DEPARTMENT OF ECOLOGY
State of Washington

Final Regulatory Analyses

Including the:

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

Chapter 173-350 WAC
Solid Waste Handling Standards

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Chapter 173-350 WAC

Solid Waste Handling Standards

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for the

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Executive Summary

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Solid Waste Handling Standards rule (chapter 173-350 WAC; the "rule"). This includes the:

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

The Solid Waste Handling Standards rule regulates multiple types of solid waste handling, including but not limited to transport, storage, processing, and disposal. It was partially updated in 2013, in a rulemaking focused on sections 220, 225 and 250 regarding organics. Over many years, however, through internal and external consultations, Ecology had identified other aspects of the rule that needed to be addressed. Based on issue papers and summaries developed following previous stakeholder work, as well as new consultation with stakeholders and Ecology staff, the current rulemaking is a comprehensive update to the rule (revisions in sections 220, 225, and 250 are for clarity and consistency only).

The goals and objectives of the authorizing statute are:

- Waste reduction must become a fundamental strategy of solid waste management. It is therefore necessary to change manufacturing and purchasing practices and waste generation behaviors to reduce the amount of waste that becomes a governmental responsibility.
- Source separation of waste must become a fundamental strategy of solid waste management. Collection and handling strategies should have, as an ultimate goal, the source separation of all materials with resource value or environmental hazard.
- It is the responsibility of state, county, and city governments to provide for a waste management infrastructure to fully implement waste reduction and source separation strategies and to process and dispose of remaining wastes in a manner that is environmentally safe and economically sound.
- The following priorities for the collection, handling, and management of solid waste are necessary and should be followed in descending order as applicable:
    - Waste reduction
    - Recycling, with source separation of recyclable materials as the preferred method
    - Energy recovery, incineration, or landfill of separated waste
    - Energy recovery, incineration, or landfill of mixed municipal solid wastes

- To ensure the safe and efficient operations of solid waste disposal facilities, it is necessary for operators and regulators of landfills and incinerators to receive training and certification.
- The development of stable and expanding markets for recyclable materials is critical to the long-term success of the state's recycling goals.
- There is an imperative need to anticipate, plan for, and accomplish effective storage, control, recovery, and recycling of discarded tires and other problem wastes with the subsequent conservation of resources and energy.
- The purpose of this chapter is to establish a comprehensive statewide program for solid waste handling, and solid waste recovery and/or recycling which will prevent land, air, and water pollution and conserve the natural, economic, and energy resources of this state. To this end it is the purpose of this chapter:
    - To assign primary responsibility for adequate solid waste handling to local government, reserving to the state, however, those functions necessary to assure effective programs throughout the state;
    - To provide for adequate planning for solid waste handling by local government;
    - To provide for the adoption and enforcement of basic minimum performance standards for solid waste handling, including that all sites where recyclable materials are generated and transported from shall provide a separate container for solid waste;
    - To encourage the development and operation of waste recycling facilities needed to accomplish the management priority of waste recycling, to promote consistency in the requirements for such facilities throughout the state, and to ensure that recyclable materials diverted from the waste stream for recycling are routed to facilities in which recycling occurs;
    - To provide technical and financial assistance to local governments in the planning, development, and conduct of solid waste handling programs;
    - To encourage storage, proper disposal, and recycling of discarded vehicle tires and to stimulate private recycling programs throughout the state; and
    - To encourage the development and operation of waste recycling facilities and activities needed to accomplish the management priority of waste recycling and to promote consistency in the permitting requirements for such facilities and activities throughout the state.

The rule amendments make the following changes:

- Section 020 – Applicability:
    - Adding a new exclusion for management of soils within a cleanup site.
    - Adding a new exclusion for managing dead livestock.
    - Adding a new exclusion for managing non-livestock animal mortalities.
    - Adding a new exclusion for reused engineered soil.
    - Adding a new exclusion for reuse.
    - Adding a new exclusion for organic materials used as animal feed.

    - Adding an exclusion for land application of farm bedding and on-farm vegetative waste.
- Section 021 – Determination of solid waste:
    - Establishing a new series of tests to not be a solid waste.
- Section 100 – Definitions of solid waste:
- Section 100 – Definitions of solid waste:
    - Adding definitions for:
        - Reuse
        - Commingled recyclables
        - Commodity
        - On-farm vegetative waste
        - Active life
        - All-weather surface
        - Asphaltic materials
        - Cementous material
        - Collection event
        - Cured concrete
        - De minimis
        - Engineered soil
        - Glass
        - Indoor storage
        - Manufactured topsoil
        - Petroleum contaminated soil
        - Release
        - Street waste
        - Tip floor
    - Changing definitions for:
        - Clean and contaminated soils and dredged materials
        - Recycling
        - Manure and bedding
        - Drop box facility
        - Limited moderate risk waste facility
        - Mobile systems
        - Point of compliance
        - Septage
    - Replacing the term “capacity” with “site capacity.”
    - Replacing the term “throughput” with “processing capacity.”

- Section 200 – Beneficial use permit exemptions:
  - Modifying the definition of beneficial use.
  - Changing requirements for storage prior to beneficial use.
- Section 210 – Recycling and material recovery facilities:
  - Combining requirements for material recovery facilities and recyclers.
  - Requiring facilities accepting comingled materials to obtain a permit.
  - Allowing the five percent contamination rate for exempt facilities to be measured in weight or volume.
- Section 230 – Land application:
  - Expanding sampling requirements.
- Section 310 – Transfer stations and drop box facilities:
  - Moving the standards for material recovery facilities to the recycling section and aligning the requirements of the two standards.
  - Renaming the "Intermediate solid waste handling facilities" section "Transfer stations and drop box facilities" to cover the remaining standards in the section.
  - Moving the exemption for drop boxes accepting only recyclable materials from section 020 to this section.
- Section 320 – Piles used for storage or treatment:
  - For contaminated soils and dredged material, created an exemption for temporary storage that does not recur.
  - Changing language so a facility with ongoing pile storage is subject to the section.
  - Clarifying that the section applies to outdoor piles.
  - Changing conditional exemption requirements.
  - Changing conditional exemptions for brick, cured concrete, and asphalt.
- Section 330 – Surface impoundments and tanks:
  - Requiring minimum 2-year leak or tightness testing for pipes.
  - Requiring access control to have artificial barriers and lockable gates.
- Section 350 – Waste tire storage:
  - Changing applicability to include waste tires stored in enclosed buildings.
  - Changing applicability to include waste tires stored in containers not used for transport.
  - Updating design standards to reflect current criteria in the International Fire Code.
  - Modifying the regulatory threshold to accommodate heavy equipment tires.
- Section 355 - Waste tire transportation:
  - Separating transportation of waste tires from waste tire storage, Section 350.
- Section 360 – Moderate risk waste handling:
  - Changing requirements for conditional exemptions for limited moderate risk waste facilities and product takeback centers.

    - Clarifying requirements for secondary containment.
    - Requiring that trained staff be present when receiving moderate risk waste.
- Section 400 – Limited purpose landfills:
    - Changing the timeframe for post-closure requirements.
    - Requiring environmental covenants.
- Section 500 – Groundwater:
    - Electronically submitting groundwater data by April 1 each year.
    - Requiring additional sample analyses.
- Section 600 – Financial assurance:
    - Using prevailing wages for financial assurance calculations.
    - Adjusting financial assurance for post-closure.
- Section 700, 710, and 715 – Permitting
    - Adding a sub-section addressing permit transfer.
    - Adding language addressing WSDA proposal review as mandated by statute.
    - Updating permit modification process.
    - Updating variance request process.
- Section 990 – Criteria for inert waste:
    - Repealing entire section.
- Reorganization and clarifications with no impact to requirements.

The amended rule results in numerous relatively small one-time or annual impacts to covered facilities. The largest quantifiable costs are one-time costs to limited purpose landfills, of approximately $385 thousand economy-wide in the first year (falling to $27 thousand annually thereafter). Due to the breadth of this rulemaking, we have summarized the costs and benefits of amendments by section, in Chapter 5. Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the rule amendments, that the benefits of the rule amendments are greater than the costs.

Least-burdensome alternative:

After considering alternatives to the amended rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the amended rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

Regulatory fairness act compliance:

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:

- Reducing, modifying, or eliminating substantive regulatory requirements;
- Simplifying, reducing, or eliminating recordkeeping and reporting requirements;
- Reducing the frequency of inspections;
- Delaying compliance timetables;
- Reducing or modifying fine schedules for noncompliance; or
- Any other mitigation techniques including those suggested by small businesses or small business advocates.

Ecology considered all of the above options, and included the following legal and feasible elements in the rule amendments that reduce costs. In addition, Ecology considered the alternative rule contents discussed in Chapter 6, and excluded those elements that would have imposed excess compliance burden on businesses.

- Adding exclusions, exceptions, and clarifications to prevent overlapping permitting and regulatory requirements.
- Simplifying determination of solid wastes.
- Expanding the definition of recycling.
- Expanding regulatory flexibility regarding impervious surfaces.
- Expanding regulatory flexibility regarding protecting wastes from weather.
- Adding language to the effective dates (173-350-030(a)(ii)(A)) allowing for up to two six-month extensions for currently exempt facilities to obtain permits required under the amended rule.
- Allowing alternative storage proposals as part of the beneficial use determination application process.
- Exempting contaminated soils and dredged material being stored or treated over 90 days when the facility has a Construction Stormwater General Permit.
- Expanding flexibility through the specification that the regulatory threshold for waste tire storage is eight tons for tires that individually weigh under 500 pounds, and 20 tons for tires that individually weigh 500 pounds or more.

In the first year, when one-time and annual costs increases and reductions will be incurred, approximately seven full-time employee positions (FTEs; a full time position for one year) could be lost, not including transfers of funds to and from other industries/

In subsequent years, when only annual cost increases and reductions will be incurred, one FTE could be lost in perpetuity, not including transfers of funds to and from other industries.

Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Solid Waste Handling Standards rule (chapter 173-350 WAC; the "rule"). This includes the:

- Final Cost-Benefit Analysis (CBA).
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- 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 (RCW 34.05.328(1)(d)). 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 provides the documentation for these determinations.

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

1.1.1 Rulemaking motivation

The Solid Waste Handling Standards rule regulates multiple types of solid waste handling, including but not limited to transport, storage, processing, and disposal. It was partially updated in 2013, in a rulemaking focused on sections 220, 225 and 250 regarding organics. Over many years, however, through internal and external consultations, Ecology had identified other aspects of the rule that needed to be addressed. Based on issue papers and summaries developed following previous stakeholder work, as well as new consultation with stakeholders and Ecology staff, the

current rulemaking is a comprehensive update to the rule (revisions in sections 220, 225, and 250 are for clarity and consistency only).

1.2 Summary of the rule amendments

The rule amendments make the following changes not required by other laws or rules:

- Section 020 – Applicability:
    - Adding a new exclusion for management of soils within a cleanup site.
    - Adding a new exclusion for managing dead livestock.
    - Adding a new exclusion for managing non-livestock animal mortalities.
    - Adding a new exclusion for reused engineered soil.
    - Adding a new exclusion for reuse.
    - Adding a new exclusion for organic materials used as animal feed.
    - Adding an exclusion for land application of farm bedding and on-farm vegetative waste.
- Section 021 – Determination of solid waste:
    - Establishing a new series of tests to not be a solid waste.
- Section 100 – Definitions of solid waste:
    - Adding definitions for:
        - Reuse
        - Commingled recyclables
        - Commodity
        - On-farm vegetative waste
        - Active life
        - All-weather surface
        - Asphaltic materials
        - Cementous material
        - Collection event
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        - Engineered soil
        - Glass
        - Indoor storage
        - Manufactured topsoil
        - Petroleum contaminated soil
        - Release
        - Street waste
        - Tip floor

    - Changing definitions for:
        - Clean and contaminated soils and dredged materials
        - Recycling
        - Manure and bedding
        - Drop box facility
        - Limited moderate risk waste facility
        - Mobile systems
        - Point of compliance
        - Septage
    - Replacing the term "capacity" with "site capacity."
    - Replacing the term "throughput" with "processing capacity."
- Section 200 – Beneficial use permit exemptions:
    - Modifying the definition of beneficial use.
    - Changing requirements for storage prior to beneficial use.
- Section 210 – Recycling and material recovery facilities:
    - Combining requirements for material recovery facilities and recyclers.
    - Requiring facilities accepting comingled materials to obtain a permit.
    - Allowing the five percent contamination rate for exempt facilities to be measured in weight or volume.
- Section 230 – Land application:
    - Expanding sampling requirements.
- Section 310 – Transfer stations and drop box facilities:
    - Moving the standards for material recovery facilities to the recycling section and aligning the requirements of the two standards.
    - Renaming the "Intermediate solid waste handling facilities" section "Transfer stations and drop box facilities" to cover the remaining standards in the section.
    - Moving the exemption for drop boxes accepting only recyclable materials from section 020 to this section.
- Section 320 – Piles used for storage or treatment:
    - For contaminated soils and dredged material, created an exemption for temporary storage that does not recur.
    - Changing language so a facility with ongoing pile storage is subject to the section.
    - Clarifying that the section applies to outdoor piles.
    - Changing conditional exemption requirements.
    - Changing conditional exemptions for brick, cured concrete, and asphalt.
- Section 330 – Surface impoundments and tanks:
    - Requiring minimum 2-year leak or tightness testing for pipes.
    - Requiring access control to have artificial barriers and lockable gates.

- Section 350 – Waste tire storage:
    - Changing applicability to include waste tires stored in enclosed buildings.
    - Changing applicability to include waste tires stored in containers not used for transport.
    - Updating design standards to reflect current criteria in the International Fire Code.
    - Modifying the regulatory threshold to accommodate heavy equipment tires.
- Section 355 - Waste tire transportation:
    - Separating transportation of waste tires from waste tire storage, Section 350.
- Section 360 – Moderate risk waste handling:
    - Changing requirements for conditional exemptions for limited moderate risk waste facilities and product takeback centers.
    - Clarifying requirements for secondary containment.
    - Requiring that trained staff be present when receiving moderate risk waste.
- Section 400 – Limited purpose landfills:
    - Changing the timeframe for post-closure requirements.
    - Requiring environmental covenants.
- Section 500 – Groundwater:
    - Electronically submitting groundwater data by April 1 each year.
    - Requiring additional sample analyses.
- Section 600 – Financial assurance:
    - Using prevailing wages for financial assurance calculations.
    - Adjusting financial assurance for post-closure.
- Section 700, 710, and 715 – Permitting
    - Adding a sub-section addressing permit transfer.
    - Adding language addressing WSDA proposal review as mandated by statute.
    - Updating permit modification process.
    - Updating variance request process.
- Section 990 – Criteria for inert waste:
    - Repealing entire section.
- Reorganization and clarifications with no impact to requirements.

1.3 Reasons for the rule amendments

1.3.1 Applicability

The rule amendments add or amend definitions and exclusions from management as a solid waste. These changes were motivated by circumstances under which the previous rule could be interpreted to cover wastes and require permitting. Many such circumstances have not been enforced, and explicit exemption or exclusion improves clarity and consistency in which wastes are managed as solid wastes.

1.3.2 Determination of solid waste

The rule amendments establish a new series of tests for determining whether something is a solid waste. Historically, the rule was inconsistently interpreted. The series of tests or factors that must be met in order for a material to be considered a solid waste was needed to improve consistency in application and enforcement of the rule.

1.3.3 Definitions of solid waste

To support changes made to other sections of the rule, Ecology is changing and adding definitions. This addresses need for clear and distinct terminology to aid in application of the rule. We also amend the rule to make clear that contaminated soils and sediments are solid waste.

1.3.4 Beneficial use permit exemptions

Changes to beneficial use permit exemptions are based on identified needs to update processes and clarify requirements.

1.3.5 Recycling and material recovery facilities

The rule combines and aligns the requirements for material recovery facilities and recyclers, to improve covered facilities' ability to identify requirements for a permit or exemption and address inconsistencies. These changes address an identified need to promote recycling, identify and manage solid waste appropriately, and facilitate compliance through clarity in applicability.

1.3.6 Land application

To address inconsistency with general practice and to better reflect plant nutrient uptake at root level, the rule amends sampling requirements for land application during the initial solid waste permitting process.

1.3.7 Transfer stations and drop box facilities

The rule revises the requirements for permit exemptions, moves the requirements for material recovery facilities to combine with the requirements for recycling, and renames this section Transfer Stations and Drop Box Facilities to cover the remaining standards.

1.3.8 Piles used for storage or treatment

The rule makes multiple changes to requirements for the management of piles used for storage or treatment of solid waste. These changes were motivated by needs to limit the amount of time and locations of piles allowed under the previous rule that increase potential for piles to become hazards or attract vectors.

1.3.9 Surface impoundments and tanks

To address identified need for leak testing not only at surface impoundments and tanks but also in the long lengths of pipe connected to them, the rule establishes new testing requirements. Similarly, where access control at facilities with tanks and surface impoundments was not required consistently with other rules, it specifies requirements for barriers and gates.

1.3.10 Waste tire storage

Ecology identified sections of the rule that needed improved clarity in what was being regulated and how, pertaining to waste tire storage and transport. The rule breaks out and specifies requirements or exceptions for types of waste tire storage, as well as updating requirements to protect staff and first responders in the event of a fire.

1.3.11 Waste tire transportation

Ecology identified sections of the rule that needed improved clarity in what was being regulated and how, pertaining to waste tire storage and transport. For clarity, the rule separates requirements for waste tire transportation from waste tire storage, without material change to any requirement.

1.3.12 Moderate risk waste handling

The rule benefits the public by making it easier for product takeback centers to operate, but maintains requirements for safe collection and handling of moderate risk waste.

1.3.13 Limited purpose landfills

The rule changes the timeframe for post-closure requirements, based on potential risk rather than explicit time. It also requires environmental covenants to address potential identified compliance and long-run land use needs.

1.3.14 Groundwater

The rule modernizes data submittal, and adds analytical requirements necessary to accurately determine whether groundwater quality standards are exceeded.

1.3.15 Financial assurance

The rule amendments address identified needs to fully fund closure and post-closure activities if the local health agency takes over responsibility for the facility, and to reflect updated definition of site stabilization.

1.3.16 Criteria for inert waste

The rule reverts to a specific statutory list of wastes acceptable for disposal in an inert waste landfill, to institute clear and consistent requirements across the state.

1.3.17 Permitting

The rule updates permit processes to reflect current statutory requirements, and address an identified need for a permit transfer process.

1.3.18 Reorganization and clarifications with no impact to requirements

Multiple changes in the rule bring the rule into line with existing laws and rules, or make organizational changes or clarification intended to improve clarity and consistency, in order to facilitate compliance with the rule.

1.4 Document organization

The remainder of this document is organized in the following chapters:

- Baseline and the rule amendments (Chapter 2): Description and comparison of the baseline (what would occur in the absence of the rule amendments) and the changes to rule requirements.
- Likely costs of the rule amendments (Chapter 3): Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the rule amendments.
- Likely benefits of the rule amendments (Chapter 4): Analysis of the types and size of benefits we expect to result from the rule amendments.
- Cost-benefit comparison and conclusions (Chapter 5): Discussion of the complete implications of the CBA.
- Least-Burdensome Alternative Analysis (Chapter 6): Analysis of considered alternatives to the contents of the rule amendments.
- Small Business Economic Impact Statement (Chapter 7, when applicable): Comparison of compliance costs to small and large businesses; mitigation; impact on jobs.
- RCW 34.05.328 determinations not discussed in Chapter 5 or 6 (Appendix A).

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Chapter 2: Baseline and the Rule Amendments

2.1 Introduction

We analyzed the impacts of the rule amendments relative to the baseline of the previous rule, within the context of all existing requirements (federal and state laws and rules). This context for comparison is called the baseline, and reflects the most likely regulatory circumstances that entities would face if the amended rule were not adopted. It is discussed in Section 2.2, below.

2.2 Baseline

The baseline for our analyses generally consists of existing rules and laws, and their requirements. This is what allows us to make a consistent comparison between the state of the world with and without the rule amendments.

For this rulemaking, the baseline includes:

- The previous rule, chapter 173-350, Solid Waste Handling Standards.
- The authorizing statute, chapter 70.95 RCW, Solid Waste Management – Recycling and Reduction.
- Related laws and rules, including but not limited to:
  - Chapter 173-226, Waste Discharge General Permit Program.
  - Chapter 173-340, Model Toxics Control Act – Cleanup.

2.3 Rule amendments

The rule amendments that differ from the baseline and are not *specifically* dictated in the authorizing statute or elsewhere in law or rule include:

- Section 020 – Applicability:
  - Adding a new exclusion for management of soils within a cleanup site.
  - Adding a new exclusion for managing dead livestock.
  - Adding a new exclusion for managing non-livestock animal mortalities.
  - Adding a new exclusion for reused engineered soil.
  - Adding a new exclusion for reuse.
  - Adding a new exclusion for organic materials used as animal feed.
  - Adding an exclusion for land application of farm bedding and on-farm vegetative waste.
- Section 021 – Determination of solid waste:
  - Establishing a new series of tests to not be a solid waste.
- Section 100 – Definitions of solid waste:

    - Adding definitions for:
        - Reuse
        - Commingled recyclables
        - Commodity
        - On-farm vegetative waste
        - Active life
        - All-weather surface
        - Asphaltic materials
        - Cementous material
        - Collection event
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        - Engineered soil
        - Glass
        - Indoor storage
        - Manufactured topsoil
        - Petroleum contaminated soil
        - Release
        - Street waste
        - Tip floor
    - Changing definitions for:
        - Clean and contaminated soils and dredged materials
        - Recycling
        - Manure and bedding
        - Drop box facility
        - Limited moderate risk waste facility
        - Mobile systems
        - Point of compliance
        - Septage
    - Replacing the term "capacity" with "site capacity."
    - Replacing the term "throughput" with "processing capacity."
- Section 200 – Beneficial use permit exemptions:
    - Modifying the definition of beneficial use.
    - Changing requirements for storage prior to beneficial use.
- Section 210 – Recycling and material recovery facilities:
    - Combining requirements for material recovery facilities and recyclers.
    - Requiring facilities accepting comingled materials to obtain a permit.
    - Allowing the five percent contamination rate for exempt facilities to be measured in weight or volume.

- Section 230 – Land application:
    - Expanding sampling requirements.
- Section 310 – Transfer stations and drop box facilities:
    - Moving the standards for material recovery facilities to the recycling section and aligning the requirements of the two standards.
    - Renaming the "Intermediate solid waste handling facilities" section "Transfer stations and drop box facilities" to cover the remaining standards in the section.
    - Moving the exemption for drop boxes accepting only recyclable materials from section 020 to this section.
- Section 320 – Piles used for storage or treatment:
    - For contaminated soils and dredged material, created an exemption for temporary storage that does not recur.
    - Changing language so a facility with ongoing pile storage is subject to the section.
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    - Changing the timeframe for post-closure requirements.
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    - Electronically submitting groundwater data by April 1 each year.
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    - Adding a sub-section addressing permit transfer.
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    - Updating permit modification process.
    - Updating variance request process.
- Section 990 – Criteria for inert waste:
    - Repealing entire section.
- Reorganization and clarifications with no impact to requirements.

2.3.1 Applicability

Baseline
The previous rule allows exemptions from permitting and excludes some solid waste activities from the rule completely, per authority granted in RCW 70.95.305. Ecology determined that authorizing statute requires solid waste handling activities to be covered under the rule, but exemptions to permitting can be provided.

Adopted

- Things excluded under the rule are not solid waste handling activities.
- Adding a new exclusion for management of soils within a cleanup site.
- Adding a new exclusion for managing dead livestock.
- Adding a new exclusion for managing non-livestock animal mortalities.
- Adding a new exclusion for reused engineered soil.
- Adding a new exclusion for reuse.
- Adding a new exclusion for organic materials used as animal feed.
- Adding an exclusion for land application of farm bedding and on-farm vegetative waste.

Expected impact
While these changes would normally allow more facilities to avoid the costs of compliance with the rule or other potentially overlapping rules – these changes are intended to avoid regulatory overlap – the applicability of the exclusions has not been enforced. We therefore expect a benefit arising from clarity in the applicability of the rule, but without additional benefits of avoided expenditure.

2.3.2 Determination of solid waste

Baseline
Under the baseline rule, determination of what is or is not regulated as a solid waste is determined by staff experience and interpretation of existing language in each subsection of the rule. There is no specific section helping users understand whether something is a solid waste.

Adopted
Establishes criteria to determine whether a material is a solid waste. The rule establishes a set of tests that determine whether a material is a solid waste, except as defined in other sections of the rule. These include:

- A material is a solid waste if any of the following is true.
  - It has been discarded, abandoned, or disposed of.
  - It has been permanently placed in or on land for the purpose of disposal.
  - It has been collected through residential or commercial solid waste or recyclable material collection.
  - It has been received at a solid waste handling facility for recycling, incineration, disposal or beneficial use as those terms are defined in WAC 173-350-100.
  - The generator has paid for or will need to pay for removal or processing of the material for recycling, incineration, disposal, or beneficial use as those terms are defined in WAC 173-350-100.
  - It has been stockpiled for recycling, reuse, or for use after recycling, but no market is available and stockpiles violate the performance standards of WAC 173-350-040.
- A material is no longer a solid waste if all of the following are true.
  - It is no longer discarded or abandoned.
  - The material has been separated from solid wastes.
  - It has been recycled, or is ready for reuse, as defined in WAC 173-350-100.
  - It has positive market value, as indicated by established markets for the material. Paying a person to remove or process the material for recycling, disposal, or incineration is not positive market value, nor is paying a discounted amount for removal or processing.
  - It is stored and managed to preserve its value, and is stored in a manner that presents little or no risk to human health or the environment.
  - It does not contain harmful chemical, physical, biological, or radiological substances that will pose a threat to human health or the environment for its intended or likely manner of use.

Expected impact
The rule amendments will make it much easier for stakeholders and local health authorities to determine whether a material is a solid waste. The new section on determination of solid waste also results in the ability to recognize when materials, such as clean, baled cardboard have been processed to a point that handling is not considered solid waste management. This addresses and important concern in the recycling community that their efforts should be rewarded with the recognition that they yield products, not wastes. Facilities that are conditionally exempt under the baseline but more clearly determined not to be a solid waste under the rule amendments could avoid the costs of notification and reporting.

2.3.3 Definitions of solid waste

Baseline
The baseline rule defines clean soils and dredged material as those that are not dangerous waste or contaminated soils or dredged material. "Contaminated dredged material" means dredged material resulting from the dredging of surface waters of the state where contaminants are present in the dredged material at concentrations not suitable for open water disposal and the dredged material is not dangerous waste and is not regulated by section 404 of the Federal Clean Water Act. "Contaminated soils" means soils removed during the cleanup of a hazardous waste site, or a dangerous waste facility closure, corrective actions or other clean-up activities and which contain harmful substances but are not designated dangerous wastes.

An additional part of the baseline is the Model Toxics Control Act (MTCA; chapter 173-340 WAC) sets standards for contaminated soils and dredged materials (sediments) that require cleanup.

The baseline also includes an existing definition of recycling as transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. Recycling does not include collection, compacting, repackaging, and sorting for the purpose of transport.

Adopted
Redefining clean and contaminated soils and dredged materials:

- "Clean dredged material" means dredged material that does not contain contaminants from a release. It also includes dredged material that contains one or more contaminants from a release and when moved from one location to another for placement on or into the ground:
    - Does not contain contaminants at concentrations that exceed a cleanup level under chapter 173-340 WAC, MTCA - cleanup regulation, that would be established for existing land use at the location where dredged material is placed; or
    - Contains contaminants that affect pH, but pH of the dredged material is between 4.5 and 9.5 or within natural back-ground pH limits that exist at the location where dredged material is placed.

- "Clean soil" means soil that does not contain contaminants from a release. It also includes soil that contains one or more contaminants from a release and when moved from one location to another for placement on or into the ground:
    - Does not contain contaminants at concentrations that exceed a cleanup level under chapter 173-340 WAC, MTCA - cleanup regulation, that would be established for existing land use at the location where soil is placed; or
    - Contains contaminants that affect pH, but pH of the soil is between 4.5 and 9.5 or within natural background pH limits that exist at the location where soil is placed.

  Examples of potentially clean soil may include but are not limited to soil from undeveloped lands unlikely to have impacts from release of contaminants associated with area wide or local industrial or historical activities. This includes similar soil over which development may have occurred but land use is unlikely to have led to a release, such as use for residential housing, or over which development provided protection from impacts from a release, such as coverage by pavement. Soil with substances from natural background conditions, as natural background is defined in WAC 173-350-100, are clean soil under this rule.
- "Contaminated dredged material" means dredged material containing one or more contaminants from a release and when moved from one location to another for placement on or into the ground:
    - Contains contaminants at concentrations that exceed a cleanup level under chapter 173-340 WAC, MTCA - cleanup regulation, that would be established for existing land use at the location where dredged material is placed; or
    - Contains contaminants that affect pH, and pH of the dredged material is below 4.5 or above 9.5 or is not within natural background pH limits that exist at the location where dredged material is placed.

  Contaminated dredged material is solid waste and must to be managed at a solid waste handling facility in conformance with this chapter or chapter 173-351 WAC, Criteria for municipal solid waste landfills. Characterization of material may be required based on solid waste facility acceptance standards. An example of a potentially contaminated dredged material may include but is not limited to dredged material from surface waters containing contaminants from a release.
- "Contaminated soil" means soil containing one or more contaminants from a release and when moved from one location to another for placement on or into the ground:
    - Contains contaminants at concentrations that exceed a cleanup level under chapter 173-340 WAC, MTCA - cleanup regulation, that would be established for existing land use at the location where soil is placed; or

- Contains contaminants that affect pH, and pH of the soil is below 4.5 or above 9.5 or is not within natural background pH limits that exist at the location where soil is placed.

Unless excluded in WAC 173-350-020, contaminated soil is solid waste and must be managed at a solid waste handling facility in conformance with this chapter or chapter 173-351 WAC, Criteria for municipal solid waste landfills. Characterization of material may be required based on solid waste facility acceptance standards. Examples of potentially contaminated soil may include but are not limited to street waste, petroleum contaminated soil, engineered soils, and soils likely to have contaminants from a release associated with from industrial or historical activities.

- Adding a definition for reuse:
  - "Reuse" means using an object or material again, either for its original purpose or for a similar purpose, without significantly altering the physical form of the object or material. Reuse is not a solid waste handling activity, but separating materials from other solid wastes for reuse is a solid waste handling activity. Use of solid waste as fill or alternative daily cover is not reuse.
- Adding a definition of commodity:
  - "Commodity" means a material that meets widely recognized standards and specifications, such as those from ASTM International or the Institute of Scrap Recycling Industries, Inc., (for example, commodity-grade scrap metal) that is mutually interchangeable with other materials meeting the same specifications, and that has well-established markets.
- Changing the definition of recycling:
  - "Recycling" means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. This adds processing waste materials to produce tangible commodities, and removes not including collection, compacting, repackaging, and sorting for the purpose of transport.

Expected impact

The rule amendments potentially result in increased disposal costs as well as some increased permitting costs at facilities that are not currently permitted. They also improve clarity as to who is regulated by the rule, and determine that facilities accepting only commodities or other recycled products are no longer solid waste handlers allowing them to avoid permitting or conditional exemption costs.

2.3.4 Beneficial use permit exemptions

Baseline
The baseline rule addresses beneficial use permit exemptions, defining beneficial use as the use of solid waste as an ingredient in a manufacturing process, or as an effective substitute for natural or commercial products, in a manner that does not pose a threat to human health or the environment. Avoidance of processing or disposal cost alone does not constitute beneficial use. It sets conditions as part of the approval.

Adopted

- Modifying the definition of beneficial use to explicitly exclude the use of solid waste solely as fill and adding the soil amendment component of the beneficial use permit exemption and land application sections.
- Changing requirements for storage prior to beneficial use to allow for other approved storage methods.

Expected impact
The rule amendments are likely to result in greater flexibility in storage methods prior to beneficial use.

2.3.5 Recycling and material recovery facilities

Baseline
The baseline rule regulates material recovery facilities separately from recycling facilities, setting different permitting requirements for non-exempt facilities. It also has no definition for commodities. Permit-exempt material recovery facilities may accept commingled recyclables with 5 percent or less contamination, or up to 10 percent in a given load.

Adopted

- Incorporating changes made in definitions and combining the standards for recycling and material recovery facilities under one section.
- Required facilities accepting comingled recycling to obtain a permit.
- Allowed 5 percent contamination at permit exempt MRFs and recycling facilities to be measured by weight or volume, instead of by weight alone, and removed the 10 percent in a given load allowance.

Expected impact
The expected impacts of amendments to this section are discussed in the corresponding sections with which they align: definitions and regulation of material recovery facilities. Making all sections of the rule consistent in definitions, structure, and requirements provide the benefit of clarity to the regulated community as to whether they are regulated and what compliance requirements are.

While facilities accepting commingled recyclables will no longer be exempt, most are already permitted since they exceed the percent contamination threshold. Facilities might also choose to no longer accept commingled recyclables, if the resulting overall cost is lower.

2.3.6 Land application

Baseline
The baseline rule requires an analysis of soil nutrients be done once for the initial permitting process, in the upper two feet of land application soil, in one-foot increments.

Adopted
Expanding sampling requirements, by requiring a third sample at three-foot depth at each sampling location.

Expected impact
New permittees using land application will need to analyze one additional sample at each sampling location, during permit application, resulting in increased compliance costs as well as providing the benefit of more accurate information on soil nutrients at depths reached by plant roots.

2.3.7 Transfer stations and drop box facilities

Baseline
The baseline rule regulates material recovery facilities in the same section as disposal facilities like transfer stations, and separately from recycling facilities, with different permitting and exempt criteria.

Adopted
- Moving the standards for material recovery facilities to the recycling section and aligning the requirements of the two standards.
- Renaming the Intermediate solid waste handling facilities section Transfer stations and drop box facilities to cover the remaining standards in the section.
- Moving the exemption for drop boxes accepting only recyclable materials from section 020 to this section.

Expected impact
Regulating material recovery facilities and recyclers in the same manner and putting them in a separate section from disposal facilities like transfer stations and drop boxes improves regulatory clarity and equitability.

2.3.8 Piles used for storage or treatment

Baseline
The baseline rule sets permit and exemption requirements for piles used for storage or treatment. Exemptions are for certain wastes and/or timeframes, and the rule sets notification and reporting requirements for most exempt pile facilities. Interpretation of timeframes in the rule has been problematic, resulting in ongoing piles at sites not falling under the regulation.

Adopted

- Changing language so that the rule will apply to facilities that have ongoing pile storage, even if piles are removed within a certain timeframe, but restarted.
- Added an exemption for the temporary storage of contaminated soils where a construction stormwater permit is in place.
- Limited the storage of agricultural waste on a site to what can be applied in one year, but allowed for placement on multiple sites.
- Clarifying the section is applicable to outdoor piles, not indoor piles.
- Adding or changing conditional exemption requirements.
- Changing conditional exemptions for brick, cured concrete, and asphalt.

Expected impact
The amended rule will likely result in some additional pile facilities providing notification and annual reports. The corresponding benefits will be proper management, improved information on exempt piles, reduced regulatory overlap with other permits and/or regulations, improved planning, and comprehensive records.

2.3.9 Surface impoundments and tanks

Baseline
The baseline rule sets leak detection and prevention requirements for surface impoundments, but not for the pipes leading to them. It also generally requires access control to surface impoundments, but does not specify measures.

Adopted

- Requiring minimum 2-year leak or tightness testing for pipes.
- Requiring access control to have artificial barriers and lockable gates.

Expected impact
The amended rule will likely create costs for facilities needing to test pipes for leaks, remedy leaks, and document these activities. While the specification of artificial barriers and lockable gates is a change from the existing broad requirement, existing requirements at facilities that must also comply with requirements for limited purpose and municipal waste landfills likely result in existing compliance with the specification.

2.3.10 Waste tire storage

Baseline
The baseline rule sets applicability and fire code requirements for waste tire storage facilities. It establishes the regulatory threshold at eight hundred individual automobile tires or eight tons of tires. It states that tire storage requirements are not applicable to the storage of waste tires in an enclosed building or in mobile containers used to transport waste tires.

Adopted

- Modifying applicability to accommodate a reasonable regulatory threshold for waste tires previously used on heavy equipment. In the case of tires that weigh five hundred pounds or more individually, the regulatory threshold for waste tire storage is increased to twenty tons. In the case of tires that weigh less than five hundred pounds individually, the regulatory threshold for waste tire storage remains eight tons.
- Changing applicability to include enclosed buildings.
- Changing applicability to include waste tires stored in containers not used for transport, whereas the existing rule could be interpreted to exclude waste tires stored in transportable containers regardless of whether they are actively used to transport tires.
- Updating permit requirements - design (formerly known as design standards) of waste tire storage facilities to reflect criteria stated in the International Fire Code. Previously, criteria from the Universal Fire Code was used to model the design standards of storage facilities. Some local jurisdictions still use Universal Fire Code, and the amended rule allows for flexibility.
- Updating permit requirements - design (formerly known as design standards) so that in instances where waste tires are stored and not processed on site, tires that weigh less than five hundred pounds individually are required to be segregated from tires that weigh more than five hundred pounds individually.

Expected impact

Modifying the regulatory threshold for waste tire storage to accommodate heavy equipment tires enables a reasonable compliance threshold for businesses that may accumulate these larger tires. While passenger car and truck tires can be loaded into a mobile container to max out at an eight ton capacity, heavy equipment tires are typically loaded onto a flatbed trailer to max out at a twenty ton capacity. The intent is to set the regulatory threshold at one load to be hauled away. With this modified regulatory threshold, businesses that own heavy equipment stand to save money from not being required to haul away more numerous than necessary partial loads of waste tires. Instead, they can save up these tires for fewer full loads.

Applicability changes in the amended rule will likely result in increased costs to account for, manage, and financially assure long-term management of waste tires stored in enclosed buildings and containers that are not actively used for transport. The update in design standards to reflect the current International Fire Code may lead to some additional associated costs, however, the updated design standards has built in flexibility for local jurisdictions that still use the Universal Fire Code.

The amendments will likely result in improved management of indoor and container-stored tires, improving environmental protection, as well as reducing risks to staff, the public, and first responders in the event of a tire fire.

2.3.11 Waste tire transportation

Baseline
The baseline rule combines requirements for waste tire storage and waste tire transportation in one section.

Adopted
Separating transportation of waste tires from waste tire storage, Section 350.

Expected impact
Moving requirements for waste tire transportation does not impact behavior, but may provide a benefit of clarity to transporters of waste tires in how they are regulated.

2.3.12 Moderate risk waste handling

Baseline
The baseline rule contains exemptions for limited moderate risk waste facilities, collection/mobile facilities, and product takeback centers, setting conditions for exemption including but not limited to prevention of releases to protect public and environmental health, notification requirements, and performance standards.

Adopted

- Changing requirements for conditional exemptions for limited moderate risk waste facilities and product takeback centers, including closed containers, labeling, and public access control, as well as maintaining containers in good condition, allowing inspections, and requiring labels on containers, respectively.
- Clarifying requirements for impervious surfaces, specifying that floors must only be impervious when the floor itself serves as secondary containment requirements for impervious surfaces, specifying that floors must only be impervious when the floor itself serves as the containment.
- Requiring that trained staff be present when receiving moderate risk waste.

Expected impact
The rule amendments are likely to result in increased costs to meet conditional exemptions at limited moderate risk waste facilities, collection/mobile facilities, and product takeback centers, for training staff, and updating operating plans. They are also likely to result in improved safety for employees and first responders, and environmental safety. More options have been given for facilities to meet the secondary containment requirements, which could result in cost savings for facilities.

2.3.13 Limited purpose landfills

Baseline
The baseline rule defines post-closure as the requirements placed upon disposal facilities after closure to ensure their environmental safety for at least a 20-year period or until the site becomes stabilized (little or no settlement, gas production, or leachate generation). It also requires a recording with the county auditor to provide some record of the use of the

property as a landfill at the time of closure: “The owner or operator shall record maps and a statement of fact concerning the location of the disposal facility as part of the deed with the county auditor not later than three months after closure.” The apparent intent of this requirement is to provide information to guide the future uses of properties where landfills have been located.

Adopted

- Changing the timeframe for post-closure to whenever the site is determined to be stabilized.
- Requiring environmental covenants.

Expected impact

The amended rule amendments may result in either longer or shorter post-closure periods, depending on individual landfill attributes. Staff expertise indicates that most will be shorter. The amended rule amendments require facilities to perform modeling and analysis to determine financial assurance timeframes.

Requiring environmental covenants will likely result in additional cost to create them, as well as long-run environmental protection and potential reduction of liability and land-use problems.

2.3.14 Groundwater

Baseline

The baseline rule requires permittees to submit groundwater data, and requires samples to be analyzed for 17 parameters.

Adopted

- Electronically submitting groundwater data by April 1 each year.
- Requiring additional sample analysis for five analytes.

Expected impact

The rule amendments are likely to increase costs of switching to and using the electronic data submittal system, as well as analytical costs. They are also likely to improve efficiency in data submittal, receipt, and processing, as well as improving accuracy in determining whether groundwater standards have been exceeded.

2.3.15 Financial assurance

Baseline

The baseline rule requires use of a wage estimate in current dollars, but does not specify the source. It also requires planning financial assurance for minimum 20-year post-closure.

Adopted

- Using prevailing wages for financial assurance calculations.
- Adjusting financial assurance for post-closure to reflect changes in how post-closure timeframes are determined.

Expected impact
The rule amendments are likely to result in increased financial assurance requirements for some facilities, and reduced financial assurance requirements for other facilities. They will also provide more certainty that there will be sufficient funds for closure and to maintain post-closure requirements.

2.3.16 Permitting

Baseline
The baseline rule reflects solid waste permitting requirements and procedures expressed in the solid waste statute. The statute has been amended since the last rule revision and now includes additional review requirements and exclusions.

Adopted

- Update the permit modification and variance sections to be more clear and relevant to current solid waste management practices.
- Add a solid waste permit transfer section for when facility ownership changes.
- Adopt language that is consistent with statutory changes pertaining to WSDA review of permit applications and permits under certain circumstances.

Expected impact
The amended rule improves consistency with statute and create a formal process for permit transfers. The explicit permit transfer process will potentially increase costs to new owners of facilities, depending on the facility type and subsequent plans for use, while creating a benefit of ensuring new owners are capable of meeting all permit requirements, financial assurance requirements where applicable, and ensure that solid wastes at an applicable facility continues to be appropriately managed.

2.3.17 Criteria for inert waste

Baseline
The baseline rule allows for determinations of inert waste to be made based on meeting certain criteria.

Adopted
Repealing entire section and reverting to only those wastes listed explicitly in the authorizing statute:

- Cured concrete, including any embedded steel reinforcing and wood.
- Asphaltic materials, including road construction asphalt.
- Brick and masonry.

- Ceramic materials produced from fired clay or porcelain.
- Glass.
- Stainless steel and aluminum.

Expected impact
The rule amendments will likely result in some, though likely small, impacts to wastes being taken to inert waste landfills rather than more expensive disposal. Impacts are likely small because inert waste landfills already largely determine which wastes can be disposed of based on the statutory authority to minimize liability.

2.3.18 Reorganization and clarifications with no impact to requirements

Baseline
The previous rule organization.

Adopted
Multiple changes to rule organization and wording are adopted in order to streamline the rule language and improve clarity. They do not change requirements or applicability.

Expected impact
The rule amendments are likely to improve ease of compliance with the rule, so that facilities are better aware of whether they are covered by the rule, whether they are required to obtain a permit or can obtain an exemption, and what is required of them if permitted or exempt.

Chapter 3: Likely Costs of the Rule Amendments

3.1 Introduction

We assessed the likely costs associated with the rule amendments, as compared to the baseline, and quantified those costs where possible. The rule amendments and the baseline are discussed in detail in Chapter 2 of this document.

3.2 Cost analysis

3.2.1 Applicability

No additional cost over the baseline is expected for amendments to this section of the rule.

3.2.2 Determination of solid waste

No additional cost over the baseline is expected for amendments to this section of the rule.

3.2.3 Definitions of solid waste

No additional cost over the baseline is expected for amendments to this section in and of themselves.

3.2.4 Beneficial use permit exemptions

No additional cost over the baseline is expected for amendments to this section of the rule.

3.2.5 Recycling and material recovery facilities

The rule amendments will potentially result in some increased permitting costs at facilities that are not currently permitted:

- While facilities accepting commingled recyclables will no longer be exempt from permitting under the amended rule, most are already permitted. We identified ten facilities that will potentially be impacted by this change. If these facilities did incur full permitting costs, actual permitting costs will rely heavily on facility type and attributes. For illustrative purposes, we assumed 10 analytical components to permitting, and 8 hours of engineer time to complete each component, resulting in approximate permitting costs of nearly $10 thousand. This does not include the costs of fees, or compliance adjustments to facilities and business practices necessary to comply with a permit.

3.2.6 Land application

New permittees using land application will need to analyze one additional sample at each sampling location as part of the permit application, resulting in increased costs. We estimated costs based on one new permit per year, $20 per additional analysis[1], and eight representative sample locations per facility. This resulted in total estimated costs of $160 per year, with an equivalent 20-year present value of nearly $3 thousand.

3.2.7 Transfer stations and drop box facilities

Impacts to material recovery facilities no longer regulated under the revised and renamed formerly "Intermediate solid waste handling facilities" section, are discussed in 3.2.5 above.

3.2.8 Piles used for storage or treatment

The adopted rule will likely result in additional pile facilities providing notification and annual reports:

- Changes to conditional exemption requirements will result in approximately 24 exempt facilities incurring costs of keeping records, submitting notifications, and annual reporting. We estimated this cost based on 4 hours of time spent by an owner/operator, a $48.92 hourly wage[2] multiplied by a factor of 2.257 for overhead[3], and an inflation adjustment of 2.7 percent.[4] This resulted in a cost estimate of approximately $12 thousand per year, corresponding to a total 20-year present value[5] cost of $196 thousand.
- Changes to exemptions for piles of brick, cured concrete, and asphalt with a water quality sand and gravel or construction stormwater general permit will result in increased exemptions that will incur the costs of notification and annual reporting, rather than the full cost of permitting when recycling these wastes. We estimated reporting cost based on 4 hours of owner/operator time at 59 facilities, a $48.92 hourly wage[6] multiplied by a factor of 2.257 for overhead[7], and an inflation adjustment of 2.7 percent.[8] This resulted in a cost estimate of approximately $28 thousand per year (total across 59 facilities), corresponding to a 20-year present value[9] cost of $488 thousand.

[1] Communication with Joel Bird, WA Department of Ecology Manchester Lab. 10/25/2017.
[2] US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.
[3] WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.
[4] US Bureau of Labor Statistics (2017). Consumer Price Index 2016-2017.
[5] US Treasury Department (2017). Historic rates of return on I-Bonds, 1998 – 2017.
[6] US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.
[7] WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.
[8] US Bureau of Labor Statistics (2017). Consumer Price Index 2016-2017.
[9] US Treasury Department (2017). Historic rates of return on I-Bonds, 1998 – 2017.

Facilities that also crush the material into a recycled aggregate product may already be reporting as required under the baseline recycling standards, and will not incur any additional cost. 91 regulated facilities reported in 2015, most or all of which produce recycled aggregate product. A total of 114 facilities reported, including exempt pile facilities that are not required to report under the baseline. If up to half of facilities with piles of brick, cured concrete, or asphalt already report under the baseline, this total present value cost will drop to approximately $244 thousand.

3.2.9 Surface impoundments and tanks

The amended rule will likely create costs for facilities needing to test pipes for leaks, remedy leaks, and document these activities. While the specification of artificial barriers and lockable gates is a change from the existing broad requirement, existing requirements at facilities that must also comply with requirements for limited purpose and municipal waste landfills likely result in existing compliance with the specification.

We estimated the cost of leak or tightness testing at a facility with surface impoundments that does not discharge to sewers. This estimate was based a facility incurring the costs of 40 hours of licensed professional engineer time, a $48.92 hourly wage[10] multiplied by a factor of 2.257 for overhead[11], and an inflation adjustment of 2.7 percent.[12] This resulted in a cost estimate of approximately $12 thousand per facility per testing year (testing is semiannual), corresponding to a 20-year present value[13] cost of approximately $110 thousand.

3.2.10 Waste tire storage

Applicability changes will likely result in increased costs to account for, manage, and financially assure long-run management of waste tires stored in enclosed buildings and containers that remain on site.

- We estimated the costs of permitting including financial assurance statewide to appropriately dispose of all waste tires, because there is currently insufficient data on facilities that are not covered by the baseline rule. This illustrative extreme high-end estimate was based on the assumptions of one waste tire per person per year, approximately 7 million state population, 100 tires per ton, and an average disposal cost of $250 per ton. This would result in a total cost to dispose of all waste tires in the state of $17.5 million per year. The amended rule will not result in costs this high, as many waste tires are managed according to the requirements of the baseline. Expanding the rule's coverage to waste tires stored in enclosed buildings and containers that remain on site will result in changes for some unknown subset of the total waste tires in the state.

[10] US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.
[11] WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.
[12] US Bureau of Labor Statistics (2017). Consumer Price Index 2016-2017.
[13] US Treasury Department (2017). Historic rates of return on I-Bonds, 1998 – 2017.

- If local jurisdictions currently require International Fire Code compliance, the amended rule does not result in additional costs. If facilities are regulated according to the outdated Universal Fire Code, they might incur additional compliance costs upon implementation of the amended rule. Effectively, this may mean they could store fewer waste tires per unit of space, resulting in a need to manage tires off site more rapidly and incur disposal costs sooner than they would under the baseline. However, since the design standards in section 350 have built in flexibility that allow for the local jurisdictions to use the fire code of their choosing, there may be little to no change.

3.2.11 Waste tire transportation

No additional cost over the baseline is expected for amendments to this section of the rule.

3.2.12 Moderate risk waste handling

The rule amendments are likely to result in some increased costs for limited MRW facilities and product takeback centers.

- The rule amendments are likely to result in increased costs to meet conditional exemptions at limited MRW facilities and product takeback centers. Examples of conditional exemptions to meet include using closed containers, labeling, and access control:
    - We assumed using closed containers will require one in ten facilities (approximately 30) to minimally adjust their procedures to keep containers closed.
    - We assumed that one percent of the approximately 256 limited MRW facilities will need to purchase signage, using up to 12 signs at $20 each. This corresponds to a one-time cost of up to $800.
    - Finally, we assumed one in ten facilities (approximately 30) will need to install additional fencing as applicable, as well as use padlocks.
- The requirement to have trained workers present during acceptance of moderate risk waste will likely result in minimal temporary reassignment of workers, during intake periods. We assumed that 12 identified moderate risk waste facilities will need to have one employee undergo hazardous waste worker training. This training can cost up to $300, resulting in a one-time cost of $3,600.

3.2.13 Limited purpose landfills

The rule amendments may result in either longer or shorter post-closure periods, depending on individual landfill attributes. Most facilities should expect shorter post-closure periods, as they have limited amounts of organic material that would degrade for extended periods. Requiring environmental covenants will likely result in additional cost to create them.

- We estimated the cost of evaluating post-closure timelines, application preparation, and updating post-closure plans for 23 limited purpose landfills. We estimated this cost based on a high-end estimate of 120 hours of engineer time, a $48.92 hourly wage[14] multiplied by a factor of 2.257 for overhead[15], and an inflation adjustment of 2.7 percent.[16] This resulted in a one-time cost estimate of approximately $313 thousand.
- Similarly, we estimated the cost of developing environmental covenants at 23 limited purpose landfills, based on 8 hours of legal consultant time, a $53.45 hourly wage[17] multiplied by a factor of 2.257 for overhead[18], and an inflation adjustment of 2.7 percent.[19] This resulted in a one-time cost estimate of approximately $23 thousand.

3.2.14 Groundwater

The rule amendments are likely to create compliance costs of switching to and using the electronic data submittal system, as well as analytical costs.

- We estimated costs for 23 limited purpose landfills to set up electronic data submission accounts (if they do not currently have them; this is a high-end estimate), based on 6.25 hours at an hourly wage including overhead of $150. This total one-time cost is approximately $22 thousand.
- While electronic data submissions itself bears a cost, the incremental cost of providing data to Ecology as compared to the baseline of submitting paper or email documents is likely a cost savings, after initial account setup (if applicable).
- For additional analysis for five constituents per well, we estimated costs for the number of wells at 23 landfills based on each landfill's number of sampling events per year (maximum 4), and $12 per metals analysis.[20] This total cost is approximately $27 thousand per year, corresponding to a 20-year present value of $491 thousand.

[14] US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.
[15] WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.
[16] US Bureau of Labor Statistics (2017). Consumer Price Index 2016-2017.
[17] US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.
[18] WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.
[19] US Bureau of Labor Statistics (2017). Consumer Price Index 2016-2017.
[20] Communication with Cole Carter, WA Department of Ecology. 10/04/2017.

3.2.15 Financial assurance

The rule amendments are likely to result in increased financial assurance requirements for some facilities, and reduced financial assurance requirements for other facilities.

- Median financial assurance requirements in available data were approximately $1 million.21 Some facilities, however, meet financial assurance using a financial test that determines the owner company has sufficient funds to meet requirements. These facilities are not required to acquire additional insurance or bonds. It is not clear from available information whether facilities tend to overestimate or underestimate wages as compared to the prevailing wage. We therefore could not determine whether or how much potential financial assurance requirements will increase or decrease.
- The cost of modeling the length of post-closure care is included above under Limited purpose landfills (section 3.2.13).

3.2.16 Permitting

The rule amendments may increase some costs of compliance to new facility owners.

- The rule amendment may increase the cost of transferring permits when a facility is sold to a new owner. Local health department processing costs could be passed through to a new owner. The process requires that the new owner demonstrate the ability properly run the facility and meet facility compliance requirements. The occurrences of permit transfer are infrequent and some local jurisdictions that issue solid waste permits may already have fees built into the local solid waste permitting fee ordinances. In addition, under the baseline, facilities are required to have appropriate permits or other compliance behaviors, regardless of whether they are new facility owners, so this cost is potentially one that should already be incurred under the baseline, even if it is not consistently implemented.

3.2.17 Criteria for inert waste

The rule amendments potentially result in small cost impacts.

- The rule amendments will likely result in some, though likely small, impacts to wastes being taken to inert waste landfills rather than more expensive disposal. Impacts are likely small because inert waste landfills already largely determine which wastes can be disposed of based on the statutory authority to minimize liability.

3.2.18 Reorganization and clarifications with no impact to requirements

No additional costs, as compared to the baseline, are expected from amendments to this section.

- [21] WA Department of Ecology (2017). Sampled financial assurance values from WA Department of Ecology Northwest Region and Eastern Region.

Chapter 4: Likely Benefits of the Rule Amendments

4.1 Introduction

We estimated the likely benefits associated with the rule amendments, as compared to the baseline (both described in Chapter 2 of this document).

4.2 Benefit analysis

4.2.1 Applicability

Ecology determined on review of statutory authority that we cannot exclude solid waste handling activities from the rule. We must either require a permit for a solid waste handling activity, or provide a means of exemption. Therefore, all solid waste handling activities (other than municipal solid waste landfills) do fall under the amended rule. Changes clarify the applicability of the rule, resulting in a benefit to all stakeholders.

4.2.2 Determination of solid waste

We expect these changes to allow some recycler and exempt pile facilities that are currently conditionally exempt, to avoid the costs of coverage by the rule, including the cost of annual reporting.

- We assumed annual reporting takes 4 hours of owner/operator time, at 20 recycler and exempt pile facilities. Using an hourly wage of $48.92[22], updated for inflation using 2.7 percent[23], and an overhead multiplier of 2.257[24], this benefit is estimated at up to $9,100 per year. This converts to a 20-year present value[25] of $165 thousand. In addition, there may be a benefit to facilities in their ability to locate under local zoning ordinances, if they are not considered a solid waste facility.

4.2.3 Definitions of solid waste

The rule amendments improve clarity as to who is regulated by the rule, allow commodities to be counted by recyclers, and determine that some facilities accepting recycled materials to no longer be solid waste handlers allowing them to avoid permitting or conditional exemption costs.

[22] US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.
[23] US Bureau of Labor Statistics (2017). Consumer Price Index 2016-2017.
[24] WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.
[25] US Treasury Department (2017). Historic rates of return on I-Bonds, 1998 – 2017.

- The definition of "reuse" clarifies which activities associated with reuse are or are not solid waste handling activities. It also provides clarity that use of solid waste as fill or as alternative daily cover in landfills is not reuse.
- The definition of "commodity" allows facilities buying commodities to be out of the solid waste regulatory system. This includes items for which there is a functioning market, such as corrugated cardboard and aluminum cans.
- Amending the definition of "recycling" to add processing into commodities, and to remove the exclusion of collection and repackaging for transport, results in some facilities no longer being considered solid waste handling facilities. Compared to the baseline, this will result in those facilities avoiding the costs of solid waste permitting or conditional exemption. As a result, this benefit is the potential avoided cost of permitting, but as most such facilities qualified for exemption under the baseline, is not likely to include full avoided costs of permitting.

4.2.4 Beneficial use permit exemptions

Changes to this section are primarily organizational. Additions of applicability clarifications are based on experience implementing the program and bring the section organization in line with rule format in other sections of the rule.

4.2.5 Recycling and material recovery facilities

Regulating material recovery facilities and recyclers in one consistent manner improves regulatory clarity and equitability. This provides the benefit of clarity to the regulated community as to whether they are regulated and what compliance requirements are.

Both recycling and material recovery facilities only handle source-separated recyclable materials, and operators are often confused as to which standard applies. By combining the two handling styles under one standard, the rule eliminates this source of confusion. It also provides clear standards for permitting a recycling facility, should that ever be necessary (it is not currently). Requiring permit oversight for facilities processing commingled materials may reduce fraudulent recycling and residual waste resulting from contamination of the recycling stream. Contamination of recyclable waste streams is damaging to statewide goals that place recycling ahead of disposal. Contaminated commodity streams damage the market for all products. This can be seen in the recent China initiative to limit contaminates to less than one percent contaminants. China is an important market for recyclable materials, and Washington now faces landfilling of waste streams that are recoverable if they were free from contamination.

4.2.6 Land application

The rule amendments will provide the benefit of more accurate information on soil nutrients at depths reached by plant roots.

- Many crop plant roots grow to three feet in depth, and nutrients can accumulate at that depth. Prior to allowing a new site to receive a permit to land apply; it is necessary to ensure nutrients at this depth are not already high. Ensuring this is the case at new land application sites will better protect the environment from excess nutrient accumulation.

4.2.7 Transfer stations and drop box facilities

Regulating material recovery facilities and recyclers together and separating them from disposal facilities like transfer stations and drop boxes will improve regulatory clarity and equitability.

Changing the name of the section from Intermediate solid waste handling facilities to Transfer stations and drop boxes removes a broad, vague term in preference for concrete terms.

4.2.8 Piles used for storage or treatment

The rule amendment benefits are proper handling of piles, improved information on exempt piles, and reduced regulatory overlap with other permits and/or regulations.

- Under the baseline, facilities storing wastes in piles can effectively evade permitting and other requirements by removing the pile and starting over, or even just moving materials around on site. The authorizing statute requires that solid waste handling be subject to permitting or a permit exemption, but the baseline left a no-man's-land of not regulated, but not exempt. Changes to language now subject such facilities that always have ongoing material handling in piles to the piles standards in compliance with statute.
- Amendments make clear the piles section is applicable to the outdoor storage or treatment of solid waste in piles. These changes also direct owner/operators where indoor storage of piles will be regulated.
- Amendments to conditional exemptions create certainty as to which materials are candidates for an exemption. They also increase some owner/operator requirements by requiring notification and reporting, improving knowledge of and about exempt piles. Clearer capacity requirements for exemption provide certainty in when exemptions may be applied.
- Adding exemptions for brick, cured concrete and asphaltic materials when there are already other permits (related to water quality, e.g., sand and gravel permits, construction stormwater permits) reduces regulatory overlap and burden. These other permits already address the largest impacts indicated by the authorizing statute (water quality impacts and abandonment of materials) and adequately protect the environment.

- Amendment to impervious surface requirements add compliance flexibility, allowing facilities to use lower-cost compliance methods if they are available. By removing “engineered soil" and adding an option to waive the requirement under some circumstances, the amended rule retains environmental protection while providing more options for compliance.

4.2.9 Surface impoundments and tanks

The amended rule will reduce the incidence of leaks from pipes connected to surface impoundments. This will better protect the environment, including soils and groundwater, from contamination. In turn, this will protect facilities from potential liability and remedial actions resulting from contamination. Environmental cleanup can vary significantly by cleanup site, and costs avoided at facilities that prevent or identify leaks early under the amended rule might include:

- Cleanup program fees.
- Cleanup contractor professional services costs.
- Laboratory services costs if you have environmental samples analyzed.
- Attorney costs and legal expenses if you seek legal assistance.
- Permit fees if any permits are required to do the cleanup work.

While the specification of artificial barriers and lockable gates will be a change from the existing broad requirement, existing requirements at facilities that must also comply with requirements for limited purpose and municipal waste landfills likely result in existing compliance with the specification.

4.2.10 Waste tire storage

Modifying the regulatory threshold for waste tire storage to accommodate heavy equipment tires enables a reasonable compliance threshold for businesses that may accumulate these larger tires. While passenger car and truck tires can be loaded into a mobile container to max out at an eight-ton capacity, heavy equipment tires are typically loaded onto a flatbed trailer to max out at a twenty-ton capacity. The intent is to set the regulatory threshold at one load to be hauled away. With this modified regulatory threshold, businesses that own heavy equipment stand to save money from not being required to haul away more numerous than necessary partial loads of waste tires. Instead, they can save up these tires for fewer full loads.

The amendments to include indoor and container storage will likely result in improved management of indoor and container-stored waste tires, improving environmental protection, as well as reducing risks to staff, the public, and first responders associated with waste tire fires.

- Amendments adding facilities that store waste tires indoors to those regulated as waste tire storage facilities will increase regulatory oversight of those facilities. This will potentially reduce the incidence of waste tires stored inside enclosed buildings without regulatory coverage, which are sometimes abandoned.

Since these waste tires are costly to properly dispose of, they pose a financial liability to the building owner if the indoor space is rented by the facility operator. If, instead, public funds are used to properly dispose of these waste tires, they pose a financial liability to the public. In the event that these tires become vector habitat or catch fire, they pose a public and environmental health hazard. The amendments reduce the risk of all of these results through proper handling and financial assurance.

Amendments will also level the playing field by reducing the ability for any currently unregulated indoor facilities to undercut storage facilities that are already under regulation and in compliance.

We could not confidently estimate the number of facilities that store waste tires indoors and are not currently covered by the baseline rule. Avoided or reduced costs might include the costs of:

- Pest removal.
- Environmental cleanup.
- Fire remediation.

- Amendments adding waste tires stored inside mobile containers that are not actively used for transport to those included under the regulation of waste tire storage will increase regulatory oversight of facilities that store waste tires in this manner. This will potentially reduce the incidence of waste tires that are not covered by financial assurance to be remaining at facilities that go out of business. Where these waste tires are not properly cleaned up, they pose a financial liability to property owners or the public because they are not covered by the financial assurance. The amendments reduce the risk of these results through proper handling and financial assurance.

  Amendments will also level the playing field by reducing the ability for facilities that store waste tires in containers not actively used for transport, to undercut storage facilities that do not store waste tires in containers not actively used for transport.

  We could not confidently estimate the number of facilities that store waste tires in containers not used for transport and are not currently covered by the baseline rule. Avoided or reduced costs might include the costs of:

  - Pest removal.
  - Environmental cleanup.
  - Fire remediation.

- Where local jurisdiction require waste tire storage facilities to meet Universal Fire Code, amendments modeled after the International Fire Code may improve protections for staff, first responders, and the public in preventing and mitigating tire fires. The Universal Fire Code is considered outdated as compared to the International Fire Code. However, some local jurisdictions still use the Universal

Fire Code, and since the design standards in section 350 have built in flexibility that allow for the local jurisdictions to use the fire code of their choosing, there may be little or no change. These amendments could result in avoided or reduced costs of remediating fire damage and associated environmental impacts, as well as liability in potential injury to staff and first responders.

4.2.11 Waste tire transportation

Moving requirements for waste tire transportation does not impact behavior, but may provide a benefit of clarity to transporters of waste tires in how they are regulated.

4.2.12 Moderate risk waste handling

The amendments are likely to result in improved staff, first-responder, and public safety, and improved environmental safety.

- Additional requirements for limited MRW facilities increase safety for facility staff, the public, and first responders. They also increase protection of the environment. Keeping containers closed prevents spills and releases. Proper labeling alerts staff, the public, and first responders to hazards. Restricting public access prevents illegal dumping and unauthorized access to hazardous materials.
- Additional requirements for product takeback centers increase safety for facility staff, the public, and first responders. They also increase protection of the environment. Keeping incompatibles separated prevents dangerous chemical reactions. Proper labeling alerts staff, the public, and first responders to hazards. Maintaining containers in good condition prevents releases (spills). Ensuring staff are knowledgeable protects them and the public from exposure. Restricting public access prevents unauthorized access to hazardous materials. Allowing inspection ensures compliance. Secondary containment protects the environment from spills/releases.
- Amendments to impervious surface requirements clarify that only floors serving as secondary containment need to be impervious. This change offers facilities more flexibility to meet secondary containment requirements. Facilities may avoid costly paving and floor coatings averaging $3 per square foot26. For example, a 2,500 square foot facility could save $7,500.
- Amendments to protection requirements for moderate risk waste clarify that operational measures can be implemented to provide adequate protection from weather, rather than only structural elements. For example, a facility could avoid building shelter in favor of immediately moving moderate risk waste indoors upon acceptance.

[26] Thumbtack.com (2017). Price quote survey for epoxy coating garage floor in the Seattle area. https://www.thumbtack.com/p/epoxy-garage-floor-cost

- Requiring that trained personnel be present when moderate risk waste is accepted or handled ensures greater environmental protection. It will prevent customers from "dumping" moderate risk waste on site, and prevent incompatibles from coming into contact with one another.
- Amendments clarify that secondary containment to hold twenty minutes of flow from an automatic fire suppression system is only necessary as required in state or local fire of building codes. This may save MRW facilities from having to install additional secondary containment. For example, if there is a sprinkler system over an office space within the facility, secondary containment to hold 20 minutes of sprinkler flow will not be necessary unless required by the local fire code.

4.2.13 Limited purpose landfills

The rule amendments may result in either longer or shorter post-closure periods, depending on individual landfill attributes. Requiring environmental covenants will likely result long-run environmental protection and potential reduction of liability and land-use problems.

- Ending post-closure care based on evaluating and managing the risks of a closed landfill, rather than relying on subjective criteria to determine if the landfill has become stabilized, potentially benefits landfills by reducing the amount of post-closure time that they need to plan for (though it may also increase it) depending on landfill attributes. It also more clearly identifies the operator's need to plan for demonstrating that a landfill is functionally stable. This is expected to result in a more predictable and orderly process for operators of 14 limited purpose landfills and solid waste permitting agencies to make determinations regarding the ending of post-closure.
- Replacement of recording of a statement of fact and maps with the environmental covenant for 14 limited purpose landfills should provide a more robust mechanism to ensure the continued integrity of landfill closure and, thereby, protection of human health and the environment.
- Environmental covenants could be used to support a state of reduced intensity of maintenance and monitoring that could allow a permitting agency to release a facility from permitted status at the end of post-closure, despite the landfill not having reached a functionally stable condition. This will result in a cost savings for the landfill if it occurred.

4.2.14 Groundwater

The rule amendments are likely to improve efficiency in data submittal, receipt, and processing, as well as improving accuracy in determining whether groundwater standards have been exceeded.

- Ecology regulations require that much of the environmental monitoring data presently collected is submitted to the agency in an electronic format that is capable of being input into the Environmental Information Management (EIM) system. Under the baseline this data is submitted in original analytical report

form, which must then be input into the system. The rule amendments align requirements with 2012 revisions to the Municipal Solid Waste Landfill rule (chapter 173-351 WAC) by adding a requirement to submit data electronically so it can be input into Ecology's data management system. Having environmental monitoring data an Ecology database will increase efficiency by allowing Ecology employees and the public to easily access the data from the various Ecology programs.

- The rule's addition of analyses of total iron concentration, total magnesium concentration, total and dissolved manganese concentration, and potassium reduces the likelihood that groundwater quality standards for these metals will be exceeded. The groundwater standards (chapter 173-200 WAC) consider total metal values as the criteria for metal concentrations. Dissolved metal concentrations are used for geochemical evaluations but are usually lower than the total metal concentrations, and are therefore not a good indicator of whether water quality standards are exceeded. This element of the amended rule will reduce the likelihood of groundwater contamination that is potentially dangerous to the environment, cause hard water, taste, or staining problems for users of well water, or harm crops. It will also ensure that facilities do not violate existing water quality standards, incurring penalties and remediation costs.

4.2.15 Financial assurance

The rule amendments are likely to result in more certainty that there will be sufficient funds to maintain post-closure requirements.

- Requiring financial assurance to be based on prevailing wages will ensure adequate funds are available for a local health agency to conduct closure and post-closure care of a facility if the owner/operator does not conduct the closure or post-closure care. A local health agency will need to comply with chapter 39.12 RCW, Prevailing wages on public works, and will not be able to instead use the wages used in calculating financial assurance requirements. This benefit will occur under the amended rule if facilities calculated financial assurance using lower wages under the baseline.
- It is not clear from available data whether financial assurance calculations currently use higher or lower wages than prevailing wages under the baseline, but if they use wages lower than the prevailing wage, there is potential for a cost increase under the amended rule, as financial assurance requirements will be higher.
- The rule amendments align financial assurance requirements with changes for limited purpose landfills, regarding the length of the post-closure period being based on functional stability of the landfill rather than on a 20-year period. The actual duration of the post-closure period will depend on facility attributes, and could be longer or shorter. If the post-closure period is modeled to be shorter, this will also reduce financial assurance requirements for the facility.

4.2.16 Permitting

The rule amendments are likely to result in improved clarity and consistency in permitting.

- The permitting sections have been modified to ensure better clarity in the process for reviewing and issuing solid waste permits, which are issued by local health jurisdictions. Statute defines roles and responsibilities for the solid waste permitting process. The addition of a permit transfer process addresses a need to ensure local health jurisdictions, Ecology, and a new owner all have certainty about a process to formally transfer a permit.

4.2.17 Criteria for inert waste

Inert waste landfills already largely determine which wastes can be disposed of based on the statutory authority to minimize liability, resulting in limited impact of amendments to this section.

4.2.18 Reorganization and clarifications with no impact to requirements

The rule amendments are likely to improve ease of compliance with the rule, so that facilities are better aware of whether they are covered by the rule, whether they are required to obtain a permit or can obtain an exemption, and what is required of them if permitted or exempt.

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Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of the costs and benefits of the rule amendments

Table 1. Applicability

Applicability	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
No additional cost over the baseline is expected for amendments to this section of the rule.	Ecology determined on review of statutory authority that we cannot exclude solid waste handling activities from the rule. We must either require a permit for a solid waste handling activity, or provide a means of exemption. Therefore, all solid waste handling activities (other than municipal solid waste landfills) do fall under the rule. Changes clarify the applicability of the rule, resulting in a benefit to all stakeholders.

Table 2. Determination of solid waste

Determination of solid waste	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
No additional cost over the baseline is expected for amendments to this section of the rule.	We assumed annual reporting takes 4 hours of owner/operator time, at 20 recycler and exempt pile facilities. Using an hourly wage of $48.92, updated for inflation using 2.7 percent, and an overhead multiplier of 2.257, this benefit is estimated at up to $9,100 per year. This converts to a 20-year present value of $165 thousand. In addition, there may be a benefit to facilities in their ability to locate under local zoning ordinances, if they are not considered a solid waste facility.

Table 3. Definitions of solid waste

Definitions of solid waste	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
No additional cost over the baseline is expected for amendments to this section in and of themselves.	

Table 4. Beneficial use permit exemptions

Beneficial use permit exemptions	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
No additional cost over the baseline is expected for amendments to this section of the rule.	Changes to this section are primarily organizational. Additions of applicability clarifications are based on experience implementing the program and bring the section organization in line with rule format in other sections of the rule.

Table 5. Recycling and material recovery facilities

Recycling and material recovery facilities	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
While facilities accepting commingled recyclables will no longer be exempt from permitting under the amended rule, most are already permitted. We identified ten facilities that will potentially be impacted by this change. If these facilities did incur full permitting costs, actual permitting costs will rely heavily on facility type and attributes. For illustrative purposes, we assumed 10 analytical components to permitting, and 8 hours of engineer time to complete each component, resulting in approximate permitting costs of nearly $10 thousand. This does not include the costs of fees, or compliance adjustments to facilities and business practices necessary to comply with a permit.	Making all sections of the rule consistent in definitions, structure, and requirements will provide the benefit of clarity to the regulated community as to whether they are regulated and what compliance requirements are. Regulating material recovery facilities and recyclers in the same manner will improve regulatory clarity and equitability. Both recycling and material recovery facilities only handle source-separated recyclable materials, and operators are often confused as to which standard applies. By combining the two handling styles under one standard, the amended rule eliminates this source of confusion. It also provides clear standards for permitting a recycling facility, should that ever be necessary (it is not currently). Requiring permit oversight for facilities processing commingled materials may reduce fraudulent recycling and residual waste resulting from contamination of the recycling stream. Contamination of recyclable waste streams is damaging to statewide goals that place recycling ahead of disposal. Contaminated commodity streams damage the market for all products. This can be seen in the recent China initiative to limit contaminates to less than one percent contaminants. China is an important market for recyclable materials, and Washington now faces landfilling of waste streams that are recoverable if they were free from contamination.

Table 6. Land application

Land application	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
New permittees using land application will need to analyze one additional sample at each sampling location as part of the permit application, resulting in increased costs. We estimated costs based on one new permit per year, $20 per additional analysis, and eight representative sample locations per facility. This resulted in total estimated costs of $160 per year, with an equivalent 20-year present value of nearly $3 thousand.	Many crop plant roots grow to three feet in depth, and nutrients can accumulate at that depth. Prior to allowing a new site to receive a permit to land apply, it is necessary to ensure nutrients at this depth are not already high. Ensuring this is the case at new land application sites will better protect the environment from excess nutrient accumulation.

Table 7. Transfer stations and drop box facilities

Transfer stations and drop box facilities	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
Impacts to material recovery facilities no longer regulated under the revised and renamed formerly “Intermediate solid waste handling facilities” section, are discussed under Recycling and material recovery facilities above.	Regulating material recovery facilities and recyclers together and separating them from disposal facilities like transfer stations and drop boxes will improve regulatory clarity and equitability.

Table 8. Piles used for storage or treatment

Piles used for storage or treatment	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
• Changes to conditional exemption requirements will result in approximately 24 exempt facilities incurring costs of keeping records, submitting notifications, and annual reporting. We estimated this cost based on 4 hours of time spent by an owner/operator, a $48.92 hourly wage multiplied by a factor of 2.257 for overhead, and an inflation adjustment of 2.7 percent. This resulted in a cost estimate of approximately $12 thousand per year, corresponding to a total 20-year present value cost of $196 thousand. • Changes to exemptions for piles of brick, cured concrete, and asphalt with a water quality sand and gravel or construction stormwater general permit will result in increased exemptions that will incur the costs of notification and annual reporting, rather than the full cost of permitting when recycling these wastes. We estimated reporting cost based on 4 hours of owner/operator time at 59 facilities, a $48.92 hourly wage multiplied by a factor of 2.257 for overhead, and an inflation adjustment of 2.7 percent. This resulted in a cost estimate of approximately $28 thousand per year (total across 59 facilities), corresponding to a 20-year present value cost of $488 thousand. Facilities that also crush the material into a recycled aggregate product may already be reporting as required under the baseline recycling standards, and will not incur any additional cost. 91 regulated facilities reported in 2015, most or all of which produce recycled aggregate product. A total of 114 facilities reported, including exempt pile facilities that are not required to report under the baseline. If up to half of	• Under the baseline, some facilities are able to store materials for a certain timeframe, remove the entire pile, and then resume piling materials without being subject to pile storage requirements. The authorizing statute requires that solid waste handling be subject either to permitting or a permit exemption, but the baseline left a no-man's-land of not regulated, but not exempt. Changes to language now subject such facilities that always have ongoing material handling in piles to the piles standards in compliance with statute. • Amendments make clear the piles section is applicable to the outdoor storage or treatment of solid waste in piles. These changes also direct owner/operators where indoor storage of piles will be regulated. • Amendments to conditional exemptions create certainty as to which materials are candidates for an exemption. They also increase some owner/operator requirements by requiring notification and reporting, improving knowledge of and about exempt piles. Clearer capacity requirements for exemption provide certainty in when exemptions may be applied. • Adding exemptions for brick, cured concrete and asphaltic materials when there are already other permits (related to water quality, e.g., sand and gravel permits, construction stormwater permits) reduces regulatory overlap and burden. These other permits already address the largest impacts indicated by the

Piles used for storage or treatment	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
facilities with piles of brick, cured concrete, or asphalt already report under the baseline, this total present value cost will drop to approximately $244 thousand.	authorizing statute (water quality impacts and abandonment of materials) and adequately protect the environment. • Amendment to impervious surface requirements add compliance flexibility, allowing facilities to use lower-cost compliance methods if they are available. By removing “engineered soil" and adding an option to waive the requirement under some circumstances, the amended rule retains environmental protection while providing more options for compliance.

Table 9. Surface impoundments and tanks

Surface impoundments and tanks	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
We estimated the cost of leak or tightness testing at a facility with surface impoundments that does not discharge to sewers. This estimate was based a facility incurring the costs of 40 hours of licensed professional engineer time, a $48.92 hourly wage multiplied by a factor of 2.257 for overhead, and an inflation adjustment of 2.7 percent. This resulted in a cost estimate of approximately $12 thousand per facility per testing year (testing is semiannual), corresponding to a 20-year present value cost of approximately $110 thousand.	The amended rule will reduce the incidence of leaks from pipes connected to surface impoundments. This will better protect the environment, including soils and groundwater, from contamination. In turn, this will protect facilities from potential liability and remedial actions resulting from contamination. Environmental cleanup can vary significantly by cleanup site, and costs avoided at facilities that prevent or identify leaks early under the rule might include: • Cleanup program fees. • Cleanup contractor professional services costs. • Laboratory services costs if you have environmental samples analyzed. • Attorney costs and legal expenses if you seek legal assistance. • Permit fees if any permits are required to do the cleanup work. While the specification of artificial barriers and lockable gates will be a change from the existing broad requirement, existing requirements at facilities that must also comply with requirements for limited purpose and municipal waste landfills likely result in existing compliance with the rule.

Table 10. Waste tire storage

Waste tire storage	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
• We estimated the costs of permitting including financial assurance statewide to appropriately dispose of all waste tires, because there is currently insufficient data on facilities that are not covered by the baseline rule. This illustrative extreme high-end estimate was based on the assumptions of one waste tire per person per year, approximately 7 million state population, 100 tires per ton, and an average disposal cost of $250 per ton. This will result in a total cost to dispose of all waste tires in the state of $17.5 million per year. The amended rule will not result in costs this high, as many waste tires are managed according to the requirements of the baseline. Expanding the rule's coverage to waste tires stored in enclosed buildings and containers that remain on site will result in changes for some unknown subset of the total waste tires in the state. • If local jurisdictions currently require International Fire Code compliance, the amended rule does not result in additional costs. If facilities are regulated according to the outdated Universal Fire Code, they might incur additional compliance costs upon implementation of the amended rule. Effectively, this may mean they could store fewer waste tires per unit of space, resulting in a need to manage tires off site more rapidly and incur disposal costs sooner than they would under the baseline. However, since the design standards in section 350 have built in flexibility that allow for the local jurisdictions to use the fire code of their choosing, there may be little to no change.	• Amendments adding facilities that store waste tires indoors to those regulated as waste tire storage facilities will increase regulatory oversight of those facilities. This will potentially reduce the incidence of waste tires stored inside enclosed buildings without regulatory coverage, which are sometimes abandoned. Since these waste tires are costly to properly dispose of, they pose a financial liability to the building owner if the indoor space is rented by the facility operator. If, instead, public funds are used to properly dispose of these waste tires, they pose a financial liability to the public. In the event that these tires become vector habitat or catch fire, they pose a public and environmental health hazard. The amendments reduce the risk of all of these results through proper handling and financial assurance. Amendments will also level the playing field by reducing the ability for any currently unregulated indoor facilities to undercut storage facilities that are already under regulation and in compliance. We could not confidently estimate the number of facilities that store waste tires indoors and are not currently covered by the baseline rule. Avoided or reduced costs might include the costs of: o Pest removal. o Environmental cleanup. o Fire remediation. • Amendments adding waste tires stored inside mobile containers that are not actively used for transport to those included under the regulation of waste tire storage will increase regulatory

Waste tire storage	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
	oversight of facilities that store waste tires in this manner. This will potentially reduce the incidence of waste tires that are not covered by financial assurance to be remaining at facilities that go out of business. Where these waste tires are not properly cleaned up, they pose a financial liability to property owners or the public because they are not covered by the financial assurance. The amendments reduce the risk of these results through proper handling and financial assurance. Amendments will also level the playing field by reducing the ability for facilities that store waste tires in containers not actively used for transport, to undercut storage facilities that do not store waste tires in containers not actively used for transport. We could not confidently estimate the number of facilities that store waste tires in containers not used for transport and are not currently covered by the baseline rule. Avoided or reduced costs might include the costs of: o Pest removal. o Environmental cleanup. o Fire remediation. • Where local jurisdiction require waste tire storage facilities to meet Universal Fire Code, amendments modeled after the International Fire Code may improve protections for staff, first responders, and the public in preventing and mitigating tire fires. The Universal Fire Code is considered outdated as compared to the International Fire Code. However, some local jurisdictions still use the Universal Fire Code, and since the design standards in section 350 have built in flexibility that allow for the local jurisdictions to

Waste tire storage	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
	use the fire code of their choosing, there may be little or no change. These amendments could result in avoided or reduced costs of remediating fire damage and associated environmental impacts, as well as liability in potential injury to staff and first responders.

Table 11. Waste tire transportation

Waste tire transportation	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
No additional cost over the baseline is expected for amendments to this section of the rule.	Moving requirements for waste tire transportation does not impact behavior, but may provide a benefit of clarity to transporters of waste tires in how they are regulated.

Table 12. Moderate risk waste handling

Moderate risk waste handling	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
• The amended rule amendments are likely to result in increased costs to meet conditional exemptions at limited MRW facilities and product takeback centers. Examples of conditional exemptions to meet include using closed containers, labeling, and access control: ○ We assumed using closed containers will require one in ten facilities (approximately 30) to	• Federal regulations administered by the Drug Enforcement Agency govern these activities and provide protection of human health and the environment. The minimal conditions that must be met to qualify for exemption from solid waste permitting are common sense measures that most are already following. It is difficult to quantify this benefit, as the avoided costs of permitting vary significantly by facility.

Moderate risk waste handling	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
minimally adjust their procedures to keep containers closed. ○ We assumed that one percent of the approximately 256 limited MRW facilities, will need to purchase signage, using up to 12 signs at $20 each. This corresponds to a one-time cost of up to $800. ○ Finally, we assumed one in ten facilities (approximately 30) will need to install additional fencing as applicable, as well as use padlocks. • The requirement to have trained workers present during acceptance of moderate risk waste will likely result in minimal temporary reassignment of workers, during intake periods. We assumed that 12 identified moderate risk waste facilities will need to have one employee undergo hazardous waste worker training. This training costs about $300, resulting in a one-time cost of $3,600.	In addition, annual permit fees for a moderate risk waste facility can exceed $7 thousand (e.g., in King County), compared to the limited moderate risk waste facility exemption fee of approximately $700. A fee cost-savings of at least $6 thousand has an equivalent present value of $109 thousand. • Additional requirements for product takeback centers increase safety for facility staff, the public, and first responders. They also increase protection of the environment. Keeping containers closed prevents spills and releases. Proper labeling alerts staff, the public, and first responders to hazards. Restricting public access prevents illegal dumping and unauthorized access to hazardous materials. • Additional requirements for product takeback centers increase safety for facility staff, the public, and first responders. They also increase protection of the environment. Keeping incompatibles separated prevents dangerous chemical reactions. Proper labeling alerts staff, the public, and first responders to hazards. Maintaining containers in good condition prevents releases (spills). Ensuring staff are knowledgeable protects them and the public from exposure. Restricting public access prevents unauthorized access to hazardous materials. Allowing inspection ensures compliance. Secondary containment protects the environment from spills/releases. • Amendments to impervious surface requirements clarify that only floors serving as secondary containment need to

Moderate risk waste handling	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
	be impervious. This change offers facilities more flexibility to meet secondary containment requirements. Facilities may avoid costly paving and floor coatings averaging $3 per square foot. For example, a 2,500 square foot facility could save $7,500. • Amendments to protection requirements for moderate risk waste clarify that operational measures can be implemented to provide adequate protection from weather, rather than only structural elements. For example, a facility could avoid building shelter in favor of immediately moving moderate risk waste indoors upon acceptance. • Requiring that trained personnel be present when moderate risk waste is accepted or handled ensures greater environmental protection. It will prevent customers from "dumping" moderate risk waste on site, and prevent incompatibles from coming into contact with one another. • Amendments clarifying that secondary containment hold twenty minutes of flow from an automatic fire suppression system is only necessary as required in state or local fire of building codes, may save MRW facilities from having to install additional secondary containment.

Table 13. Limited purpose landfills

Limited purpose landfills	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
• We estimated the cost of evaluating post-closure timelines, application preparation, and updating post-closure plans for 23 limited purpose landfills. We estimated this cost based on a high-end estimate of 120 hours of engineer time, a $48.92 hourly wage multiplied by a factor of 2.257 for overhead, and an inflation adjustment of 2.7 percent. This resulted in a one-time cost estimate of approximately $313 thousand. • Similarly, we estimated the cost of developing environmental covenants at 23 limited purpose landfills, based on 8 hours of legal consultant time, a $53.45 hourly wage multiplied by a factor of 2.257 for overhead, and an inflation adjustment of 2.7 percent. This resulted in a one-time cost estimate of approximately $23 thousand.	• Ending post-closure care based on evaluating and managing the risks of a closed landfill, rather than relying on subjective criteria to determine if the landfill has become stabilized, potentially benefits landfills by reducing the amount of post-closure time that they need to plan for (though it may also increase it) depending on landfill attributes. It also more clearly identifies the operator's need to plan for demonstrating that a landfill is functionally stable. This is expected to result in a more predictable and orderly process for operators of 14 limited purpose landfills and solid waste permitting agencies to make determinations regarding the ending of post-closure. • Replacement of recording of a statement of fact and maps with the environmental covenant for 14 limited purpose landfills should provide a more robust mechanism to ensure the continued integrity of landfill closure and, thereby, protection of human health and the environment. • Environmental covenants could be used to support a state of reduced intensity of maintenance and monitoring that could allow a permitting agency to release a facility from permitted status at the end of post-closure, despite the landfill not having reached a functionally stable condition. This will result in a cost savings for the landfill if it occurred.

Table 14. Groundwater

Groundwater	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
• We estimated costs for 23 limited purpose landfills to set up electronic data submission accounts (if they do not currently have them; this is a high-end estimate), based on 6.25 hours at an hourly wage including overhead of $150. This total one-time cost is approximately $22 thousand. • While electronic data submissions itself bears a cost, the incremental cost of providing data to Ecology as compared to the baseline of submitting paper or email documents is likely a cost savings, after initial account setup (if applicable). • For the additional analysis for five constituents per well, we estimated costs for the number of wells at 23 landfills based on each landfill's number of sampling events per year (maximum 4), and $12 per metals analysis. This total cost is approximately $27 thousand per year, corresponding to a 20-year present value of $491 thousand.	• Ecology regulations require that much of the environmental monitoring data presently collected is submitted to the agency in an electronic format that is capable of being input into the Environmental Information Management (EIM) system. Under the baseline this data is submitted in original analytical report form, which must then be input into the system. The rule amendments align requirements with 2012 revisions to the Municipal Solid Waste Landfill rule (chapter 173-351 WAC) by adding a requirement to submit data electronically so it can be input into Ecology's data management system. Having environmental monitoring data an Ecology database will increase efficiency by allowing Ecology employees and the public to easily access the data from the various Ecology programs. • The amended rule's addition of analyses of total iron concentration, total magnesium concentration, total and dissolved manganese concentration, and potassium reduces the likelihood that groundwater quality standards for these metals will be exceeded. The groundwater standards (chapter 173-200 WAC) consider total metal values as the criteria for metal concentrations. Dissolved metal concentrations are used for geochemical evaluations but are usually lower than the total metal concentrations, and are therefore not a good indicator of whether water quality standards are exceeded. This element of the amended rule will reduce the likelihood of groundwater contamination that is potentially dangerous to the

Groundwater	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
	environment, cause hard water, taste, or staining problems for users of well water, or harm crops. It will also ensure that facilities do not violate existing water quality standards, incurring penalties and remediation costs.

Table 15. Financial assurance

Financial assurance	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
• Median financial assurance requirements in available data were approximately $1 million. Some facilities, however, meet financial assurance using a financial test that determines the owner company has sufficient funds to meet requirements. These facilities are not required to acquire additional insurance or bonds. It is not clear from available information whether facilities tend to overestimate or underestimate wages as compared to the prevailing wage. We therefore could not determine whether or how much potential financial assurance requirements will increase or decrease. • The cost of modeling the length of post-closure care is included above under Limited purpose landfills.	• Requiring financial assurance to be based on prevailing wages will ensure adequate funds are available for a local health agency to conduct closure and post-closure care of a facility if the owner/operator does not conduct the closure or post-closure care. A local health agency will need to comply with chapter 39.12 RCW, Prevailing wages on public works, and will not be able to instead use the wages used in calculating financial assurance requirements. This benefit will occur under the adopted rule if facilities calculated financial assurance using lower wages under the baseline. • It is not clear from available data whether financial assurance calculations currently use higher or lower wages than prevailing wages under the baseline, but if they use wages higher than the prevailing wage, there is potential for a cost-savings under the amended rule, as financial assurance requirements will be lower. • The rule amendments align financial assurance requirements with changes for limited purpose landfills, regarding the length of the post-closure period being based on functional stability of the landfill rather than on a 20-year period. The actual duration of the post-closure period will depend on facility attributes, and could be longer or shorter. If the post-closure period is modeled to be shorter, this will also reduce financial assurance requirements for the facility.

Table 16. Permitting

Permitting	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
The rule amendments may increase the cost of transferring permits when a facility is sold to a new owner. Local health department processing costs could be passed through to a new owner. The process requires that the new owner demonstrate the ability properly run the facility and meet facility compliance requirements. The occurrences of permit transfer are infrequent and some local jurisdictions that issue solid waste permits may already have fees built into the local solid waste permitting fee ordinances. In addition, under the baseline, facilities are required to have appropriate permits or other compliance behaviors, regardless of whether they are new facility owners, so this cost is potentially one that should already be incurred under the baseline, even if it is not consistently implemented.	The permitting sections have been modified to ensure better clarity in the process for reviewing and issuing solid waste permits, which are issued by local health jurisdictions. Statute defines roles and responsibilities for the solid waste permitting process. The addition of a permit transfer process addresses a need to ensure local health jurisdictions, Ecology, and a new owner all have certainty about a process to formally transfer a permit.

Table 17. Criteria for inert waste

Criteria for inert waste	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
The rule amendments will likely result in some, though likely small, impacts to wastes being taken to inert waste landfills rather than more expensive disposal. Impacts are likely small because inert waste landfills already largely determine which wastes can be disposed of based on the statutory authority to minimize liability.	Inert waste landfills already largely determine which wastes can be disposed of based on the statutory authority to minimize liability, resulting in limited impact of amendments to this section.

Table 18. Reorganization and clarifications with no impact to requirements

Reorganization and clarifications with no impact to requirements	
The amended rule is likely to result in the following costs, compared to the baseline.	**The amended rule is likely to result in the following benefits, compared to the baseline.**
No additional costs, as compared to the baseline, are expected from amendments to this section.	The rule amendments are likely to improve ease of compliance with the rule, so that facilities are better aware of whether they are covered by the rule, whether they are required to obtain a permit or can obtain an exemption, and what is required of them if permitted or exempt.

5.2 Conclusion

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the rule amendments, that the benefits of the rule amendments 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, Ecology is required to determine that the contents of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

Ecology assessed alternatives to the amended rule content, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the rule were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statute: Chapter 70.95 RCW

The goals and objectives of the authorizing statute are:

- Waste reduction must become a fundamental strategy of solid waste management. It is therefore necessary to change manufacturing and purchasing practices and waste generation behaviors to reduce the amount of waste that becomes a governmental responsibility.
- Source separation of waste must become a fundamental strategy of solid waste management. Collection and handling strategies should have, as an ultimate goal, the source separation of all materials with resource value or environmental hazard.
- It is the responsibility of state, county, and city governments to provide for a waste management infrastructure to fully implement waste reduction and source separation strategies and to process and dispose of remaining wastes in a manner that is environmentally safe and economically sound.
- The following priorities for the collection, handling, and management of solid waste are necessary and should be followed in descending order as applicable:
    - Waste reduction
    - Recycling, with source separation of recyclable materials as the preferred method
    - Energy recovery, incineration, or landfill of separated waste
    - Energy recovery, incineration, or landfill of mixed municipal solid wastes
- To ensure the safe and efficient operations of solid waste disposal facilities, it is necessary for operators and regulators of landfills and incinerators to receive training and certification.
- The development of stable and expanding markets for recyclable materials is critical to the long-term success of the state's recycling goals.
- There is an imperative need to anticipate, plan for, and accomplish effective storage, control, recovery, and recycling of discarded tires and other problem wastes with the subsequent conservation of resources and energy.
- The purpose of this chapter is to establish a comprehensive statewide program for solid waste handling, and solid waste recovery and/or recycling which will prevent land, air, and water pollution and conserve the natural, economic, and energy resources of this state. To this end it is the purpose of this chapter:
    - To assign primary responsibility for adequate solid waste handling to local government, reserving to the state, however, those functions necessary to assure effective programs throughout the state;
    - To provide for adequate planning for solid waste handling by local government;

- To provide for the adoption and enforcement of basic minimum performance standards for solid waste handling, including that all sites where recyclable materials are generated and transported from shall provide a separate container for solid waste;
- To encourage the development and operation of waste recycling facilities needed to accomplish the management priority of waste recycling, to promote consistency in the requirements for such facilities throughout the state, and to ensure that recyclable materials diverted from the waste stream for recycling are routed to facilities in which recycling occurs;
- To provide technical and financial assistance to local governments in the planning, development, and conduct of solid waste handling programs;
- To encourage storage, proper disposal, and recycling of discarded vehicle tires and to stimulate private recycling programs throughout the state; and
- To encourage the development and operation of waste recycling facilities and activities needed to accomplish the management priority of waste recycling and to promote consistency in the permitting requirements for such facilities and activities throughout the state.

6.3 Alternatives considered and why they were not included

6.3.1 Recycling contamination

Ecology considered altering the five-percent recycling contamination limit for exempt facilities in the baseline rule, or not changing the language in the baseline rule. This alternative would not have met the goals and objectives of the authorizing statute.

Recycling contamination is any item that does not belong in the recycling process. Contamination can occur in comingled streams of many types of recyclables collected together, or in loads that should contain just one type of material, such as loads of glass only. Contamination within the recycling stream is a serious issue – it reduces efficiency, destroys value of the recyclable material, and leads to greater waste.

The current rule allows material recovery facilities accepting source-separated recyclables to operate under a permit exemption if there is less than five percent contamination by weight overall in a waste stream, and up to ten percent by weight in a single load. This limit applies to both facilities taking comingled and those that only take a pure load of one kind of waste. Facilities processing comingled materials usually have a contamination rate far above 5 percent, and many are already operating under a permit because of that. Approximately ten facilities accepting commingled recyclables are currently operating with exemptions, but experience argues that the level of contamination often exceeds five percent. That threshold, however, is very hard to assay even for a few loads, let alone over a period of years. It is difficult to establish the threshold where permitting becomes mandatory. Facilities managing loads with high contamination have a financial incentive to dispose of the unrecyclable materials at the

lowest cost, and the lowest cost option is not always aligned with legal disposal. Facilities with high contamination should have the regulatory oversite provided by a solid waste permit.

Contamination of recyclable waste streams is damaging to statewide goals that place recycling ahead of disposal. Contaminated commodity streams damage the market for all products. This can be seen in the recent China initiative to limit contaminates to less than 0.3 percent contaminants. China is an important market for recyclable materials, and Washington now faces landfilling of waste streams that are recoverable if they were free from contamination.

We considered changing the contamination limit for exempt facilities, and settled on a five percent limit by weight or volume (as some facilities do not have scales) that applied to facilities accepting only individual waste streams. Due to the high contamination rate of comingled, we ultimately decided that permit oversite was the best option for ensuring compliance and legal disposal of residuals. We also considered leaving the rule unchanged, and simply pressing harder for voluntarily cleaner waste streams, but experience has demonstrated that we are unlikely to be successful. In the meantime, statewide goals would continue to be in jeopardy.

6.3.2 Inert waste landfill exemption tier

Ecology considered and initially proposed adding a tier to the existing conditional exemption for inert waste landfills. Based on further analysis and input from regulators and industry, we determined that few landfills would be able to use such an exemption, and that it was not clear that it would prompt market entry. There was also opposition from industry and regulators. We therefore determined that this alternative would not improve the rule's ability to meet the goals and objectives of the authorizing statute.

6.3.3 Product takeback permit exemption

In the current rule, product takeback centers have very few requirements they must meet to obtain an exemption from permitting. When considering setting additional conditions for permit exemption for product takeback centers, we evaluated each of the requirements for all permit-exempt moderate risk waste facilities (i.e. notification, annual reporting, record keeping) to see which were appropriate for a product takeback center. We selected conditions that we thought were "common sense practices" and posed the least burden, such as requiring containers to have labels, and keeping incompatible wastes segregated. We rejected conditions we felt would create additional work without commensurate benefit, or that would deter the activity.

6.3.4 Staff at moderate risk waste facilities

Ecology considered having staff on site in moderate risk waste receiving areas, but instead chose to have personnel present when moderate risk waste is received. This allows for a scenario where staff move within a facility to the moderate risk waste area only when customers are present versus having staff at the MRW area full-time. This alternative would have imposed more burden on facilities.

6.3.5 Protecting moderate risk waste from weather

Ecology considered specifying the measures that must be taken to protect moderate risk waste from weather. This could have included handling areas, the waste itself, receiving areas, and storage areas. We chose to focus on the protection of the waste itself, but allowed for this protection to be met through structural or operational measures. The other alternatives would have imposed more burden on facilities.

6.3.6 Definition of moderate risk waste

Ecology considered expanding the definition of limited moderate risk waste. By definition, limited moderate risk waste is only waste batteries, waste oil, and waste antifreeze. We considered expanding the definition to include other waste types such as paint, but received pushback from stakeholders. The potential expansion would greatly increase the number of exempt facilities, creating a burden to local health departments to provide adequate oversight (without financial support of permitting fees).

6.3.7 Prevailing wages for financial assurance

Ecology considered leaving the baseline rule unchanged regarding financial assurance (not requiring the use of prevailing wages when developing cost estimates). This "no change" alternative was not chosen because it would not meet the goals and objectives of the authorizing statute. Without this adjustment, the jurisdictional health department would be burdened by insufficient funds if it needed to draw upon the financial assurance fund to cover the cost of closure or post-closure care, and potentially unable to carry out required work.

6.3.8 Contaminated soils and dredged materials

Ecology considered alternative definitions of clean and contaminated soils and dredged materials. The current rule is inadequate for the purposes of regulating contaminated soils and dredged materials. This has been a longstanding problem resulting in questions about material management and regulatory decisions, and generally increasing costs for all involved. For the purposes of management as solid waste, these are materials that are not clean enough to be placed on the land freely (for example as topsoil or quality fill), but that aren't contaminated to the point of being hazardous waste or requiring cleanup under the state Model Toxics Control Act.

We developed and shared with stakeholders a new section on management of soils and dredged materials impacted by release of a contaminant(s). The section specified test parameters, set contaminant limits based on the type of site where use or disposal would occur, and placed limitations to prevent impacts outside the site of placement. Contaminant limits were based on Washington State cleanup standards, Washington State groundwater quality standards, and U.S. EPA cleanup standards. We believe our approach gave those managing contaminated soils and sediments flexibility, while still being protective of human health and the environment. The majority of commenters found the language too complex and contaminant limits too stringent. In response to this, Ecology eliminated the section, and instead revised definitions for contaminated soil and

dredged material, basing contaminant limits and uses solely on Washington State cleanup standards.

The approach selected by Ecology was based specifically on stakeholder objections to the burden of Ecology's preferred approach, and it being the least burdensome approach that could arguably meet the intent of statute.

6.3.9 Inert waste criteria

Ecology considered retaining and revising the criteria for inert waste to be less subjective, a major complaint of stakeholders. However, the stakeholder work group quickly found that creating prescriptive criteria only added to the complexity of the rule and that most materials being assessed under the inert criteria were soil-based. As the new definitions of clean and contaminated soil and dredged materials prescribed contaminant limits for management of soil under MTCA standards, the workgroup and Ecology did not feel that the inert criteria added value to the rule.

The approach selected by Ecology was based specifically on stakeholder participation and creating less burden in the rule by removing a complex and subjective set of criteria that was being applied differently from jurisdiction to jurisdiction.

6.3.10 Piles – Unlimited storage

Ecology considered unlimited storage of agricultural waste and on farm vegetative wastes. The amended rule increases owner/operator requirements for maintaining a permit exemption by limiting duration of storage time to one year and for only the amount that can be applied to the land in that one year period. This is consistent with revisions to section 230 for land application. Stakeholders in the agricultural community were extremely concerned about the prospect for requiring permits for routine management of agricultural residuals. The alternative of unlimited storage is unacceptable to Ecology because of the prospect of accumulating large amounts of material with no management solution. This alternative would not meet the goals and objectives of the authorizing statute.

6.3.11 Piles – Notification and reporting for all

Ecology considered requiring notification and reporting for all facilities, regardless of size, or eliminating exemptions entirely. Given the potential number of small facilities, and difficulty in implementation, this alternative would impose more burden on facilities. The amended rule increases owner/operator requirements for maintaining a permit exemption for wood waste, wood-derived fuel, and nonferrous materials by requiring notification and reporting. The rule amendments allow an exemption between 250 and 2,000 cubic yards if criteria, including rate of waste accumulation, are met. Above 2,000 cubic yards a permit is required.

Under the baseline, facilities can remain exempt from permitting if they remove at least fifty percent of the material each year, and all of the material every three years. There are no notification or reporting requirements under this scenario, and it is not possible for a

regulatory authority to determine compliance. For facilities in the mid-range above, we revised the process for determining whether the rate of waste accumulation requires a permit, or continues to qualify for exemption. The amended rule would require that at least half of the material on site at the beginning of a year is removed that same year, plus half of any new material brought onto the site during that year. Facilities would be required to notify and submit annual reports in order to maintain their permit exemption.

6.3.12 Piles – Retaining separate indoor and outdoor storage requirements

The rule amends the applicability of the piles section so that is clear that it applies only to outdoor storage of solid waste in piles. It clarifies that indoor storage of wastes in piles associated with other solid waste handling activities, is subject to the requirements of those applicable sections of the rule. The ability to achieve compliance under one central aspect of the rule, as opposed to obtaining permits or maintaining exemptions under multiple sections results in a lessened burden for operators. Keeping requirements separate or unclear would have increased compliance burden.

6.3.13 Piles – Not allowing alternatives for impervious surfaces

The baseline rule requires operators of permitted facilities to have impervious surfaces for all areas where wastes are stored in piles. Under the amended rule, some facilities previously not requiring permits could need to obtain a permit, creating an unreasonable economic burden for those facilities. Consequently the amended rule exempts facilities that store cured concrete, asphaltic materials, and brick from the impervious surface requirement with no upper limit, if they have Water Quality Sand and Gravel Permit or Construction Stormwater General Permit. This allowance recognizes the ability of other permits to address the concerns raised by managing these solid wastes. Not including this exemption would increase burden to covered facilities.

In addition, in cases where these same facilities do not have the water quality permits, health departments may waive the impervious surface requirement under the amended rule if the applicant can demonstrate how soil and groundwater will be protected by other design features. This approach recognizes that alternative designs may provide adequate protection, particularly when different materials and intrinsic site factors are considered. Not including this ability in the amended rule would increase burden to covered facilities.

6.3.14 Piles – requiring multiple permits or exemptions

Ecology considered not changing applicability of the piles section to allow other sections of the rule to capture the requirements for piles permitting and exemptions. Under this alternative, for example, a single facility with multiple piles of various materials would need multiple permits and exemptions. This alternative would increase burden to covered facilities.

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6.4 Conclusion

After considering alternatives to the amended rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the amended rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

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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 rule amendments.

This chapter presents the:

- Results of the analysis of relative compliance cost burden.
- Consideration of lost sales or revenue.
- Cost-mitigating action taken by Ecology, if required.
- Small business and local government consultation.
- Industries likely impacted by the rule.
- Expected net impact on jobs statewide.

A small business is defined by the RFA as having 50 or fewer employees. Estimated costs are determined as compared to the baseline regulatory environment—the regulations in the absence of the rule amendments. The RFA only applies to costs to "businesses in an industry" in Washington State. This means that impacts, for this chapter, are not evaluated for non-profit or government agencies.

The existing regulatory environment is called the "baseline" in this document. It includes only existing laws and rules at federal and state levels.

7.2 Quantification of Cost Ratios

Ecology calculated the estimated per-entity costs to comply with the rule amendments, based on the costs estimated in Chapter 3.

The median affected small business likely to be covered by the rule amendments employs an average of approximately 9 people. The median largest ten percent of affected businesses employ an average of approximately 76 people. All quantitative cost estimates in this analysis are point estimates (not differentiated by size or range), and dividing any number by 9 employees versus 76 employees will yield a disproportionate compliance cost impact per employee.

We conclude that the rule amendments are likely to have disproportionate impacts on small businesses, based on the possible quantified cost estimates, and therefore Ecology must include elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

7.3 Loss of sales or revenue

Businesses that will incur costs could experience reduced sales or revenues if the fee changes significantly affect 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 significantly affect marginal costs), as well as the specific attributes of the markets in which they sell goods, including the degree of influence of each firm on market prices, as well as the relative responsiveness of market demand to price changes.

7.4 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:
>
> - Reducing, modifying, or eliminating substantive regulatory requirements;
> - Simplifying, reducing, or eliminating recordkeeping and reporting requirements;
> - Reducing the frequency of inspections;
> - Delaying compliance timetables;
> - Reducing or modifying fine schedules for noncompliance; or
> - Any other mitigation techniques including those suggested by small businesses or small business advocates.

Ecology considered all of the above options, and included the following legal and feasible elements in the rule amendments that reduce costs. In addition, Ecology considered the alternative rule contents discussed in Chapter 6, and excluded those elements that would have imposed excess compliance burden on businesses.

- Adding exclusions, exceptions, and clarifications to prevent overlapping permitting and regulatory requirements.
- Simplifying determination of solid wastes.
- Expanding the definition of recycling.
- Expanding regulatory flexibility regarding impervious surfaces.
- Expanding regulatory flexibility regarding protecting wastes from weather.
- Adding language to the effective dates (173-350-030(a)(ii)(A)) allowing for up to two six-month extensions for currently exempt facilities to obtain permits required under the amended rule.

- Allowing alternative storage proposals as part of the beneficial use determination application process.
- Exempting contaminated soils and dredged material being stored or treated over 90 days when the facility has a Construction Stormwater General Permit.
- Expanding flexibility through the specification that the regulatory threshold for waste tire storage is eight tons for tires that individually weigh under 500 pounds, and 20 tons for tires that individually weigh 500 pounds or more.
- See Chapter 6 for rule content that was excluded from the amended rule because it would impose additional burden on covered parties.

7.5 Small Business and Government Involvement

Ecology involved businesses – large and small – and state and local governments (or representative organizations) in development of the rule amendments. This included:

- Email listserv "ECY-SW-Handling-Standards", with 798 current members, consisting of interested parties including businesses, state and local government agencies, and organizations representing those groups.
- Multiple rule development workgroups, with direct appointment *or* attendance by representatives from:
- Ashgrove Cement
- Association of General Contractors
- Auto Recyclers of Washington
- Nucor Steel
- Cal Portland
- Cedar Grove
- Central Pre-Mix
- City of Spokane
- County Public Works and Solid Waste (various)
- Inert Waste Landfill Operators
- Institute of Scrap Recycling Industries
- Jurisdictional Health Authorities (various)
- Les Schwab
- Northwest Food Processors Association
- Northwest Product Stewardship Council
- Northwest Tire Dealers Association

- Pacific Topsoils
- Port of Olympia
- Port Townsend Paper
- Roosevelt Regional Landfill
- Rubber Manufacturers Association
- Small Businesses / Contractors
- Snohomish County
- Stericycle
- Tire Disposal and Recycling
- Trans-Alta USA
- WA Department of Ecology (various programs)
- WA Department of Labor & Industries
- WA Department of Natural Resources
- WA Department of Transportation
- WA State Association of Fire Marshals
- WA State Patrol
- WA Utilities and Transportation Commission
- Walla Walla County Code Enforcement
- Washington Aggregates & Concrete Association
- Washington Organics Recycling Council
- Washington State Recycling Association
- Waste Connections
- Waste Management
- Zero Waste Washington
- Workgroup meetings:
    - January 5, 2016
    - August 11, 2015
    - June 16, 2015
    - February 18, 2015
    - February 3, 2015
    - January 20, 2015
    - January 6, 2015, Conference Call
    - December 16, 2014

    - December 2, 2014, Conference Call
    - November 18, 2014
    - November 4, 2014, Conference Call
    - October 17, 2014
    - October 7, 2014, Conference Call
    - September 16, 2014
    - August 22, 2014
    - July 9, 2014
- Public workshops:
    - July 21, 2016, Lacey
    - July 26, 2016, Ellensburg
    - July 27, 2016, Spokane

7.6 NAICS Codes of Impacted Industries

The amended rule is likely to impact the following North American Industrial Classification System (NAICS) codes. An "X" indicates multiple sub-codes.

- 111X Crop Production
- 112X Animal Production and Aquaculture
- 2123 Nonmetallic Mineral Mining and Quarrying
- 2213 Water, Sewage and Other Systems
- 3253 Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
- 4239 Miscellaneous Durable Goods Merchant Wholesalers
- 4413 Automotive Parts, Accessories, and Tire Stores
- 4441 Building Material and Supplies Dealers
- 4442 Lawn and Garden Equipment and Supplies Stores
- 4451 Grocery Stores
- 4461 Health and Personal Care Stores
- 4471 Gasoline Stations (also 4451 grocery stores)
- 4533 Used Merchandise Stores
- 5621 Waste Collection
- 5622 Waste Treatment and Disposal
- 5629 Remediation and Other Waste Management Services

7.7 Impact on Jobs

Ecology used the Washington State Office of Financial Management's 2007 Washington Input-Output Model[27] to estimate the impact of the amended rule on jobs in the state. The model accounts for inter-industry impacts and spending multipliers of earned income and changes in output.

The rule amendments will result in transfers of money within and between industries. Transfers will primarily occur to or from engineering professions, as well as to financial or insurance sector providers of financial assurance. Jobs impact calculations were based on cost increases and reductions that could be fully quantified across an industry or industries for the rule amendments.

In the first year, when one-time and annual costs increases and reductions will be incurred, seven full-time employee positions (FTEs; a full time position for one year) could be lost, not including transfers of funds to and from other industries.

In subsequent years, when only annual cost increases and reductions will be incurred, one FTE could be lost in perpetuity, not including transfers of funds to and from other industries.

These prospective changes in overall employment in the state are the sum of multiple small impacts across all industries in the state.

[27] See the Washington State Office of Financial Management's site for more information on the Input-Output model. http://www.ofm.wa.gov/economy/io/2007/default.asp

References

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Communication with Joel Bird, WA Department of Ecology Manchester Lab. 10/25/2017.

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US Bureau of Labor Statistics (2016). 2016 Wages by Area and Occupation. Washington State.

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US Treasury Department (2017). Historic rates of return on I-Bonds, 1998 – 2017.

WA Department of Ecology (2016). Ecology 2017 Standard Cost assumptions. December 2, 2016.

WA Department of Ecology (2017). Sampled financial assurance values from WA Department of Ecology Northwest Region and Eastern Region.

WA Office of Financial Management (2012). Input-Output Model for Washington State. http://www.ofm.wa.gov/economy/io/2007/default.asp

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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.

Before starting the rulemaking we spent several years working with the regulated community and local jurisdictional health authorities implementing the rule. The current rule presented too many obstacles to interpretation and efficient implementation. The alternatives were to not undertake a rulemaking at all (rejected as inconsistent with good stewardship of the rule), or undertake a less comprehensive update. In that latter case, many sections of the rule are tied together in some way. There were no more limited revisions that could be undertaken without simply ignoring the fact that the rule as a whole was greatly in need of revision.

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 and record for rulemaking.

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 is not a new program and the relationship with other rules is well known. We make this determination because knowledgeable staff have interacted broadly with stakeholders, as well as focusing on certain critical areas to examine the nexus of solid waste rules with other related rules and authorities. We have involved our assistant attorney general along the way to aid us in sorting out issues that were more complex.

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

Changes to the rule do not impose more stringent requirements on private entities, than on public entities. There are different requirements for privately owned versus publicly own facilities as regards financial assurance under WAC 173-350-600. It isn't really a matter of stringency, but relates to fundamental differences in how the two groups operate economically, and what tests are appropriate to establish financial assurance.

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.

Yes.

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

☐(i) A state statute explicitly allows Ecology to differ from federal standards. [If checked, provide the citation included quote of the language.]

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

Federal regulations in 40 CF$ 257 govern the management of non-hazardous, non-municipal solid waste. Federal rules establish a baseline for state solid waste programs, and the state rule reflects that language. The federal rule does not require permitting, as required under state law. Federal rules also do not reflect the broader nature of the state program as regards goals for waste reduction and recycling, and related innovative program efforts, nor the state and local planning mandated under state statute. This was by design as EPA expected states to establish their own programs

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.

Federal regulations in 40 CF$ 257 govern the management of non-hazardous, non-municipal solid waste. Federal rules establish a baseline for state solid waste programs, and the state rule reflects that language. he federal rule does not require permitting, as required under state law. Federal rules also do not reflect the broader nature of the state program as regards goals for waste reduction and recycling, and related innovative program efforts, nor the state and local planning mandated under state statute. This was by design as EPA expected states to establish their own programs

Internally the largest potential for conflicts is with the Hazardous Waste and Toxics Reduction Program, the Toxics Cleanup Program, and the Water Quality Program. During rulemaking, W2R staff worked with contacts in each of those programs to ensure compatibility.

Three other state agencies had a specific interest in this rulemaking. The Utilities and Transportation Commission is charged with regulating over-the-road transportation of solid waste, and has an integral role in discerning between solid waste and recyclable materials. The Department of Transportation has a significant interest in this rulemaking because of the volumes of soil and inert waste they manage. The Department of Natural Resources is responsible for surface mine reclamation, which has implications for both soils and inert wastes. Staff from these agencies participated in the rulemaking process.

State solid waste rules respond to a strong legislative mandate in Chapter 70.95 RCW. The Department of Ecology is charged with adopting rules and providing overall leadership to local governments. Local jurisdictional health authorities are assigned the responsibility of issuing solid waste handling permits, and act as the first line of technical assistance and enforcement. Ecology meets on a regular basis with the statewide association of environmental health directors, and with the Waste 2 Resources Advisory Committee. The latter is a group comprised of representatives cutting across all stakeholder groups.

In addition to work with the specific stakeholder groups noted above, we maintain a ListServ with a membership of about 800 stakeholders, as well as program and rulemaking web pages to convey information. We shared significant updates and opportunities for input during the rulemaking process. We have identified guidance that may need to be developed or updated to reflect the requirements of the revised rule, and will involve stakeholders in that effort as appropriate.