

Safe Battery Recovery

ESI Conference 2026





Lithium-ion Battery Disposal Ban

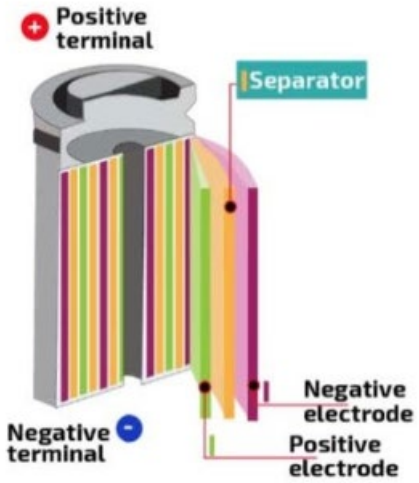
G.S. 130A-309.10

Lithium-ion batteries banned from landfill disposal effective Dec 1, 2026

Why?

- Fire hazard
- Resource recovery

Simplified Battery Recycling Process





Pyrometallurgy

Hydrometallurgy

Mechanical recycling

Environmental Benefits of Battery Recycling

- Reduces rare-earth extraction
- 80% of America's lithium reserves are in NC
- Uses less water and energy to make new batteries

	Natural Resources	Spent Batteries
One ton of battery-grade cobalt can come from:	 **300 TONS** OF ORE	 **5-15 TONS** OF SPENT LITHIUM-ION BATTERIES
One ton of battery-grade lithium can come from:	 **250 TONS** OF ORE  **750 TONS** BRINE	 **28 TONS** OF LITHIUM-ION BATTERIES

Waste Characterization Study



2025 sort dates:

- Spring: Apr-Jun
- Fall: Sep-Oct

Each sort was:

- 3 days
- ~30 samples

Evaluating loads from:

- Residential
- Commercial
- Mixed








COMPOST
PAPER

Lithium-Ion Batteries



A total of 21 sampled loads were found to contain a Lithium battery.
The weight of the Lithium batteries sampled is not significant enough to register as a percentage.

From the Waste Characterization Study…

1 in 8 truckloads contained a lithium-ion battery.

NORTH CAROLINA
Department of Environmental Quality

Market Assessments: Lithium-Ion Batteries

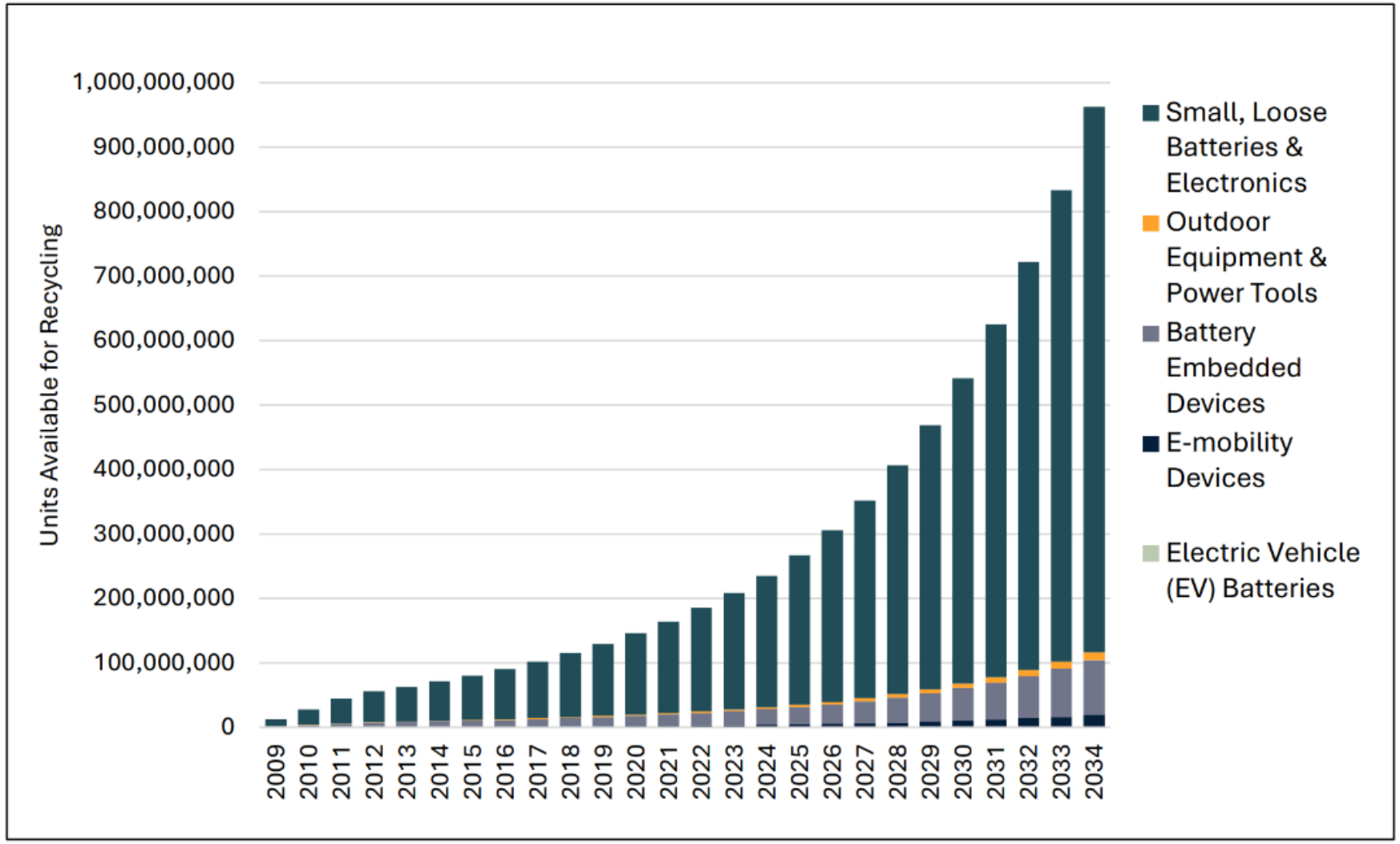


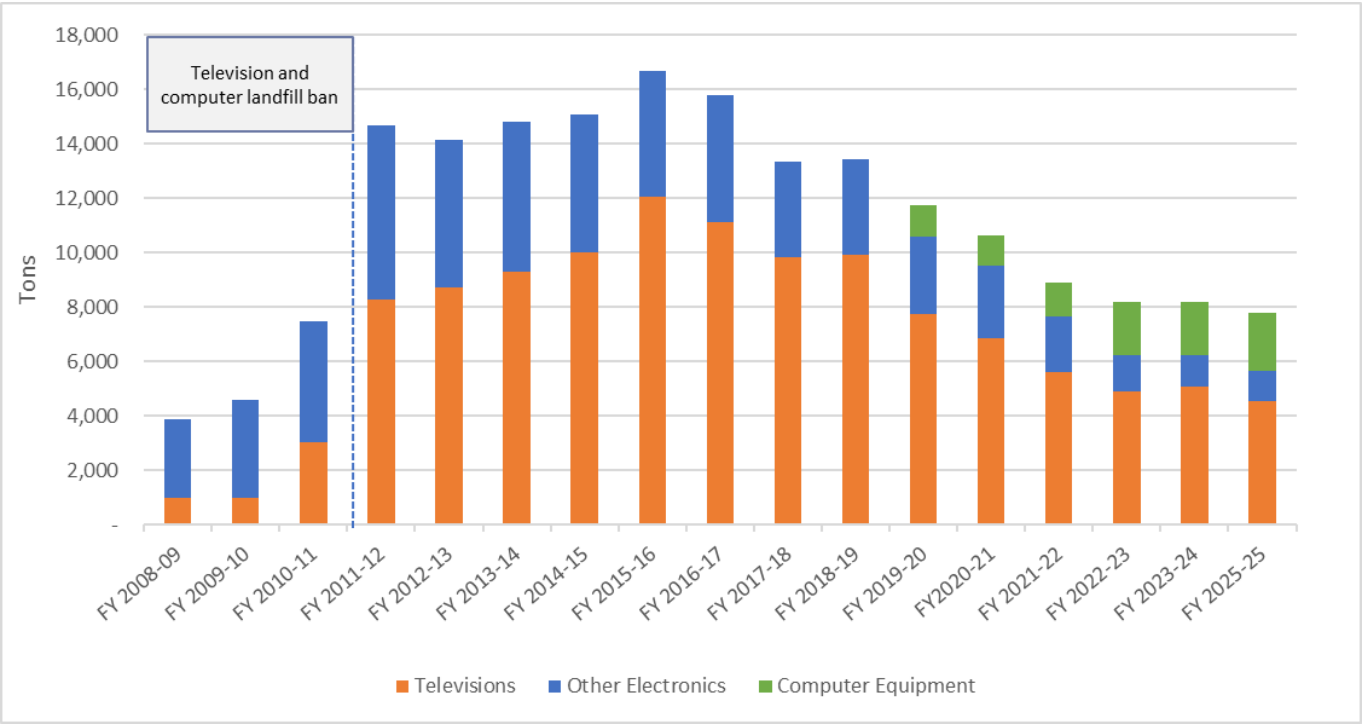
Figure 2. Total Projected EoL Li-ion Battery Units Available for Recycling in the U.S. through 2034

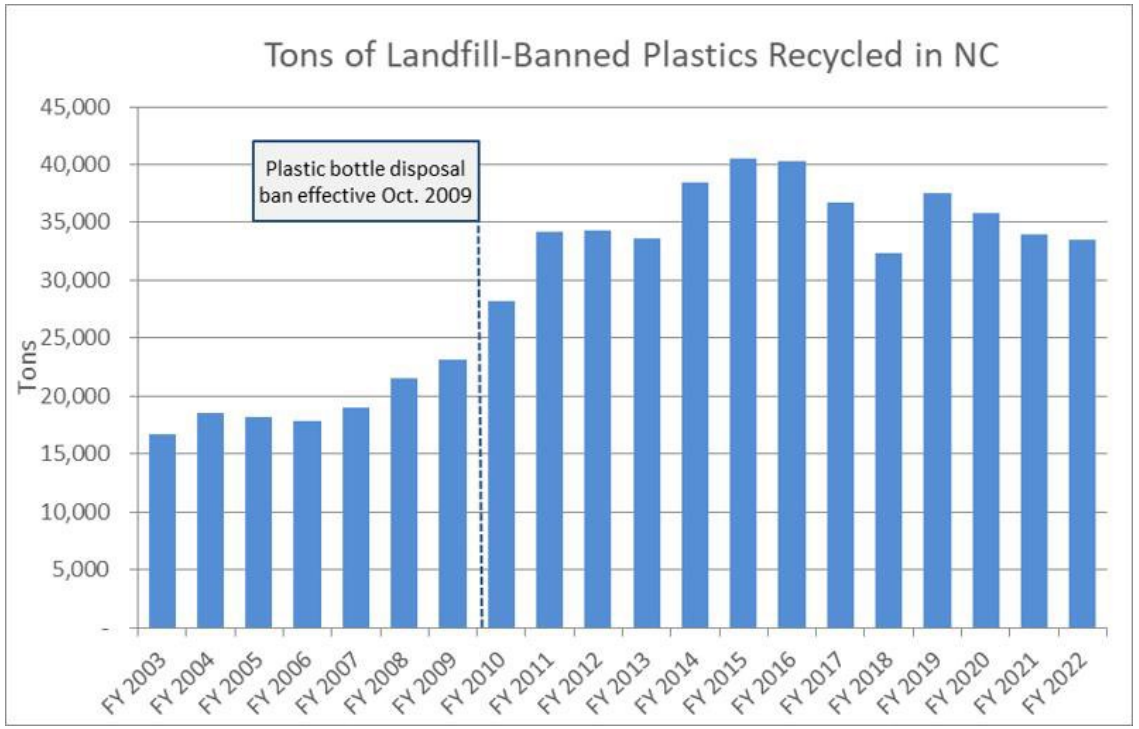
2025: 0.8 end-of-life batteries per person

2034: **2.7 end-of-life batteries** per person

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Department of Environmental Quality

Effectiveness of Disposal Bans





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Department of Environmental Quality

What types of batteries are lithium-ion?













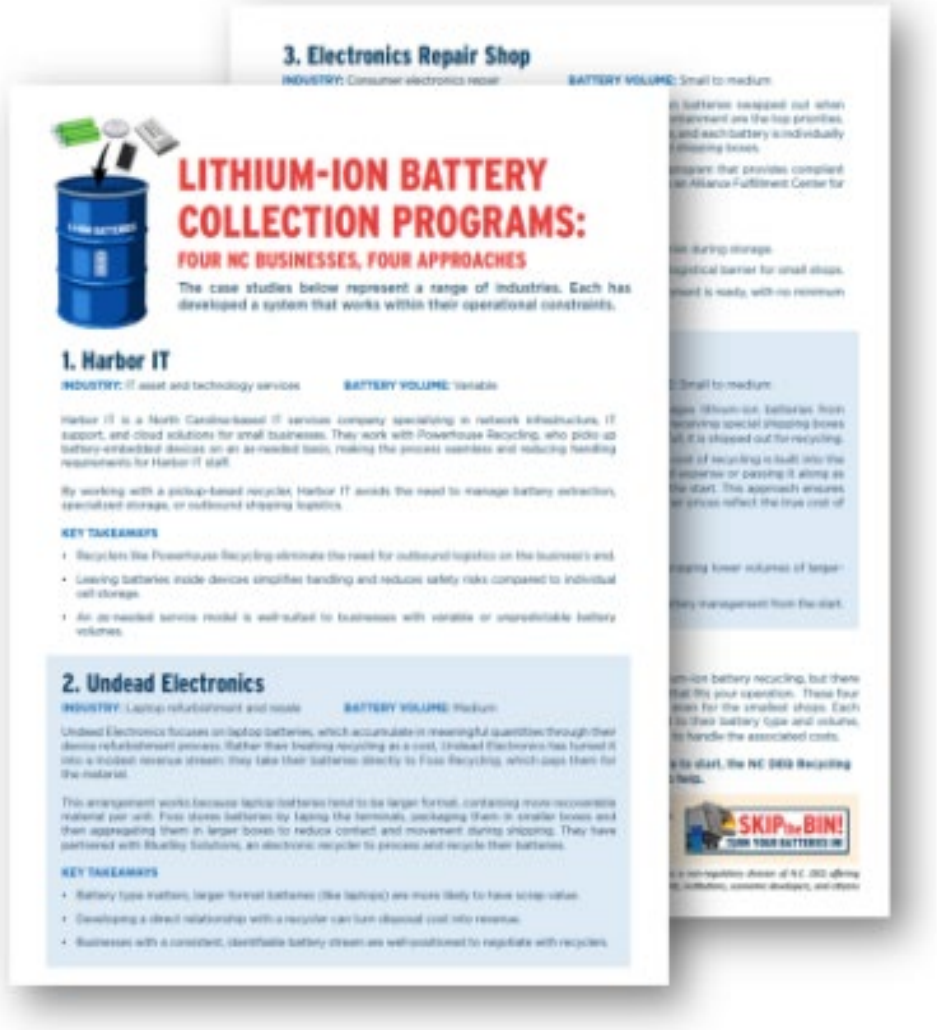
Lithium-ion batteries power many of the **rechargeable devices** we use every day, such as:

- Cellphones, tablets and laptops
- Smartwatches
- Wireless headphones
- Smart home devices
- Power tools
- Electric scooters and bicycles

See more examples listed by room.

Preparation for the Ban

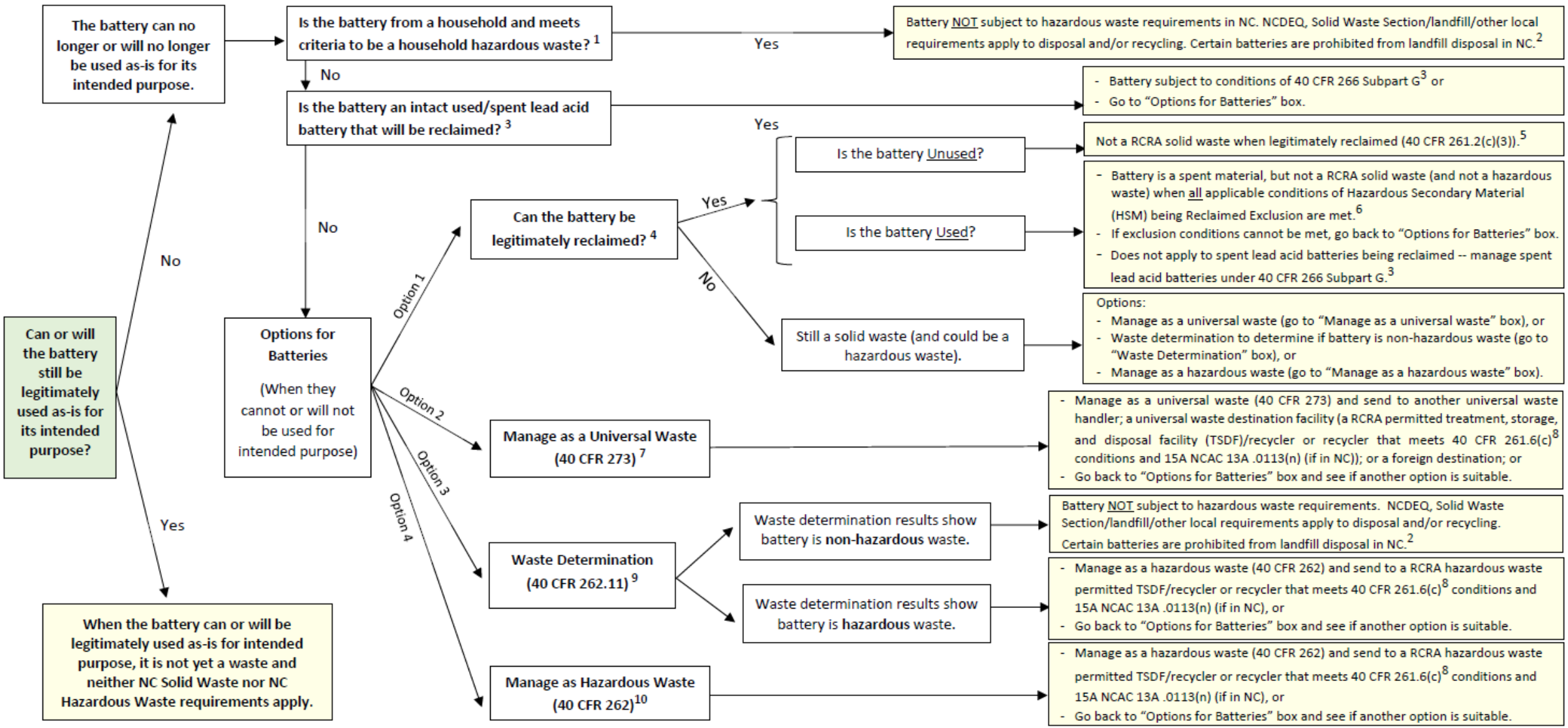
1. Educate yourself
2. Train your employees
3. Find a vendor



NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE SECTION

(Print first page on legal size paper)

Generator Options for the Management of Discarded Batteries*



Safe Management and Handling

Safe Storage and Handling



Take these steps to ensure the drop-off facility is safely storing lithium-ion batteries.

- Ask battery, electronics, or HHW vendors for best practices and requirements.
- Use nonconductive containers or insulated fireproof bags or boxes.
- Keep batteries in a cool and dry location, out of direct sunlight, and not exposed to extreme temperatures.
- Reach out to your battery recycler for guidance on proper handling of DDR batteries.
- Tape terminals.
- Check with your battery recycler to determine how to store batteries by chemistry type.
- Clearly label battery collection containers.





Tape terminals





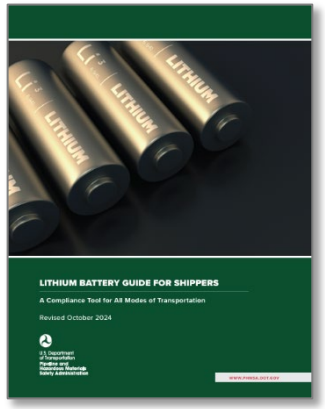
Look out for damaged, defective, or recalled (DDR) batteries

Storage and Transportation



- Segregate by battery chemistry
- Tape terminals or store in baggies
- Seal in containers
- Store in lined drums or buckets
- Proper DOT labeling
- Avoid storing in high heat
- In case of fire, do NOT douse with water

US DOT Guide

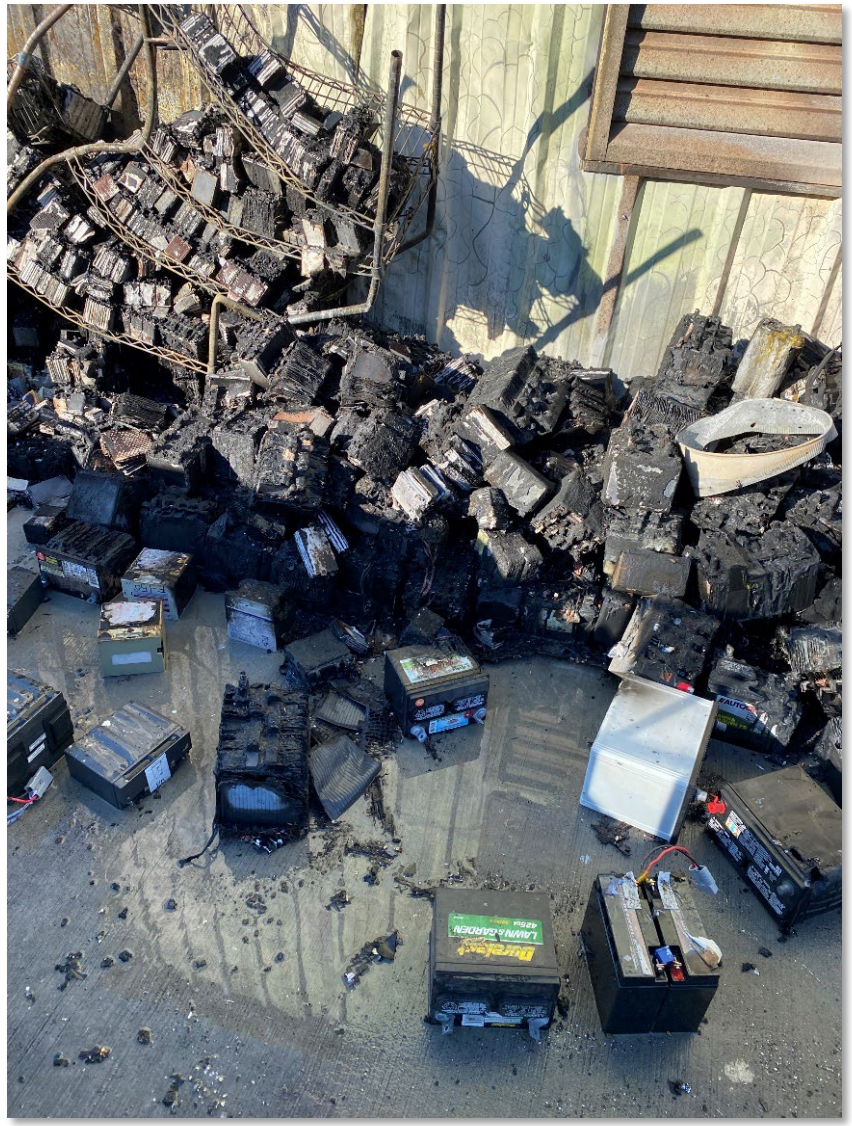




Importance of Safe Storage



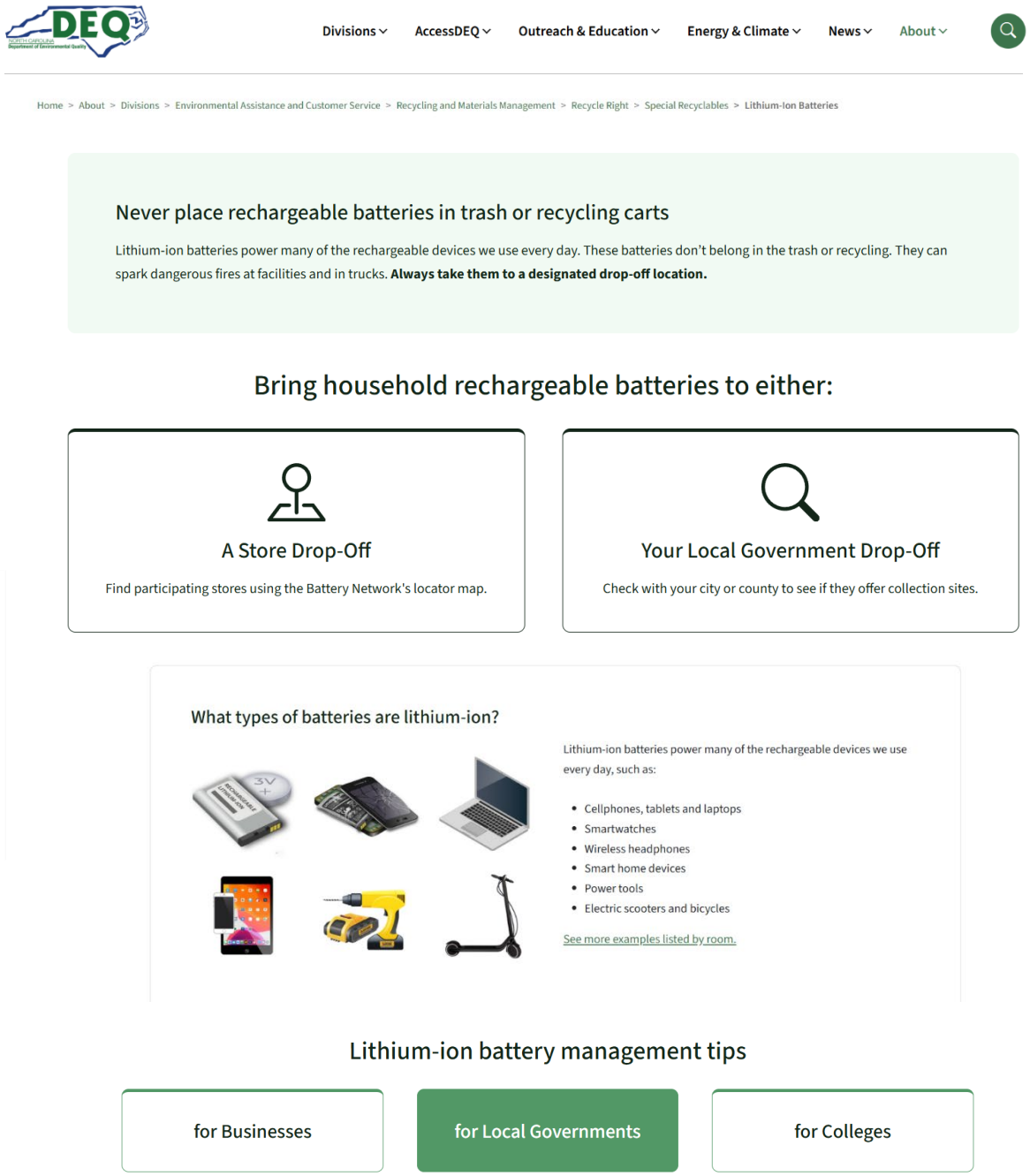
Wake County HHW shed



DEQ Webpage

batterysafe.nc.gov





Finding a Vendor



Types of lithium-ion battery vendors:

- Electronics recyclers
- HHW vendors
- Battery recyclers
  - Redwood
  - The Battery Network (formerly Call2Recycle)



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Never place rechargeable batteries in trash or recycling carts

Lithium-ion batteries power many of the rechargeable devices we use every day. These batteries don't belong in the trash or recycling. They can spark dangerous fires at facilities and in trucks. **Always take them to a designated drop-off location.**

batterysafe.nc.gov

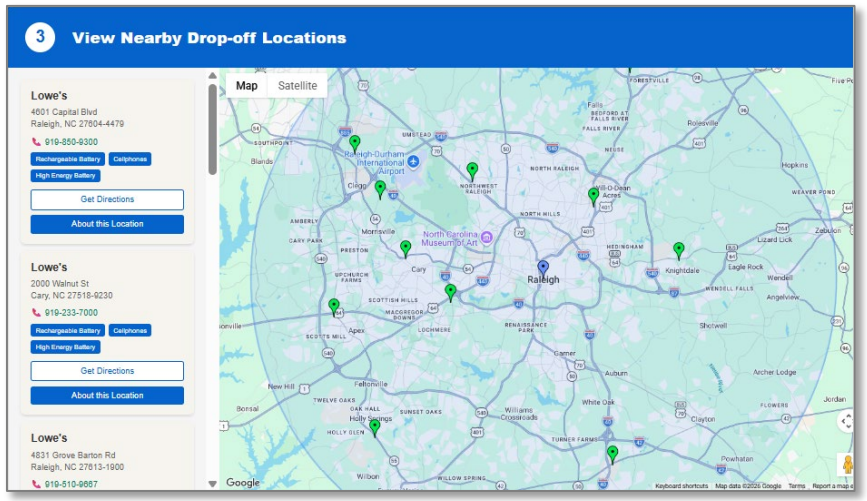
Bring household rechargeable batteries to either:

A Store Drop-Off

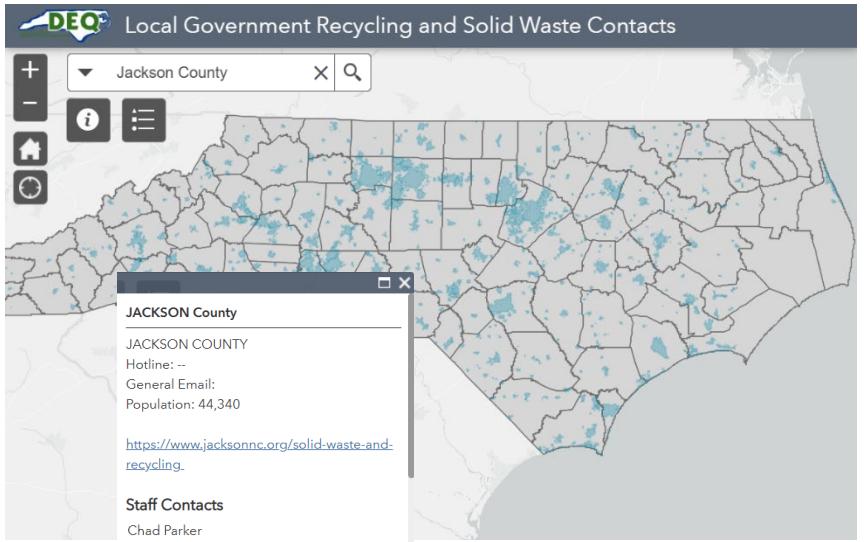
Find participating stores using the Battery Network's locator map.

Your Local Government Drop-Off

Check with your city or county to see if they offer collection sites.



https://batterynetwork.org/locator/



https://www.deq.nc.gov/recycling/lgcontacts



DEQ Outreach Campaign

1. Inform the public about the problem.
2. Tell them what to do with batteries.
3. Share resources to learn more.

Radio

Aug 2026 – Feb 2027

Online

Sept 2026 – Feb 2027

Outreach Templates



Postcard



Signage



Oops tag



Sticker - No Batteries or Electronics



Curbside Rack Card



Drop-off Rack Card



Customized Outreach Design











Thank You

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www.recyclenc.org