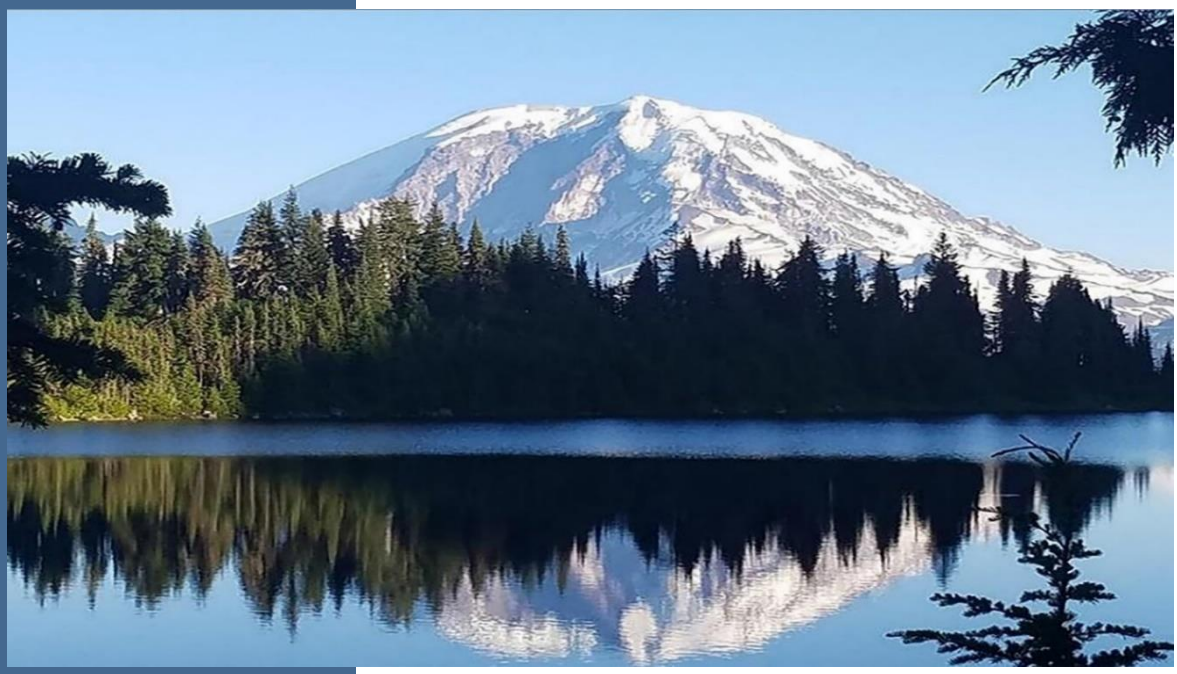
Association of Washington Cities (Shannon McClelland)



Washington Preliminary Needs Assessment

DRAFT Report

By

Eastern Research Group, HDR Engineering, Inc., Resource Recycling Systems, Cascadia Consulting Group, Bin There Consulting and Start Consulting

For the

Solid Waste Management Program

Washington State Department of Ecology

DEPARTMENT OF ECOLOGY
State of Washington

Olympia, Washington

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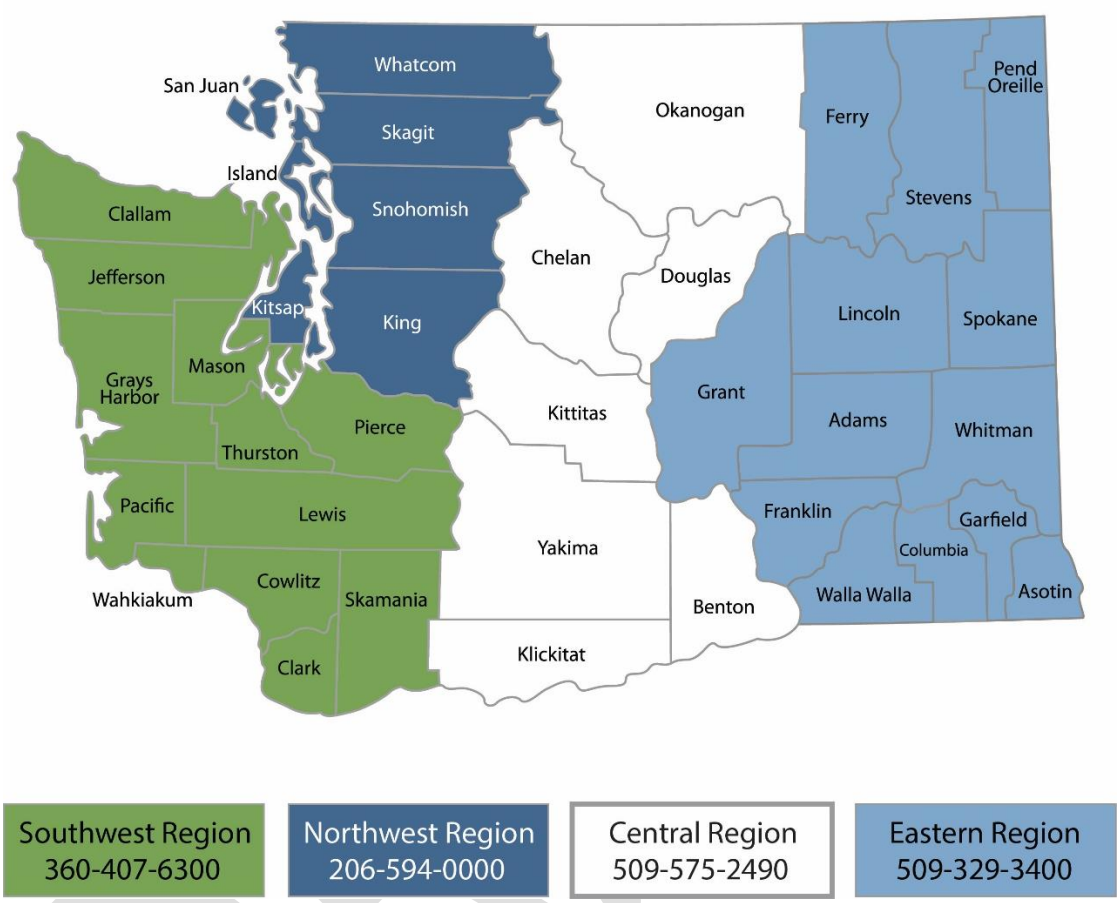
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Map of Counties Served



Region	Counties Served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 47600 Olympia, WA 98504	360-407-6000

Washington Preliminary Needs Assessment

Version 1

by

Eastern Research Group, HDR Engineering, Inc., Resource Recycling Systems, Cascadia Consulting Group, Bin There Consulting and Start Consulting

Solid Waste Management Program

Washington State Department of Ecology

Olympia, WA

October 2026 | Publication 26-07-077 (DRAFT)

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DEPARTMENT OF
ECOLOGY
State of Washington

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1.0 Executive Summary

The Washington legislature passed the Recycling Reform Act in 2025 (Chapter 70A.208 Revised Code of Washington [RCW]). The law creates an extended producer responsibility (EPR) program for consumer packaging and paper products, also called "covered materials." Under this program, producers take on part of the cost and responsibility for managing these materials after use.

Under this EPR program, producers of packaging and paper products will fund a nonprofit producer responsibility organization (PRO). The PRO collects fees from individual producers and uses those funds to collect, transport, and process covered materials into new materials. The PRO will reimburse service providers, which include local governments, collectors, material recovery facilities, and processors, to support recycling activities.

To implement the EPR program, the Recycling Reform Act required the Washington State Department of Ecology (Ecology) to develop statewide collection lists in 2026 and conduct two needs assessments: a preliminary needs assessment in 2026 and a full needs assessment in 2027. The statewide collection lists will create a standardized list of packaging and paper products for collection, regardless of location. The needs assessments help Ecology and the PRO understand what changes and additional investments are needed to collect and manage these materials.

As required by law, Ecology hired a third-party consultant team to prepare this draft preliminary needs assessment. The team reviewed existing reports and data, including studies of waste types and amounts, facility annual reports, compost studies, websites, service provider registrations, and collection contracts. The team also contacted interested parties, issued a statewide request for information, and surveyed collection providers, facilities, and local governments.

This draft preliminary needs assessment documents Washington's current residential recycling and composting system. It summarizes current collection service contracts, the covered materials generated and collected in the state, and the current services, infrastructure, and end markets for those materials.

1.1 Findings

Contracts with private collection service providers are the most common collection service arrangement for recycling and organics. The most common contract term length for a solid waste collection contract between a municipality and a private provider is ten years. The average term is slightly over nine years. Contracts tend to be longest in Washington's Southwest region and shortest in the Eastern region.

Collection contract cost structures vary by jurisdiction because several factors affect rates. Most collection contracts offer solid waste service as a pay-as-you-throw system, where the cost depends on the garbage container size. Approximately half of municipalities include the cost of recycling in residential garbage rates. Fewer include multifamily recycling. The

calculated recycling service cost is approximately $432 per ton. However, this cost is based on limited data.

Residential sources generated approximately 6 million tons of waste in 2024. About 2 million tons were covered materials. Paper packaging (14 percent of total tons), paper products (8 percent), and rigid plastic packaging (5 percent) were the most prevalent covered materials generated by residents.

Most Washington residences currently have curbside recycling available, but gaps remain. Multifamily residences have less availability than single-family residences. Statewide, 91 percent of single-family residences have curbside recycling available, compared with 69 percent of multifamily residences. Availability is also more limited in the Central and Eastern regions than in the Southwest and Northwest regions. For single-family residences, availability is 65 percent in the Central region and 69 percent in the Eastern region, compared with 91 percent statewide. For multifamily residences, it is 23 percent in the Central region and 29 percent in the Eastern region, compared with 69 percent statewide.

Washington has a network of recycling and organics management facilities that handle current material quantities and may handle more. The state has seven material recovery facilities that process recyclables, approximately 160 transfer stations and drop-off sites that manage recyclables, and approximately 65 organics management facilities that could potentially process compostable products. Washington's material recovery facilities currently manage approximately 675,000 tons of material and have capacity of nearly 900,000 tons. Most organics management facilities responded that they do not currently accept compostable products, but some expressed interest about incentives to do so.

Paper and fiber-based materials and metals have the most in-state end markets compared to other covered material types. The inventory identifies one in-state glass manufacturing end market and no in-state end markets for recovered plastics. Only a small number of organics facilities accept compostable packaging.

1.2 Recommendations

We recommend gathering more consistent data on material quantities collected, collection services, costs, and facility capacity to support the full needs assessment.

Collect more complete data using consistent reporting methods. Some service providers consider cost, fee, and revenue information confidential. We offered non-disclosure agreements, and Ecology offered its process for protecting confidential business information. Some parties still had concerns about sharing data. Ecology could consider standard reporting requirements with protections for sensitive information.

Visit material recovery facilities to learn more about current operations and possible improvements. More information is needed about current technology, capital improvement plans, potential operating efficiencies, performance, and costs. These details will show how much additional material Washington's existing material recovery facilities can manage. They will also show which material types the facilities can manage through existing infrastructure,

capital upgrades, and operational improvements. This information will help set realistic goals and estimate costs for the EPR program in the full needs assessment.

Evaluate whether collected materials consistently reach verified, responsible end markets. The full needs assessment should determine whether identified markets offer sufficient, stable, and practical outlets for covered recyclable and compostable materials from Washington. The review should consider market locations, transportation needs, competing material supply, facility specifications, market demand and stability, and projected capacity. The preliminary needs assessment identifies potential end markets. It does not determine whether individual facilities or pathways meet the Recycling Reform Act's criteria for responsible markets.

1.3 Questions for public comment

This draft describes what we know about Washington's residential recycling and composting system. Your comments can help us check the findings and fill information gaps. The revised preliminary needs assessment will provide a baseline for the full needs assessment, which will identify needs and recommend improvements for the packaging and paper products EPR program.

We invite comments on whether this draft of the preliminary needs assessment accurately describes Washington's recycling and composting system. Residents and community groups can share their experiences. Local and Tribal governments, service providers, facilities, and end markets are invited to share records that could clarify service coverage, material amounts, costs, processing capacity, and where collected materials go.

Questions:

1. **All**: Do the main findings and conclusions match what you know about recycling and composting in Washington?
2. **All:** Where does your experience differ from the access described in the preliminary needs assessment? For example, is a service listed as available but difficult to use, or missing at apartments, in rural areas, or in public places?
3. **All:** Looking ahead to the full needs assessment, what else should we consider? Are there questions, experiences, communities, or possible improvements that this draft preliminary needs assessment does not address or that deserve a closer look?
4. **Local and Tribal governments and collection service providers**: Do you have service maps, contracts, cost records, or information on the amounts and types of residential material collected or discarded that could confirm or improve the draft preliminary needs assessment findings?
5. **Recycling, transfer, and composting facilities**: Does the draft preliminary needs assessment accurately describe what facilities can accept and process? Can you share information on materials handled, usable additional capacity, or practical limits that the report may have missed?

6. **Collection providers, processors, manufacturers, and end markets**: Does the draft preliminary needs assessment accurately describe where Washington's collected materials go? Can you share information on actual destinations, amounts received, or barriers to using more of these materials?

How to comment or share information: Submit comments or offer information through Recycling Reform Act - Preliminary Needs Assessment.

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2.0 Introduction

This section explains the background, purpose, and structure of the preliminary needs assessment.

2.1 Overview of needs assessments

The Recycling Reform Act established an extended producer responsibility (EPR) program for consumer packaging and paper products in Washington (Chapter 70A.208 Revised Code of Washington [RCW]). This program partially shifts responsibility for managing packaging and paper products after use, also referred to as "covered materials," to producers.

Under this EPR program, producers of covered packaging and paper products will fund a nonprofit producer responsibility organization (PRO). The PRO will invest in statewide recycling system improvements. These improvements may include wider access to curbside recycling and more convenient drop-off locations. The PRO will collect fees from individual producers and use the funds to collect, transport, and process residential packaging and paper products into new materials. It will reimburse service providers, including local governments, collectors, material recovery facilities, and processors, for recycling activities.

The law directs Ecology to:

- Develop four statewide collection lists, due by October 1, 2026, identifying covered materials suitable for residential recycling, residential composting, public place collection, or alternative collection.
- Complete a preliminary needs assessment due by December 31, 2026, describing current recycling system availability, infrastructure, contracts, costs, material flows, and market conditions.
- Complete a full needs assessment, due by December 31, 2027, evaluating system performance, environmental and public health considerations, investment needs, and opportunities for improvement.

Findings from both needs assessments will guide the PRO's program plan.

Ecology retained Eastern Research Group (ERG), in partnership with Cascadia Consulting Group, HDR Engineering, Inc. (HDR), Start Consulting, Bin There Consulting, and Resource Recycling Systems (RRS), to develop the statewide collection lists and conduct both needs assessments.

2.2 Purpose and structure of the preliminary needs assessment

This draft describes the state's recycling and composting system. We organized the Recycling Reform Act requirements into five topics for the assessment, shown in Figure 1.

Section 4.0 reviews of how service contracts are currently structured and service costs. Section 5.0 offers estimates of how much covered residential packaging and paper products was

collected. Section 6.0 provides an overview of current recycling and composting collection services, including service types, coverage areas, and accepted materials. Section 7.0 describes existing infrastructure and processing capacity of drop-off sites, transfer stations, material recovery facilities, and organics materials management facilities. Section 8.0 inventories available end markets for covered materials and the capacity of those markets.

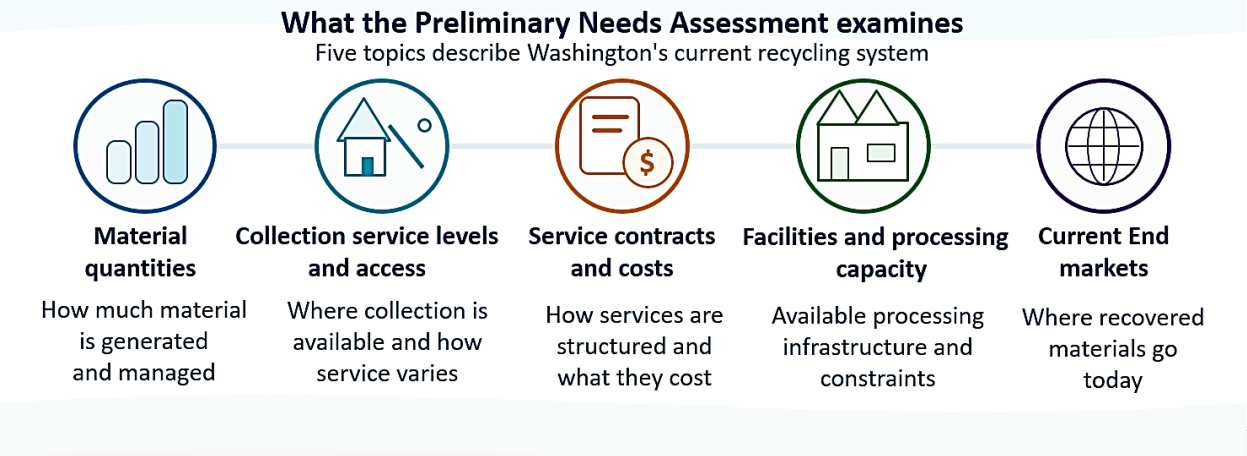


Figure 1. Organization of the preliminary needs assessment.

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3.0 Methodology

This section explains the preliminary needs assessment methodology, including the project scope, project approach, data collection methods, and data quality limitations.

3.1 Approach

We grouped the Recycling Reform Act requirements for conducting the preliminary needs assessment into five topics. A consultant with experience in each topic led the analysis for each topic.

We reviewed service provider registrations, facility permits and annual reports, existing reports, solid waste management plans, and Washington Utilities and Transportation Commission (UTC) data. This review helped us identify missing information. These gaps guided Ecology's request for information and survey efforts.

We then used the existing data and survey data to prepare detailed analyses for Ecology. The Recycling Reform Act Advisory Council Needs Assessment Subcommittee reviewed drafts of the technical analyses in August and September 2026. This public comment draft summarizes the key findings and will support the 30-day public comment period and consultation with the Advisory Council and the PRO.

3.2 Scope

This section explains the scope of the assessment and defines key terms. A full glossary is available in Section 12.0.

3.2.1 Scope of packaging and paper products

The Recycling Reform Act covers consumer packaging, such as boxes, bottles, and cans made from materials including paper, plastic, metal, and glass, and paper products such as flyers, catalogs, magazines, and other printed paper. Together, we refer to packaging and paper products as **covered materials** (RCW 70A.208.020).

As part of program implementation, Ecology is developing statewide collection lists that will establish which covered materials are suitable for residential recycling, residential composting, public place collection, or alternative collection programs.

The statewide collection lists group materials by type, class, and name. Material class describes the main material and its use, such as plastic packaging or paper products. Material names provide more detail about the product's form, use, and composition, such as plastic resin or metal type.

We used the same material types, classes, and names as the statewide collection lists. The May 2026 surveys included material names so respondents could report which materials they accept. More details on the surveys are described in Section 3.3.7.

Table 1 shows the covered material types and classes used in this assessment. It includes examples of material names, rather than the complete list.

Table 1. Covered material types, classes, and examples used in the statewide collection lists and the preliminary needs assessment.

Material Type	Material Class	Example Covered Material Names
Plastic	Flexible Plastic Packaging	Food contact and non-food contact bags and films, and compostable bags and film
Plastic	Rigid Plastic Packaging	Plastics broken out by resin type and format, such as bottles, jugs, jars
Paper and Fiber	Paper Packaging	Aseptic and gable top containers, corrugated cardboard, and coated and uncoated packaging
Paper and Fiber	Paper Products	Magazines, high- and low-grade paper products, newsprint, and shredded paper
Glass and Ceramic	Glass & Ceramic Packaging	Glass bottles and containers
Metal	Metal Packaging	Aluminum cans, foil, aerosol containers, and pressed packaging, non-ferrous, and steel packaging
Compostable	Organic & Wood Packaging	Wood and bio-based packaging and utensils
Other	Other Materials Packaging	Natural, synthetic, composite and all other textile packaging

3.2.2 Scope of recycling and organics management

This draft preliminary needs assessment summarizes the current services, infrastructure, and the end markets for covered materials from residential generators and public places.

What are covered services?

Covered services are activities used to collect and manage covered materials. These services include "collecting, transferring, transporting, sorting, processing, recovering, preparing, or otherwise managing for purposes of waste reduction, refill, reuse, recycling, composting, or disposal of contamination or residuals" (RCW 70A.208.020). Covered services do not include mixed municipal solid waste composting, incineration, or land disposal.

Who provides covered services?

Service providers collect, transport, sort, or process residential packaging and paper products (RCW 70A.208.020). They include local governments that provide or arrange for services and private collection companies. Collection may be provided under a contract, through an open market with several providers, under a UTC G-certificate, or directly by a municipality, county, or Tribe. Drop-off sites, transfer stations, material recovery facilities, and organics facilities may also be service providers.

Who receives covered services?

Covered entities are the residences and public places that receive recycling and other covered services under the Recycling Reform Act. These include single-family residences, multifamily residences, and some public places. For this assessment, **multifamily residences** include buildings or group of buildings with four or more units (RCW 84.14.010).

A **public place** is an indoor or outdoor location that is open to, generally used by, and accessible to the public. Examples include streets, sidewalks, plazas, town squares, public parks, beaches, forests and other public recreational lands, and transportation facilities such as bus and train stations, airports, and ferry terminals (RCW 70A.208.020).

Additional key terms used in this assessment

Throughout this report, we use **residential** or **residential generators** to refer collectively to single-family and multifamily generators. We use **nonresidential generators** to refer to public places and institutional, commercial, and industrial generators. Where possible, we report information for public places separately.

When talking about collection services, we focus only on garbage, recycling, or organics. **Garbage collection** means collecting material from a generator and sending it to a landfill, incinerator, alternative fuel facility, or waste-to-energy facility.

Recycling collection means a generator separates material for recycling, and a service provider collects it or the generator self-hauls it. A material recovery facility sorts the material, or the material goes directly to an end market or broker without additional processing beyond consolidation, such as glass or baled cardboard.

Organics collection means the material separated by the generator and collected or self-hauled for recovery materials for management at either composting or anaerobic digestion facilities.

Drop-off collection is also a covered service.

We use the term **collection service providers** or **collected by service providers** to mean local governments and private collection companies that collect covered materials, primarily through curbside collection.

Self-haul means that someone other than a contracted or municipal service transports the materials. This includes residents, businesses, for-hire collection, landscapers, and contractors that take covered materials to a drop-off collection site, transfer station, material recovery facility, or landfill.

Refill means a consumer continues to use a covered material (RCW 70A.208.020). **Reuse** refers to a covered material returned to the marketplace and continues to be used by a producer or service provider for its original purpose without changing its form (RCW 70A.208.020).

After collection, covered materials may be transferred, transported between facilities, sorted, prepared, and processed at different facilities. This assessment inventories **drop-off collection sites**, **transfer stations, material recovery facilities,** and **organic materials management facilities**.

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The Recycling Reform Act focuses on compostable packaging collected through residential composting services. However, we expanded the analysis to include **organics materials management facilities**, meaning a facility that manages organic materials through composting, anaerobic digestion, vermiculture, black soldier fly, or similar technologies, as defined in RCW 70A.205.015. **Compost facility** means a facility that may accept and process covered materials using composting activities as defined in RCW 70A.208.020.

End markets use the recycled packaging and paper products as a feedstock for new products or usable outputs. For example, a paper mill may use recovered fiber to make new paper products. End markets are not covered service providers. Access to end markets can affect how service providers manage materials and where those materials ultimately go. We evaluate current end markets but do not determine if they meet responsible end market requirements.

3.2.3 Geographic scope

We present data in four regions, as shown in Figure 2, to better understand trends and to protect confidential and proprietary information. The regional profiles mirror the regions presented in Ecology's statewide waste characterization: Eastern, Central, Northwest, and Southwest (Ecology 2026).

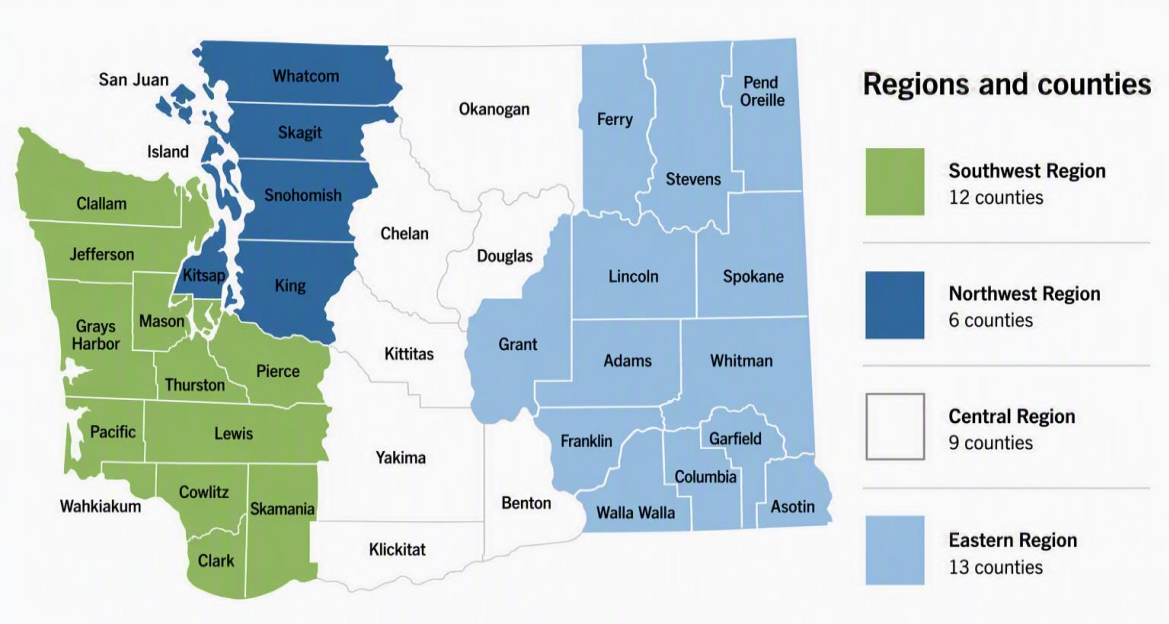


Figure 2. Washington State Department of Ecology regions.

The request for information asked whether we should use different regional boundaries. Responses did not recommend a specific change, so we retained Ecology's four regions. The state's 39 counties are divided across the following four regions:

- Southwest: Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, and Wahkiakum counties
- Northwest: Island, King, Kitsap, San Juan, Skagit, Snohomish, and Whatcom counties

- Central: Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, and Yakima counties
- Eastern**:** Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman counties

3.2.4 Data years

The Recycling Reform Act requires the preliminary needs assessment to cover a period of 12 to 36 months before the assessment is due in December 2026. The Recycling Reform Act also requires Ecology to consider information from recycling-related studies it conducted after 2019.

This draft uses the best available data from calendar years 2024 and 2025. We used 2024 tonnage data for the material quantities analysis. We also used 2024 annual reporting data for the facilities and processing capacity assessment. The 2025 service provider registration form requested 2024 tonnage data and 2025 service area information. Surveys requested the most recent data available from 2024 or 2025. In some cases, we used older data to fill gaps when newer data were unavailable. For example, we reviewed service provider contracts when service providers did not respond to the survey.

3.3 Data sources

This section describes the existing reports and data sources and primary data collection used for this draft of the preliminary needs assessment.

3.3.1 Service provider registration

The Recycling Reform Act requires service providers seeking PRO reimbursement to register annually with Ecology beginning in 2026. Registration includes service areas, services offered, residences served and eligible for service, costs, and tons managed. These records help describe the statewide system. The registration form used for this assessment requested 2024 tonnage and 2025 service area information

3.3.2 Facility permits and annual reports

Recycling and organic materials management facilities must submit annual reports to Ecology. The reports identify information relevant to each facility, including the quantities and types of recyclable or compostable materials managed during the year, material origins, residual disposal tonnages, compost produced, recyclable material destinations, and end market information. We used Ecology's 2024 annual reports and material recovery facility permit documentation to develop the facility inventory and inform the end market assessment.

3.3.3 Existing reports

The Recycling Reform Act requires this assessment to consider relevant Ecology studies from 2019 to present.

Table 2 summarizes key Ecology reports and studies reviewed to inform the draft preliminary needs assessment.

Table 2. Related Ecology studies.

Title	Year	Description
Plastic Packaging in Washington: Assessing Use, Disposal, and Management	2020	Plastic packaging waste generation, disposal, and management in Washington and assessment policy options to meet specific goals, including infrastructure needs.
Recycled Content Use in Washington: Assessing Demand, Barriers, and Opportunities	2020	Findings from interviews with plastic manufacturers, converters, and re-processors about their ability to market and use post-consumer resin in their products, barriers to sourcing, and potential solutions to barriers
Washington Statewide Waste Characterization Study	2020-2021	Report of four-season MSW characterization study.
Washington Statewide Recycling & Organics Characterization Study	2022-2023	Report of four-season study that characterizes commingled inbound and outbound recycling and inbound organics from facilities throughout Washington.
Washington Consumer Packaging and Paper Study: Recycling Rate Assessment and Recommendations	2023	Baseline of consumer packaging and paper products in Washington and estimated recycling rates for these materials. Reviews problematic materials and proposed policy measures to address them.
Washington Statewide Waste Generation and Recovery Data	2024	This dataset tracks recovered materials in Washington by collection type and sector for all recyclables and organic materials collected.
Compost Market Study	2026	Summarizes regional facility counts, statewide organic tonnage, forecasts.
Recycling Reform Act: Service Provider Registration	2026	Data collected by Ecology from collection service providers.

3.3.4 Washington UTC data

The UTC regulates private utility and transportation companies, including exclusive franchise agreements (G-certificates), between solid waste franchise areas and collection service providers. G-certified collection service providers are required to submit annual reports detailing collection tonnage, revenues, and costs for each tariff area. Service requirements and rates are established through tariffs, and the UTC must review and approve proposed rate adjustments.

3.3.5 Solid waste management plans

Available municipal and county solid waste management plans helped us identify each jurisdiction's collection arrangement. A jurisdiction may provide municipal collection, contract with a private collection service provider, or rely on UTC regulation. Some plans did not provide enough detail to make this determination. Others did not clearly separate arrangements by material stream. For example, a municipality may collect garbage, contract with a private collection service provider for recycling, and not regulate organics collection. A county solid waste management plan may describe this more generally as municipal garbage collection and private recycling and organics collection. We reviewed available solid waste management plan data for information on collection contracts.

3.3.6 Request for information

On April 1, 2026, Ecology issued a public request for information to support the statewide collection lists and needs assessments. It sought technical information, data, studies, and recommendations from the public and industry. The request also supported the Recycling Reform Act's requirement to consult the advisory council, government entities, service providers, producer responsibility organizations, the UTC, and other interested parties about the information the assessments should collect and analyze.

The request was open from April 1 to May 8, 2026, and Ecology received 30 responses. We organized the responses by request number and used relevant data and recommendations in the preliminary needs assessment and statewide collection lists evaluation.

The request complemented the surveys and service provider reporting. It sought information on covered materials, collection and processing facilities, contamination, costs, markets, environmental impacts, and system performance. It also asked for recommendations on data sources, methods, measures of performance, and information gaps.

3.3.7 Primary data collection

The Recycling Reform Act requires a service provider or other person to provide data or information needed for a needs assessment when the department requests it. After reviewing existing data and responses to the request for information, we developed surveys to fill remaining gaps. We aimed to contact every service provider, local government, and facility that may manage covered materials in the state. Each had an opportunity to provide feedback and insight. We contacted interested parties throughout the two-month engagement period to encourage survey participation.

A **Collection Services Survey** collected information on garbage, recycling, and organics programs serving single-family and multifamily residences and public places. We sent it to 54 collection service providers and 321 municipal and county contacts. Eleven collection service providers and 45 municipalities and counties responded.

A **Material Recovery Facility Survey** collected information on the infrastructure that processes covered materials, including material flows and processing capacity. We sent it to seven

material recovery facility contacts during the engagement window and received responses from three facilities.

An **Organic Facility Survey** requested information on infrastructure that may process compostable covered materials, including inbound organic material types and volumes, facility capacity, and acceptance of compostable products. Ecology sent it to 65 facilities that may collect and process covered materials. 24 facilities provided data.

A **Transfer Station and Public Drop-Off Facility Survey** collected information on transfer station facility operations, accepted materials, and capacity. We surveyed 160 facilities during the engagement window and received responses from 52 facilities.

A **Tribal Survey** attempted to gather information on Tribal access to recycling and composting programs, solid waste facility and infrastructure needs, and overall materials management practices. We collaborated with the Tribal Solid Waste Advisory Network (TSWAN) to distribute the survey to Washington Tribes. We received two responses, which are not considered representative of Tribal communities statewide. We are continuing engagement efforts to inform the needs assessments for a more comprehensive understanding of existing conditions, identify service and infrastructure gaps, and inform future program opportunities for Tribal Nations.

3.4 Crosscutting data quality and limitations

Specific data are limited to publicly available data and input provided through survey responses. We requested information from every service provider, local government, and facility that may manage covered materials in the state. We also offered options to protect confidential or sensitive information. However, responses were voluntary and some entities did not respond. Some respondents provided partial or incomplete data.

Facility survey responses were limited and sometimes incomplete. We supplemented them with desktop research or operation permit characteristics. Limited data are available. Public-place collections, particularly from non-municipal entities other than municipalities.

Service provider registration data did not reflect all facilities and regions in Washington. Although the Recycling Reform Act requires service provider registration and reporting, not all service providers identified are currently registered. Additionally, service provider registration predated the draft preliminary needs assessment and did not capture all detailed information to support the analysis.

Facility data from surveys, registration, and reporting are self-reported and have not been independently verified. Reported throughput, service areas, and capacity may vary in accuracy, completeness, and definition.

Additional data limitations are addressed in the following subsections.

4.0 Service Contracts and Costs

This section reviews service contracts of all 281 incorporated municipalities and Washington counties, along with costs for garbage, recycling, and organics collection. Table 3 summarizes the statutory requirements and data used for this assessment.

Table 3. Statutory requirement and data sources for service contracts and costs.

Statutory requirement	Data sources	Additional data needs
An evaluation of the costs for delivering existing services	Service provider data, UTC annual reports, solid waste management plans, collection provider survey, public records requests, municipal and service provider websites	Cost data from collection service providers
Average term length and variability of residential recycling and composting collection contracts issued by government entities and an assessment of contract cost structures	Contracts collected from various sources (listed above)	None
An estimate of the total annual collection and processing service costs based on registered service provider costs.	Contracts collected from various sources (listed above)	Cost data from collection service providers

4.1 Key findings

Private collection contracts are the most common arrangement among municipalities with recycling or organics collection services.

Collection arrangements are similar across the four regions, with two exceptions. Only the Southwest region has interlocal and franchise agreements, and these cover a small number of municipalities. The Eastern region has a larger share of municipalities using UTC-regulated providers and a smaller share using private collection contracts than the other regions.

The most common solid waste collection contract term length between a municipality and a private collection service provider is 10 years, with the average contract term length of about nine years. Contracts in the Southwest region tend to be the longest and those in the Eastern region tend to be the shortest on average.

The average contract extension is five years. Extensions are longest in the Southwest region and shortest in the Northwest. Few Northwest contracts are evergreen, meaning they renew automatically unless either party gives notice to end the contract. Evergreen contracts are more common in the other regions.

Collection rates vary by jurisdiction. Most contracts use a pay-as-you-throw system, where charges depend on garbage container size. About half of municipalities include recycling costs in residential garbage rates. Fewer include multifamily recycling costs.

The estimated recycling service cost is about $432 per ton, based on service provider registrations and surveys. We have low confidence in this estimate because there are few data points and the reported costs are not consistently defined. More complete service provider data would improve the estimate.

4.2 Methodology

4.2.1 Scope and approach

We identified municipalities and counties using the Association of Washington Cities website. We then reviewed service provider data, surveys, solid waste management plans, government and provider websites, UTC records, Ecology's Box database, and Bin There Consulting's contract files. If we could not find a current contract, we searched council meeting packets and online records for the contract and amendments.

When those searches did not locate a contract, we submitted a public records request. For smaller municipalities without online request systems or published email addresses, we contacted them by telephone or mail. We reviewed each agreement to identify the collection arrangement and materials included.

For costs, we combined available cost data from service provider registrations, municipal and hauler surveys, and UTC annual reports to estimate recycling costs per ton. We reviewed overlapping submissions to avoid double counting and averaged costs when the same provider reported through both registration and survey responses. We excluded records without cost or tonnage data and costs below $50 or above $3,000 per ton as outliers.

4.2.2 Limitations

Ecology first asked service providers for cost information through the early 2026 registration process. Of the 125 providers that registered for 209 jurisdictions, 44 submitted both cost and tonnage data for 100 jurisdictions. There were 91 usable data points from the initial service provider registration. When combined with UTC, data and surveys, there were 100 usable data points.

Responses to the mid-2026 surveys were also limited. Forty-three municipalities and nine haulers serving 26 jurisdictions responded, but only seven municipalities and five haulers serving five jurisdictions provided both cost and tonnage data. Four municipal responses and two hauler responses added data that were not included in the original registrations.

The registration forms and surveys asked for costs and tonnage by service category but did not define the categories in detail. Respondents may therefore have reported gross or net costs, included or excluded revenue from recycled materials, or used different definitions of drop-off

service. Some totals may also have used different measures or units, such as garbage collection costs or costs per customer instead of annual totals.

Other issues made the reported data harder to obtain and compare. Haulers often treat detailed recycling costs as confidential, and municipalities may not be able to separate recycling costs when they are included in garbage rates. Several municipalities said their haulers would not provide cost information directly but planned to submit it through service provider registration.

UTC annual reports did not list all relevant expenses, and 47 of 50 reports were heavily redacted. UTC tariffs showed customer charges but did not include the participation data needed to calculate service costs reliably.

Multifamily recycling data were especially difficult to separate because haulers may group non-cart-based multifamily recycling with commercial recycling, and records may define multifamily properties differently.

Data varies by geographic areas, such as jurisdictions, UTC service areas, counties, or regions. When data covered more than one Ecology region, we assigned them to the region with the most jurisdictions. Several haulers, especially in the Northwest and Central regions, did not provide cost information because their systems did not track costs at the requested level or because they considered the information confidential.

4.3 Supporting analysis

4.3.1 Service contracts assessment

Washington's solid waste collection system was established in 1961, when the state was divided into 46 solid waste franchise areas. Exclusive franchise agreements, or G-certificates, were awarded to collection service providers for each area, except where municipal solid waste collection services were already in place. These franchises provided collection service providers with exclusive authority to collect garbage, recyclables, and organics from single-family and multifamily residences, and garbage from commercial businesses. G-certificated collection service providers are regulated by the UTC. They are required to submit annual reports detailing collection tonnage, revenues, and costs for each tariff area.

State law also provides municipalities with an option to assume local control of solid waste collection services by canceling UTC-regulated collection rights under RCW 35.13.280.

Counties have authority to contract with private collection service providers for recyclable and compostable collection services. However, garbage collection and the associated rates remain under UTC jurisdiction pursuant to RCW 36.58.040. Other public entities—including state and federal parks, military installations, ports, and similar government agencies—may operate under municipality collection contracts, UTC regulation, or separate service arrangements, depending on their jurisdiction and applicable authorities. Federally recognized Tribes retain sovereign authority over solid waste management activities within their reservation lands.

The primary solid waste collection service arrangements available are **UTC regulation, municipal collection, interlocal agreements, contracting with a private collection service provider,** or **franchise agreement**.

Unless a jurisdiction assumed responsibility for solid waste collection before 1961 or has cancelled UTC-regulated collection rights, the UTC regulates solid waste collection. Under UTC regulation, municipalities typically have limited direct interaction with collection service providers and may receive little or no information regarding collection volumes, costs, revenues, or other service performance measures.

Municipalities may collect solid waste themselves. They may collect all streams or provide one or two services and use another arrangement for the rest. Direct collection gives a municipality more control over services and better access to operating and cost information.

Municipalities may arrange for another public agency, such as a county or neighboring municipality, to provide or manage collection through an interlocal agreement. The partner may collect material directly or manage a private collection contract. This allows jurisdictions to share administrative work and coordinate services. It is the least common arrangement described in this report.

Private contracts are the most common collection arrangement among municipalities. A municipality may select a provider through competition or negotiate with a preferred provider. Contracts can offer more flexibility than UTC tariffs. They may combine services, set service requirements, require performance reports, or add services to meet local needs.

A municipality may instead grant a provider exclusive collection rights through a franchise agreement. The municipality then oversees the provider in place of the UTC. These agreements typically retain the rates and services in the UTC tariff. The municipality sets reporting requirements, which are generally more limited than those in a negotiated collection contract.

Municipality collection service arrangements

Table 4 and ILA refers to interlocal agreement.

Table 5 show recycling and organics collection arrangements for 281 municipalities, grouped by region. Each value is the number of municipalities with that arrangement for the material stream. Private contracts are the most common arrangement where a recycling or organics service arrangement exists.

Table 4. Municipality recycling collection service arrangements.

Geography	UTC regulated	Municipal or Tribal collection	ILA	Private collection service provider contract	Franchise agreement	None	Total
Southwest	14	3	3	37	4	9	70
Northwest	19	4	0	53	0	4	80
Central	7	2	0	11	0	29	49

Geography	UTC regulated	Municipal or Tribal collection	ILA	Private collection service provider contract	Franchise agreement	None	Total
Eastern	13	1	0	8	0	60	82
Total	53	10	3	109	4	102	281

ILA refers to interlocal agreement.

Table 5. Municipality organics collection service arrangements.

Geography	UTC regulated	Municipal or Tribal collection	ILA	Private collection service provider contract	Franchise agreement	None	Total
Southwest	14	0	3	32	3	18	70
Northwest	12	0	0	51	0	17	80
Central	1	1	0	8	0	39	49
Eastern	1	0	0	7	0	74	82
Statewide total	28	1	3	98	3	148	281

ILA refers to interlocal agreement.

County collection service arrangements

Counties rely on the UTC to regulate garbage collection, but their approved solid waste management plans can influence available services. Some counties have one UTC tariff; others have up to five providers or tariffs serving different areas. Tariffs may also set different service levels inside and outside urban growth boundaries.

Although counties must use UTC-regulated collection service providers for garbage collection, they may contract directly with private collection service providers for recycling and organics collection services. Table 6 summarizes the number of solid waste collection service contracts between counties and private collection service providers in each region, categorized by material stream.

Table 6. County collection contracts.

Geography	Total counties	Garbage **c**ontracts	Recycling **c**ontracts	Organics **c**ontracts
Southwest	12	–	1	1
Northwest	7	–	0	0
Central	7	1	1	0
Eastern	13	–	0	0
Statewide total	39	1	2	1

Contract term length

We reviewed current municipality and county contracts and franchise agreements for the initial term length by the number of available extensions, excluding agreements with unlimited extensions, summarized in Table 7.

Across all regions, the average initial contract term length was nine years, with the most common term being 10 years. The range represents the shortest and longest individual initial terms reviewed and may be influenced by atypical agreements. It should not be interpreted as the typical contract term in each region.

Table 7. Solid waste collection contract initial term length in years.

Geography	Average contract length	Most common contract length	Range of contract lengths
Southwest	9	10	5–32
Northwest	10	10	3–20
Central	9	10	5–15
Eastern	8	5	1–15
Average	9	10	1–32

Extension provisions vary. Some contracts allow one additional five-year term; others allow multiple extensions, such as two additional two-year terms. Some specify an extension but allow an unlimited number of extensions.

4.3.2 Costs

Ecology initially requested service cost information in early 2026 as part of the service provider registration process. 125 service providers registered on behalf of 209 jurisdictions. Cost and tonnage data was provided by 44 service providers on behalf of 100 jurisdictions.

We requested the same information in the mid-2026 municipal and collection service provider surveys. The surveys drew responses from 43 municipalities and nine collection service providers; the providers represented 26 jurisdictions. Seven municipalities provided both cost and tonnage data in the municipal survey, four of which had not provided the data in the original service provider registration. Five collection service providers provided both cost and tonnage data on behalf of five jurisdictions in the collection service provider survey.

Some providers submitted cost data during both registration and the survey, and their responses sometimes differed. Reported totals may have used different units or included costs for garbage or other services.

Contracts rarely provide detailed recycling costs because providers often consider them confidential. Municipalities also may not be able to separate recycling costs when they are included in garbage rates. Some municipalities said their providers declined to share costs directly but planned to submit them through registration.

UTC annual reports did not list all relevant service expenses. In addition, 47 of the 50 reports had substantial information removed to protect confidentiality. Tariffs listed customer charges, but we lacked participation data, especially for multifamily properties. Without these data, we could not use charges to calculate service costs reliably.

Providers often group multifamily recycling collected in large containers with commercial recycling. They may also classify mixed-use properties and retirement complexes differently from county assessors. Separate multifamily cost estimates would require consistent property definitions and a way to assign costs and tons to those properties.

While some collection service providers provided recycling cost data by jurisdiction, others provided them by UTC area, county, or region. Most of the cost data fit within Ecology's regional designations, but in some instances, the data were part of multiple regions. In this case, the data were associated with the region that covered the most jurisdictions.

Several providers, especially in the Northwest and Central regions, did not provide cost data. They said they did not track costs at the requested level or considered the information confidential.

Contract cost structures

Most contracts use a pay-as-you-throw system, where charges depend on garbage container size. Rates usually have two parts: collection services and tipping fees. A tipping fee is the charge for delivering material to a receiving facility. Contracts often pass this fee through to customers and adjust it separately when the facility's charge changes.

The service charge generally covers vehicles, equipment, labor, containers, collection, transport, processing, customer service, administration, overhead, and provider profit. Contracts may adjust rates using a price index or a fixed increase. Some also include credits or charges linked to recycled material prices and processing fees.

Rates depend on many factors. These include container size, whether customers must subscribe separately, whether service is required, contract age, number of customers, route density, location, and materials collected. Travel distances, disposal and processing fees, outreach requirements, municipal fees, and extra services such as bulky-item pickup also affect rates.

Customer rates do not necessarily equal the cost of each service. For example, larger garbage subscriptions may help pay for smaller subscriptions, and commercial charges may help pay for residential services. Rates may reflect the provider's overall pricing approach rather than the cost of serving each customer group.

Providers rarely share detailed cost information beyond contract rates because they consider it commercially sensitive. This makes underlying costs difficult to evaluate. Local UTC tariffs may provide a useful comparison for customer rates in the same area.

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Recycling and organic collection rates

About half of municipalities with curbside recycling include recycling in garbage rates; the rest charge a separate fee. These municipalities provide service directly or through private contracts. About one-quarter to one-third include multifamily recycling in garbage rates. Multifamily recycling more often uses a separate subscription similar to commercial recycling, with charges based on units or container volume.

Fewer municipalities include the cost of organics collection in their garbage rates than include the recycling costs in their garbage rates. Only a handful of municipalities across the state include the cost of organics collection in their garbage rates for multifamily properties.

Collection service costs

We calculated recycling costs per ton using reported annual costs and tons. We excluded submissions missing either value. When a municipality or provider submitted both registration and survey data, we averaged the two cost-per-ton values. We excluded values below $50 or above $3,000 per ton because they appeared to be outliers when compared with the other values.

Table 8 shows the average annual recycling cost per ton for each Ecology region. The included services are single-family and multifamily recycling collection, drop-off services, sorting and processing, and transfer and transport—as reported by service providers.

Table 8. Average annual total recycling cost per ton by region.

Geography	Average recycling cost per ton	Recycling cost per ton range	Data points
Southwest	$558.64	$64–$1,179	53
Northwest	$357.51	$69–$1,713	17
Central	$504.95	$111–$2,008	9
Eastern	$383.54	$80–$547	21
Total Statewide	$431.94	$64–$2,008	100

Source: Collection service cost analysis. “Data points” are the observations retained for the cost analysis; they should not be assumed to be distinct service providers or jurisdictions. The overall average is not a complete statewide annual cost estimate.

Figure 3 displays the frequency of the average annual recycling cost per ton for jurisdictions that reported total recycling costs and tonnages.

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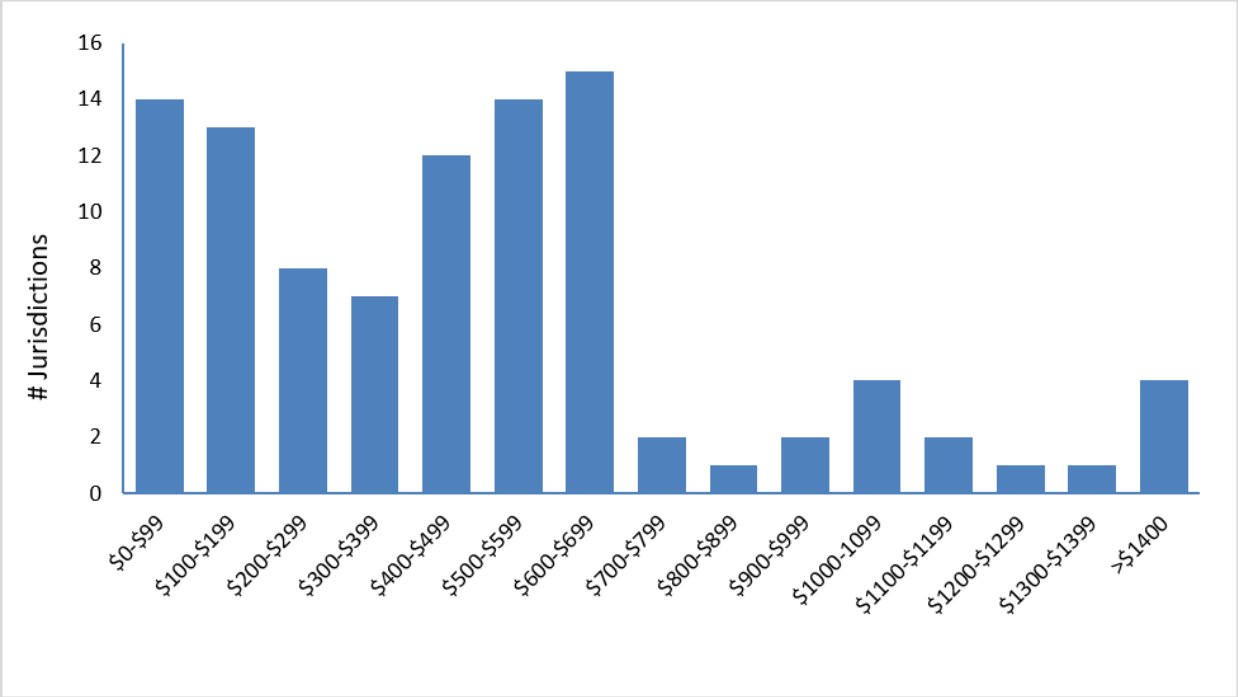


Figure 3. Average annual total recycling cost per ton.

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5.0 Covered Materials Collected in Washington

This section estimates the residential packaging and paper products collected from residences and public places for garbage, recycling, and organics management. Table 9 summarizes the statutory requirements and the data used for this assessment. We used existing estimates of how much material is generated in the state and the materials that make up these waste streams. However, we need additional data from producers or the PRO on the specific types and amounts of covered materials introduced into Washington.

Table 9. Statutory requirement and data sources for covered materials collected.

Statutory requirement	Data sources	Additional data needs
The quantity of covered materials collected in the state (b)	2024 Washington Waste Generation and Recovery Data, Ecology Waste Characterization Data	Tons of residential self-hauled garbage and tons of waste from Public Areas.
The currently or recently introduced covered materials and covered material types (a)	Relied on material categories developed with input from the Statewide Lists Subcommittee and Advisory Council	Washington-specific producer and/or PRO reported data.
The covered materials introduced by producers by volume, weight, and covered material types (k)	Relevant, publicly available waste composition data from Washinton jurisdictions	Composition data for Public Areas. Washington-specific producer and/or PRO reported data.

5.1 Key findings

Producers have not yet provided enough data on materials introduced into Washington. We therefore used estimates of waste generated and collected as an indirect measure of those amounts.

In 2024, single-family and multifamily residences generated approximately 6 million tons of waste. Approximately 2 million tons are covered packaging and paper products. Paper packaging (14 percent of total tons), paper products (8 percent of total tons), and rigid plastic packaging (5 percent of total tons) are the most prevalent covered material classes generated and collected from residences.

Collection by service providers is the most prevalent collection method. In 2024, collection service providers collected about 1.8 million tons of covered materials from single-family and multifamily residences. The remaining 0.2 million tons of covered materials generated were self-hauled.

5.2 Methodology

5.2.1 Scope and approach

We estimated covered and non-covered material amounts from residential and nonresidential sources. Residential sources include single-family and multifamily homes. Nonresidential sources include public places, institutions, businesses, and industry. The available data do not separate public places from other nonresidential sources.

We began the analysis in April 2026. That month, the Recycling Reform Act Advisory Council asked Ecology to include both covered and non-covered materials in the statewide collection lists evaluation. We used those material categories as the starting point for this assessment. We then separated covered materials from non-covered materials. Some non-covered materials, such as food waste and newsprint products like newspapers, were evaluated for the lists because recycling or organics systems may be able to recover them.

The analysis uses two collection methods for residential and nonresidential waste: collected by service providers and self-hauled. The self-haul data includes drop-off collection from residential generators but cannot be broken out separately due to data limitations. These materials are collected for either garbage, recycling, or organic materials management.

The study compiled and reviewed available data on waste quantities and material composition across Washington and standardized material categories to align with the statewide collection lists. We combined 2024 data reported to Ecology with waste composition studies to estimate annual material tonnage by region and statewide. We then applied published material-specific density factors to estimate annual volumes for covered materials. We reviewed the most recent three years of producer data available, but the data did not provide enough detail by material category to use in the assessment. For each material category, we combined the applicable composition share with reported tons for the corresponding region, generator, collection method, and stream.

5.2.2 Limitations on generation and collection estimates

This analysis draws on several data sources that vary in completeness and consistency. We could not estimate all materials or sources because some composition data were unavailable, and we matched material categories across studies to the assessment material lists as closely as possible. Some source data come from 2020 through 2023, when pandemic-related changes may have affected waste generation and composition. Available data do not allow us to separate residential from nonresidential self-hauled garbage or identify waste from public places separately. We also lacked producer data to verify the estimates. Haulers and processors self-report recovered tonnages, which may create differences in how entities report data.

5.3 Supporting analysis

The available data used for the tonnage analysis tracks the collection of residential and nonresidential materials independently, and therefore the garbage, recycling, and organic materials collection streams can be analyzed by generator and by collection method.

In 2024, Washington generated an estimated 9.2 million tons of waste. The Northwest and Southwest regions accounted for most of this waste, at 46.5 percent and 29.9 percent, respectively. Single-family and multifamily residences generated most of this waste. In 2024, residences generated an estimated 6 million tons, or 65 percent of the total. Nonresidential generators accounted for the remaining 35 percent.

Service providers collect most of the waste generated in Washington. They collect an estimated 7.4 million tons, or 80 percent of the 9.2 million tons generated, while the remaining 1.8 million tons are self-hauled. Table 10 shows the 4,271,223 tons of **materials collected by service providers from residential generators** in 2024. Garbage accounted for 2,622,372 tons, recycling for 1,083,702 tons, and organic materials collection.

Table 10. Amount of materials collected by service providers from residential generators by collection stream in 2024.

Geography	Generation (tons)	Garbage (tons)	Recycling (tons)	Organic materials (tons)
Statewide	4,271,223	2,622,372	1,083,702	565,150
Northwest	2,185,101	1,267,033	659,283	258,785
Southwest	1,242,694	738,293	281,507	222,894
Central	335,107	273,233	26,790	35,084
Eastern	508,321	343,812	116,121	48,387

Of the 3.1 million tons of non-residential waste generated, service providers collected the majority, 3.09 million tons, in 2024. Of the nonresidential material generated, approximately 1.7 million tons (55 percent) was collected as garbage, 900,000 tons (29 percent) as recycling, and 492,000 tons (16 percent) was collected for organic materials management.

Table 11 shows the breakdown of the 1.8 million tons of **self-hauled materials** by stream. Most of the material that was self-hauled (86 percent) was disposed.

Table 11. Amount of materials self-hauled by collection stream in 2024.

Geography	Generation (tons)	Self-hauled garbage (tons)	Self-hauled recycling (tons)	Self-hauled organics (tons)
Statewide	1,839,935	1,575,977	217,211	46,747
Northwest	920,265	809,774	98,534	11,957
Southwest	495,884	462,261	22,121	11,502
Central	205,000	150,906	39,969	14,125
Eastern	218,787	153,036	56,588	9,163

Available data does not indicate whether material that is self-hauled as garbage is generated by residential or nonresidential sources. Therefore, Table 12 shows residential and nonresidential recycling and organic quantities that were self-hauled in 2024 but does not separate the garbage stream.

Table 12. Amount of materials self-hauled by generator in 2024.

Geography	Residential recycling (tons)	Residential organics (tons)	Nonresidential recycling (tons)	Nonresidential organics (tons)
Statewide	67,262	17,712	149,949	29,036
Northwest	37,767	9,503	60,766	2,454
Southwest	11,403	7,412	10,718	4,091
Central	7,195	529	32,774	13,596
Eastern	10,896	268	45,692	8,895

After the tonnage analysis, we evaluated the composition of residential garbage, recycling, and organics waste that was either collected by service providers or self-hauled. Of the total 4.2 million tons of waste collected by service providers from residential generator, an estimated 1.8 million tons (42 percent) are covered materials. Figure 4 shows the breakdown by evaluated material type and by region.

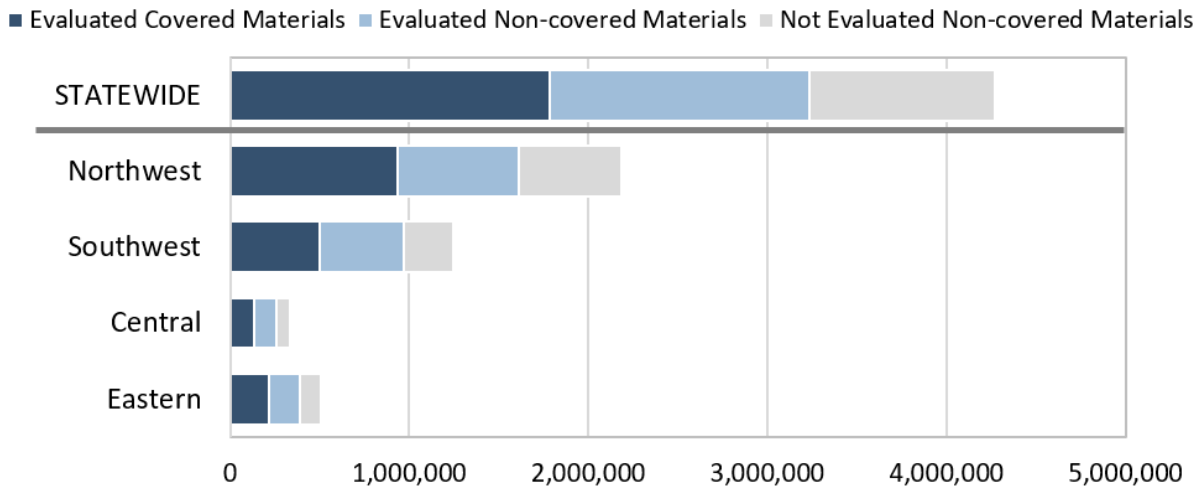


Figure 4: Composition of residential waste collected by service providers in 2024 by region

Table 13 shows the composition of covered materials that were collected by service providers. Of the estimated total 1.8 million tons of covered materials, paper packaging and paper products accounted for 1.1 million tons and plastic packaging accounted for 0.4 million tons.

Table 13. Estimated tons of covered materials collected from residences by service providers by stream in 2024.

Covered Materials	Generation (tons)	Garbage (tons)	Recycling (tons)	Organics (tons)
Cardboard & Kraft Packaging	479,950	77,565	398,157	4,228
Mixed/Low-grade Paper Packaging	95,979	49,164	46,036	779
Aseptic Containers	7,451	4,737	2,604	109
Gable Top Containers	12,882	5,959	6,317	605
Other Polycoated Packaging	47,839	4,801	42,576	462
Potentially Compostable Paper Packaging	90,319	67,915	19,109	3,296
Composite Paper Packaging	25,784	21,140	4,320	324
Magazines & Catalogs	47,284	6,572	40,698	14
Other Paper Products	168,787	84,059	84,289	439
Uncoated Short-fiber Paper Products	110,210	102,143	4,232	3,835
Composite Paper Products	47,402	38,600	7,825	977
#1 PET Bottles, Jugs & Jars	70,102	29,978	40,005	119
#1 PET Other Packaging	29,257	16,769	12,435	52
#2 HDPE Natural/Clear Bottles, Jugs, & Jars	19,244	7,310	11,904	30
#2 HDPE Tinted/Pigmented Bottles, Jugs, & Jars	18,380	8,043	10,247	90
#2 HDPE Other Packaging	7,512	3,971	3,524	17
#3 PVC Packaging	177	101	76	0
#4 LDPE Packaging	311	179	132	0
#5 PP Packaging	42,034	32,675	9,259	101
#6 PS Packaging	4,729	3,585	1,122	22
Expanded Polystyrene Packaging	23,614	19,593	3,997	24
PLA Compostable Packaging	1,154	960	103	91
#3-#7 Other Packaging	16,451	12,211	4,217	23
PE Film	29,043	23,169	5,821	53
Certified Compostable Bags and Film	752	40	102	609
Other Film & Flexible Packaging	90,129	82,909	7,002	219
Composite Plastic Packaging	8,384	5,752	2,619	13
Aluminum Cans	40,640	15,238	25,367	35
Aluminum Foil/Containers	7,543	5,585	1,944	14
Aerosol Cans	2,364	892	1,472	0
Steel & Tin Cans	36,267	19,878	16,374	15
Other Metal Packaging	1,240	1,240	0	0
Glass Bottles & Containers	199,329	69,645	129,519	165
Composite & Other Glass Packaging	n/a	n/a	n/a	n/a
Wood Food Service & Packaging	1,763	1,276	400	88
Wooden Pallets, Crates & Other Packaging	602	595	7	0
Textile Packaging	n/a	n/a	n/a	n/a

HDPE = high-density polyethylene; LDPE = low-density polyethylene; PET = polyethylene terephthalate; PE = polyethylene film; PLA= polylactic acid; PP = polypropylene; PS = polystyrene; PVC = polyvinyl chloride.

Of the total 1.8 million tons in the self-hauled stream, about 0.2 million tons, are covered materials. Figure 5 shows the breakdown by material type and region.

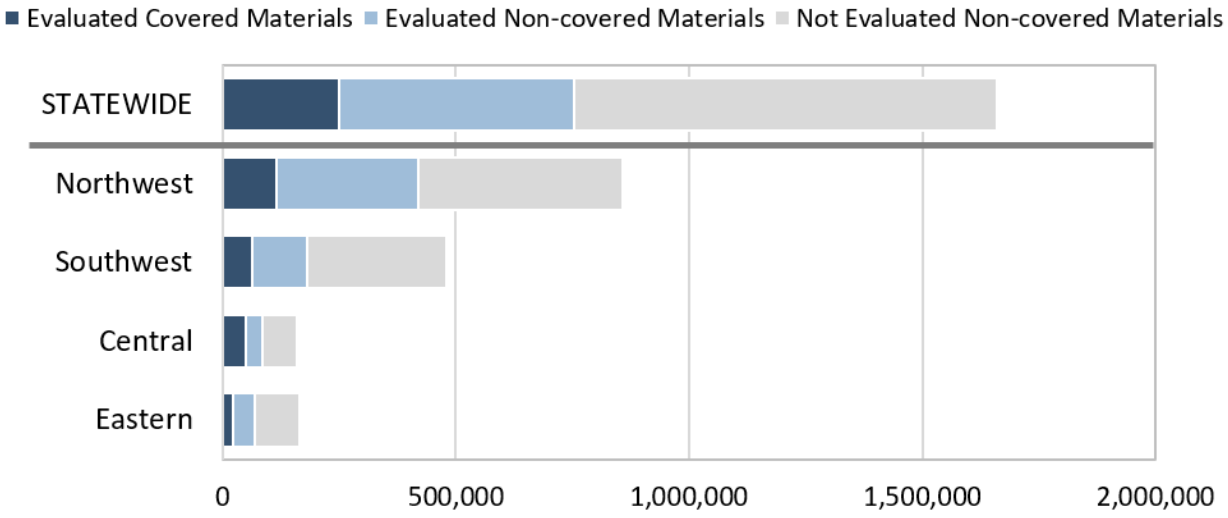


Figure 5: Composition of self-hauled residential waste in 2024 by region

Error! Reference source not found. shows the types and amounts of covered materials self-hauled in 2024. Of the estimated 0.2 million tons, paper packaging and paper products accounted for 0.1 million tons and plastic packaging for 0.05 million tons.

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Table 14. Estimated tons of residential covered materials self-hauled in 2024.

Covered Materials	Generation (tons)	Garbage (tons)	Recycling (tons)	Organics (tons)
Cardboard & Kraft Packaging	**81,881**	75,376	6,505	0
Mixed/Low-grade Paper Packaging	**8,458**	8,159	300	0
Aseptic Containers	**350**	339	10	0
Gable Top Containers	**589**	558	31	0
Other Polycoated Packaging	**800**	512	287	0
Potentially Compostable Paper Packaging	**4,763**	4,717	46	0
Composite Paper Packaging	**2,504**	2,479	25	0
Magazines & Catalogs	**1,315**	951	363	0
Other Paper Products	**22,349**	21,773	576	0
Uncoated Short-fiber Paper Products	**9,150**	9,130	20	0
Composite Paper Products	**11,035**	11,005	30	0
#1 PET Bottles, Jugs & Jars	**4,747**	4,412	335	0
#1 PET Other Packaging	**2,373**	2,217	157	0
#2 HDPE Natural/Clear Bottles, Jugs, & Jars	**983**	877	105	0
#2 HDPE Tinted/Pigmented Bottles, Jugs, & Jars	**1,821**	1,743	79	0
#2 HDPE Other Packaging	**3,618**	3,582	36	0
#3 PVC Packaging	**96**	95	1	0
#4 LDPE Packaging	**13**	10	3	0
#5 PP Packaging	**3,752**	3,631	121	0
#6 PS Packaging	**953**	947	6	0
Expanded Polystyrene Packaging	**6,535**	5,999	536	0
PLA Compostable Packaging	**128**	127	1	0
#3-#7 Other Packaging	**2,577**	2,538	39	0
PE Film	**5,746**	5,745	1	0
Certified Compostable Bags and Film	**8**	8	0	0
Other Film & Flexible Packaging	**12,448**	12,447	2	0
Composite Plastic Packaging	**3,859**	3,855	4	0
Aluminum Cans	**2,459**	1,939	520	0
Aluminum Foil/Containers	**513**	513	0	0
Aerosol Cans	**225**	225	0	0
Steel & Tin Cans	**1,675**	1,669	6	0
Other Metal Packaging	**576**	576	0	0
Glass Bottles & Containers	**21,110**	12,475	8,635	0
Composite & Other Glass Packaging	**n/a**	n/a	n/a	n/a
Wood Food Service & Packaging	**1,462**	1,462	0	0
Wooden Pallets, Crates & Other Packaging	**28,892**	28,892	0	0
Textile Packaging	**n/a**	n/a	n/a	n/a

HDPE = high-density polyethylene; LDPE = low-density polyethylene; PET = polyethylene terephthalate; PE = polyethylene film; PLA= polylactic acid; PP = polypropylene; PS = polystyrene; PVC = polyvinyl chloride.

6.0 Collection Service Levels and Availability

This section examines collection services for single-family residences, multifamily residences, and public places. Availability means a service is offered in an area. It does not mean residents subscribe to or use it. We identify differences in reported availability and possible reasons for gaps.

Table 15 summarizes the requirements and data used to evaluate collection services. We lack service availability data for 19 percent of multifamily residences. Public-place coverage is also poorly documented. More provider and local government data would help identify service gaps and improve the baseline for the full needs assessment.

Table 15. Statutory requirement and data sources for collection service levels and availability.

Statutory requirement	Data sources	Additional data needs
The current methods and infrastructure used to service single-family and multifamily residences (c)(ii)	Service provider registration, service contracts, surveys.	Additional detail of methods and infrastructure, specifically for multifamily residences
The current availability and types of recycling collection services for single-family residences, multifamily residences, and public places (c)(i)	Service provider registration, service contracts, surveys.	Public place collection data; subscription data; multifamily services from areas with no data
Current service gaps in densely populated areas where curbside recycling services for covered materials are not available or are partially available(c)(iii)	Service provider registration, service contracts, surveys.	Covered materials collected (referencing final statewide list)
Current service gaps where curbside garbage collection is offered but curbside recycling is not offered(c)(iv)	Service provider registration, service contracts, surveys.	Information from additional municipalities, especially regarding multifamily residences

6.1 Key findings

Washington residences use curbside recycling systems that collect materials together or in separate containers. Private companies provide most collection services, and some municipalities provide their own. Single-family homes typically use carts or cans. Multifamily buildings often use dumpsters or other large containers and may be served on commercial routes equipped to empty them.

Drop-off options allow residents to take residential packaging and paper products to a site that is open at least 12 hours a week. Drop-off collection sites may accept commingled recyclables, recyclables separated by material type, and organics.

Collection services for curbside and drop-off recycling for the residential sector are currently widely available across the four regions. Statewide, 91 percent of single-family residences and

69 percent of multifamily residences have available curbside recycling. Curbside organic material collection is more available in the Southwest and Northwest regions. Organics collection is more limited than curbside and drop-off recycling collection.

Curbside recycling collection is more limited in the Central and Eastern regions. Availability for single-family residences is 65 percent in the Central region and 69 percent in the Eastern region compared to 91 percent statewide. Availability for multifamily residences is 23 percent in the Central region and 29 percent in the Eastern region compared to 69 percent statewide. Existing refill and reuse infrastructure is not currently widespread. Availability for multifamily residences may be further limited by property managers opting out of curbside recycling programs, even when available in their area.

Public-place collection data are limited. Available data suggest that garbage collection is most common, followed by recycling, with more limited organics collection.

6.2 Methodology

We combined service records with housing data to estimate where collection services are available. We used survey responses separately to describe participation, services in public places, and refill and reuse programs. This distinction matters: a service may be offered in an area even when some residents do not subscribe to or use it.

6.2.1 Scope and approach

This analysis summarizes current services for recycling, organics, and/or garbage collection to single-family, multifamily, and/or public places. Collection services are in scope if they collect one or more type of covered residential packaging or paper product.

We used existing records, public information, and responses from interested parties. The Collection Services Survey asked about recycling, organics, garbage, and refill and reuse programs. We sent it to 54 providers and 321 municipal and county contacts. References to the database mean the combined records and survey data.

Household availability combines Census and American Community Survey housing information with jurisdiction-level service records. Tables 16 and 18 show whether service is available, limited, unavailable, or unknown. Unknown availability does not mean that no service is available. Participation rates come from survey responses and describe reported use of available programs. They are separate from the service availability estimates.

Public-place percentages use the 71 responding local governments: 19 Southwest, 22 Northwest, seven Central, and 23 Eastern. Table 19 divides respondents reporting each service by respondents in that region. Bin co-location results use the 30 respondents reporting public-place recycling.

We identified refill and reuse programs through desktop research, outreach, and survey responses. The gap analysis maps combine service records with geographic information to show reported gaps in collection.

6.2.2 Limitations

Service availability data are incomplete, especially for multifamily residences and public places. An area with no data should not be treated as an area with no service. Available data also describes whether service is offered, rather than whether each household can or does use it. Property managers may decide whether multifamily buildings subscribe.

Participation rates and public-place findings come from limited survey responses. They may not represent all jurisdictions or households. Public-place percentages show the share of responding local governments reporting a service; they do not show the share of individual public places with collection bins. Refill and reuse records also lack information on the amounts of material handled.

6.3 Supporting analysis

6.3.1 Current methods and infrastructure types

The following collection methods and infrastructure types operate across the state:

- **Curbside single-stream collection:** Residents place recyclable materials in a single cart, bin, or container for curbside collection.
- **Curbside dual-stream collection:** Residents separate recyclable materials by material type into two carts or containers for curbside collection, such as one for fiber and one for containers.
- **Multi-stream (three or more bins) collection:** Residents separate recyclable materials by material type into three or more containers. A typical system includes a cardboard bin, a plastics bin, and a third bin for other recyclable materials.
- **Drop-off collection:** The public brings covered materials to a designated collection site. The Recycling Reform Act defines drop-off sites as locations that are open at least 12 hours per week throughout the year (RCW 70A.208.020).

Materials are collected in a variety of container types. Single-family curbside materials are typically collected in carts or cans. Multifamily curbside materials are often collected in dumpsters or other large containers. For this reason, garbage, recycling, and organics material at multifamily units may be picked up during a commercial business collection route, as these routes are serviced by trucks that can collect from larger containers.

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6.3.2 Curbside recycling collection availability

We compared curbside recycling availability by housing type and region. The analysis estimates that service is available to 91 percent of single-family residences and 69 percent of multifamily residences statewide. “Limited” means service offerings differ within an area, including some areas with several provider options.

The “no data available” category means availability were not available for nearly 20 percent of multifamily residences statewide, with larger gaps in the Central and Eastern regions, but multifamily recycling availability is less documented in all four regions.

Availability of curbside recycling in the Southwest and Northwest regions was higher for both single-family and multifamily residents compared to the Central and Eastern regions. Details regarding curbside recycling availability are shown in Table 16.

Table 16. Comparison of curbside recycling availability for single-family and multifamily residences.

Parameter	Statewide	Southwest	Northwest	Central	Eastern
Single-family residences with curbside recycling	91%	94%	99%	65%	69%
Multifamily residences with curbside recycling	69%	70%	86%	23%	29%
Single-family residences with limited curbside recycling	2%	2%	1%	7%	0%
Multifamily residences with limited curbside recycling	3%	1%	4%	10%	1%
Single-family residences without curbside recycling	7%	4%	0%	28%	31%
Multifamily residences without curbside recycling	9%	10%	0%	25%	33%
Single-family residences with no data available	N/A	N/A	N/A	N/A	N/A
Multifamily residences with no data available	19%	19%	10%	42%	37%

Source: Collection service database. “No data” means unknown availability. Rounded categories may not total exactly 100 percent. Availability is separate from subscription and participation.

Note: An availability level of 0% does not necessarily indicate that no residences in this area have curbside recycling available. There may be residences in remote areas or on islands that do not have available recycling, but because of the large number of residences in those regions, the percentage of residences with no availability in those areas rounds to zero.

N/A = not applicable.

Table 17 presents reported recycling participation rates from a limited set of survey responses. Thirty-six jurisdictions provided single-family rates. Participation figures may be estimates, and the available sample does not establish representative rates for all households. They should be read separately from the availability estimates in Table 16.

Table 17. Comparison of participation rates for single-family and multifamily residences.

Participation rate	Southwest	Northwest	Central	Eastern
Single-family	96%	99%	51%	23%
Multifamily	89%	98%	61%	50%

Source: Collection service analysis. These are reported participation rates from limited survey data. Regional sample counts and aggregation methods require confirmation.

The combined database also identifies drop-off recycling programs. These programs provide an important alternative in areas with less curbside service, particularly for multifamily residences. The Southwest and Northwest regions have less availability of drop-off recycling, which correlates with more common curbside recycling.

6.3.3 Organics collection availability

Certified compostable packaging, including paper and plastic products, is covered by the Recycling Reform Act. Few Washington organics facilities currently accept these materials. Expanded organics collection could provide a way to collect more compostable packaging, if receiving facilities can accept and process it. We therefore included organics collection in this evaluation. Table 18 shows estimated curbside organics availability by housing type and region. Availability is higher in the Southwest and Northwest regions. Service is identified as available to fewer than half of single-family residences in the Central and Eastern regions.

Table 18. Comparison of curbside organics available for single-family and multifamily residences.

Parameter	Statewide	Southwest	Northwest	Central	Eastern
Single-family residences with curbside organics	69%	67%	80%	42%	46%
Multifamily residences with curbside organics	60%	66%	72%	10%	29%
Single-family residences with limited curbside organics	5%	0%	9%	3%	1%
Multifamily residences with limited curbside organics	10%	0%	18%	3%	1%
Single-family residences without curbside organics	11%	16%	1%	35%	30%
Multifamily residences without curbside organics	12%	16%	1%	39%	32%
Single-family residences with no data available	14%	17%	10%	20%	24%
Multifamily residences with no data available	19%	17%	9%	48%	39%

Source: Collection service analysis. Figures describe general organics service availability, not acceptance of compostable packaging. Unknown cases are reported separately; rounding may affect totals.

In general, survey respondents reported higher organics participation rates for single-family residences, which ranged from 15 percent in the Central region to 86 percent in the Northwest; multifamily rates ranged from 5 to 43 percent in the three regions with data. No multifamily rate was reported for the Eastern region.

Multifamily participation is difficult to measure because residents share dumpsters or other large containers. Property managers may also decide whether a building receives service. The reported rates describe the limited survey responses and are not statewide estimates.

6.3.4 Refill and reuse infrastructure

We reviewed existing refill and reuse programs in Washington. Reusable packaging can replace single-use products and be used many times. Understanding existing programs and infrastructure can help identify opportunities to reduce packaging waste.

We identified the following refill and reuse systems used at home or while away from home.

Refill at home means buying a product in durable packaging and refilling it for continued home use. We identified 15 zero-waste or low-packaging retail locations that offer refills, mostly in the Northwest region. Refill on the go means bringing a reusable container to a store, café, or dispenser. Examples include bulk grocery sales and Ecology's Bring Your Own Cup program, which lists more than 200 businesses offering reusable-cup discounts (Ecology Bring Your Own Cup 2026). Overall, we identified 45 businesses offering refill services at 241 locations. The Northwest region had the most identified locations, at 154.

Return from home means that used reusable packaging is collected from consumers. Washington has had pilot programs, but this approach remains uncommon. Return on the go means taking empty packaging to a return point. These systems need places to return packaging, equipment to sort and wash it, and services to refill or restock it. We identified six reuse service providers. Some programs operate within a single setting, such as a university dining system. Other settings include schools, workplaces, sports and cultural venues, zoos, festivals, and food and beverage businesses.

The survey asked municipalities about refill and reuse programs in their jurisdictions. Bulk grocery refill was the most commonly identified program. Other examples included reusable cups, reuse systems at events, and refill stations for cleaning and personal care products. No municipalities provided data on the amounts of material moving through these programs.

Municipalities identified cost, low participation, behavior change, and inconvenience as common barriers to refill and reuse. Suggested support included public education, clear health and safety guidance, shared infrastructure, and technical assistance.

6.3.5 Public places collection

The public place analysis is based on a separate set of local-government survey responses. Of 71 responding jurisdictions, 58 reported garbage collection, 30 recycling, and eight organics collection in public places. Table 19 presents regional shares of responding jurisdictions that

reported each service. It does not measure the percentage of public places with bins or the amount of material collected.

Table 19. Regional availability of public place collection by waste stream.

Collection type	Southwest	Northwest	Central	Eastern
Garbage	95%	86%	57%	74%
Recycling	47%	50%	43%	30%
Organics	5%	23%	14%	5%

Source: Collection service analysis. Regional respondent counts are 19, 22, seven, and 23, respectively. For example, nine of 19 Southwest respondents reported public-place recycling, or 47 percent. Results measure responding jurisdictions with a service, not coverage of all public places.

Of the 30 respondents reporting public-place recycling, seven said all recycling bins were next to garbage bins, seven said some were, and 16 said none were. After rounding, these shares are 23 percent, 23 percent, and 53 percent. Placing the bins together gives users both options and can help reduce contamination.

When public place recycling is available, the most accepted covered materials include cardboard, paper, plastic bottles, aluminum cans, tin and steel cans, and glass.

6.3.6 Gap analysis

The interactive Recycling Needs Assessment Map further details the gap analysis and provides additional context about residences across the state (HDR 2026). The map combines demographic, socioeconomic, housing, environmental health, and population data with information about existing facilities and residence availability for garbage, recycling, and organics collection services across Washington.

We used best available data to develop the map; however, there were some parts of the state where no data was available. Limited information about service availability is a gap.

Figure 6 and Figure 7 show the urban and rural population patterns and population density across Washington, respectively, providing context for evaluating the geographical distribution of collection service gaps.

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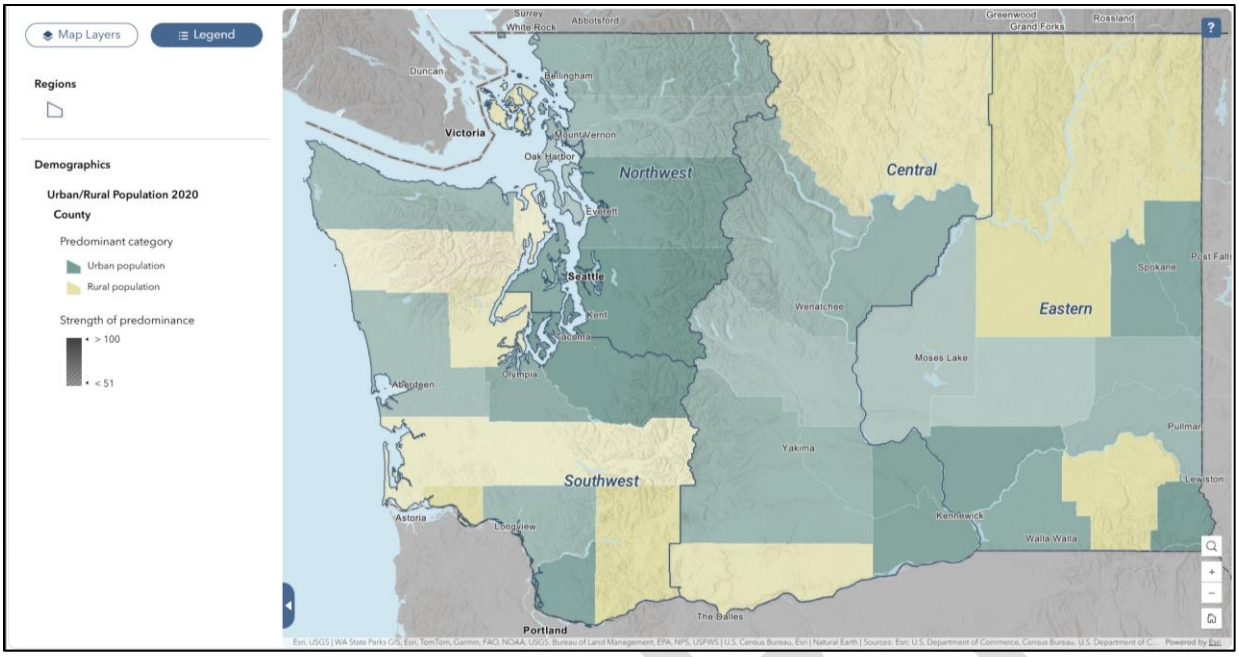


Figure 6. Urban and rural population distribution in Washington.

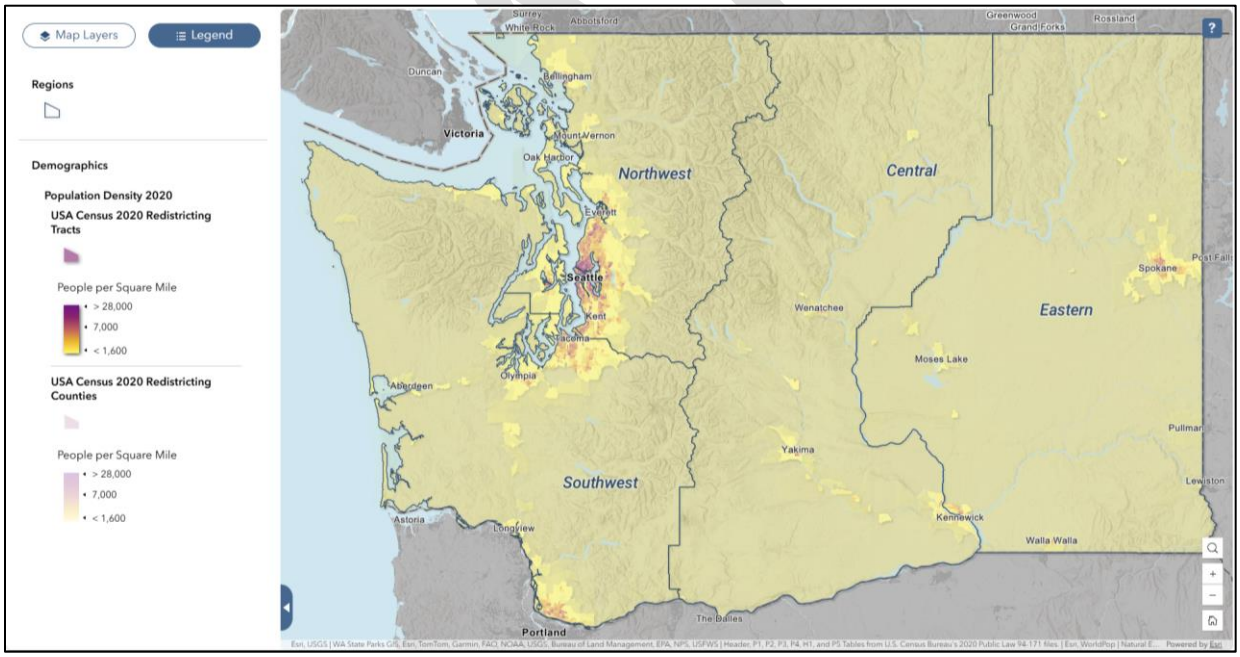


Figure 7. Population density in Washington.

This section uses residence-level service data to provide a high-level overview of existing collection services and identify where gaps exist in the types of collection services offered across the state.

Based on data collected, most residences statewide have both curbside garbage and recycling collection available. However, all four regions have some residences that have available curbside garbage collection but not curbside recycling collection. This is most prevalent in the Central and Eastern regions, as shown in Figure 8.

By region, less than 1 percent of residences in the Northwest, 2 percent in the Southwest, 28 percent in the Central, and 31 percent in the Eastern region receive curbside garbage service but do not receive curbside recycling service.

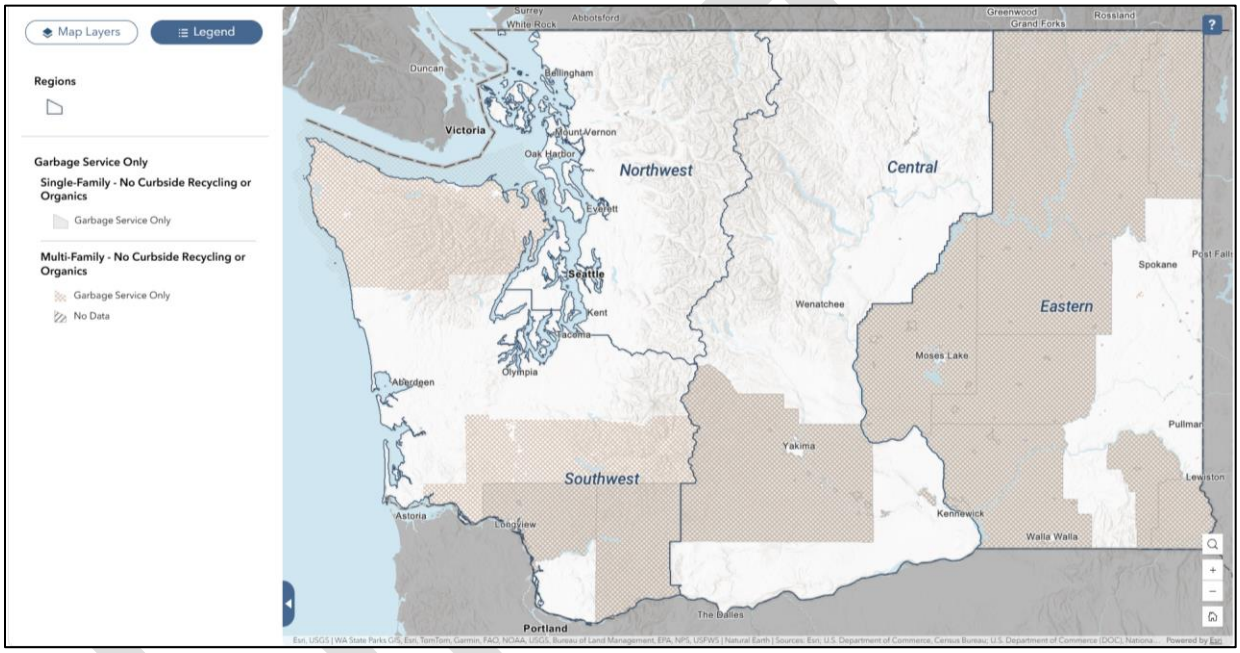


Figure 8. Areas with garbage collection but no curbside recycling collection.

Note: Limited availability indicates areas within each region that have differing levels of available collection programs.

Organics collection availability varies by jurisdiction and service type. Figure 9 shows reported gaps in single-family curbside, multifamily curbside, and drop-off organics services. Gaps are especially visible in parts of the Central and Eastern regions. Some jurisdictions have no service data, which limits the analysis. Areas marked “no data” should not be interpreted as lacking organics collection.

Organics collection is less widely available than recycling and varies by region and housing type. Some residences have garbage and recycling services but no curbside organics collection. Reported gaps are most visible in the Central and Eastern regions. Missing organics service data are also common in parts of the Southwest region.

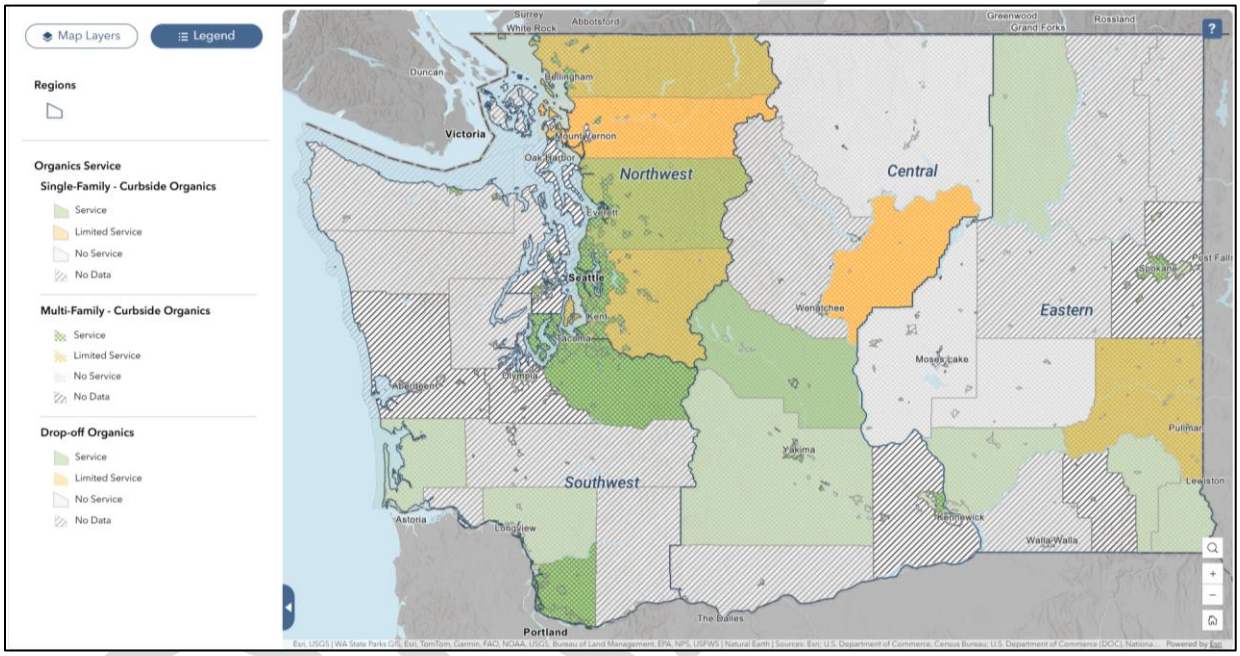


Figure 9. Single-family, multifamily, and drop-off organics collection.

Curbside organics collection is less available than recycling and varies by region and housing type. The Central and Eastern regions have the largest gaps in curbside organics service among residences with garbage and recycling service. Limited data make it harder to assess organics service gaps in parts of the Southwest region.

Availability of single-family and multi-family curbside recycling collection varies across the regions. While most densely populated areas have both types of service available, single-family recycling collection is generally more widely available than multi-family recycling collection, as shown in Figure 10 and Figure 11. The Eastern region exhibits the most significant gaps in curbside recycling service.

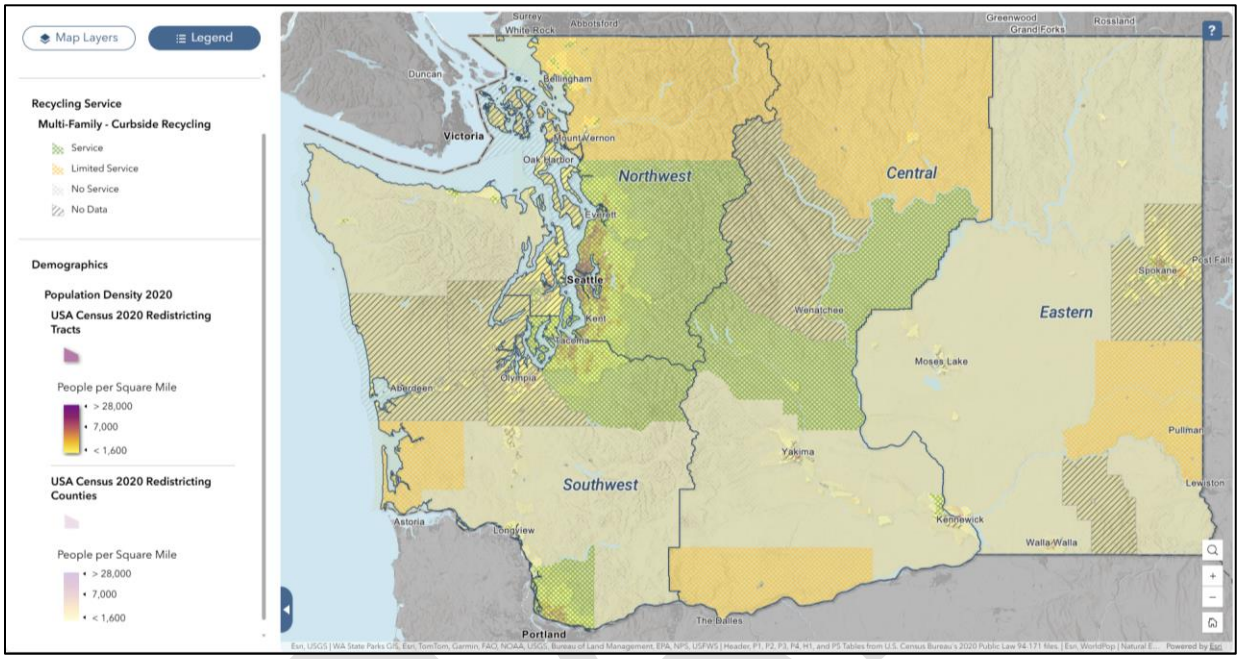


Figure 10. Areas with available single-family curbside recycling and population density.

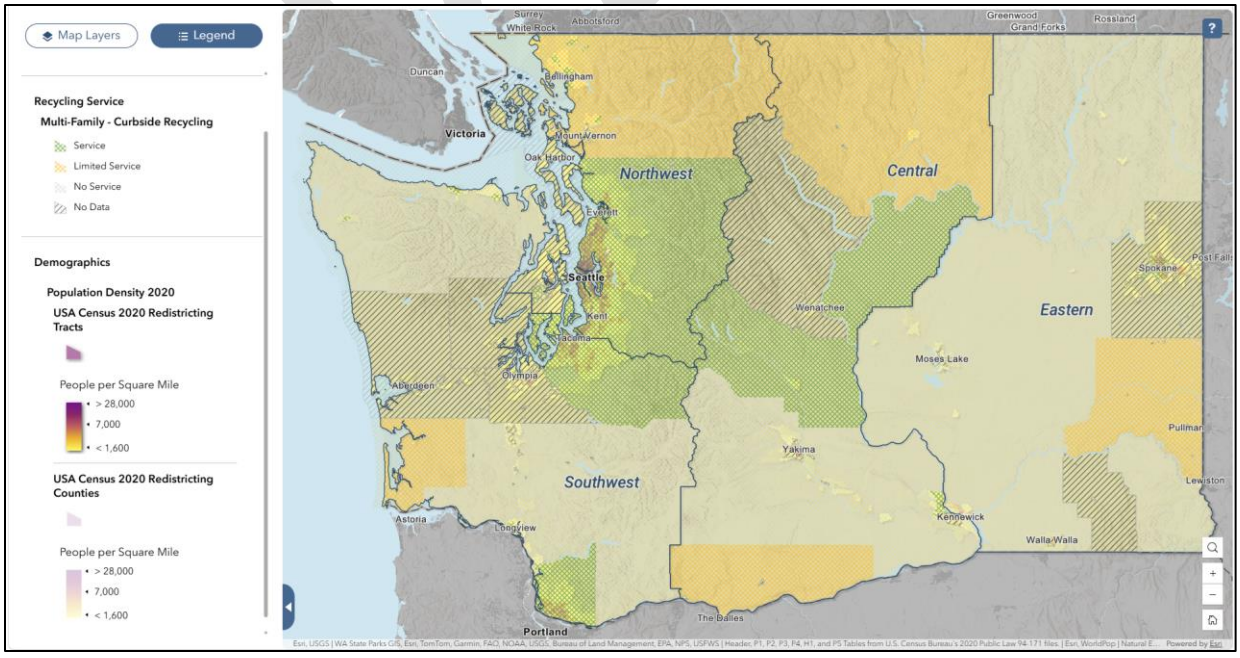


Figure 11. Areas with available multi-family curbside recycling and population density.

7.0 Statewide Facilities and Processing Capacity

This section describes the current infrastructure and capacity of drop-off sites, transfer stations, material recovery facilities, and compost facilities. Table 20 summarizes the statutory requirements and completeness of the data used to develop the statewide facility inventory. Facility inventories and reported tons provide a baseline, but aggregate design capacity does not show how much additional covered material each facility could handle. Information on acceptance and practical capacity for compostable products is especially limited.

Table 20. Statutory requirement and data sources for statewide facilities and processing capacity.

Statutory requirement	Data sources	Additional data needs
Capacity and number of transfer stations and transfer locations	Annual reports; Transfer Station and Public Drop-Off Facility Survey, Municipality Survey, existing reports, and studies (see References)	For further understanding of current capacity, request transfer station permits from all local jurisdictions
Capacity and number of drop-off collection sites, and the materials collected at those drop-off collection sites	Annual reports; Transfer Station and Public Drop-Off Facility Survey, Municipality Survey, existing reports, and studies (see References)	For further understanding of current capacity, request transfer station/drop-off permits from all local jurisdictions, and conduct further engagement with local jurisdictions to assess ability to expand capacity
The current processing capacity at material recovery facilities, including total tons processed and sold, composition of tons processed and sold, current technologies used, and facility processing fees	Annual reports, Material Recovery Facility Survey, existing reports, and studies (see References)	Data on current technologies used (e.g., age, vendors, performance), capital improvement plans, potential operational efficiencies, performance, and associated costs.
The current processing capacity of compost facilities including total tons processed and sold, technology used, acceptance of compostable covered materials, and facility processing fees	Annual reports, Organics Facility Survey, existing reports, and studies (see References)	Data on technologies currently used, their effectiveness at managing compostable products, and capital investments required to increase processing capacity for compostable covered materials.

7.1 Key findings

Drop-off sites are often the main or only recycling option for residents without curbside service, especially in rural areas. Transfer stations combine material from smaller collection trucks into larger loads for shipment to processing facilities. Material recovery facilities sort recyclables

into material grades that buyers can use. Organics facilities may process accepted compostable packaging with other organic materials to produce compost or other outputs.

Washington currently has 160 transfer stations and drop-off collection sites across the state. Drop-off collection sites have potential for expansion to capture more covered materials, but some investment will be required. Some surveyed drop-off sites said they could accommodate additional material. Most said they would need more containers, equipment, staff, or space to do so. Drop-off collection sites in the Eastern and Central regions are more likely to collect recyclables separated by material type. Hybrid and commingled recycling collection are more common in the Northwest and Southwest regions, where material recovery facility capacity is concentrated.

Transfer stations have limited capacity to manage recyclable materials. Many transfer stations have dedicated tipping floors for recyclable materials. Among facilities surveyed, some reported capacity to accept additional recyclables, while others reported no additional capacity or were uncertain.

The seven municipal recovery facilities in the inventory are privately owned and operated. Transfer stations and drop-off sites are mainly owned and operated by local governments. The six MRFs included in the capacity analysis receive about 675,000 tons per year and have nearly 900,000 tons of reported design capacity. The analysis excludes a Southwest MRF expected to become a transfer facility. Material recovery facilities market polyethylene terephthalate (PET) and high-density polyethylene (HDPE) plastics; some other plastics are combined into mixed bales. Most MRFs accept glass, although acceptance at drop-off sites is less common. Available information identifies MRF processing fees of $120 to $170 per ton.

Acceptance of compostable products is limited. Four organics survey respondents (17 percent) accept certified compostable plastic films and liners, and three (13 percent) accept certified compostable rigid plastics. Facilities estimated that investments of more than $1 million per facility may be needed to begin processing compostable products. They identified contamination from look-alike and non-compostable products as a major barrier. Contamination affects staff time, equipment, product quality, and compost sales. Some facilities said that maintaining organic certification and access to organic farming markets is more valuable than incentives to accept compostable packaging.

7.2 Methodology

We combined a statewide facility inventory with surveys and available operating data to describe where covered materials are collected and processed. The inventory provides facility counts and locations. Annual reports and other facility records provide quantities and capacity information. Surveys add detail on accepted materials, operating limits, fees, and the changes facilities would need to handle more material. We used these sources together because survey responses alone do not describe the full statewide system.

7.2.1 Scope and approach

We used Ecology's annual reports to build an initial facility list. We screened records by facility type, materials handled, and where outgoing materials were sent. We then checked websites, solid waste management plans, permits, and information from operators to refine the list. We removed facilities that did not focus on residential covered materials and classified facilities by their actual work. A facility's permit category alone did not always show whether it functioned as a drop-off site, transfer station, or material recovery facility.

We combined annual reports, service provider registrations, permits, survey responses, and follow-up information in three databases: transfer stations and drop-off sites, material recovery facilities, and organics facilities. We summarized records by facility type and Ecology's four regions. The inventory in this report includes 232 facilities: 83 transfer stations, including 65 with public drop-off services; 77 standalone drop-off sites; seven MRFs; and 65 organics facilities. Transfer stations with drop-off services are counted once in the combined total.

For organics, Ecology started with a broad list of facilities. We reviewed the facilities and excluded those permitted as biosolids management facilities. We included compost facilities regardless of permit status and retained anaerobic digestion facilities that may handle covered materials. This broad inventory identifies potential infrastructure; it does not mean every listed facility accepts compostable packaging.

We used three surveys to collect information specific to each facility type, focusing on calendar year 2025. Operators could complete a survey with us during a virtual interview, and we offered non-disclosure agreements to protect confidential information.

The Transfer Station and Public Drop-Off Facility Survey collected information on facility operations, accepted materials, processing and storage activities, public drop-off options, material destinations, and capacity.

The Material Recovery Facility Survey collected information on facility infrastructure, ownership and operational structure, material flows, capacity, staffing, contamination, technology, end markets, and tipping fees.

The Organic Materials Management Facility Survey collected information on facility characteristics, ownership and operational structure, inbound organic material types and volumes, capacity, contamination, acceptance and processing of compostable products, staffing, and tipping fees.

Table 21 lists facilities surveyed, responses, and response rates. Each response rate equals responses received divided by facilities surveyed, multiplied by 100.

Table 21. Facilities surveyed and response rates.

Facility type	Facilities collecting covered materials that were surveyed	Responses	Response rate
Standalone drop-off collection site	77	15	19%

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Facility type	Facilities collecting covered materials that were surveyed	Responses	Response rate
Transfer stations with drop-off collection sites	65	27	42%
Transfer stations	18	10	56%
Material recovery facilities	7	3	43%
Organics materials management facilities	65	24	37%

The inventory uses annual reports, permits, and public records. Survey percentages use facilities that answered the relevant question, so their totals may differ from the full inventory or response count in Table 21.

The capacity analysis compares reported annual throughput with reported design or maximum capacity. That difference alone does not establish usable capacity for additional covered materials.

7.2.2 Limitations

Survey participation varied by facility type, and some responses were incomplete. Results may differ from conditions at facilities that did not respond. Small drop-off sites that do not report to Ecology may also be missing. We supplemented records where possible, but the inventory may not include every site. Definitions of facility types also differ across reporting systems, which can limit comparisons.

Facility data are self-reported and have not been independently verified. We checked permits where available, but detailed information on equipment, operating limits, and expansion plans was often unavailable or confidential. Future site visits and more complete reporting would help verify practical capacity.

Reported throughput and design or maximum capacity do not establish how much additional material a facility can accept. Equipment, staffing, storage, downtime, material quality, and transportation can limit day-to-day operations. The reported quantities may also include commercial material, non-covered recyclables, food scraps, or yard waste. They do not measure capacity dedicated to residential covered materials.

Compostable packaging presents an additional limitation. A facility may have room to process more yard waste or food scraps without accepting compostable packaging. Acceptance also does not show whether all accepted packaging breaks down within the facility's processing time. The compost volume-to-weight conversion is an estimate because actual density varies with moisture and material composition.

Processing fee information was limited because some operators treat it as confidential. The reported fee range comes from available contracts and local government information and is not a statewide average.

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7.3 Supporting analysis

7.3.1 Drop-off sites and transfer stations

Transfer stations are designed to make collection more efficient. We identified and characterized 160 transfer stations and drop-off collection sites currently operating in Washington. The inventory revealed that many transfer stations also serve as drop-off collection sites that offer residents access to recycling collection.

To reflect this distinction between the services offered at transfer facilities, facilities were classified into three categories: transfer stations, transfer stations with drop-off collection sites, and standalone drop-off collection sites. Table 22 shows the number of each facility type by region.

Table 22. Transfer stations and drop-off collection sites by region.

Facility type	Southwest	Northwest	Central	Eastern	Total
Drop-off collection site	16	21	14	26	77
Transfer station with drop-off collection site	21	21	10	13	65
Transfer station	4	7	6	1	18
Total	41	49	30	40	160

Source: Facility data provided by Ecology; supplemented by desktop research.

Figure 12 shows the locations of transfer stations and drop-off collection sites.

The Northwest region has 49 transfer stations and drop-off sites, about 31 percent of the statewide inventory. The Central region has 30, the smallest regional total. Facility counts alone do not show whether residents have convenient access to recycling. Figure 12 shows facility locations.

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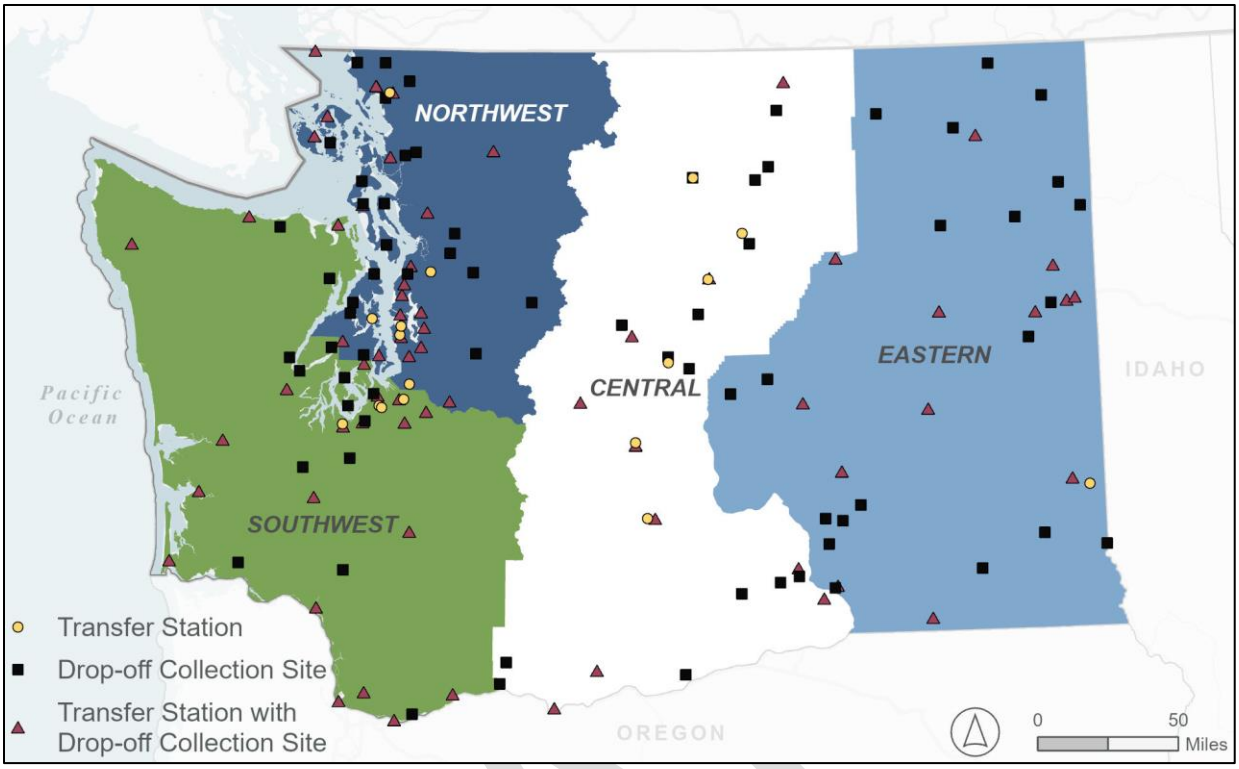


Figure 12. Map of transfer stations and drop-off collection sites.

Material acceptance at drop-off sites and transfer stations

Transfer stations typically accept garbage, and some transfer stations also accept and consolidate recyclables. Transfer stations that accept both garbage and recycling need sufficient tipping floor space to accept both material types.

Table 23 identifies 49 facilities with recycling tipping floors and reports regional shares from the analysis. This space allows facilities to receive and combine recyclable materials for shipment Privately owned transfer facilities are more likely to have tipping floors for recycling: 53 percent of publicly owned transfer stations and 67 percent of privately owned facilities include recycling tipping floors.

Table 23. Regional distribution of transfer stations with recycling tipping floors.

Parameter	Statewide	Southwest	Northwest	Central	Eastern
Facilities with recycling tipping floors	49	14	18	7	10
As a share of all transfer stations	61%	56%	67%	44%	71%

Source: Facility data provided by Ecology; supplemented by Transfer Station and Public Drop-off Facility Survey and desktop research.

Most drop-off sites ask residents to separate recyclables by material, such as cardboard, aluminum, or glass. About 80 percent use only this approach. Another 16 percent use a hybrid system: they accept some recyclables together but require certain materials to be separated. Only two sites accept all recyclables together. Drop-off facilities in the Eastern and Central

regions use material-separated collection. Collection of mixed recyclables is more common in the Northwest and Southwest regions, where most material recovery facilities are located.

Ecology's material-flow records show that some facilities send sorted materials directly to processors or end markets without using a material recovery facility. Examples include metals, cardboard, paper, glass, and some plastics. Because these materials are separated during collection, they need less sorting before shipment. Drop-off sites can therefore help connect materials to buyers, including in areas with limited material recovery facility access.

Statewide capacity at drop-off sites and transfer stations

The Transfer Station and Public Drop-off Facility Survey asked facilities to assess their ability to manage additional recyclable materials in terms of quantities or the addition of new material types. A total of 39 drop-off facilities responded to this question. Overall, 33 percent indicated that they could accommodate additional recyclable materials, while 33 percent reported that they could not and 33 percent were uncertain.

Facilities that indicated that they could increase their capacity cited needs for additional collection containers, staffing, and additional equipment to enable this. Among facilities that answered "no" or "not sure," the most commonly cited barriers were insufficient space for additional containers and concerns regarding staff capacity.

Limited data were available regarding the quantities of recyclable materials managed by transfer stations. Thirty-seven facilities provided information as a part of the Transfer Station and Public Drop-off Facility Survey. Self-reported capacities varied substantially, ranging from approximately 50 tons per year (TPY) at smaller facilities to 32,000 TPY at larger facilities, with many facilities reporting capacities between these values. However, a notable finding from the survey was the lack of consistency in how capacity was measured and reported. Facilities provided estimates using a variety of metrics, including TPY, tons per day (TPD), cubic yards (CY), and container turnover rates.

Because facilities measure and report capacity in different ways, we cannot readily develop a consistent statewide estimate. More consistent data would support future planning and capacity assessments.

The survey also asked for facilities to evaluate their capacity to manage additional recyclables for transfer in terms of quantities and materials managed. Overall, the responses indicate that most transfer stations have limited confidence in their ability to manage additional recyclable materials without further investment.

Of the 32 facilities that responded to the question regarding transfer capacity, six facilities (19 percent) reported that they currently have the capacity to manage additional recyclables, through either increased quantities or additional material types. In contrast, 16 facilities (50 percent) reported that they do not have additional capacity, while ten facilities (31 percent) indicated that they were uncertain.

Facilities that answered “no” or “not sure” commonly cited constraints including limited site space, insufficient storage capacity, staffing shortages, lack of equipment, and transportation-related challenges such as transfer trailer capacity and/or truck driver availability.

7.3.2 Material recovery facilities

If recycled materials are not separated by material type when they are collected, they need to be separated by material type to be sold to commodity end markets (see Section 8.0). Seven material recovery facilities in Washington manage covered materials. These facilities are largely concentrated in the western regions of the state. There are three material recovery facilities in the Southwest region, three material recovery facilities in the Northwest region, zero material recovery facilities in the Central region, and one material recovery facility in the Eastern region, as shown in Figure 13.

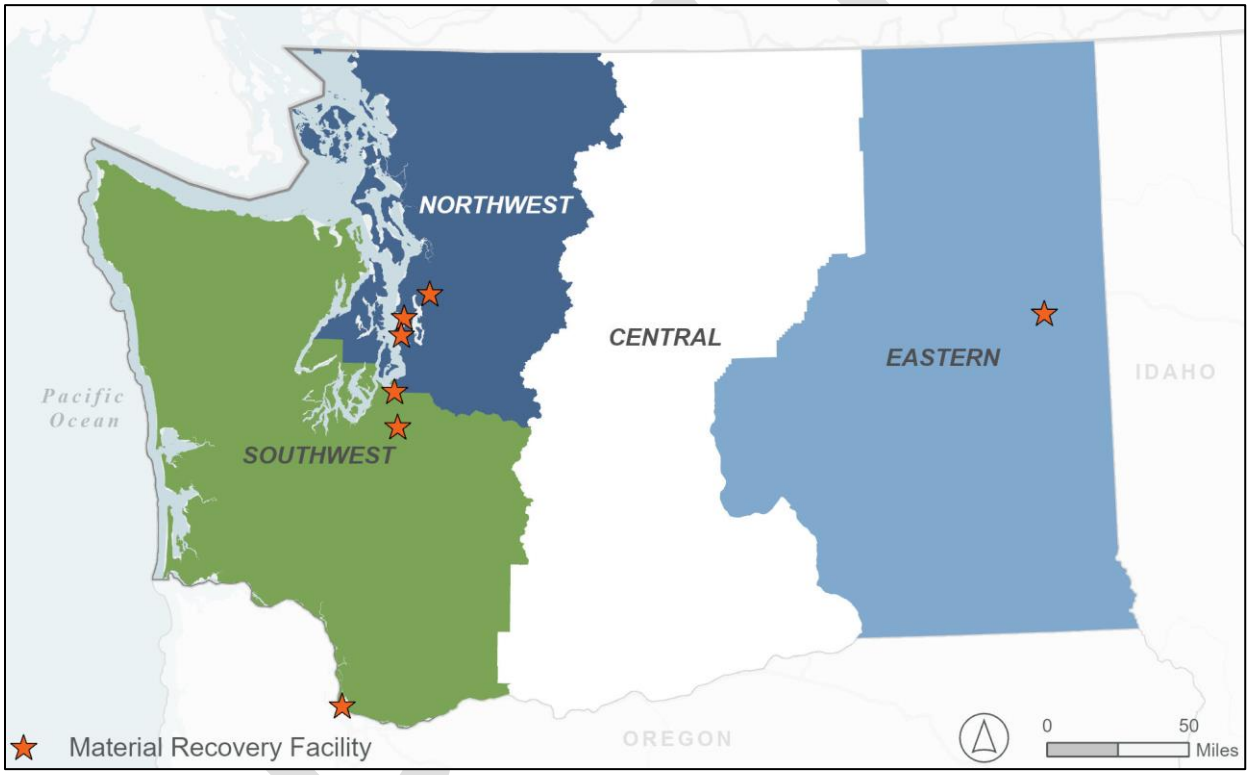


Figure 13. Material recovery facilities by region.

Material acceptance at material recovery facilities

Material recovery facilities accept materials from both residential and commercial sources. Residential materials arrive primarily from single-stream curbside collection programs.

Plastics acceptance varied by resin type. **PET** and **HDPE** (natural and colored) are the primary plastic resin types being recovered and marketed by material recovery facilities across Washington. Three of the seven material recovery facilities reported that they market **polypropylene (PP)** to end markets, suggesting that statewide recovery and market

development for PP remains limited compared to PET and HDPE. No material recovery facilities reported accepting flexible plastic packaging.

Paper and fiber such as corrugated cardboard and mixed paper represented the largest outbound material streams by weight, indicating established processing systems and robust end-market demand.

Metals represent a smaller share of the recycling stream by weight compared to fiber commodities but remain an important and consistently marketed material category.

The majority of material recovery facilities accept **glass**. However, survey responses and interviews with partners indicated that there are increased constraints on glass end markets since closure of the Seattle Ardagh Glass Packaging facility in 2024.

Statewide processing capacity at material recovery facilities

Washington material recovery facilities have approximately 900,000 tons of total recycling processing capacity, shown in Table 24. In the next 2 years, one material recovery facility in the Southwest region will become a transfer facility. Materials managed by this facility are not included in the total tonnage below as the operator plans to direct those materials to an out-of-state material recovery facility in the future.

Table 24. Regional material recovery facility capacity, 2025.

Parameter	Southwest	Northwest	Central	Eastern	Total
Inbound quantities managed (TPY)	236,015	381,613	0	57,736	675,364
Design capacity (TPY)	272,500	526,000	0	100,000	898,500
Difference as a share of design capacity	13%	27%	-	42%	25%

Calculation: The design-capacity margin is (reported design capacity minus annual inbound quantities) divided by reported design capacity. Statewide, (898,500 – 675,364) ÷ 898,500 is approximately 25 percent. This is not a measured operating reserve. TPY = tons per year.

Sources: Service provider registration, desktop research, survey responses, and interviews.

Note: Design capacity is a reported facility rating. The difference between design capacity and annual throughput does not account for downtime, equipment limits, staffing, storage, material mix, or other operating constraints.

TPY = tons per year.

Reported material recovery facility throughput is about 75 percent of total capacity. The remaining 25 percent of usable capacity for additional materials (42 percent) while the Southwest region is nearing capacity with only 13 percent of its design capacity currently available.

Material recovery facility processing fees

The private service providers that own material recovery facilities in Washington consider the facility processing fee information to be proprietary information. Surveys requested

information on costs and fees, including the material recovery facility's cost to sort and prepare materials for end market, including all operating and capital costs. Some processing fee information is publicly available via contracts with local governments. We used desk research and input from local governments to identify processing fees ranging from $120 to $170 per ton, with potentially higher fees in western Washington.

7.3.3 Organic materials management

The Recycling Reform Act requires that the preliminary needs assessment identify compost facility capacity. We also considered other organic materials management facilities, such as anaerobic digestion facilities, because they may process covered compostable products, including certified compostable paper and plastic.

There are 65 organic materials management facilities in Washington, shown in Figure 14. Organic materials management facilities are more concentrated in the Northwest and Southwest regions.

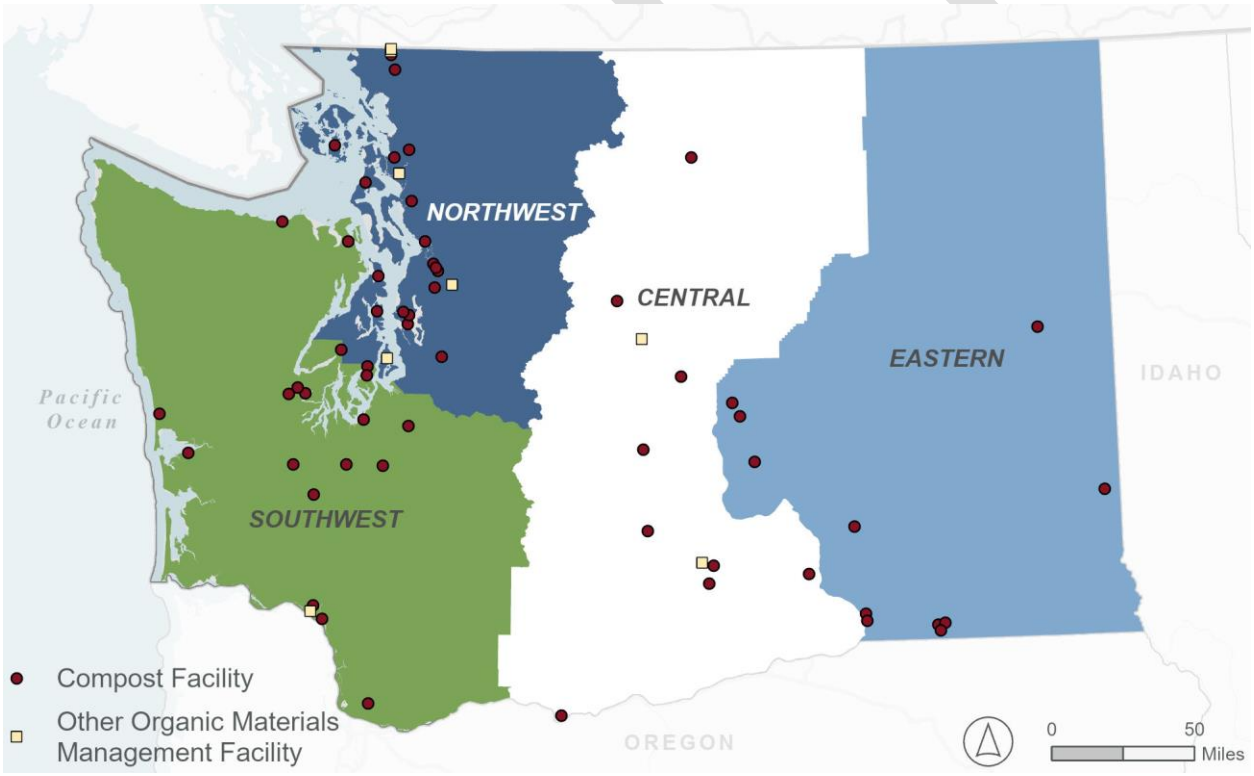


Figure 14. Organic materials management facilities by region.

Material acceptance at organics management facilities

Ecology distributed the survey to organic materials management facilities for this assessment.[1] Twenty-four organic materials management facilities responded to the survey. The most accepted material types at these facilities are yard waste and green waste. Approximately half of the facilities accept food scraps, which are not covered materials.

Certified compostable paper products were the most widely accepted covered material, with 21 percent of survey respondents reporting acceptance. Certified compostable plastic packaging materials were accepted by fewer facilities. Certified compostable plastic films and liners were accepted by 17 percent of respondents, and 13 percent reported accepting certified compostable rigid plastic products. Certified compostables, both paper and plastic, were identified as processable only by facilities in the Northwest region.[2] These results are not necessarily representative of acceptance of covered materials statewide, as less than half of identified facilities responded to the survey.

Survey respondents identified look-alike products and other non-compostable materials that could cause contamination as a barrier to accepting compostable packaging. While the Plastic Product Degradability Act regulates and standardizes compostable claims on products in Washington (chapter 70A.455 RCW), survey respondents were still concerned. Respondents also identified operational constraints such as equipment limitations and processing time as another key barrier. Approximately a quarter of respondents noted concerns with end market requirements, such as contamination thresholds or organics certification. They expressed concern that compost made with compostable products does not qualify for use on organic farms under Organic Materials Review Institute standards.

To gauge interest in incentives to manage compostable products, the survey asked whether facilities would consider financial incentives, such as payment for managing compostable products. Most respondents noted that they would consider this opportunity. However, some respondents noted that their ability to sell to organic farmers is too important to their brand identity, and therefore they will not accept compostable products.

Statewide capacity at organics management facilities

Organic materials management facilities managed more than 1.3 million tons of material in 2024. Once processed, more than 0.6 million tons of compost were produced and made available for sale statewide, shown in Table 25. The difference between incoming feedstock and finished product reflects the natural reduction in mass that occurs during the composting process.

[1] Our questions were added into an existing survey that Ecology prepared and distributed. Ecology distributed the survey to 77 organics management facilities, which included some facilities that are out of scope for this assessment because they are unlikely to accept covered materials (for example, facilities that are permitted but are not currently operating).

[2] One anonymous facility response noted that the facility accepts accept certified compostable paper products and certified compostable films/liners but did not provide a facility name, county, or region.

Table 25. Total organics quantities processed and produced by region, 2024.

Parameter	Southwest	Northwest	Central	Eastern	Total
Organic materials processed (tons)	252,267	662,294	176,541	262,887	1,353,989
Finished compost produced (tons)	118,546	334,133	64,873	102,503	620,055

Source: 2024 Annual Report Data for Organic Materials Management Facilities.

Note: Compost produced is reported to Ecology in cubic yards. RRA requires the reporting of compost in tons. The *Composting Handbook's* median bulk density of finished compost (483 grams per liter, or 820 pounds per cubic yard) was used as a conversion factor to convert volume to weight.

The 24 responding organic materials management facilities reported combined maximum annual capacity of approximately 1.84 million tons and throughput equal to about 58 percent of reported capacity at the time of the survey.

While these responses suggest that available capacity exists, less than half of facilities responded, and therefore the survey results alone are insufficient to characterize total regional capacity. Furthermore, the additional capacity does not represent capacity for compostable products alone: compostable products are mixed with other feedstocks (such as yard waste, green waste, and food scraps) for processing. Most survey respondents noted that they do not currently accept compostable covered materials.

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8.0 Current End Markets

End markets use recovered materials to make new materials or products. For example, a paper mill uses recovered paper to make paper or cardboard. Plastic reclaimers produce recycled plastic flakes or pellets, and composting facilities produce finished compost. Access to these markets affects where collected materials go and which materials local recycling programs accept.

This evaluation identifies current end markets for covered materials and their reported capacity, where available. The inventory identifies potential buyers and broad commodity capacity but relies on limited on where Washington's covered materials go or how much capacity is available to manage them. This assessment does not consider if an end market is a "responsible market" as defined by the Recycling Reform Act. The full needs assessment evaluate market stability, access, and whether markets meet the Recycling Reform Act's criteria for responsible markets.

Table 26. Statutory requirement and data sources for end markets.

Statutory requirement	Data sources	Additional data needs
Available markets for residential packaging and paper products and the capacity of available markets	Resource Recycling System's internal end market database, annual reports and facility lists, publicly available company information	Facility specific capacity information

8.1 Key findings

The end market inventory shows that Washington-generated covered materials rely on a mix of in-state, regional, North American, and international end markets, with notable differences by material in availability, location, and pathway characteristics.

Plastic packaging is typically marketed through PET, HDPE, PP, low-density polyethylene (LDPE)/film, and other plastic commodity streams. Washington has limited in-state plastic end market capacity, but regional and national reclaimers provide potential outlets if materials can be sorted into acceptable grades. Rigid PET and HDPE packaging formats have geographically accessible end markets but compete with materials from other states for available capacity. We found limited facility acceptance for plastic film, flexible packaging, and certain polystyrene (PS) formats.

For paper and fiber-based materials, the in-state and regional capacity is strongest for old, corrugated containers and other paper cups. Mixed paper, newsprint, and other lower-value grades appear more dependent on export markets or a smaller number of accepting mills.

There is reduced in-state manufacturing capacity for glass. Beneficiation capacity, rail access, and western U.S. manufacturers appear to provide viable regional pathways.

Metals have geographically accessible end markets.

Compostable packaging poses a challenge because only a small number of composting facilities are willing to accept and process these materials into finished compost.

The full needs assessment will build on this baseline inventory to assess "the viability and robustness of markets for recyclable and compostable covered materials and the degree to which these markets can be considered responsible markets." The full needs assessment will evaluate whether identified markets provide sufficient, stable, and accessible outlets for Washington-generated materials and whether they meet the statutory criteria for responsible markets

8.2 Methodology

We developed an inventory of facilities known or reasonably likely to use recovered covered materials from Washington. We linked covered material categories to the material grades that buyers purchase, identified potential end markets, and compiled available capacity information. We also reviewed trade data to describe exports. This approach establishes a baseline of market pathways and information gaps for the full needs assessment.

8.2.1 Scope and approach

We first reviewed the latest available data, including RRS's internal end market database and Ecology facility reports, to identify facilities known or reasonably likely to receive recovered materials generated in Washington. We then supplemented and cross-checked the inventory using publicly available facility listings, company websites, trade association resources, news articles, press releases, and market publications. Responses to the request for information from 16 organizations—including producers, recycling industry operators, trade associations, retailers, and nonprofit organizations—provided information relevant to end markets for specific materials. Many respondents provided information or data from their own organizations or identified additional market information.

The end market inventory is limited to the covered materials. However, end market data are generally reported by recovered commodity or bale grade, rather than by individual covered material category. Therefore, we mapped the covered material categories to the commodity or bale grades through which they would typically reach end markets.

Capacity figures come from available facility information and estimates. They describe total facility capacity, rather than capacity reserved for Washington. Facility counts may overlap across commodities. We used U.S. Census Bureau trade data and Harmonized System commodity codes to describe export activity. Those codes group materials more broadly than the statewide collection lists. We also used expert input and RFI responses to supplement the facility inventory and trade data.

The analysis considered both in-state and out-of-state end markets because covered materials collected and processed in Washington may ultimately move to other states or countries. This approach provides a more complete picture of Washington's in-state end market capacity and

its role within the broader market network. The geographic scope varied by material based on transportation costs, commodity value, and typical market conditions.

Because many recovered materials generated in Washington move outside the state, the inventory considered in-state, out-of-state, North American, and international markets as applicable. End markets generally purchase recovered commodities, such as PET, old, corrugated containers, mixed glass, steel, or aluminum, rather than individual covered material categories. The analysis therefore mapped covered material categories evaluated for Ecology's statewide collection lists to the commodity or bale grades through which the covered materials typically reach end markets. This method links RRA-covered packaging and paper products to the recovered material markets where they are marketed.

For plastics, we included seven end market commodity or bale grades: PET, HDPE, LDPE, PP, film and flexibles, PS, and EPS. We consider in-state and out-of-state markets because these materials may travel longer distances depending on material type, price, quality requirements, and buyer relationships. For paper and fiber, we included four commodities: old, corrugated cardboard, newsprint and mechanical pulp, mixed paper, and cartons. We focused primarily on in-state and mills in neighboring states and Canada because most recovered fiber travels shorter distances unless exported by ship.

For glass, we focused on mixed glass as the commodity. More distant out-of-state end markets may be accessible after the beneficiation of mixed glass, which removes contaminants and prepares recycled glass for use in manufacturing, particularly where rail transportation is available.

For metals, we included two commodities: steel cans and aluminum. We considered in-state and out-of-state markets since metals may travel longer distances.

8.2.2 Limitations of the end market inventory

Available capacity may not be available to Washington materials. Facilities may serve multiple regions, have existing contracts, or have material quality requirements. Identifying a facility or its capacity also does not confirm that Washington-generated materials currently reach that facility.

Material flows are difficult to track. Facility-specific sourcing and throughput data are often proprietary or unavailable, and some materials lose their identity when combined with broader commodity streams. As a result, the analysis generally cannot determine how much Washington-generated material reaches a specific end market.

Data sources do not always align. State recovery categories, industry grades, facility acceptance categories, and export codes classify materials differently. Trade data may also include materials that did not originate in Washington and generally do not identify the final facility or end use.

Markets change over time. Facility acceptance, available capacity, and material flows may change based on contamination, equipment, material specifications, commodity prices, contracts, and other market conditions.

The full needs assessment will examine market access, stability, and responsible-market criteria in more detail. Further information is needed on actual material destinations, facility acceptance, and capacity available specifically to Washington-generated covered materials.

8.3 Supporting analysis

Table 27 summarizes identified end markets and their capacity. The table is organized by broad commodity groupings because end markets generally purchase recovered commodities because manufacturers generally buy bale grades or recovered feedstocks rather than individual covered-material categories. One PET bale, for example, a PET bale that is sold to an end market may include multiple types of PET as defined by Washington's statewide covered packaging formats.

The facility capacity represents the total reported or estimated facility capacity and does not necessarily represent capacity available solely for Washington-generated material. Similarly, identifying an out-of-state end market does not confirm that the facility currently receives material generated in Washington.

Table 27. Summary of end markets identified for Washington recovered materials.

Material	Commodity material type	In-state end markets	Out-of-state end markets	In-state capacity (TPY)	Estimated out-of-state capacity (TPY)	Estimated export tons (TPY)
Plastic	PET	0	11	0	237,500	2,070
Plastic	HDPE	0	15	0	300,000	1,500
Plastic	PP	0	12	0	150,000	Unknown
Plastic	LDPE/film/ flexibles	0	7	0	187,500	Included in 1,500 for HDPE
Plastic	PS/EPS	0	2	Unknown	Unknown	Unknown
Paper and fiber	Old corrugated cardboard	5	4	1,714,000	775,000	268,636
Paper and fiber	Newsprint/ mechanical pulp	1	0	Unknown	0	40,601
Paper and fiber	Mixed paper	1	1	400,000	164,000	76,258
Paper and fiber	Sorted office paper	1	0	Unknown	0	Unknown
Glass and ceramic	Mixed glass	1	19	Unknown	Unknown	184
Metals	Steel	3	21	Unknown	Unknown	Unknown
Metals	Aluminum	2	60	Unknown	Unknown	Unknown

Material	Commodity material type	In-state end markets	Out-of-state end markets	In-state capacity (TPY)	Estimated out-of-state capacity (TPY)	Estimated export tons (TPY)
Compostable products	Compost	5	2	729,000*	Unknown	Minimal

Source: End market analysis. Capacity means total reported or estimated facility capacity, not capacity reserved for Washington or confirmed spare capacity. Unknown values indicate missing information, not zero capacity. Facilities may appear under more than one commodity.

*Value represents total composting capacity of five facilities identified through our interviews as accepting certified compostable packaging in some form. Compostable packaging is expected to represent a small share of throughput.

EPS = expanded polystyrene; HDPE = high-density polyethylene; LDPE = low-density polyethylene; PET = polyethylene terephthalate; PP = polypropylene; PS = polystyrene.

The inventory describes identified outlets, reported capacity, and exports by broad commodity group.

8.3.1 Plastics

Processing requirements for recovered plastics vary by material type, feedstock condition, and intended end use. Mechanical processors generally sort plastics by resin type and, when needed, color. They then shred or grind the material and remove contaminants. Some facilities also use friction washing, density separation, and drying. Facilities produce recycled resin pellets by melting, filtering, and extruding prepared plastic. They may also clean, deodorize, or add additives to meet quality requirements. For lightweight flexible films, facilities may use densification or agglomeration to improve handling and feeding.

We define plastics end markets as reclaimers that process recovered plastic into recycled flakes or pellets. Washington has no identified in-state end market capacity for recovered plastics. Therefore, Washington relies primarily on out-of-state North American markets. Washington recovered approximately 50,000 TPY of plastic, as shown in Table 28.

Table 28. Plastic recovery in 2024.

End market commodity (2024 TPY)	Washington recovered material: packaging and non-packaging (2024 TPY)
PET	21,535
HDPE	10,185
PP	6,100
LDPE/film/flexibles	9,916
PS/EPS	2,043
Total	49,779

EPS = expanded polystyrene; HDPE = high-density polyethylene; LDPE = low-density polyethylene; PET = polyethylene terephthalate; PP = polypropylene; PS = polystyrene; TPY = tons per year.

We identified approximately 30 out-of-state facilities known or reasonably likely to accept Washington-generated recovered plastics. Identified facilities are distributed throughout North America, including in California, Oregon, Nevada, Arizona, British Columbia, and Alberta.

International exports represent a relatively small portion of Washington's recovered plastic stream. U.S. Census Bureau trade data indicate that approximately 3,847 tons of recovered plastic were exported from Washington in 2024 and approximately 1,858 tons in 2025 (U.S. Census Bureau n.d.). The available information indicates that Washington relies primarily on domestic North American markets with international exports serving as a supplementary and variable outlet.

8.3.2 Paper and fiber

Washington has in-state end market capacity for old, corrugated cardboard and mixed paper, while other recovered fiber grades typically rely on out-of-state or international markets. End markets in the state have more than 2 million TPY of capacity.

Table 29. Paper packaging recovery, processing capacity, and exports.

End market commodity	Washington recovered material: packaging and non-packaging	In-state capacity (TPY)	Estimated export tons (2024 TPY)
Old corrugated cardboard	664,777	1,714,000	268,636
Newsprint and mechanical pulp	34,908	Minimal	40,601
Mixed paper	230,170	400,000	76,258
Cartons	1,627–3,733	Potentially included with mixed paper	Included with mixed paper

Sources: Paper packaging generation: Ecology 2023; total recovered from Washington (except where noted): Ecology 2024; exports: U.S. Census Bureau n.d.

Six in-state end markets for recovered paper, as shown in Table 30. Most of the end markets are located in the Southwest region and primarily accept old, corrugated cardboard.

Table 30. In-state end markets for recovered paper.

Facility name	City	Region	Materials accepted	Products produced
PCA Wallula	Wallula	Eastern	Old corrugated cardboard	Linerboard and medium
NORPAC Longview	Longview	Southwest	Old corrugated cardboard, mixed paper (including cartons)	Linerboard and medium
Port Townsend Paper	Port Townsend	Southwest	Old corrugated cardboard	Linerboard and medium

Facility name	City	Region	Materials accepted	Products produced
Smurfit Westrock	Longview	Southwest	Old corrugated cardboard	Linerboard and medium
Bio-PAPPEL	Port Angeles	Southwest	Old corrugated cardboard	Linerboard and medium
Inland Empire Paper Company	Millwood	Eastern	Sorted office paper, old newspapers	Newsprint, specialty papers

NORPAC = North Pacific Paper Company

Three out-of-state mills operate within 250 miles of Washington's border. These mills accept only old, corrugated cardboard. In-state and regional end markets provide limited domestic capacity for other fiber grades. This limitation primarily affects grades other than old, corrugated cardboard and mixed paper.

8.3.3 Glass and ceramics

The covered material list includes several types of glass and ceramic packaging. These include glass bottles and containers, ceramic packaging, composite packaging, and household hazardous waste glass packaging. Currently, only glass bottles and containers have a commodity market. Processors market this material as mixed glass. Beneficiation removes contaminants and prepares recycled glass to meet manufacturers' specifications. Glass manufacturers then use the processed glass to make new products.

Central and Eastern Washington typically use glass-only collection systems instead of curbside recycling programs. Collection systems consolidate the glass and transport it to beneficiation facilities. Glass is heavy and has relatively low value. Shippers often use rail to transport beneficiated cullet cost-effectively to distant end markets. The Washington beneficiation facility sends cullet to manufacturers across the western United States. Key markets include Oregon, Northern California, Colorado, and Utah. We identified 19 glass recycling facilities within 1,000 miles of Washington's border.

Washington has limited in-state capacity to manufacture new products from recovered container glass. Sibelco's glass cleaning facility in the Northwest region prepares recycled glass for manufacturers. It is a secondary processor rather than an end market because it does not use the glass to make finished products.

There is one in-state glass manufacturing end market: O-I Glass's glass container manufacturing facility in Kalama, in the Southwest region. Less than 1 percent of the total glass collected for recycling in Washington is exported to international end markets.

8.3.4 Metals

Recovered metal packaging is usually sold by metal type or scrap grade. Material recovery facilities separate and recover metal packaging. Processors often combine this packaging with broader ferrous or nonferrous scrap streams. These streams may include non-packaging and non-covered materials. Steel packaging generally enters steel-can or mixed-metal streams.

Aluminum packaging may enter used beverage container, mixed nonferrous, or mixed-metal streams. The material type and sorting method determine which stream receives the aluminum.

Five in-state facilities that may serve as end markets for recovered aluminum and steel, as shown in Table 31.

Table 31. In-state end markets for aluminum and steel.

Facility name	City	Region	Materials accepted	Products produced
Nucor Steel Seattle	Seattle	Northwest	Steel	Carbon steel
Kaiser Trentwood	Spokane Valley	Eastern	Aluminum	Aluminum plate and sheet (aerospace and general engineering applications)
Kaiser Richland	Richland	Central	Aluminum	Extruded aluminum products
Bradken	Tacoma	Southwest	Steel	Stainless and specialty castings
Spokane Industry	Spokane Valley	Eastern	Steel	Stainless and specialty castings

Identifying out-of-state end markets for recovered metal packaging is challenging because processors often commingle these materials with commercial scrap. Recovered aluminum from Washington may move to markets in the West, including Oregon, California, and Utah; the Midwest and Ohio Valley; and the South and Southwest, including Alabama and Texas. We identified 60 potential end market facilities for recovered aluminum. Recovered steel packaging may move to Oregon, California, Utah, and other steel-producing markets in the West. We identified 21 potential end market facilities for recovered steel.

Washington exports substantial quantities of recovered metal commodities to international end markets. U.S. Census Bureau data show exports of steel packaging primarily to Bangladesh, India, and Vietnam. These data cover 2023 through 2025. Used beverage containers represent most aluminum packaging recovered in Washington. Used beverage containers are a high-value, established aluminum recycling grade. Washington primarily exports Used beverage containers to Thailand, South Korea, Japan, Hong Kong, Indonesia, and India. However, available export data do not separately track recovered packaging. Exporters combine recovered packaging with scrap metal from other sources. Therefore, we cannot determine the exact quantity of covered materials exported.

8.3.5 Compostable products

Compostable covered materials include paper, plastic, wood, and other plant-based packaging and food service items intended for composting. They generally use the same composting pathway, but acceptance differs by facility and product. A product designed or certified for

composting may still be rejected. Facilities consider contamination, processing methods, compost buyer requirements, and certification standards (Ecology 2025).

Five composting facilities in Washington accept certified compostable packaging in some form. Four facilities accept both certified compostable paper products and certified compostable plastic products. One additional facility accepts certified compostable paper products.

Reported acceptance does not mean facilities consistently or fully compost accepted materials. Facilities may remove some compostable materials during pre- or post-processing. Facilities may also screen out materials that do not break down within their operational time frame.

We also reviewed out-of-state organics facilities within 50 miles of the Washington border. Two facilities met this distance criterion and accepted some paper packaging; both are in Oregon. Their acceptance is limited to unlined paper products, such as napkins, paper towels, and greasy pizza boxes.

Some facilities in the greater Vancouver region of British Columbia report accepting compostable packaging. We did not consider them likely destinations for Washington material because shipments of organic material into Canada face additional regulatory and permitting requirements (CFIA n.d.).

8.3.6 Other packaging materials

A small number of covered material categories do not fall within the major plastic, paper and fiber, glass and ceramic, metals, or compostable packaging groups discussed above. These materials include other composite wood packaging and textile packaging. Unlike the major commodity groups, these materials generally rely on localized or specialized recovery pathways rather than established statewide commodity streams. Table 32 shows end market pathways for these covered materials.

Table 32. End market pathways for other covered materials evaluated for the statewide lists.

Covered material category	Typical end market pathway	Current end market finding
Other and composite wood packaging	No typical statewide commodity pathway identified	Acceptance depends on the material's composition and individual facility specifications. Some unpainted and untreated composite wood may enter clean-wood recycling programs, depending on composition and facility specifications. Treated wood requires separate management.
Natural-fiber textile packaging	Reusable textiles, industrial wiping cloths, or mechanically recovered textile fiber	May enter specialized textile collection and recovery systems; pathways depend on fiber composition, condition, size, and contamination.

Covered material category	Typical end market pathway	Current end market finding
Synthetic and composite textile packaging	Mechanically recovered textile fiber or wiping cloths, where suitable	May enter broader textile recovery systems; processor specifications vary by material composition and condition.

8.3.7 Capacity gaps and constraints

Washington's end market access varies by material type. In-state end markets are available for fiber-based materials, glass, metals, and compostable products. In-state end markets are not available for plastics.

Geography, transportation costs, material quality, collection and processing methods, and facility specifications affect whether Washington-generated materials can reach identified markets. The capacity identified through this inventory represents total facility capacity and does not establish how much capacity is available specifically to Washington-generated material. These findings identify areas of potential constraint and uncertainty that the full needs assessment will evaluate further, including actual market access, available capacity, and the factors affecting the viability of identified end market pathways.

Insufficient or uncertain market capacity

Uncertain market capacity impacts multiple material types, especially materials without in-state end markets.

No in-state plastic end markets are available. Washington relies on out-of-state reclaimers and manufacturers for PET, HDPE, PP, film, and other plastic grades. Film and flexible packaging, certain PS formats, and other difficult-to-sort plastics may face additional market-access challenges because they often require cleaner bales, specialized processing, or separate collection and aggregation pathways.

Paper and fiber constraints vary by grade. Old, corrugated cardboard has substantial identified in-state, out-of-state, and export markets. In contrast, lower-value fiber streams like mixed paper, newsprint, and mechanical pulp grades have more limited domestic capacity and are more dependent on export markets. This reliance on export markets, along with limited visibility into final downstream destinations and end uses, warrants further evaluation in the full needs assessment.

Glass has experienced a significant reduction in in-state manufacturing capacity following the closure of a major local bottle manufacturing facility. This reduction makes the state more dependent on beneficiation facilities and regional manufacturers in the western United States.

The inventory identified extensive regional, national, and international scrap market infrastructure for recovered steel and aluminum. The main limitation is traceability: once packaging metals are aggregated with other scrap streams, it is difficult to determine the extent

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to which facilities consume packaging-derived material. This poses challenges to validate responsible end markets.

Only a small subset of composting facilities in Washington and nearby states report accepting compostable packaging, and available capacity for these materials is not well defined. Acceptance also does not necessarily mean that facilities process compostable products into finished compost or other usable byproducts. Many composting facilities exclude packaging because of contamination concerns, processing limitations, product quality requirements, or certification requirements.

Mismatches between material generation and market access

Geographic mismatches between material generation and market access are most common for materials that are low value, heavy, costly to transport, or dependent on specialized processing.

Higher-value plastics, such as PET and HDPE, may be able to move economically to out-of-state retailers. However, sale of lower-value plastics (for example, film) to out-of-state end markets may be more sensitive to freight costs and bale quality.

Geographic access is strongest for old corrugated cardboard because in-state and out-of-state regional end markets are available. Other grades have fewer domestic outlets and rely on international markets.

Distance can limit glass recycling because glass is heavy and costly to transport. Beneficiation facilities typically process glass before manufacturers use it. This additional step increases transportation time, costs, and logistical needs. These challenges increase for areas far from beneficiation facilities. In Central and Eastern Washington, hub-and-spoke systems aggregate material for cost-effective transportation.

We did not identify geographic mismatches for metals.

Long-distance transportation is often impractical for organic feedstocks. Therefore, compostable products depend heavily on local end markets. Communities without composting facilities that accept compostable packaging may have few practical composting options.

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9.0 Conclusions

Available data indicate that recycling services are offered to most residences. However, not all residents have equal availability varies by housing type and region. Reported curbside recycling availability is lower for multifamily residences and in the less-populated regions of the state, including the Central and Eastern regions. Furthermore, residents in multifamily residences have less availability of recycling than services compared to residents in single-family residences.

Recyclables move through transfer stations, material recovery facilities, or sometimes directly to end markets. Material recovery facilities in Washington have enough capacity exceeds reported annual throughput, but that is currently collected for recycling as well as additional material. In some cases, transfer stations consolidate recyclables to transport them to material recovery facilities. In general, transfer stations that do not currently have a recycling tipping floor have limited capacity to begin transferring recyclables because of site capacity constraints. Transfer facilities may need changes in space, equipment, staffing, or transportation to manage more recyclables.

Material recovery facilities and other processors send sorted materials to end markets in Washington, other states, and other countries. The inventory identifies in-state end markets for fiber, glass, and metals, but none for plastics. The presence of an in-state end market does not mean that all materials generated in Washington go to that market. Material specifications, transportation costs, prices, and other factors besides distance affect where processors send materials.

Collection programs collect compostable covered materials with the organics waste stream. Organic materials management facilities, such as composting and anaerobic digestion facilities, typically manage yard waste and food waste. Only a limited number of facilities accept compostable products, and most are in the Northwest region. Organic materials management facilities serve as end markets for compostable products. However, accepting compostable products does not mean that a facility processes them into finished compost or other usable byproducts. Facilities may screen out these materials during pre- or post-processing.

We identified collection, processing, and potential end market pathways for some covered materials, but we did not confirm whether each pathway meets responsible end market requirements. Data gaps also limit our ability to track material flows. Some businesses did not share data they consider proprietary or confidential. In addition, facilities do not consistently track data using standardized categories that align with Recycling Reform Act requirements and covered material terminology. For example, material recovery facilities and end markets often track materials by bale type, which may combine covered and non-covered materials. The full needs assessments will expand analysis and modeling of current system performance and program design options for EPR implementation in Washington.

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10.0 Recommendations

This section summarizes recommendations for additional data collection to better inform future EPR program planning.

10.1 Service costs

We need more complete cost data from service providers to improve confidence in the service costs estimates. We recommend standardized data metrics to make data directly comparable between entities.

10.2 Covered materials collected

We need more data to address remaining gaps in covered material generation and collection from drop-off collection sites and public places. Statewide studies could help estimate residential drop-off quantities and composition. Targeted public-place studies could improve estimates of the materials generated and collected there.

We also need producer-reported data on covered materials introduced into Washington. As producers report data to the PRO for Washington-specific covered materials sold into the state, we recommend alignment with covered material names for the full needs assessment.

10.3 Collection service levels and availability

We need more data to understand participation in collection services and identify gaps in service availability. Future data collection should measure actual participation rather than assume full participation in areas with mandatory collection requirements. We also need a more complete inventory of public place recycling and organics collection services, including service locations, service levels, and collection arrangements. These data would help identify areas with limited or no service and improve statewide planning.

We also need more information on refill and reuse programs and Tribal collection systems. Additional data on participation in refill and reuse programs and the amount of waste they prevent would help assess their contribution to waste reduction goals. We recommend continued engagement with Tribes to better understand existing collection programs, infrastructure, service needs, data gaps, and opportunities for improvement.

10.4 Statewide facilities and processing capacity

We need more detailed information on the capacity and operations of Washington's recycling infrastructure. Site visits to material recovery facilities could provide information on current technologies, performance, operational improvements, capital improvement plans, and associated costs. We also need standardized data on transfer stations and drop-off collection sites, including throughput, operating constraints, and processing functions. These data would

help determine how much additional material existing facilities could manage and identify opportunities to use existing infrastructure to support RRA implementation.

We also need more information on compost facility capacity and technology. Future data collection should assess the technologies facilities use, how they manage contamination and compostable covered materials, and what investments could increase capacity. This information would help the full needs assessment identify technology and infrastructure gaps, evaluate potential improvements, and develop more realistic estimates of future processing capacity and costs.

10.5 Current markets

We need better data on how Washington-generated covered materials move from collection and processing to end markets. Future data collection should document facility acceptance practices, available processing capacity, and actual material flows. It should also distinguish between materials collected for recycling or composting and materials that ultimately reach an end market. Better data would help identify whether barriers occur at collection, sorting, processing, transportation, or another point in the system, or whether limited end market demand is the primary constraint.

We also need more information to determine whether the materials collected consistently reach responsible end markets. The full needs assessment will evaluate whether end markets provide sufficient, stable, and accessible outlets for Washington-generated covered materials and consider factors such as transportation requirements, facility specifications, market demand and stability, and available capacity. The analysis should pay particular attention to material pathways with limited traceability or inconsistent facility acceptance. We also recommend monitoring market conditions over time because changes in commodity prices, facility operations, processing technologies, and manufacturing demand can affect end market availability.

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11.0 References

Canadian Food Inspection Agency. n.d. D-95-26: Phytosanitary requirements for soil and soil-related matter and for items contaminated with soil and soil-related matter. Canadian Food Inspection Agency, Ottawa. Accessed September 16, 2026. https://inspection.canada.ca/plant-health/invasive-species/directives/imports/d-95-26/eng/1322520617862/1322525397975.

Chapter 70A.208 RCW. Solid Waste—Packaging and Paper Products—Producer Responsibility. Revised Code of Washington. https://app.leg.wa.gov/RCW/default.aspx?cite=70A.208.

Chapter 70A.455 RCW. Plastic Product Degradability. Code of Washington. https://app.leg.wa.gov/RCW/default.aspx?cite=70A.222.

Ecology [Washington State Department of Ecology]. 2020. Plastic Packaging in Washington: Assessing Use, Disposal, and Management. Publication 20-07-024. Washington State Department of Ecology, Olympia. https://apps.ecology.wa.gov/publications/documents/2007024.pdf.

Ecology [Washington State Department of Ecology]. 2020. Recycled Content Use in Washington: Assessing Demand, Barriers, and Opportunities. Publication 20-07-023. Washington State Department of Ecology, Olympia. https://apps.ecology.wa.gov/publications/SummaryPages/2007023.html.

Ecology [Washington State Department of Ecology]. August 2021. 2020-2021 Washington Statewide Waste Characterization Study. Publication 21-07-026. Washington State Department of Ecology, Olympia. https://apps.ecology.wa.gov/publications/SummaryPages/2107026.html.

Ecology [Washington State Department of Ecology]. 2023 (revised April 2023). Washington Consumer Packaging and Paper Study: Recycling Rate Assessment and Recommendations. Publication 22-07-022. Washington State Department of Ecology, Olympia. https://apps.ecology.wa.gov/publications/documents/2407007.pdf.

Ecology [Washington State Department of Ecology]. July 2024. 2022-2023 Washington Statewide Recycling & Organics Characterization Study. Publication 24-07-007. Washington State Department of Ecology, Olympia. https://apps.ecology.wa.gov/publications/summarypages/2407007.html.

Ecology [Washington State Department of Ecology]. 2024. Solid Waste & Recycling Data. Waste generation and recovery data (2024) [data set]. Olympia, Washington. https://ecology.wa.gov/research-data/data-resources/solid-waste-recycling-data.

Ecology [Washington State Department of Ecology]. 2025. Compost Market Study. Washington State Department of Ecology, Olympia. September 2025. https://apps.ecology.wa.gov/publications/documents/2507062.pdf.

Ecology [Washington State Department of Ecology]. 2026. Contact Us. https://ecology.wa.gov/about-us/contact-us.

Ecology [Washington State Department of Ecology]. 2026. Recycling Reform Act: Service Provider Registration. https://ecology.wa.gov/waste-toxics/reducing-recycling-waste/our-recycling-programs/recycling-reform-act/service-provider-registration.

Ecology Bring Your Own Cup 2026. Do Something Grande for the Environment. https://ecology.wa.gov/waste-toxics/reducing-recycling-waste/reduce-reuse/bring-your-own-cup.

HDR [HDR Engineering, Inc.]. 2026. Washington Recycling Needs Assessment Map. https://experience.arcgis.com/experience/512afbc9458342e6b566a8d80be0b5ab/page/Page?views=Map-Layers.

RCW 70A.208.020. Solid Waste—Packaging and Paper Products—Producer Responsibility — Definitions. Revised Code of Washington. https://app.leg.wa.gov/RCW/default.aspx?cite=70A.208.020.

RCW 70A.208.110. Solid Waste—Packaging and Paper Products—Producer Responsibility — Statewide Needs Assessments. Revised Code of Washington. https://app.leg.wa.gov/RCW/default.aspx?cite=70A.208.110.

U.S. Census Bureau. n.d. USA Trade Online [database]. U.S. Department of Commerce, Washington, D.C. Accessed April 6, 2026. https://usatradeonline.census.gov/.

Washington Utilities and Transportation Commission. 2026. Solid Waste Service Maps – By County. https://www.utc.wa.gov/regulated-industries/transportation/regulated-transportation-industries/solid-waste-carriers/solid-waste-service-maps-county.

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12.0 Glossary, Acronyms, and Abbreviations

Glossary terms and abbreviations to be added during report development, which may include but are not limited to definitions included in the Recycling Reform Act.

12.1 Glossary

Availability (of recycling services): Curbside collection or drop-off services are offered within a given area. Availability should not be interpreted as participation in the service.

Bale specification: A set of quality and composition requirements for a compressed bale of recyclable material, often used by buyers and trade associations.

Capacity: The amount of recyclable material that a recycling facility can receive, sort, process, and prepare for end markets.

Collection program: The collection of covered materials through curbside or drop-off methods that collect covered materials and transport them for sorting and processing.

Commingled recyclable materials: As defined in WAC 173-350-100**,** a mixture of several types of recyclable materials in one load or container, such as aluminum cans, paper, plastic, and cardboard in one container, or wood, concrete, and metal in one load.

Compost facility: A facility that conducts composting activities as defined by the RRA. "Composting", as defined in RCW 70A.208.020, means the controlled microbial degradation of source separated compostable materials to yield a humus-like product.

Composting: As defined in RCW 70A.208.020, means the controlled microbial degradation of source-separated compostable materials to yield a humus-like product.

Compostable packaging: Packaging designed to break down under composting conditions, though acceptance depends on facility capabilities and policies.

Contamination: As defined in RCW 70A.208.020, means (a) the presence of materials that are not on the list of materials collected in that material stream or (b) the presence of materials that are not specified or accepted as a component of the feedstock or commodity.

Covered entity: As defined in RCW 70A.208.020, means a person or location that receives covered services for covered materials, including the following:

(1) A single-family residence

(2) A multifamily residence

(3) A public place where a government entity managed recycling collection receptacles as of August 1, 2025, and any additional public place identified in an approved plan.

Covered material: As defined in RCW 70A.208.020, means packaging and paper products introduced into Washington.

Covered services: As defined in RCW 70A.208.020, means collecting, transferring, transporting, sorting, processing, recovering, preparing, or otherwise managing for purposes of waste reduction, refill, reuse, recycling, composting, or disposal of contamination or residuals.

Database: The combined data set created for the collection service levels and access evaluation, which consists of data from contract-based data sources, the municipality survey responses, the collection service provider survey responses, and UTC data.

Drop-off collection site: As defined in RCW 70A.208.020, means the physical location where covered materials are accepted from the public and that is open a minimum of 12 hours weekly throughout the year. Drop-off collection includes both recycling and/or organics collection.

Dual-stream recycling: Recyclable materials collected as two material streams (fibers and containers separately) at the curb.

End markets: Facilities that use recovered covered materials as feedstock in a manufacturing, composting, or industrial process that converts those materials into a new commodity, product, or usable output.

Expanded polystyrene (EPS): a lightweight, rigid plastic foam made from solid polystyrene beads

Extended Producer Responsibility (EPR): A policy approach that makes producers responsible for helping fund and manage the collection and recycling of their products or packaging.

Feedstock: Recovered material used as an input in a manufacturing, recycling, composting, or industrial process.

Ferrous metal: Metal that contains iron, such as steel and tin-coated steel cans.

Film and flexible packaging: Thin, flexible plastic packaging such as bags, wraps, pouches, and films.

Format: The structural shape or physical configuration of a material, such as a rigid container, flexible film, tube, or thermoform.

High-grade paper: Higher-quality recovered paper, such as office paper or printing paper, that generally contains fewer contaminants and stronger fibers.

Interest holder: Any person, organization, government agency, business, Tribal Nation, or other group that may be affected by or interested in a recycling refunds program.

Material recovery facility: As defined in RCW 70A.208.020, means any facility that receives, compacts, repackages, or sorts source-separated solid waste for the purpose of recycling.

Mixed paper: A recovered paper grade made up of multiple paper types, such as office paper, mail, magazines, and paperboard.

Newsprint: Paper used for newspapers and similar publications, often treated as a distinct recovered fiber grade.

Nonferrous metal: Metal that does not contain significant iron, such as aluminum.

Old corrugated containers: Used corrugated cardboard boxes and containers collected for recycling.

Organic materials management facility: As defined in RCW 70A.205.015, means a facility that manages organic materials through composting, anaerobic digestion, vermiculture, black soldier fly, or similar technologies.

Participation: the extent to which residences are both signed up for and actively utilizing available curbside collection services.

PET: Polyethylene terephthalate, a plastic resin commonly used for beverage bottles, food containers, cups, and thermoforms.

PET thermoform: A PET package formed by heating plastic sheet and shaping it into items such as clamshells, trays, and produce containers.

Plastic resin: A polymer material used to make plastic products and packaging, often identified by resin type such as PET, HDPE, PP, or PS.

Polyethylene (HDPE and LDPE): A family of thermoplastic resins that includes high-density polyethylene (HDPE) and low-density polyethylene (LDPE). HDPE, identified by resin code #2, is commonly used in rigid containers such as bottles and jugs. LDPE, identified by resin code #4, is commonly used in films, bags, wraps, and flexible squeeze bottles.

Polymer: A material made of long chains of molecules; in recycling, the term is commonly used to describe different plastic resin types.

Polypropylene (PP): A versatile, semi-rigid to rigid thermoplastic. It is commonly used for takeout containers, yogurt tubs, bottle caps, medicine bottles, and microwaveable packaging.

Polystyrene (PS): Means a plastic resin used in some rigid cups, containers, and foodservice packaging.

Polyvinyl chloride (PVC): Means a plastic resin used in some packaging and products but often problematic in recycling streams because it can contaminate other plastics.

Producer Responsibility Organization (PRO): An organization created by producers to help meet Extended Producer Responsibility requirements.

Processor: A facility or company that prepares recovered materials for end markets by sorting, cleaning, grinding, baling, densifying, washing, or otherwise processing them.

Program plan: A plan developed by the PRO describing how it will implement the EPR program, fund services, meet performance requirements, and support system improvements.

Public place: As defined in RCW 70A.208.020, means an indoor or outdoor location open to and generally used by the public and to which the public is permitted to have access including, but not limited to, streets, sidewalks, plazas, town squares, public parks, beaches, forests, or other

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public land open for recreation or other uses and transportation facilities such as bus and train stations, airports, and ferry terminals; "public place" does not include a retail establishment or industrial, commercial, or privately owned property that is not required to be accessible to the public.

Recycling: As defined in RCW 70A.208.020, means transforming or remanufacturing covered materials into usable or marketable materials for use other than landfill disposal or incineration and does not include reuse or composting.

Recycling Reform Act (RRA): Washington State's Recycling Reform Act, which established an extended producer responsibility (EPR) program for residential packaging and paper products and directed Ecology to develop needs assessments to inform program design.

Refill: As defined in RCW 70A.208.020, means a consumer continues to use a covered material through a system designed for repeated filling that provides convenient access and meets applicable health and safety requirements.

Residence: A dwelling unit occupied by one or more persons as a household, including single-family homes, apartments, and/or other multifamily residential units.

Reuse: As defined in RCW 70A.208.020, means a producer or service provider returns a covered material to the marketplace for repeated use for its original purpose. The material must be durable, supported by adequate infrastructure, and meet applicable health and safety requirements.

Separated recyclables: Recyclable material separated by kind at its origin.

Service provider: As defined in RCW 70A.208.020, means an entity that provides covered services for covered materials. A government entity that provides, contracts for, or otherwise arranges for another party to provide covered services for covered materials within its jurisdiction may be a service provider regardless of whether it provided, contracted for, or otherwise arranged for similar services before the approval of the applicable plan.

Single-stream recycling: Recyclable materials collected as one material stream at the curb.

12.2 Acronyms and Abbreviations

CY	cubic yard(s)
Ecology	Washington State Department of Ecology
EPR	extended producer responsibility
EPS	expanded polystyrene
ERG	Eastern Research Group
HDPE	high-density polyethylene
HDR	HDR Engineering, Inc.
LDPE	low-density polyethylene
N/A	not applicable
NORPAC	North Pacific Paper Company

PET	polyethylene terephthalate
PP	polypropylene
PRO	producer responsibility organization
PS	polystyrene
RCW	Revised Code of Washington
RRS	Resource Recycling Systems
TPD	ton(s) per day
TPY	ton(s) per year
UTC	Washington Utilities and Transportation Commission

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Statutory TextThe Recycling Reform Act directs the Department of Ecology to conduct a preliminary needs assessment and a needs assessment (RCW 70A.208.110):

(1)(a) By December 31, 2026, the department must complete a preliminary assessment consistent with subsection (3) of this section.

(b) By December 31, 2027, and every five years thereafter, the department must complete a needs assessment consistent with subsection (4) of this section. The department may adjust the required content in a specific needs assessment to inform the next plan.

(2) In conducting a needs assessment, the department must:

(a) Initiate a consultation process to obtain recommendations from the advisory council, government entities, service providers, producer responsibility organizations, the utilities and transportation commission, and other interested parties, regarding the type and scope of information that should be collected and analyzed in the needs assessments required by this section;

(b) Contract with a third party who is not a producer, a producer responsibility organization, or a member of the advisory council to conduct the needs assessment;

(c) At least 90 days prior to finalizing the needs assessment, make the draft needs assessment available for comment by the advisory council, producer responsibility organizations, the utilities and transportation commission, jurisdictions planning under chapter 70A.205 RCW, and the public. The advisory council must have the opportunity to review drafts of the needs assessment and accompanying data used in the needs assessment. The department must respond in writing to the comments and recommendations of the advisory council and producer responsibility organizations; and

(d)(i) Consider information from studies related to recycling conducted by the department after 2019; and (ii) Use the department's statewide collection lists for covered materials as established under RCW 70A.208.090.

(3) A preliminary needs assessment must be completed for a preceding period of no less than 12 months and no more than 36 months that includes:

(a) Identification of currently or recently introduced covered materials and covered material types;

(b) Tons of collected covered materials;

(c) An evaluation of what services related to the requirements of this chapter are currently being delivered in each county and city planning under chapter 70A.205 RCW and what the costs are for those existing services, including:

(i) The availability and types of recycling services for covered materials for residents in single-family and multifamily residences, including whether current services are considered residential or commercial and whether any gaps, costs, or needs are specific to either commercial or residential customer service;

(ii) The current methods and infrastructure for servicing residents, including curbside recycling service areas and material drop-off locations;

(iii) Any densely populated areas within each jurisdiction in which curbside recycling services for covered materials identified by the department on the list developed and published under RCW 70A.208.090 are not available or are only partially available;

(iv) Any areas within each jurisdiction where curbside garbage collection services are offered to residents in single-family and multifamily residences, but curbside recycling services are not offered;

(d) Processing capacity at material recovery facilities, including total tons processed and sold, composition of tons processed and sold, current technologies utilized, and facility processing fees charged to collectors delivering covered materials for recycling;

(e) Capacity of compost facilities, including total tons processed and sold, technology used by, and characteristics of compost facilities to process and recover compostable covered materials, and facility processing fees charged to collectors delivering covered materials for composting;

(f) Capacity and number of drop-off collection sites, and the materials collected at those drop-off collection sites;

(g) Capacity and number of transfer stations and transfer locations;

(h) Average term length and variability of residential recycling and composting collection contracts issued by government entities and an assessment of contract cost structures;

(i) An estimate of the total annual collection and processing service costs based on registered service provider costs;

(j) Available markets in Washington for covered materials and the capacity of those markets; and

(k) Covered materials introduced by volume, weight, and covered material types introduced by producers.

(4) Each needs assessment after the preliminary needs assessment must include at least the following:

(a) An evaluation of:

(i) Existing waste reduction, refill, reuse, recycling, and composting outcomes, as applicable, for each covered material type, including collection rates, recycling rates, composting rates, reuse rates, and return rates, as applicable, for each covered material type;

(ii) The overall recycling rate, composting rate, reuse rate, and return rate for all covered material types; and

(iii) The extent to which postconsumer recycled content, by the best estimate, is or could be incorporated into each covered materials type, as applicable, including a review of North American sources and markets and technical barriers to incorporating postconsumer materials

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into covered materials. For plastic covered materials, postconsumer recycled content must be measured by rigid plastic resin type and by film or flexible plastic;

(b) An evaluation of covered materials in the disposal, recycling, and composting streams to determine the covered materials types and amounts within each stream, using new studies conducted by the department or publicly available and applicable studies;

(c) Proposals for a range of outcomes for each covered materials type to be accomplished within a five-year time frame in multiple units of measurement including, but not limited to, unit-based, weight-based, and volume-based, for each of the following:

(i) Plastic source reduction rates;

(ii) Reuse rates and return rates;

(iii) Recycling rates;

(iv) Composting rates; and

(v) Postconsumer recycled content, if applicable;

(d) Proposals for a range of outcomes for the categories established in RCW 70A.208.150(10) that consider:

(i) Information contained in or used to prepare a needs assessment under this section;

(ii) Goals and requirements of chapters 70A.205 and 70A.245RCW;

(iii) The statewide greenhouse gas emissions limits of chapter 70A.45 RCW;

(iv) The need for continuous progress toward:

(A) Overall reduction in the generation of covered material waste;

(B) The reuse, recycling, or composting of covered materials to reduce environmental impacts and human health impacts; and

(C) Progress to incorporate postconsumer content to replace virgin materials and to support more regional markets;

(v) A preference for statewide requirements that accomplish and further the goals and requirements in (d)(ii), (iii), and (iv) of this subsection as soon as practicable and to the maximum extent achievable; and

(vi) Information from paper and packaging producer responsibility programs operating in other jurisdictions;

(e) An evaluation of the criteria used for developing the lists of covered materials determined to be recyclable or compostable statewide as established in RCW 70A.208.090;

(f) Recommended collection methods by covered materials type to maximize collection efficiency, maximize feedstock quality, and optimize service and convenience for collection of covered materials to be considered or that are included on lists established in RCW

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70A.208.090, or for which a group of producers has been granted a petition by the department under RCW 70A.208.090(5);

(g) Proposed plans and metrics for how to measure progress in achieving performance targets and statewide requirements;

(h) An evaluation of options for third-party certification of activities to meet obligations of this chapter;

(i) An inventory of the current system, including:

(i) Infrastructure, capacity, performance, funding level, and method and source of financing for the existing covered services for covered materials operating in the state;

(ii) An estimate of total annual costs of covered services based on registered service provider costs; and

(iii) Availability and cost of covered services for covered materials to covered entities and any other location where covered materials are introduced, including identification of disparities in the availability of these services in overburdened communities compared with other areas and to socially vulnerable populations as compared to other populations and proposals for reducing or eliminating those disparities;

(j) An evaluation of investments needed to increase waste reduction, refill, reuse, recycling, and composting rates of covered materials according to the range of proposed performance targets and statewide requirements, including what new or expanded services and infrastructure are needed in each county and city planning under chapter 70A.205 RCW, and the estimated total costs of investments needed, that would also:

(i) Maintain or improve operations of existing infrastructure and account for waste reduction, refill, reuse, recycling, and composting of covered materials statewide;

(ii) Expand the availability and accessibility of recycling collection services for covered materials to all places required under this chapter and expand the availability and accessibility of composting collection services where feasible; and

(iii) Establish and expand the availability and accessibility of reuse services for reusable covered materials;

(k) A recommended methodology for applying criteria and formulas to establish reimbursement rates as described in RCW 70A.208.170;

(l) An assessment of the viability and robustness of markets for recyclable and compostable covered materials and the degree to which these markets can be considered responsible markets;

(m) An assessment of the level and causes of contamination of source separated recyclable materials, source separated compostable materials, and collected reusables, and the impacts of contamination on service providers and on commodity values of covered material types, including the cost to manage this contamination;

(n) An assessment of toxic substances intentionally added to or residual from manufacturing in covered materials, whether this limits one or more covered material types from being used as a marketable feedstock, and best practices producers can implement to reduce intentionally added or residual toxic substances in covered materials that could be verified through suppliers' certificates of compliance, testing, or other analytical and scientifically demonstrated technology;

(o) An assessment and evaluation of current best practices and efforts on:

(i) Public awareness, education, and outreach activities accounting for culturally responsive materials and methods and an evaluation of the efficacy of those efforts;

(ii) Using product or packaging labels as a means of informing consumers about environmentally sound use and management of covered materials;

(iii) Increasing public awareness of how to use and manage covered materials in an environmentally sound manner and how to access waste reduction, refill, reuse, recycling, and composting services; and

(iv) Encouraging behavior change to increase participation in waste reduction, refill, reuse, recycling, and composting programs;

(p) Identification of the covered materials with the most significant environmental impacts, including assessing each covered material's generation of hazardous waste, generation of greenhouse gases, environmental justice impacts, public health impacts, and other impacts;

(q) Recommendations for meeting the criteria for an alternative collection program; and

(r) Other items identified by the department that would aid the creation of the plan, the implementation of the plan, and the enforcement of this chapter.

(5) The department or its contracted third party may conduct voluntary interviews with service providers of curbside recycling or composting services or recycling or composting processing services within a jurisdiction on costs for additional infrastructure, vehicles, staff, equipment, and other investments to achieve the range of outcomes proposed under subsection (4)(c) and (d) of this section.

(6) When determining the extent to which any statewide requirement or performance target under this chapter has been achieved, information contained in a needs assessment must serve as the baseline for that determination, when applicable.

(7)(a) A service provider or other person with data or information necessary to complete a needs assessment must provide the data or information to the department upon request.

(b) A service provider or other person providing the data or information may submit a request to the department consistent with RCW 70A.208.220 that the data or information be considered confidential and not made public.

(c) The contractor conducting the needs assessment must aggregate and anonymize the nonpublic data or information, excluding location data as necessary to assess needs, received

from all parties under this section and must then include the aggregated anonymized data in the needs assessment.

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