



February 14, 2025

To: Maryland Senate Education, Energy and Environment Committee

Re: SB0591: Environment - Covered Electronic Device Recycling Program - Establishment (Electronics Recycling Health and Safety Modernization Act)

Favorable

As current President of Maryland Recycling Network (MRN), I am writing in support of SB0591. I bring my experience managing electronics recycling contracts over the last 11 years at the Northeast Maryland Waste Disposal Authority. I am not speaking on behalf of the Authority.

Maryland Recycling Network members include public recycling managers, private sector and non-profit recyclers and individuals who support recycling. We promote sustainable reduction, reuse and recycling (the 3 "R's") of materials otherwise destined for disposal and the purchase of products made with recycled material content. We achieve these goals through education programs, advocacy activities to affect public policy, technical assistance efforts, and the development of markets to purchase recycled materials and manufacture products with recycled content.

We have direct experience operating recycling and composting programs in the private sector and municipal government level. We know the ins and outs of recycling in Maryland. Our experience informs our comments.

We thank Senator Augustine for sponsoring this bill.

Maryland's electronics recycling law is outdated and does not fund recycling.

Electronics recycling plummeted in the market downturn of 2014, and has not recovered. Our state went from recycling over 19,000,000 million residential pounds per year, to under 6,000,000 pounds in recent years. That sharp decline kicked off in 2014, when municipal contracts began to see costs for the first time. Most programs stopped recycling televisions and computer monitors, the bulk of e-waste collected.

[Now, Maryland has 21 years left of landfill capacity. There is an urgent need to ramp up recycling.](#)

Maryland Recycling Network
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Only ~eight of 23 Counties recycle all electronics year-round, without drop off fees.

Six jurisdictions in Maryland have spent over \$8,000,000 since 2014 to run these programs. Three of those six jurisdictions had limited programs in place, meaning total program costs would have far exceeded \$8,000,000 if they had been recycling their televisions and computer monitors, which they were not.

This is unsustainable.

This bill will take that financial burden off taxpayers and local government, and fully fund both collection sites and recycling operations, while manufacturers will continue to fund MDE's administration. It will insulate programs from unpredictable commodity markets, inflation and economic downturns.

It will grow local jobs and increase our domestic supply of rare earth minerals and precious metals for the auto, jewelry, electronics and clean energy industries.

It will allow jurisdictions to divert much needed tax revenues to other critical public sector services, eliminate fees at public collection sites, and expand programs, especially for rural and underserved areas.

Fires have already occurred at County electronics collection sites. We need to protect our essential workers, first responders, and recycling infrastructure. This bill will do that.

It will address the severe human health and safety issues from toxic chemical battery flammable gas, smoke, fire and explosion incidents (which have been fatal, even from inhalation). Battery fire incidents have been exponentially increasing in Maryland and across the country and world. The bill would fund heat spot (thermal imaging), fire and smoke detection, suppression and extinguishing equipment and monitoring and notification systems at electronics collection sites to limit these events and stop thermal runaway when they do occur. These incidents severely impact and endanger site staff, capital infrastructure like MRFs, transfer stations, collection trucks/drivers, other processing equipment, insurance rates (limiting capability to even be insured), in addition to first responders, who continue to receive more and more call outs due to battery fires.

Overall, this is a true shared responsibility model among government, consumers, retailers and producers, with broad support from government, private sector, electronics recyclers, solid waste associations, environmental nonprofits.

Maryland already has this type of program for tire and paint recycling. This bill complements those laws, to ensure difficult material is responsibly managed.

Maryland has proven itself to be a leader, by passing the 3rd e-waste law in the country, back in 2005. We are asking you to lead once again, and finish building on what is already in place.

Sincerely,

A handwritten signature in black ink that reads "Kitty McIlroy". The script is fluid and cursive, with the first letters of each word being capitalized and prominent.

Kitty McIlroy
President
Maryland Recycling Network

The Maryland Recycling Network stands ready to serve as a sounding board and resource for legislators and others interested in pursuing our mission. Please do not hesitate to contact MRN via email phoustle@marylandrecyclingnetwork.org, phone 301-725-2508 or mail - MRN, PO Box 1640, Columbia MD 21044 if you have any questions or would like additional information regarding the above. We look forward to working with you to improve Maryland's recycling programs and thank you for your consideration and support.

Background

Per recent experience:

- Testified before the U.S. Senate, Environment and Public Works Committee, on ["Improving Capacity for Critical Mineral Recovery through Electronic Waste Recycling and Reuse"](#) (July 2023);

- Co-Chair of the Solid Waste Association of North America's (SWANA) Lithium-Ion Battery Advocacy & Public Policy Sub-Workgroup (July 2024-Present), Member of the SWANA Lithium-Ion Battery Communications & Outreach Sub-Workgroup (July 2024-Present), and Member of the SWANA Lithium-Ion Battery Facility & Vehicle Safety Sub-Workgroup (July 2024-Present);

- Advisor at the U.S. EPA In-Person Working Session focused on Mid-Format Consumer Battery Labeling and Collection (January 2025); and

- Member of The Commission to Advance Lithium-Ion Battery Safety in Maryland (House Bill 468/Ch. 950, 2024 and SB 532/Ch. 949, 2024) and two of its Subcommittees (2024-Present):

- 1) The Prevent, Detect and Suppress Lithium-Ion Fires at Recycling Facilities Subcommittee; and

- 2) The Reusing, Recycling and Decommissioning Lithium-Ion Batteries Subcommittee;

Please see the background information presented below for further consideration:

As Maryland landfills its end-of-life electronics, we are losing rare earth minerals and precious metals every day to our landfills within those electronics, increasing conflict mining, habitat destruction and GHG impacts attributable to sourcing their virgin counterparts.

This causes Maryland and the U.S. to have a dependence on foreign suppliers, thus hurting our domestic stability.

Maryland has a critical need for these resources, in order to build the clean energy infrastructure essential to the state's future.

Due to costs of recycling, approximately only 8 out of 23 Counties/City of Baltimore in Maryland are able to provide to their residents free (at time of drop off), year-round acceptance of all types of municipal electronics for recycling, including flat screen and CRT Glass Tube televisions and computer monitors, historically the bulk of material by weight and volume in the municipal electronics stream. These jurisdictions include Baltimore City, Baltimore County, Calvert County, Charles County, Howard County, Montgomery County, Prince George's County and Somerset County. The existing [Statewide Electronics Recycling Program \(SERP\)](#) has been unable to provide the funding needed for local government to run these programs. This means millions of pounds of electronics are likely being landfilled every year. Detail on the existing SERP shortfalls can be found [here](#).

MDE provided a space for government and industry (retailers and manufacturers) to discuss electronics recycling and the [current law](#) during the [2015 Electronics Recycling Department](#)

[Workgroup](#). The stakeholders discussed in detail the current requirements and benefits, as well as shortcomings, one of those being the lack of funding directed to municipalities for actual recycling activities.

Maryland Recycling Network then chaired a Workgroup with Member/Non-Member Participation, beginning late 2021, including stakeholders from government and electronic recyclers, to discuss the MDE Workgroup findings and provide a set of policy recommendations to improve the current law. More specifically, stakeholders recommended replicating what is working in other states and applying it to the SERP. Many in both the public and private sector believe a hybrid consumer fee and manufacturer fee can succeed in this state, using California and Canada's consumer fee model to supplement the existing manufacturer fee already in place in Maryland. Stakeholders recommended that rather relying on infrequent grant funding, local government should be provided a sustainable source of funding, for operating collection sites and hiring electronic recyclers. These recommendations became SB0591/HB0931: Environment - Covered Electronic Device Recycling Program - Establishment (Electronics Recycling Health and Safety Modernization Act)

As noted above, a visible consumer fee to fund a wide variety of electronics recycling programs is well established and commonplace in Canada¹ and California.²

A [Resolution](#) adopted by The United States Conference of Mayors at their 2017 Annual Meeting, also supports utilizing a visible consumer fee to support electronics recycling.

Additionally, the Pennsylvania Legislature is considering passing a consumer fee (eco fee) to be added to the purchase of electronics to assist in funding electronics recycling in the state. The House Consumer Protection, Technology and Utilities Committee seem to be supportive and [described](#) the Bill Sponsor, Representative Lisa Borowski's, efforts as "Herculean."

Furthermore, no federal law exists to mandate electronics recycling, and only 25 states along with Washington D.C. have some form of an e-waste law. The United States has not joined 187 countries and the European Commission in ratifying the Basel Convention, an international agreement governing the transboundary movements of hazardous wastes and their disposal.

As a result of this bill, MDE will be able to maintain a list of Authorized Recyclers eligible for reimbursement, which will increase transparency of national and international shipments of e-waste. Authorized Recyclers will have requirements for themselves and certified downstream markets, in order to guarantee certain environmental standards. This would support stronger environmental protection and prevent unauthorized exports, while creating jobs and supporting economic growth in the state, especially for those local electronics recyclers that operate here in Maryland.

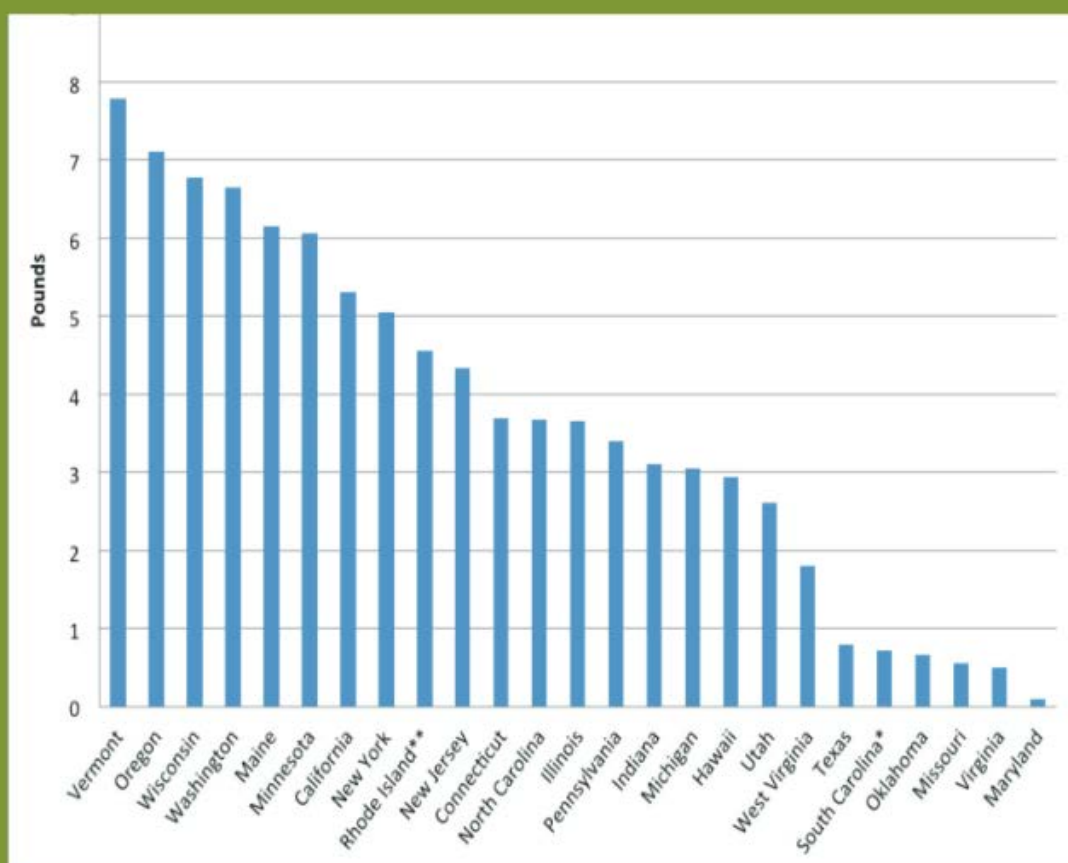
"The proliferation of electronic devices has contributed to the accelerated surge of greenhouse gas (GHG) emissions in e-waste, according to a new study in Circular Economy. E-waste GHG emissions rose 53 percent between 2014 and 2020. Researchers anticipate e-waste will annually generate 852 million metric tons of CO2 compounds by 2030...Increasing the useful lifespan expectancy of electronic devices by 50%–100% can mitigate up to half of the total GHG

¹ Sources: <https://www.return-it.ca/electronics/fags/elec-consumer/> and <https://recyclemyelectronics.ca/bc/what-can-i-recycle> and <https://recyclemyelectronics.ca/bc/what-is-the-ehf>

² Source: <https://calrecycle.ca.gov/electronics/recyclingfee/>

emissions," the study's authors stated. "Such outcomes will require coordination of eco-design and source reduction, repair, refurbishment, and reuse...The current global rate of e-waste recycling stands at 17.4 percent, with Europe and the Americas responsible for the majority of waste generated. The study noted that Europe's recycling rate stands above other countries at 42.5 percent, following by Asia at 11.7 percent and the Americas at 9.4 percent...Researchers found that between 2013 and 2020, "the useful lifespan of average electronic devices such as desktops, laptops, and smartphones decreased by 41%, 22%, and 30%, respectively." Source: [E-Waste Emissions Jump 53 Percent Between 2014 and 2020 \(waste360.com\)](http://waste360.com)

E-scrap collection volumes per capita in states with recycling laws, 2013



Note: This chart presents available data on program collections performance, but does not provide an "apples to apples" comparison as the covered products and covered entities (residents, businesses, schools, etc.) vary from state to state.

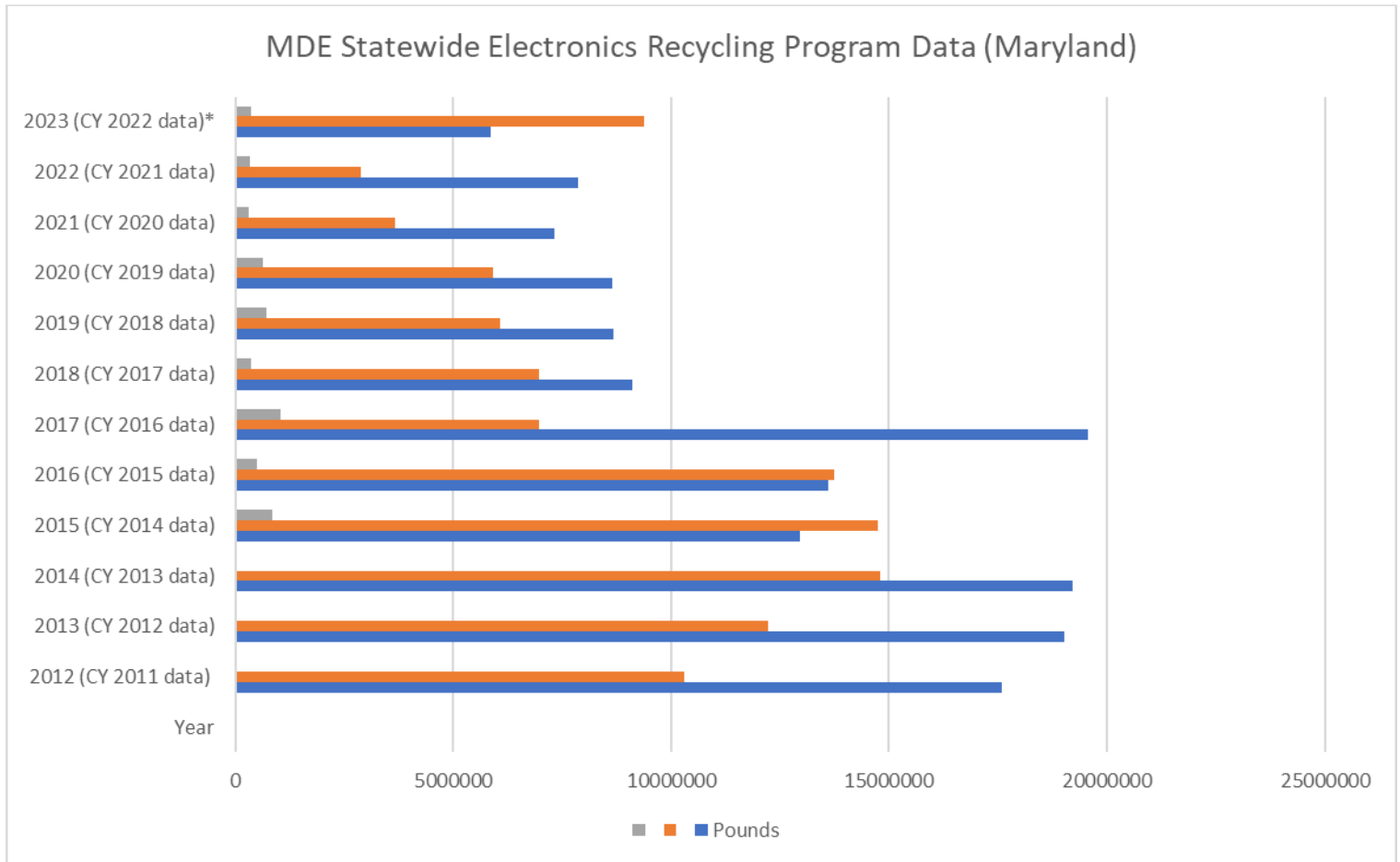
Source: Electronics Recycling Coordination Clearinghouse

* 2012 data

** 2011 data

Source: [E-Scrap Newsletter Article \(March 2015\)](#)

MDE Statewide Electronics Recycling Program Data (Maryland)							
Year	Pounds			Manufacturer Program Share of Total Pounds	Residential Program Share of Total Pounds	Commercial Share of Total Pounds	Total Residential, Commercial, Manufacturer Program (Pounds)
	Residential/Municipal Program	Commercial	Manufacturer Program				
2012 (CY 2011 data)	17,591,221	10,302,000	N/A	N/A	63%	37%	27,893,221
2013 (CY 2012 data)	19,033,550	12,214,000	N/A	N/A	61%	39%	31,247,550
2014 (CY 2013 data)	19,208,026	14,808,000	N/A	N/A	56%	44%	34,016,026
2015 (CY 2014 data)	12,949,658	14,736,000	853,400	3%	45%	52%	28,539,058
2016 (CY 2015 data)	13,610,620	13,734,000	512,000	2%	49%	49%	27,856,620
2017 (CY 2016 data)	19,554,907	6,978,000	1,050,000	4%	71%	25%	27,582,907
2018 (CY 2017 data)	9,120,499	6,978,000	371,200	2%	55%	42%	16,469,699
2019 (CY 2018 data)	8,691,452	6,080,000	716,000	5%	56%	39%	15,487,452
2020 (CY 2019 data)	8,656,008	5,910,000	638,100	4%	57%	39%	15,204,108
2021 (CY 2020 data)	7,329,304	3,664,540	312,780	3%	65%	32%	11,306,624
2022 (CY 2021 data)	7,853,593	2,891,080	330,820	3%	71%	26%	11,075,493
2023 (CY 2022 data)*	5,857,420	9,376,220	374,000	2%	38%	60%	15,607,640
Total	149,456,258	107,671,840	5,158,300	2%	57%	41%	262,286,398
Source: Maryland Solid Waste Management and Diversion Annual Reports: https://mde.maryland.gov/programs/land/Pages/LandPublications.aspx							
*Source: Email with MDE 2/4/25: Prince George's County collected 164.89 tons in CY 2022 and reported them as commercial.							
For the purposes of this data set, it is being reflected in the residential category (and subtracted from the commercial category).							
As of CY 2022: MDE stopped reporting special municipal events and now just reports total recycling reported by the Counties in the MRA survey.							



Manufacturer fees collected under existing law do not cover costs for local government to operate recycling programs. All grants provided to date are listed below:

MDE Electronics Recycling Grants to Local Government	
Fiscal Year	Total Grants Issued
2008	\$190,000
2009	\$616,552
2015	\$500,000
2016	\$250,000

Sources: Maryland Department of the Environment
[2015 Electronics Recycling Department Workgroup
 news.maryland.gov/mde/2016/07/22/departement-of-the-environment-awards-grants-totaling-250000-for-electronics-recycling-in-maryland/](https://news.maryland.gov/mde/2016/07/22/departement-of-the-environment-awards-grants-totaling-250000-for-electronics-recycling-in-maryland/)

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	Electronics Recycling Costs to Jurisdictions*														
	CV 2012	CV 2013	CV 2014	CV 2015	CV 2016	CV 2017	CV 2018	CV 2019	CV 2020	CV 2021	CV 2022	CV 2023 ^a	CV 2024 ^a	Total	
Anne Arundel County	\$0.00	\$0.00	\$0.00		\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	
Baltimore City**	\$0.00	\$0.00	\$101,353.16	Unknown	Unknown	\$22,998.93	\$90,364.65	\$128,671.74	\$157,536.67	\$210,534.80	\$149,080.28	\$80,691.80	\$66,747.76	\$1,007,919.79	
Baltimore County	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$126,824.30	\$121,773.60	\$156,026.90	\$170,998.40	\$143,225.64	\$15,064.04	\$88,711.92	\$80,545.76	\$1,004,571.52	
Carroll County	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$20,770.56	\$23,865.60	\$37,280.60	\$42,885.40	\$14,397.60	\$30,538.72	\$18,881.00	\$15,027.20	\$223,644.68	
Frederick County***	\$0.00	\$0.00	\$36,753.16	Unknown	Unknown	Unknown	\$14,604.64	\$28,953.62	\$28,953.62	\$24,869.88	\$24,502.02	\$20,811.90	\$22,627.20	\$192,578.42	
Hartford County	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			\$0.00	\$0.00	
Howard County	\$0.00	\$0.00	\$211,797.47	\$195,366.08	\$193,463.90	\$193,037.28	\$158,821.44	\$197,481.16	\$188,424.00	\$141,089.80	\$109,897.00	\$53,723.40	\$0.00	\$1,642,201.73	
Montgomery County	\$0.00	\$0.00	\$448,836.35	\$644,707.34	\$440,131.12	\$465,529.60	\$363,510.40	\$475,527.06	\$479,147.72	\$482,906.12	\$436,069.54	\$181,908.58	\$0.00	\$4,282,160.83	
Total	\$0.00	\$0.00	\$798,740.14	\$660,073.42	\$633,594.62	\$819,160.67	\$759,335.69	\$1,029,148.10	\$1,067,837.41	\$1,036,923.80	\$864,691.60	\$445,728.60	\$185,437.92	\$8,299,581.97	

*\$0.00 refers to either \$0.00 in costs or revenues to jurisdictions and/or program years where jurisdictions received revenues for their electronics

** Baltimore City: July 1, 2014-December 31, 2014 cost data is unknown; January 1, 2017-September 30, 2017 cost data is unknown

*** Frederick County: July 1, 2014-December 31, 2014 cost data is unknown.

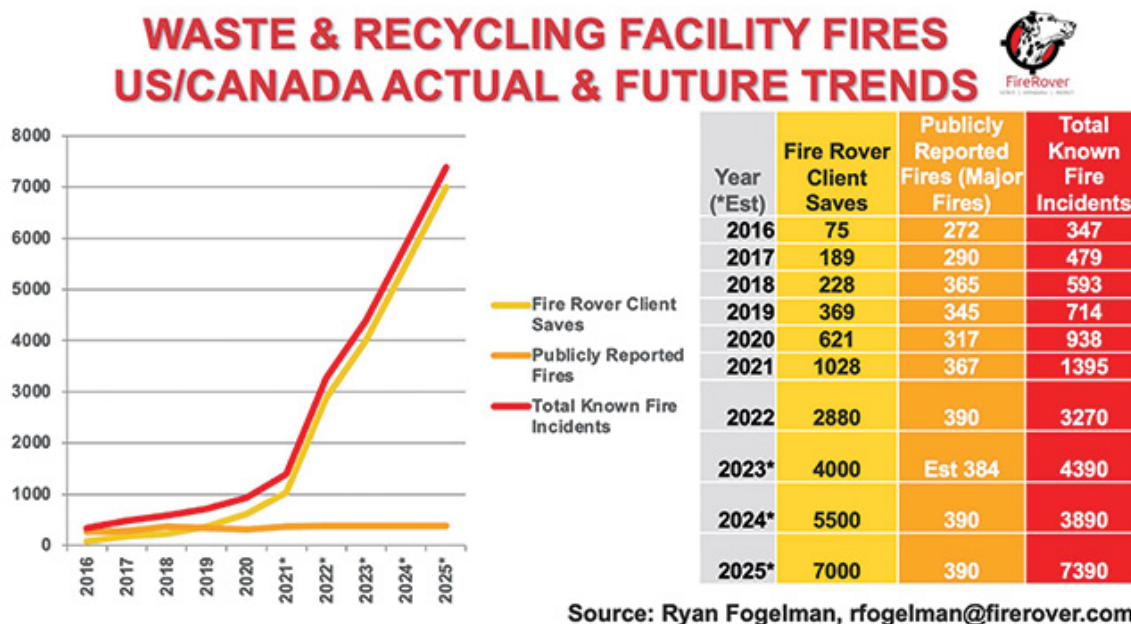
Rebeginning FY 24 Baltimore County reintroduced TV/Computer Monitor recycling & Baltimore City's program paused due to contract awaiting execution by its Board of Estimates. Baltimore City service did not reimburse until July 2024.

Sources: Northeast Maryland Waste Disposal Authority data

SB0591/HB0931 will provide funding for collection sites to hire staff and implement heat spot (thermal imaging) and fire detection and suppression technology, a critical safety measure as facility fires from lithium-ion batteries continue to increase.

It will relieve overburdened collection site staff (as many sites are understaffed). It funds staff dedicated solely for receiving and packaging all types of electronics. Workplace safety will improve, especially related to stacking and palletizing large, heavy electronics that have tipping risks when there are not enough staff to assist. Additionally, dedicated staff will be able to properly monitor and orderly pack electronics dropped off from the public, ensure battery embedded electronics are properly stored (so they are not inadvertently crushed in collection containers, etc.), and be able to identify and safely segregate and contain Damaged, Defective, or Recalled (DDR) battery embedded products for special handling collection contractors.

This will prevent recycling workers and first responders from ending up with health issues and death incidents from thermal runaway events, including exposure to lithium-ion battery toxic chemical flammable gas production, smoke, explosion, internal pressure rise, vapor cloud and fire.³



“Then came the lithium-ion battery threat that revealed itself in 2018 in the form of increased fire incidents across the globe...This problem is not going away. In fact, the number of lithium-ion batteries forecasted to enter the waste and recycling streams is only growing along with hotter and dryer environments, which leads to a breeding ground for increased fire incidents... The

³ *Source: Information on Thermal Runaway described above was covered at the December 5, 2024 *Commission to Advance Lithium-Ion Battery Safety in Maryland* meeting. James Milke (Ph.D., FSFPE, Professor Emeritus, University of Maryland, Senior Principal Engineer) presented to the Commission an “Overview of Lithium-Ion Battery Hazards and Protection Strategies.”

goal is not just to catch a fire when there are flames, but also to understand that there are situations where hot spots can be cooled before they flame. The goal is to set the tripwire as early in the process as possible. This can be done through top-grade thermal detection in combination with smoke, optical flame detection, and advanced data analytics—all coupled with a highly trained agent who is able to weed through false positives to fight only the incidents that need fighting... 2022 was (and 2023 is forecasted to be) the worst year for reported fire incidents ...we are heading down a path where investments in solutions like the Fire Rover are considered 'critical' to successfully responding to the fire hazards that continue to hit our waste and recycling streams. We need a funding mechanism like the government or the battery manufacturers to help pay for the costs they have created... Investing in proper equipment for the fire department to use onsite can be a huge timesaver and lifesaver. Even going as far as having attached and rollout hoses so the firefighters can immediately start applying suppressant to the affected area can make a huge difference"

Source: [Keys to Building a Successful MRF: Before, During, After - Waste Advantage Magazine](#))

Additional Details of SB0591 & HB0931

- 1) Establishes a shared responsibility model among local government, MDE, manufacturers, consumers and retailers to fully fund electronics recycling statewide. The bill will insulate programs from unpredictable commodity markets, recession and inflation, to fully fund both collection sites and recycling operations, while manufacturers will fund MDE's administration.
- 2) Establishes a California and Canada modeled consumer fee (advanced recovery fee, environmental handling fee, or eco fee) at the point of purchase of a new covered electronic device (CED) in Maryland, to fund Authorized Collectors and Authorized Recyclers. The Comptroller of Maryland shall collect the fees and distribute them to MDE in a dedicated account, less the cost of their administration to do so. MDE shall have authority to amend/expand these definitions and fees, and create additional Tiers, as needed:
 - a. Tier 1 CEDs have a fee, to be determined by MDE for a computer monitor, television or video display device.
 - b. Tier 2 CEDs have a fee, to be determined by MDE, for a laptop computer, personal digital assistant, notebook, reader, tablet device, cell phone, central processing unit of a computer, printer, scanner, facsimile machine, copier, and any other computer or electronic device or accessory that has a plug or battery that is designated as a Tier II CED by MDE.
- 3) Authorized Collectors (such as local government or retailers) are eligible to be reimbursed for the costs of end-of-life CED on-site collection, storage, equipment, heat spot (thermal imaging) and fire detection and suppression systems and equipment, transportation, staffing, and education. Per further Advisory Council feedback and MDE evaluation and determination, additional costs that may be eligible for reimbursement could include mailback and curbside collection programs for residential homes, etc., to further incentivize convenience and participation in the program.
- 4) Authorized Recyclers are eligible to be reimbursed for CED collection, transportation, recycling, refurbishment and reuse.

- 5) Authorized Collectors and Authorized Recyclers are required to accept CEDs with no charge to the public (residents and businesses). Manufacturers are not eligible to participate in the program nor act as Authorized Collectors and receive reimbursement, unless they are also retailers and have physical takeback locations in state that accept all makes and models of CEDs. Manufacturers are encouraged to continue managing their own recycling programs, independent of the SERP as well.
- 6) Terminates the scarcely used manufacturer takeback programs as option under the SERP (which currently allow for reduced annual fees).
- 7) Reallocates existing annual manufacturer fees to solely fund MDE's administration of the statewide program including certifying and distributing funds to participating Authorized Collectors and Authorized Recyclers, as well as auditing, enforcement and education. MDE shall have the ability to alter the manufacturer fees as needed, in order to adequately fund the administration of the program.
- 8) MDE shall have the ability to hire a third-party entity to administer the program, as some nonprofits already administer electronics programs on behalf of state departments and are experts in doing so.
- 9) It will provide stronger environmental protections by authorizing MDE to establish:
- a. Baseline of participating Authorized Recycler requirements and certifications, as needed.
 - b. Baseline of participating Authorized Collector requirements and certifications, as needed.
- 10) Authorizes MDE to establish reasonable caps on reimbursement rates for participating Authorized Recyclers and Authorized Collectors
- 11) Establishes an Advisory Council made up of a variety of stakeholders to continuously evaluate and recommend program updates to MDE, as needed. MDE maintains ultimate authority over the SERP.

Summary

SB0591 & HB0931 Electronics Recycling Health and Safety Modernization Act shall:

- (1) cover the costs of existing programs that local government is currently paying to recyclers to accept electronics
- (2) allow jurisdictions to retract existing electronics recycling tipping fees placed on their residents;
- (3) allow jurisdictions to expand financially restricted programs by providing the funds to cover recycling of previously excluded electronics that were ending up disposed; and
- (4) Expand green collar jobs due to new demand for staffing at collection sites and recycling facilities.

These updates will fully support and fund electronics recycling operations, infrastructure and administration statewide, incentivizing a system of convenience and accessibility for all Maryland residents and businesses to be able to participate equally, especially underserved rural and urban areas.