



Changing habits. Inspiring action.™

# LITHIUM-ION BATTERY RECYCLING, CHALLENGES & OPPORTUNITIES

**NEWMOA & NERC Lithium Battery Webinar Series:  
Overview of Lithium Batteries, Their Uses & Recycling**

May 18, 2021

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Managing Director, Operations

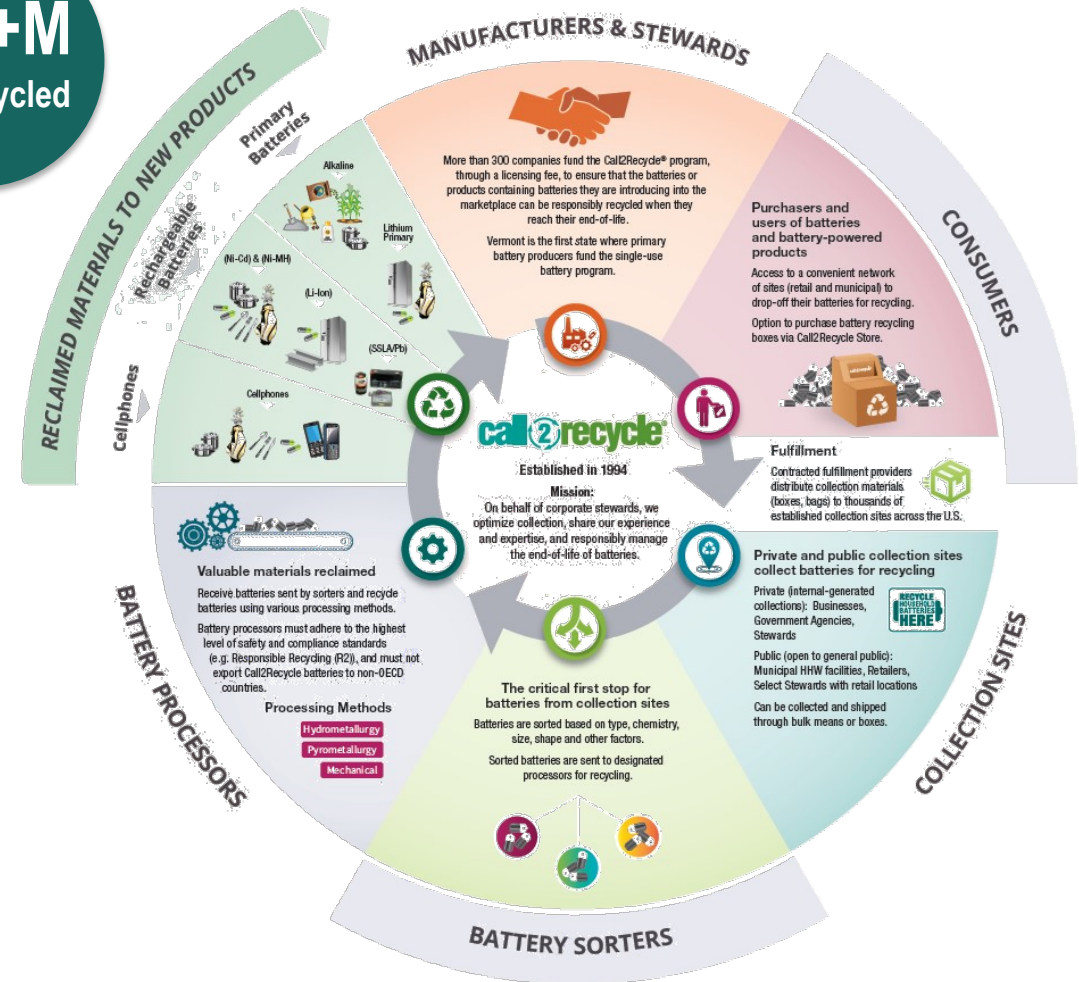


# Call2Recycle Program Overview



- Founded in 1994 by industry to address the emergence of EPR legislation.
- Non-profit stewardship organization that administers its collection and recycling program, Call2Recycle®, across the U.S.
- In the U.S., funded primarily by rechargeable battery stewards and, more recently, fee-based services.
- In the U.S., we're primarily a voluntary program except in certain states (e.g., Vermont, Minnesota, New York, Washington, D.C. - *pending*) where collections of some (but not always all) chemistries is mandated.

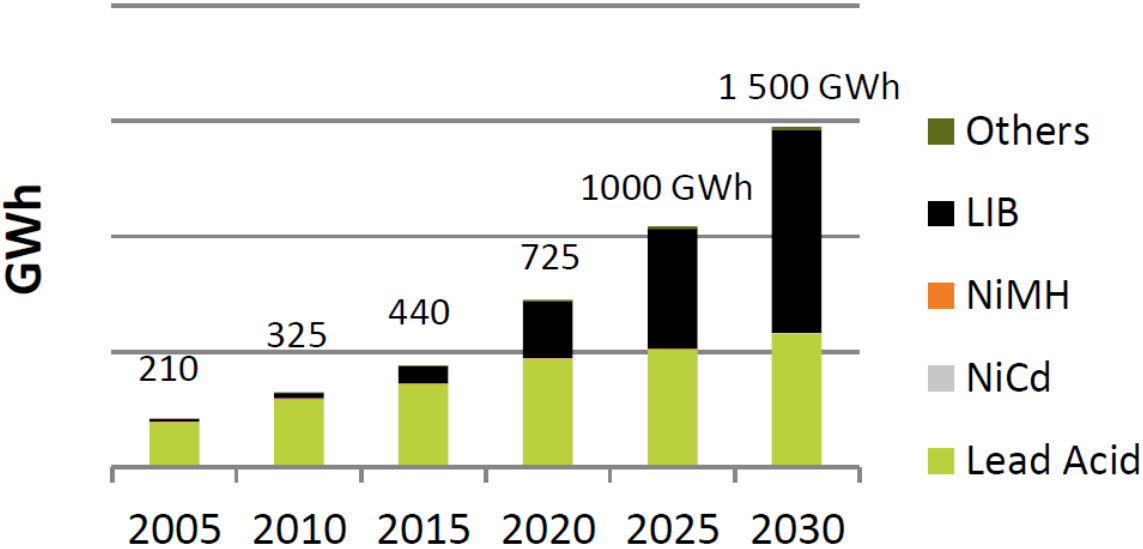
131+M  
lbs. recycled



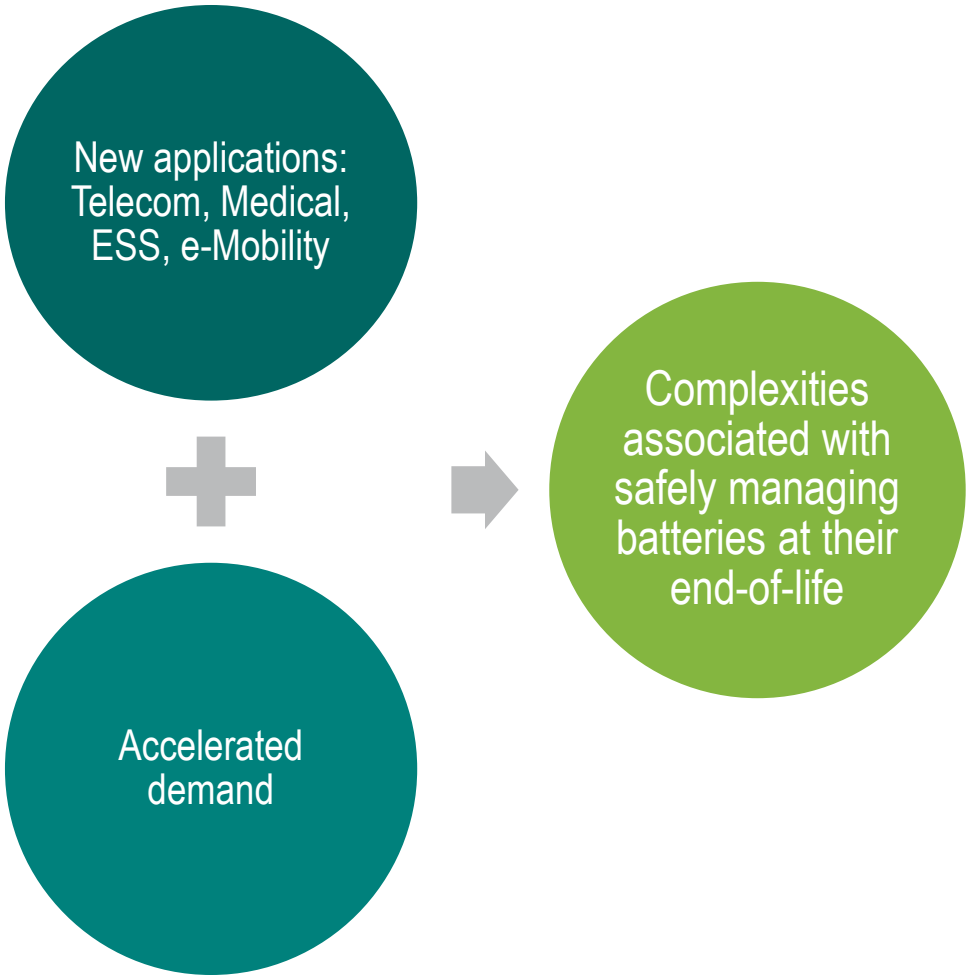
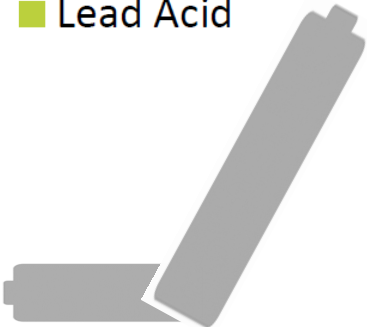
# Preparing for Hockey Stick Growth



## RECHARGEABLE BATTERY MARKET WORLDWIDE 2000-2030 (base scenario)



Source: AVICENNE 2019





## Collections

Adopting new tools and approaches to meet consumers' needs for more convenient recycling options



## Safety

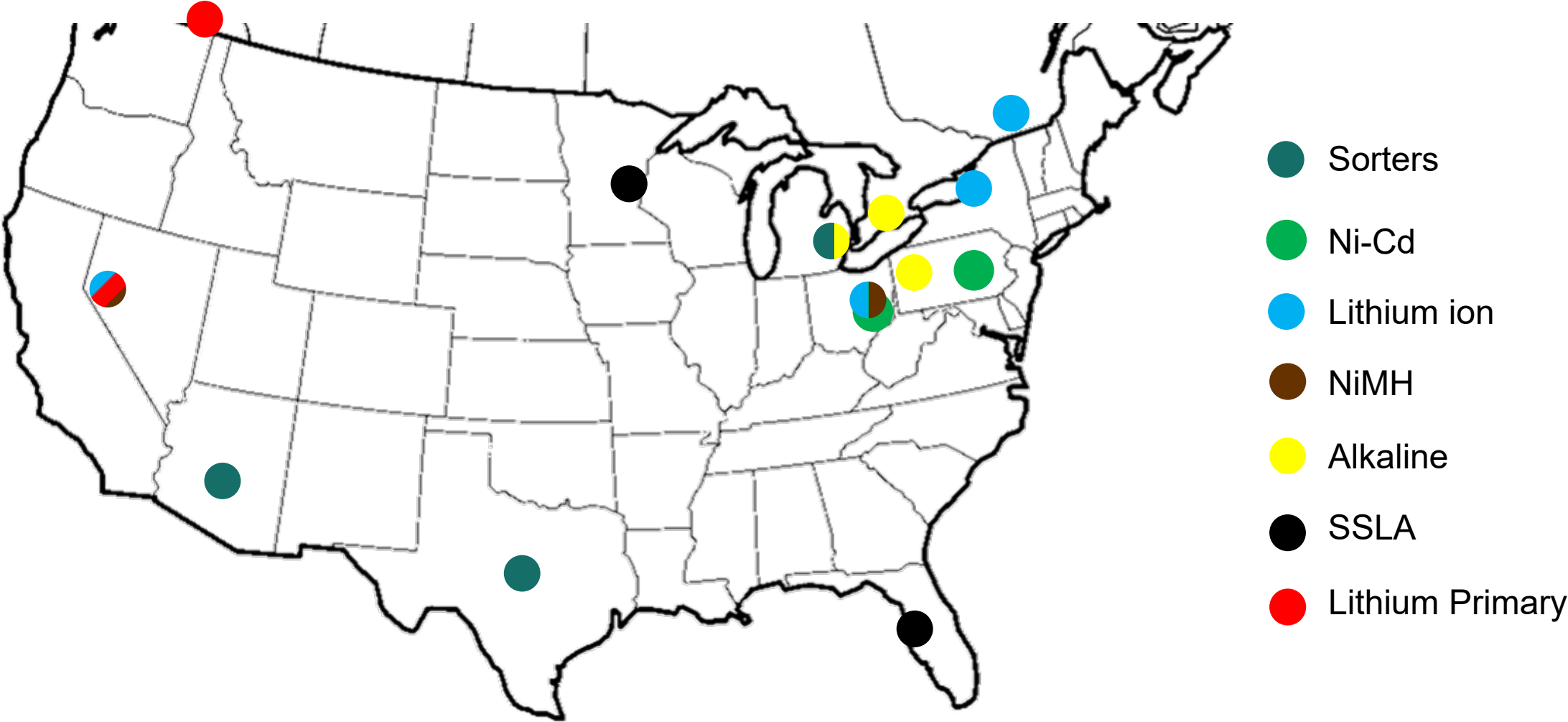
Through existing partnership with [CellBlock FCS](#), improve battery safety – throughout the battery journey – to mitigate the risk for lithium-based fires



## Market & Customer Demand

Electrification across all sectors presents challenges & opportunities for responsible end-of-life management

# Call2Recycle North American Network



June 5, 2017



*Reference: <https://youtu.be/AIff-fKTBYE>*



# ***Charge Up Safety!***<sup>™</sup> Campaign

1. **Foster Employee Leadership.** Improve our knowledge, culture and commitment to safety to enable us to serve as leaders and influencers with customers.
2. **Improve Collection Site & Sorter Performance.** Increase visibility, accountability and behaviors surrounding safe handling, storage and transport of batteries.
3. **Drive Consumer Awareness.** Improving the visibility and knowledge of safe practices.
4. **Engage Stakeholders.** Build relationships with other like-minded organizations to influence public and government debate on relevant safety issues.





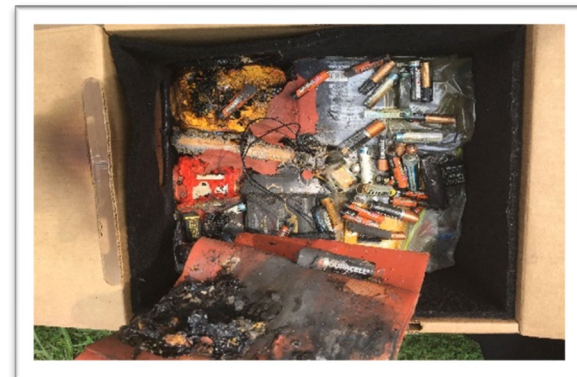


## ***Charge Up Safety!™***

- ✓ **Flame Retardant Box Liner** - Patent granted in 2019.
- ✓ **Third-Party Tested** - Extensive testing by independent laboratory (withstood up to 1,100 degrees F).
- ✓ **Containment** - Prevents flames & heat from spreading outside the shipping container.
- ✓ **Recyclable & Reusable** - Made of polyester material manufactured from used plastic bottles and can be reused multiple times.



**We Know It Works –**  
Pictures Are From Actual  
Returned Boxes

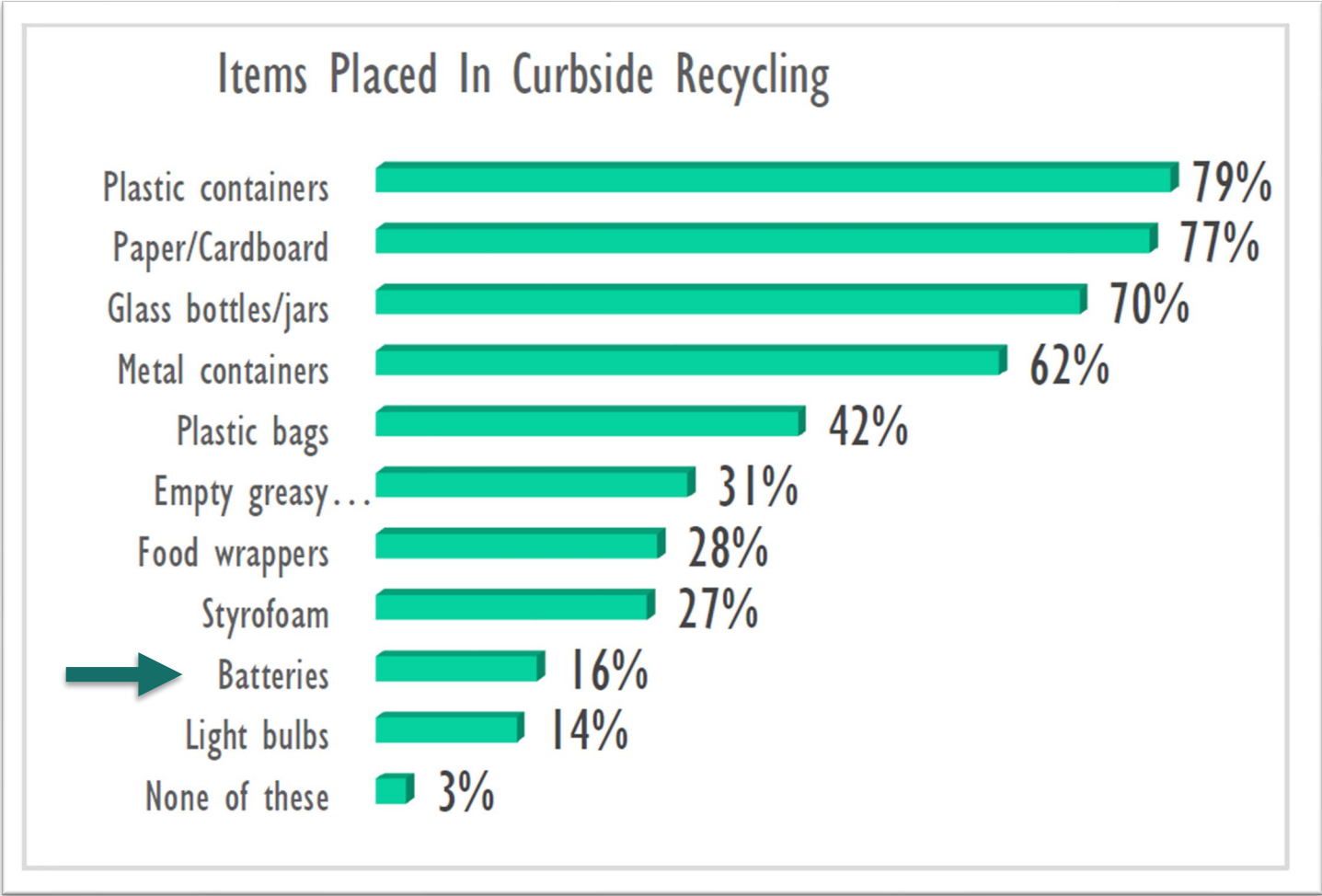




## Charge Up Safety!™

- Shipping Guidelines
- Required Safety Training
- Stakeholder Engagement







## Charge Up Safety!™

- Safety Video
- Safety Portal
- Consumer Outreach Events

**SAFETY**

Safety is a core tenet of the Call2Recycle® program and is reflected in every aspect of our daily operations. We are committed to the safety of the employees, collection sites, transporters, industry stewards, sorters and processors involved in the used battery collection and recycling process. As the premier North American battery recycling program, Call2Recycle is continually improving its safety policies and best practices to ensure we protect both people and the environment.

We invite you to join us and **Charge Up Safety** in your recycling efforts! This safety portal shares our best practices and resources on how to improve recycling safety, whether you are a large business, municipality, retailer, community center or consumer. Test your knowledge with our safety training lesson. Find out why damaged batteries require special packaging. Download our collection site guidelines. Get ready to charge up the safety of your recycling!

**Collections & Shipping**  
Learn about the essential aspects of handling, collecting and shipping used household batteries, whether you are shipping in boxes or bulk.  
[LEARN MORE](#)

**Safety Training**  
Test your safety knowledge, including how to bag and tape batteries, what containers are acceptable and what mistakes to avoid in preparing batteries for shipping.  
[LEARN MORE](#)

**Damaged, Defective & Recalled Batteries**  
Find out what to do with your damaged, defective or recalled batteries, which require special packaging requirements.  
[LEARN MORE](#)

**FAQs & Resources**  
Charge up your recycling safety by reading common safety questions and visiting links to other safety resources.  
[LEARN MORE](#)

**Help Lead the Charge On NATIONAL BATTERY DAY**

MON 2016 FEB 10<sup>th</sup>

Take action now:

- ☑ Gather and individually bag used batteries for safe transport
- ☑ Visit our website to locate a convenient drop-off site
- ☑ Talk about battery recycling with friends and family

For more information:  
Visit [call2recycle.org/nationalbatteryday](http://call2recycle.org/nationalbatteryday)  
877-722-1037 • [call2recycle.org](http://call2recycle.org)

**call2recycle**  
Leading the charge for recycling

**Battery hoarding happens.**  
Break the battery hoarding habit.

**OLD BATTERIES**

**call2recycle** [LEARN MORE](#)



### ***Avoid the Spark™ Campaign***

- With support of industry groups devoted to batteries, electronics and power tools, Call2Recycle piloted the ***Avoid the Spark. Be Battery Safety Smart.™*** campaign in the Bay Area in May 2018 to generate awareness with stakeholders and residents on battery safety.
- The first phase of the campaign focused on the Bay Area due to the progressive market, high concentration of technology and leadership of green initiatives in the region.
- The campaign zoned in on five counties: Alameda, Marin, San Francisco, San Mateo and Santa Clara. Each county offers curbside battery recycling and has high recycling collection rates.





## *Avoid the Spark™* Campaign Phase 1 Results

- 177 total media mentions including print, online and radio
- 196.7M+ total reach
- \$257K+ total publicity value



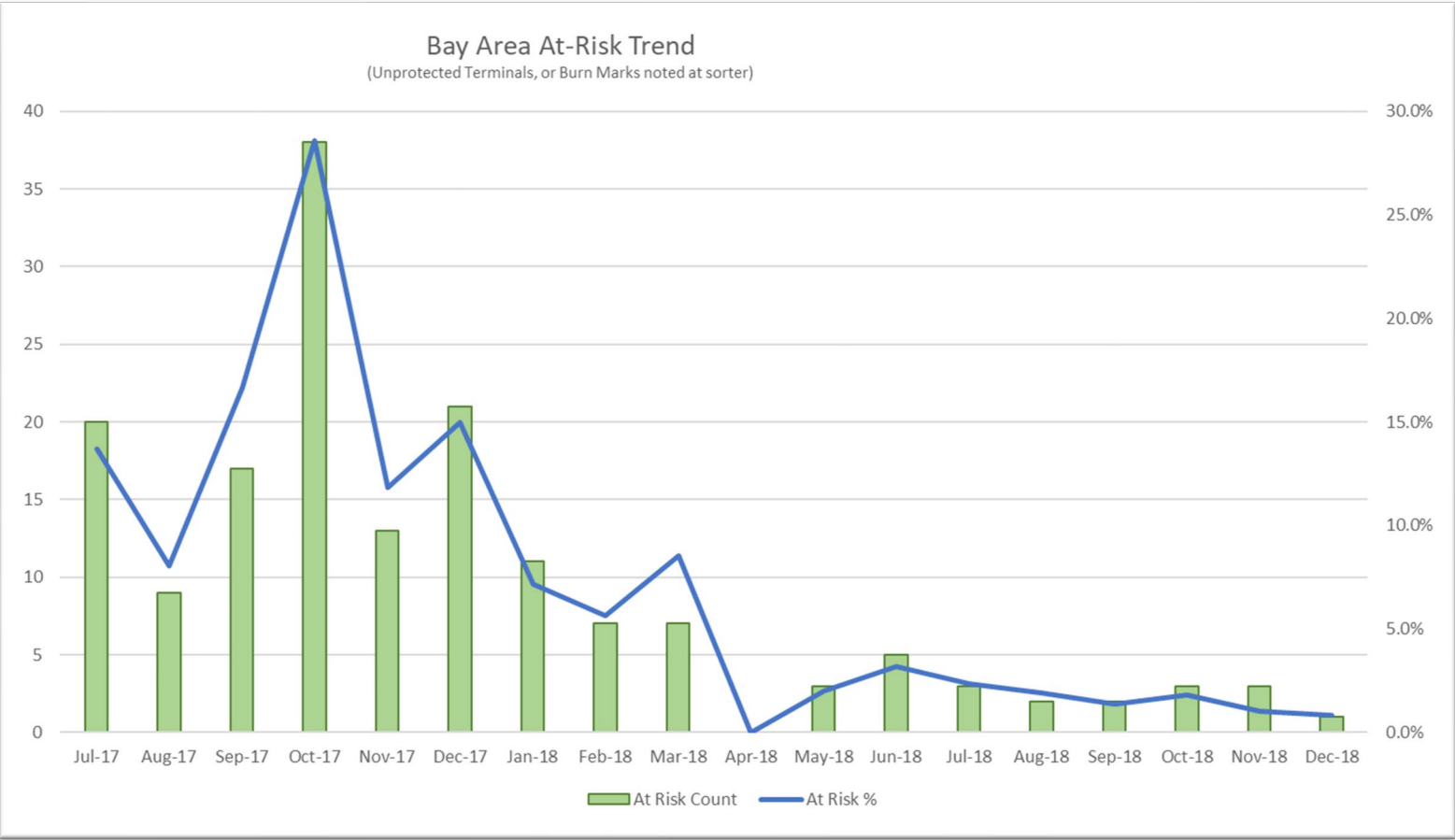
**GIZMODO**

Half Moon Bay Review

***Marin Independent Journal***  
marinij.com







## Avoid the Spark™ ...Campaign Results

*‘At Risk’ boxes from the Bay Area declined by 88% from July-Dec year-over-year*

➤ **Based on campaign results, Call2Recycle is working with partners in CA, NJ, and FL to bring Avoid the Spark safety messaging to their communities.**



## With Mobility, Comes Risks (& Responsibilities)

- ☐ Safety must remain a top priority otherwise the potential for further incidents will only increase.
- ☐ Education, both internally and with consumers, is the most effective way to reduce safety risks and optimize recycling.

## It's Not Just About Batteries

- ☐ There is a huge void in leadership on broader waste management issues.
- ☐ Effective consumer education on recycling requires adoption of broader messaging that touches upon all types of material (e.g., plastics, sharps, etc.).





# Call2Recycle, Inc.

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thank you!

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