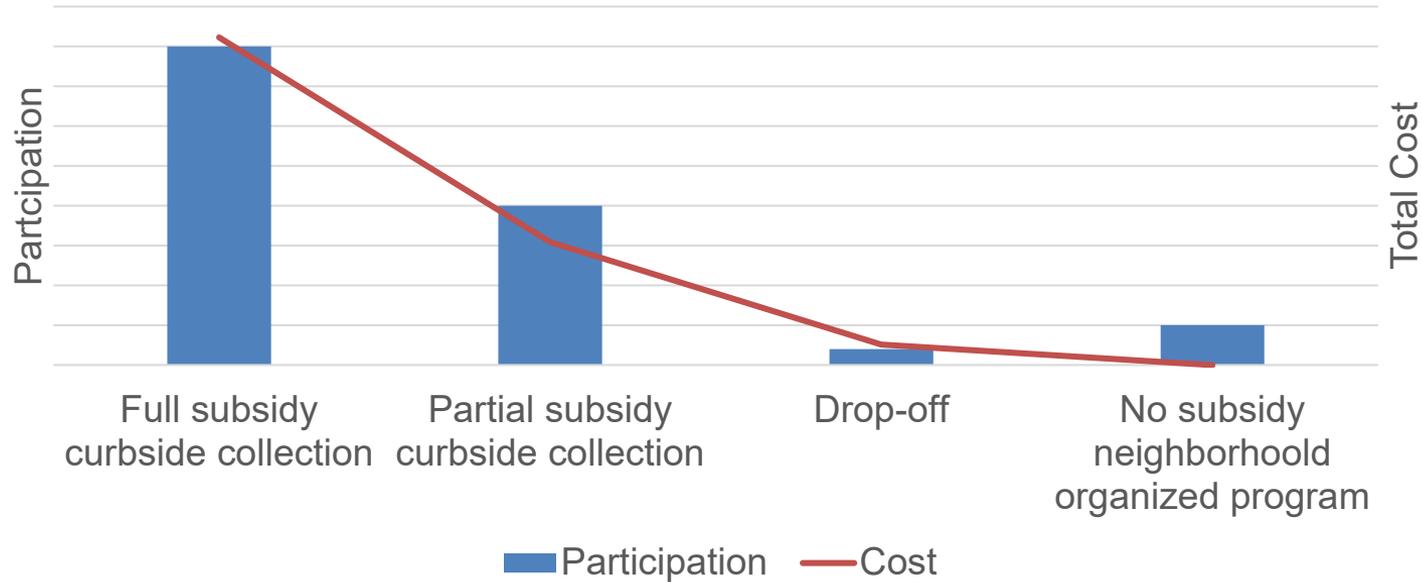


**The Municipal Guide to Residential
Food Scrap Collection**

MUNICIPAL PROGRAMS



Participation Rates and Cost for Food Scrap Collection Programs





FOOD WASTE IS A BIG PART OF
THE U.S. TRASH PROBLEM...

...while the ability of soil to support plant growth
and food production is in jeopardy

COMPOSTING SOLUTION

Compost Crew establishes food scrap recycling programs for communities, municipalities and businesses, with a focus on decentralized composting.

Benefits

- **Environmental** – save our soil and boost local food production
- **Environmental** – diversion of food waste from a landfill
- **Economic** – keep jobs and profits in the community
- **Practical** - take the ick factor out of your trash





THANK YOU!

ben@compostcrew.com

301.202.4450



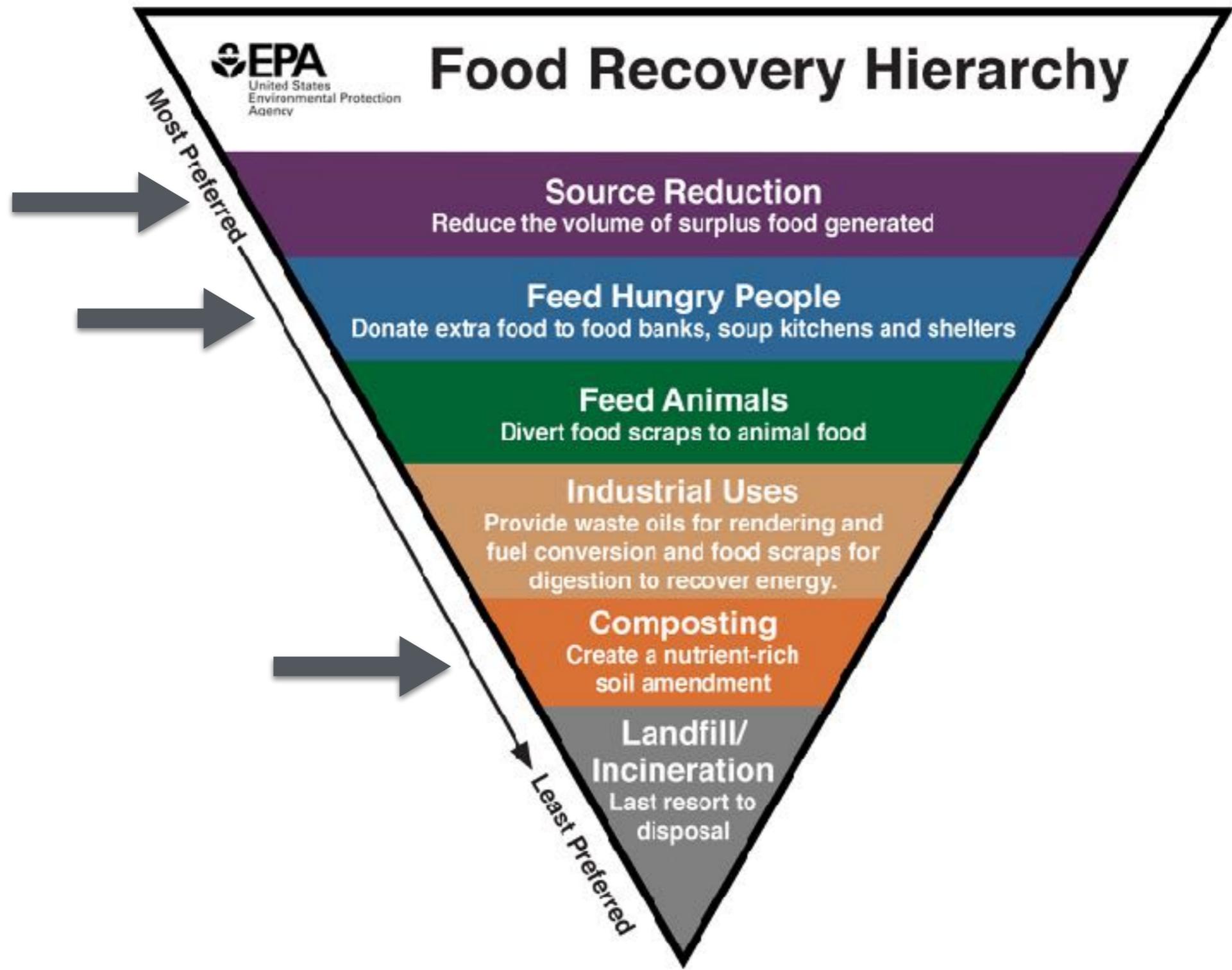


ideas
for a
better world

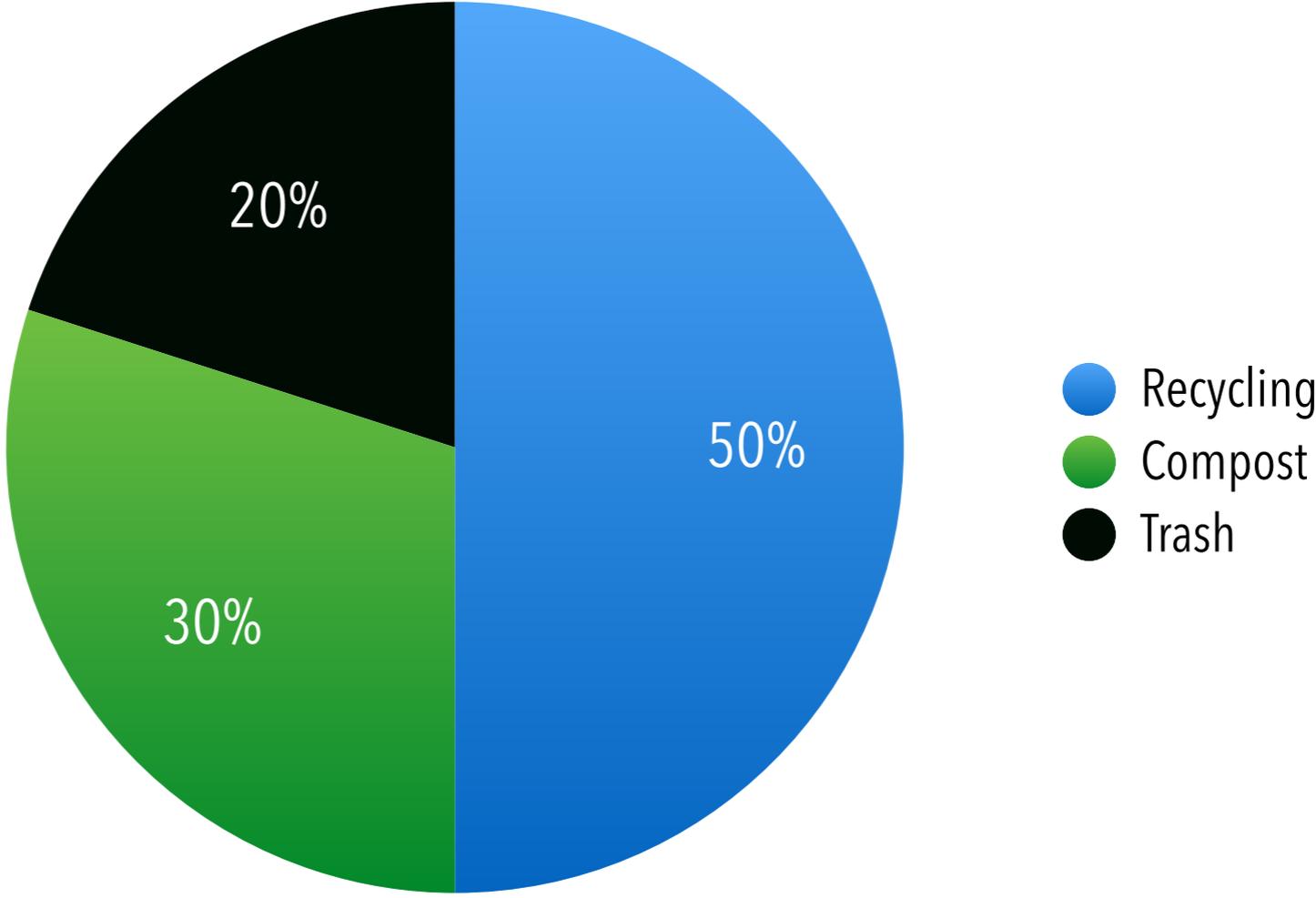
Mundea helps businesses save money on waste management and lower their environmental footprint.

Solutions

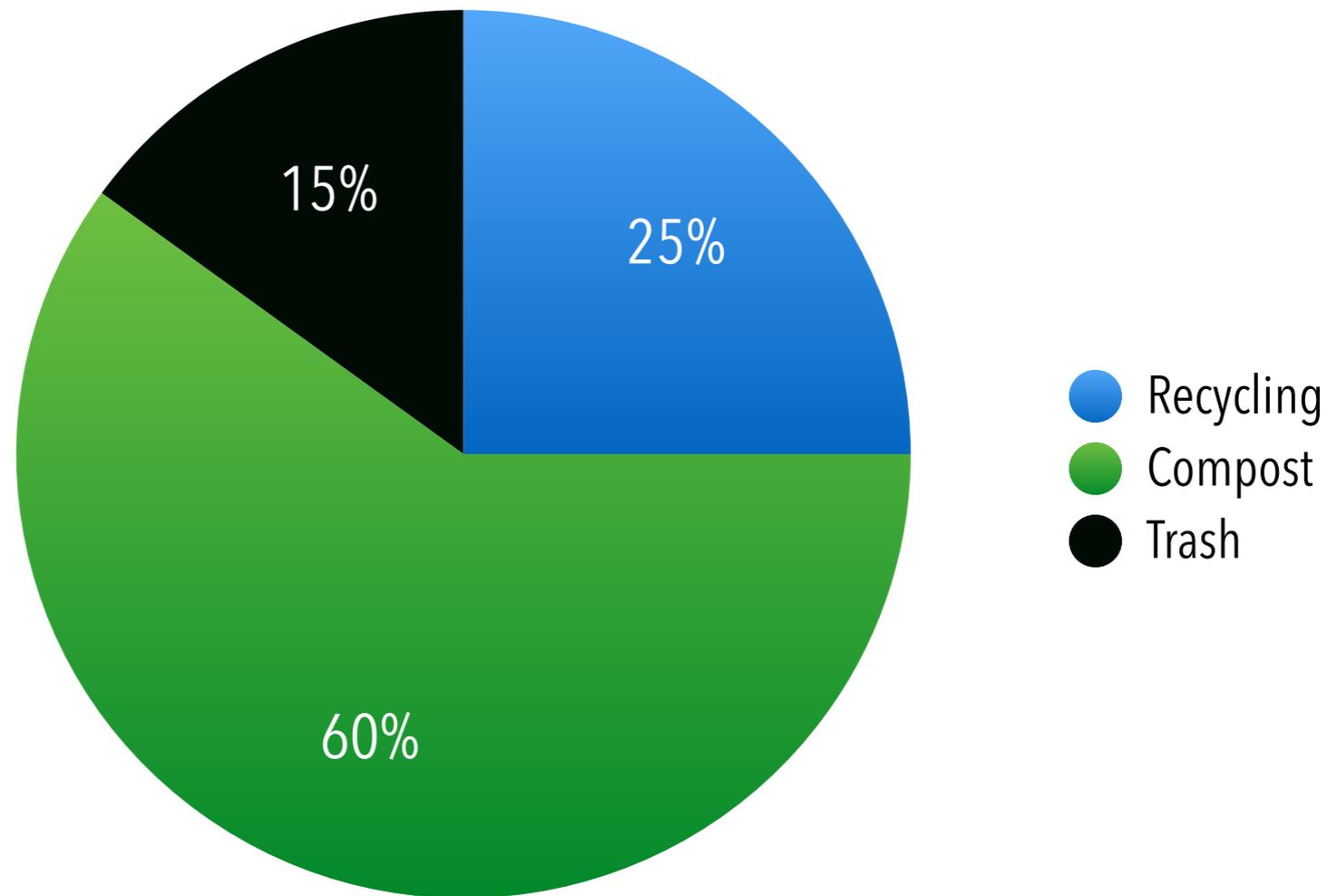
- ➔ Waste Audit
- ➔ Waste Diversion Programs
 - Recycling
 - Compost
 - Maryland Food Bank
- ➔ Ongoing Training and Monitoring



Restaurant Waste Diversion by Volume after Program Implementation (%)



Restaurant Waste Diversion by Weight after Program Implementation (%)





Contact Information

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www.mundea.com