

Powering Local Safety: Smart Battery Solutions for Municipalities

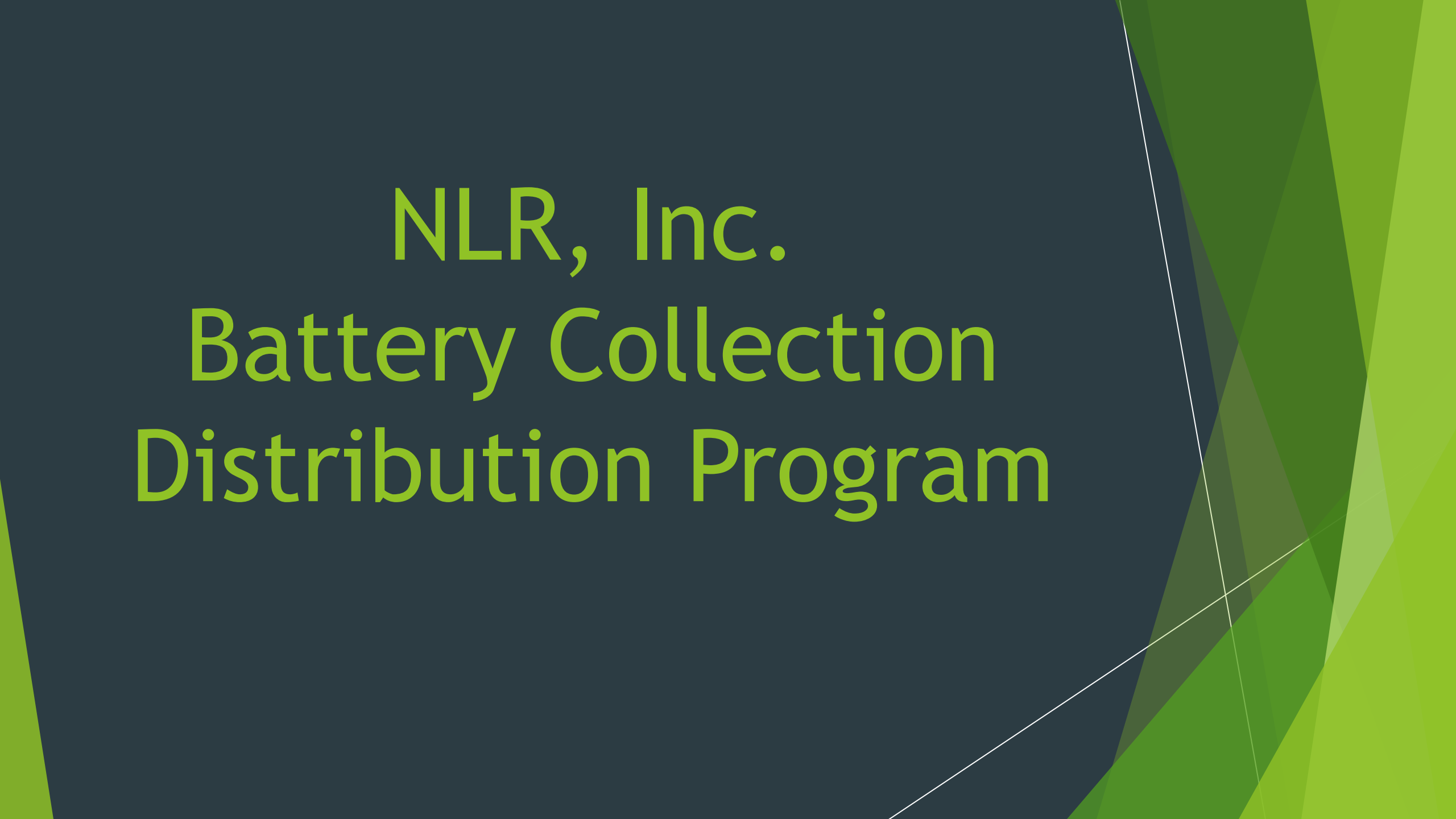
Presented by: Suzanne Nardi



The Modern Waste Challenge

- Increasing volume of Lithium-Ion in curbside bins.
- Risk of "Thermal Runaway" in standard waste streams.
- Need for a "One-Stop" compliant collection partner - that's YOU!





NLR, Inc. Battery Collection Distribution Program

Battery Collection Distribution Program

1. Intact mixed batteries including lithium-ion
2. Damaged, Defective, or Recalled (DDR) mixed battery collection including lithium-ion
3. Lithium-ion fire blanket

Mixed Battery Bucket

- **No Sorting Required:** Residents recycle consumer batteries in one place.
- **Compliance Made Easy:** Self-locking, DOT-compliant containers.
- **Full Documentation:** Certificates of Recycling for municipal records.

Mixed Battery Bucket

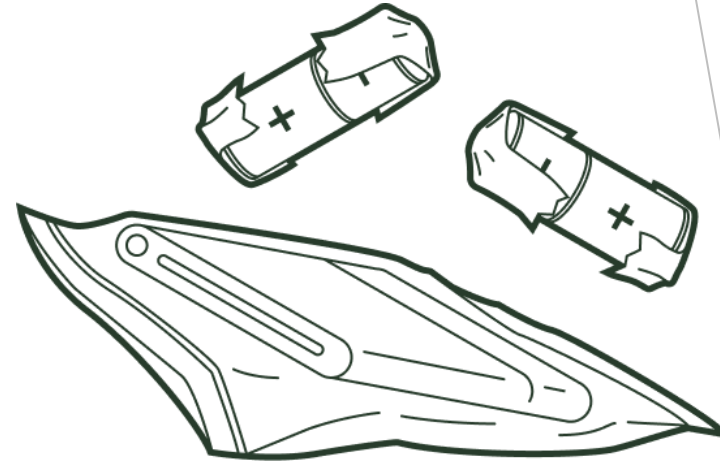


1. Remove lid and insert liner into the bucket.

Mixed Battery Bucket

2. Insulate batteries

- Taping terminals with non-conductive tape (clear packing tape or electrical tape)
- Individually packaging batteries in non-conductive material (i.e. individual plastic bags)
- Using original packaging to separate batteries from one another and other conductive materials.



BATTERY CHEMISTRY	ARE YOU REQUIRED TO INSULATE TERMINALS?
Lithium	YES
NiCd	YES
NiMH	YES
Alkaline	1.5V, 6V and 9V Alkaline stored ONLY with other alkaline batteries do not need terminals insulated. As soon as other chemistries are introduced, ALL batteries must be insulated.

Mixed Battery Bucket



3. Place batteries in bucket.

Accepted Battery Types:

Alkaline

Ni-Cad

Nickel Metal Hydride

Lithium Ion

Zinc Carbon

Mercuric Oxide

Silver Oxide

All other batteries not accepted.

* No Lithium Primaries Batteries

Mixed Battery Bucket

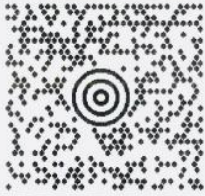


4. Tie top of liner bag.
5. Attach lid and lock into place.

Label and Ship

Schedule UPS Pickup with  UNISHIPPERS®
Call 1-877-741-0667 or
Email at supportups@unishippers.com

**If there are any issues or problems,
contact NLR at 860.292.1992 and ask
the receptionist for Returns Shipping
assistance.**

RECYCLING SUSTAINABILITY DEPT SAMPLE COMPANY 999 ANYWHERE STREET EAST WINDSOR CT 06088		35 LBS	1 OF 1
		RS	DWT: 49,8,14 AH
SHIP TO: ROBERT E ROBERT (860) 292-1992 101 NLR INC WAREHOUSE RM/STE B 250 MAIN ST EAST WINDSOR CT 06088-9519			
	CT 060 9-02 		
UPS GROUND TRACKING #: 1Z HE7 277 90 4143 9816			
			
BILLING: P/P DESC: LIGHT BULBS RETURN SERVICE			
REF 2: SAMPLE RSA TAG			
WS 28.0.905 ZDesigner ZD4 49.0A 11/2025			

PROPER STORAGE OF BATTERIES

- ✓ Insulate terminals
- ✓ Store in a cool dry place
- ✓ Store away from excess heat and moisture
- ✓ Keep away from flammable objects and fuel sources
- ✓ Keep trash and metal objects out of your recycling buckets

DDR Batteries: Damaged, Defective or Recalled



Visual Warning Signs

- ▶ **Swelling/Bulging:** This indicates internal gas buildup in lithium-ion cells and is a precursor to thermal runaway.
- ▶ **White Crusty Residue:** Typically found on alkaline batteries, this is potassium hydroxide leakage which is corrosive to skin and electronics.
- ▶ **Discoloration or Odor:** A "sweet" chemical smell often indicates a lithium cell has begun off-gassing.



DDR Battery Bucket



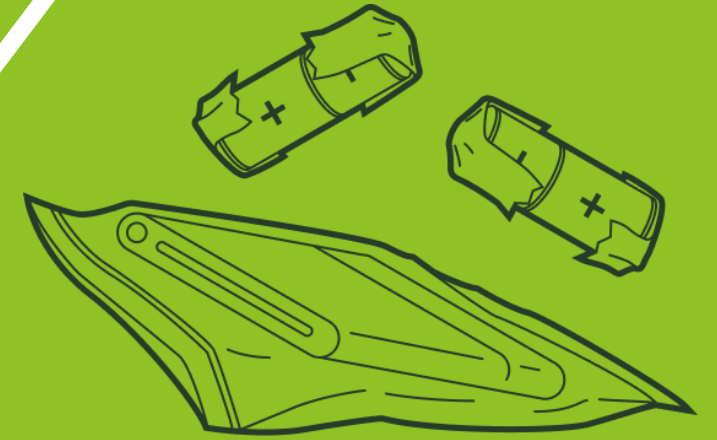
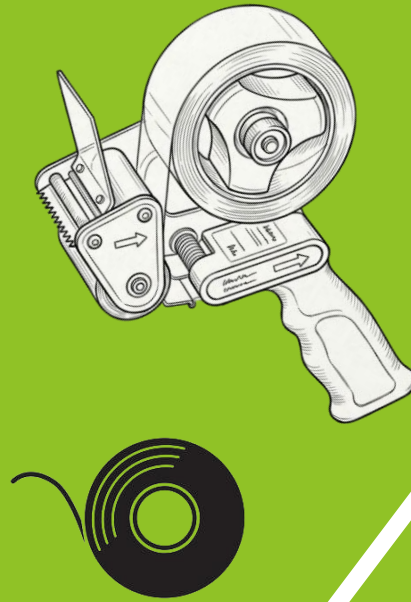
1. Remove lid and insert liner into the bucket.

DDR Battery Bucket



2. Dispense about 2” of thermal suppressant into the bottom of the bucket.

DDR Battery Bucket



3. Use nonconductive tape on terminals or place batteries in individual baggies or in original packaging.

DDR Battery Bucket



□ Batteries
■ Thermal Suppressant

4. Place protected batteries on the thermal suppressant. Be sure to leave 1 -2 inches of space between each battery.

5. Cover batteries in a layer of thermal suppressant.

6. Keep adding layers of batteries and thermal suppressant.

DDR Battery Bucket



7. Allow at least 2 inches of space at the top of the bucket. Fill with thermal suppressant.

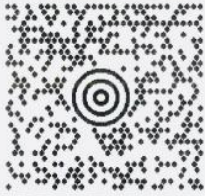
8. Tie top of liner bag.

9. Attach lid and lock into place.

Label and Ship

Schedule UPS Pickup with  UNISHIPPERS®
Call 1-877-741-0667 or
Email at supportups@unishippers.com

**If there are any issues or problems,
contact NLR at 860.292.1992 and ask
the receptionist for Returns Shipping
assistance.**

RECYCLING SUSTAINABILITY DEPT SAMPLE COMPANY 999 ANYWHERE STREET EAST WINDSOR CT 06088		35 LBS	1 OF 1
		RS	DWT: 49,8,14 AH
SHIP TO: ROBERT E ROBERT (860) 292-1992 101 NLR INC WAREHOUSE RM/STE B 250 MAIN ST EAST WINDSOR CT 06088-9519			
	CT 060 9-02 		
UPS GROUND TRACKING #: 1Z HE7 277 90 4143 9816			
			
BILLING: P/P DESC: LIGHT BULBS RETURN SERVICE			
REF 2: SAMPLE RSA TAG			
WS 28.0.905 ZDesigner ZD4 49.0A 11/2025			

Lithium Fire Blanket



Standard Procedure for Battery Fire Blankets

To use a battery fire blanket, you must prioritize containment over total extinguishment, as lithium-ion battery fires generate their own oxygen and can burn at temperatures exceeding 1,000°C (1,832°F)

1. Evacuate and Call for Help

Immediately clear everyone from the area and call emergency services, even for small fires. Lithium battery fires release gases like hydrogen fluoride that can cause lung damage.



Standard Procedure for Battery Fire Blankets

2. Deploy the Blanket

- **Remove and Unfold:** Pull down the release tabs from wall-mounted bag and shake blanket to unfold it.
- **Shield Yourself:** Hold the blanket by its designated pull-loops in front of you to create a heat shield.
- **Positioning:**
 - **Battery Bucket:** Carefully drape the blanket over the bucket to cover it completely.



Standard Procedure for Battery Fire Blankets

3. Secure the Seal

Once the bucket is covered, press down on the edges using a tool, this will minimize air intake and trap the smoke. Ensure there is sufficient overlap on all sides to create a tight ground seal.

4. Wait and Monitor

Do not remove the blanket immediately. Battery fires are prone to **re-ignition** for hours or days after the initial flames are suppressed. Blankets are designed for containment; they do not necessarily put the fire out but prevent it from spreading.

Single-Use Only: Once used on a fire, the blanket must be disposed of and replaced, as the extreme heat and chemical exposure compromise its structural integrity.

Lithium Fire Blanket



Program Goal

Our goal at NLR is to make your municipality a leader in sustainability without compromising on safety. We handle everything from providing the buckets to the final processing at our fully permitted facilities.

Municipalities are the heartbeat of the circular economy. By joining the NLR program, you aren't just 'getting rid of trash.' You're recovering rare earth metals, protecting your local environment, and—most importantly—keeping your employees and residents safe.

Thank you for choosing NLR, Inc.

At NLR we also recycle lamps, ballasts, e-waste and mercury devices. We were recently bought by a larger recycling company and are expanding the products we can recycle.

We have a white glove pickup service as well as our mail back program.

Feel free to reach out to me and I can extend the **Massachusetts State Contract** pricing to you.

I am happy to answer any questions you may have.

Suzanne Nardi

s.nardi@nlr-green.com

860-292-1992