



Leading the Charge Battery Stewardship in Washington

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Peak Sustainability

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Battery Product Stewardship

- E2SSB 5144 – Providing for responsible environmental management of batteries
- Codified as Chapter 70A.555RCW
- Create a statewide system for the collection and recycling of batteries
 - FREE
 - Open to households & businesses
 - Many types of batteries covered
- Includes 2 studies
 - EV batteries
 - Excluded battery types



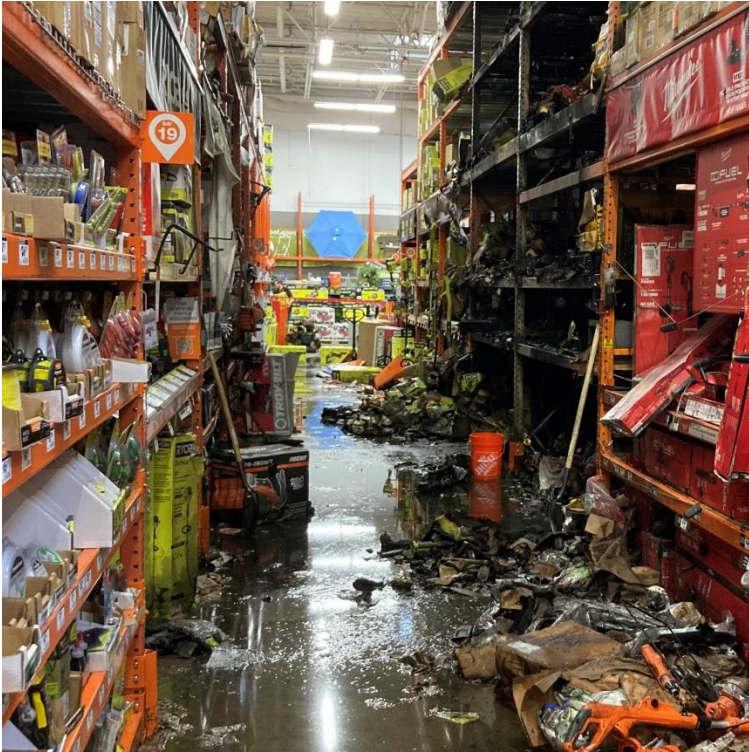
Why the Bill Passed

- Unprecedented fires and damage to solid waste infrastructure
- Increasingly difficult for solid waste facilities to obtain/afford insurance
- Valuable resources are wasted when batteries are not recycled
- Patchwork of access to recycling services



Source: *The Columbian*, November 21, 2019. Photo courtesy of Vancouver Fire Department.

Extreme Hazard Posed by Lithium-ion Batteries



EV Battery Study & Report

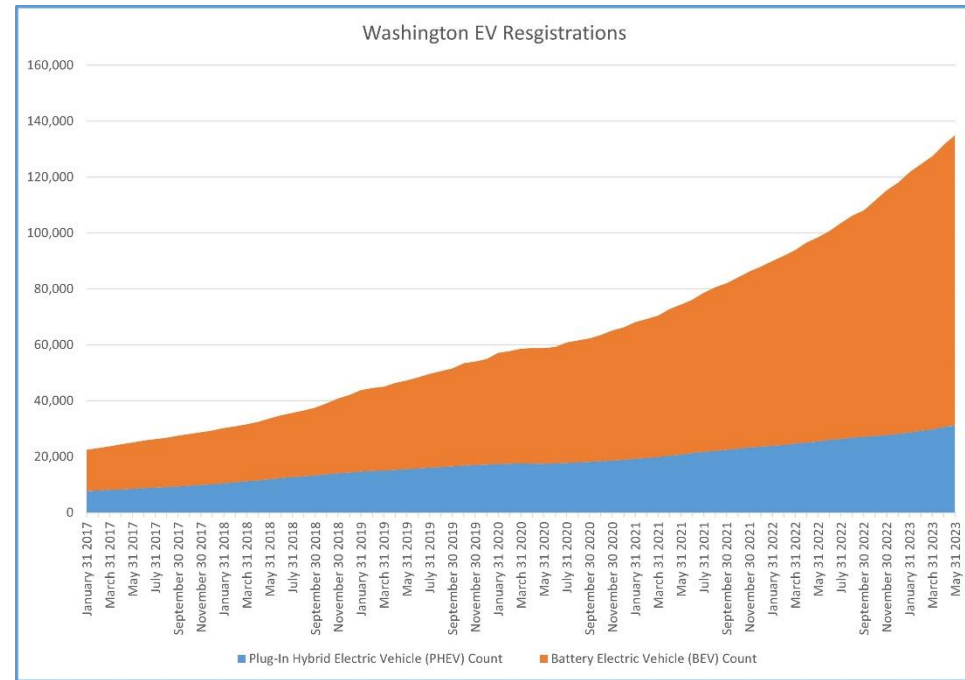
Recommendations for the collection and management of EV batteries. Study included:

- Current practices in WA
- Best practices in other jurisdictions
- Volume and projections
- Potential pathways for EV batteries
- Regulatory landscape
- Economics of battery management
- Battery chemistries and value



EVs in Washington

- Currently 135,038 EVs in WA
- EV market share of 16.9% in Q1 2023
 - +7.2% increase over 2022
 - Washington: 14% BEV, 2.9% PHEV
 - National: 8.6%
- 97 ZEV models available in Washington in all vehicle classes



Monthly EV and PHEV registrations in Washington

Source: Ecology's Climate Pollution Reduction Program

Interested Parties and Partners



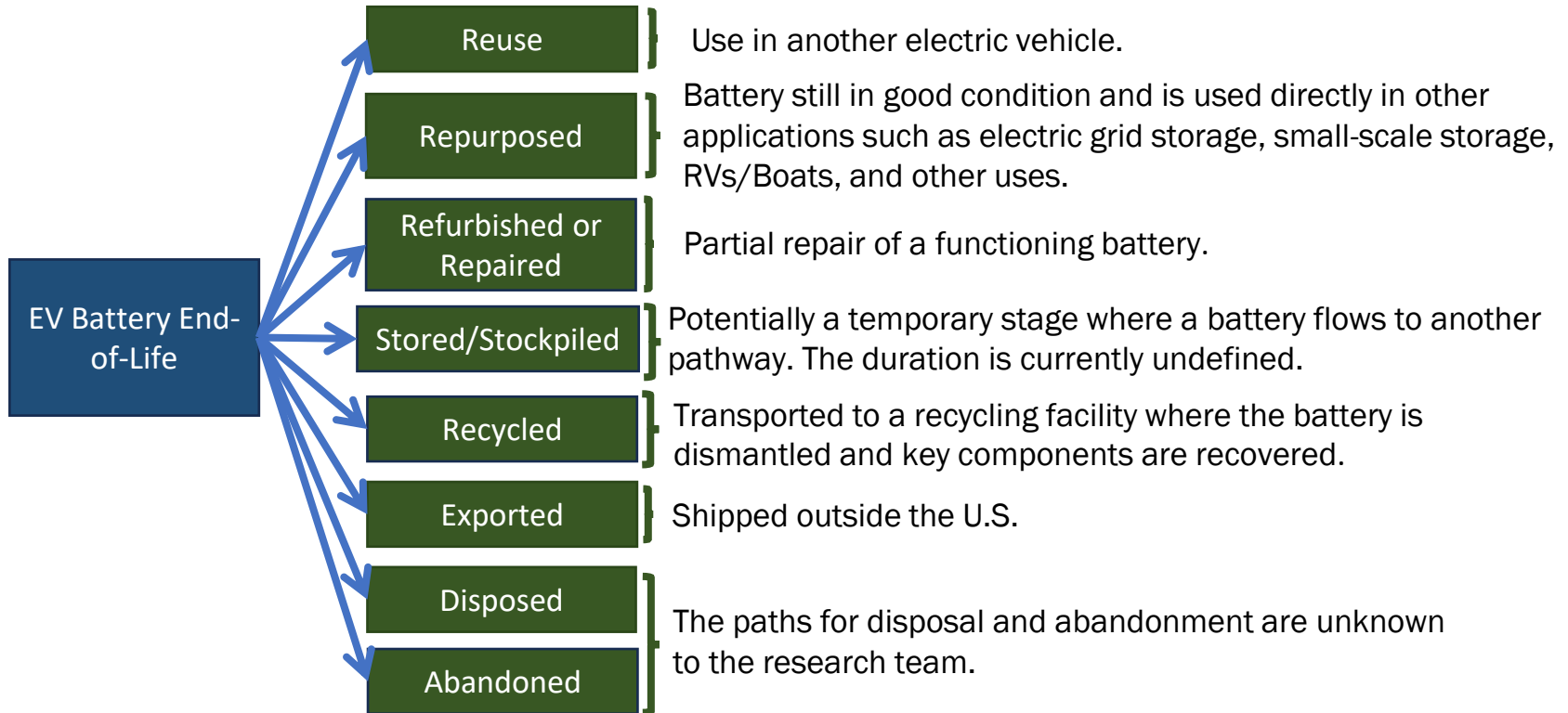
Interviews, surveys, and webinars with:

- Wrecking and salvage
- Local governments
- Environmental organizations
- EV manufacturers
- Battery manufacturers
- Battery recyclers
- DIY community
- Emergency responders

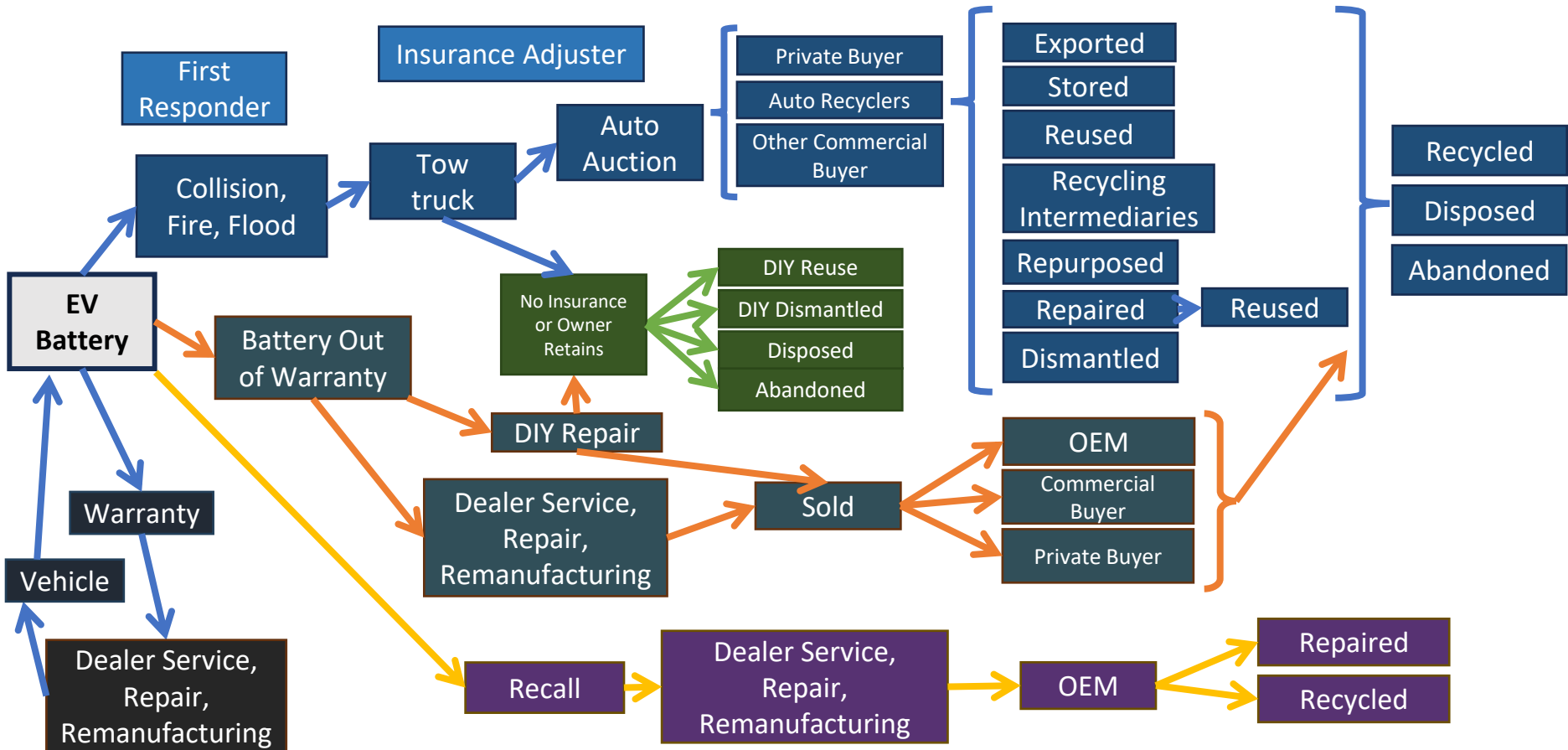
Emerging Themes

- Industry players are refining procedures to meet federal & state regulation – harmonization is desired
- EV battery recycling is a nascent industry undergoing rapid growth & change
- An active market exists for used EV batteries
- Access to EV battery information would support safe collection, management and safety
- Training on best practices for EV incident response would help first responders
- Varying opinions regarding responsibility for end-of-life management

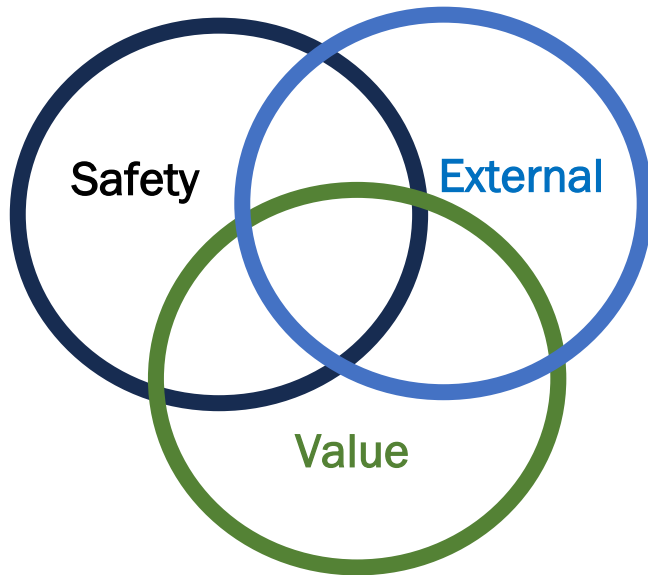
Simplified Potential Pathways



Overview of Potential Pathways



Potential Factors Determining EOL EV Battery Pathways



Safety Factors

- Visible battery characteristics
 - Physical damages or absence of damage
- Non-visible battery characteristics
 - State of health
 - Internal damage
- Battery chemistry
- Regulatory

External Factors

- Battery Handler
 - Ability/authority to test battery
- Insured Vehicle
- Warranty
- Regulatory

Value Factors

- Visible battery characteristics
 - Physical damages or absence of damage
- Non-visible battery characteristics: battery health
- Battery chemistry
- Battery history
 - Manufacture recall
 - Vehicle history: collision, flood, other damage

Task Force

strategy tactics goal target direct focus

plan leader communication special unit objectives

teamwork teaching precision army military

business explicit relevant unique measurable work smart team

project duty marker objective people activity united unity problem specify setting insignia corporate employees

success aim school resources specific training combat

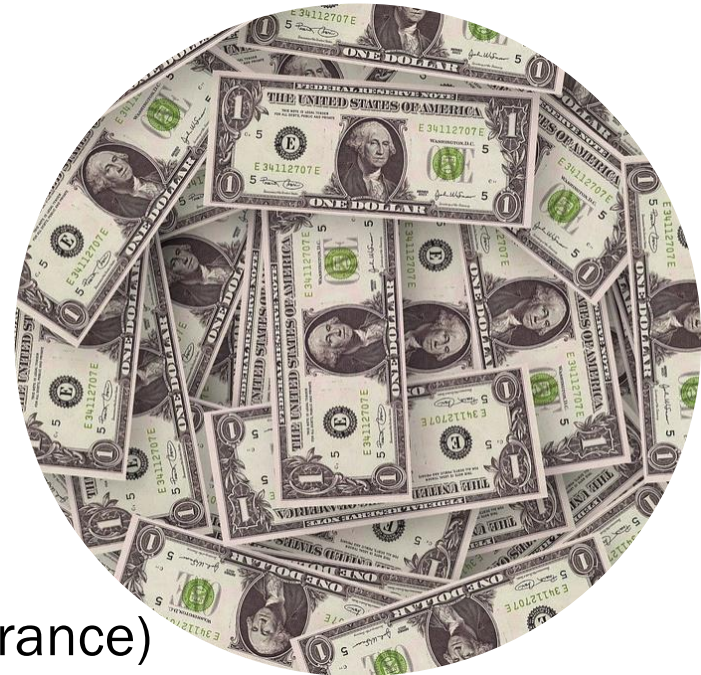
Education, Training & Resources

- Create a clearing house
- First responders
 - Need information on how to respond in a variety of situations involving different Evs
 - Facility for testing and training
 - Ways to mitigate or deenergize Li-ion batteries
 - Reduce hazards of thermal runaway
- Second responders
 - Safe transport
- Recyclers
 - Safe dismantling and storage
 - Safe reuse



Financial Responsibility & Liability

- Pathway informs who may bear responsibility
 - Insurers
 - Vehicle Owner/consumer
 - Battery manufacturer
 - Vehicle manufacturer
 - EV Dismantler
- Potential models
 - Core exchange
 - Extended producer responsibility
 - Insurance requirements (financial assurance)
 - Others?



Legislative Proposals

SSB 5812 – An act relating to responding to EV fires

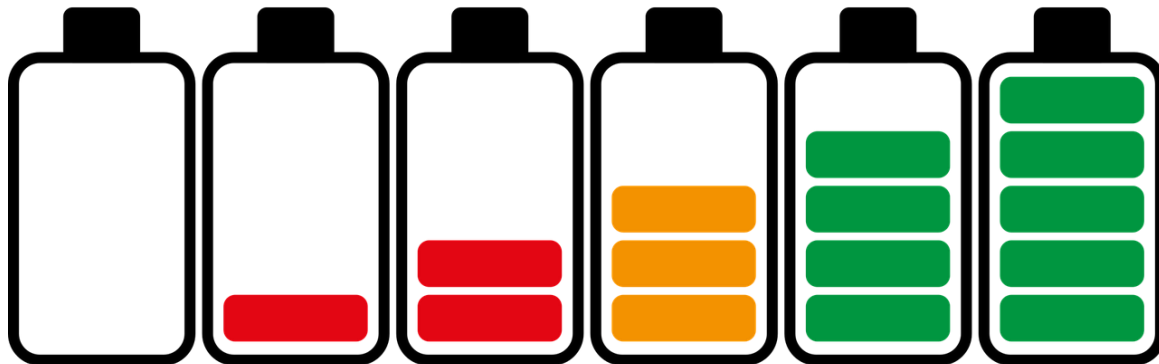
- WSP must study the following elements of EV fires:
 - Impacts to environment and proximate residential areas
 - Best practices for fire response
 - Best practices regarding clean-up and disposal efforts
- WSP must work with:
 - Ecology
 - Local fire protection districts
 - Towing and recovery industry
 - Other entities
- Legislative report due January 1, 2025

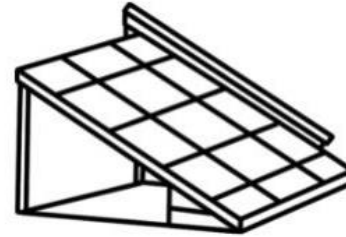


Photo credit: KTVL TV, Denver, CO

Program Milestones

- Rulemaking began March 2024
- Plans due July 1, 2026
- Program start July 1, 2027
- Medium format batteries included July 1, 2029
- Other tasks:
 - Research and legislative report on EV batteries 2023 & 2024
 - Assessment on excluded battery types in 2027
 - Legislative report in 2027





Thank you

<https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Our-recycling-programs>

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