Preliminary Regulatory Analyses:

Including the:

- Preliminary Cost-Benefit Analysis
- Least-Burdensome Alternative Analysis
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

Chapter 173-905 WAC

Battery Stewardship Program

By

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For the

Solid Waste Management Program

Washington State Department of Ecology

Olympia, Washington

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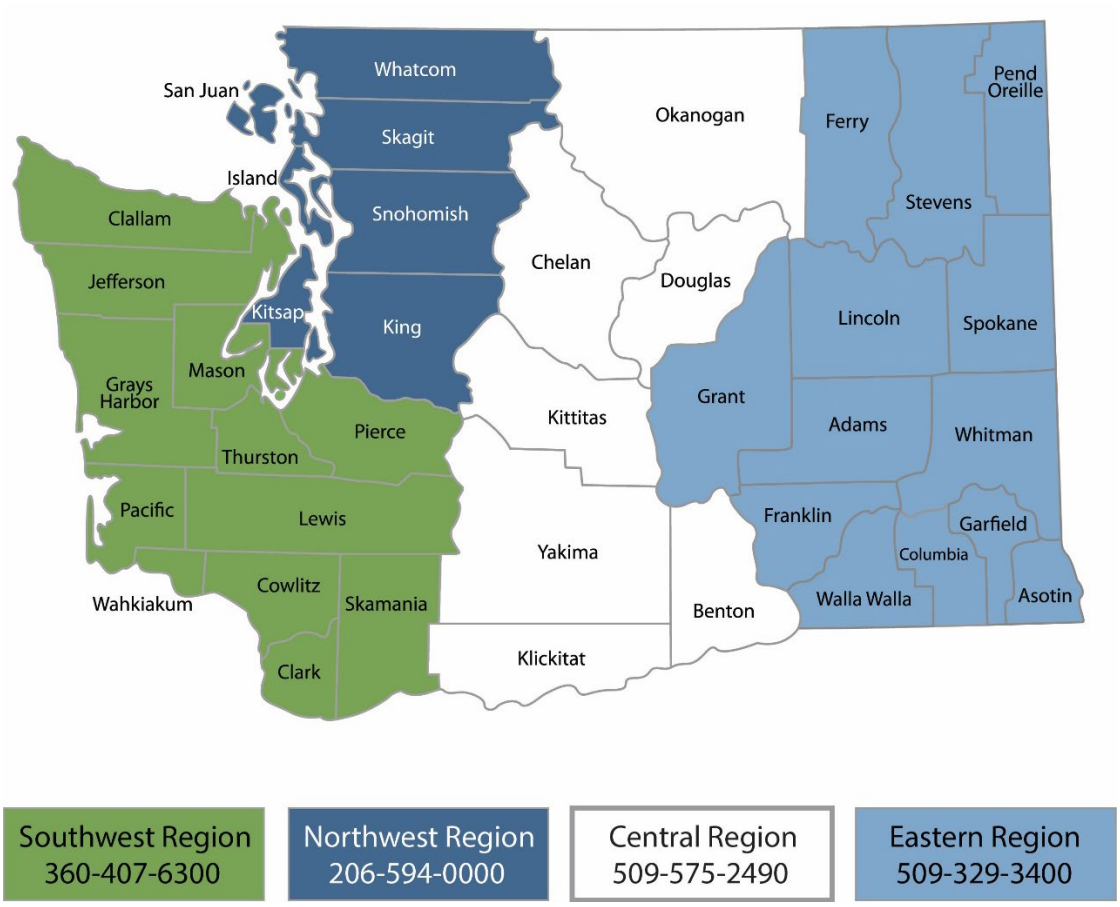

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Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
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Headquarters	Across Washington	P.O. Box 46700 Olympia, WA 98504	360-407-6000

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Chapter 173-905 WAC Battery Stewardship Program

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DEPARTMENT OF
ECOLOGY
State of Washington

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Abbreviations and Acronyms

APA	Administrative Procedure Act
BSO	Battery Stewardship Organization
CBA	Cost-Benefit Analysis
CPA	Certified Public Accountant
EPR	Extend Producer Responsibility
EREF	According to Environmental Research & Education Foundation's
LBA	Least Burdensome Alternative Analysis
FY	Fiscal Year
MRW	Moderate Risk Waste
NPV	Net Present Value
RCW	Revised Code of Washington
RFA	Regulatory Fairness Act
WAC	Washington Administrative Code

Executive Summary

This report presents the determinations made by the Washington State Department of Ecology as required under Chapter 70A.555 RCW, for the proposed Battery Stewardship Program rule (Chapter 173-905 WAC; the "rule"). This includes the:

- Preliminary Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The purpose of this rulemaking effort is to implement new program requirements established under chapter 70A.555 RCW Batteries—Environmental Stewardship, which was passed by the state legislature in April 2023. The new law creates an extended producer responsibility (EPR) program for recycling most types of household batteries. Beginning January 1, 2027, battery producers are required to pay into a program that establishes a statewide network of battery collection sites that will provide opportunities for people to drop off batteries at no cost.

While chapter 70A.555 RCW lays out core tenants of the EPR program, it requires Ecology to adopt rules that set a fee covering its costs to administer and oversee the program. Ecology is also proposing rule language that clarifies definitions, sets education and outreach standards, determines handling procedures, and expands battery marking requirements, among other important aspects. Relative to chapter 70A.555 RCW, The proposed rule would:

- Add, expand, or clarify **definitions**
- Develop a **fee structure** that recovers Ecology costs related to overseeing the battery stewardship program
- Require quarterly **education and outreach**
- Add, expand, or clarify **stewardship plan** contents
- Add, expand, or clarify **plan submissions**
- Allow Ecology to amend and accept a plan after two disapprovals in **plan review**
- Add, expand, or clarify **annual report requirements**
- Give 30 days for additional information requested by the department during annual **report review**
- Add, expand, or clarify **quarterly updates**
- Add, expand, or clarify **marking requirements**
- Add, expand, or clarify **collection network requirements**
- Add, expand, or clarify **collection site procedures, safety, and training**

While we can isolate and summarize some impacts from discretionary portions Ecology's rule, it is impossible to separate all impacts of the rule from those created broadly by chapter 70A.555 RCW. This is because the law creates the EPR program, and the program creates the majority of

the costs and benefits, but these cannot be realized without the rule and Ecology's administration and oversight.

For this reason, we estimate the impacts (cost and benefits) of the rule when separable, and aspects of the rule and law together ("Program") against a battery recycling reality in Washington with no EPR alternative. We present quantifiable costs as a range of 20-year net present values in Table 1.[2]

Table 1. Estimated Present Value of Total Cost To Washington

Cost Category	High Estimate	Mid Estimate	Low Estimate
Plan Review (from rule)	$212,139	$107,363	$2,587
Annual Report Review (from rule)	$697,362	$352,933	$8,504
Technical Assistance (from rule)	$2,857,659	$1,446,254	$34,849
Education and Outreach (from rule)	$655,255	$327,628	$0
Annual Reporting (from rule)	$929,010	$465,490	$1,970
Site Training (from rule)	$859,582	$429,791	$0
Site Monitoring (Gov) (from rule)	$1,189,013	$594,506	$0
Site Monitoring (Non-Gov) (from rule)	$14,154,919	$7,077,459	$0
Sub-Total	**$21,554,939**	**$10,801,425**	**$47,910**
Recycling Costs (from program)	$56,924,383	$28,642,780	$361,176
Total	**$78,479,322**	**$39,444,204**	**$409,086**

Additional qualitative cost include, but not limited to:

- A cost associated with reimbursing various demonstrable costs by local governments,
- A cost from narrowing "collection services" to a "collection event" required to reach areas without a permanent collection site,
- A cost to retailers that verify product participation in the Program.

Table 2 presents the quantifiable present value of Washington's estimated benefits from the rule, and Program that the rule works to administer.

[2] To convert streams of costs or benefits over time into a single comparable value in current dollars. A present value accounts for inflation, and the opportunity cost of having funds or value later versus now. For additional discussion on social discounting in economic analysis see https://www.epa.gov/system/files/documents/2024-12/guidelines-for-preparing-economic-analyses_final_508-compliant_compressed.pdf.

Table 2. Estimated Present Value of Total Benefits, By Category

Benefit Category	High Estimate	Mid Estimate	Low Estimate
Education and Outreach Rev. (from rule)	$799,092	$399,546	$0
Annual Reporting Revenue (from rule)	$1,132,939	$ 664,996	$197,053
Site Training Revenue (from rule)	$1,048,271	$524,135	$0
Site Monitoring Revenue(Gov) (from rule)	$1,450,016	$725,008	$0
Sub-Total	**$4,430,318**	**$2,313,685**	**$197,053**
Avoided Recycling Costs (from program)	$69,419,980	$52,768,809	$36,117,637
Avoided Damages (from program)	$41,223,652	$21,127,122	$1,030,591
Total	**$115,073,950**	**$76,209,616**	**$37,345,281**

Additional qualitative benefits include, but not limited to:

- Positive impacts to job growth and economic output in the state related to new revenues transfers,
- A time savings for producers and retailers from certification requirements in the rule,
- Time savings from streamlining departmental review,
- Consistency and transparency by narrowing “collection services” to a “collection event” required to reach areas without a permanent collection site,
- A potential decreased travel time to collection sites,
- A potential reduction in the mining of raw materials and associated environmental impacts,
- A potential increase in customer foot traffic for retail locations participating as collection sites,
- Stronger financial incentives to innovate across product materials and recycling technology,
- Reduced battery recycling costs through economies of scale,
- A reduction in high frequency, low damage fires,
- A reduction in the probability of a catastrophic fires, including wildfires,
- A reduction in the probability of environmental contamination of air, water, and soil,
- An improvement in human health by protecting workers and surrounding communities from handling risks.

When comparing Table 1 and Table 2, note that some benefits in Table 2, such as avoided recycling costs, come from transferring the cost of recycling from local governments, businesses, and individuals to producers responsible under the Program. To be conservative, this analysis assumes that transfers to producers could return to the state in the form of higher

product prices (e.g. recycling costs in Table 1) but set at a range from 0% in our low estimate to 80% in the high estimate, given uncertainty around this dynamic. Note that other benefits like avoided damages (from battery related incidents) are also presented as a wide range to capture the potential scope of safety improvements, but limited data and research on the topic.

We conclude, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed rule, as compared to the baseline, that the benefits of the proposed rule requirements are greater than the costs.

After considering alternatives, within the context of the goals and objectives of the authorizing statute, we determined that the adopted rule represents the least-burdensome alternative of possible rule requirements meeting the goals and objectives.

We conclude that the rule amendments are likely to have disproportionate impacts on small businesses, and therefore Ecology must include elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible. Some elements of the rule were included, in part, to reduce costs to small businesses. These are discussed further in section 7.3 of this analysis.

Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology as required under Chapter 70A.555 RCW, for the proposed Battery Stewardship Program rule (Chapter 173-905 WAC; the "rule"). This includes the:

- Preliminary Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented." Chapters 1 – 5 of this document describe that determination.

The APA also requires Ecology to "determine, after considering alternative versions of the rule…that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives" of the governing and authorizing statutes. Chapter 6 of this document describes that determination.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, including authorization, need, context, and coordination. Appendix A of this document provides the documentation for these determinations.

The Washington Regulatory Fairness Act (RFA; Chapter 19.85 RCW) requires Ecology to evaluate the relative impact of proposed rules that impose costs on businesses in an industry. It compares the relative compliance costs for small businesses to those of the largest businesses affected. Chapter 7 of this document documents that analysis, when applicable.

All determinations are based on the best available information at the time of publication. We encourage feedback (including specific data) that may improve the accuracy of this analysis.

1.1.1 Background

Ensuring the proper collection, handling, processing, and end-of-life management (collectively "Recycling" hereafter) of used batteries prevents the release of toxic materials into the environment and removes materials from the waste stream that, if mishandled, may present safety concerns to workers, such as igniting fires at solid waste handling facilities. For this reason, batteries should not be placed into commingled containers or disposed of via traditional garbage collection containers. However, without a dedicated battery stewardship program, battery user confusion regarding proper disposal and limited access to collection sites will likely persist in Washington.

It is also in the public interest for producers to be financially responsible for managing their products at the end-of-life. Coupling products directly with their end of life costs, commonly referred to as "Extended Producer Responsibility" or EPR, transfers the costs of recycling from tax-funded local governments to those responsible for producing and purchasing batteries and battery containing products. Among other benefits, EPR programs can provide stronger financial incentives to innovate across product materials and recycling technology. Increased recycling activity more broadly may also reduce the mining of raw materials including lithium, cobalt, and nickel (Gaines et al. 2023; Root, 2025) and associated environmental costs.

Jurisdictions around the world have successfully implemented EPR laws that help address these challenges posed by the end-of-life management of batteries. In 2023, SB 5144 was signed into law (chapter 70A.555 RCW), which creates an EPR program in Washington designed to increase opportunities for people to recycle most types of household batteries, and transfer battery recycling costs to producers in- and out-of-state.

1.1.2 Reasons for the proposed rule

While Chapter 70A.555 RCW lays out core tenants of the EPR program, and many stewardship plan details (see section 2.1.1), it requires Ecology to adopt rules that set a fee covering its costs to administer and oversee the program. Ecology is also proposing rule language that clarifies definitions, sets education and outreach standards, determines handling procedures, and expands battery marking requirements, among other things (see section 2.3). In conjunction with aspects of the authorizing statute, the proposed rule is intended to create a more effective and efficient stewardship program and better recycling outcomes.

1.2 Summary of the proposed rule

The proposed rule would:

- Add, expand, or clarify **definitions**
- Develop a **fee structure** that recovers Ecology costs related to overseeing the battery stewardship program
- Require quarterly **education and outreach**
- Add, expand, or clarify **stewardship plan** contents
- Add, expand, or clarify **plan submissions**
- Allow Ecology to amend and accept a plan after two disapprovals in **plan review**
- Add, expand, or clarify **annual report requirements**
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- Add, expand, or clarify **collection network requirements**
- Add, expand, or clarify **collection site procedures, safety, and training**

1.3 Document organization

The chapters of this document are organized as follows:

- **Chapter 2 - Baseline and the proposed rule:** Description and comparison of the baseline (what would occur in the absence of the proposed rule) and the proposed rule requirements.
- **Chapter 3 - Likely costs of the proposed rule:** Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the proposed rule.
- **Chapter 4 - Likely benefits of the proposed rule:** Analysis of the types and sizes of benefits we expect to result from the proposed rule.
- **Chapter 5 - Cost-benefit comparison and conclusions:** Discussion of the complete implications of the CBA.
- **Chapter 6 - Least-Burdensome Alternative Analysis:** Analysis of considered alternatives to the contents of the proposed rule.
- **Chapter 7 - Regulatory Fairness Act Compliance:** When applicable. Comparison of compliance costs for small and large businesses; mitigation; impact on jobs.
- **Appendix A - APA Determinations:** RCW 34.05.328 determinations not discussed in chapters 5 and 6.

Chapter 2: Baseline and Proposed Rule

In this chapter, we analyze the proposed rule relative to current behavior and existing requirements (federal and state laws and rules). This context for comparison is called the baseline and reflects the most likely economic and regulatory circumstances that entities would face if Ecology does not adopt the proposed rule. This is what allows us to make a consistent comparison between the state of the world with and without the proposed rule.

We first discuss the battery stewardship law (chapter 70A.555 RCW), followed by other existing rules and laws that govern the management of batteries at their end-of-life (Section 2.1). We then compare components of the rule (chapter 173-905 WAC) to chapter 70A.555 RCW and other legal requirements to highlight the rules relative impacts where practical (section 2.3). We refer to this analysis as comparing the rule to its "statutory baseline".

While we can isolate and summarize some impacts from discretionary portions Ecology's rule, it is impossible to separate all impacts of the rule from those created broadly by chapter 70A.555 RCW. This is because the law creates the program itself, and the program creates the majority of the costs and benefits, but these cannot be realized without the rule and Ecology's administration and oversight. This is particularly the case for aspects of the proposed rule like fees (RCW 70A.555.100), where program administration inherently could not function without fees to pay for it. [3]

Since we cannot fully separate all elements specified in statute from the program as implemented by the rule, this analysis also describes the impacts of the rule and the law together ("Program" from here on), against a reality with no extended producer responsibility alternative. [4] For this purpose, we include a no-Program baseline comprised of current recycling behavior, recycling cost, and battery-related risk in Washington state in section 2.4. We analyze the impacts of the Program relative to this no-Program baseline quantitatively and qualitatively in Chapters 3 and 4.

2.1 Existing Rules and Laws

2.1.1 Chapter 70A.555 RCW, Batteries—Environmental Stewardship

Coverage

Chapter 70A.555 RCW requires the recycling of most types of household batteries. This includes AA and AAA batteries used in everyday items such as flashlights, button batteries used in watches and other smaller devices ("portable batteries" hereafter as defined in RCW 70A.555.010(12)), and larger batteries used in electric bikes, scooters and power tools

[3] Note that taken to the extreme, it is unclear whether covered batteries could be sold into Washington state beginning January 1, 2027 without the rule. While this no-rule scenario is technically possible, it's not likely, as temporary emergency rules or other legal mechanisms and policy could be used to safeguard against such an outcome. For this reason, we do not consider further the avoided loss of all covered battery sales as an impact of the proposed rule.

[4] But with all other existing federal and state laws and rules in place.

("medium format batteries" hereafter as defined in RCW 70A.555.010(11)). Together, batteries under these classifications are considered "covered batteries" (RCW 70A.555.010(5)(a)).

Some batteries such as car batteries, batteries for medical devices, and batteries in products that are not intended or designed to be easily removable by the consumer (RCW 70A.555.010(5)(b)(v)) are excluded from the program. Big energy storage system batteries ranging from those used by homeowners to store solar and wind power, to grid stabilization applications at utility scale, are also excluded due to their weight under definitions of portable and medium format battery.

The Stewardship Plan

Beginning January 1, 2027, battery producers (see RCW 70A.555.010(14) for definition of producer) must establish a statewide network of battery collection sites that provide opportunities for people to drop off portable batteries for recycling at no cost. Beginning January 1, 2029, the program is expanded to include the collection of medium format batteries. In addition to funding battery collection, battery producers are responsible for the cost of transporting, processing, education, administration, agency [Ecology] reimbursement, and other end-of-life management functions (RCW 70A.555.060(3)(a)).

To meet these requirements, battery producers can choose either to:

1. Participate in an approved battery stewardship plan designed by a nonprofit "battery stewardship organization" (BSO),

   Or

2. Implement a battery stewardship plan themselves, in which case the producer would be the battery stewardship organization.

A BSO implementing a battery stewardship plan must submit plans to Ecology describing how the program will operate (RCW 70A.555.040) and pay fees to the department (RCW 70A.555.100). Under option 1, the BSO would in turn charge participating producers to cover the costs of the plan. Under option 2, the producer would bear the full cost of implementing and funding the plan, including fees to the department.

The Collection Network

Under the law, the total number and locations of collection sites in the state must meet density and convenience standards, among other collection network requirements. For example, there must be at least one permanent collection site for portable batteries within a 15 mile radius for at least 95 percent of Washington residents (RCW 70A.555.070(3)(b)(i); and at least one permanent collection site for portable batteries in addition to those required in (b)(i) of this subsection for every 30,000 residents of each urban area in this state (70A.555.070(3)(b)(iii)), among other details.

Importantly, BSOs must use existing public and private waste collection services and facilities, including battery collection sites that are established through other battery collection services, transporters, consolidators, processors, and retailers, where cost-effective, mutually agreeable, and otherwise practicable (RCW 70A.555.070(4)(a)). They must also use as a collection site for

covered batteries any retailer, wholesaler, municipality, solid waste management facility, or other entity that meets the criteria for collection sites in the approved plan, upon the submission of a request by the entity to the battery stewardship organization to serve as a collection site (RCW 70A.555.070 (b)(i)).

For reference throughout this document, Ecology performed a GIS analysis of existing battery collection sites meeting the definitions above compared to the number of sites that would be needed, at minimum, to meet the density and convenience standards in the law. Findings show that roughly 226 sites would be required in total to meet the standard, and that 119 sites are or will be located within the Seattle-Tacoma urban area.

Other Chapter 70A.555 RCW Requirements

For brevity, additional detail and references to chapter 70A.555 RCW are relegated to section 2.3 under "statutory baseline" subheadings as they apply to department fees, public outreach, plan review, annual reports, quarterly updates, marking requirements (including product certification), and site training and monitoring.

2.1.2 Other Rules and Laws Governing Battery Recycling

In the absence of the rule, other existing state and federal laws apply to the handling and disposal of batteries, including:

- Chapter 173-350 WAC Solid waste handling standards. In particular:
  - WAC 173-350-360 Moderate risk waste handling,
  - WAC 173-350-100 Definitions.
- Chapter 173-303 WAC Dangerous waste regulations,
- Chapter 70A.02 RCW Environmental Justice, which defines and directs areas that constitute overburdened communities pertaining to the rule's convenience standards,
- 49 C.F.R., Parts 171-180, which regulate lithium batteries as a hazardous material under the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations,
- 49 C.F.R., Parts 173.185 and 189 regulating lithium cell and sodium containing batteries, respectively.

2.2 Proposed Rule Components

A large portion of the new rule is drawn directly from statute or other state and federal regulations summarized in a way that retains the bulk of its original intent.

For the purposes of this analysis, we narrow our analytical scope to parts of the rule where Ecology has discretion to impose, alter, or materially expand on specific requirements in the authorizing statute. These parts of the proposed rule are categorized below by concept in bold, and correspond to a similarly themed section in chapter 173-905 WAC:

- Add, expand, or clarify **definitions**

- Develop a **fee structure** that recovers Ecology costs related to overseeing the battery stewardship program
- Require quarterly **education and outreach**
- Add, expand, or clarify **stewardship plan** contents
- Add, expand, or clarify **plan submissions**
- Allow Ecology to amend and accept a plan after two disapprovals in **plan review**
- Add, expand, or clarify **annual report requirements**
- Give 30 days for additional information requested by the department during annual **report review**
- Add, expand, or clarify **quarterly updates**
- Add, expand, or clarify **marking requirements**
- Add, expand, or clarify **collection network requirements**
- Add, expand, or clarify **collection site procedures, safety, and training**

2.3 Regulatory Impacts by Rule Component

2.3.1 Adds, expands, or clarifies definitions

Statutory Baseline

RCW 70A.555.010 – Definitions

Proposed

The proposed rule would add, expand, or clarify the following definitions in WAC 173-905-030:

- "Battery related incident",
- "Best available technologies",
- "Chemistry",
- "Collections event",
- "Demonstrable costs",
- "Environmentally sound management practices",
- "Geographically isolated community",
- "Plan amendment",
- "Regulated generator",
- "Retailer".

Expected Impact

We expect no direct impact outside of where the defined terms are used in the rule, as discussed in subsequent sections below. Particularly with a new rule, definitions do not, in and of themselves, have regulatory impact beyond their use in the rule's requirements. The sections below reflect both the requirements and their relevant definitions.

2.3.2 Develop a fee structure that recovers Ecology costs related to overseeing the battery stewardship program

Statutory Baseline

RCW 70A.555.100 establishes that: "(1) The department [Ecology] must adopt rules as necessary for the purpose of implementing, administering, and enforcing this chapter. The department must by rule establish fees, to be paid annually by a battery stewardship organization, that are adequate to cover the department's full costs of implementing, administering, and enforcing this chapter and allocates costs between battery stewardship organizations, if applicable."

RCW 70A.555.100 establishes Ecology's responsibilities associated with program administration which include but are not limited to reviewing and approving plans and plan amendments (2)(a), reviewing annual reports(2)(b), maintaining a website (2)(c)(i), and providing technical assistance (2)(d).

Beyond the authorizing language in RCW 70A.555.100 there is no established fee amount or fee structure to be levied on battery stewardship organizations, related to Ecology's administration of the program, in state law.

Proposed

WAC 173-905-100 would recover Ecology costs related to overseeing the battery stewardship program by establishing two distinct fee categories—a plan review fee (WAC 173-905-100(2)), and an administration fee (WAC 173-905-100(3)).

The plan review fee would be a one-time fee that each battery stewardship organization shall pay when it submits a plan to the department for review and approval. The base amount of the fee would be determined annually (WAC 173-905-100(3)(a)), based on estimated staff hours, salaries, benefits, and other direct costs associated with plan review (WAC 173-905-100(2)(b)). If the actual cost of review exceeds the base plan review fee, the department would charge an additional per-hour fee to cover the additional cost (WAC 173-905-100(2)(a)).

Separate from the plan review fee, the administrative fee would begin in 2026, and is due each year on June 1st (WAC 173-905-100(3)). The amount of the fee will be based on annual costs from the previous calendar year (WAC 173-905-100(3)(a)) and may be adjusted by the fiscal growth factor (FGF) under RCW 43.135.025 to account for inflation (WAC 173-905-100(3)(b)). If there is only one approved plan, that battery stewardship organization is responsible for the entire fee (WAC 173-905-100(3)(c)). In the case of multiple stewardship organizations, the fee will be allocated in proportion to the market share a stewardship organization represents (WAC 173-905-100(3)(d)).

Expected Impact

Compared to the authorizing statute, the rule would specify how fees are determined, structured and distributed across a population of payers. This would likely impose a cost to battery producers either directly, or through stewardship plan membership. Although uncertain

in the current context, a change in production cost from regulatory compliance may affect Washington retailers and consumers, including businesses, in the form of higher battery prices (see Section 3.4.1 for additional discussion).

2.3.3 Require quarterly education and outreach

Statutory Baseline

RCW 70A.555.080 establishes that each battery stewardship organization must carry out promotional activities directed toward the public in support of plan implementation (RCW 70A.555.080(1)). These may include, but are not limited to, the creation and maintenance of a website, promotional materials, press releases, articles, and social media posts, including outreach to overburdened communities (RCW 70A.555.080(1)(a) through (d)).

Under RCW 70A.555.080(2), each battery stewardship organization must also provide consumer focused promotional materials (RCW 70A.555.080(2)(a)) and safety information (RCW 70A.555.080(2)(b)) to each collection site used by the program, among other educational materials RCW 70A.555.080(3) through (6)).

Proposed

WAC 173-905-110(1) would require public education and outreach at least once a quarter. The types of outreach materials specified largely mirror those in statute. They include but are not limited to:

- Maintaining a website (WAC 173-905-110(1)(a)),
- Consumer facing materials about battery disposal through press releases (WAC 173-905-110(1)(b)), and news articles (WAC 173-905-110(1)(c)),
- Social media posts (WAC 173-905-110(1)(d)),
- Collection site materials (WAC 173-905-110(1)(e)).

Similar to statute, but required quarterly, the rule also requires that educational martials be distributed to collection site operators about handling recalled, damaged and defective batteries (WAC 173-905-110(1)(f) through (h)), and to retailers that describe customer collection opportunities if requested (WAC 173-905-110(1)(i).

Expected Impact

It is not apparent how often educational and promotional activities would take place to meet other performance goals in statute without this aspect of the rule. The rule establishes a clear minimum quarterly requirement.

Despite educational and outreach requirements being nearly identical to statute, the impacts of requiring them quarterly in the proposed rule range from no impact, to imposing a cost to battery producers either directly, or through their stewardship plan membership. Although uncertain in the current context, a change in production cost from regulatory compliance may affect Washington retailers and consumers, including businesses, in the form of higher battery prices (see Section 3.4.1 for additional discussion).

There would likely be positive benefit to program effectiveness with respect to both collection volumes and safety, provided education and outreach would have been less frequent (e.g. annually or semiannually) in the absence of the rule.

2.3.4 Add, expand, or clarify stewardship plan contents

Statutory Baseline

RCW 70A.555.040 governs stewardship plan components.

RCW 70A.555.090 governs reporting requirements

Proposed

WAC 173-905-120(1) would describe the contents of a stewardship plan. Areas of discretion in this section, beyond requirements in the statute, include a requirement that plans must name factors for choosing which facilities will be selected to recycle collected batteries (WAC 173-905-120(1)(d)). The plan must also establish collection goals by primary and rechargeable categories (WAC 173-905-120(4)(a) and (b)), and efficiency goals by chemistry type (WAC 173-905-120(4)(c)).[5]

Expected Impact

Compared to RCW 70A.555.040, the proposed rule would ensure that program planning and operations would be reported to the department and the public, along with detailed recycling goals by battery type and chemistry.

Documenting collection site choices would require minimal effort since these data should already exist as part of plan development under the statute. The act of establishing various performance goals in the plan itself also carry minimal costs.

The cost of data collection and reporting related to performance goals could be positive but minimized by the fact that reporting on "primary" and "rechargeable" categories is most likely already part of sorting facility operations. Likewise, data on battery collection by chemistry type would already be required of stewardship organizations to meet reporting requirements under RCW 70A.555.090(1)(c).

Additional information and detail in this section would provide clarity to stewardship organizations, and help the department ensure compliance, monitor progress, and direct reform as needed. In conjunction with other aspects of the proposed rule, this would lead to a more effective and efficient stewardship program and better recycling outcomes.

[5] Chemistry means the primary anode and cathode materials used in a battery to produce an electrochemical reaction, common examples include but are not limited to Alkaline (such as commonly used for AA and AAA batteries), lithium, and nickel-cadmium. The definition of chemistry is intentionally broad to conform to future technologies and materials.

2.3.5 Add, expand, or clarify plan submissions

Statutory Baseline

RCW 70A.555.040 governs stewardship plan components, including plan submission and plan amendments.

Proposed

WAC 173-905-130 describes plan submission, including plan amendments. The rule expands on statute to include a requirement that a new plan must be submitted by January 1, 2028 if the approved plan does not already include medium format batteries (WAC 173-905-130(2)). Plan amendments would be required when there are significant changes not addressed in the approved plan including when another battery stewardship organization is approved, the budget is updated, or as requested by the department (WAC 173-905-130(3)(c) through (f)).

Expected Impact

Compared to baseline requirements, the proposed rule would ensure that more detailed information is provided to the department and the public regarding program planning and operations.

The cost of providing or breaking out information that is already required by statute in more aggregate forms is positive, but likely negligible. The additional information and detail in this section would provide clarity to stewardship organizations, and help the department ensure compliance, monitor progress, and direct reform as needed.

In conjunction with other aspects of the proposed rule, this would lead to a more effective and efficient stewardship program and recycling outcome.

2.3.6 Allow Ecology to amend and accept a plan after two plan review disapprovals

Statutory Baseline

RCW 70A.555.040 governs stewardship plan components, including plan submission and plan amendments.

Proposed

WAC 173-905-410 covers requirements and procedures for Ecology when reviewing a submitted plan. WAC 173-905-410(4) establishes that after two plan disapprovals, if the department determines that a submitted plan or plan amendment still does not meet the requirements of chapter 70A.555 RCW and this chapter (173-905 WAC), the department may amend the most recent plan submittal. A plan amended by the department in this manner becomes the approved plan that the BSO must implement.

Expected Impact

The cost for Ecology to make amendments on behalf of the stewardship organization would likely be recovered through the plan review fee. However, the rule would also likely lead to the

stewardship organization needing to provide fewer iterations of a plan and thus reducing labor costs. Since this section of the rule ultimately prevents indefinite plan iterations, we assume its effects on this aspect are positive (a benefit) but negligible.

More broadly, and in conjunction with other aspects of the proposed rule, this helps ensure an effective and efficient stewardship program and better recycling outcomes.

2.3.7 Add, expand, or clarify annual report requirements.

Statutory Baseline

RCW 70A.555.090 governs reporting requirements by battery stewardship organizations.

Proposed

WAC 173-905-150 covers annual report requirements. This section of the rule requires annual reports to include an independent financial audit when required by the department (WAC 173-905-150(2)), a summary of the program budget including revenue and a detailed analysis of program costs, expenses, and expenditures of the program (WAC 173-905-150(3)), information on safety training (WAC 173-905-150(8)), battery related incident data (WAC 173-905-150(9)), and marking requirement certification (WAC 173-905-150(10)).

Expected Impact

There would be some cost to formatting and printing budget information in a report required by the rule, but it is likely negligible. This is because budgeting information required by the rule likely exists for internal reporting within the stewardship organization's business structure. In a similar way, records regarding safety training and marking requirement certifications should already be tracked internally, and therefore adding these to a report is likely negligible.

WAC 173-905-150(2) simply clarifies "independent financial assessment" from RCW 70A.555.090(1)(a) to mean "independent financial audit". For this reason we do not expect additional impacts of this rule section relative to statute.

Reporting battery related incident data would likely impose a cost to battery producers either directly, or through stewardship plan membership because in the form of time to collect, verify, and organize primary data. Although uncertain in the current context, a change in production cost from regulatory compliance may affect Washington retailers and consumers, including businesses, in the form of higher battery prices (see Section 3.4.1 for additional discussion).

The proposed rule would however ensure transparency to the department and the public regarding program planning, operations, and finance necessary for monitoring, compliance, and reform. Stewardship organizations would also benefit from regulatory clarity in this section. More broadly, and in conjunction with other aspects of the proposed rule, this helps ensure an effective and efficient stewardship program and better recycling outcomes.

2.3.8 Give 30 days for additional information requested by the department during annual report review

Statutory Baseline

RCW 70A.555.100(2)(b) states that annual reports will be reviewed within 90 days of submission.

Proposed

WAC 173-905-420(2) states if an annual report is incomplete, the department will notify the battery stewardship organization in writing of the additional information needed to comply with the requirements of WAC 173-905-150. The battery stewardship organization shall submit the additional information requested by the department within 30 days of its receipt of the notice.

Expected Impact

The statute is vague regarding incomplete annual reports and a timeline for information requests. Given the 90 day timeline for plan review, specifying 30 days to provide information needed to comply with reporting requirements provides a benefit by avoiding potential confusion and program delays. More broadly, and in conjunction with other aspects of the proposed rule, this helps ensure an effective and efficient stewardship program and better recycling outcomes.

2.3.9 Add, expand, or clarify quarterly updates

Statutory Baseline

RCW 70A.555.040(3) states if required by the department, a battery stewardship organization must provide plan amendments to the department for approval: (c) When adding or removing a processor or transporter, as part of a quarterly update submitted to the department.

RCW 70A.555.040(4) As part of a quarterly update, a battery stewardship organization must notify the department after a producer begins or ceases to participate in a battery stewardship organization. The quarterly update submitted to the department must also include a current list of the producers and brands participating in the plan.

Proposed

Beyond quarterly requirements outlined in RCW 70A.555.040, WAC 173-905-160 adds a notice of any civil action the battery stewardship organization has taken (WAC 173-905-160(2)), the addition or removal of collection sites (WAC 173-905-160(3)), a summary of outreach and education (WAC 173-905-160(6)), a list of collection events (WAC 173-905-160(7)), and information on battery related incidents (WAC 173-905-160(8)).

Expected Impact

There could be some cost to formatting and printing this information in a report, but it is likely negligible. We presume that operational information related to civil actions, changes in collection sites, and educational efforts would already be tracked for internal reporting within the stewardship organization's existing business structure.

While the cost of collecting primary incident data is likely positive (discussed above in section 2.3.7), the requirement to report on incidents quarterly also draws from existing information mandated by the rule for annual reporting. Reporting these at a quarterly frequency, once collected, is negligible.

The proposed rule would ensure more timely reporting to the department and the public regarding program planning, operations, and safety necessary for monitoring, compliance, and reform. For example, a trend in battery related incidents could be identified more quickly through quarterly reports than an annual alternative. More broadly, and in conjunction with other aspects of the proposed rule, this helps ensure an effective and efficient stewardship program and better recycling outcomes.

2.3.10 Add, expand, or clarify marking requirements

Statutory Baseline

RCW 70A.555.130 – Marking requirements for batteries. This section of the statute provides marking requirements for covered batteries, large format batteries, and batteries in battery containing products sold in or into WA that are one half-inch or greater in diameter or does not contain a surface whose length exceeds one-half inch. For these, markings must identify the producer (RCW 70A.555.130(a)), chemistry, and an indication that it should not be disposed of as household waste (RCW 70A.555.130(b)).

In addition, a producer shall certify to its customers, or to the retailer if the retailer is not the customer, that the requirements of this section have been met, as provided (RCW 70A.555.130(2)).

Proposed

WAC 173-905-310 requires that packaging is marked when the battery or battery in a battery-containing product does not have a surface longer than one-half inch (WAC 173-905-310(4)). The rule also clarifies that the marking indicating that a battery should not be disposed of as household waste will be a wheelie bin with an "x" over it (WAC 173-905-310(2)(b)).

WAC 173-905-310(5)(a) requires producers to certify compliance with marking requirements to the stewardship organization, or if not participating in a stewardship organization, directly to the department. A producer that meets the requirement in WAC 173-905-310(5)(a) is in compliance with the certification requirement under RCW 70A.555.130(2).

Expected Impact

The additional packaging requirement likely represents some cost to producers who would need to add design elements to applicable packaging.

Imposing a particular design in the rule is not likely to impose an additional cost beyond what would have been the chosen under the statutory baseline (e.g. some design time, volume of ink etc. would be required). The design chosen in the rule (WAC 173-905-310(2)(b)) is commonly required by European countries, already appear on many batteries and battery containing products also selling into those markets and is most likely the symbol that would have been chosen under the baseline to indicate that the battery should not be disposed of as household waste.

In comparison to the statute requiring producers to provide certification to every customer or retailer where their batteries are sold, the rule allows producers to instead provide certification to the stewardship organization they participate in, or if they are not participating in a stewardship organization, directly to the department. This likely represents a benefit to producers, as it requires less effort and fewer materials, including gathering new data on all sales locations. The rule also likely benefits retailers who, because of centralization under the rule, will be able to easily search Ecology's website to find which producers are certified as compliant.

2.3.11 Add, expand, or clarify collection network requirements

Statutory Baseline

RCW 70A.555.070(3)(b) For portable batteries, each battery stewardship organization must provide statewide collection opportunities that include, but are not limited to, the provision of: (v) Service to areas without a permanent collection site, including service to island and geographically isolated communities without a permanent collection site.

RCW 70A.555.070(3)(c) For medium format batteries, a battery stewardship organization must provide statewide collection opportunities that include, but are not limited to, the provision of: (v) Service to areas without a permanent collection site, including service to island and geographically isolated communities.

The definition of a "collection event" under WAC 173-350-100 means a one-time or recurrent designation of a site and areas within that site used by an operator to collect moderate risk waste (MRW) from the public and to store the MRW for less than forty-eight hours.[6]

Proposed

Clarify "service" to areas without permanent collection sites, to mean "collection events" under WAC 173-905-500 for portable batteries WAC 173-905-500(1)(d) and medium format batteries WAC 173-905-500(2)(e). WAC 173-905-500(5)(C) adds that batteries collected during collection events may be stored on-site for no more than forty-eight hours after the event has concluded.

Expected Impact

[7] Note that moderate risk waste includes "limited moderate risk waste". Under WAC 173-350-100 Limited moderate risk waste means waste batteries, waste oil, and waste antifreeze generated from households.

Specifying “service” to mean a “collection event” in the context of an area without a permanent site reduces ambiguity for the stewardship organization and the department when considering applicable services. However, to the degree that other services would have been less costly than collection events, restricting the stewardship organization’s choices could lead to higher costs.

Note the definition of a “collection event" under WAC 173-350-100 means a one-time or recurrent designation of a site and areas within that site used by an operator to collect moderate risk waste (MRW) from the public and to store the MRW for less than forty-eight hours.[7] While a collection event could be selected as a service under the statute, the rule implicitly restricts other forms, such as a mail-back envelope.

There is no impact from adding the forty-eight hour storage requirement for collection events to the rule, as the definition of a “collection event" under WAC 173-350-100 already includes a similar forty-eight hour storage requirement.

2.3.12 Add, expand, or clarify collection site procedures, safety, and training

Statutory Baseline

RCW 70A.555.040(1)(g) [a stewardship plan] Includes collection site safety training procedures related to covered battery collection activities at collection sites, including appropriate protocols to reduce risks of spills or fires and response protocols in the event of a spill or fire, and a protocol for the safe management of damaged batteries that are returned to collection sites.

RCW 70A.555.070(2)(c)(i) establishes that damaged and defective batteries are intended to be collected at collection sites staffed by persons trained to handle and ship those batteries.

Proposed

The proposed rule section WAC 173-905-520 expands on-site safety procedures. These include monitoring battery collection containers each operating day for evidence of materials that are not a covered battery and damaged batteries WAC 173-905-520(1)(e), and if found, a series of detailed handling steps to avoid fire or leakage (WAC 173-905-520(1)(g); WAC 173-905-520(1)(i) through (vi)).

The rule also mandates stewardship organizations provide safety training to collection sites annually (WAC 173-905-520(2)(b)).

Expected Impact

The rule requires daily activity by collection site staff for monitoring, along with storage, marking, and shipping requirements that would not necessarily occur at the same frequency or

[7] Note that moderate risk waste includes “limited moderate risk waste”. Under WAC 173-350-100 Limited moderate risk waste means waste batteries, waste oil, and waste antifreeze generated from households.

detail without the rule. Similarly, there is no guarantee that education to collection sites would be provided annually without the rule.

These sections would likely impose a cost to battery producers either directly, or through stewardship plan membership. Although uncertain in the current context, a change in production cost from regulatory compliance may affect Washington retailers and consumers, including businesses, in the form of higher battery prices (see Section 3.4.1 for additional discussion).

Compared to baseline requirements, the proposed rule would work to ensure that non-covered, damaged, and recalled batteries are quickly identified, properly handled, marked, and shipped from collection sites. Benefits from these actions would likely include fewer fires and leaks at collection sites, which could extend to reducing risk during transport, and at solid waste and recycling facilities. Added protection against incidents would help ensure that collection sites, many of which would be voluntary, remain in service to meet BSO collection site requirements.

More broadly, and in conjunction with other aspects of the proposed rule, this helps ensure an effective and efficient stewardship program and better recycling outcomes.

2.4 No-Program Baseline

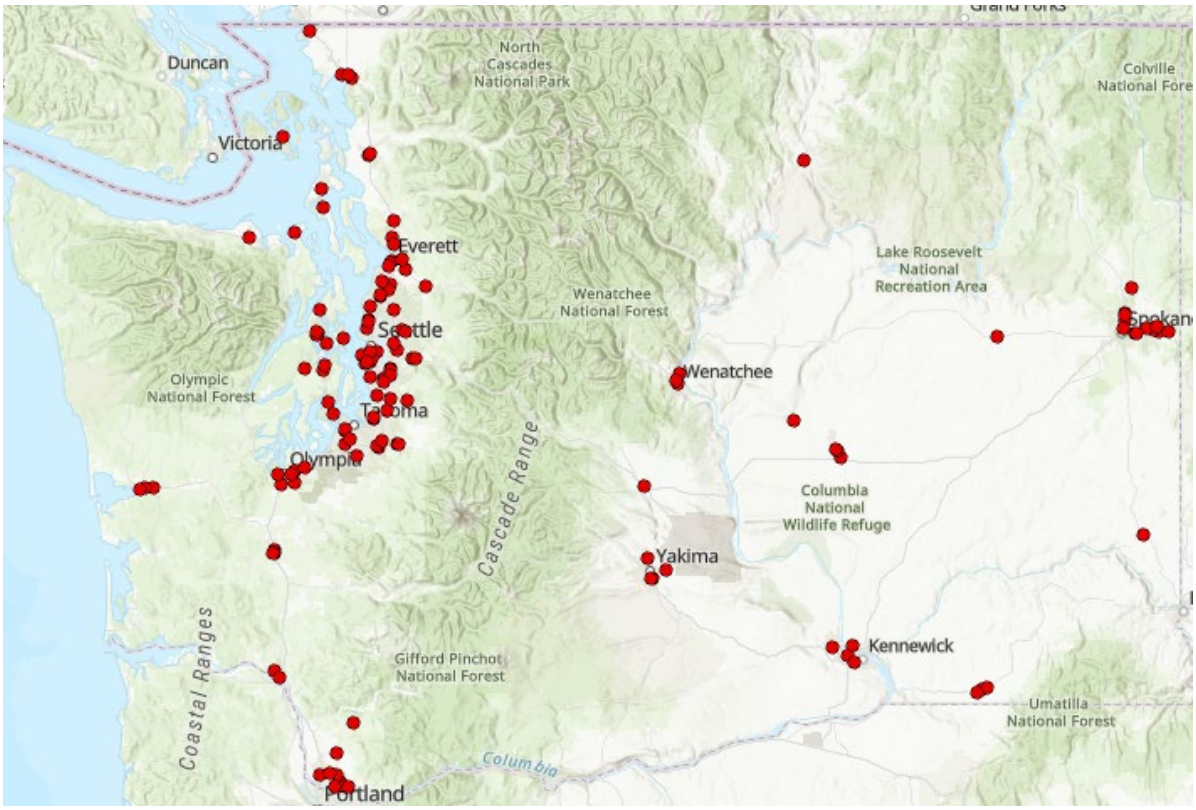
2.4.1 Existing collection locations and recycled volume

In the absence of the Program there exists some degree of recycling effort focused on batteries (much of which would be covered an expanded on by the Program). These occur at the local government, private, and not-for-profit levels.

For example, there are 147 drop off locations accessible to the public in the Washington (see Figure 1). These range from private business locations, like The Home Depot, Lowes, and Staples, to government-run waste facilities and transfer stations at the local city and county level. While existing collection sites tend to cluster around population centers, they do not necessarily exist at high enough densities, or in smaller and difficult to reach communities. Some existing collection locations also limit various battery chemistry types and sizes. For example, many retail locations currently do not accept batteries larger than 11lbs, or chemistry types such as alkaline.[8]

[8] Note that under the Program, existing collection sites would still not collect batteries weighing more than 11 pounds unless they have staff trained to handle and ship those batteries (see RCW 70A.555.070(2)(b)).

Figure 1. Existing Collection Site Locations in Washington



To estimate existing household battery collection and recycling volumes, Ecology relies on three primary sources—annual recycling reports, annual recycling surveys, and MRW annual reports. Regulated facilities are required to submit an annual recycling report as a condition of a permit, permit exemption, or permit deferral. There are currently about 1,000 such facilities in Washington, accounting for about 75% of known facilities accepting waste materials. [9] The remaining 25% may submit voluntary annual recycling surveys. Some out-of-state facilities that accept waste from Washington may also submit annual reports or recycling surveys, despite not being required to do so.

MRW reports are received separately from annual recycling reports and surveys. MRW reports focus on waste collection facilities and mobile collection or collection events for household hazardous waste and business small quantity generator waste. After collection and reporting at an MRW facility the material is then sent to a processing facility in- or out-of-state.

Annual recycling reports and surveys covering household batteries come primarily from large processors, generators, or handlers, including those that receive MRW material. This means

[9] Facilities submitting reports and surveys to Ecology are also asked to include incoming waste material quantity (reported in tons), source county for the material, approximate sector percentages (i.e. residential vs commercial), outgoing waste material quantity, material disposition to the best of their knowledge (e.g. recycling, composting, burning for energy, reuse, disposal), and destination of those materials. Ecology uses outgoing and destination information to avoid double-counting the same material handled by more than one reporting facility.

that the annual recycling reports and surveys likely capture most MRW collection volumes, except for those sent out-of-state to facilities that don't voluntarily report. All three data sets can suffer from missing reports or incorrectly self-reported data from key facilities.[10] All records of collection were also affected by the COVID-19 pandemic. For example, no survey data are currently available for 2019 and 2020, while MRW reports are not available for 2020 and 2021.

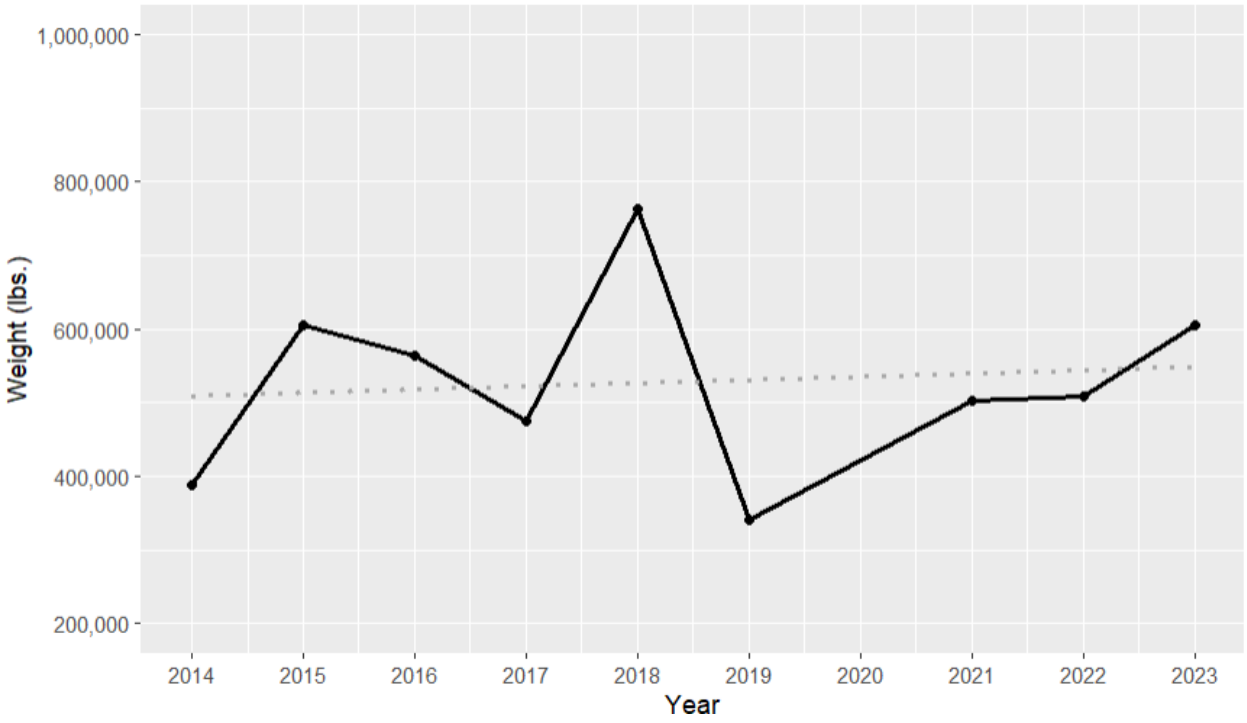
To construct the most complete record of existing battery collection efforts, we draw on all three data sources. For example, when available we use annual recycling reports and surveys, filtered by residential volumes, due to their broad coverage of recycling materials—including materials from MRW facilities. Facilities report the sector of origin for the materials collected as either residential or commercial; however, this is often an estimate. [11] In years where these reports are missing and MRW data is available (e.g. 2019), or figures are lower than reported by MRW data (e.g. due to missing reports from large collectors), we substitute MRW data. We also report MRW data for 2023, as annual recycling reports and surveys have not been processed at the time of this writing.

Considering the caveats and limitations above, Figure 2 describes historical collection rates from the data. Here, we estimate that between 400,000 and 800,000 lbs. of batteries were collected each year in Washington, with a mean of 528,147 pounds from 2013 to 2023, and at least 604,401 pounds collected in 2023. These batteries, diverted from landfill and other improper disposal, include household dry cell, nickel-cadmium, nickel–metal hydride, and lithium chemistry types. As illustrated by the dotted grey line in Figure 2, 2023 is the endpoint of an upward linear trend in collections since 2014.

[10] 88.9 percent of regulated solid waste facilities completed their annual 2022 reports.

[11] Facilities attempt to separate material as residential or commercial sources to the best of their ability. Nonetheless, these self-reported breakouts may may be prone to error.

Figure 2. Battery Collection Data From Survey and MRW Report



2.4.3 Existing cost of recycling efforts

Several local and county governments obtain contracted services through the Hazardous Waste Handling and Disposal Service Contract. Rates in the contract, which is held by Clean Harbors at the time of this writing (DES #03614), are negotiated at the state level for all users, on a dollar-per-pound basis (see Table 3). This fee covers waste handling and disposal services including, recycling, energy recovery, incineration, landfill waste management, on site packing services, sampling and analysis, and full documentation.

Local governments that choose not to use the state contract, and private businesses offering public collections, would need to negotiate their own rates as-needed. We currently do not have access to comprehensive information on alternative rates in Washington or major differences in the types of services they provide. For the purposes of this analysis, we assume these would be reasonably similar in cost, on average, to those quoted by Clean Harbors for services in the state contract.

State collections data do not break out collection volumes by chemistry type at the same level of detail as costs in the state contract. As these are important in estimating total state costs below, we rely on national data provided by Call2Recycle's (2022) annual collection summary.

Table 3 State Contract Pricing (Clean Harbors), and National Collections by Chemistry (Call2Recycle)

Battery Chemistry	$/lb.[1]	Collected Nationally (lbs.)[3]	Percent of Total Collected
Alkaline	$1.43	2.2 Million	28%
Carbon-Aire	$1.43	n/a	n/a
lead/acid (Non-Auto)	$0.80	1.3 Million	16%
Mercury	$5.14	n/a	n/a
Lithium	$7.36[2]	3.1 Million	40%
Ni/Cad	$1.99	1.0 Million	13%
Nickel Metal Hydride	$1.42	0.2 Million	3%
Silver Oxide	$5.14	n/a	n/a
Other[4]	n/a	<.01 Million	<1%
Average	**$3.09**	**n/a**	**n/a**

Notes: 1 Taken from Hazardous Waste Handling and Disposal Service Contract. 2 Lithium is originally quoted as $147 for a 5 gallon drum, converted here using a Clean Harbors' assumption of 4 lbs. per gallon. 3 National collection volumes were provided by a Call2Recycles 2022 collection summary, rounded. 4 Presumed to contain, among other chemistry types, Carbon-Aire, Mercury, and Silver Oxide batteries.

Multiplying the average annual battery collection volume from 2014-2023 in Section 2.4.2 (528,147), with the average per pound collection cost in Table 3, shows state recycling costs of roughly $1.7 million per year. Assuming battery collection in Washington varies by chemistry type similar to broader US trends in Table 3, current recycling costs per pound increase from $3.09 to $3.76 on average, and total roughly $2.0 million per year.[12,13]

2.4.4 Existing risk and damages

Under current conditions, including existing collection and recycling efforts, training, and education aimed at safely diverting batteries from the waste stream, hazards like fire and contamination are common.

According to Environmental Research & Education Foundation's (EREF) report on Fires in the Materials Management Sector, transfer stations and material recovery facilities (MRFs) have an estimated 3 – 8 fires per year (EREF, 2025). This estimate was based on an analysis done of facility fires that occurred between 2014 and 2020, but it also suggests many facilities in more recent years have fires as frequent as once a week on average. This report stated that while 36% of the fires at these facilities did not have any identifiable cause, portable batteries made

[12] By applying the weighted average of recycling cost by chemistry proportions reported at the US level by battery stewardship organization Call2Recycles 2022 collection summary. Discussions with experts at Ecology suggest lithium is also a dominate category in current and future battery collections.

[13] Missing facility reports from year to year noted in section 2.4.2 means that total recycling costs are likely higher than estimated here, but to an unknown degree.

up the largest number of fires with an identifiable cause. About 13% of these fires were directly attributable to small batteries such as those from consumer electronics.

The EREF report also estimated the average cost per fire from data on 316 facility fires. While over 80% of these fires resulted in between $0 and $1,000 in direct and indirect losses, some incidents cost over $200,000 worth of damage. The report calculated that there is about a $4,829 value of direct and indirect losses from an average facility fire. Communities that surround these facilities may also feel the impacts of larger fires. One plastics recycling plant in Indiana where a fire broke out caused an estimated 2,000 residents living within half a mile of the facility to evacuate. These fires can throw harmful fine particulate matter and toxic chemicals into the air resulting in potentially harmful health effects for the community (Nugent, 2023).

Using the conservative estimate from the report (3 fires per year per facility) as the low-end frequency and 50 fires per year per facility as an upper end given the recent trend, and assuming $4,829 as an average loss; we estimate that small battery fires alone could currently cost Washington MRFs and transfer stations between $600,000 and $8,000,000 annually.

The estimates above do not include the fires that also regularly occur at landfills, in waste transportation, and other waste management facilities which also report regular fires in Washington. For example, an EPA analysis on lithium-ion batteries in waste management cited incidents in Washington that included a lithium-ion battery tossed into recycling that ignited after being crushed by a truck compactor. The truck was forced to dump its load into the street, creating an obstruction that took four hours to clean up (EPA, 2021). One Pacific Northwest landfill that was also interviewed for the analysis reported 124 fires directly attributable to lithium-ion batteries between 2017 and 2020.

Another report highlighted the more catastrophic fires that have the potential to occur from improperly disposed of lithium-ion batteries. Ten publicly reported fires that occurred between 2021 and 2023 across US MRFs had estimated losses between $10,000,000 and $60,000,000. While not all these fires can be directly attributed to batteries, it is widely agreed that lithium-ion batteries are believed to be the main cause of increasing fires at MRFs (Timpane, 2023).

Chapter 3: Likely Costs of the Proposed Rule

3.1 Introduction

We analyzed the likely costs associated with the proposed rule, as compared to the statutory baseline, and the Program compared to the no-Program baseline. The proposed rule, Program, and the baseline(s) are discussed in detail in Chapter 2 of this document.

3.2 Cost by Rule Component (From Statutory Baseline)

Reprinted from Chapter 2, the proposed rule would:

- Add, expand, or clarify **definitions**
- Develop a **fee structure** that recovers Ecology costs related to overseeing the battery stewardship program
- Require quarterly **education and outreach**
- Add, expand, or clarify **stewardship plan** contents
- Add, expand, or clarify **plan submissions**
- Allow Ecology to amend and accept a plan after two disapprovals in **plan review**
- Add, expand, or clarify **annual report requirements**
- Give 30 days for additional information requested by the department during a **report review**
- Add, expand, or clarify **quarterly updates**
- Add, expand, or clarify **marking requirements**
- Add, expand, or clarify **collection network requirements**
- Add, expand, or clarify c**ollection site procedures, safety, and training**

3.2.1 Add, expand, or clarify definitions

There is no direct impact of definitions beyond their used in the rule and associated cost.

3.2.2 Develop a fee structure that recovers Ecology costs related to overseeing the battery stewardship program

The rule will establish a plan review fee and annual administrative fee to cover the department's costs related to overseeing the Program (see section 2.3.2). Since the Program has not yet begun, nor do we know relevant department cost leading up to adoption, we lean on costs estimated in Ecology's fiscal note (State Agency Fiscal Note FNS063) to calculate fees.[14]

[14] Excludes cost associated with large format batteries research and EV regulation. We also exclude rulemaking costs, as they would not materially impact fees.

Ecology estimates in its fiscal note that plan review will cost $66,948 in FY2027, and includes staff time, benefits, and overhead needed for plan review and approval. This cost is based on Ecology's expectation that a total of two plans would be submitted—one from each of the two stewardship organizations. Not shown in Table 4, we also expect a complete plan revision submittal once every five years after the initial approval of a plan to ensure compliance, and that future revisions would require the same level of effort as the initial plan review.

The annual report review requires staff time, materials, and overhead necessary to review collections networks, performance goals, and educational requirements among other details in annual reports. Based on experience with other extended producer responsibility programs, Ecology estimates in its fiscal note that the annual report review will cost the agency $52,533 in FY2029. Annual technical assistance costs include fielding questions, providing information on vulnerable populations, maintaining a website, and developing guidance for businesses regulated under the state's dangerous waste regulations. Based on experience with other extended producer responsibility programs, Ecology expects these costs to vary by year ranging from $65,859 in FY2024 to $260,290 in FY2027 then settling on a steady value of $180,576 per year after FY2029.

Table 4. Estimated Department Costs by Fiscal Year

Fiscal Year	2024	2025	2026	2027	2028	2029
Plan Review Cost	-	-	-	$66,948	-	-
Annual Report Review Cost	-	-	-	-	-	$52,533
Technical Assistance Cost	$65,859	$123,128	$151,205	$260,290	$183,858	$180,576
Total	**$65,859**	**$123,128**	**$151,205**	**$327,274**	**$183,858**	**$ 233,109**

The one-time plan review fee is assumed to be equivalent to plan review costs in the fiscal note, split between two BSOs. The administrative fee is comprised of annual report review and technical assistance costs. The administrative fees is also split by BSOs, if multiple, allocated in proportion to the market share a stewardship organization represents.

Costs reported in Ecology's fiscal note are reported by fiscal year (July 1st to June 30th, named for the calendar year in which it ends). To translate program cost by fiscal year into total fees charged by calendar year (CY) (see Table 5), we make the following adjustments.

Plan review costs from FY2027 are assigned to CY2026. This reflects the fact that this fee will be due by the plan submission deadline on July 1, 2026.[15]

The annual administrative fee is due each year on June 1 and by rule will be calculated based on department costs from the *previous* calendar year. That is, fees charged in CY2027 will be based

[15] We note that under the rule, stewardship organizations could submit a plan for medium sized format batteries separately by January 1, 2028. However if not addressed in original plan submittals, it is more likely that plans will be amended to address the inclusion of medium format batteries.

on department costs in CY2026, which is effectively made up of activities in the second half of FY2026 (Jan 1st to June 30th CY2026) and the first half of FY2027 (July 1st to December 31st CY2026).

Following this convention, we estimate annual administrative fees by averaging contemporaneous and previous fiscal year costs relative to the fee calculation year. For example, fees associated with the technical assistance in calendar year 2028 ($222,074 in Table 5) are comprised of activity costs from the "second" half of FY2027 ($260,290 × 0.5 = $130,145) and the "first" half of FY2028 ($183,858 × 0.5 = $91,929) in the fiscal note (Table 4) and so on.[16] We assume that fees associated with report review and technical assistance are fixed from 2030 onward since there is no variability in department costs reported in the fiscal note after FY2029.

Table 5 reflects the fact that fees would not be invoiced until CY2026, after the rule is adopted. Also note that rulemaking activities will be paid out of the Model Toxics Control Act (MTCA) operating account through FY2026 and were not considered when estimating the administrative fee.[17]

Table 5. Estimated Fees by Calander Year

Calander Year	2026	2027	2028	2029	2030
Plan Review Cost (plan review fee)	$66,984	-	-	-	-
Annual Report Review Cost (administrative fee)	-	-	-	$52,533	$52,533
Technical Assistance Cost (administrative fee)	$137,166	$205,747	$222,074	$182,217	$180,576
Total	**$204,150**	**$205,747**	**$222,074**	**$ 234,750**	**$233,109**

3.2.3 Require quarterly education and outreach

It is not apparent how often education and outreach efforts would take place under the statute. Therefore, the cost of a quarterly requirement in the proposed rule could range from zero, to some positive cost related to additional resources needed to meet a higher frequency of these actions. To estimate the latter we assume similar educational actions would have taken place annually without the rule (i.e. 3 additional actions are required per year to meet rule requirements). These include press releases, social media posts, and other public facing

[16] We apply the same math when estimating fees associated with the annual report review but assume all costs of this discrete task would occur in the first half of the FY. This effectively sets CY2029 estimates equal to FY 2029 and so on.

[17] We note that 0.01 FTE for an AAG and 0.01 FTE for a legal assistant was allocated to FY2026 and FY2027 in the fiscal note for advice on general implementation and enforcement under the rulemaking category. These costs, as they relate to fees, would be negligible.

materials. This also includes the delivery of educational materials to collection sites detailing safe handling, storage and transport. Despite the potential for multiple BSO's, we note that organizations are expected to coordinate education efforts as direct by RCW 70A.555.080(5) and therefore would not duplicate costs.

Online Media

Using the Bureau of Labor Statistics (BLS) job categories and median 2024 pay, we assume that a quarterly press release, social media post, and web content update, would require forty hours of full time labor for an Environmental Science and Protection Technician at a rate of $37.63 per hour, eight hours of labor for a web developer at a rate of $53.85 per hour, and eight hours of labor for a marketing manager at rate of $81.16 per hour (BLS, 2024). [18] We add 30% to the base wage to account for benefits and overhead. This breaks down to $3,360 a quarter, or $10,082 per year.

Physical Materials

We assume that postcard size handouts would be designed and made available for print by collections sites quarterly as needed. Common commercial printing options offer bulk standard postcard printing at around $0.10 per postcard at the time of this writing.[19]

Recall from section 2.1.1 that roughly 226 sites would be required in total to meet density and convince standards. Assuming 500 postcards are given out by 226 sites each quarter, or 339,000 per year, this component would cost an estimated $33,900.

Together, total estimated cost of online and physical media required by this section ranges from $0 to $43,982 beginning calendar year 2027.

3.2.4 Add, expand, or clarify stewardship plan contents

The cost of providing or breaking out information that is already required by statute in more aggregate forms is positive, but likely negligible.

3.2.5 Add, expand, or clarify plan submissions

The cost of providing or breaking out information that is already required by statute in more aggregate forms is positive, but likely negligible.

3.2.6 Allow Ecology to amend and accept a plan after two disapprovals in plan review

The cost for Ecology to make amendments on behalf of the stewardship organization would likely be recovered through the plan review fee discussed in Section 3.2.2.

[18] Washington - May 2023 OEWS State Occupational Employment and Wage Estimates.
[19] See https://www.postcardmania.com/postcard-printing/ , https://www.staples.com/services/printing/sales-marketing/custom-postcards/ and others.

3.2.7 Add, expand, or clarify annual report requirements.

Collecting, verifying, and organizing primary and secondary data associated with battery incidents for reporting likely represents a cost through the following two components.

First, site staff would be needed to document incidents from the preceding calendar year in an Excel spreadsheet (see WAC 173-905-150). The time it would take to make these entries is highly dependent on the frequency, size, and complexity of the incident, which vary by site and year (some sites incur zero incidents, while others see dozens or more per year).[20] Given this uncertainty, we assume this documentation would require 1 to 8 hours annually by the equivalent of a First-Line Supervisors of Retail Sales Workers, valued at $28.11 per hour. After adding 30% to the base wage to account for benefits and overhead, this represents a range of $8,258 to $66,069 per year.

Second, staff at a BSO would need to aggregate site level information into the annual report. For this task we assume 40 hours of labor for an Environmental Science and Protection Technician, valued at $37.63 per hour (BLS, 2024). We add 30% to the base wage for benefits and overhead. Assuming there will be two BSOs, the estimated cost of this requirement is $3,913.

The total estimated cost of this section ranges from $12,172 to $69,983 per year.

3.2.8 Give 30 days for additional information requested by the department during a report review

This section offers logistical clarification of the law at no material cost.

3.2.9 Add, expand, or clarify quarterly updates

Most information required by rule for quarterly reports either draws from information that would exist for typical business operations and internal reporting, or new information collected for annual reports (see section 3.2.7). While the cost of organizing some of these materials is positive, it is likely negligible.

3.2.10 Add, expand, or clarify marking requirements

The additional packaging requirement likely represents a positive cost to producers that would need to add design elements to applicable packaging. However, the effort and ink required to add required markings to a production process that already involves frequent redesign is likely negligible for the purposes of this analysis. The number of packages sold into Washington that would require the new markings is also highly uncertain at this time.

[20] See section 2.4.4 for a discussion on the frequency and size of fire incidents. Note that fires are only a subset of battery-related incidents that include spill, fire, release, or other hazard that poses a risk to public safety or environmental health resulting from the collection, handling, transportation, or processing of a covered battery.

3.2.11 Add, expand, or clarify collection network requirements

Specifying "service" to mean a "collection event" in the context of an area without a permanent site restricts other forms of collection services, such as a mail-back envelope (see section 2.3.11). Restricting the stewardship organization's choices could lead to higher cost to the degree that other services under statute would be less costly. Costs, if any, would vary by site specific factors like collection site access, postage costs, population density, and public participation rates, but remain unknown and qualitative for the purposes of this analysis.

3.2.12 Add, expand, or clarify collection site procedures, safety, and training

This rule section requires daily activity by collection site staff for monitoring, along with storage, marking, and shipping requirements that may or may not occur at the same frequency or detail without the rule. Similarly, the rule ensures that annual collection site education would be provided by the stewardship organization. Therefore, cost range from zero, to a positive cost described below related to additional resources needed to meet a higher frequency of these actions.

We assume that daily monitoring would be performed by trained staff on site (see below for site level education costs), for this we assume 2 hours a week by a First-Line Supervisor of Retail Sales Workers, or 104 hours a year, per site, valued at $28.11 per hour. After adding 30% to the base wage to account for benefits and overhead, this equals $3,800 per year per site, or $858,906 per year. If the collection site is a local government, these costs would be reimbursed by the BSO. Private companies, agreeing to serve as collection sites, would bear these costs themselves. For reference, 21 collection local government collection sites are currently known to exist. Assuming a total of 226 sites meet density and convenience standards, and the balance of sites are private business locations, daily costs from above break out to $79,809 and $779,096 per year for the BSO and private sites respectively.

To provide annual collection site education, we assume four hours of labor by one Environmental Science and Protection Technician, valued at $37.63 per hour (BLS, 2024) per site. We add 30% to the base wage to account for benefits and overhead.

We assume this training would be provided in-person to be conservative. Based on Ecology conversations with prospective BSO's, we understand that at least one staff, qualified to carry out site level education, will be permanently located in the Seattle-Tacoma region. An Ecology GIS analysis of required collection site density and convenience standards show that at least 119 sites are or will be located within the Seattle-Tacoma urban area. To reach the sites in this area we assume that 15 miles would be driven, on average, at a standard mileage reimbursement rate of 65.6 cents per mile.[21,22]

[21] In assuming the average of 15 miles, we acknowledge that any given trip could be more or less than 15 miles from a site.
[22] See IRS national standard milage rates.

To reach the balance of collection sites distributed around the state (107), we assume a series of ten week-long trips would be required—two each based out of Spokane, Vancouver, Tri Cities, Bellingham, and Port Angeles/Ocean Shores.[23] To complete each trip we assume the following:

- A $200 airfare (apart from Port Angeles and Ocean Shores, which for simplicity we assume a similar fixed cost given the road distance and/or ferry fares).
- 5 days of lodging at the standard state per diem rate of $110 per day[24],
- 5 days of meals at the standard state per diem rate of $68 per day,

Provided that some sites are likely to be more rural and disperse around these destinations, we assume an average of 20 miles per site would be driven at a standard mileage reimbursement rate of 65.6 cents per mile.

In total, annual collection site education is estimated to cost $55,517 per year.

Combined with daily site monitoring, the total estimated cost of this section to BSOs range from $0 to $135,326 per year, and to private collection sites from $0 to $779,096 beginning calendar year 2027.

3.3 Program Cost (Compared to No-Program Baseline)

Under a battery stewardship Program, the cost of collection, transportation, and processing efforts otherwise born by local government and companies in the future will largely be passed on to producers; compared to the state of the world in which the rule, and therefore the law and Program, is not implemented (see Section 2.4 for additional detail).[25]

The scope of these costs depend on several assumptions about how current collections in Washington would trend into the future, and how collection rates would be affected by the Program. Since historical trends may or may not persist, and public response to battery stewardship programs in general is unknown, we apply three different sets of assumptions to develop a conservative range of post-Program recycling volumes. These are as follows:

1. The average battery recycling volume in Washington from 2013 to 2023, or 528,147 lbs. (See Section 2.4.1), would persist in the future under the Program (green dashed line in Figure 3)
2. Battery recycling trends in Washington from 2013 to 2023 (See Section 2.4.1) would persist linearly into the future under the Program (grey dotted line in Figure 3).

[23] Based on the simplifying assumption that 107 sites visited for four hours each would require 428 hours total, or roughly 10 weeks total assuming a 5 day work week.
[24] https://ofm.wa.gov/accounting/administrative-accounting-resources/travel/diem-rate-tables
[25] Note that the burden on producers, characterized as a "cost" in this section are a direct benefit to local Washington governments, businesses, and the public that otherwise paid for battery recycling efforts. We discuss these reciprocal impacts in Section 4 and summarize together in Section 5.

3. Battery recycling trends in Washington from 2013 to 2023 (See Section 2.4.1) would persist linearly into the future and be additionally impacted by Program activity (red dot-dashed line in Figure 3). To describe potential Program impacts, we scale the aforementioned trend by two additional quantities:

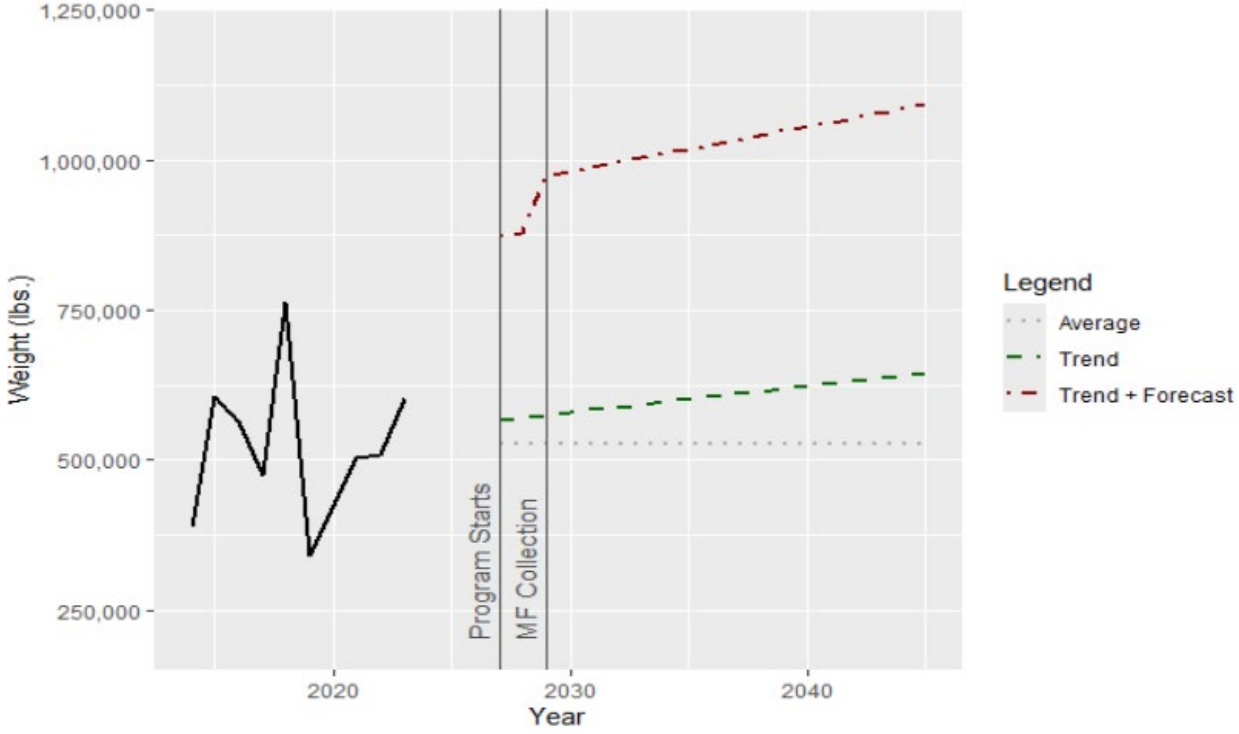
    a. The percentage increase in collection sites that would be required relative to the number of existing collection sites.

    For this we turn to a geospatial analysis of the program's convenience and density standards. We find that currently, 94% of the state's population is located within 15 miles of one of 147 existing collection site locations. Assuming all locations are utilized by program, this mean that the convenience standard would largely be met.

    However, 79 additional collection sites would be needed to meet the programs density requirement (68 of which to be added in Seattle). This brings the expected total number of collection sites to 226, or a 53% increase from the no-program baseline.

    b. By an additional 30% increase in recycling, by volume, to account for the expansion of some sites into medium format battery collections.[26]

Figure 3. Actual and Predicted Collection Volumes



[26] Note that under the Program, some retail sites would still not be able to collect batteries larger than this unless they have staff trained to handle and ship those batteries (see RCW 70A.555.070(2)(b))

All three forecasts, and associated costs, begin starting in 2027, the year that battery stewardship organizations are required to have fully implemented an approved plan for covered portable batteries (WAC 173-905-140). As discussed above, the dot-dashed trend in red describes a potential increase in the collection of medium sized format batteries beginning in 2029, and hence a shift upward across that threshold.

Applying the weighted average cost of existing recycling efforts by chemistry type (discussed in Section 2.4.3), we estimate the cost of future collection ranges from roughly $2 million per year under assumption set one, to just over 4.1 million per year under assumption set three by 2045 (in current year dollars).

3.4 Quantitative Cost Summary

For exposition, Section 3.1 through 3.3 discussed costs in annual terms. To convert streams of costs or benefits over time into a single comparable value in current dollars, Ecology calculates costs and benefits of rules using 20-year net present values (NPV). A present value accounts for inflation, and the opportunity cost of having funds or value later versus now.[27,28] We also break out estimated costs by rule component and Program in Table 6 where practical.

Table 6. Estimated Present Value of Total Cost, By Category

Cost Category	High Estimate	Mid Estimate	Low Estimate
Plan Review (from rule)	$258,706	$258,706	$258,706
Annual Report Review (from rule)	$850,442	$850,442	$850,442
Technical Assistance (from rule)	$3,484,950	$3,484,950	$3,484,950
Education and Outreach (from rule)	$799,092	$399,546	$0
Annual Reporting (from rule)	$1,132,939	$664,996	$197,053
Site Training (from rule)	$1,048,271	$524,135	$0
Site Monitoring (Gov) (from rule)	$1,450,016	$725,008	$0
Site Monitoring (Non-Gov) (from rule)	$14,154,919	$7,077,459	$0
Sub-Total	**$23,179,335**	**$13,985,243**	**$4,791,151**
Recycling costs (from program)	$69,419,980	$52,768,809	$36,117,637
Total	**$92,599,315**	**$66,754,051**	**$40,908,788**

Some costs in Table 6, like non-government collection site monitoring, would be borne by state businesses through their voluntary involvement as a collection site (see section 3.2.12). All other costs in Table 6 would ultimately fall on producers defined under RCW 70A.555.010(14). For example:

[27] See https://www.epa.gov/system/files/documents/2024-12/guidelines-for-preparing-economic-analyses_final_508-compliant_compressed.pdf For additional discussion on social discounting in economic analysis.

[28] The historic 20 year average real discount rate was 0.4 percent at the time of this writing. US Treasury Department, 2025. https://treasurydirect.gov/savings-bonds/i-bonds/i-bonds-interest-rates/#:~:text=The%20composite%20rate%20for%20I,through%20April%202023%20is%206.89%25.

- Plan review, annual report review, and technical assistance would be an initial cost to Ecology but recovered through fees charged to a stewardship organization. The stewardship organization would in turn charge participating producers. If not participating in a stewardship organization and submitting their own stewardship plan, the producer would pay their portion of the fee directly.
- Costs for education and outreach, reporting and auditing, site training, and general recycling costs would be initially born by the battery stewardship organization, who would in turn charge participating producers. If not participating in a stewardship organization and submitting their own stewardship plan, the producer would pay their portion of these costs directly.

3.4.1 Cost distribution to Washington

Only a small subset of producers are likely located within the state. These include companies that rebrand batteries, select electronics manufacturers, and some "drop shippers". The former are limited to a few large tech and retail companies. The latter two categories describe businesses that manufacture or import devices under their brand, but contain unlabeled or non-compliant batteries and therefore subject to Program requirements.

In addition to costs to non-government collection sites, costs to these in-state producers represent an impact Washington business. However, data required to confidently apportion producer costs to in- and out-of-state business are not currently available.[29] Given our uncertainty about this proportion, but a likelihood that it is not zero, we assume 1% to 10% of producer related costs from Table 3 would be borne by Washington business on the low and the high end respectively.

The remainder of producers subject to sharing the costs from Table 6, including most major manufacturers of covered batteries and battery containing products, are located outside of Washington.[30] Costs to out-of-state producers are not considered a direct cost to Washington businesses, and hence are not in and of themselves a cost from the Program for the purposes of this analysis. But when viewed as a type of production tax, producers could choose to pass most, some, or none of these costs to Washington retailers and consumers (including businesses) in the form of higher prices on batteries and battery containing products sold into the state.[31]

Theoretically, price impacts from the Program would depend on, among other things, consumer price sensitives (i.e. demand elasticity). For example, to the degree that consumers of batteries and battery containing products can substitute or forgo some of their use, producers would

[29] For example , the number and size of businesses in the state that fall under this distinction and/or their sales volume of covered products relative to those from the out-of-state producers.
[30] Ecology investigated 18 business identified as battery manufacturers or suspected batter manufactures in Washington state. All were either manufactured batteries not covered by the rule, out of business as verified by Washington state corporate filings or was a retail location. Two companies were verified to be in the early stages of research and development, but note that Ecology cannot speculate on the viability of individual companies.
[31] In any, price impacts may occur in anticipation of the rule, during policy implementation, or be lagged in time.

choose to share some regulatory costs in favor of maintaining higher sales volume. As a basic economic principle, so long as there is some elasticity to consumer demand, 100% of regulatory costs would not pass on fully to consumers. Market competition, and business structures that share regulatory costs across geographic markets would also attenuate state specific passthrough to some degree. For example, in the face of multiple fluctuating production costs, including regulatory, a major retail chain is unlikely to vary the cost of a pack of AAA batteries across state lines, even when state-specific components are known. Holding other factors constant, they may over time however increase prices for all stores to recover some of these additional costs.

Empirically, there is limited research on EPR costs to draw from, and none that we are aware of focused on battery specific regulation. For example, a recent Columbia University policy brief analyzed demand elasticities in packaged food products across the US and suggests that roughly 30% of packaging related EPR programs would be passed through to consumers (Satyajit, 2022). At the request of Oregon's Department of Environmental Quality, another study by Hesterman et al. (2021) observed common consumer product prices purchased in matched EPR and non-EPR jurisdictions in Canada and two cities in Oregon. Their research, which was also focused on paper and packaging regulation, found no correlation between EPR status and consumer prices, suggesting that zero passthrough may be a credible lower bound under some circumstances.[32]

Economic theory combined with the empirical research and anecdotal evidence above suggests that between 0% and less than 100% of the costs to out of state producers could be passed on to consumers buying batteries in Washington.[33] For this reason, we choose an upper bound of 80% to recognize that batteries and battery containing products likely have fewer substitutes compared to packaged goods analyzed in the Satyajit (2022) study (e.g., otherwise suggesting 30%); and maintain that 0% is a technically possible outcome given the findings from Oregon's EPR study and Ecology's observations from other EPR programs.

The 20-year net present values presented in Table 7 captures all cost dynamics discussed above. Except for non-governmental collection monitoring, the high cost estimates in Table 7 comprises of 10% of the high estimate from Table 3 to reflect direct Washington impacts from those components, and 80% of the remainder to reflect an assumption that costs transferred out-of-state could impact prices in-state. The low estimate in Table 4 is 1% of the low estimate from Table 3 to reflect impacts to Washington producers, and 0% of the remainder to reflect an assumption that costs transferred out-of-state would not impact prices in-state. The mid estimate in Table 4 is the average of our high and low scenarios.

[32] Ecology has observed, anecdotally, that the EPR program "E-Cycle" (RCW 70A.500; WAC 173-900) has not increased the price of a television or laptop in Washington compared to states like Idaho, which does not have an EPR program in place.

Table 7. Estimated Present Value of Total Cost To Washington

Cost Category	High Estimate	Mid Estimate	Low Estimate
Plan Review (from rule)	$212,139	$107,363	$2,587
Annual Report Review (from rule)	$697,362	$352,933	$8,504
Technical Assistance (from rule)	$2,857,659	$1,446,254	$34,849
Education and Outreach (from rule)	$655,255	$327,628	$0
Annual Reporting (from rule)	$929,010	$465,490	$1,970
Site Training (from rule)	$859,582	$429,791	$0
Site Monitoring (Gov) (from rule)	$1,189,013	$594,506	$0
Site Monitoring (Non-Gov) (from rule)	$14,154,919	$7,077,459	$0
Sub-Total	**$21,554,939**	**$10,801,425**	**$47,910**
Recycling costs (from program)	$56,924,383	$28,642,780	$361,176
Total	**$78,479,322**	**$39,444,204**	**$409,086**

On a practical level, these costs on a per-battery or per-product basis would likely be difficult to detect by the average consumer.

For illustration, consider that the total weight of batteries sold in British Columbia (BC) as reported by Call2Recycle's annual report (2022) was 3.2 million kilograms (Ecology does not currently possess total sales into Washington). Scaling this figure by the difference between BC and Washington populations and converting to pounds, we find that roughly 1.5 million lbs. per year could be a reasonable estimate of batteries currently sold into the state.[34]

Applying our highest estimate of total annualized cost that could be passed through to Washington consumers (roughly $3.9 million per year), this would suggest $2.62 per pound of batteries. Assuming that this added cost scales relative to the weight of a battery, the cost of a 0.025 pound AAA would increase by a little over six cents, or twenty five cents per pack of four. Assuming a four pack costs $5.50 on average, impacts represents less than a 5% increase in the cost of the pack. If the same four batteries made up even 10% of the cost of a battery-containing product, we would expect the price increase for that product to be less than one half of a percent.

3.5 Qualitative Costs

We are not able to capture some costs quantitatively in this analysis due to uncertainty, data and analytical limitations, or both. For these cases we provide the qualitative discussion below.

[34] This assumes individual battery consumption in Washington is similar battery consumption in BC.

Keeping with convention of describing rule and Program impacts separately where practical, qualitative costs include but are not limited to:

From Rule

- A cost associated with reimbursing various demonstrable costs under WAC 173-905-030. Demonstrable costs include, but are not limited to, additional labor costs associated with sorting and packaging, storage containers not provided by the stewardship organization, transportation to a BSO vendor, recycling at collection events, and additional costs not explicitly defined elsewhere. While positive, these costs are ancillary would need to be agreed-to by the BSO and are highly site-specific. As with others, these BSO costs would ultimately be passed to producers.

  Early commenters suggest that some outreach and education campaigns, not specifically defined in rule, might fall under demonstrable costs. For example, one commenter suggested that postcard mailers sent to educate and inform households about new collections sites cost roughly $0.64 per household in their service area.[35] For illustration, if even 5% of the roughly 7.7 million households in Washington state (Census, 2023), were reached in a similar way, and for a similar cost, this represents an additional $246,568 statewide per campaign.

- A potential cost from narrowing "collection services" to a "collection event" required to reach areas without a permanent site (see section 2.3.11). Restricting collection choices could lead to higher cost to the degree that other service options under statute would be less costly. Costs, if any, would vary by site specific factors like collection site access, postage costs, population density, and public participation rates. These costs would ultimately be passed from the BSO to producers.

From Program

- A potential cost to retail, in the form of time, to verify that the covered batteries or battery-containing products they sell participate in an approved battery stewardship plan, and are marked correctly.[36]

[35] We note that per-postcard costs in section 3.2.3 were assumed to be less expensive ($0.10 per postcard) than cited in this section. This is due to the difference in postage required for delivery to a few hundred sites, compared to individual cards being mailed to thousands or millions of individual homes under this example.

[36] To be complete. This verification process was simplified through sections of the rule (see section 2.3.10) which would result in a searchable list of compliant producers on Ecology's website. There is also no reporting requirement for retailers. Ecology assumes compliance with the rule by producers and therefor limits speculation about the need for further retail action.

3.6 Environmental justice costs[37]

Harms are not anticipated from Program directly. However, there are potential risks associated with an increase in collection and transportation of batteries—particularly those that are damaged, defective, or improperly disposed of.

The collection and transportation of batteries, particularly those that are damaged, defective, or improperly disposed of, can pose potential risks to both public health and the environment. Batteries contain hazardous materials, such as lead, mercury, and cadmium, which can be toxic if released into the environment. These materials can contaminate soil, water, and air, leading to long-term environmental damage. Additionally, many batteries are combustible or can short-circuit when mishandled, creating a risk of fires or explosions, especially at collection sites where large volumes of batteries may accumulate.

If batteries are not properly sorted, stored, and transported, there is a risk of leakage or ignition, which could lead to hazardous chemical exposure for workers, community members, or emergency responders. This is particularly concerning in areas where the infrastructure to safely handle such materials may be lacking, or where there are limited resources for staff training on proper handling procedures. Furthermore, improper handling could result in significant environmental harm if any hazardous materials leak into local ecosystems or contaminate the water supply.

While battery stewardship programs in other states have demonstrated that risks to community members can be effectively managed through robust safety protocols—such as staff training, regulated handling of hazardous materials, and regular site inspections—it is important to consider that overburdened communities may still face disproportionate harm if these measures are not uniformly implemented or enforced across the state.

Furthermore, the transport of hazardous materials through Washington communities still presents a potential risk, particularly in case of accidents or fires. Vulnerable populations may have limited access to information, emergency preparedness resources, or health care, further compounding the effects of any incident. Moreover, communities located along major transportation routes, such as freeways and highways used for battery transport, may also face increased risks. These areas often house economically disadvantaged populations who already experience higher levels of air pollution and noise from vehicle traffic.

[37] Any input received from likely impacted communities, helped to inform the proposed rule amendments. See Chapter 6 for discussion of alternative rule content suggested during rule development, that was not included in the proposed rule. Community engagement and input are documented in the Environmental Justice Assessment for this rulemaking, and included in the rule file, when a final rule is adopted.

Chapter 4: Likely Benefits of the Proposed Rule

4.1 Introduction

We analyzed the likely benefits associated with the proposed rule, as compared to the statutory baseline, and the Program compared to the no-Program baseline. The proposed rule, Program, and the baseline(s) are discussed in detail in Chapter 2 of this document.

4.2 Benefits by Rule Component (From Statutory Baseline)

Reprinted from Chapter 2, the proposed rule would:

- Add, expand, or clarify **definitions**
- Develop a **fee structure** that recovers Ecology costs related to overseeing the battery stewardship program
- Require quarterly **education and outreach**
- Add, expand, or clarify **stewardship plan** contents
- Add, expand, or clarify **plan submissions**
- Allow Ecology to amend and accept a plan after two disapprovals in **plan review**
- Add, expand, or clarify **annual report requirements**
- Give 30 days for additional information requested by the department during a **report review**
- Add, expand, or clarify **quarterly updates**
- Add, expand, or clarify **marking requirements**
- Add, expand, or clarify **collection network requirements**
- Add, expand, or clarify **collection site procedures, safety, and training**

Costs charged to producers related to **education and outreach** (see section 3.2.3), **quarterly updates** (see section 3.2.7), and a portion of **collection site procedures, safety, and training** (see section 3.2.12) from the list above, would become new revenue for battery stewardship organizations (e.g. a transfer from producers).[38,39]

To the degree that BSOs or BSO staff are based in Washington, these revenues are considered a benefit to the Washington economy. As the future location of these entities and staff is not fully known, and could shift in future years, we assume as a low estimate that all revenue

[38] We recognize that under the law, battery producers can submit their own plans for approval. However, based on conversations with industry and past experience with similar EPR programs, Ecology assumes membership to an existing plan of an independent stewardship organization, similar to those already operating on a voluntary basis in WA.

[39] Costs borne by nongovernmental collection sites for monitoring would not represent a revenue to the BSOs.

received for these activities is retained out-of-state. As a high estimate, we assume that all BSO revenue is retained in-state.

The estimated 20 year net present value of this benefit range (Table 8) is drawn directly from components in Table 6 in Section 3.4, except that annual reporting revenues are zero in our low estimate to reflect assumptions in this section.[40]

Table 8. Payments to BSOs

Benefit Category	High Estimate	Mid Estimate	Low Estimate
Education and Outreach Revenue	$799,092	$399,546	$0
Annual Reporting Revenue	$1,132,939	$ 664,996	$197,053
Site Training Revenue	$1,048,271	$524,135	$0
Site Monitoring Revenue (Gov)	$1,450,016	$725,008	$0
Sub-Total	**$4,430,318**	**$2,313,685**	**$197,053**

4.3 Program Benefits (Compared to No-Program Baseline)

While we can isolate the cost (section 3.2), and some benefits (section 4.2) from discretionary portions the rule, it is nearly impossible to separate all benefits from the rule in the same manner. This is because benefits are generated by multiple rule sections jointly, and the broader implementation of the law cannot exist without the rule (see discussion in chapter 2).

Benefits from the Program compared to the no-Program baseline would accumulate under one of two main categories:

1. Avoided costs of current and future recycling efforts by local governments, businesses, and individuals in Washington otherwise paying to recycle covered batteries.
2. Reductions in damages associated battery related incidents such as fires and contamination at waste facilities, collection sites, transporters and other solid waste infrastructure.

4.3.1 Avoided recycling costs

Without the Program, current and future costs of covered battery recycling would be borne largely by local county and city governments. Under the program, future cost would largely be transferred to battery producers (see section 3.4), and represents a direct savings to local governments, and ultimately the Washington taxpayer.

Drawn directly from Table 6, the 20 year net present value of these benefits range from an estimated $36,117,637 to $69,419,980. As a reminder, the low estimate assumes that historical

[40] Note that we do not consider transfers to Ecology (e.g. plan review and administrative fees) a benefit for the purposes of this analysis.

average collection volumes would persist under the program, while the high estimate assumes increased volumes based on collection site expansion, and the acceptance of new battery chemistry types and sizes at some locations.

4.3.2 Reductions in Battery Related Risk

In Section 2.4.4, we estimate that portable battery fires alone could cost Washington MRFs and transfer stations between $600,000 and $8,000,000 annually under current conditions.

Recent reports and general intuition suggests that battery related damages would increase beyond historical estimates as battery use grows, especially for lithium-ion chemistries. In the absence of consistently collected historical incident data, we were not able to confidently project this figure into the future. To be conservative we assume historical damages constitute future damages in the absence of the program. Our estimate of future damages is additionally conservative in that it does not capture very frequent small fires.[41] We also do not include data on less frequent catastrophic fires (losses between $10 - $60 million dollars), where batteries were suspected, but could not be confirmed.

These baseline risks and resulting damages would likely be reduced under the Program because of:

1. Improvements in site level monitoring, education, handling procedures, sorting, incident tracking and reporting, among other actions that work to reduce known catalyst for fire.
2. A growth in collection volume through increased consumers convenience. This would divert more batteries from general waste streams and into recycling as a source separated material.

While these links are practical and likely have a positive non-zero impact on risk, to our knowledge there are no empirical studies measuring the magnitude of similar actions. For this reason, we assume that future battery related fires would fall by a conservative range between 10 to 30 percent because of the Program. Applied to our range of potential damages ($600,000 and $8,000,000), this amounts to an estimated benefit of $60,000 to $2.4 million a year. Assuming these benefits begin accruing in calendar year 2028, their 20 year net present value is roughly $1 to $41 million.

4.4 Quantitative Benefits Summary

For exposition, Section 4.1 through 4.3 discussed benefits in annual terms. To convert streams of costs or benefits over time into a single comparable value in current dollars, Ecology calculates costs and benefits of rules using 20-year net present values. A present value accounts

[41] Anecdotal evidence suggests that some facilities experience dozens if not hundreds of battery related fires extinguishable by hand by current staff. This category of fire is however underreported through tradition channels like surveys and media reports from which our estimates were built. Nevertheless we expect some portion of small incidents to be avoided because of the Program which constitutes additional benefits through avoided staff time and production loss.

for inflation, and the opportunity cost of having funds or value later versus now.[42,43] We also break out estimated benefits by rule component and Program in Table 9 where practical.

Table 9. Estimated Present Value of Total Benefits, By Category

Benefit Category	High Estimate	Mid Estimate	Low Estimate
Education and Outreach Rev. (from rule)	$799,092	$399,546	$0
Annual Reporting Revenue (from rule)	$1,132,939	$ 664,996	$197,053
Site Training Revenue (from rule)	$1,048,271	$524,135	$0
Site Monitoring Revenue(Gov) (from rule)	$1,450,016	$725,008	$0
Sub-Total	**$4,430,318**	**$2,313,685**	**$197,053**
Avoided Recycling Costs (from program)	$69,419,980	$52,768,809	$36,117,637
Avoided Damages (from program)	$41,223,652	$21,127,122	$1,030,591
Total	**$115,073,950**	**$76,209,616**	**$37,345,281**

4.5 Qualitative Benefits

We are not able to capture some benefits quantitatively in this analysis due to uncertainty, data and analytical limitations, or both. For these cases we provide the qualitative discussion below. Keeping with convention of describing rule and Program impacts separately where practical, qualitative benefits include but are not limited to:

From Rule

- Positive impacts to job growth and economic output in the state related to new revenues transferred to in-state BSOs (see Section 4.2).
- A time savings for producers that, because of WAC 173-905-310(5)(a) (see section 2.3.10), can provide certification to the stewardship organization they participate in, or if they are not participating in a stewardship organization, directly to the department. This is compared with certification to all relevant customers and retailers under statute.
- A time savings for retailers that, because of WAC 173-905-310(5)(a) (see section 2.3.10), will be able to easily search Ecology's website to find which products are compliant. This is compared to receiving certification from producers piecemeal under statute.
- A time savings for stewardship organizations, and ultimately producers, by allowing Ecology to amend and accept stewardship plans after two plan disapprovals (WAC 173-

[42] See https://www.epa.gov/system/files/documents/2024-12/guidelines-for-preparing-economic-analyses_final_508-compliant_compressed.pdf For additional discussion on social discounting in economic analysis.

[43] The historic 20 year average real discount rate was 0.4 percent at the time of this writing. US Treasury Department, 2025. https://treasurydirect.gov/savings-bonds/i-bonds/i-bonds-interest-rates/#:~:text=The%20composite%20rate%20for%20I,through%20April%202023%20is%206.89%25.

905-410(4)) (see section 2.3.6). This would likely lead to the stewardship organization needing to provide fewer iterations of a plan.

- A decrease in ambiguity by narrowing "service" to mean a "collection event" in the context of an area without a permanent site. Compared to some other service alternatives, ensuring collection events occur may also help ensure a consistent and known level of public access and performance.

From Program

- A decreased travel time to collection sites as more locations are added under the convenience distribution (% within a 15-mile radius) and density (1 additional site per 30,000 people) standards, among others.
- A potential reduction in the mining of raw materials including lithium, cobalt, and nickel (Gaines et al. 2023, Root, 2025) and associated environmental impacts.
- A potential increase in customer foot traffic for retail locations participating as collection sites, and brand association with environmentally friendly practices.
- Stronger financial incentives to innovate across product materials and recycling technology. Current ongoing research includes the development of more efficient processing of lithium ion batteries (Neumann et al., 2022) and technologies that reduce battery related risk (Mecheri, 2025; Hoey, 2024).
- A larger collection system under the Program would likely work to reduce battery recycling costs on a per-pound basis over time through economies of scale.[44]
- A reduction in high frequency, low damage fires. Anecdotal evidence suggests that some facilities experience dozens if not hundreds of battery related fires extinguishable by hand by current staff but are underreported through tradition channels like surveys and media reports not fully accounted for quantitatively in Section 4.4 estimates.
- A reduction in the probability of a catastrophic fires, including wildfires, could generate potentially large benefits but are not accounted for quantitatively in Section 4.4 estimates.
- A reduction in the probability of environmental contamination of air, water, and soil from batteries being illegally disposed and additional contamination associated with battery related fires.
- An improvement in human health by protecting workers and surrounding communities from exposure and handling risks associated with battery collection. Although there are

[44] There is some evidence of this based on data from battery stewardship organizations like Call2Recycle that manage mandatory programs in both Canada and the US. While Call2Recycle's Canadian model differs from the US in several operational aspects, the Canadian subsidiary collects 4.7 million more pounds of batteries (12.7 million lbs. total) than its US counterpart (8 million lbs.) and has been operating in its current form since 2012 (Call2Recycle, 2024). Dividing total expenses in USD (1 CAD = 0.71 USD reported on 5/2025) by collection volumes, Canadian operations break down to $1.95 per pound, while US operation show $3.40 per pound.

inherent risks in handling and storing batteries—such as exposure to hazardous chemicals or fire hazards at collection sites—the program includes training and safeguards to ensure that these risks are minimized.

4.6 Environmental Justice Benefits[45]

The program would increase opportunities for battery recycling throughout the state and improve consistency of existing battery recycling programs in Washington. In addition to environmental, public health, and community benefits across Washington, the program provides battery stewardship organizations regulatory clarity so that the program is implemented equitably across Washington.

Residents in urban, rural, island, and geographically isolated communities—including overburdened populations disproportionately affected by environmental risks—will particularly benefit from the program's commitment to accessibility and reducing transportation costs to collection sites and events.

While there are potential risks associated with the improper handling or disposal of batteries—such as exposure to hazardous materials like lead, cadmium, and mercury—additional cumulative health concerns are not likely to occur with the implementation of the Program. In fact, the Program is designed to reduce such risks by promoting proper disposal and safe handling practices. While overburdened communities, which may already face environmental and health disparities, could be at greater risk from improper battery disposal, the Program aims to mitigate these threats through improved waste management.

The program's focus on safe battery collection and recycling is expected to offer health benefits by minimizing environmental contamination of air, water, and soil, which could otherwise exacerbate existing health issues in vulnerable populations. Although there are inherent risks in handling and storing batteries—such as exposure to hazardous chemicals or fire hazards at collection sites—the Program includes training and safeguards to ensure that these risks are minimized, protecting both workers and surrounding communities from long-term health issues like respiratory problems or chemical-related illnesses.

[45] Any input received from likely impacted communities, including input from overburdened communities and vulnerable populations, helped to inform the proposed rule amendments. See Chapter 6 for discussion of alternative rule content suggested during rule development, that was not included in the proposed rule. Community engagement and input are documented in the Environmental Justice Assessment for this rulemaking, and included in the rule file, when a final rule is adopted.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the proposed rule

Reprinted from Section 3.4.1, Table 10 summarizes cost estimates by component.

Table 10. Estimated Present Value of Total Cost To Washington

Cost Category	High Estimate	Mid Estimate	Low Estimate
Plan Review (from rule)	$212,139	$107,363	$2,587
Annual Report Review(from rule)	$697,362	$352,933	$8,504
Technical Assistance(from rule)	$2857659	$1,446,254	$34,849
Education and Outreach(from rule)	$655,255	$327,628	$0
Annual Reporting(from rule)	$929,010	$465,490	$1,970
Site Training(from rule)	$859,582	$429,791	$0
Site Monitoring (Gov) (from rule)	$1,189,013	$594,506	$0
Site Monitoring (Non-Gov) (from rule)	$14,154,919	$7,077,459	$0
Sub-Total	**$21,554,939**	**$10,801,425**	**$47,910**
Recycling costs (from program)	$56,924,383	$28,642,780	$361,176
Total	**$78,479,322**	**$39,444,204**	**$409,086**

Summarized from Section 3.5, additional qualitative cost could include, but not limited to:

- A cost associated with reimbursing various demonstrable costs to local governments under WAC 173-905-030,
- A cost from narrowing “collection services” to a “collection event” required to reach areas without a permanent collection site,
- A potential cost to retail, in the form of time, to verify that the covered batteries or battery-containing products they sell participate in an approved battery stewardship plan, and are marked correctly.[46]

Reprinted from Section 4.4, Table 11 summarizes benefits by component.

[46] To be complete. This verification process was simplified through sections of the rule (see section 2.3.10) which would result in a searchable list of compliant producers on Ecology’s website. There is also no reporting requirement for retailers. Ecology assumes compliance with the rule by producers and therefor limits speculation about the need for further retail action.

Table 11. Estimated Present Value of Total Benefits, By Category

Benefit Category	High Estimate	Mid Estimate	Low Estimate
Education and Outreach Rev. (from rule)	$799,092	$399,546	$0
Annual Reporting Revenue (from rule)	$1,132,939	$ 664,996	$197,053
Site Training Revenue (from rule)	$1,048,271	$524,135	$0
Site Monitoring Revenue (Gov) (from rule)	$1,450,016	$725,008	$0
Sub-Total	**$4,430,318**	**$2,313,685**	**$197,053**
Avoided Recycling Costs (from program)	$69,419,980	$52,768,809	$36,117,637
Avoided Damages (from program)	$41,223,652	$21,127,122	$1,030,591
Total	**$115,073,950**	**$76,209,616**	**$37,345,281**

Summarized from Section 4.6, additional qualitative benefits could include, but not are limited to:

- Positive impacts to job growth and economic output in the state related to new revenues transferred to in-state BSOs,
- A time savings for producers by allowing compliance certification directly to the BSO,
- A time savings for retailers by providing an online list of compliant products,
- Time saving to stewardship organizations, and ultimately producers by streamlining plan review,
- Consistency and transparency by narrowing “service” to mean a “collection event” in the context of an area without a permanent site,
- A potential decreased travel time to collection sites,
- A potential reduction in the mining of raw materials and associated environmental impacts,
- A potential increase in customer foot traffic for retail locations participating as collection sites,
- Stronger financial incentives to innovate across product materials and recycling technology,
- Reduced battery recycling costs through economies of scale,
- A reduction in high frequency, low damage fires,
- A reduction in the probability of a catastrophic fires, including wildfires,
- A reduction in the probability of environmental contamination of air, water, and soil,
- An improvement in human health by protecting workers and surrounding communities from handling risks.

5.2 Conclusion

We conclude, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the proposed rule, as compared to the baseline, that the benefits of the proposed rule requirements are greater than the costs.

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(e) requires Ecology to "…[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection." The referenced subsections are:

> (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
>
> (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
>
> (c) Provide notification in the notice of proposed rulemaking under RCW 34.05.320 that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW 34.05.340, the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW 34.05.360;
>
> (d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

In other words, to be able to adopt the rule, we must determine that the requirements of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

We assessed alternative proposed rule content, and determined whether they met the goals and objectives of the authorizing statute(s). Of those that would meet the goals and objectives, we determined whether those chosen for inclusion in the proposed rule were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statute

The authorizing statute for this rule is Chapter 70A.555 RCW, Batteries – Environmental Stewardship. Its goals and objectives are:

- To encourage the recovery and reuse of materials
- To ensure the proper handling, recycling, and end-of-life management of used batteries
- To implement a battery stewardship program that addresses challenges posed by the end-of-life management of used batteries
- To require battery stewardship organizations to submit a stewardship plan by July 1, 2026, or 6-months after rules have been adopted

6.3 Alternatives considered and why they were excluded

We considered the following alternative rule requirements, and did not include them in the proposed rule. Each section below explains why we did not include these alternatives.

- Clarify to what extent the battery law applies to collection activities that occur outside the purview of the program
- Extend time for BSOs to implement an approved plan
- Align battery marking requirements with the EPA

6.3.1 Clarify to what extent the battery law applies to collection activities that occur outside the purview of the program

We considered clarifying in rule what extent the battery law applies to collection activities that occur outside the purview of the program after it is implemented. The statute does not prohibit battery collection activities outside of the program. Ecology considered options to clarify in rule outside-program battery collections by entities other than local government facilities and whether they would legally be allowed to operate. Ultimately, we concluded that: 1) The statute does not explicitly prohibit the collection of batteries outside the program 2) Existing regulations, such as those under chapter 173-350 WAC Solid Waste Handling Standards and chapter 173-303 WAC Dangerous Waste Regulations, cover battery collection and management of batteries outside of the program; and 3) Ecology does not have the authority to place regulations on potential outside-program collection operations to bring them in line with the battery stewardship program since Ecology's authority is limited to implementing, administering, and enforcing only the collection activities within the battery stewardship program. Addressing this alternative during this rulemaking would not as effectively have met the goal of implementing a battery stewardship program that addresses challenges posed by the end-of-life management of used batteries. Ecology will consider alternate pathways to address this uncertainty such as with an interpretive statement that is separate from this rulemaking.

6.3.2 Extend time for BSOs to implement an approved plan

We considered extending the amount of time for a BSO to implement an approved plan. However, the statute establishes a firm date for implementation. By July 1, 2027, the program must be fully implemented. Ecology expects to adopt rules by December 31, 2025 and a plan for managing covered portable batteries would be due by July 1, 2026. Ecology would approve a plan after approximately 6 months, leaving six months left for a battery stewardship organization to fully implement the approved plan. Because these dates are established in statute, it would be outside of the statutory goals to push that date to a later time.

6.3.3 Align battery marking requirements with the EPA

We considered aligning battery marking requirements with the EPA's upcoming voluntary standards for marking batteries. However, to date, EPA has not issued any voluntary standards for marking batteries nor have they provided a specific date on when that guidance would be made available.[47] Ecology agrees that alignment with the regulations or guidance of other government agencies whenever possible is generally beneficial, though in this case there is no evidence that consideration of these voluntary standards would result in battery marking requirements that are less burdensome to parties required to comply with the rule.

6.4 Conclusion

After considering alternatives, within the context of the goals and objectives of the authorizing statute, we determined that the proposed rule represents the least-burdensome alternative of possible rule requirements meeting the goals and objectives.

[47] More information on the EPA's development of battery labeling guidelines can be found here: https://www.epa.gov/infrastructure/development-battery-labeling-guidelines

Chapter 7: Regulatory Fairness Act Compliance

7.1 Introduction

The Regulatory Fairness Act (RFA; RCW 19.85.070) requires Ecology to perform a set of analyses and make certain determinations regarding the proposed rule. This chapter presents the:

- Analysis of relative compliance cost burden.
- Consideration of lost sales or revenue.
- Cost-mitigating elements of the rule, if required.
- Small business and local government consultation.
- Industries likely impacted by the proposed rule.
- Expected impact on jobs.

A small business is defined by the RFA as having 50 or fewer employees, at the highest ownership and operator level. Estimated compliance costs are determined as compared to the baseline (the regulatory environment in the absence of the proposed rule, limited to existing federal and state requirements). Analyses under the RFA only apply to costs to "businesses in an industry" in Washington State. This means the impacts, for this part of our analyses, are not evaluated for government agencies.

7.2 Analysis of Relative Compliance Cost Burden

We calculated the estimated costs to comply with the proposed rule, based on the costs estimated in Chapter 3 of this document. Traditionally, Ecology would prepare an analysis with tables quantifying costs per employee (RCW 19.85.040(1)(a)), among other metrics. However, for this rule there is a narrow subset of retailers and manufacturers in the state that can be described anecdotally as producers, but are not identifiable at an individual level (e.g., those that make or import battery containing products under their own brand, whose batteries are unmarked or not already participating in a stewardship plan). Until after the rule goes into effect, and these businesses subscribe to a plan or self-identify, we cannot quantify disproportionate impacts across large and small business in this segment.

There may be some costs to retail in the form of time to verify that covered batteries or battery-containing products they sell participate in an approved battery stewardship plan, and are marked correctly.[48,49] However, this verification process was simplified through sections of

[48] Ecology assumes compliance with the rule by producers and therefor limits speculation about the need for further retail action.

[49] Site monitoring costs to private businesses (non-government) (see section 3.2.12) are not consider compliance cost to business for the purposes of this chapter because their participation as a collection site is entirely voluntary.

the rule (see section 2.3.10) by providing a list of compliant producers on Ecology's website. There is also no reporting requirement for retailers. As these costs are described qualitatively in our analysis (see section of 3.5), we cannot quantify disproportionate impacts across large and small business in this segment. Taking this into consideration and because the rule is likely to impose more than minor costs on some small businesses in Washington, we conclude that the proposed rule may have disproportionate impacts on small businesses, and therefore Ecology must include elements in the proposed rule to mitigate this disproportion, as far as is legal and feasible.

7.3 Action Taken to Reduce Small Business Impacts

The RFA (19.85.030(2) RCW) states that:

"Based upon the extent of disproportionate impact on small business identified in the statement prepared under RCW 19.85.040, the agency shall, where legal and feasible in meeting the stated objectives of the statutes upon which the rule is based, reduce the costs imposed by the rule on small businesses. The agency must consider, without limitation, each of the following methods of reducing the impact of the proposed rule on small businesses:

a) Reducing, modifying, or eliminating substantive regulatory requirements;

b) Simplifying, reducing, or eliminating recordkeeping and reporting requirements;

c) Reducing the frequency of inspections;

d) Delaying compliance timetables;

e) Reducing or modifying fine schedules for noncompliance; or

f) Any other mitigation techniques including those suggested by small businesses or small business advocates."

We considered all of the above options, the goals and objectives of the authorizing statutes (see Chapter 6), and the scope of this rulemaking. We limited compliance cost-reduction methods to those that:

- Are legal and feasible.
- Meet the goals and objectives of the authorizing statute.
- Are within the scope of this rulemaking.

Reducing substantive regulatory requirements, reducing reporting requirements, reducing inspection frequency, delaying compliance timetables, or modifying fine schedules for noncompliance would not have met the goals and objectives of the statute that require the establishment of a convenient, accessible, and environmentally sound product stewardship program for all covered batteries throughout Washington State.

Finally, we included the following elements in the proposed rule to reduce costs to small businesses.

Battery stewardship organizations (BSO) must propose a battery stewardship plan that includes a description of how the BSO will establish and administer a means for fully funding a program that equitably distributes the program's costs among the producers that are part of the BSO. This is intended to alleviate costs to small businesses in Washington that meet the definition of producer under this regulation. In Ecology's experience with other product stewardship program's a stewardship organization typically apportions costs to producers based on market share, thus protecting smaller businesses.

The rule allows producers to certify compliance to the stewardship organization they participate in, or if they are not participating in a stewardship organization, directly to the department. This likely reduces impacts to small business, as it requires less effort and fewer materials, relative to gathering new data on all sales locations by producers under the statute. The rule also likely benefits small retailers who, because of the rule, can easily search Ecology's website to find which producers are compliant.

7.4 Small Business and Government Involvement

We involved businesses, some of which meet the definition of a small business, and local governments in the development of the proposed rule, using the eComment website, the Battery Stewardship Advisory Committee Workgroup, and other public meetings.

Organizations that participated in these engagement opportunities included Battery Council International, Redwood Materials, Cirba Solutions, Call2Recycle, Pacific Power Batteries, Sequim Electronics, Critical Materials Recovery, LLC, Ridwell, Washington Refuse & Recycling Association, Zero Waste Washington, PRBA (The Rechargeable Battery Association), Stanley Black & Decker, Panasonic, Rivian, Volvo, Washington Retail Association, Directv, Costco, Pullman Disposal, Lenovo, Peacehealth, Vizio, Target, Best Buy, and Energizer.

Local governments that participated in these engagement opportunities included Clark County Public Health, City of Tacoma, City of Federal Way, Clark County Solid Waste & Recycling, City of Vancouver, Kitsap County Solid Waste, the Washington State Association of Counties, Snohomish PUD, King County, Whatcom County, Spokane County, City of Seattle, Oregon Metro, Grays Harbor County, City of Spokane, and Clark County.

7.5 North American Industry Classification System (NAICS) Codes of Impacted Industries

The proposed rule likely impacts the following industries, with associated NAICS codes. NAICS definitions and industry hierarchies are discussed at https://www.census.gov/naics/.

- 335910 – Battery Manufacturing

This rule will likely impact a wide variety of other industries that may not be appropriately defined by the North American Industry Classification System. These industries include manufacturers and retailers that make and sell batteries and/or products with batteries in

them, and businesses that import products that may have batteries not covered by a battery stewardship organization.

7.6 Loss of Sales or Revenue and Impacts on Jobs

Businesses that would incur costs could experience reduced sales or revenues if the proposed rule significantly affected the prices of the goods they sell. The degree to which this could happen is strongly related to each business's production and pricing model (whether additional lump-sum costs would significantly affect marginal costs), as well as the specific attributes of the markets in which they sell goods, including the degree of influence each firm has on market prices, as well as the relative responsiveness of market demand to price changes. Finally, overall shifts in economic activity in the state, including competition within markets and attributes of the labor market simultaneously adjust in response to changes in compliance costs.

Similarly, employment within directly impacted industries, other industries in Washington, the labor market within and outside of the state, and in the state will also adjust in response to a change in costs.

Impacts from the rule on retailers and manufacturers in the state are described qualitatively and anecdotally throughout our analysis, but not identifiable quantitatively or at an individual level. For this reason, the magnitude of sales, revenue, or job loss from the rule in any specific economic sector within the state of Washington is unclear.

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Appendix A: Administrative Procedure Act (RCW 34.05.328) Determinations

A. RCW 34.05.328(1)(a) – Clearly state in detail the general goals and specific objectives of the statute that this rule implements.

See Chapter 6.

B. RCW 34.05.328(1)(b) –

1. Determine that the rule is needed to achieve the general goals and specific objectives of the statute.

See chapters 1 and 2.

2. Analyze alternatives to rulemaking and the consequences of not adopting this rule.

RCW 70A.555.100 mandates Ecology to adopt rules as necessary for the purpose of implementing, administering, and enforcing the chapter. Rules are required to establish the process by which the agency will determine fees to cover costs associated with oversight of the battery stewardship program. Additionally, Ecology is proposing rules that will clarify some requirements in statute and set new collection and handling standards for batteries that will help prevent risk to human health and the environment. If Ecology failed to adopt rules, then it would be out of compliance with the law and there would likely be confusion from battery producers and stewardship organizations on how to comply with certain aspects of the law.

Please see the Least Burdensome Alternative Analysis, Chapter 6 of this document, for discussion of alternative rule content considered.

C. RCW 34.05.328(1)(c) - A preliminary cost-benefit analysis was made available.

When filing a rule proposal (CR-102) under RCW 34.05.320, Ecology provides notice that a preliminary cost-benefit analysis is available. At adoption (CR-103 filing) under RCW 34.05.360, Ecology provides notice of the availability of the final cost-benefit analysis.

D. RCW 34.05.328(1)(d) – Determine that probable benefits of this rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

See Chapters 1 – 5.

E. RCW 34.05.328 (1)(e) - Determine, after considering alternative versions of the analysis required under RCW 34.05.328 (b), (c) and (d) that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated in Chapter 6.

Please see Chapter 6.

F. RCW 34.05.328(1)(f) - Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

This does not conflict with any federal or state law. The Solid Waste Program has been working collaboratively with the Hazardous Waste and Toxics Reduction Program of Ecology to ensure that the rule does not conflict with chapter 173-303 WAC Dangerous Waste Regulations. Likewise, the rule does not conflict with the regulations under chapter 173-350 WAC- Solid Waste Handling Standards.

G. RCW 34.05.328 (1)(g) - Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

No, the rule will apply equally to both private and public entities.

H. RCW 34.05.328 (1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter.

No, the rule does not differ from any federal regulations or statute.

- If **yes**, the difference is justified because of the following:

  ☐ (i) A state statute explicitly allows Ecology to differ from federal standards.

  ☐ (ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated in Chapter 6.

I. RCW 34.05.328 (1)(i) – Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same subject matter.

Ecology staff have been coordinating with the United States Environmental Protection Agency and drafting the rule that complies with federal regulations and Washington State's Dangerous Waste regulations, chapter 173-303 WAC.