STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Region Office
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June 29, 2023

Jennifer Hayden
Environmental Health Supervisor
Whatcom County Health Department
509 Girard Street
Bellingham, WA 98225-4005

RE: Ecology Approval of Whatcom County's 2022-2027 Comprehensive Solid and Hazardous Waste Management Plan

Dear Jennifer Hayden,

The Department of Ecology (Ecology) is pleased to approve Whatcom County's *2022-2027 Comprehensive Solid and Hazardous Waste Management Plan,* transmitted to us on May 23, 2023.

This Plan demonstrates Whatcom County's commitment to reduction, recycling, and safe management of solid waste. It promotes a system that supports the state's solid waste handling priorities while reflecting local needs. This Plan includes strong elements, such as clear and informative hauler and population density maps, key construction and demolition debris recommendations, and a thoughtful land acknowledgement. We believe this Plan will allow you the flexibility you need to respond to changing conditions yet gives clear enough direction to guide the County in a clear sustainable path.

Ecology commends the efforts of Whatcom County staff, the consultant, the Solid Waste Advisory Committee, and the public at large toward completion of this Plan.

The six-year planning period covered by this combined Solid and Hazardous Waste Management Plan is 2022-2027. Thus, the five-year review required in RCW 70A.205.075 should begin in the year 2026. Ecology looks forward to working with Whatcom County and its stakeholders as this Plan is implemented, and we are here to assist as needed.

Sincerely,

Diana Wadley

Diana Wadley
Acting Northwest Region Section Manager
Solid Waste Management Program

cc: Olivia Carros, Ecology Regional Planner and Grant Manager
Peter Guttchen, Ecology Statewide Lead Planner
Mike Young, Washington Utilities and Transportation Commission
Amy Clow, Washington Department of Agriculture

2022-2027 COMPREHENSIVE SOLID AND HAZARDOUS WASTE MANAGEMENT PLAN

Whatcom County, Washington

May 15, 2023

ACKNOWLEDGEMENTS

The Whatcom County Comprehensive Solid and Hazardous Waste Management Plan was prepared by a team consisting of Whatcom County Solid Waste Division staff, the Whatcom County Solid Waste Advisory Committee, and the Maul Foster & Alongi, Inc. consultant team. Throughout development of this document, the individuals involved dedicated an extensive amount of time and energy in formulating recommendations, discussing approaches, and reviewing the document. In particular, the team wishes to acknowledge, with great appreciation, the solid waste industry service providers in our community, and their employees, who work hard to effectively manage our solid and hazardous wastes.

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Carol Frazey, Whatcom County Council representative
Kevin Renz, City of Ferndale, small cities representative
Michael Olinger, City of Bellingham representative
Eric Johnston, City of Bellingham representative
Lisa Friend, citizen representative
Robert Hendricks, citizen representative (term expired 6/18/21)
Mark Peterson, public interest group representative (term expired 1/31/2021)
Brandi Hutton, public interest group representative
Larry McCarter, business/industry representative
Troy Lautenbach, waste collection industry representative (term expired 1/31/2021)
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ACRONYMS AND ABBREVIATIONS

C/D	construction and demolition
Cando	Cando Recycling and Disposal
CESQG	conditionally exempt small quantity generator
the County	Whatcom County
CSHWMP	Comprehensive Solid and Hazardous Waste Management Plan
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
FCO	Flow Control Ordinance
FRP	Food Recovery Program
G-permit	WUTC permit
MFS	minimal functional standards (refer to WAC 173-304 and 173-350)
MRF	material recovery facility
MRW	moderate risk waste
MRWF	moderate risk waste facilities
MSW	municipal solid waste
MTCA	Model Toxics Control Act
NVD	Nooksack Valley Disposal
NWCAA	Northwest Clean Air Agency
OFM	Washington State Office of Financial Management
PPG	Public Participation Grant
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RDS	Recycling and Disposal Services
Republic	Republic Services
SEPA	State Environmental Policy Act
SSC	Sanitary Service Company
SWAC	Solid Waste Advisory Committee
SWEC	Solid Waste Executive Committee
TZW	Toward Zero Waste Program
W2G	Where To Go With To-Go campaign
WAC	Washington Administrative Code
WCC	Whatcom County Code
WDFW	Washington Department of Fish and Wildlife
WSU	Washington State University
WUTC	Washington Utilities and Transportation Commission

GLOSSARY[1]

Anaerobic Digestion: The process by which organic material is broken down by microorganisms in the absence of oxygen. This process results in emission of a carbon dioxide- and methane-rich biogas that can be collected and used as an energy source. The digestate can then be landfilled or composted. Advantages of this process include volume reduction of landfilled organic waste, as well as decreased landfill gas production.

Biosolids: Municipal sewage sludge that is a primarily organic, semisolid product resulting from the wastewater treatment process and that can be beneficially recycled.

Commingled Recycling: A method of recovery and/or collection where recyclable commodities are mixed together and sorted at a material recovery facility (MRF).

Composting: The biological degradation and transformation of organic solid waste under controlled conditions designed to promote aerobic decomposition. Natural decay of organic solid waste under uncontrolled conditions is not composting.

Construction and Demolition (C/D) Waste: Those wastes that are typically associated with the construction industry; these can include stone, concrete, brick, metal, lumber, and shingles.

Designated Recyclables: Wastes separated for recycling or reuse, such as paper, metals, and plastics that are identified as recyclable material pursuant to a local comprehensive solid waste plan. Prior to the adoption of the local comprehensive solid waste plan, adopted pursuant to RCW 70.95.110(2), local governments may identify recyclable materials by ordinance from July 23, 1989.

Disposal: The discharge, deposit, injection, dumping, leaking, or placing of any solid waste into or on any land or water.

Diversion: Any method of recycling, energy production, or beneficial use that prevents disposal of material in landfills or incinerators. This definition includes all materials that are reported as recyclable.

Drop Box: A "drop box" facility means a facility used for the placement of a detachable solid waste container, such as a drop box, including the area adjacent for necessary entrance and exit roads, and unloading and turnaround areas. A drop box facility normally serves self-haulers with loose loads and receives waste from off site. A drop box facility may also include containers for separated recyclable materials.

E-Cycle Washington: Washington's producer-funded recycling program for computers, monitors, laptops, and televisions. www.ecy.wa.gov/programs/swfa/eproductrecycle/index.html.

[1] Source: Appendix A (Glossary of Terms and List of Acronyms), Guidelines for Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions, Washington State Department of Ecology Publication No. 10-07-005.

Food Waste: Organic waste derived from food products.

G-Certificate: A certificate of public convenience and necessity issued by the WUTC under the provisions of RCW 81.77 for the operation of solid waste collection. This certificate defines the territory and level of service required for solid waste collection in unincorporated areas of Washington State.

Garbage: General unsorted household waste that goes to a landfill. Garbage may include scrap paper, food, metal, plastic, wood, glass, dirt, fabric, and other materials that are considered not recoverable because of the size of the material, presence of contamination, lack of a market, or lack of separation effort by the generator.

Green Building: Design or construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and occupants in the areas of site selection, and promote conservation of materials and resources, energy efficiency, water efficiency, and indoor environmental quality.

Green Waste: Biodegradable waste typically consisting of garden or park waste, such as grass or flower cuttings and hedge trimmings, and contain relatively high nitrogen concentrations.

Hazardous Substance: Any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, which exhibits any of the characteristics or criteria of hazardous waste as described in rules adopted under RCW 70.105.

Hazardous Waste: All dangerous and extremely hazardous waste, including substances composed of both radioactive and hazardous components.

Household Hazardous Waste: Those substances identified by Ecology as hazardous household substances in the guidelines developed under RCW 70.105.220 (Local Hazardous Waste Management Program Guidelines). Household hazardous waste is any waste that exhibits the properties of dangerous wastes but is exempt from the Dangerous Waste Regulations solely because it is generated by households.

Hog Fuel: Wood chips ranging in size between 2 and 5 inches that are used as a fuel source in a combustion process, such as firing a boiler.

Incineration: Reducing the volume of solid wastes by use of an enclosed device using controlled flame combustion.

Industrial Waste: Industrial waste includes by-products from manufacturing operations, food processing, and other industrial processes, such as scraps, trimmings, packaging, boiler ash, wood-product residuals, and other discarded materials not otherwise designated as a dangerous waste under WAC Chapter 173-303.

Interlocal Agreement: An interlocal agreement is a formal agreement between any two or more public agencies to work cooperatively. In the world of solid waste planning, this usually refers to an agreement where the county and participating cities enter into an interlocal agreement to designate the county as the solid waste planning authority.

Landfill: A disposal facility or part of a facility at which solid waste is permanently placed in or on land, including facilities that use solid waste as a component of fill.

Material Recovery Facility (MRF): Any facility that collects, compacts, repackages, sorts, or processes for transport source-separated solid waste for recycling.

Model Toxics Control Act (MTCA): MTCA is the legislation that created the toxics accounts that now fund a significant portion of solid waste management at the state and local levels. More detail on the act can be found in RCW 70.105D.

Moderate Risk Wastes (MRW): MRW are composed of chemical materials that are poisonous, toxic, flammable, reactive, or corrosive. These products include but are not limited to pesticides, herbicides, mercury and mercury thermometers, some types of batteries, gasoline, kerosene, motor oil, antifreeze, oil-based paint, paint thinner, turpentine, pool chemicals, and drain cleaners. MRW are divided into two categories: household hazardous waste and small-quantity generator hazardous waste.

Municipal Solid Waste (MSW): A subset of solid waste that includes unsegregated garbage, refuse and similar solid waste material discarded from residential, commercial, institutional, and industrial sources and community activities, including residue left after recyclables have been separated.

Organics (organic materials): Substances that are products of biological origin that have the potential to be returned to the soil or turned into biofuels, bioenergy, or other products. Organic materials include landscaping and yard waste, food waste, manures, crop residues, wood, soiled/low-grade paper, and biosolids.

Per capita waste generation: The average amount of waste generated by a single person in a year. The per capita waste generation rate is calculated by dividing the total waste generation in an area by the total population of that area.

Planning area: The geographical boundaries in which a solid waste plan will be implemented.

Recovery: Material removed from the waste stream for the purpose of recycling and/or composting.

Recyclable Materials: Solid wastes that are separated for recycling or reuse, including, but not limited to, papers, metals, and glass that are identified as recyclable material pursuant to a local comprehensive solid waste plan.

Recycling: Transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. Recycling does not include collection, compacting, repackaging, and sorting for the purpose of transport.

Resolution of Adoption: In solid waste planning, a resolution passed by the local executive or legislative authority to adopt the local solid waste management plan. A combination of an interlocal agreement and a resolution of adoption is generally required for all participating jurisdictions in order for a solid waste management plan to be approved by Ecology.

Revised Code of Washington (RCW): A compilation of all Washington State laws now in force, created and modified through bills passed by the Legislature.

Solid Waste Advisory Committee (SWAC): An advisory committee established at the local level in each planning jurisdiction. The local SWAC should assist in development of programs and policies concerning solid waste handling and disposal and should review and comment on proposed rules, policies, or ordinances prior to their adoption.

Solid Waste: All putrescible and nonputrescible solid and semisolid wastes, including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, C/D wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Source Separation: The separation of different kinds of solid waste at the place where the waste originates.

State Environmental Policy Act (SEPA): A way to identify possible environmental impacts that may result from governmental decisions. These decisions may be related to issuing permits for private projects; constructing public facilities; or adopting regulations, policies, or plans.

Transfer Station: A facility where wastes are transferred from smaller vehicles (cars, pickup trucks, contractor trucks, and collection vehicles) into larger transport trailers prior to transport to the landfill for disposal.

Toxics or Toxic Substances: A general term that refers to hazardous substances and hazardous wastes that have properties that may cause or significantly contribute to death, injury, or illness of humans, animals, or other living things.

USEPA: The U.S. Environmental Protection Agency is a federal agency that leads the nation's environmental science, research, education, and assessment efforts. Created in 1970, the USEPA's mission is to protect human health and the environment.

Vactor Waste: A common term used to describe street waste. "Vactor" is a brand name for a vacuum truck that is capable of picking up many types of waste. Currently, a wide variety of wastes are collected by Vactor trucks and treated as street wastes. However, not all wastes picked up by Vactor truck qualify as street waste.

Washington Administrative Code (WAC): Regulations of executive branch agencies are issued by authority of statutes. Like legislation and the Constitution, regulations are a source of primary law in Washington State.

Waste Characterization: The composition and ratio of materials in the total waste stream. Also sometimes referred to as a "waste audit."

Waste Reduction: Also, sometimes referred to as "waste prevention" or "precycling." Waste reduction is the practice of minimizing waste through responsible purchasing and consumerism. It is essentially, removing waste from the waste stream by not creating it in the first place. Waste reduction is typically achieved through better product or packaging design, by improved efficiency of use by the end user, and/or by process management.

Woodwaste: Solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, and handling and storage of raw materials. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard waste, but does not include wood pieces or particles containing paint, laminates, bonding agents, or chemical preservatives such as creosote, pentachlorophenol or copper-chrome-arsenate.

Yard Waste/Debris: Plant material commonly created in the course of maintaining yards and gardens and through horticulture, gardening, landscaping, or similar activities. Yard debris includes, but is not limited to grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, and vegetable garden debris.

1 INTRODUCTION

1.1 Purpose

The State of Washington enacted legislation through adoption and subsequent, periodic amendments to Revised Code of Washington (RCW) Chapter 70A.205 establishing comprehensive statewide programs for solid waste handling and solid waste recovery and recycling. The purpose of these requirements is to prevent land, air, and water pollution, and to conserve the natural, economic, and energy resources of the state.

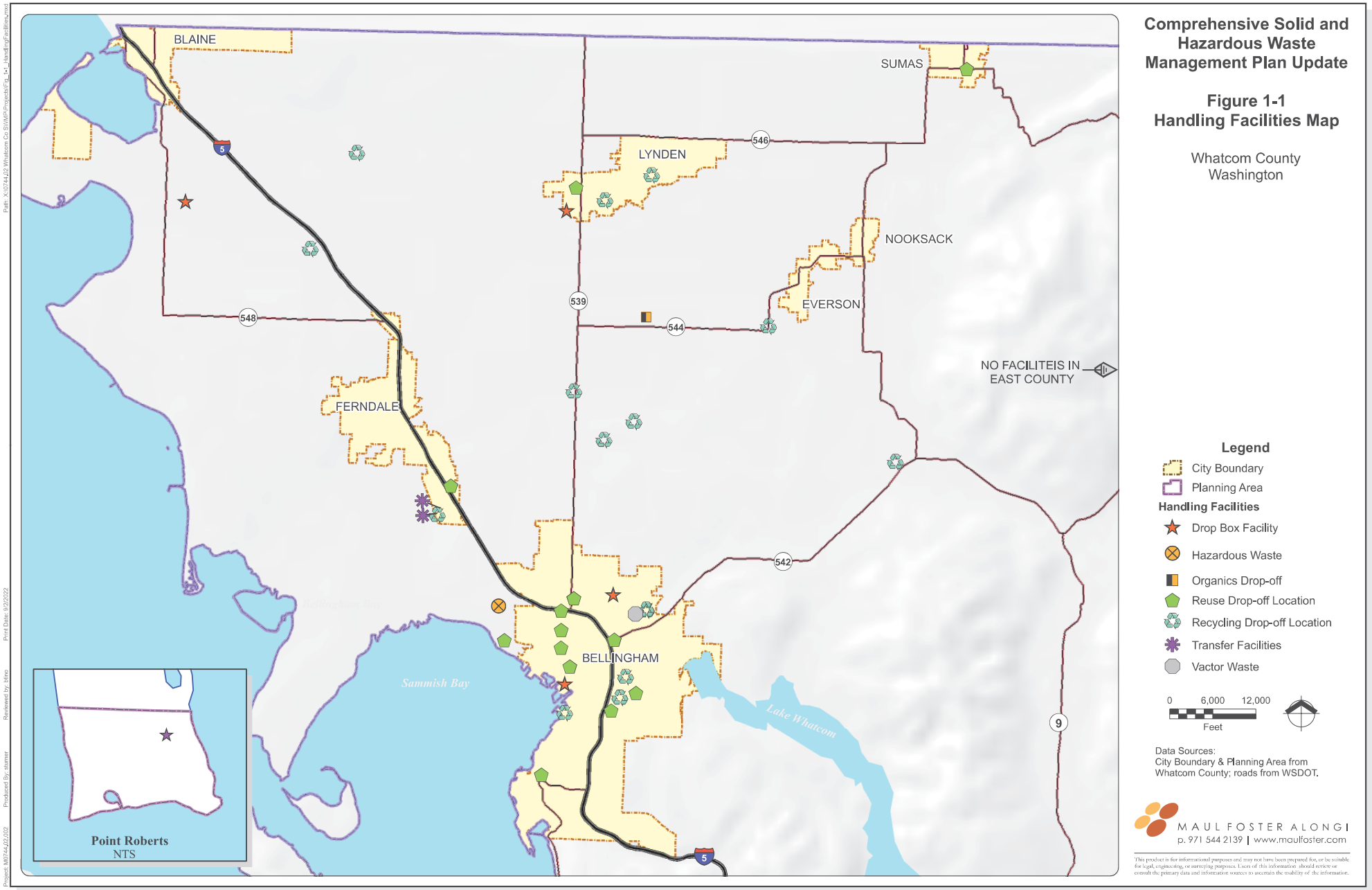
Each county in the state is required by RCW 70A.205.040 to prepare a solid waste management plan. Washington Administrative Code (WAC) Section 173-304-011 states that

> The overall purpose of local comprehensive solid waste planning is to determine the nature and extent of the various solid waste categories and to establish management concepts for their handling, utilization, and disposal consistent with the priorities established in RCW 70A.205.005 for waste reduction, waste recycling, energy recovery and incineration, and landfill.

To address state requirements, Whatcom County (the County) originally developed and adopted the first version of the Comprehensive Solid and Hazardous Waste Management Plan (CSHWMP) in 1974. As discussed with the Washington State Department of Ecology (Ecology), this plan is expected to be finalized as the 2022 revision that covers the five-year period from 2022–2027, representing the seventh iteration of the CSHWMP, which was most recently revised in 2008 and 2016. RCW 70A.205.005 requires that each plan be reviewed and revised, if necessary, at least every five years. Sections 1 through 9 of the 2022-2027 CSHWMP are specific to solid waste management planning, and Section 10 is specific to hazardous waste management planning.

1.2 Solid Waste System Overview

The waste management system in the County, illustrated in Figure 1-1, consists of approximately 35 permitted and exempt solid waste handling facilities, as regulated by WAC 173-350, Solid Waste Handling Facilities. These facilities consist of private sector landfills, landfills managed in postclosure, transfer stations, drop box collection sites, moderate risk waste (MRW) fixed facilities, composting facilities, anaerobic digesters, biosolids facilities, and recycling operations. The solid waste system is largely privatized, and except for the MRW facility (called the Disposal of Toxics Program), the County neither owns nor operates collection, treatment, or disposal facilities. The easternmost portion of the County (including Newhalem and Diablo) is within the Washington Utilities and Transportation Commission (WUTC) permit (G-permit) collection area of Waste Management and is managed in the Skagit County system, and is therefore excluded from the planning in this CSHWMP.


BLAINE
SUMAS
LYNDEN
NOOKSACK
EVERSON
FERNDALE
BELLINGHAM
NO FACILITEIS IN EAST COUNTY
Sammish Bay
Lake Whatcom
Bellingham Bay
546
539
544
548
542
5
9
Point Roberts
NTS
Comprehensive Solid and Hazardous Waste Management Plan Update
Figure 1-1
Handling Facilities Map
Whatcom County
Washington
Legend
City Boundary
Planning Area
Handling Facilities
Drop Box Facility
Hazardous Waste
Organics Drop-off
Reuse Drop-off Location
Recycling Drop-off Location
Transfer Facilities
Vactor Waste
0 6,000 12,000
Feet
Data Sources:
City Boundary & Planning Area from Whatcom County; roads from WSDOT.
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Print Date: 9/2/2022
Reviewed by: ktino
Produced By: stamer
Project: M0744.02.002

An overview of the County's solid waste system is provided below. Specific details on the system components are in the corresponding sections

1.2.1 Waste Reduction and Public Education

The first step in the waste management hierarchy is reducing waste generated. The County's waste reduction efforts use public education and technical assistance for businesses to educate the public about the importance of and methods for reducing waste generated to the extent possible. In addition, there is a wide variety of material reuse opportunities provided by private sector and nonprofit entities, consisting of consignment stores, donation centers, and construction material reuse centers. More detail is provided in Section 3.1.

1.2.2 Recycling

Recyclable materials are collected in the system through curbside collection, drop box facilities, and transfer station drop-off locations and are delivered to the appropriate facilities. Most household recyclable materials go to the Slater Road Lautenbach Recycle Park. Commercial recyclable collection is provided directly to businesses by the private recycling collectors in an unregulated system. Recycling collectors include waste haulers, buyback centers, private collection firms, and small *mosquito fleet* operators, often consisting of a single pickup truck and driver. Other recycling services are also available to the public and are described in more detail in Section 4.1.

1.2.3 Organic Materials Management

Curbside and self-haul organic materials (yard and food waste) are collected and delivered to Green Earth Technology Composting Facility. Materials are processed on site. More detail is described in Section 5.1.2.

1.2.4 Solid Waste Collection

Solid waste in the County is collected primarily by three private service providers, covering distinct service areas in the County and regulated by the WUTC: Sanitary Service Company (SSC), Nooksack Valley Disposal (NVD), and Cando Recycling and Disposal (Cando). The easternmost portion of the County is served by the Skagit County waste hauler, currently Waste Management, and managed in the Skagit County system.

All cities in the County use traditional bag or customer-owned, 32-gallon can residential collection systems, or collector provided containers or totes. Customers of SSC and NVD also have the option of using collection-company-owned wheeled carts. Residential recycling is collected on a weekly basis in Bellingham and biweekly elsewhere in the County. Organic materials (yard waste and food waste) are picked up on a biweekly basis throughout the year. Commercial recycling collection frequency and services vary based on customer need. More detail is provided in Section 6.1.

1.2.5 Transfer and Disposal

Curbside waste, recycling, and organic materials collected by the private haulers are transported to one of three privately operated transfer stations that also receive waste from public self-haulers. Municipal solid waste (MSW) is consolidated into transfer trucks or railcars for landfill disposal outside the County. The three transfer stations include:

- Recycling and Disposal Services (RDS) Transfer Station
- Republic Services (Republic) Transfer Station
- Cando/Point Roberts Transfer Station.

MSW collected by Waste Management from the communities Diablo and Newhalem (eastern Whatcom County) is transported to the Skagit County Recycling and Transfer Station and ultimately disposed of at the Roosevelt Landfill in Roosevelt, Washington.

The County system also includes four drop box facilities and recycling centers available to public self-haulers:

- NVD Drop Box Facility & Recycling Center
- SSC Roeder Avenue Drop Box Facility & Recycling Center
- SSC Birch Bay-Lynden Drop Box Facility & Recycling Center
- SSC Cedarville Drop Box Facility & Recycling Center

Waste collected in these drop boxes is hauled to the transfer stations in the County.

Waste for disposal is transferred by truck or rail to the Columbia Ridge Landfill in Arlington, Oregon (by RDS); the Roosevelt Landfill in Roosevelt, Washington (by Republic); or the Cowlitz County Headquarters Landfill (by Cando). While there are no active public landfills, there are five closed County landfills maintained under permit in postclosure status in the County. Other closed landfills, such as the Y Road landfills, are regulated as Model Toxics Control Act (MTCA) sites (see Section 7.1.3).

Other system facilities include the City of Bellingham Vactor Waste Transfer Station, the Whatcom County MRW facility (Disposal of Toxics Program), and a variety of private recycling and reuse services.

More detail is provided in Section 7.1. A list of public and private solid waste handling facilities is provided in Appendix A.

1.2.6 Miscellaneous Waste

Miscellaneous wastes are materials that require special or separate handling because of their unique characteristics, such as bulk, water content, or dangerous constituents. Miscellaneous wastes include

agricultural waste, contaminated soils, vactor waste, tires, and construction and demolition (C/D) waste, to name a few. Miscellaneous waste is handled through material-specific programs. Details on these programs are provided in Section 8.1.

1.3 Participating Jurisdictions

Pursuant to interlocal agreements, the CSHWMP defines the solid waste management policy of the County and all incorporated cities in the County, including Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, and Sumas. These jurisdictions have worked with the County to plan for solid-waste-related needs since the 1970s and originally entered into formal interlocal agreements regarding solid waste management in 1989. The agreements have been amended over the years. Current interlocal agreements were reviewed as part of the planning process and are consistent with the CSHWMP. These agreements are presented in Appendix B. Each participating jurisdiction, as represented by the Solid Waste Executive Committee (SWEC) through interlocal agreement, adopted this revision to the CSHWMP prior to its approval by Ecology.

The 2022-2027 CSHWMP encompasses both the incorporated and unincorporated areas of the County. The privately-owned and operated solid waste facilities also serve the members of the Lummi Nation and Nooksack Tribe, which are federally recognized tribes, and as such, their reservations and tribal governments have sovereign status. In the absence of an agreement stating otherwise, Washington State solid waste regulations do not generally apply on tribal lands and the tribal governments manage their own solid waste. The County invited the Lummi Nation and Nooksack Tribe to participate in the plan update process by providing them with a draft of the 2022-2027 CSHWMP to review and provide comments. In addition, the eastern portion of the County (including Newhalem and Diablo) is serviced by the Skagit County waste hauler, Waste Management.

1.4 Required Contents

RCW 70A.205.045 mandates the required contents for solid waste management plans in Washington State, including:

- A detailed inventory and description of all existing solid waste handling facilities, including an inventory of any deficiencies in meeting current solid waste handling needs.
- The estimated long-range needs for solid waste handling facilities projected 20 years into the future.
- A program for the orderly development of solid waste handling facilities in a manner consistent with the plans for the entire county that shall:
  - Meet the minimum functional standards (MFS) for solid waste handling adopted by the County and all laws and regulations relating to air and water pollution, fire prevention, flood control, and protection of public health
  - Consider the comprehensive land use plan of each jurisdiction

  - Contain a six-year construction and capital acquisition program for solid waste handling facilities
  - Contain a plan for financing both capital costs and operational expenditures of the proposed solid waste management system
- A program for surveillance and control.
- A current inventory and description of solid waste collection needs and operations in each respective jurisdiction that shall include:
  - Any certificate for solid waste collection granted by the WUTC in the respective jurisdictions
  - Any city solid waste operation in the county and the boundaries of such operation
  - The population density of each area serviced by a city operation or by a certificated operation in the respective jurisdictions
  - The projected solid waste collection needs for the respective jurisdictions for the next six years
- A comprehensive waste reduction and recycling element that, in accordance with the priorities established in RCW 70A.205.005, provides programs that reduce waste, provides incentives and mechanisms for source separation, and establishes recycling opportunities for the source-separated waste. RCW 70A.205.045(6) and (7) list detailed program and strategy requirements.
- An assessment of the CSHWMP's impact on the costs of solid waste collection. The assessment must conform to guidelines established by the WUTC.
- A review of potential areas that meet the solid waste disposal facility siting criteria outlined in RCW 70A.205.110.
- A Contamination Reduction and Outreach Plan (CROP) outlined in RCW 70A.205.045(10) (Appendix C).

A compliance checklist has been provided that clearly articulates requirements specified by state code and illustrates how the revised CSHWMP formally achieves each standard on a case-by-case basis (Appendix D). The compliance checklist cites each regulatory requirement and the section in the CSHWMP report that satisfies each criterion.

Planning specific to hazardous waste management, as required by RCW 70A.300, is presented in Section 10.

1.5 Relationship to Other Plans

The 2022-2027 CSHWMP is an update of the 2016 CSHWMP that was compiled from the 1999 (Whatcom County, 1999) and 2008 (Whatcom County, 2008) Comprehensive Solid Waste Management Plans and the 1991 Hazardous Waste Management Plan (Whatcom County, 1991). The previous documents provide a useful baseline for the 2022 planning process, but in many cases do not reflect the County's current practices and administrative structure.

In addition, this 2022-2027 CSHWMP builds on the foundation of the County's comprehensive plan that provides framework for growth in the County over the 20-year planning horizon in accordance with the Growth Management Act (RCW 36.70A). The 2016 Comprehensive Plan (Whatcom County, 2016) is the current, adopted County plan. To ensure consistency between plans, the CSHWMP has been developed using the latest demographic data for population and employment projections provided by County Planning and Development Services. These demographic figures have received preliminary approval from the County Council through Ordinance 2014-013 and represent the best data available. Further, this 2022-2027 CSHWMP complies with the land use policies set forth in the 2016 Comprehensive Plan.

In addition, the following plans provided a foundation for development of this 2022-2027 CSHWMP and were reviewed for consistency:

- Whatcom County Code (WCC), Title 20—Zoning (updated December 2020)
- Whatcom County Comprehensive Emergency Management Plan (updated March 2017)
- Whatcom County Climate Action Plan (2021)
- Whatcom County Disaster Debris Management Plan (2017)
- Washington State Growth Management Act, RCW 36.70A
- Washington State Office of Financial Management (OFM) County Growth Management Population Projections by Age and Sex: 2010–2040
- Ecology 2021 State Solid and Hazardous Waste Plan - Moving Washington Beyond Waste and Toxics (Beyond Waste Plan)
- Skagit County Solid Waste Management Plan (updated September 2017)
- Supporting comprehensive and land use plans for the jurisdictions of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, and Sumas.

1.6 The Solid Waste Advisory Committee and Solid Waste Executive Committee

The Solid Waste Advisory Committee (SWAC) provides ongoing public input and advice to the County on solid waste management issues and played a critical role in overseeing the creation of the CSHWMP.

The SWAC consists of 11 committee members: eight council-appointed members and three designees from the County and municipal jurisdictions. Members are appointed for three-year terms, with a two-term limit. Returning members are required to have a one-year separation between terms, and that position is filled by another individual for the entire term. The SWAC meets on a quarterly basis to discuss current solid waste issues. To facilitate the development of the CSHWMP, a SWAC subcommittee was formed to provide frequent direction to the planning team on an as-needed basis.

The SWAC includes the following members, with SWAC subcommittee members designated:

- County council representative
- City of Bellingham representative (SWAC subcommittee)
- Small cities representative
- Citizen representative I
- Citizen representative II
- Public interest group representative I (SWAC subcommittee)
- Public interest group representative II
- Business/Industry representative (SWAC subcommittee)
- Waste collection industry representative
- Waste recycling industry representative (SWAC subcommittee)
- Solid waste disposal facility representative
- Agricultural representative

The SWAC by-laws and meeting minutes documenting evidence of participation in the plan update are included as Appendix E.

The SWEC consists of the County executive and mayor of each city and was established in 1991 by interlocal agreement. SWEC meets at least annually as may be necessary to approve or amend the CSHWMP, review and approve budget proposals, flow control ordinance (FCO) revisions, and other solid waste system policy considerations.

1.7 Mission

The County's mission through implementation of the CSHWMP is to facilitate an economically efficient waste prevention, recycling, and disposal system that protects human health and the

environment. The County provides for appropriate and economical utilization of natural resources for the citizens of the County by managing a privatized solid waste system. The CSHWMP works to develop, monitor, educate and enforce various federal, state, and local government plans, laws, regulations, and grants.

The County achieves this mission through the following objectives in order of priority:

- Where possible, reduce or prevent the generation of solid waste and MRW and their associated issues through service-oriented, cost-effective actions in which prevention or reduction will protect human health, safety, and environmental quality.
- Solve issues related to solid waste and MRW through service-oriented actions that protect human health and safety and environmental quality.
- Maintain a balance with the privatized solid waste system while ensuring that user needs are satisfied.
- Provide necessary support for the preceding goals, using service-oriented, cost-effective actions.

1.8 Process of Updating the CSHWMP

The CSHWMP was developed by the County through direct input from staff, the public, SWAC, SWEC, WUTC, Ecology, and industry stakeholders.

1.8.1 Development of the CSHWMP

The preparation of the 2022-2027 CSHWMP began in October 2020. At the start of plan development, background information available in the previous CSHWMP was reviewed with a subcommittee made up of SWAC members, and informational interviews with County staff and service providers were conducted as needed to verify the description of the overall County solid waste system. This description was used as the basis for the data-gathering analysis and reporting process for the CSHWMP update. An updated description of the current solid waste system was prepared so that all members of the SWAC had an accurate basis for evaluating the path forward.

An evaluation of the system's past performance was conducted using data from Ecology's annual waste disposal and recycling summary for the County. Data from the past ten years were compiled and analyzed to understand total tonnage of waste recycled, diverted, and disposed of, as well as the breakdown by type of the County's recycled and diverted materials. This analysis resulted in a detailed understanding of the historical waste profile critical to understanding the value of specific waste management programs.

A demographic analysis was conducted to understand historical population trends. Future population projections were also considered, and the anticipated growth rate was applied to estimate future waste

disposal and recycling trends. When considered with the waste generation information, changes in individual waste generation and recycling habits could then be analyzed.

An updated understanding of the current system was developed with support from the SWAC subcommittee. County staff worked with the SWAC subcommittee and consultant team to identify 27 goals in these primary areas to address the needs identified through the planning effort. Seventy-six supporting actions were developed by the County and its partners, providing a road map for strategic implementation of each goal.

1.8.2 Implementation Schedule

The implementation schedule described in Section 11 was developed to assist the County in the systematic achievement of each goal defined in the 2022-2027 CSHWMP through specific, measurable actions. Each of these actions is described in detail in the corresponding sections. Actions were prioritized over the six-year planning horizon, from year 2022 through 2027. The implementation plan is designed to assist the County with decision-making associated with new or expanded programming, as funding becomes available.

1.8.3 Public Participation

The SWAC meets on a quarterly basis to provide public input and advice to the County on a variety of solid waste management issues. To assist with the development of the 2022-2027 CSHWMP, the County SWAC formed a subcommittee of members who agreed to meet on a more frequent basis to facilitate the rapid development and evaluation of information and strategy. The subcommittee met every two to four weeks, between November 2020 and June 2021, and went through a process of evaluating the existing system, identifying needs, setting goals, and determining future action items. The progress of the plan development was reviewed with the SWAC during their regular quarterly meetings, with ultimate approval of all recommendations coming from the full SWAC. All draft sections and subsequent revisions of the 2022-2027 CSHWMP have been reviewed by the SWAC.

SWAC meetings were open to the public and provided opportunities for public input. Planning materials and periodic updates were posted on the County's solid waste website to ensure inclusivity in the process. The draft 2022-2027 CSHWMP was presented to the full SWAC and then released for a 60-day public review and comment period beginning in March 2022. After revision to incorporate public and Ecology comments, and SWEC review and approval, the 2022-2027 CSHWMP was submitted to Ecology for approval, after which the council formally adopted the plan. The final resolution for adoption and accompanying interlocal agreements are included in Appendix B, and copies of SWAC and SWEC meeting minutes recommending approval of the 2022-2027 CSHWMP are included in Appendix E.

1.8.4 Public Agency Review

A State Environmental Policy Act (SEPA) checklist was prepared in conjunction with the 2022-2027 CSHWMP update. The submittals and meetings required for SEPA checklist review and approval were timed to facilitate the incorporation of the SEPA checklist (Appendix F) into the final revision of the 2022-2027 CSHWMP submitted to Ecology.

The WUTC reviewed the draft 2022-2027 CSHWMP, as well as the WUTC Cost Assessment Questionnaire (Appendix G), during the approval process. The WUTC regulates solid waste companies and reviews solid waste plans to evaluate probable financial impacts to ratepayers. More information regarding their authority is provided in Section 9.1.1. The WUTC issued a letter dated March 24, 2022, indicating it had no comments on the revised 2022-2027 CSHWMP (Appendix G).

The draft 2022-2027 CSHWMP was also reviewed by all participating local jurisdictions represented in the CSHWMP. The County Health Department revised the 2022-2027 CSHWMP to address comments received from all parties, including a 60-day public comment period. The revised draft was submitted to Ecology for its 120-day review and comment. A summary of the County's response to Ecology's comments is included as Appendix H. Once the County incorporated Ecology's comments, the final 2022-2027 CSHWMP was submitted to Ecology for final approval. The County then carried out the local adoption process, including revisiting interlocal agreements with participating municipalities to ensure accordance with the terms, Public Works and Health Committee review, and County Council adoption. Implementation of the 2022-2027 CSHWMP began following local adoption.

1.8.5 Plan Amendments and Revisions

A comprehensive update of the plan is completed every five years through the above process consistent with RCW 70A.205.075. Outside of the five-year update, plans can be modified in two ways – revisions or amendments. Minor adjustments to the plan within the five-year planning window may be necessary to keep the plan up to date and ensure permits can be properly issued, grant funding can be secured, and the appropriate commodities collected for recycling. Amendments do not alter the five-year planning cycle and are generally appropriate for changes that do not require a WUTC cost assessment review and are inside the five-year planning window. CSHWMP amendments usually consist of the following:

- Changing the designated recyclables list (only if separate process is not defined in the plan).
- Adjusting implementation schedules
- Changing the priority of alternative strategies and/or projects.
- Making changes to levels of service that do not significantly affect the cost to collect and dispose solid waste.

- Updating the priorities of the plan based on the results of a previously pending feasibility study.
- Major residential or commercial development or the emergence of a new major industry.

If a plan amendment is necessary, the County will start the process outlined below:

1. Receive a written petition from an individual or organization to amend the plan.
2. Investigate the basis for the petition and
3. Produce a red-lined version of the plan, incorporating any changes noted in the petition.
4. Provide the red-lined version to SWAC for review and approval. The SWAC meeting may also serve as the public comment period.
5. Incorporate any relevant comments from the public and/or SWAC to the red-lined version.
6. If substantial changes were made due to public or SWAC comment, provide the updated red-lined version to SWAC for review and approval.
7. Present SWAC-approved red-lined version of the plan to SWEC for review and approval.
8. Present SWAC and SWEC-approved red-lined version to County Council for review and approval.
9. Present County-approved red-lined version to the Department of Ecology for review, and sharing with relevant state agencies.

CSHWMP revisions are generally defined as any change to the solid waste plan outside the five-year period and any change that requires a new or revised WUTC cost assessment. If a plan revision is necessary, the County will start the process outlined in the Ecology guidance document in coordination with the Ecology regional planner.

1.9 Organization of the CSHWMP

This CSHWMP provides an overview of existing conditions, needs, and opportunities, as well as defining system-wide solid waste management goals. Action items supporting each of these goals are embedded in the goals' corresponding section.

The format of this 2022-2027 CSHWMP was drafted to correspond with the CSHWMP Organization Table provided in the Ecology Guidelines for Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions (Publication No. 10-07-005, Ecology 2010). However, the CSHWMP outline was modified following discussion with Ecology staff to meet the unique needs of the County, which operates as an administrative and educational agency overseeing a privatized solid

waste system. The resulting plan framework focuses on system-wide goals and actions for implementing new programs and services, rather than evaluating alternatives for future specific facility or infrastructure improvements that will be determined by the private waste collection and disposal providers.

This 2022-2027 CSHWMP includes eleven subsequent sections relating to:

- Section 2: Planning Area
- Section 3: Waste Reduction and Public Education
- Section 4: Recycling
- Section 5: Organics
- Section 6: Waste Collection
- Section 7: Transfer and Disposal
- Section 8: Special Waste
- Section 9: Administration and Enforcement
- Section 10: Hazardous Waste Management
- Section 11: Implementation

2 PLANNING AREA

2.1 Description of the Planning Area

First and foremost, we must acknowledge that what settlers called Whatcom County is the ancestral homelands of the Coast Salish Peoples, who have lived in the Salish Sea Basin, throughout the San Juan Islands and the North Cascade Watershed, from time immemorial. We, the Whatcom County Health Department and Solid Waste Advisory Committee, as well as all residents in Whatcom County, extend our deepest respect and gratitude for our indigenous neighbors, the Lummi Nation and Nooksack Tribe, for their enduring care and protection of our shared lands and waterways.

Whatcom County is the northernmost county in western Washington. The County, depicted in Figure 2-1, covers an area of 2,182 square miles and extends from the Strait of Georgia eastward, its western boundary, to the crest of the Cascade Mountain Range. The County is bounded on the north by Canada, by Okanogan County to the east, and by Skagit County to the south. Nearly two-thirds of the County's total land area lies in the mountainous region of the Mt. Baker National Forest, with most of the population residing in the western portion of the County. The solid waste management planning area encompasses the entire County, including the incorporated municipalities of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, and Sumas, but excepting tribal lands. Figure 2-2 shows this area in greater detail, including city limits, urban growth areas, and tribal lands.

2.1.1 Natural Environment

TOPOGRAPHY

Northwestern Whatcom County is relatively flat terrain, with elevations ranging from sea level to a few hundred feet above mean sea level. Rolling hills characterize the bottom southwestern portion of the County. The eastern portion of the County is typically mountainous. Mt. Baker, the most notable landmark of the North Cascade Range, has an elevation of 10,781 feet (USGS, 2015).

CLIMATE

The County's position between western ocean salt water and eastern mountains gives it a maritime climate. Winters are generally moist, with temperatures dropping into the 30 degrees Fahrenheit range; summers are generally dry, with temperatures in the 70 degrees Fahrenheit range. Precipitation falls mostly as rain in the lowlands and snow in the mountains and varies from 30 inches per year near Puget Sound to as much as 200 inches in the Cascades.

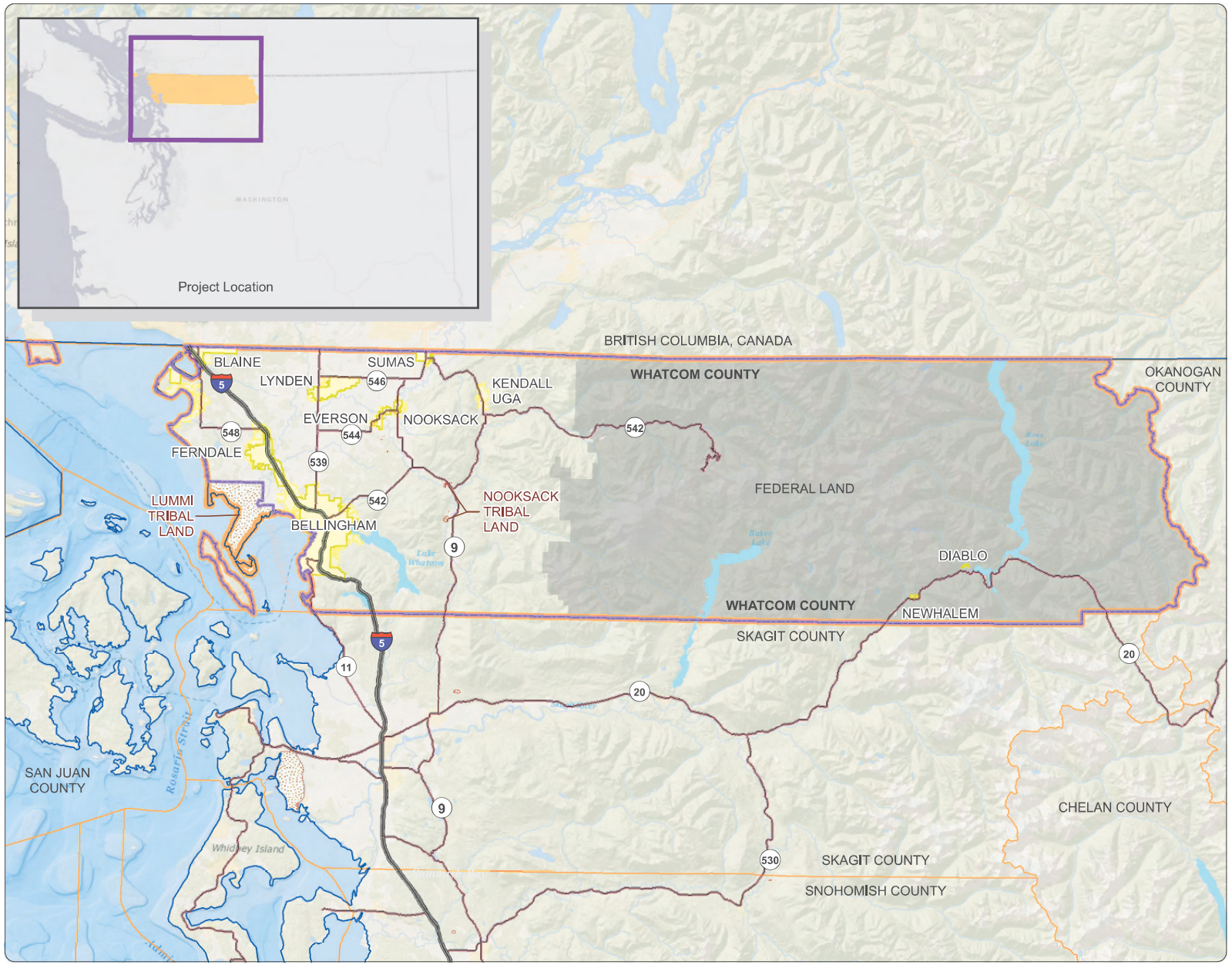
HYDROLOGY

Three main river systems, the Nooksack, Sumas, and Skagit, help to drain the lowlands, foothills, and western mountains. The largest body of water in the western part of the County is Lake Whatcom (4,924 acres) and is the main source of drinking water for Bellingham. Other sizable lakes include Lake Samish (809 acres), Lake Terrell (321 acres), Silver Lake (157 acres), Lake Padden (147 acres), and Wiser Lake (116 acres) (WDFW, 2015).

Comprehensive Solid and Hazardous Waste Management Plan Update

Figure 2-1
Base Map

Whatcom County
Washington



Legend

- Planning Area
- City Boundary
- Urban Growth Area
- County Boundary
- Washington Boundary
- Federal Land
- Tribal Lands

0 4,5 9
Miles

Source: Modeled terrain from Esri ArcGIS Online City Boundary, County Boundary, Federal Lands, Railroad, & Roads from Whatcom County.

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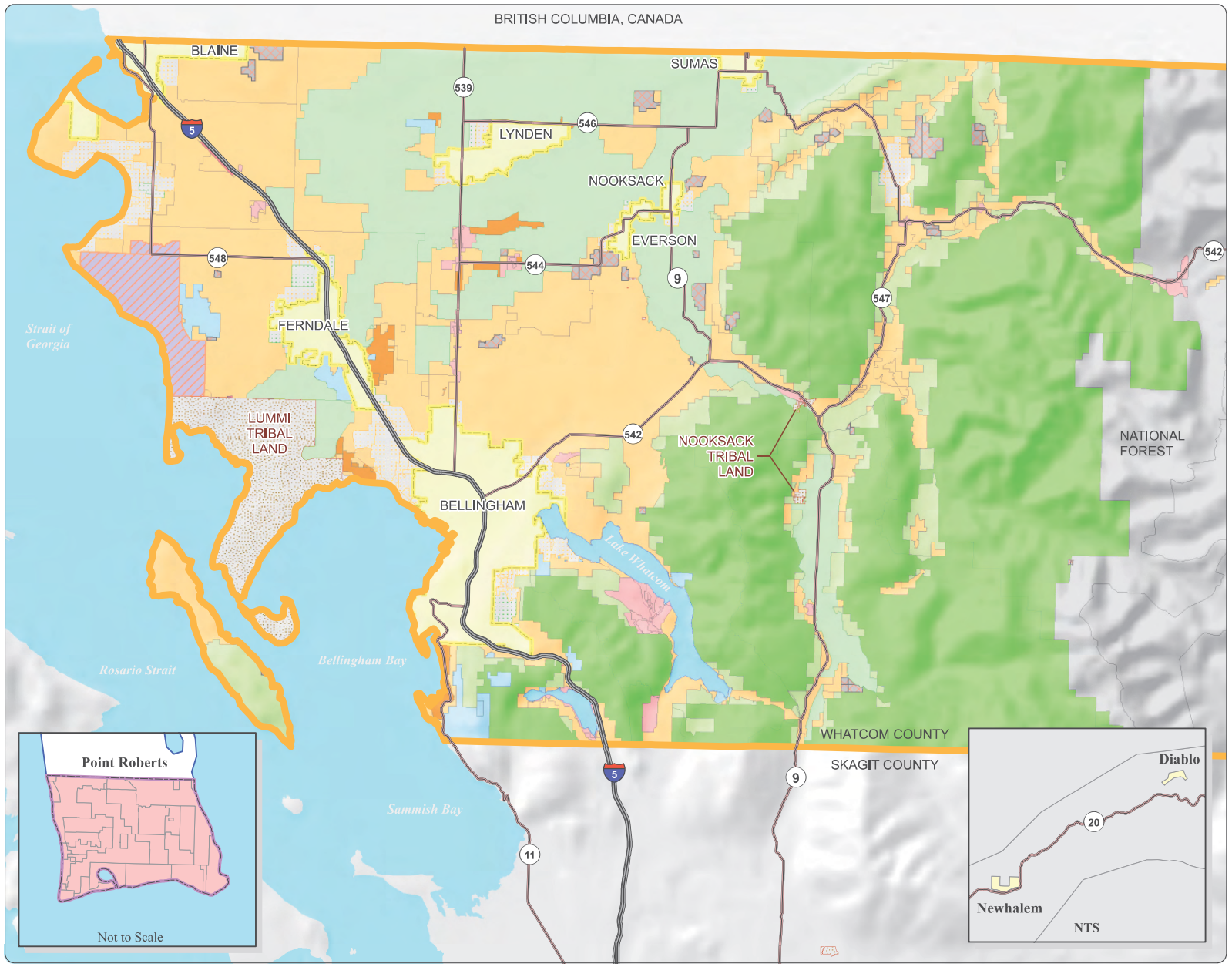

Comprehensive Solid and Hazardous Waste Management Plan Update

Figure 2-2
Land Uses Map

Whatcom County
Washington

Legend

- County Boundary

Comprehensive Plan Designation

Urban Designations

- Incorporated City Limits
- Small Town
- Urban Growth Area
- Urban Growth Area Reserve

Rural Designations

- Agriculture
- Commercial Forestry
- Federal Land
- Major/Port Industrial UGA
- Mineral Resource Lands
- Public Recreation
- Rural Forestry
- Rural
- Rural Business
- Rural Community
- Rural Neighborhood
- Rural Tourism

Note:
Urban and rural designations are consistent with Revised Code of Washington 70.95.090(7)(b).

0 9,000 18,000
Feet

Source: City Boundary, National Forest Area, Planning Area Designations, Waterbodies, Zoning Designations from Whatcom County.

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Print Date: 3/2/2016
Reviewed By: ktmo
Produced By: stamer
Project: 0744.02

Because of the County's hydrological features, the area available for the development of any future solid waste disposal landfill sites has proven to be extremely limited. Therefore, all solid waste generated in the County is transported to permitted sites outside the County.

SOILS AND GEOLOGY

There are a wide variety of soil types in the lowland portions of the County including sandstone, shales, conglomerates, and coal, all of which are underlain by sedimentary bedrock. The lowland consists of alluvial bottomlands, broad fluvial and glacial terraces, and several large moraines of bedded glacial till clays and gravels. The low permeability cemented hardpan or clay soils provide protection of the underlying groundwater but can also create constraints associated with construction of solid waste disposal facilities. A very compact or firmly cemented and comparatively impervious hardpan could result in a perched water table and make excavation difficult.

From a solid waste management standpoint, the area's most important physical feature is the alluvial plain of the Nooksack River that extends more than 20 miles inland and is a center for population and economic activity. The terrain is relatively flat, with a few low, poorly drained sections of lakes and marshes. The Nooksack River meanders slightly above sea level and periodically floods areas between Lynden and Ferndale. Just east of the alluvial plain, the north, middle, and south forks of the Nooksack River have formed narrow valleys as they flow out of the Cascade foothills.

In southwestern Whatcom County, glaciers of the Pleistocene epoch (about 10,000 to 15,000 years ago) carried uplifted and eroded rocks to the sea, forming Lake Whatcom and Lake Samish, and affecting the Chuckanut Mountain Range. The southern edge of Bellingham is situated on the lower, primarily sandstone slopes of the Chuckanut Mountains. Potential land disposal sites can be found in the unconsolidated deposits of the lowland portion of the County. These deposits consist of two distinct types, characterized by whether they were formed by glaciers or water movement.

Glacial movement formed marine and till deposits around King Mountain, Lummi Peninsula, the northern half of Lummi Island, Mountain View, Birch Point, and Point Roberts. Glacial deposits are essentially an impervious, blue-gray, compacted mixture of clay, silt, sand, and gravel up to 50 feet thick.

Deposits from water movement associated with glacial outwash and recent alluvium also contain clay, sand, silt, and gravel, but are not as impervious as the more compact glacial deposits. Such sedimentary deposits are located along the Nooksack lowland, Custer Trough, Lynden Terrace, and Sumas Trough.

The detailed soils maps produced by the Natural Resources Conservation Service and the U.S. Geological Survey should be consulted for site-specific information.

2.1.2 County Demographics

POPULATION

Waste generation, recycling, and disposal rates of an area are a function of the County's population and projected growth. In 2020, the OFM[2] estimated the total county population as 228,000. The population of the incorporated areas was 132,700, while the population of unincorporated areas was 95,300. The U.S. Census defines urban areas as census-designated places that contain 2,500 residents or more. By this definition, 94.3 percent of the total county population resided in urban areas according to the 2010 U.S. Census, the last available Census data. This same breakdown between urban and rural areas was applied to the OFM population estimates to determine the 2017 and 2020 unincorporated urban and rural populations.

Table 2-1 provides a more detailed breakdown of different areas in the County from the federal census data.

Table 2-1
Whatcom County Population

Place	2010[(a)]	2017[(b)(c)]	2020 [(b)(c)]
Urban Areas			
Bellingham	80,885	86,720	91,610
Blaine	4,684	5,075	5,520
Ferndale	11,415	13,470	14,600
Lynden	11,951	13,620	14,800
Unincorporated Urban	80,740	85,086	88,474
Urban Subtotal	**189,675**	**203,971**	**215,004**
Rural Areas			
Everson	2,483	2,630	2,860
Nooksack	1,338	1,490	1,645
Sumas	1,319	1,571	1,665
Unincorporated Rural	6,325	6,638	6,826
Rural Subtotal	**11,465**	**12,329**	**12,996**
Total Population	**201,140**	**216,300**	**228,000**

NOTES:
OFM = Washington State Office of Financial Management
[(a)]Data for 2010 was provided by the U.S. Census Bureau.
[(b)]The breakdown of population estimated for each jurisdiction in 2017 and 2020 was calculated by assuming the same population share for each jurisdiction in 2010.
[(c)]Total population for 2017 and 2020 is projected data prepared by OFM.

[2] At the time of this document preparation, the 2020 United States Census was projected to be released in September 2021.

Between 2010 and 2020, the average annual growth rate of County population was 1.34 percent.

EMPLOYMENT

The U.S. Census 2017 American Community Survey (U.S. Census, 2017) reports that approximately 111,592 individuals above the age of 16 are employed in the County. The 2019 employment rate, the most recent data available is approximately 62.3 percent. This employment rate is comparable to the future statewide employment rates projected by OFM.

To support the ongoing comprehensive planning update effort, the County conducted analysis of employment in the County. The study uses County population and statewide employment forecasts, provided by OFM, to estimate an annual employment growth rate of approximately 1.1 percent through 2036. Overall, 64 percent of employment growth is expected to occur in the City of Bellingham Urban Growth Area, with additional growth occurring in the cities of Ferndale and Lynden (6.6 percent and 6.1 percent, respectively). The major growth sectors for the County are commercial (59 percent of total anticipated growth), industrial (26 percent), and retail (15 percent) (BERK, 2013).

Table 2-2 illustrates historical employment rates in the County compared to Washington State.

Table 2-2
Employment Rates

Date	Whatcom County	Washington State
Historical Estimates		
1990	50.6%	49.4%
2000	50.1%	49.2%
2010	48.0%	47.1%
Projections		
2020	--	46.6%
2030	--	44.8%
2040	--	44.4%

NOTES:
-- = No data available
OFM = Washington State Office of Financial Management
BERK, Whatcom County Population and Employment Projections and Urban Growth Area Allocations, 2013. (References: OFM Long-term Forecast of the Washington Labor Force, March 2012–2013, Employment Security Department Local Employment Statistics.)

Employment opportunities in the County are diversified; however, health care and social assistance, retail trade, manufacturing, and education services provide the largest shares of employment. Table 2-3 provides more detail on the County's most substantial industry sectors.

Table 2-3
Whatcom County Employment Sectors, 2017

Industry	Number of Employees	Percent of Employed Population
Educational services, health care, and social assistance	25,543	22.9%
Retail trade	12,813	11.5%
Manufacturing	11,958	10.7%
Arts, entertainment, recreation, and accommodation and food services	11,471	10.3%
Professional, scientific, management, and administrative and waste management services	8,797	7.9%
Construction	8,811	7.9%
Other services	6,178	5.5%
Public administration	5,952	5.3%
Financing, insurance, and real estate	4,790	4.3%
Transportation, warehousing, and utilities	4,686	4.2%
Wholesale trade	4,244	3.8%
Information	3,347	3%
Agriculture, forestry, fishing, hunting, and mining	3,002	2.7%

NOTES:
Percent of employed population is based on laborers per industry and total labor population 16 years and older (111,592)
2017, U.S. Census American community survey 5-year estimates.

2.1.3 Land Use

The County covers approximately 2,152 square miles, with the majority (nearly three-quarters) of nonfederal land use distribution in the unincorporated portion of the County dedicated to forestry and agriculture. Residential lands make up approximately 11 percent of the County's unincorporated areas.

The Washington State Growth Management Act requires that counties designate urban growth areas based on the 20-year population projections developed by OFM. By definition, these areas must contain enough space and density to accommodate the projected growth. Counties then allocate data-gathering tasks for more specific forecasts that are essential for planning by cities, towns, and rural areas. the County's process involves all jurisdictions and the County's Planning Department.

The Whatcom County Comprehensive Plan most recently updated in 2016, sets policies for land use, community services, transportation, and environmental management.

2.2 History of the Whatcom County Solid Waste System

The 2022-2027 CSHWMP represents the seventh iteration of the plan. Each planning period represents a chapter in the history of solid waste management in the County, and each has contributed to where we are today.

Until the early 1970s, the County was involved in relatively unsophisticated solid waste disposal, the management of four dumps: Birch Bay-Lynden, Cedarville, Point Roberts, and Y Road. In addition, two incinerators were privately operated by Recomp of Washington, Inc., and Olivine Corporation (the last incinerator, operated by Recomp of Washington, Inc., ceased operation prior to 1996). In the early 1970s, the County acquired minimal solid waste management planning responsibilities because of new state law and produced its first plan in 1974. The CSHWMP was developed in conjunction with the cities and towns in the County and recognized that open dumps were no longer an acceptable solid waste disposal method, and that public health and environmental concerns warranted a more rigorous approach. This is when the new solid waste system was formed, and the County set up a separate solid waste management division in its Department of Public Works. At that time, state grants helped finance capital costs, while disposal or tipping fees financed operational costs.

In the early 1980s, the County began closing its dumps to all MSW, and three of the four accepted only C/D materials until the late 1980s. During the late 1980s, the County relied on private disposal companies and Cedarville Landfill to provide for the County's waste disposal needs. The County also began environmental compliance at the closed landfill sites and developed the second iteration of the CSHWMP.

The 1980s saw the County expand its solid waste management activities to include more than disposal, at least partially because of increased state and federal requirements. During this period, the County closed most of its existing dumps, compared the feasibility of waste export to finding a site for a new landfill, and began the development of the third iteration of the CSHWMP. Most importantly, from a functional viewpoint, the County designed and implemented its initial recycling and MRW programs. Trends in federal and state environmental regulation had increased the emphasis on multimedia approaches to environmental problems. Activities such as solid waste management were seen as capable of contributing to the resolution of problems such as resource depletion and air and water pollution. For the first time, the County formally acknowledged that its waste responsibilities extended beyond solid waste and beyond disposal-related activities. One component of this acknowledgment was the adoption, in the 1990 plan, of a 41 percent recycling goal by 1994.

Since the 1990 CSHWMP was adopted, the County made the decision to abandon efforts to site a County-owned landfill and expanded the recycling and MRW programs into the area of waste and pollution prevention, with an increased emphasis on recycling and MRW-related activities. In addition, environmental compliance responsibilities increased because of additional mandates and closure of the Cedarville Landfill. Since this time, the private sector has played an increasing role in the County's solid waste system, providing not only for disposal, but also for handling of solid waste. While the

County owns the MRW facility (Disposal of Toxics Program), the operation of the facility is contracted out.

Since 1999, each iteration of the CSHWMP has stressed the importance of diverting waste from landfill disposal through reducing, reusing, recycling, and composting. The primary roles of the County in the current system revolve around in-house waste prevention, public education and outreach, in-house recycling, MRW disposal, monitoring and compliance at closed landfills, enforcement, and administration.

2.3 Quantity and Characterization of Solid Waste

This section identifies and characterizes the County's waste stream that provides the information necessary for evaluation of existing programs, development of new strategies, and implementation of new or revised planning measures.

2.3.1 Solid Waste Definitions

The following definitions describe general categories of waste discussed throughout this CSHWMP. A more comprehensive glossary of definitions is provided immediately following the main body of this document.

Diversion: Any method of recycling, energy production, or beneficial use that prevents disposition of material in landfills or incinerators. The changes to Ecology's quantification of solid waste also replaced the term "diversion" with "recovery".

Industrial Waste: Industrial waste includes by-products from manufacturing operations, food processing, and other industrial processes, such as scraps, trimmings, packaging, boiler ash, wood-product residuals, and other discarded materials not otherwise designated as a dangerous waste under WAC Chapter 173-303.

MSW: A subset of solid waste that includes unsegregated garbage, refuse, and similar solid waste material discarded from residential, commercial, institutional, and industrial sources and community activities, including residue left after recyclables have been separated.

Organic Material: Organic material refers to biodegradable, carbon-based materials that include green waste, food waste, and compostable paper and cardboard, and woodwaste. These materials make up a significant component of the County's solid waste stream as shown in Figure 2-5 Whatcom County Waste Stream Composition, 2015 Seasonal Study.

Solid Waste: All putrescible and nonputrescible solid and semisolid wastes, including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, C/D waste, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials.

Recovery: Materials that are burned for energy recovery, anaerobically digested, or land applied for agricultural purposes. To provide an accurate comparison between 2017 and previous years, this CSHWMP will continue to use the prior definition of diversion.

Recycling: Transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. Recycling does not include collection, compacting, repackaging, and sorting for the purpose of transport. It is important to note that in 2017, Ecology updated the classification of recyclable materials more broadly to include C/D, asphalt and concrete, land clearing debris, antifreeze, and commercial/industrial and household batteries.

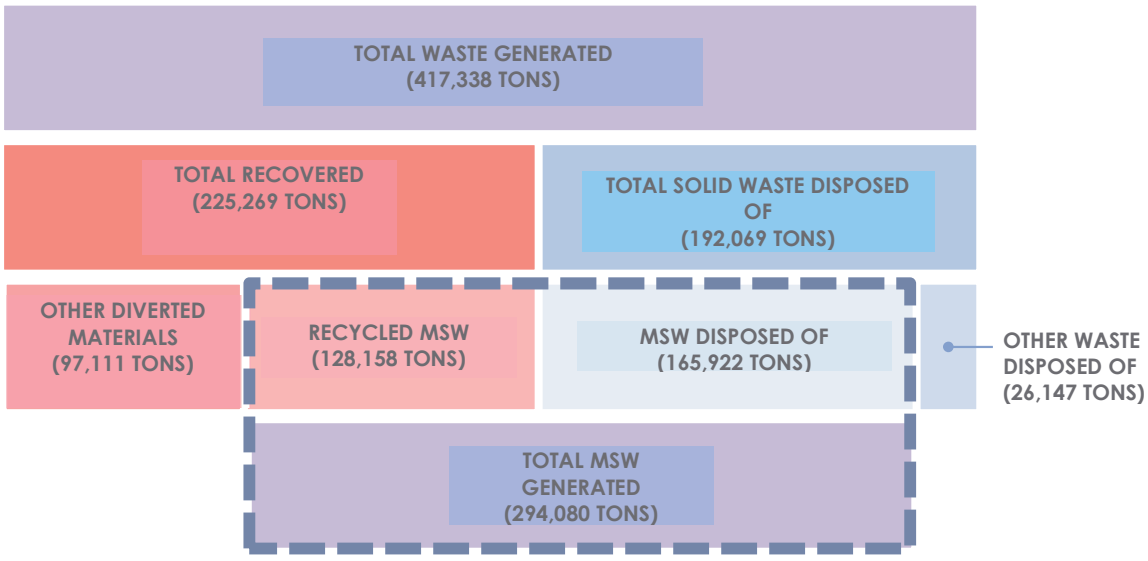
Waste Reduction: Sometimes referred to as *waste prevention* or *precycling*. Waste reduction is the practice of minimizing waste through responsible purchasing and consumerism, with a focus on the concepts of *reducing* and *reusing*. It is essentially, removing waste from the waste stream by not creating it in the first place. Waste reduction is typically achieved through better product or packaging design, by improved efficiency of use by the end user, and/or by process management.

2.3.2 Waste Generation

The discussion presented below is based mainly on data that were collected by Ecology and provided to the County[3]. A total of 417,338 tons of solid waste was generated in the County in 2017 (this is inclusive of recycled, recovered, MSW, and industrial and inert wastes).

An overall summary of waste generation is represented graphically in Figure 2-3 below.

Figure 2-3
Waste Generation Breakdown



[3] https://ecology.wa.gov/Research-Data/Data-resources/Solid-waste-recycling-data

2.3.3 Waste Disposal

Of the 417,338 tons of MSW generated in the County, including recycled and diverted material, 165,922 tons of MSW were transported to and disposed of at an MSW landfill as described below. The remaining nonrecoverable portion of the waste generated in the County was disposed of at the Spokane Regional Waste to Energy Facility in Spokane, Washington, BP Cherry Point Landfill in Blaine, Washington, and Graham Road Recycling and Disposal in Medical Lake, Washington. Additionally, Lautenbach Recycling disposes of C/D and recycling residuals (nonrecyclable material) from the Skagit County Transfer Station.

Of the 165,922 tons of MSW disposed of at MSW landfills, roughly 69 percent is disposed of at Columbia Ridge Landfill in Arlington, Oregon (by RDS) and 29 percent is disposed of at the Roosevelt Landfill in Roosevelt, Washington (by Republic). The remaining two percent of waste was disposed of at the Greater Wenatchee Regional Landfill in East Wenatchee, Washington, and the Headquarters Landfill in Cowlitz County (by Cando). A portion of the total MSW generated in the County is disposed of at the Spokane Regional Waste to Energy Facility in Spokane, Washington, and Graham Road Recycling and Disposal in Medical Lake, Washington. Additionally, Lautenbach Recycling disposes of C/D and recycling residuals (nonrecyclable material) from the Skagit County Transfer Station.

Table 2-4 illustrates the trends in waste disposal and recycling in the County since 2007.

Table 2-4
Waste Summary—Change Over Time, 2007–2017

Year	Tons MSW Landfilled	Annual Percent Change	Tons Recycled	Annual Percent Change in Tons Recycled
2007	156,043	--	132,007	--
2008	149,751	-4.0%	121,917	-7.6%
2009	138,623	-7.4%	92,358	-24.2%
2010	133,943	-3.4%	103,385	11.9%
2011	130,171	-2.8%	129,553	25.3%
2012	132,539	1.8%	120,215	-7.2%
2013	135,134	2.0%	114,055	-5.1%
2014	135,442	0.2%	117,628	3.1%
2015	142,862	5.5%	125,898	7.0%
2016	149,294	4.5%	129,252	2.7%
2017	165,922	11.1%	128,158	-0.8%

NOTE:
-- = No annual percent change in first year of data.
Ecology = Washington State Department of Ecology.
MSW = municipal solid waste.
Tons landfilled data for 2007–2017 are taken from annual Ecology records. Recycled tons are taken from annual Ecology Recycling Survey.

2.3.4 Population Projections

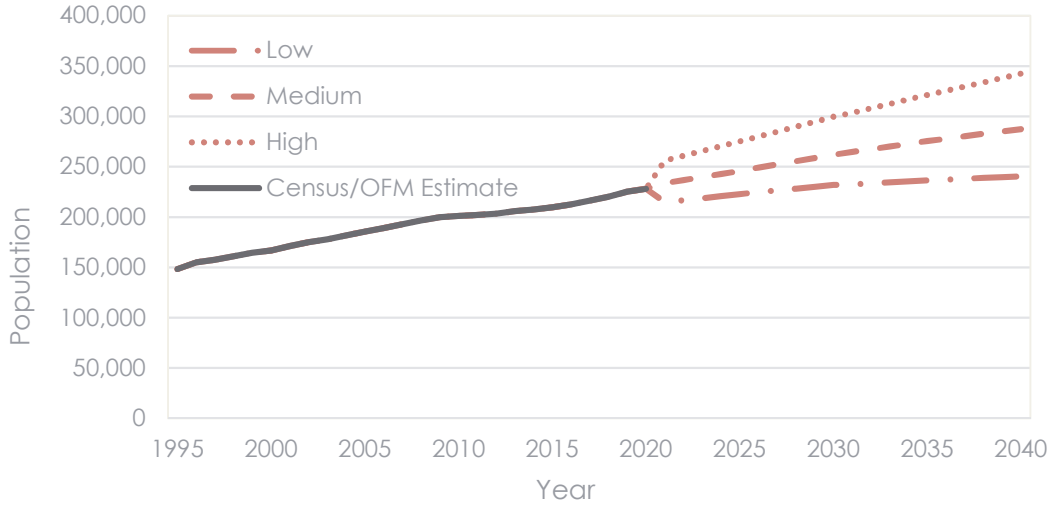
OFM's population estimates for 2017 are used as a basis for the discussion below (OFM, 2017). OFM provides population forecasts for each county in Washington State. OFM has prepared high-, medium-, and low-series population projections for Washington counties through 2040. RCW 43.62.035 provides that counties may, for purposes of growth management planning, use values between the high and low projections. As shown in Table 2-5, the medium series population projection predicts a County population of 287,369 in 2040. These populations would be attained with an average annual growth rate of approximately 1.2 percent over the planning period. The OFM low- and high-series projections have average annual growth rates of approximately 0.5 percent to 1.4 percent, respectively. Figure 2-4 below shows the low-, medium-, and high-series OFM population growth trajectory through 2040.

Table 2-5
OFM Population Projections

Year	Low Series	Medium Series	High Series
2020—estimated current		228,000	
2025	222,711	245,610	275,316
2030	231,842	261,996	299,625
2035	236,388	275,405	321,273
2040	240,495	287,369	342,477
Average annual percent growth	**0.5%**	**1.2%**	**1.4%**

NOTES:
OFM = Office of Financial Management.
All projections based on 2020 population estimate of 228,000 from OFM.

Figure 2-4
OFM Population Growth Trajectory for Whatcom County—Low, Medium, High



Continued increases in population and households likely will result in increased overall solid waste generation that will increase the need for continued emphasis on waste reduction and recycling.

2.3.5 Solid Waste Per Capita

With an estimated population of 216,300 in 2017 (OFM, 2017), the County's municipal disposal rate was 1,534 pounds per person per year, or 4.20 pounds per person per day. Table 2-6 summarizes the County's total waste and diversion rates per capita over the last ten years.

Table 2-6
MSW Summary—Total and Per Capita, 2007–2017

Year	Countywide	Total Recycling[a] (Tons Per Year)	Total Diversion[b] (Tons Per Year)	Total MSW Disposal (Tons Per Year)	Per Capita Waste Generation	Total Recycling (Pounds Per Year)	Total Diversion (Pounds Per Year)	Total MSW Disposal (Pounds Per Year)
2007		132,007	88,602	156,043		1,369	919	1,618
2008		121,917	28,232	149,751		1,240	287	1,523
2009		92,358	75,300	138,623		924	754	1,387
2010		103,385	88,194	133,943		1,028	877	1,332
2011		129,553	55,679	130,171		1,282	551	1,288
2012		120,215	88,347	132,539		1,181	868	1,303
2013		114,055	62,653	135,134		1,108	609	1,313
2014		117,628	41,205	135,442		1,133	397	1,305
2015		125,898	58,809	142,862		1,200	561	1,362
2016		129,252	71,932	149,294		1,216	677	1,405
2017		128,158	97,111	165,922		1,185	898	1,534

NOTES:
Ecology = Washington State Department of Ecology
MSW = municipal solid waste.
Tons landfilled data for 2007–2017 are taken from annual Ecology records. Recycled tons are taken from annual Ecology recycling survey.
[a]Recycling represents materials that are transformed or remanufactured into usable or marketable materials for use other than landfill disposal or incineration as described in Section 2.3.1. Recycling does not include collection, compaction, repackaging, and sorting for the purpose of transport.
[b]Diversion represents the materials that are removed from the waste stream for the purpose of energy production or other beneficial use, as described in Section 2.3.1. Total Diversion excludes materials that are recycled.

2.3.6 Disposed Municipal Solid Waste Stream Composition

In 2015–2016, Ecology conducted a four-season MSW characterization study that identified major waste stream compositions for specific counties in Washington State (Ecology, 2018). The study included wastes generated from four major sectors: commercial waste sector, residential waste sector, self-hauled C/D materials sector, and self-hauled other waste sector. Figure 2-5 below shows the percent of total waste disposed by weight for the County from all waste sectors averaged over the four seasons.

Figure 2-5
Whatcom County Waste Stream Composition
2015 Seasonal Study (All Seasons)*

*Ecology seasonal percentages of total waste disposed by weight, have been averaged among the four seasons.

The annual disposed waste stream composition for the County is nearly identical to the waste stream composition for Washington State as a whole.

2.3.7 Other Disposed Solid Waste

Table 2-7 shows the other major waste streams generated in the County in addition to MSW. Non-MSW waste streams tend to be highly variable on an annual basis because of largescale industrial maintenance activities, contaminated site remediation projects, structure demolition projects, and other non-routine activities.

Table 2-7
Total Tonnage of Waste Disposal, 2007–2017

Year	Municipal Waste	Industrial Waste	Contaminated Soil[a]	C/D Waste[b]	Asbestos-Containing Materials	Special Waste
2007	156,043	29,503	11,299	13,700	6,214	--
2008	149,751	3,447	10,901	19,612	1,004	--
2009	138,623	1,511	12,197	7,187	67	--
2010	133,943	4,109	16,408	2,938	236	--
2011	130,171	7,893	20,291	440	227	--
2012	132,539	13,380	8,062	5,034	115	105
2013	135,134	3,407	8,217	9,729	93	9,827
2014	135,442	2,785	14,014	11,540	81	11,083
2015	142,862	2,893	23,191	1,794	1,314	116,756
2016	149,294	2,879	33,342	4,325	346	89,194
2017	165,922	2,685	18,954	6,378	334	17,084
Percent of Total Waste Stream	**79%**	**1%**	**9%**	**3%**	**<1%**	**8%**

NOTES:
Total tonnage of waste disposal data for 2007–2017 are taken from Washington Department of Ecology's Disposal by County annual records.
-- = No data available.
C/D = construction and demolition.
Ecology = Washington State Department of Ecology
[a]Contaminated soil includes petroleum-contaminated soils, dredged materials, and other contaminated soil.
[b]C/D waste includes brick and masonry, concrete, C/D waste, soil, rock, gravel, uncontaminated soil, and woodwaste.

2.3.8 Diversion and Recycling Rates

Diverted waste is the prevention of landfill disposal of generated waste though source reduction, reuse, recycling, energy recovery, or composting. Recycled materials are the portion of diverted wastes that are transformed or remanufactured into usable or marketable materials.

The waste diversion rate for the County is calculated by dividing the tons recovered (recycled materials plus other diverted materials) by the total solid waste generated.[4] The waste diversion rate is different from the recycling rate in that all the waste generated in the County is considered, including industrial waste. The typical diversion rate for the County is above 50 percent. Over the most recent five-year period (2013 to 2017) the diversion rate was generally above 50 percent, though two years dipped to as low as 41 percent.[5]

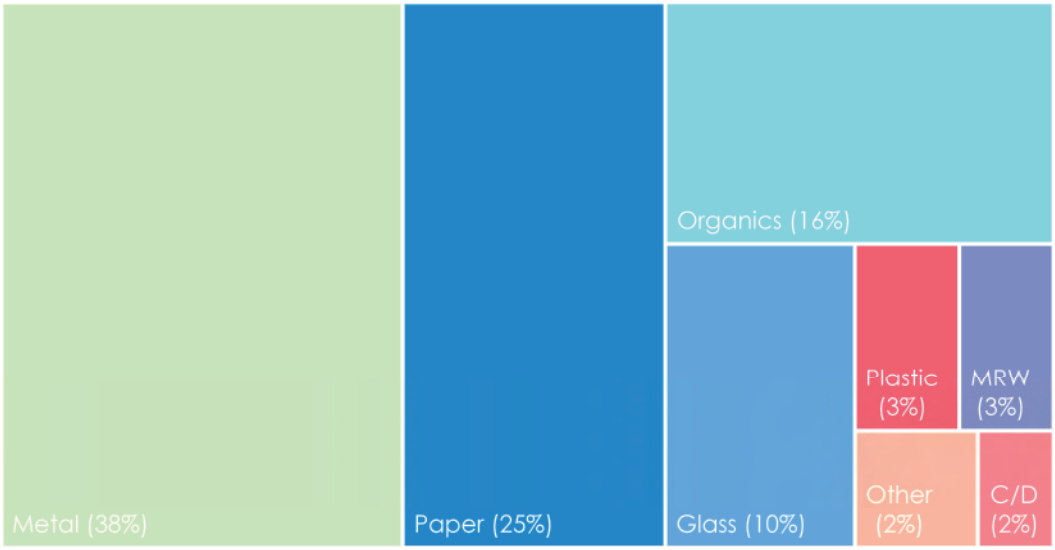
The recycling rate for the County is calculated by dividing the tons recycled by the total MSW generated. It is important to note that the recycling rate is included in the diversion rate. The recycling rate is a measure of how much of the MSW generated in the County is successfully separated by residents and businesses and then sent for recycling. Typically, the County recycling rate is between 45 and 50 percent. Over the most recent five-year period (2013 to 2017) the recycling rate varied been between 44 and 47 percent.

According to the annual Ecology records, major diversion streams for the County include C/D-related waste (including asphalt and concrete, C/D waste, land clearing debris, and wood burned for energy) that makes up 95 percent of diverted materials, organics, and MRW. Major recycled streams for the County include metals, paper, and organics (see Figure 2-6). It is worth noting that metals, which account for a significant portion of the recycled stream, are collected curbside (typically small cans) and are also brought directly to metal recycling facilities (cars, industrial and construction remnants, and other salvaged materials).

[4] In 2017, Ecology recategorized materials into recycling and recovery, eliminating the diversion category. The new term, recovery, focuses on materials that are burned for energy recovery, aerobically or anaerobically digested, or land applied for agricultural purposes. The recategorization moved many material types from diversion into the recycling category and caused the calculation of total MSW generated (calculated by adding MSW disposed of and material recycled) to increase significantly. Due to the recency of the change and to provide a reasonable comparison to previous years, MFA recategorized Ecology's 2017 summary of material types recycled and recovered to match the previous classifications of recycling and diversion. Future updates of the CSHWMP should evaluate the benefit of reclassifying the historic data summaries to match Ecology's new categories.

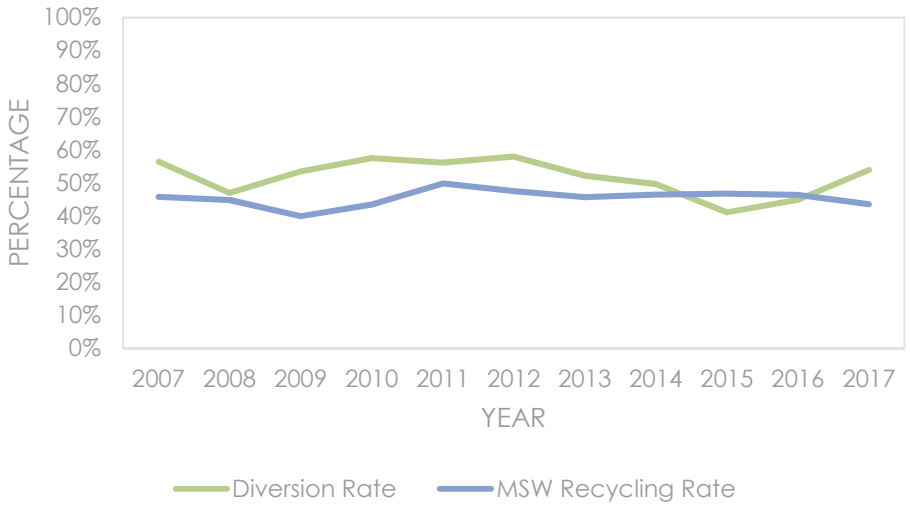
[5] In 2015 and 2016, an anomalous amount of special waste was reported by the Columbia Ridge Landfill, which may be attributed to a large one-time project or misattributed waste records.

Figure 2-6
Recycled Stream Composition (Percentage by Weight), 2017



A summary of the overall diversion and recycling rates from 2007 to 2017 is presented in Figure 2-7 below.

Figure 2-7
Diversion and Recycling Rates, 2007–2017



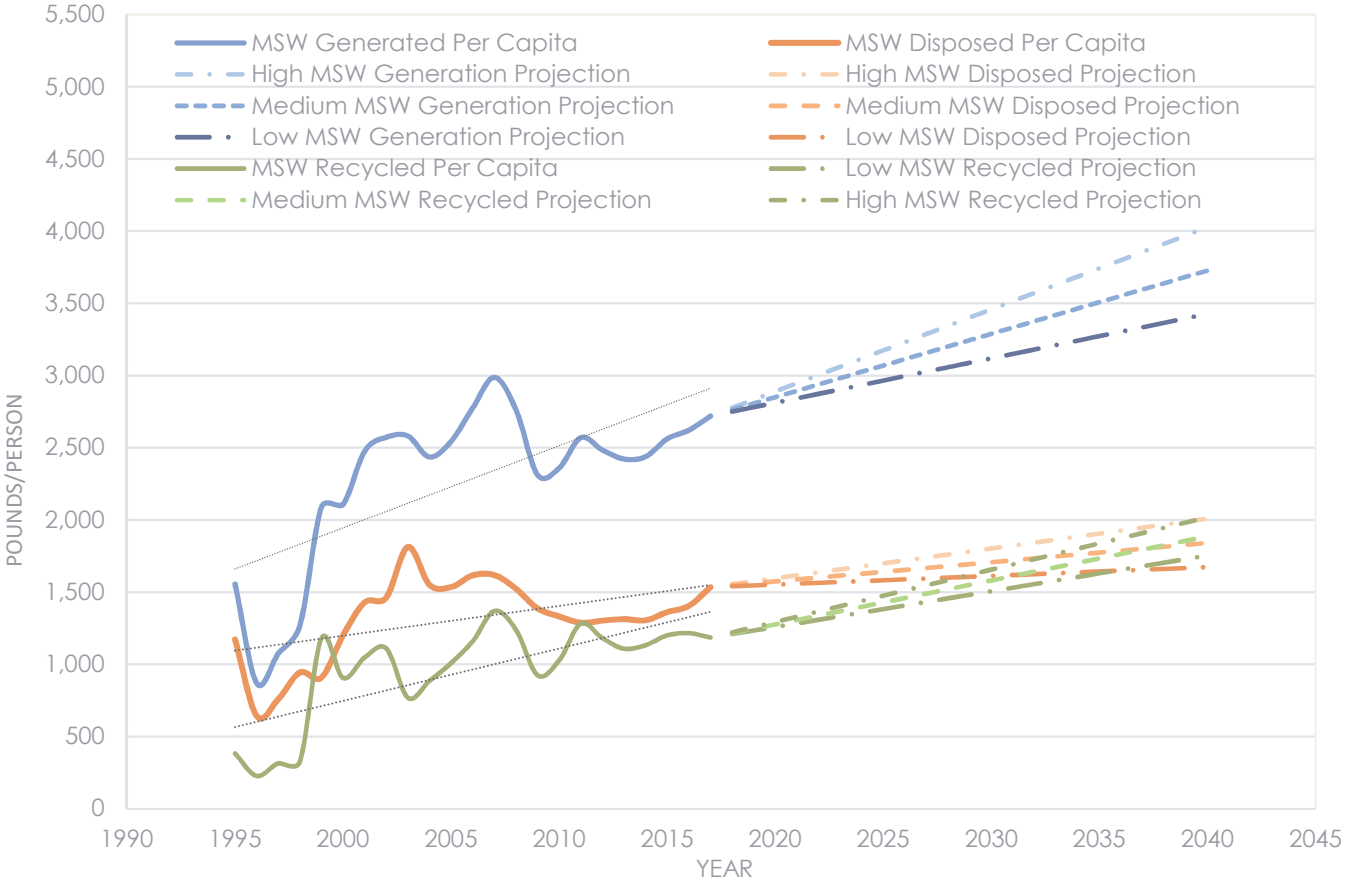
2.3.9 Per Capita Waste Projections

The per capita MSW generation chart is shown in Figure 2-8. Between 1995 and 1999 there were large fluctuations in per capita waste generation from a low of 870 pounds per person in 1996, to a high of 2,089 pounds per person in 1999. Following 1999, per capita waste generation increased steadily to a high of 2,987 in 2007. Per capita MSW generation decreased noticeably in 2009 and 2010, likely due to the significant financial recession that began in 2008. This change in the per capita trend is a phenomenon has been observed at a state and national level. A portion of the drop in the per capita waste generation likely is also a result of increasing public awareness of the negative economic and environmental impact that resulted in improved efficiency (reducing management costs) and/or community motivation to prevent the generation of solid waste. Per capita MSW generation was mostly steady from 2011 to 2013 at which point it began to increase to 2,719 pounds per person in 2017. A close look at the waste generation line between 2000 and 2007 shows a period of accelerated growth, followed by a steep decline in 2008 and 2009, corresponding to a significant financial recession. The change in per capita generation habits was observed at a state and national level. A portion of the drop in the per capita waste generation was likely also a result of increasing public awareness of the negative economic and environmental impact that resulted in improved efficiency (reducing management costs) and/or community motivation to prevent the generation of solid waste. A consistently upward new trend is visible between 2009 and 2017. It is not as steep as the previous trend.

A projection of the per capita MSW generation in the County has been developed for both trends that are shown in Figure 2-9: a high projection assumes the gradual return to the generation rates and annual growth that were observed prior to the recession; and a low projection that assumes maintaining current waste generation habits. The per capita low projection of waste generation increases at a rate of 31 pounds per person per year, while the high rate increases at 57 pounds per person per year. The per capita low projection of recycling increases at 25 pounds per person per year, while the high rate increases at 36 pounds per person per year.

The waste projections are based on the data provided by Ecology through 2017. The County anticipates significant changes to solid waste generation and disposal beginning in early 2020 and beyond, due to changes in consumer habits that were brought about by the COVID-19 global pandemic. Data for this period was not available as of the writing of this plan and so the County will evaluate potential new trends during the next update.

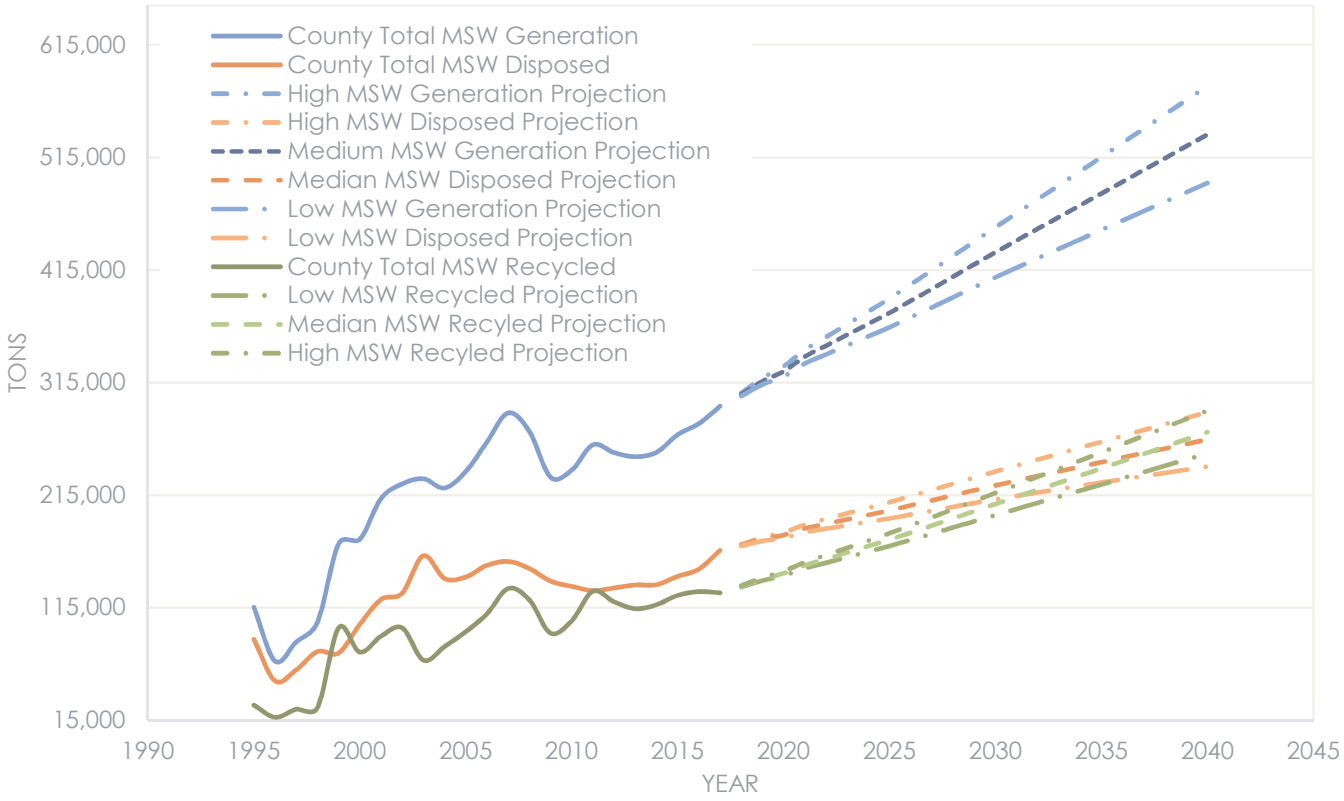
Figure 2-8
Whatcom County Waste Projection, Per Capita



2.3.10 Total County Waste Projections

Estimates for future waste generation, recycling, and disposal are calculated by multiplying the population projections with the per capita waste generation projections. The medium series population projection is shown in Figure 2-9, reflecting the high and low per capita as shown in Figure 2-8. The middle per capita number combined with the medium series population growth for the County identifies a 20-year waste potential of 535,000 tons generated, 265,000 tons disposed of, and 271,000 tons recycled. Solid waste service providers were apprised of these waste projections throughout development of this revision of the CSHWMP and have ensured the County that they will continue to plan for and construct sufficient system capacity in advance of need. The County will continue to work with the private solid waste service providers to ensure that facility capacity is constructed in advance of need.

Figure 2-9
Whatcom County Waste Projection, Total



2.3.11 MRW Management

MRW is regulated as solid waste and is defined as hazardous waste (waste chemicals) generated from households and qualified conditionally exempt small quantity generator (CESQG) businesses. The County owns one of the two permitted moderate risk waste facilities (MRWFs) located in the County. The second facility is the Seattle City Light Skagit Hydroelectric Project (Newhalem) MRWF.

The Newhalem MRWF accepts MRW from CESQGs working on the Skagit Hydroelectric Project only. The County collected 453,766 pounds of MRW in 2020 (64,003 pounds from CESQGs and 389,763 pounds from county residents). The most recent version of the State of Washington's annual status report on solid waste was published by Ecology in December 2015 (Ecology, 2015) and provides a summary of the statewide solid waste activities, including MRW activities. The report states that the County was one of the five counties that publicly collected the most CESQG waste per capita. An active outreach program through the county Pollution Prevention and Assistance program, and EnviroStars is a significant contributor to the success of the County program that is described in more detail in Section 3.1.1.

3 WASTE REDUCTION AND PUBLIC EDUCATION

The State of Washington identifies source reduction of waste as a fundamental strategy and a top priority for solid waste management (RCW 70A.205). As a result, waste reduction is a critical element of all local solid waste management plans. Waste reduction is defined in RCW 70A.205.015 as "reducing the amount or toxicity of waste generated or reusing materials." Recycling is defined in RCW 70A.205.015 as "transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration."

There are two primary reasons for promoting waste reduction. One is to reduce the risks associated with all solid waste management methods by reducing toxicity. Reducing the toxicity of solid waste makes all solid waste management methods safer and helps develop public confidence in waste management methods. The other reason is to reduce the quantity of discarded materials. This extends the useful life of existing and future facilities and conserves natural resources; there is also significant economic value to the avoided cost of disposal.

Waste prevention and pollution prevention are the most environmentally beneficial waste management strategies and are identified in RCW 70A.205 as a top priority for solid waste management. There has been a continued trend in focusing and supporting waste and pollution prevention. The County promotes the concepts of "Refuse, Reduce, and Reuse" as primary actions to achieve the goal of waste reduction, especially given the difficulties in reducing waste through recycling alone. An obstacle that remains is that while individual companies can achieve considerable economic benefits through waste and pollution prevention, no other company, such as a hauler or processor of recyclables, will gain from another party reducing their generation of waste. This is contrary to the situation of recyclables, where certain companies earn money by helping others to recycle. Since no such profits exist in the case of waste or pollution prevention, the marketing of these strategies is left largely to the public sector and nonprofits, with some exceptions. In the County, programming and work conducted by Sustainable Connections, RE Sources classroom education and programming, Washington State University (WSU), and others attempt to fill this void.

In a few cases, private haulers have demonstrated a balanced approach by pursuing community outreach efforts and providing reduction and recycling technical assistance to businesses. For example, SSC currently provides waste audits to businesses to increase efficiency in their customers' system and to help save money and gain efficiencies.

The objective of this section is to identify waste reduction actions that are reasonable for implementation in the County.

3.1 Existing Conditions

3.1.1 Public Sector Activities

STATEWIDE

A statewide ban on single-use plastic bags began on October 1, 2021. This ban prohibits the distribution of single-use plastic carry-out bags by restaurants, retail, small vendors, and grocery stores. Ecology recommends the use of reusable bags, but customers also have the option of using compliant plastic or paper bags offered by a merchant for a charge of eight cents per bag. Ecology and partners developed an outreach tool kit that includes a variety of materials that are customizable for individual restaurants and retailers. With the passing of new plastics laws in 2021 and the Food Waste Reduction Act in 2019, Ecology anticipates expanding its education and outreach efforts to implement these and other initiatives. Ecology's approach to educating the public about sustainable materials management best practices is evolving to meet these challenges.

As guided by the statutes in the state's legislature, Ecology offers recycling information to Washington's residents, oversees recycling programs for unusual or hazardous materials, and supports programs to reduce or reuse food waste and other organic materials. Through ongoing communications with local partners, Ecology guides the implementation of new waste laws and promotes harmonization of outreach campaign messaging across the state.

Ecology is committed to ensuring that diverse audiences have meaningful access to services, information, and input on policy directions. This means routinely evaluating who the intended audience is then planning for inclusive engagement that addresses the languages, cultures, literacy, abilities, and other characteristics of the audience

To support the general public, Ecology's Reducing and Recycling Waste website (https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste) provides a wealth of information on various recycling programs, solid waste data, and recycling services. The 1-800-RECYCLE program (https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/1-800-RECYCLE) is both a hotline and an online tool that connects individuals and businesses to recycling services across Washington.

The Waste Not Washington School Awards (https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Solid-Waste-Management/Sustainable-School-Awards) promote sustainability and reward school efforts to reduce waste, recycle, and teach environmental curriculum.

Ecology oversees three active producer responsibility programs: E-Cycle Washington (https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Electronics-E-Cycle) for computers and TVs; LightRecycle Washington (https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Mercury-lights) for mercury-containing lights, and PaintCare (https://ecology.wa.gov/Waste-Toxics/Reducing-recycling-waste/Paint-stewardship) for

architectural paint. These programs all have requirements for outreach so that the public knows where they can safely recycle these items.

Washington's LightRecycle program, RCW 70A.505, allows residents and businesses to recycle up to ten fluorescent and other mercury-containing lights per day for free at certain locations across the state. A sunset provision states that this law is subject to review, termination, and possible extension. The program may be effectively terminated or extended on July 1, 2026. If the program is terminated, the proper disposal of these materials would be eligible for LSWFA funding and County will document alternative disposal options to continue to safely manage these products with a plan amendment if needed.

To support local partners conducting outreach efforts, Ecology distributes outreach materials including:

- The We Keep Washington Litter Free campaign (https://ecology.wa.gov/Waste-Toxics/Solid-waste-litter/Litter/litter-prevention/Keep-Washington-Litter-Free) recently launched with radio ads, commercials, and an outreach tool kit: Secure Your Load for Safer Roads (https://ecology.wa.gov/Waste-Toxics/Solid-waste-litter/Litter/litter-prevention/Keep-Washington-Litter-Free/Secure-Load-campaign).
- Ecology's Recycle Right page(https://ecology.wa.gov/recycleright) has a link to a tool kit with outreach materials for the public.
- The Plastic Bag Ban effort provides an outreach tool kit (https://app.box.com/s/mhrkiuiku4sum2q904saymf6dix294b7) for local governments and businesses to comply with Washington's single-use plastic bag ban, that will go into effect in October 2021.
- The Recycling Contamination Reduction Resource Library (https://www.ezview.wa.gov/site/alias__1962/37664/recycling_contamination_reduction_resources.aspx) is a rich information resource for local governments and interested members of the public to reduce contaminants in the recycling stream.

The State Solid and Hazardous Waste Plan (https://ecology.wa.gov/Regulations-Permits/Plans-policies/Washington-state-waste-plan) is another information-rich document available for the public. It includes a section about education and outreach, and it includes goals and actions for state and local governments and others to work on. The plan calls for outreach and education about:

- Toxic chemicals in products, including how to avoid and properly dispose of them
- Reducing food waste, reducing contamination in collected organic materials, and the benefits of using compost and other recycled organic products
- Reduced consumption, waste reduction, environmentally preferred purchasing, proper recycling, and litter prevention.

The plan calls for communication strategies, outreach materials, and public engagement activities to be inclusive, accessible, and in compliance with Title VI of the Civil Rights Act.

Ecology also administers grants to support waste reduction and recycling, which may include public outreach efforts:

- Public Participation Grants (PPG) (https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Public-participation-grants) provide funding to individuals and not-for-profit public interest organizations to increase public understanding and involvement in cleaning up contaminated sites and improving recycling and waste management.
- Local Solid Waste Financial Assistance program (https://ecology.wa.gov/About-us/Payments-contracts-grants/Grants-loans/Find-a-grant-or-loan/Coordinated-prevention-grants) provides funding to local governments for solid and hazardous waste planning and implementation, as well as enforcement of solid waste rules and regulations.
- Waste Reduction and Recycling Education Grants (https://ecology.wa.gov/WRRED) provide funding for qualified local governments and nonprofit organizations for local or statewide education programs designed to help the public with litter control, waste reduction, recycling, and composting.

WHATCOM COUNTY

In a privatized solid waste system, a primary County role in solid waste management is public outreach and education, as well as overall program assessment. The County conducts, sponsors and/or contracts for several waste prevention and public outreach programs, including in-class education, Green Classroom Certification Programs, business outreach through the Pollution Prevention Assistance and EnviroStars programs, and volunteer training through the WSU Whatcom County Extension Master Recycler and Composter Program. Educational resources provided by the County, including a social media page with posts related to solid waste (https://www.facebook.com/WhatcomCountyHealth) are reviewed by the Public Information Officer for audience accessibility and inclusivity. The County also serves as a resource for members of the public who may have questions regarding the solid waste program.

Classroom education and programming are provided by the County through contracts with third-party entities, currently RE Sources. County contractors provide in-classroom education to educate students about responsible waste management, including ways to minimize waste and disposal. Green classroom certifications and waste audits are also provided to measure classroom and cafeteria waste and educate students. More details are provided in Section 3.1.3.

In April 2022, the County entered into a contract with ReCollect to provide an online searchable database for various waste streams, "Waste Wise", allowing county residents to easily identify how to properly recycle or dispose of different materials. The database shares results in order of preferred

disposal options, beginning with reuse, then recycle/compost, and finally disposal. The primary goal of this tool are to make it as easy as possible for residents to "do the right thing" to reduce the amount of contamination in the County's recycling and compost streams.

Pollution Prevention Assistance is a program funded through grants from Ecology to both the County and the City of Bellingham that provides business assistance for hazardous materials management, stormwater protection, and other resource management issues. The grant focuses on the process source control by identifying pollution sources and preventing them from entering the environment. Included in these activities is providing technical assistance to businesses to reduce pollution through site visits to businesses. County staff help businesses identify and manage dangerous waste, prepare for spills, and reduce stormwater pollution. The grant also funds EnviroStars.

EnviroStars profiles sustainable businesses and provides a rating system that helps businesses communicate to the public their commitment to environmental protection. The program provides technical assistance with:

- Waste storage
- Disposal and recycling
- Spill management and prevention
- Stormwater protection
- Washwater practices
- Recordkeeping
- Processes that generate wastewater
- Outdoor storage of products and waste

To qualify as an EnviroStar, businesses must not generate large quantities of hazardous waste and must set goals to reduce hazardous materials and improve handling practices. Businesses are rated on a scale of two to five stars based on their ability to reduce waste, protect water quality, conserve energy, and educate the public on green practices. EnviroStar businesses are listed in the annual EnviroStars directory and receive a window decal advertising their participation in the program. Businesses are also recognized through radio, print, and online advertisements and through award nominations. The program is a joint effort between the County Health Department and the regional EnviroStars cooperative. Assistance is provided in conjunction with the County's local Source Control program.

CITY OF BELLINGHAM

A single-use carry-out bag ordinance, commonly referred to as the plastic bag ban, was instituted in the City of Bellingham in 2012, through Ordinance 2011-07-034, which became Bellingham Municipal Code 6.47.020. The ordinance prohibited the use of single-use, plastic, carry-out bags less than 2.25 mils[6] thick, like those typically provided by retailers at the point of sale. Thick plastic bags, thicker than 2.25 mils, are deemed reusable and may be used, with or without a charge, at the store's discretion.

[6] A mil is equivalent to one thousandth of an inch.

Large paper bags require a five-cent charge and must be a minimum of 40 percent post-consumer recycled fiber. Fiber content is required to be marked on the outside of the bag. The ordinance represents a big step forward in reducing litter and unnecessary waste, protecting water and wildlife, and saving money by reducing the use of plastic bags in the community.

In March 2020, the plastic bag ban was suspended due to safety concerns related to the COVID-19 pandemic. In March 2021, the City Council resumed discussion on an expanded single-use plastic ban, including straws, cutlery, plates, bowls, cups and beverage containers and lids, and condiment containers. The pending ordinance was approved in May 2021 and took effect in 2022.

3.1.2 Private Sector Activities

Repair and reuse of durable products represent the most traditional forms of waste reduction and are well established in the County. There are various nonprofit and for-profit ventures in the County that accept or purchase used goods and resell them through local storefronts and other outlets. Online material exchanges such as Craigslist (http://www.craigslist.org/) and Industrial Materials Waste Exchange (http://www.lhwmp.org/home/BHW/index.aspx) are additional resources available for material exchange and resale. Reuse of goods is a significant contributor to the success of waste prevention activities but is also extremely hard to measure because these businesses do not track and report their data in measures that are comparable to waste (i.e., weight in tons).

The following organizations accept used goods from the public in the County. This list of organizations should not be considered inclusive of all organizations that accept used goods.

ARC of Washington State offers curbside pickup of bedding, small appliances, videos, small children's items, clothing and shoes, craft items, furniture, kitchen equipment, home goods, musical instruments, records, tapes, CDs, camping equipment, and VCRs. Donated materials are sold to the public.

Goodwill Bellingham accepts reusable clothing, household items, and electronics including televisions, computer monitors, desktop computers, and laptops. Donated materials are sold to the public.

Habitat for Humanity accepts donations of surplus building materials, furniture, and appliances. Materials are sold to the public at discounted rates.

Northwest Center's Big Blue Truck offers curbside pickup of bedding, small appliances, books, videos, clothing and shoes, craft items, small furniture, kitchen equipment, records, tapes, CDs, toys, bikes, camping equipment, VCRs. Donated materials are sold to the public.

Ragfinery opened in April 2014 as the second "jobs from waste" business of ReUse Works, which is a branch of the same nonprofit that operated the former Appliance Depot. Ragfinery accepts unwanted garments and textiles, diverting them from the waste stream and upcycling them in a training business that provides transitional jobs for low-income clients.

The RE Store is the retail arm of RE Sources. Staff and volunteers work to divert more than four million pounds of C/D waste annually by deconstructing small homes and outbuildings, salvaging usable building materials and furnishings from residential and commercial buildings, offering free pickup of usable building materials and usable manufacturing by-products, and accepting material donations at their facility. The RE Store operates a retail store that sells affordable building materials and furnishings as a quality alternative to new products; locally manufactures fine, handcrafted furniture and furnishings created from repurposed building materials; offers educational opportunities to the community throughout North Puget Sound; and has an extensive community jobs training program with more than 100 work trainees and volunteers, totaling more than 5,000 hours annually.

Value Village Bellingham accepts reusable clothing, household items, and electronics including televisions, computer monitors, desktop computers, and laptops. Donated materials are sold to the public.

A notable change is the closure of Appliance Depot, which previously offered free curbside pickup of large household appliances in the City of Bellingham and other portions of the County. The appliances were reconditioned and sold to the public. Due to COVID-19, Appliance Depot is no longer in operation.

Education programming and public outreach efforts are also provided by the private sector and nonprofit entities.

SSC has provided over 2,500 free commercial waste evaluations since 1996. Evaluations are provided to local businesses, government agencies, and institutions such as school districts, St. Joseph's Hospital, and local colleges and universities. These on-site evaluations continue to be provided on request, and through SSC's participation as a Pioneer Business Partner in the Toward Zero Waste Program (TZW) organized by Sustainable Connections in concert with the City of Bellingham and the County. Participating entities receive a written report outlining current activities and additional opportunities in waste reduction, reuse, and recycling, as well as links to resources in similar community efforts for water, energy, and traffic. Aggregate recycling savings to the community at large total in the tens of millions of dollars.

Since 1994, the SSC recycling manager has reviewed all new commercial and multifamily construction in the City of Bellingham (Ferndale and Blaine applications have been reviewed since roughly 2004) to help design safe and effective enclosures for recycling, composting, and refuse collection, thus adding to the permanent infrastructure in the community, making waste diversion easier and more cost effective. SSC also consults regularly with local processors, agency staff and elected officials about new opportunities in public area recycling, event recycling, and possible program expansions. Free recycling and waste prevention consultations have been provided to local event managers for 20 years, helping create an even stronger climate of resource conservation and community support for the curbside program serving all residents.

NVD also provides educational materials at their facility and online to educate customers on proper waste disposal practices as well as recycling and composting.

Sustainable Connections is a nonprofit membership organization that provides educational programming and technical services for reducing waste, increasing reuse and recycling, and increasing the purchasing of recycled and environmentally preferable products. Sustainable Connections provides waste audits, trainings, and education tool kits, and promotes companies committed to reducing waste in the community on a limited basis, determined by funding levels. Sustainable Connections provides a business outreach program that actively engages 80 businesses per year over a two-year period, helping participants implement individual TZW plans. Of these businesses, 50 to 55 typically are existing participants who need supplemental hands-on assistance to successfully implement TZW, and 25 to 30 are new participants interested in establishing TZW in their businesses.

By September 30, 2014, a total of 445 participating businesses showed improvement in at least two of the following areas:

- Reducing solid waste generated by 50 percent compared to pre-TZW participation
- Increasing recycling and composting by 50 percent
- Reducing their largest solid waste stream
- Participating in additional sustainable business practices

3.1.3 Nonprofit and Institutional Activities

RE Sources is a nonprofit environmental education organization that provides technical assistance for clean energy, water, carbon emissions, and school education programs. RE Sources also operates The RE Store reuse facility. On behalf of the Whatcom County Solid Waste Division, the Sustainable Schools team offers two types of programming: traditional in-class presentations about solid waste, paper-making, and household hazardous waste; and the Green Classroom Certification program for elementary schools. The Green Certification builds on the introductory presentations to create a structured way for classrooms to implement behavior change in the classroom and beyond.

During the 2018-2019 school year, RE Sources conducted programming in 88 Kindergarten through twelfth grade classrooms, reaching 2,107 students, in 60 different schools across seven school districts throughout the County. Additionally, 53 Green Classrooms were certified. RE Sources is seeking additional funding to expand and extend waste prevention education programming to the middle school level in 2021 and explore the potential for programs at the high school level. In addition, RE Sources will continue to develop relationships with district-level staff, starting with Bellingham Public Schools. In addition to local efforts led by RE Sources, a handful of schools also participate in the EarthGen program, formerly Washington Green Schools, that provides support and resources for resource conservation education.

County funding for solid waste education is supplemented by funding provided by private foundations. These additional funding sources support education for clean energy, clean water, and low-carbon-living programs.

The RE Store provides manufacturing businesses with a waste or by-product audit to identify usable materials and an end use through repurposing as a means for increased diversion and cost savings to those businesses.

WSU, Whatcom County Extension hosts a Master Composting and Recycling program. The effort is a volunteer service program in which volunteers are trained in methods for reducing waste and increasing public awareness of opportunities to prevent waste, recycle, and compost in the County. Course participants work with local organizations, community members, neighborhoods, schools, and workplaces, or at special events encouraging waste prevention, recycling, and composting. Scheduled programming for 2021 includes a four-week course with an emphasis on composting and soil building. Enrollment is anticipated at 20 families.

3.1.4 Former Education Efforts (County, Private, and Nonprofit)

The County has a long history of public education and outreach regarding solid waste best management practices. Although these programs have been successful, the County was forced to reduce funding allocated toward public education during the great recession following the financial collapse in 2008. As funding levels return to pre-recession levels, the County may look toward the success of former programs, either reinstating them or preparing new programs. Examples of programs that were previously funded by the County, or that could potentially be funded by the County in the future, are listed below.

TZW is an ongoing effort to reduce waste, increase reuse and recycling rates, and increase purchases of environmentally friendly products by businesses in the County. The program, led by Sustainable Connections, receives funding from multiple public and private sources to promote the TZW in person to a list of nearly 1,000 business leaders and participants. Outreach staff attend local conferences and events to promote sustainable waste management practices. In addition, the initiative funds the update of the construction waste recycling tool kit and service provider directory, which is widely distributed both in print and online.

Despite the lack of County funding, the program has been highly successful. As of the end of 2020, 550 businesses were participating in the TZW program. Eighty-two percent of respondents have reduced, reused, or recycled their largest waste stream, 30 percent of participants reduced the size of their garbage dumpster, 40 percent of participants reduced the frequency of waste hauler pickup, and 65 percent of TZW participants have instituted at least one additional sustainable business practice.

This effort, originally launched in 2009, received funding from the County in 2009 and 2011, but has not received additional County funding since. Most current program funding comes from private foundations and grants.

In 2017, an Ecology PPG was awarded to Sustainable Connections to develop an organics diversion and education program, now known as the Food Recovery Program (FRP). The FRP diverts nutritious surplus food from smaller sectors, such as restaurants and cafeterias, and redistributes this food to agencies focused on feeding community members in need. Sustainable Connections identified the need to work with these smaller sectors because the larger food banks are unable to handle the inconsistency and immediacy around prepared, perishable foods. The FRP recovers food from more than 70 businesses, works with more than 50 volunteers, and redistributes food to 12 hunger relief agencies throughout the County including the Lummi Nation.

Businesses that donate food to the FRP report a better understanding on how to store foods and extend the food's lifetime, use surplus prepared food and reduce food waste overall. The amount of food waste reduction at these businesses can be attributed to their increased handling of surplus food; the more that food is analyzed by the donating business, the better understanding they have of their food waste, ultimately allowing them to reduce the volume of surplus food. Success of the FRP

has resulted in additional PPG funding in 2019 and again in 2021. County funding was also awarded in 2019 and in 2021 to aid the growth of the program.

In addition to the food recovery element of the FRP, there is an educational component encouraging community members to reduce food waste at home. Food waste reduction education exists on the Sustainable Connections website and is shared at workshops, school presentations, newsletters, social media, outreach materials, and more.

In 2020, Sustainable Connections was awarded one year's worth of funding by an Ecology Waste Reduction and Recycling Education grant and launched the Where To Go With To-Go campaign (W2G). The goal of this campaign was to combat the upswing of single-use plastic waste generated by the influx of to-go food. W2G helps restaurants move away from single-use plastic, ensures that any switches to compostable products are switches to options that can be composted locally, and increases public education in how to dispose of to-go products. The W2G campaign is comprised of 40 participating businesses, and that number continues to grow. Sustainable Connections provides these businesses with educational materials for both employees and customers regarding source reduction and proper waste sorting, conducts personalized to-go ware waste assessments, and generates and distributes a resource guide to support restaurants in making informed purchasing decisions of to-go ware. This campaign helped set the foundational approach and outreach strategy applicable to the single-use plastics ban that went into effect for restaurants and hotels in Bellingham starting in July of 2022.

A formal recycling hotline was operated by the County, and before that, by RE Sources, to answer questions regarding waste reduction, recycling, composting, and household hazardous waste. Callers were served by a recorded message and were referred to the County's solid waste website or were able to leave a message. Messages left on the hotline were returned by solid waste staff. Calls made to the hotline are now redirected to the County Health Department receptionist and calls are referred to relevant staff, or directed to the Waste Wise database, www.whatcomcounty.us/wastewise. Additional resources are available online through the state https://www.facebook.com/1800recycle.wa.gov and http://1800recycle.wa.gov, and via live phone assistance during the week (9:00 a.m. to 3:00 p.m.) at 1-800-RECYCLE (1-800-732-9253)

The Paper Tiger Program used posters and brochures to emphasize ways to reduce the amount of wastepaper produced in government and business offices. Paper Tiger materials were distributed to businesses and institutions throughout the County.

Absolutely Free Listings were free advertisements for free items that ran in four newspapers: the Bellingham Herald, Lynden Tribune, Ferndale Record Journal, the Echo, and on the KGMI radio station and TCI cable station.

Permanent information centers were installed in 1992 to provide solid waste information on brochure racks throughout the County. Locations include libraries, city halls, post offices, malls, recreation centers, senior centers, Western Washington University and Whatcom Community College.

Event recycling was provided by RE Sources with funding from the County (and is now required by law under RCW 70A.200.100). RE Sources developed an event recycling guide that detailed how to host large, waste-free events (i.e., soccer tournaments, fundraisers, concerts) and then managed a crew of volunteers who staffed the garbage cans at several County events, including Ski to Sea, directing people how to dispose of their waste. Ecology provides an event recycling brochure that outlines the requirements and resources for the public to comply with this law (https://apps.ecology.wa.gov/publications/documents/0807016.pdf).

Dish rental service was provided by RE Sources with funding from the County. RE Sources maintained a set of 100 dishes, flatware, and glasses and made them available to the public free of charge. RE Sources still receives inquiries about borrowing flatware.

Electronics recycling assistance was provided by RE Sources in partnership with Ecology and local retailers. Information was provided at stores selling computers, TVs, and other electronics to educate the public on the importance of recycling electronic waste and the programs available to do so. In addition, certain electronics can be recycled for free through a product stewardship program call E-Cycle Washington launched in 2009.

3.2 Needs and Opportunities

The state has identified citizen participation as a critical element in decreasing the per capita waste generation rate. When considering all waste generated in the County (residential, commercial, industrial), the per capita generation rate is 3,859 pounds of waste per person per year, compared to the state rate of 4,709 pounds per person per year. After accounting for waste reduction and recycling, MSW disposed of by county residents is 1,534 pounds per person per year compared to the state rate of 1,431 pounds per person per year. In summary, the average resident is generating less waste than the state as a whole, but somewhat less material is being recovered from the waste stream prior to disposal.

As presented in Section 2.3.8, based on the historical trends and existing waste reduction programs, the County per capita waste generation rate is expected to increase between one and two percent per year over the next 20 years. The outcome of successfully implementing the goals and actions of the 2022-2027 CSHWMP would limit per capita generation to not more than a one percent annual increase (or 27 pounds per person per year) from the 2017 per capita rate. Packaging and mailing containers are suspected to be significant contributors to waste generation increases as residents switch to more home deliveries of goods during the COVID global pandemic. Given the significant volumes of material that require disposal and the projections for continued population growth, there is a need for the County to maintain and strategically improve, as appropriate, its formal waste reduction programs. It should be noted that with contamination losses of less than one percent, the County's effective recycling diversion per capita is significantly higher than the state average, where contamination and processing losses from single-stream recycling approach 25 percent by weight.

Waste reduction is the state's highest waste management priority. The solid waste management planning guidelines recommend that local jurisdictions, such as the County, set specific waste reduction goals and implement programs to reduce waste. The County may consider not only development of waste reduction programs but also a mechanism for tracking subsequent results. Initial recommendations highlight the need to track County waste trends.

Voluntary waste reduction can only be achieved through inclusion of public education, media campaigns, waste audits, classroom education and other outreach activities that promote the economics, necessity, and purpose of waste reduction. If the public does not understand these values, waste reduction efforts are not likely to succeed. If necessary, waste reduction goals may also be supported by regulatory requirements.

Easily accessible information is critical to raising public awareness of County- and non-County-funded waste programs and encouraging public engagement in the waste management dialogue. To heighten public awareness, a rebranding effort may be undertaken to reenergize the community's efforts and increase program recognition. Residents who understand that the County has a role in managing the solid waste system may use the County as a resource when looking for information about management and disposal options. The County can play a significant role in providing easy access to waste management information that is spread to various websites, such as those maintained by the private haulers and transfer facilities, composting facilities, the master gardener program, and other municipal entities.

Public education and awareness efforts may also be expanded to include preparing educational materials that advertise the solid waste services available through the County, haulers, facilities, community partners, and Ecology. Outreach efforts could be enhanced to include a greater presence at public events or by posting the County website address prominently in public places (e.g., libraries and municipal buildings). The County may also partner with haulers to distribute informational material through billing systems. A detailed discussion of the County's private transfer and disposal system is provided in Section 7 of the 2022-2027 CSHWMP.

3.3 Goals and Actions

Education programming and waste reduction are two areas in which the County is most active in improving the solid waste system. As County funding levels for solid waste management improve, the County will prioritize their resources based on the goals and actions outlined in Table 3-1 below.

Table 3-1
Goals and Actions for Education and Community Outreach

GOALS	ACTIONS
1. Increase community knowledge and expertise of waste reduction methods by providing educational opportunities to targeted populations using existing public and private resources.	A. Increase current youth and primary school education programming. B. Expand school education programming to include middle and high school levels with age-appropriate projects, information, and messaging. C. Provide additional educational resources for adults. D. Support and fund commercial education through targeted outreach, commercial waste audits, and technical assistance, specifically related to C/D and food waste. E. Increase distribution of waste reduction educational materials related to C/D waste for the construction industry to address significant increases during the COVID-19 pandemic. F. Target development of educational materials for multifamily customers. G. Increase support and advertising for the WSU composting education program through the Master Composting and Recycling program. H. Sponsor community events and use a theme of zero waste to educate participants. Make arrangements for waste management and describe the decisions that were made to accommodate the choice. I. Publish educational materials of the solid waste system in response to community requests. J. Promote outreach related to local ordinances and legislation around waste reduction.

GOALS	ACTIONS
2. Use appropriate and relevant tools for mass communication and outreach to further promote implementation of waste reduction methods, using an integrated public/private approach.	A. Continue distribution of educational materials digitally and make available in paper form, as requested. B. Integrate existing public and private social media profiles and a structure for effective advertisement and information sharing. C. Develop a cohesive branding for the solid waste system, recognizing public and private roles, and develop a relevant and attention-getting social marketing campaign that creates a vision in the collective public mind and appeals to the senses of the public. D. Consider development of other digital tools for communication of waste management information (e.g., mobile website, phone app, QR codes on advertising). E. Consider a marketing campaign that meets the public where they already are (e.g., on public transit, at events, or in movie theaters).
3. Develop relevant educational materials for residential, commercial, and institutional consumers.	A. Educate about waste generation habits/trends. B. Educate about waste reduction and home waste management (material reuse opportunities, purchasing products with less packaging, purchasing more durable goods, home composting, and food waste prevention). C. Educate about the environmental impact of waste and waste management. D. Promote the theme of zero waste and the concepts of "Refuse, Reduce, Reuse". E. Educate about which items may go into the food waste bins. F. Identify relevant metrics and data-gathering needs in coordination with the County CROP to support targeted and effective future education and outreach programs.
4. Review solid waste data on an annual basis.	A. Review annual solid waste data provided by Ecology and track effectiveness of County programming. B. Request more detailed data as needed and form material handlers to better understand the effectiveness of County programming.
5. Reduce food waste by 50 percent.	A. Incorporate the state food waste reduction Plan released in late 2021.
NOTES: C/D = construction and demolition. County = Whatcom County. CROP = contamination reduction and outreach plan. Ecology = Washington State Department of Ecology. WSU = Washington State University.	

4 RECYCLING

Recycling is defined by the State's Guidelines for Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions as "transforming or remanufacturing waste materials into usable marketable materials for use other than landfill disposal or incineration. Recycling does not include "collection, compacting, repackaging, and sorting for the purpose of transport" (WAC 173-350-100, as adopted by reference in WCC 24.06, Solid Waste Rules and Regulations).

4.1 Existing Conditions

Recyclable materials are currently collected in the County according to their potential for waste stream diversion, collection efficiency, processing requirements and market demand. The list of materials that the County Council has designated as recyclable is located in WCC 8.10.050, Section C. Items are added to or deleted from the list, depending on these very conditions, and as described in Section 4.1.3.

4.1.1 Programs

COLLECTION SERVICES

Residential curbside recyclable collection is legally established and defined under WCC 8.10.050 and requires that source-separated recyclables be collected from all residences in unincorporated portions of the County that receive regularly scheduled garbage collection. In accordance with existing solid waste interlocal agreements (Appendix B), each County municipality requires that the County-designated recyclable materials be collected by the contracted waste hauler (SSC, NVD, or Cando, depending on service area) with regularly scheduled solid waste collection. Each private waste hauler offers residential collection services under the conditions of a WUTC G-Permit in unincorporated areas or through a contract directly with a municipality.

Recycling is collected through either a single-stream system, or a three-bin system, depending on the contracted waste hauler. Currently, NVD and Cando collect recyclables through the three-bin system, and SSC is converting from a three-bin system to a single stream system.

All single-family residences are provided recycling collection service at least every other week on the same day of the week as garbage collection. Residents in unincorporated areas have the option of applying for a garbage collection exemption if they certify that they self-haul their waste and recyclables to local transfer or drop box facilities according to WCC 8.10.050(A). Residents claiming the exemption also can subscribe to recycling-only collection. Collection companies provide recycling containers to each residence at the customer's request. The following recyclable materials are collected at the curb: newspaper, mixed paper, cardboard, aluminum, tin, glass, plastic bottles, scrap metal,

vehicle batteries, and motor oil. Recyclable materials are source separated using either a stackable, three-bin recycling system, or one single-stream bin.

For customers of NVD and Cando, recycling is collected through a three-bin system, consisting of bins for newspaper; scrap paper, including cardboard and other wood-fiber materials; and containers, including plastics, glass, aluminum, and tin cans. To make the best use of available space, customers may use any bin for accepted recyclable material, as long as they are correctly separated. Recyclable material reconfiguration is intended to reduce curbside overflow. Drivers inspect the bins during pickup and determine if they are properly sorted and which compartment of the truck it should be placed into. Cardboard is accepted outside of the bins, flattened on its side.

For SSC customers who have been converted to the single stream system, recycling is collected through a single-stream bin for newspaper, scrap paper, including cardboard and other wood fiber materials, and containers, including plastics, glass, aluminum, and tin cans.

Table 4-1 provides a summary of the approved materials accepted in each bin for each collection system. For a more detailed summary of materials accepted by bin for each service provider, links to their websites are provided in Section 6.

Table 4-1
Accepted Curbside Materials by Bin

Bin	Acceptable Materials to Bundle
Newspaper (Red Bin)	• Newspaper • Inserts • Ads
Scrap Paper (White Bin)	• Mail, magazines, catalogs. • Envelopes, stationery, labels, paper sacks, phone books, paperback books, manuals, textbooks, and guides. Note: remove and discard covers and bindings of hardback books. • Computer, copy and office paper (all colors), carbonless paper, file folders, poster paper. • Paperboard cartons (e.g., cereal boxes, macaroni and cheese boxes, shoe boxes, gift boxes, egg cartons). Discard liners/packing material and flatten. • Staples, paper clips, file folder clips are okay.
Containers (Blue Bin)	• Glass bottles • Jars • Aluminum cans • Tin/steel/bimetal cans • Plastic containers (i.e., bottles, jugs, tubs, and cups)[a]
Outside of Bins	• Cardboard (flattened, on its side) • Brown paper bags
Single-Stream Bin	• Newspaper • Inserts • Ads • Mail, magazines, catalogs.

Bin	Acceptable Materials to Bundle
	• Envelopes, stationery, labels, paper sacks, phone books, paperback books, manuals, textbooks, and guides. Note: remove and discard covers and bindings of hardback books. • Computer, copy and office paper (all colors), carbonless paper, file folders, poster paper. • Paperboard cartons (e.g., cereal boxes, macaroni and cheese boxes, shoe boxes, gift boxes, egg cartons). Discard liners/packing material and flatten. • Staples, paper clips, file folder clips are okay. • Glass bottles • Jars • Aluminum cans • Tin/steel/bimetal cans • Plastic containers (i.e., bottles, jugs, tubs, and cups) • Cardboard (flattened) • Brown paper bags
NOTES: Nooksack Valley Disposal accepts bottles only (a)	

RCW 70A.205.045(7)(c) requires a "description of markets for recyclables" to be included in the CSWHMP. This includes a market analysis and a designation of the materials considered to be recyclable, as outlined in the designated recyclable materials list in Section 4.1.3 below. Market demand and prices for recyclables have fluctuated significantly in recent years, driven by domestic and global demand for secondary materials, prices of raw materials, energy prices, transportation costs, etc. At the time of writing the 2022-2027 CSHWMP, the following markets were identified for each recyclable material accepted in the County.

Table 4-2
Current Markets for Recyclable Materials

Material	Primary Market(s)
Paper (cardboard, mixed paper, and newspaper)	Regional paper mills
Cardboard	Regional paper mills
Plastics (bottles, jugs, tubs, and cups)	Domestic markets with limited export
Metals (aluminum and tin cans, appliances, and ferrous and non-ferrous scrap	Regional markets in Pacific Northwest with limited domestic markets
Glass (clear, brown, and green glass)	Regional recycling facilities
Organics (wood, yard debris, food waste)	Local composting facility; local anaerobic digesters
Construction and Demolition (concrete, asphalt paving, sheetrock, etc.)	Regional markets

Point Roberts, serviced by Cando and presenting special challenges due to geographical constraints, is an unincorporated community on the Tsawwassen Peninsula. Point Roberts is unique because of the seasonality of residents and because its physical isolation requires two trips across the Canadian border for residents to connect to the rest of the County. In Point Roberts, single-family residences are defined as a residential dwelling containing four or fewer dwelling units on one parcel. Recycling collection in this community is provided every other week but is not required to take place on the same day as garbage pickup. Effective January 1, 2019, single-family residences with on-site sewage systems that are in Point Roberts, are no longer exempt from mandatory curbside collection services. As a minimum level of service, curbside collection consists of 26 annual pickups as defined in WCC 9.10.040(D). The cost of the minimum level of service, per the approved WUTC tariff, is billed as an annual fee on the property tax bill. Service levels above the minimum level of service are billed directly by the service provider.

The unincorporated Newhalem and Diablo area is serviced by Waste Management and processed with materials collected in Skagit County. However, this area meets the minimum program requirements for collection of source-separated materials as described in RCW 70A.205.045(7)(b)(i)) through recycling depots to which residents may self-haul their recyclables.

Commercial recyclable collection is provided directly to businesses by the private sector in an unregulated system. Recycling collectors include waste haulers, buyback centers, private collection firms, and small mosquito fleet operators. Most commercial MSW customers also subscribe to source-separated collection from the G-certificated haulers for various materials, depending on their economic sector. These services are almost universally less costly than disposal, thus existing rate structures incentivize diversion to recycling and composting, and in some cases, reuse. Commercial recyclables are generally collected in the same material streams as residential (Table 4-1). Depending upon business size, they may request curbside bins, carts, various dumpsters, drop boxes, and/or compactor service. Businesses may also subscribe to source-separated collection of plastic film, scrap metal, drywall, specific industrial plastics, wood, and other source-separated materials (e.g., concrete and pallets).

Business participation has been steadily growing since the early 1990s to today, where nearly every local business participates in recycling or waste reduction to one extent or another. Part of this success is due to the rate structure, which makes recycling the more cost-effective alternative to solid waste disposal.

SSC, NVD, and organizations like Sustainable Connections, also provide technical assistance to businesses requesting information, or that need support in setting up commercial composting services.

WHATCOM COUNTY IN-HOUSE RECYCLING PROGRAMS

The County manages an internal recycling program consisting of the collection of bottles, cans, and paper at all County facilities. The program provides recycling containers for some materials at all locations with trash containers in public areas. Recycling is emphasized in office areas by providing a small, deskside trash container and a larger recycling container. These measures have contributed to

the County's successful Leadership in Energy and Environment Design, or LEED certification of the county courthouse.

ELECTRONICS RECYCLING

RCW 70A.500.030 requires that manufacturers participate in an independent or standard plan that finances an electronics collection, transportation, and recycling program in Washington State. Products covered under the law include TVs, computers, and monitors (RCW 70A.500.020(6)) from "covered entities" defined as any household, charity, school district, small business, or small government. The County and private haulers inform residents, small businesses, and schools about this program through currently existing community outreach and education methods. Electronics can be dropped off at facilities in the County that are registered with E-Cycle Washington. The website for this program is www.ecyclewashington.org.

LIGHT BULB RECYCLING

As of January 1, 2015, Washington State residents and businesses are able to recycle mercury-containing lights at no charge, by dropping them off at authorized collection sites throughout Washington State, including the County's MRW facility (the Disposal of Toxics Program). Categories of acceptable lights include fluorescent tubes, compact fluorescent lights, and high-intensity-discharge lights. Recycling mercury-containing lights protects the environment and human health by reducing the release of mercury, a potent neurotoxin. Collection sites are listed on the program website at https://www.lightrecycle.org/collection-site-locator/.

TIRE RECYCLING

Used tires are accepted at transfer stations in the system and at Beacon Battery and Tires. In recent years, the County has been the recipient of multiple tire pile cleanup grants funded by Ecology. These programs are described in further detail in Section 8.1.9.

PAINT RECYCLING

In 2019, Washington became the ninth state with a paint stewardship program, as defined by RCW 70A.515. This statewide recycling program was designed by paint manufacturers, with oversight by Ecology's Solid Waste Management program and operated by the manufacturers' stewardship organization, PaintCare. The program will accept latex paint from any household or business, but only accepts oil-based or other paint that may be potentially dangerous waste from households or small quantity generators.

4.1.2 Facilities

The following list includes, but is not limited to, facilities that accept recyclable materials from the public:

- Birch Bay-Lynden Drop Box Facility & Recycling Center (SSC)—Accepts metal, antifreeze, oil, cardboard, glass, paper, plastic, cans.
- Cando Recycling Transfer Station—Accepts metal, oil, cardboard, glass, paper, plastic, cans, electronics, tires, yard waste, construction debris, wood, and motor oil.
- SSC Cedarville Drop Box Facility & Recycling Center—Accepts metal, antifreeze, oil, cardboard, glass, plastic, cans.
- NVD Drop Box Facility & Recycling Center—Accepts metal, antifreeze, oil, cardboard, glass, paper, plastic, cans, tires, yard waste, and electronics.
- Northwest Recycling and Northwest Recycling Warehouse—Accepts metals, appliances, cardboard, automobile bodies, electric motors, radiators, and car batteries. Provides drop boxes upon request for residential, commercial, and industrial accounts.
- 1PC Electronics Recycling—A member of Washington's E-cycle program, it accepts electronic and medical equipment and offers hard drive shredding and data destruction services.
- SSC Roeder Avenue Drop Box Facility & Recycling Center—Accepts recycling of household materials, including metals, plastics, plastic film and miscellaneous plastics, and paper for a drop-off fee. Also accepts yard waste.
- Republic Transfer Station—Accepts scrap metal, vehicle batteries, cardboard, scrap paper, and newspaper.
- RDS Transfer Station—Accepts aluminum, vehicle batteries, appliances, cardboard, glass, electronics, paper, tires, plastic, scrap metal, cans, porcelain, sheetrock, wood, and yard debris for a drop-off fee.
- Z Recyclers—Metal recycling center and scrap metal facility that accepts all types of metal.

A material recovery facility (MRF) is located at the RDS Transfer Station in Ferndale and operated through early 2020. RDS has completed a new 12,000 square foot station that creates extra tipping floor space and allows the facility to presort loads and better separate mixed wastes. Potentially recoverable materials (recycling or diversion) were high graded out of the transfer station tipping floor and sent to the MRF portion of the site. Construction material haulers may be directed to dump their loads directly at the MRF. The conveyor brought materials past a manual pick line where various construction materials could be sorted including aluminum, vehicle batteries, appliances, cardboard, glass, electronics, paper, tires, plastic, scrap metal, cans, porcelain, sheetrock, and wood. The facility typically guarantees a diversion rate of 20 percent for the overall waste stream being processed by the transfer station because of the MRF capability.

4.1.3 Designated Recyclable Materials List

Recyclable materials are currently being collected in the County because of their potential for waste stream diversion, collection efficiency, processing requirements, and market demand, as listed in Table 4-1. The list of materials that the County Council has designated as recyclable through curbside collection can be found in WCC 8.10.050, Section C. Changes in technology, political climate, and markets may necessitate changes in the designated recyclables. Items are reviewed for addition to or deletion from the designated recyclables list based on the following criteria:

- The market price for an existing material becomes so low that it is no longer feasible to collect, process, and/or ship to markets.
- Local markets and/or brokers expand their list of acceptable items based on new uses for materials or technologies that increase demand.
- New local or regional processing or demand for a particular material develops.
- Consumer demand for recycling of certain materials, despite market conditions that require additional cost to do so.
- No satisfactory market can be found for an existing recyclable material, causing the material to be stockpiled with no apparent solution in the near future.
- The potential for increased or decreased amounts of diversion.
- New technologies and innovative program approaches.
- Environmental and human health impacts associated with recycling certain materials.
- Legislative mandate.

For instance, for several years, only plastic bottles with necks were accepted for recycling because of available markets for processing. As of the writing of the 2022-2027 CSHWMP in 2021, all bottles and containers, regardless of number or color were accepted for collection. These items had been added to the list as markets became available and processing these items became economically feasible for local haulers. However as of the 2024 CSHWMP amendment, in order to avoid sending materials to regional MRFs that may be designated as contaminants due to each facility's sorting technology, plastics on the designated recyclables list are limited to bottles, jugs, tubs and cups. These plastic materials have been confirmed to be universally accepted by each regional MRF to which Whatcom County sends its source separated recyclables.

Additionally, with the current changes in regional markets for glass recycling, Whatcom County may reevaluate the inclusion of glass on its designated recyclables list.

Any proposed changes to the designated recyclables list must be made to the Solid Waste Division and taken to the SWAC for review. The SWAC will make a recommendation to the County executive

for review/approval on whether to add or remove the material from the designated recyclables list. If approved, the designated recyclables list is updated and submitted to Ecology.

4.2 Needs and Opportunities

4.2.1 Residential Recycling

Residential recycling programs in the County have historically operated under a three-bin collection system. As stated in Ecology reports provided annually to the County, the County system has relatively high recycling rates (46 to 55 percent) and diversion rates (41 to 54 percent) when compared to the state and other Washington counties. Service providers and County staff generally agree that the community, specifically single-family residential users, has had a strong understanding of the source-separated, three-bin system. This understanding is reflected in the high residential recycling participation rate, which has held steady at over 90 percent in recent years.

The County reports some of the lowest contamination rates in the state, which is commonly attributed to the three-bin system. Contamination results when customers improperly sort recyclable materials, and results in higher customer costs and additional materials going to landfill.

The previous CSHWMP update process considered the benefits of alternative collection methods under a commingled (single-stream) system for recyclables, including the potential for even higher participation rates and improved compliance. At the time, stakeholders noted the significant challenges associated with conversion to a single stream recycling system that would require the construction of high-end sorting facilities, a new truck fleet, and access to markets accepting degraded products. In addition, the value of recyclable commodities could decline because of increased contamination and increased competition from the many other communities that have already converted to commingled recyclables collection. Given the strong support for the existing three-bin system of collecting recyclables, other collection opportunities were not evaluated at the time in the development of the CSHWMP. Ecology supports the collection of curbside-sorted materials through RCW 70A.205.045(7)(b).

Despite the fact that alternative collection strategies were not evaluated during the CSHWMP update, in 2022, SSC and the City of Bellingham worked to create a pilot project looking at the advantages and drawbacks of converting to a single-stream recycling system. This pilot project was the result of a contract clause between the City of Bellingham and SSC stating that it is the City's intent that SSC use good faith efforts to locate a market for all recyclable materials, so long as those markets do not exceed the cost of disposal. Due to several factors, such as the closure of Northwest Recycling where commingled plastic, tin, aluminum and glass were hand separated on site, the decrease in recycling markets due to China instituting its National Sword policy, and labor costs increasing, partially due to high LNI claims from repetitive motion injuries experienced by recycle truck drivers, the cost of recycling had exceeded the cost of landfilling.

The City of Bellingham and SSC explored options for recycling collection that would provide for a lower cost, while maintaining the high value of collected recyclables. It was quickly determined that in order to reduce costs, SSC would need to convert to an automated system. Several types of automated systems were considered, including using two separate carts for fiber and PTAG, or using split carts. These options were decided against, due to the space issues of adding two extra carts to each residence, and the exorbitant costs that would be incurred to purchase specialized trucks to accommodate for split bins. Ultimately the decision was made to pilot a single stream system based on the assumed benefits of customer convenience, increased participation, decreased litter, a decrease of injuries experienced by recycle truck drivers, and fewer trucks on the road, contributing to a reduction of greenhouse gas emissions.

The pilot project ran from May 2022 through November 2022 in the Edgemoor neighborhood in south Bellingham. SSC provided 96-gallon recycling bins for customers to consolidate all of the recyclable materials collected in the three-bins, along with cardboard. Curbside recyclables were collected every two weeks. After the pilot program was completed, SSC reported that the recycling yield from curbside collection matched that of the three-bin system, a 65% reduction in trucking hours, and generally positive response from customers.

In February 2023, Bellingham City Council discussed the results of the pilot project and approved the conversion to single stream recycling. SSC has been engaged in a slow rollout to convert the collection system in Bellingham to single stream throughout 2024. Based on the results of the pilot program, and in order to support a consistent recycling system across the service areas, Whatcom County amended its code to allow for service providers to utilize a single stream recycling system. As of this amendment, both Nooksack Valley Disposal and Cando have not expressed interest in converting to a single stream system.

During the pilot program, SSC was not able to collect data on the difference in the amount of contamination, as curbside recyclables are consolidated at the local MRF before being transported to one of the larger regional MRFs. Typically, however, contamination rates are higher in single stream systems, and the City of Bellingham has been engaged in an educational campaign to increase recycling and reduce contamination. As SSC rolls out the single stream collection system throughout the rest of its service area, they will continue to work with each jurisdiction to increase public education and outreach around proper recycling practices.

Contamination and improper recycling of materials has also been an issue with the three-bin system as reported by some providers, including mixed materials being placed in the same bins or overflowing of the bins. These issues may be addressed through additional public education programs and advertising. Within the three-bin system, in cases where a customer may have a higher volume of recyclable materials than the bin's capacity, haulers typically accept materials, if they are appropriately separated, in alternative containers. To prevent public nuisance during winter weather, waste collection companies provide routine windy weather tips such as putting paper in a paper sack before laying the sack on its side in the bin, setting bins on the ground versus stacking, weighing down cardboard, etc.

Additionally, the County provides educational resources for residents, including a social marketing campaign aimed at reducing litter due to high winds (https://www.whatcomcounty.us/litter).

4.2.2 Haulers may also provide notice to customers who repeatedly ignore recycling instructions, whether they are using the three-bin system or the single stream system.Multifamily Residential Recycling

Approximately 26 percent of the County's population resides in multifamily residential units, representing a large share of the customer base (U.S. Census, 2014–2019). There is a general perception that recycling rates for multifamily residential are low relative to single-family residential rates. This is commonly attributed to the lack of understanding of the system by multifamily residential subscribers, high tenant turnover, lack of incentives for tenant participation, and a lack of outreach and education to multifamily residents. Some service providers also indicated that the higher levels of contamination found in multifamily recycling bins and lower participation rates compared to the rest of the County are a weakness of the existing system.

The Washington State Recycling Association recognized multifamily recycling as an issue for communities across the state in its 2014 report, "Sorting It Out: The State of Multifamily Recycling in Washington State" (WSRA, 2014). The report notes the lack of targeted focus on multifamily recycling as a primary cause of relatively low multifamily recycling rates, and that an approach with three prongs can help boost rates. The three components are: (1) collection statistics; (2) policies and regulations; and (3) education and outreach. While additional outreach will be helpful, it should be noted that the local multifamily program is now and has been very successful since 1992. Over 90 percent of all multifamily complexes participate, with an average recycling rate of 30 percent, and a contamination rate of below 5 percent.

4.2.3 Commercial Recycling

Commercial recyclable collection is provided directly to businesses by the private sector in an unregulated system. Recycling collectors include waste haulers, buyback centers, private collection firms, and small mosquito fleet operators. Most commercial MSW customers also subscribe to source-separated collection from the G-certificated haulers for various materials, depending upon their economic sector. These services are almost universally less costly than disposal, thus existing rate structures incentivize diversion to recycling and composting, and in some cases, reuse. Business participation has been steadily growing since the early 1990s to today, where nearly every local business participates in recycling or waste reduction to one extent or another. Part of this success is due to the rate structure that makes recycling the more cost-effective alternative to solid waste disposal. The County recognizes the need to maintain the high recycling participation rate among businesses.

4.3 Goals and Actions

Recycling and diversion in the County are already highly successful when compared to the state goal of achieving waste stream reduction of 50 percent. In 2017, approximately 44 percent of the County's waste stream was recycled, and 54 percent was diverted, as reported by Ecology. The County recognizes that while recycling remains relatively stable, diversion rates vary and can be easily skewed by one-time events, misrepresenting the success of the County's educational programs.

Goals and actions related to recycling focus on maximizing recycling efficiency; increasing public outreach, including a focus on multifamily residential recycling; and developing a better understanding of how users interact with the overall system.

Table 4-3
Goals and Actions for Recycling

GOALS	ACTIONS
Residential Recycling	
1. Enhance residential recycling.	A. Assess materials currently collected through the recycling system, focusing on their relevance to overall solid waste system goals and commonly disposed recyclable materials. B. Evaluate current alternate materials collected curbside and consider the potential to add or remove materials. C. Educate the public on maximizing recycling efficiency, focusing on properly preparing recyclables and reducing contamination.
Multifamily Recycling	
1. Gather information about multifamily disposal and recycling habits.	A. Conduct a waste audit to understand the recycling habits of multifamily customers. Findings could drive future action.
2. Encourage manager/owner responsibility.	A. Education outreach to building/facility management. Suggest training of residents for facility waste bin system at move-in and require compliance in lease.
3. Increase multifamily residential outreach.	A. Provide educational information to be distributed to multifamily residents, such as information on how to accommodate recycling bins. B. Create or expand programs to provide waste audits to building managers and provide support for follow-up education. C. Provide clear labeling of acceptable materials with pictures for each container to address potential language barriers. D. Ensure that the frequency of curbside service to multifamily buildings provides adequate capacity in each recycling bin at any time, minimizing potential for unnecessary disposal or contamination.
Commercial Recycling	
1. Continue to support commercial recycling.	A. Monitor commercial recycling rates to ensure all businesses in the County are served.

5 ORGANIC MATERIAL MANAGEMENT

Significant diversion of waste is commonly accomplished through composting of organic materials. Organic materials (green waste, food waste, and compostable paper) are a significant component of the County's solid waste stream. In 2017, recycling and diversion efforts accounted for the diversion of over 42,000 tons of organic materials (including 9,000 tons of food) from landfill disposal that equated to about 25 percent of the total waste stream.

In 2015–2016, Ecology conducted a four-season MSW characterization study in select counties across the state, one of which was the County (Ecology, 2016). The study found that organic material made up approximately 29 percent of the total MSW stream. More than half of the organic materials were attributed to residential and commercial food waste. Using the Ecology waste sort study information and the Ecology diversion reports, the organic material generation for the 2015 waste stream was approximately 77,000 tons of organic materials, with about 21,000 tons of food waste (food scraps) and wasted food (food allowed to spoil) disposed of at a landfill. These data suggest that more than half of the organic material generated in the County is ultimately disposed of at a landfill.

5.1 Existing Conditions

5.1.1 Programs

CURBSIDE COLLECT ION

Residential food and yard waste collection services are provided by SSC and NVD on an every other week basis; commercial collection frequency varies dependent upon customer need. Curbside collection is not available in some of the rural areas of eastern Whatcom County.

- SSC—Provides residential curbside and commercial collection of yard waste, food waste, and compostable papers through the SSC Food Plus program. Materials are collected in the same container. The service is provided throughout the SSC service area, except for Lummi Island and the Lummi peninsula south of Cagey.
- NVD—Provides residential curbside and commercial collection of yard waste, food waste, and compostable papers within the city limits of Lynden, Nooksack, Everson, and Sumas. Household waste and yard waste can also be disposed of at the NVD Drop Box Facility & Recycling Center.

Cando does not provide curbside collection of organics. However, green waste is accepted at the Cando Drop Box Facility & Recycling Center in Point Roberts.

EDUCATIONAL PROGRAMMING

The WSU Master Composting and Recycling program and the County Solid Waste Division provide a substantial amount of composting information on their websites. These programs, including the WSU Backyard Composting program, assist residents with the management of food waste scraps so that these scraps never enter the solid waste system but instead provide a beneficial product for use around the home.

The SSC Food to Flowers! is a school service available to elementary schools and other educational institutions. The program promotes student engagement in composting practices while they learn about the associated environmental benefits.

The County currently provides no outreach program to assist commercial entities in managing their organic material. Because the County cannot mandate commercial recycling or composting services, the SSC Food to Flowers! program is supported through a means of advertising and education during facility audits to enhance participation.

SSC and NVD also provide technical assistance to businesses requesting information or asking for support in setting up commercial composting services.

The commercial business component focuses on food producers such as restaurants, caterers, long-term care facilities, schools, manufactures, and hospitals to help reduce their food waste. FRP works to provide the technical assistance needed to safely donate surplus food that would ordinarily be dumped in a compost or landfill can. This food is then routed to one of 12 local hunger relief agencies working with the program, using a robust network of volunteers. Participating businesses are widely promoted on social media for their efforts. The program has been successful helping participants reduce their waste costs as well as overall food waste. Once a participant takes the time to handle their food waste a second or third time, they become more aware of their waste generation and tend to donate less over time. For example, a program standout Casa Que Pasa donated on average 905 pounds of surplus food a month in the first four months of 2020. In the same first four-month period of 2021, they donated on average 755 pounds of surplus food.

The FRP program has been steadily growing in recognition and success with the help of a second PPG and additional funds from Whatcom County Solid Waste Division, as well as private donations. In 2019, more than 59,000 pounds of edible food was diverted back to community members in need. There were more than 36 regularly participating business, with additional one-time donations from public events. In 2020, the program saw many of its regular donors stop participating due to the COVID-19 pandemic shutdowns that forced restaurants to operate at lower levels, events to stop, and long-term care facilities to no longer allow outside visitors. However, the program was able to successfully pivot to help in other sectors and recovered 255,000 pounds of surplus edible foods in 2020. The program saw more than 76 businesses participate, with 18 of those businesses participate on a regular basis.

Lastly, FRP has a general public education campaign that aims to teach residents how to reduce and prevent food waste in their daily lives. This is accomplished by distributing educational materials at public events and conducting workshops for public groups. A bimonthly series titled, Waste and Whatnot, is open to the public and hosts themed workshops titled "The Future of Wasted Food" and "Use It Up and Reduce Food Waste at Home." Sustainable Connections has also built robust and interactive website (https://sustainableconnections.org/squatchfoodwaste/) to help people get creative with leftovers, plan meals, and donate nonperishables to local food banks.

5.1.2 Facilities

PUBLIC DROP-OFF LOCATIONS

The following drop box facilities accept organic materials from the public:

- SSC Roeder Avenue Drop Box Facility & Recycling Center—Accepts yard waste only. Materials are transported to the Green Earth Technology Composting Facility.
- RDS Transfer Station—Accepts yard waste and food waste. Materials are transported to the Green Earth Technology Composting Facility.
- Cando Recycling Transfer Station—Accepts yard waste only. Materials are transported to the Green Earth Technology Composting Facility.
- NVD Drop Box Facility & Recycling Center—Accepts yard waste only. Materials are transported to the Green Earth Technology Composting Facility.
- Green Earth Technology Composting Facility—Accepts residential and commercial yard waste and food waste. A description of the composting process is provided below.

COMPOSTING FACILITIES

Organic materials collected at curbside or at drop box locations are transported to the privately-operated Green Earth Technology facility in Lynden. Materials are composted using a Gore-based aerated pile system that can compost a green waste stream with a lighter amount of food waste mixed in through an eight-week production cycle. The facility currently manages up to 20,000 tons per year under its current configuration. The facility's existing infrastructure would require relatively few improvements to double the capacity to 40,000 tons per year, if a sustained need is foreseen. The facility cautiously accepts additional food waste from commercial sources, primarily because a more wet/putrescible food waste might overwhelm the system and result in the generation of significant odors.

DIGESTERS

In addition to the composting facility, two anaerobic digesters are operated in the County. Digesters can be used to generate renewable energy biogas using various organic feedstocks, such as pre-

consumer food waste, manure, sewage, grease trap waste, and agricultural waste. Biogas, biologically produced by an anaerobic digestion process, can be used to fuel combined heat and power engines that generate utility-scale electricity and heat for use internally or by neighboring facilities. Liquid fertilizer, digestate fiber, and water are secondary by-products that potentially can be used in agricultural applications.

The anaerobic digestion process begins with bacterial hydrolysis of the input materials to break down insoluble organic polymers such as carbohydrates and make them available for other bacteria. Acidogenic bacteria then convert the sugars and amino acids into carbon dioxide, hydrogen, ammonia, and organic acids. Acetogenic bacteria then convert these resulting organic acids into acetic acid, along with additional ammonia, hydrogen, and carbon dioxide. Finally, methanogens convert these products to methane and carbon dioxide. The methane gas can then be combusted and turned into energy as described above.

An anaerobic digestion facility typically includes a receiving pit for feedstock, anaerobic digestion tanks, digestate treatment facilities, and gas conditioning and power-generation equipment.

The two digesters in the County are:

- Edaleen Cow Power, LLC
- FPE Renewables, LLC (Vander Haak Dairy)

A total of 8 million gallons of pre-consumer food waste and 16 million gallons of livestock manure were treated by anaerobic digestion in 2020, and 1.8 million kilowatt-hours of generator power was produced.

5.2 Needs and Opportunities

5.2.1 Programs

Organic materials in the County are managed through residential and commercial collection, local drop-off facilities, and on-site composting. The existing program elements for collection or drop-off are accessible to all residents of the County. The residential curbside organic materials collection (yard waste plus food waste) is offered every other week; commercial collection is offered on a more frequent basis dependent upon customer needs. Commercial subscribers consist primarily of food processors and manufacturers, grocery stores, school districts, colleges and universities, and governmental entities, as well as retail and office users. Commercial subscribers also include some restaurants; however, only one chain restaurant participates (both SSC and NVD provide curbside collection services to this chain). SSC personnel indicate that commercial food waste is collected on the residential routes so that there is substantial mixing of food waste with yard waste prior to delivery to the composting facility.

Food waste prevention outreach is currently a significant topic discussed by the U.S. Environmental Protection Agency (EPA) and by Washington jurisdictions. Educational materials are readily available to solid waste program managers through the Food: Too Good to Waste campaign that is focusing on consumer education to avoid waste by consuming what is purchased. Some counties are researching partnerships with community health groups to increase food security as a means of reducing wasted food, including subsidizing the purchase of refrigerated trucks to collect and transport perishable food to community kitchens and shelters.

In 2024, RCW 70A.205.540 was amended to account for the Washington State Organics Materials Management Act, which has a goal of reducing the amount of organic waste going to landfill by 75% by 2030, compared to 2015 numbers. Requirements of the law with regard to Whatcom County are limited to the City of Bellingham and its urban growth area, and include:

1. Beginning April 1, 2027, source-separated organic solid waste collection services are required to be provided year-round to all single-family residents and nonresidential customers that generate more than .25 cubic yards per week of organic materials for management.

2. Beginning April 1, 2030, source-separated organic solid waste collection services must be provided to customers on a nonelective basis, except that a jurisdiction may grant an exemption to a customer that certifies to the jurisdiction that the customer is managing organic material waste on-site or self-hauling their own organic material waste for organic materials management.

3. Beginning April 1, 2030, each jurisdiction's source-separated organic solid waste collection service must include the acceptance of food waste year-round. The jurisdiction may choose to collect food waste source-separated from other organic materials or may collect food waste commingled with other organic materials.

4. Beginning April 1, 2030, all persons, when using curbside collection for disposal, may use only source-separated organic solid waste collection services to discard unwanted organic materials.

Currently, curbside organic service including food waste is already offered to residents throughout much of the county, including the City of Bellingham and its urban growth area.

5.2.2 Facilities

Commercial businesses account for a large percentage of the organic waste generation in the County, although a substantial portion of that material may be less preferred by the composting facility because of the material's overly wet or dense characteristics. The County has several food processors that may be able to divert their waste materials, including seafood, berries, and vegetables. An additional composting opportunity may include identification of a process to reliably compost heavy, wet food generated by restaurants, institutional cafeterias, and other food providers. Identifying additional organics processing techniques in the future may allow more of the County's organic waste stream to be diverted from disposal and processed for a higher use (such as biogas generation).

Organic waste derived from cannabis production is an emerging class of waste that the state and County are closely monitoring. At the time of the writing of the 2022-2027 CSHWMP, the Green Earth Technology facility does not accept cannabis waste and will not do so until there is new guidance from the state or federal level.

In accordance with RCW 70A.205.040, the County must identify the volumetric capacity need at organic management facilities to manage the county's organic material in a way to reach a 75 percent reduction in the statewide disposal of organic material waste by 2030, relative to 2015 levels. To meet this need, the County has determined an annual volumetric need of 34.823 tons.

This calculation uses the 2015-2016 Washington State Waste Characterization Study data that identifies that approximately 32.5% of waste sent to landfill in the NW Waste Generation Area (WGA) was organic material. Whatcom County landfilled 142,862 tons of waste in 2015. 32.5% of that is 46,430 tons. By law, our County aims to now manage at least 75% of this material, or 34,823 tons annually, in methods other than sending it to the landfill. Current infrastructure located in the Whatcom County organic material-shed has the capacity to manage 13,719 additional tons. Thus, we estimate additional organics management facility(ies) in our County need to be able to manage 21,104 tons of organic material on an annual basis. This includes efforts of waste reduction that will prevent waste or divert to human consumption.

Also in accordance with RCW 70A.205.040, the County must identify priority areas for siting organics material management facility(ies) in order to manage the county's organic waste in a way to reach the statewide goal. Priority areas include properties that meet the following criteria:

- Zoned as Agricultural or Rural Industrial and Manufacturing, which are the zones that allow for a composting facility in Whatcom CountyNot within a disadvantaged community, as designated by the Climate and Economic Justice Screening Tool
- Not adjacent to a frequently flooded area as designated by FEMA
- Adjacent to a State or Federal Road, Rural Major Collector Road, or Rural Minor Collector Road
- Not within 200 feet of a high-pressure pipeline

Figure 5-1 provides a map of identified properties that meet these criteria.

Figure 5-1
Priority Areas to Site Organics Management Facilities

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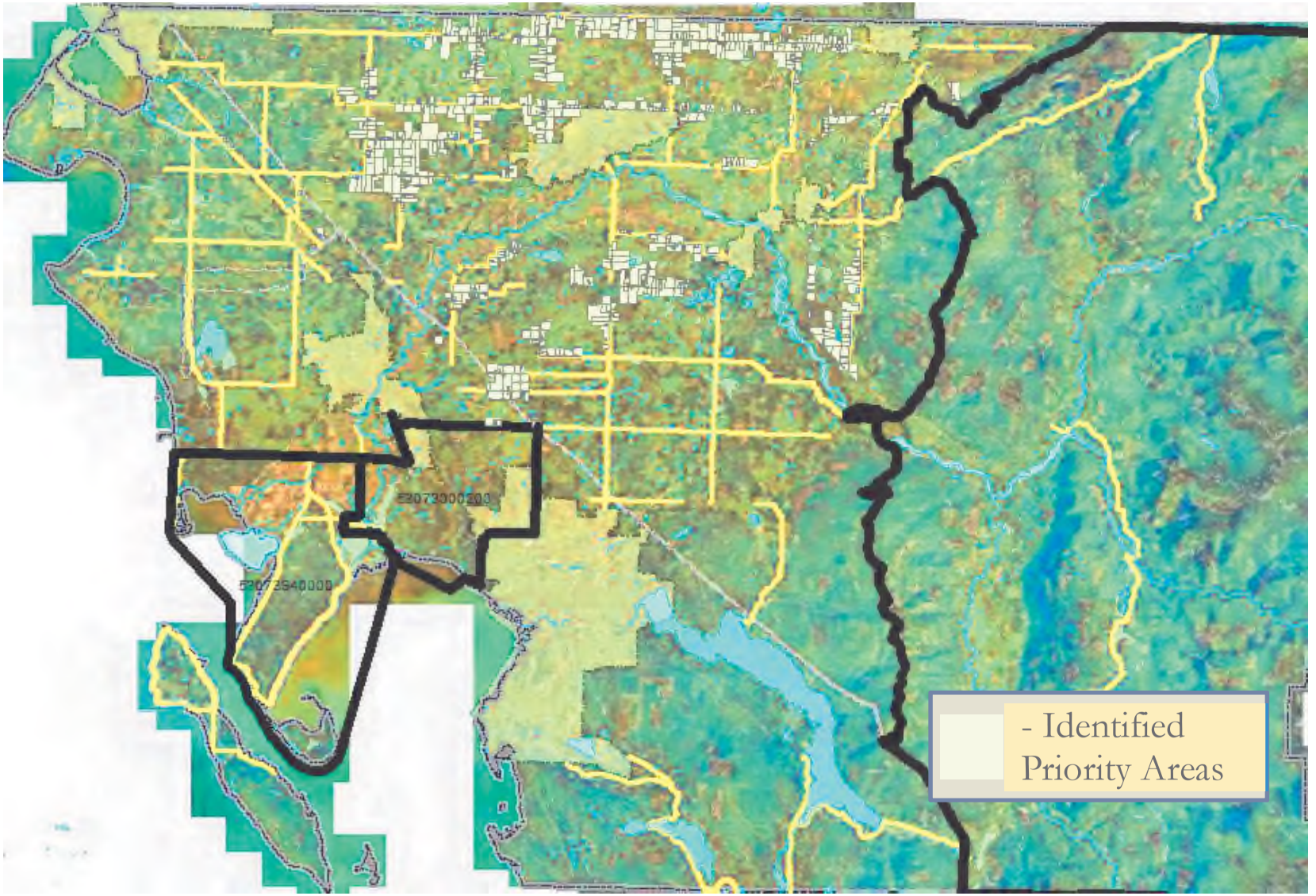


5.3 Goals and Actions

Curbside composting has proven to be an effective program in the County, given its high participation rates. However, both prevention and recovery levels should be increased. To complement this success, future County programming will focus on the expansion of services and outreach to commercial business. Table 5-1 below provides the County goals and actions for organics management.

Table 5-1
Goals and Actions for Organics Management

GOALS	ACTIONS
1. Consider accessibility of organic materials collection and management.	A. Evaluate flexibility of collection (frequency, container size, cost, etc.) and impact to the existing system. B. Investigate expanding organics collection to areas of the County that are not served by existing programs. C. Continue to support composting at home and identify opportunities to expand existing programs.
2. Increase recovery of organic materials from multifamily, commercial, and industrial generators.	A. Target outreach to the food industry with the goal of separating more material appropriate for organics composting, or other organics management approaches as they become available. B. Develop food waste management programs, including potential programs that connect restaurants with farmers who would use food waste as livestock feed. C. Require compostable, single-serving containers at commercial locations—stadiums and fast-food venues. D. Support industry opportunities to use anaerobic digesters for diversion of pre-consumer food waste. E. Evaluate and increase options for multifamily and commercial composting.
3. Identify opportunities to expand cannabis waste management in the County.	A. Identify opportunities to manage cannabis waste generated in the County. B. Monitor state and federal guidance regarding disposal of cannabis waste.
4. Reduce organic waste going to landfill by 75% by 2030, as compared to 2015 amounts.	A. Ensure that curbside organic collection requirements are being met as required by RCW 70A.205.540. B. Establish priority areas within the county for the establishment of organic materials management facilities.
NOTE: County = Whatcom County.	

6 SOLID WASTE COLLECTION

6.1 Existing Conditions

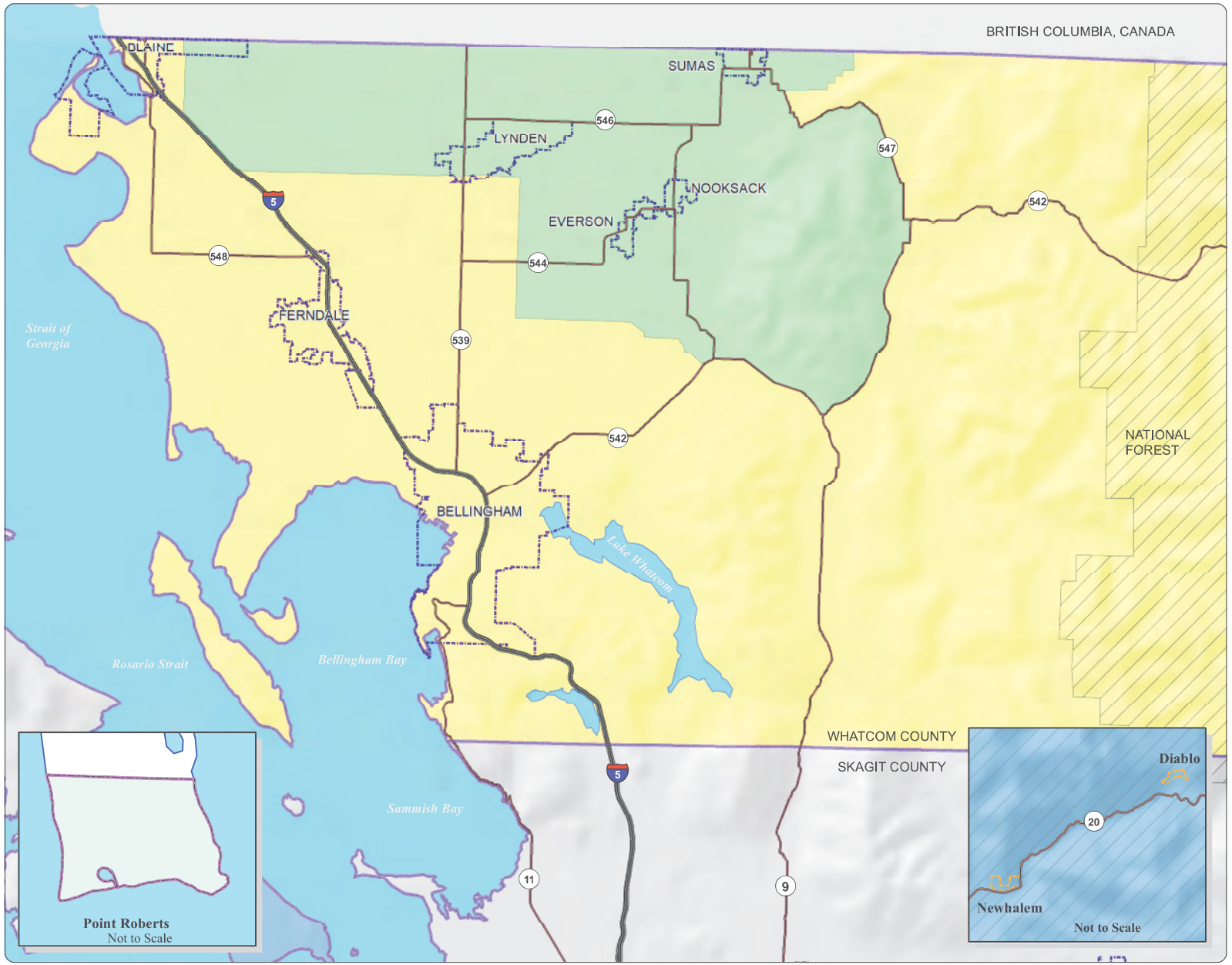
WCC 8.10.040 and WCC 8.10.060 require that certificated solid waste companies collect solid waste from residential and nonresidential entities. Only companies holding G-certificates or operating under municipal contract for that area may collect solid waste for a fee. Weekly, every other week, and monthly curbside garbage and every other week recycling collection service in the County is provided through three private collection companies, each providing service to a different region of the County and regulated by the WUTC and municipal contracts. In addition to garbage and recycling, and except for Lummi Island and certain areas east of Cedarville Road, all SSC subscribers have the option to pay for curbside collection of organic materials. Organic materials (yard waste, food-soiled paper, and food waste) are picked up on an every other week basis. NVD also offers organics collection in its cities (weekly in Lynden, and every other week in Nooksack, Everson, and Sumas). NVD does not offer organics collection in unincorporated areas. Cando does not provide curbside organics collection. The easternmost portion of the County (including Newhalem and Diablo) is within the WUTC G-permit collection area of Waste Management and is managed in the Skagit County system. This area is excluded from the planning area as discussed in Section 1.2.

All cities in the County use traditional bag or customer-owned, 32-gallon can residential collection systems, or collector provided containers or totes. Customers of SSC and NVD also have the option of using collection-company-owned wheeled carts.

The four G-certified haulers are:

- **NVD (Permit G-000166)**—Located at 250 Birch Bay-Lynden Road in Lynden. Serves northern Whatcom County, including the cities of Lynden, Everson, Nooksack, and Sumas, and unincorporated portions of the County in that region.
- **SSC (Permit G-000014)**—Located at 1001 Roeder Avenue in Bellingham. Serves the cities of Bellingham and Ferndale, the Lummi Nation and parts of the Nooksack Tribes, and the areas of unincorporated Whatcom County not served by NVD or Cando.
- **Cando (Permit G-063819)**—Located at 2005 Johnson Road in Point Roberts. Serves the unincorporated area of Point Roberts.
- **Waste Management (Permit G-00237)**—Serves the Newhalem and Diablo unincorporated areas in eastern Whatcom County.

G-certificated hauler territories are depicted in Figure 6-1. Figure 6-2 shows the population density per square mile in relationship to each hauler territory.



Comprehensive Solid and Hazardous Waste Management Plan Update

Figure 6-1
Hauler Territory Map

Whatcom County
Washington

Legend

- City Boundary
- Small Town Boundary
- County Boundary
- National Forest

Certified Waste Hauler Territory (Certificate Number)

- Freedom 2000 LLC, dba Cando (G063819)
- Nooksack Valley Disposal, Inc. (G000166)
- Sanitary Service Co., Inc. (G000014)
- Waste Management of WA, Inc. (G000237)

0 9,000 18,000
Feet

Source: City Boundary, Waterbodies, National Forest Area from Whatcom County. County Boundary from WSDOT.
Waste Hauler Territory from Utilities and Transportation Commission

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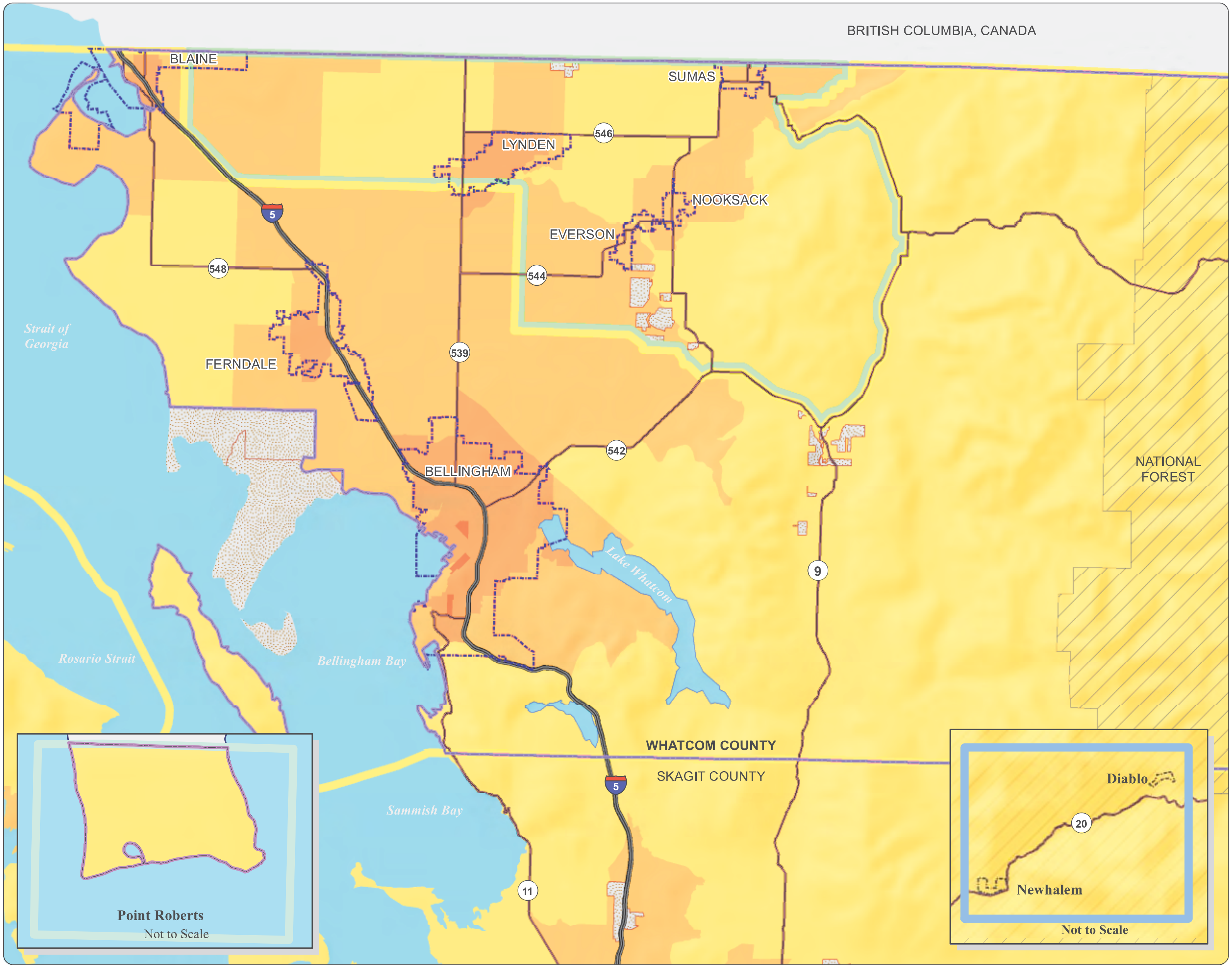
Produced By: jdbrandt
Project:

Comprehensive Solid and Hazardous Waste Management Plan Update

Figure 6-2
Population Density Map

Whatcom County
Washington



Legend

- City Boundary
- Small Town Boundary
- Tribal Lands
- Planning Area
- National Forest

Certified Waste Hauler Territory

- Freedom 2000 LLC, dba Cando
- Nooksack Valley Disposal, Inc.
- Sanitary Service Co., Inc.
- Waste Management of WA, Inc.

2020 Population Density (per square mile)

- 100 or fewer people
- 101 to 1,000 people
- 1,001 to 10,000 people
- 10,001 to 25,000

0 9,000 18,000
Feet

Source:
City Boundary, Waterbodies, National Forest Area, Planning Area from Whatcom County. Population Density from Esri ArcGIS Online.
Tribal Land from U.S. Census Bureau.
Waste Hauler Territory from Washinton Utilities and Transportation Commission

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Produced By: jelbrott
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Incorporated cities in the County obtain their own solid waste collection services through independent contracts. Contracted services, by way of interlocal agreements, must meet the County's standards for curbside collection. Collected waste is delivered to County-designated transfer facilities, as described in Section 7.1.

As an alternative to curbside collection, there are several facilities available for public drop-off. These facilities are discussed in Section 7.

6.2 Needs and Opportunities

Curbside solid waste collection is an entirely privatized system, with each collector responsive to market demands and customer requests. Collectors adjust the size and routing of their fleet as necessary to provide the services required by the County and cities. Additional services requested by customers are considered by each collector and responded to directly.

6.3 Goals and Actions

This existing collection system meets the needs of the County customer base through market demands placed on the private collectors.

Table 6-1
Goals and Actions for Collection

GOALS	ACTIONS
1. Ensure that collectors are providing the required minimum service to all subscribers as outlined in the Whatcom County Code and interlocal agreements between the County and municipalities.	A. Investigate complaints regarding collection services and correct deficiencies.

7 TRANSFER AND DISPOSAL

Transfer systems consist of fixed facilities with drop boxes and/or transfer stations that receive waste from public and commercial sources. The purpose of a transfer system is to provide a centralized location for consolidation of numerous small waste loads, loading the waste into larger transfer containers, and transporting it to an appropriately permitted disposal site. Consolidation improves the economics of waste transport and reduces traffic impacts at land disposal sites. In addition to the consolidation of waste materials, transfer stations can serve as a location for processing recyclable materials. Material-processing activities include the separation, preparation, and consolidation of recyclable material collected through curbside programs or removed from incoming loads.

- **Transfer station**—A facility that receives compact and loose waste from both residential and commercial sources. Transfer stations may use a dumping pit or tipping floor to consolidate waste material before transferring it into a trailer or compactor. In transfer stations with a dumping pit, a tractor typically crushes and compacts the waste before the waste is loaded into the trailer or compactor. Trailer loading usually requires the use of a knuckle-boom crane to evenly distribute and compact the waste in the trailer. Alternatively, a transfer station with a tipping floor may use a dozer to push the materials against a wall for crushing, followed by lifting into a trailer or pushing into a subfloor stationary compactor. Once the trailer is loaded, the load is secured and then the container is hauled to the landfill by truck or by rail.
- **Drop box facility**—A solid waste facility where the public can directly deposit their own waste materials into a drop box container. When the drop box is full, it is loaded onto a roll-off truck and transported to a transfer station where the waste is then transferred to disposal containers for transport to the landfill. Drop box facilities are often provided in various urban and rural areas to reduce the distance that the public must travel to reach a transfer facility or to provide an option where there might be less congestion. In general, drop box facilities are less expensive to operate because of reduced costs for structures, equipment, and, potentially, land. Drop box facilities can also provide opportunities for recycling and for the separate collection of yard debris, woodwaste, and/or C/D waste.

7.1 Existing Conditions

The County solid waste system is a transfer-based system consisting of several transfer stations and drop box facilities that direct waste to two primary out-of-county landfills. There are no operational landfills in the County, although the County owns several closed landfills. A summary of the facilities discussed in the following sections is provided in Appendix A.

7.1.1 Transfer Stations

The County is served by three privately operated transfer stations, one of which is located on County-owned land leased to the operator (located in Point Roberts).

- **RDS Transfer Station—**One of the two primary transfer stations in the County, it accepts self-haul waste and waste collected by SSC and NVD. The RDS Transfer Station includes one inbound scale, two outbound scales, two truck bays, and an MRF that was operated through early 2020. There is a self-service recycling center prior to the scales that accepts cardboard, newspaper, mixed paper, glass, tin cans, and aluminum. Waste for disposal is transported by truck to the Columbia Ridge Landfill in Arlington, Oregon. Recyclable materials are sold to the appropriate processing facilities, the Slater Road Lautenbach Recycle Park. Wood is chipped and shipped to burners in Washington State and Canada. In 2017, RDS processed 116,885 tons of solid waste materials.
- **Republic Transfer Station—**The other primary transfer station in the County, it accepts self-haul waste and waste collected by SSC in the City of Bellingham. The facility includes one scale for inbound and outbound traffic. The tipping floor is contained entirely indoors and provides space for six vehicle hand unloaders and one tip truck. Waste for disposal is transported by rail to the Roosevelt Regional Landfill in Roosevelt, Washington. Recyclable materials including cardboard, newspaper, and steel, are collected at the front of the facility (prior to the scales). In 2017, Republic processed 52,039 tons of solid waste materials.
- **Cando/Point Roberts Transfer Station**—Located on County-owned land but is privately operated via a lease with the County. Curbside and self-haul waste and recycling are collected and sorted. Waste for disposal is transported by truck to the Cowlitz County Headquarters Landfill in Castle Rock, Washington. Recyclable materials are sold to various entities through British Columbia, Canada. In 2017, the facility processed 1,177 tons of solid waste materials.
- **Bellingham Vactor Waste Facility—**The City of Bellingham owns, operates, and maintains a vactor waste transfer station for the purpose of processing street sweepings and vactor waste materials. The facility accepts street waste from the City of Bellingham, the County, the Washington Department of Transportation, and several private operators. The city currently contracts with a private party to transport the material to the Waste Management Greater Wenatchee Solid Waste Landfill. This facility is discussed in more detail in Section 8.1.8.

These transfer stations, with exception to the Bellingham Vactor Waste Facility, are open to the public. Current disposal rates for the transfer stations are provided in Table 7-1. Private operators adjust their rates as necessary to efficiently maintain their services. Private transfer stations are in direct competition with each other. Customers should contact the service providers directly for accurate and up-to-date information.

Table 7-1
Disposal Rates for Transfer Stations, 2021

Waste Type	Measured By	Flat Rate	Weight Rate		Volume Rate	Minimum
			Per Pound	Per Ton		
RDS						
Garbage	Weight	--	$0.070	$140	--	--
Contractors (Accounts Only)	Weight	--	$0.056	$112	--	--
Wood	Weight	--	$0.050	$100	--	--
Yard Waste	Weight	--	$0.040	$80	--	--
Dirt and Sod	Weight	--	$0.025	$50	--	--
Metal	Weight	--	$0.020	$40	--	--
Concrete	Weight	--	$0.020	$40	--	--
All Passenger Tires	Flat Fee	$10/each	--	--	--	--
Semi Tires	Flat Fee	$20/each	--	--	--	--
Tractor Tires	Flat Fee	$50/each	--	--	--	--
Loader Tires	Flat Fee	$100/each	--	--	--	--
Propane Tanks	Flat Fee	$10/each	--	--	--	--
Hot Water Tanks, Dishwasher, Stoves, Washers, Dryers	Flat Fee	$10/each	--	--	--	--
Refrigerators, Freezers, Air Conditioner Units	Flat Fee	$40/each	--	--	--	--
Porcelain Toilets and Sinks	Flat Fee	--	--	--	--	--
Mobile Homes (Manager Approval)	Volume	--	--	--	$1.25 per square foot	$1,000
Republic						
Garbage	Weight	$7.35*	$0.057	$113.40	--	$12.60
C/D Waste	Weight	$7.35*	$0.057	$113.40	--	$12.60
Yard Waste	Weight	$7.35*	$0.057	$113.40	--	$12.60
Asbestos	Weight	$7.35*	$0.175	$350.70	--	$106.05
Paper	Free	--	--	--	--	--
Cando						
Garbage	Weight	--	$0.135	$270	--	$5.50
Recycling	Weight	--	$0.05	$100	--	$3.00
Appliances	Flat Fee	$20/each	--	--	--	--
Fridge/Freezer	Flat Fee	$50/each	--	--	--	--
Tire, No Rim	Flat Fee	$4/each	--	--	--	--

Waste Type	Measured By	Flat Rate	Weight Rate		Volume Rate	Minimum
			Per Pound	Per Ton		
Propane Tank	Volume	--	--	--	$5/gallon	--
Battery	Flat Fee	$1/each	--	--	--	--
Computer Monitor	Flat Fee	$10/each	--	--	--	--
TV	Flat plus weight	$1/each plus weight	$0.135	--	--	--
Microwave	Flat plus weight	$5/each plus weight	$0.135	--	--	--
Electronics	Flat Fee	$5.00	--	--	--	--

NOTES:
-- = No data available.
C/D = construction and demolition.
Cando = Cando Recycling and Disposal
RDS = Recycling and Disposal Services.
Republic = Republic Services.
Private operators adjust their rates as necessary to efficiently maintain their services. Customers should contact the service providers directly for accurate and up-to-date information.
*Gate fee, regardless of weight or materials.

In addition, the City of Bellingham maintains a vactor waste transfer station that is not open to the public but does receive vactor and street wastes from countywide commercial and municipal operators for a fee.

7.1.2 Drop Box Facilities

In addition to the transfer stations, County residents and businesses may dispose of waste at any of the drop box facilities listed below.

- **SSC Birch Bay-Lynden Drop Box Facility & Recycling Center**—County-owned and operated by SSC via a lease with the County. Waste is transported to the RDS Transfer Station. Recyclable materials are brought to the RDS Transfer Station and Slater Road Lautenbach Recycle Park for sorting and shipment to the appropriate entities.
- **SSC Cedarville Drop Box Facility & Recycling Center**—County-owned and is operated by SSC via a lease with the County. Waste is transported to the RDS Transfer Station. Recyclable materials are delivered to the RDS Transfer Station and Slater Road Lautenbach Recycle Park for sorting and shipment to the appropriate entities.
- **SSC Roeder Avenue Drop Box Facility & Recycling Center**—Located in downtown Bellingham. Waste and recyclable materials are transported to the RDS Transfer Station or the Republic Transfer Station.

- **NVD Drop Box Facility & Recycling Center**—Waste collected is transported to the RDS Transfer Station for sorting. Recyclable materials are collected and shipped to the appropriate entities.

These drop box facilities are open to the public. Current disposal rates for the drop box facilities are provided in Table 7-2. Private operators adjust their rates as necessary to efficiently maintain their services. Private drop-off facilities are in direct competition with each other. Customers should contact the service providers directly for accurate and up-to-date information.

Table 7-2
Disposal Rates for Drop Box Facilities, 2021

Waste Type	Measured By	Weight Rate		Volume Rate	Minimum
		Per Pound	Per Ton		
NVD					
Garbage	Weight	$0.13	$260	--	$10.00
Recycling	Volume[a]	$0.05	$100	--	$5.00
Paper, Cardboard, Tin	Weight	$0.05	$100	--	$5.00
Plastics	Volume[a]	--	--	$5.00 per 32 gallon	$5.00
Glass	Weight	$0.07	$140	--	$5.00
Scrap Metal, Aluminum	Free	Free		--	--
Wood	Weight	$0.13	$260	--	$10.00
Yard Waste	Weight	$0.05	$100	--	$10.00
SSC Cedarville					
Garbage	Weight	$0.15	$300	--	$5.00
Recycling	Weight	$0.03	$60	--	--
SSC Birch Bay					
Garbage	Weight	$0.15	$300	--	$5.00
Recycling	Weight	$0.03	$60	--	--
SSC Roeder					
Garbage	Volume[a]	--	$300[b]	$30.90 per cubic yard	$5.85
Recycling	Volume[a]	--	--	$5 per 30-gallon bag	$5.00

NOTES:
Private operators adjust their rates as necessary to efficiently maintain their services. Customers should contact the service providers directly for accurate and up-to-date information.
-- = No data available.
NVD = Nooksack Valley Disposal
SSC= Sanitary Service Company
[a] Volume defined as "normal residential amounts."
[b] Garbage disposal rate per ton is estimated from the volume rate based on a loose density of 190 to 220 pounds or cubic yards.

7.1.3 Landfills

MSW generated in the County is primarily disposed of at one of the following landfills:

- **Columbia Ridge Landfill, Arlington, Oregon—**Operated by Waste Management, this landfill is a modern Resource Conservation and Recovery Act (RCRA) Subtitle D-permitted landfill that accepts primarily MSW, as well as industrial and special wastes. It does not accept hazardous waste. Columbia Ridge is the destination of waste originating from the RDS Transfer Station.
- **Roosevelt Regional Landfill, Roosevelt, Washington—**Operated by Republic Services, it accepts MSW and specific types of special waste. Roosevelt Regional Landfill is the destination of waste originating from the Republic Transfer Station and MSW collected by Waste Management from Newhalem and Diablo in eastern Whatcom County.
- **Headquarters Landfill, Castle Rock, Washington—**Cowlitz County operates this landfill. It is the destination of waste collected by Cando.

Other facilities that currently or have historically accepted waste generated in or from the County, as reported by Ecology, include:

- **BP Cherry Point Refinery Inert Landfill, Blaine, Washington—**Located at the Cherry Point Refinery in Bellingham and operated by BP.
- **CEMEX Inert Waste Landfill, Everett, Washington—**Accepts materials that are neither chemically nor biologically reactive and will not decompose, such as petroleum-contaminated soils generated from cleanup sites,. The contaminated soils are treated with a thermal desorption process at the CEMEX Regional Petroleum-Contaminated Soil Treatment facility before they are landfilled.
- **Graham Road Recycling & Disposal, Medical Lake, Washington—**Operated by Waste Management, this is a limited-purpose facility that accepts primarily C/D waste, industrial waste, and special waste; it does not accept MSW or hazardous waste.
- **Greater Wenatchee Regional Landfill, East Wenatchee, Washington—**Operated by Waste Management, it accepts primarily MSW, C/D waste, and industrial waste. It does not accept hazardous waste.

The County owns and maintains five closed landfills:

- **Cedarville Landfill—**The nine-acre landfill opened in 1980 and was closed in 1990. The landfill is estimated to contain 400,000 cubic yards of refuse underlying the cover soil. The facility is monitored under permit during post-closure consistent with WAC 173-304. The facility has a system in place that controls landfill gas migration and odors; it also has a

leachate collection system. The leachate collected is treated and discharged under a National Pollutant Discharge Elimination System permit issued by Ecology.

- **Birch Bay Landfill—**The five-acre landfill was a County-operated landfill purchased in 1951 and closed in 1983.
- **Point Roberts Landfill—**The landfill accepted MSW from 1982 until 1985, when operation ceased because of the potential costs associated with meeting the then-new MFS. At the time of closure, the landfill was slightly less than one acre in size. The landfill area was then used solely for C/D waste until a separate area was designated for disposal of this waste type in 1988. In 1990, the landfill was closed in accordance with WAC 173-304. This is the current location of the Cando Recycling Transfer Station.
- **Y Road Landfill I**—The Y Road Landfill consists of two distinct landfills, Y Road I and Y Road II, located along opposite sides of the same road. Y Road Landfill I was acquired in 1995 from the Georgia Pacific Corporation for public safety reasons. Records indicate that it was used between 1967 and 1970. It is monitored and regulated as a MTCA cleanup site.
- **Y Road Landfill II**—Y Road Landfill II was closed to MSW in 1984 because of water quality concerns. The landfill was reopened as a limited-purpose landfill that accepted only C/D waste. The landfill was closed to all waste types in 1989. Closure improvements were completed in 1991 and included installation of monitoring wells for gas and water. The MSW cells were closed to WAC 173-304 standards in 1984 and the C/D waste later placed on both the MSW cell footprint and the separate cell was later covered and closed to WAC 173-304 standards, and is monitored and regulated as a MTCA cleanup site.

7.2 Needs and Opportunities

The existing transfer and drop box facilities adequately meet the current waste disposal needs of the community. These facilities are privately owned by entities that consistently evaluate the respective facilities from an efficiency standpoint, including ongoing efforts to encourage communication between the service providers and County residents. At this time, the private entities have not identified any needs that require expanded capacity but have expressed the ability to expand their own operations under short time frames. The County will continue to work with the service providers to ensure each provider is adequately planning for and constructing additional capacity in advance of need.

7.3 Goals and Actions

Table 7-3
Goals and Actions for Transfer and Disposal

GOALS	ACTIONS
1. Continue to maintain and support transfer and disposal system facilities.	A. Provide ongoing post-closure monitoring and maintenance of closed landfills.
	B. Work with existing private transfer stations to ensure compliance with solid waste handling facility permits.
	C. Work with service providers to ensure adequate system capacity is constructed in advance of need.
	D. Work with service providers to ensure adequate communication with County residents regarding collection needs.
2. Continue to manage illegal dumping in the County.	A. Survey residents and businesses regarding disposal needs to ensure sufficient access to disposal facilities is provided.

8 MISCELLANEOUS WASTE

Miscellaneous wastes are materials that require special or separate handling because of their unique characteristics, such as bulk, water content, or dangerous constituents. Miscellaneous wastes discussed in this section include:

- Agricultural waste
- Asbestos
- Biosolids (sewage and septage)
- Contaminated soils and dredged materials
- Disaster debris
- Food-related, grease not containing petroleum
- Biomedical waste and pharmaceuticals
- Vactor waste
- Waste tires
- C/D waste

This section discusses the current management practices for miscellaneous waste and establishes goals and actions for encouraging recovery and reducing environmental impacts.

8.1 Existing Conditions

8.1.1 Agricultural Waste

Agricultural waste, such as manure and crop residues, is typically returned to the land as soil conditioners. Annual volumes and seasonal variation differ by agricultural sector. Guidelines for the proper handling of livestock waste in western Washington have been published by the WSU Agricultural Extension Service and codified under WCC 16.28, Manure and Agricultural Nutrient Management. Deceased animals and animal parts can be disposed of by Tri-County Dead Stock, Inc. Allowances can also be made by the County Health Department for animal burials and composting.

The recent legalization of recreational cannabis production and sales has resulted in regulations specific to the handling and disposal of crop residues. As the industry matures and regulations evolve, the County will rely on the most current regulations and guidance from Ecology regarding disposal best practices for addressing this waste.

8.1.2 Asbestos

The term asbestos represents a group of naturally occurring minerals that historically were used in building products such as cement siding, sprayed-on ceiling texture, and the paper backing of vinyl floor coverings. Asbestos is not considered hazardous waste under either federal or state regulations but is regulated under the federal Toxic Substances Control Act. Asbestos is also regulated under the federal Clean Air Act as an air pollutant that poses human health hazards. Local regulation is provided by the Northwest Clean Air Agency (NWCAA), Regulation Section 570. Properly packaged and labeled asbestos waste is collected at the Republic transfer station, placed in special containers or bags, and transferred to out-of-county landfills for proper disposal as asbestos-containing material. The final disposal sites require that a copy of the NWCAA's asbestos abatement or demolition permit accompany asbestos waste deliveries.

8.1.3 Biosolids (Sewage, Sludge, and Septage)

Sewage sludge that has been treated to meet standards for beneficial use (such as in land application) is called biosolids This type of material is specifically excluded from the definition of solid waste, although other wastes from the wastewater treatment process are classified as solid wastes. Biosolids are defined by WAC 173-308-080 as:

> Municipal sewage sludge that is a primarily organic, semisolid product resulting from the wastewater treatment process that can be beneficially recycled and meets all applicable requirements under this chapter. Biosolids includes a material derived from biosolids, and septic tank sludge, also known as septage, that can be beneficially recycled and meets all applicable requirements.

Biosolids are further categorized by federal regulations into Class A and Class B, based on pathogen-reduction measures and metals contamination levels. The federal and state regulations are self-implementing, which means that the requirements must be met regardless of the permit status of a facility.

Biosolids may be applied on agricultural land, forests, rangelands, or other disturbed land, in a process known as land application that supplies nutrients and replenishes soil organic matter. There are four biosolids land application facilities in the County:

- Shannon Tjoelker Biosolids Facility
- Lil John Biosolids Facility
- Tjoelker Enterprises Biosolids Facility
- City of Ferndale Wastewater Treatment Plant

8.1.4 Petroleum-Contaminated Soil and Dredged Material

Contaminated soil is soil removed during the cleanup of a MTCA site during a dangerous waste facility closure or from corrective actions or other cleanup activities and which contains harmful substances

but is not designated as dangerous waste. Contaminated dredge materials come from the dredging of waterways where contaminants are present at concentrations not suitable for open water disposal, but not designated as dangerous waste. The primary statute governing petroleum-contaminated soil clean up in Washington State is MTCA. RCW 70A.305. WAC 173-340 contains regulations to implement MTCA, including sections on corrective action requirements for leaking underground storage tanks and on cleanup standards. Materials that also contain lead, benzene, polycyclic aromatic hydrocarbons, or polychlorinated biphenyls may trigger a designation as dangerous waste. Treatment, transportation, and disposal of dangerous wastes are subject to the state Dangerous Waste Regulations, WAC 173-303. Dangerous wastes can be transported only to specifically permitted facilities for treatment, storage, or disposal.

Disposal of petroleum-contaminated materials is subject to the requirements of WAC 173-350; these materials must be disposed of at a permitted solid waste handling facility such as a landfill or incinerator. Generators of contaminated dredged materials who wish to dispose of the materials must either construct and permit a limited-purpose landfill, WAC 173-350-400, or use an approved solid waste landfill site or incinerator (see CEMEX Inert Waste Landfill description in Section 7.1.3.

Use of the County waste management system for disposal of contaminated dredged materials typically is conducted only for small projects (i.e., less than ten cubic yards). Small project contaminated dredged materials will be accepted into the County solid waste system for disposal at the RDS and Republic Transfer Stations, and the Cowlitz County Headquarters Landfill, if they have been adequately characterized and have been dewatered adequately to meet criteria specified under the EPA paint filter test (see Federal Register, Vol. 50, No. 83, Tuesday, April 30, 1985).

8.1.5 Disaster Debris

The County could be impacted by several natural disasters including floods, earthquakes, volcanos, windstorms, and landslides, all of which can create an enormous quantity of material requiring management and/or disposal. According to the Federal Emergency Management Agency, natural disasters generally create the following types of debris:

- Windstorms may leave behind waste consisting primarily of trees and other vegetation, construction materials from damaged or destroyed structures, and personal property.
- Flood debris consists of sediment, wreckage, personal belongings, and sometimes hazardous materials deposited on public and private property.
  - Additionally, heavy rains and floods may produce landslides, the debris consisting primarily of soil, gravel, rock, woody debris, and some construction materials.
- Earthquakes generate damaged building materials, personal property, woody debris, and sediment caused by landslides.
- Ice storm or snowstorm debris consists of significant amounts of woody debris from broken tree limbs and branches.

- Fire debris consists of burned-out structures, metal objects, vehicles, ash, and charred woodwaste.

Oil spills or other disasters associated with large industry or refineries are generally addressed by plans already put in place by the appropriate industries and agencies.

The Whatcom County Sheriff's Office Division of Emergency Management is responsible for developing and maintaining a community infrastructure for emergency and disaster mitigation, planning, response, and recovery. The most recent version of the Whatcom County Disaster Debris Management Plan was published on September 1, 2017 (Whatcom County, 2017). The County Health Department plays an active role in supporting emergency planning efforts, as well as serving on the incident command team during response to any natural disasters. The County also understands that the Federal Emergency Management Agency will likely take the lead in the case of natural disasters and supersede local plans. Disaster debris will be managed through the appropriate existing facilities, including transfer facilities, permitted inert waste landfills, building materials recovery centers, and composting facilities, as feasible. The County may also designate certain locations and facilities for accumulating large volumes of disaster debris. In the future, the County may need to designate certain locations and facilities for accumulating large volumes of disaster debris, as needed, specifically drop box and transfer station locations.

8.1.6 Food-Related, Nonpetroleum Grease

Grease is generated primarily by restaurants, cafeterias, and other food services. Because it is semiliquid, it should not be disposed of into a sewer or on-site sewage system and is not easily handled as solid waste. County residents can properly dispose of cooking oil by taking it to the MRW facility (Disposal of Toxics Program). Rendering companies usually handle the collection of grease from businesses, recycling it into such products as an animal feed supplement or biodiesel fuel.

If grease is improperly disposed of, several different agencies or companies may deal with it. Grease dumped into sewers is addressed by municipal wastewater agencies, while grease improperly disposed of in the garbage is addressed by the private MSW collectors. Improper handling of grease by restaurants is addressed by the County Health Department.

8.1.7 Biomedical Waste and Pharmaceuticals

In the medical industry, several definitions exist for biomedical waste because of overlapping and inconsistent local, state, and federal regulations governing its management. This has a critical impact on the management of material, since each generator's quantity of biomedical waste is greatly influenced by how inclusive the definition may be.

In response, the State of Washington has developed a statewide definition of biomedical waste to simplify compliance with local regulations while preserving local control of biomedical waste management (RCW 70A.205). Furthermore, biomedical waste is regulated by WCC 24.06.040. The

state definition of biomedical waste is to be the sole definition for biomedical waste in the state and will preempt biomedical waste definitions established by local health departments or local governments. Biomedical waste is defined and limited to the following types of waste:

Animal waste—Animal carcasses, body parts, and bedding of animals that are known to be infected with, or that have been inoculated with, pathogenic microorganisms infectious to humans.

Biosafety level 4 disease waste—Waste contaminated with blood, excretions, exudates, or secretions from humans or animals that are isolated to protect others from highly communicable infectious diseases that are identified as pathogenic organisms assigned to biosafety level 4 by the current edition of the Centers for Disease Control manual *Biosafety in Microbiological and Biomedical Laboratories*.

Cultures and stocks—Wastes infectious to humans, and include specimen cultures, cultures and stocks of etiologic agents, wastes from production of biologicals and serums, discarded live and attenuated vaccines, and laboratory waste that has come into contact with cultures and stocks of etiologic agents or blood specimens. Such waste includes but is not limited to culture dishes; blood specimen tubes; and devices used to transfer, inoculate, and mix cultures.

Human blood and blood products—Discarded waste human blood and blood components and materials containing free-flowing blood and blood products.

Pathological waste—Human-source biopsy materials, tissues, and anatomical parts that are derived from surgery, obstetrical procedures, and autopsy. Pathological waste does not include teeth, human corpses, remains, and anatomical parts that are intended for interment or cremation.

Sharps waste—Hypodermic needles, syringes with needles attached, IV tubing with needles attached, scalpel blades, and lancets that have been removed from the original sterile package.

The major sources of biomedical waste include hospitals, medical laboratories, research laboratories, commercial diagnostic laboratories, outpatient medical clinics, dental clinics, nursing homes, and veterinary hospitals and schools.

Transportation of biomedical waste requires a solid waste certificate from the WUTC. Stericycle Environmental Solutions and Waste Management Healthcare Solutions are the two biomedical waste collection companies in the state. In general, biomedical wastes must be categorized, segregated, and packaged separately from other waste in containers that are clearly labeled "biohazard" or "biomedical waste." Sharp objects, such as needles and blades, must be packaged in rigid, impervious, properly labeled containers designed for this purpose. With prior approval of the County Health Department, disposal of treated infectious solid waste in the solid waste stream is allowed.

Pharmaceutical waste is any leftover, unused, or expired medication that is no longer needed or can no longer be used. It can be classified as either hazardous or non-hazardous depending on its chemical properties and its risk to humans and the environment.

In 2019, the County Health Department began providing oversight for the Secure Medicine Return program, named Whatcom Med Return, operated by MED-Project, an independent organization at no cost to community members. This program allows residents to return unused or expired household medications at participating pharmacies, police stations, a drug return kiosk, or via a postage-paid envelope available at local libraries. Since the program began, the County has securely collected over 8,000 pounds of pharmaceutical waste and safely transported to a hazardous waste incinerator for destruction. This waste is kept out of the waste stream, protecting surface and groundwater. Properly collection and destroying unwanted medications keeps them out of the wrong hands and reduces the potential for poisoning and unintended overdose. In 2018, The Washington Secure Drug Take-Back Act was signed into law, and as of November 2021, administrative oversight of the program rests with Washington State Department of Health.

Prior to the start of the Whatcom Med Return program, the City of Bellingham collected unused household medications starting in April 2010. Since that date, over 17,000 pounds of pharmaceutical waste have been securely collected and safely transported to a hazardous waste incinerator for destruction. The City of Ferndale operated their own pharmaceutical take-back program between 2013 and 2018 that collected 3,555 pounds of unwanted medication. The City of Ferndale worked with the County Health Department to wind down the program once the Whatcom Med Return established a drop box at the Haggen Pharmacy in Ferndale, which collects household prescriptions and over-the-counter medications, and the Ferndale Police Station, which accepts controlled substances.

The MRW facility (Disposal of Toxics Program) accepts unused pharmaceuticals from small quantity generator businesses (not including controlled substances).

8.1.8 Vactor Waste

The City of Bellingham owns, operates, and maintains a vactor waste transfer station in the Irongate Industrial Area for the purpose of processing street sweepings and vactor waste materials in accordance with regulatory guidelines. The County pays a proportionate share of operations and maintenance cost for its use. The facility also accepts street waste from other municipal jurisdictions and private parties for a fee on a per-ton basis. Customers include the City of Bellingham, the County, the City of Blaine, the Washington Department of Transportation, and several private operators. The smaller cities of the County either dispose of their street sweepings and vactor waste at a permitted disposal facility or process it at a wastewater treatment plant.

Wet material is stockpiled and allowed to passively drain or decant under a covered structure. Decanted wastewater is collected and discharged to the municipal sewer system for treatment at the wastewater treatment plant.

Material is received at the vactor waste transfer station as low- to moderate-risk solid waste. Due to the classification of the material, vactor waste recycling or reuse options are limited. Since the facility is permitted as a transfer station, the City of Bellingham currently legally contracts with a private hauler to transport the material to the Waste Management Greater Wenatchee Solid Waste Landfill for reuse

as alternative daily landfill cover. The City of Bellingham continues to pursue avenues to reuse and recycle vactor waste and street sweepings. The City of Bellingham is also exploring options to encourage the development of additional privately operated vactor waste and street sweeping transfer stations.

The City of Ferndale received grant funding and intends to pursue construction of a vactor waste facility.

8.1.9 Waste Tires

Used tires generated in the County are generally handled by the retail tire industry. Usable tire casings are either shipped directly to retreading plants or combined with unusable casings for later sorting at processing sites. Unusable tires are shipped by state-permitted tire haulers to approved processing, storage, or disposal sites. Tires disposed of in the MSW stream by individuals and businesses are handled at local transfer stations, Cando Recycling Transfer Station, the NVD Drop Box Facility, or Beacon Battery and Tires.

WAC 173-350-350 provides storage requirements for tire piles. WAC 173-350-355 provides waste tire carrier requirements. Ecology provides additional resources on its waste tire website: https://ecology.wa.gov/Waste-Toxics/Business-waste/Manage-your-waste/Waste-tires. Funding for the waste removal account, waste tire storage, and carrier requirements and penalties are discussed in RCW 70A.205.400 and RCW 70A.205.460. The U.S. Uniform Fire Code also regulates tire piles since they present a fire hazard.

In addition, Ecology maintains a Waste Tire Removal Account to fund tire pile cleanups. This account is funded with a $1 fee collected for each new vehicle tire sold in Washington. The account funds waste tire efforts identified by local governments and other public entities for waste tire pile prevention, clean up, and education. The County used these funds for tire pile prevention activities, such as the cleanup of 23,600 tires at four tire amnesty collection events from 2015 to 2021. More information can be found on the program's website: https://ecology.wa.gov/Waste-Toxics/Business-waste/Manage-your-waste/Waste-tires

8.1.10 Construction and Demolition Waste

There are several private for-profit and not-for-profit facilities that accept construction waste throughout the County. These facilities are described in more detail in Sections 3.1 and 4.1.

- RE Store
- RDS Transfer Station
- SSC facilities
- Cando Recycling Transfer Station
- Slater Road Recycle Park
- Granite Construction Company

- Whatcom Builders
- Henifin Recycling Facility

8.2 Needs and Opportunities

The purpose of the solid waste system is to protect public health and environmental quality. Unfortunately, if generators do not have a convenient means of disposing of their waste, some generators will be more likely to dispose of their waste illegally. Others may store the waste while they seek disposal. Such storage or dumping is illegal and often creates environmental and/or human health risks.

Managing these risks and ensuring that there are disposal opportunities for miscellaneous waste is a critical role of the County. Although miscellaneous wastes represent only a relatively small proportion of the total solid waste generated, the County Health Department receives a significant number of inquiries about a variety of unusual and new wastes. It is the County's responsibility to ensure that a safe and reasonable disposal option exists.

All miscellaneous waste types are being handled consistent with the description in Section 8.1. The County will continue to remain active with all identified special waste handlers to ensure compliant disposal practices. In certain cases, such as with C/D waste and vactor waste, miscellaneous waste may be repurposed.

8.2.1 Construction and Demolition Debris and Recycling

C/D waste comprises a significant portion of the waste stream. The 2015 waste sort study conducted by Ecology found that approximately 13 percent by weight of all solid waste consisted of woodwaste, including treated and painted wood, dimensional lumber, engineered wood, and pallets and crates. An additional ten percent of all solid waste consisted of construction materials, including drywall, asphalt paving and roofing, ceramics and bricks, carpet and carpet padding, concrete, and residual materials. Based on these data, C/D waste represents a significant portion of the waste stream and recovery efforts may effectively increase County diversion rates.

Since completion of the study, RDS installed an MRF that was operated through early 2020, to recover C/D-related materials that were dropped off in a designated area or manually sorted from the transfer station tipping floor. While in operation, the MRF contributed a significant amount of diversion that was not accounted for in the Ecology study.

The County's FCO (Ordinance No. 91-041) requires that solid waste generated in the County be processed or disposed of at a designated waste facility. The ordinance also establishes priority levels for waste disposal sites that favor recycling or other means of diversion over landfilling of unseparated solid waste. However, the ordinance exempts C/D waste. A subsequent ordinance (Ordinance No. 96-037) further exempts C/D waste from the FCO. This amendment allows disposal of C/D waste at undesignated disposal sites, including sites located outside the County. It is difficult for the County

to determine the current recycling levels of these materials, given their out-of-county disposal location. More investigation would be required to better understand the situation. Alternatively, revising the current exemption may encourage better management at existing in-County facilities to ensure material recovery prior to disposal.

8.2.2 Vactor Waste

Materials from the City of Bellingham's vactor waste facility are sent to a landfill to be used as landfill cover. Since much of the material contains some level of contamination, reuse of the material requires careful consideration. However, some opportunities may exist to repurpose the material as fill for road projects where the fill will then be capped with asphalt and isolated from any potential exposure pathways. The City of Bellingham and the County should work with regulatory agencies to identify appropriate and safe beneficial reuse alternatives.

8.3 Goals and Actions

The County will evaluate the potential for disposal, recycling, and reuse of miscellaneous waste sources. Programs for miscellaneous waste will focus on the evaluation of alternatives for management of construction demolition, street sweepings, and pharmaceutical waste.

Table 8-1
Goals and Actions for Miscellaneous Waste

GOALS	ACTIONS
1. Increase C/D materials recycling.	A. Conduct outreach to building associations and other construction-related entities to educate contractors about the benefits of a self-regulating industry.
	B. Measure, monitor, and support existing C/D diversion efforts.
	C. Evaluate potential for instituting recycling requirements for construction sites through the building permit program.
	D. Implement provisions for governmental construction projects to require recycling of waste and a preference to use recycled building products.
	E. Explore County use of reclaimed asphalt shingles.
2. Control sham recycling, if it is taking place.	A. Develop a monitoring program to evaluate sham recycling. Understand if there is an issue of illegally hauling solid waste under the guise of recycling.
	B. Evaluate changes to the flow control exemption for C/D materials.
3. Work in state regulatory structure to effectively manage street sweepings and contaminated soil.	A. Evaluate growing need to manage street sweepings and the regulatory barriers to beneficial reuse and/or management of street sweepings.
4. Provide effective management options for pharmaceutical waste.	A. Continue to support and/or enhance existing programs for pharmaceutical take-back.
5. Be prepared for management of miscellaneous waste generated though response to natural or human-caused disasters.	A. Coordinate with the Whatcom County Sheriff's Office Division of Emergency Management for integration of waste handling/disposal into emergency planning documents.

NOTES:
C/D = construction and debris.
County = Whatcom County.

9 ADMINISTRATION AND ENFORCEMENT

Administration and enforcement of solid waste regulations in the County are carried out by various agencies in the County. Administration of solid waste regulations is the joint responsibility of Ecology, the County Health Department, and the incorporated cities in the County. Responsibilities for the enforcement of solid waste regulations are distributed between Ecology and the County Health Department.

This section identifies the statutes and regulations that form the basis for solid waste administration and enforcement and the agencies responsible for implementing them, discusses their effectiveness, and offers recommendations for improvements.

9.1 Existing Conditions

9.1.1 Agency Roles and Responsibilities

WHATCOM COUNTY HEALTH DEPARTMENT

The solid waste system is managed by the Solid Waste Division of the County Health Department; management includes the following responsibilities: solid waste enforcement; solid waste facility permitting; education and outreach for waste prevention and recycling; ensuring economically efficient recycling and disposal systems; litter control; hazardous waste education and disposal; and monitoring of the County's closed landfills. They also facilitate SWAC committee meetings. Funding for the Solid Waste Division is allocated through the County's annual budget process (see Section 11.3) with most revenues provided by the collection of an excise tax on garbage hauled by certificated haulers, as well as by multiple Ecology Local Solid Waste Financial Assistance Grants. The Health Department administers several contracts to provide solid waste education and outreach services to enhance County programs.

The Solid Waste Division was transferred to the County Health Department from the County's Public Works Department on January 1, 2015.

WHATCOM COUNTY PUBLIC WORKS DEPARTMENT

As the agency formerly overseeing the Solid Waste Division, the Public Works Department was responsible for drafting previous solid waste plans, including the 2008 CSHWMP and the 1991 Hazardous Waste Plan. The Public Works Department has remained engaged in the planning process of the current CSHWMP, although they no longer hold any responsibility for solid waste activities in the County.

SOLID WASTE ADVISORY COMMITTEE

The Whatcom County SWAC was established in 1985 to provide input and review for the CSHWMP that was under development at that time. The SWAC has continued to meet to review and update solid and hazardous waste management plans, County policies and ordinances, and other issues related to local solid waste management. SWAC meetings are open to the public and are recorded with written minutes. All documents and meeting minutes are distributed to the mayors of the cities, affected agencies and organizations, and interested individuals.

SOLID WASTE EXECUTIVE COMMITTEE

The SWEC is responsible for estimating quarterly and annual revenues, recommending annual budgets to the County Council, and monitoring expenses to ensure budget compliance. The SWEC is composed of the mayors representing each city in the County, as well as the County executive. The SWEC is responsible for reviewing the CSHWMP and providing recommendations to County Council.

CITIES

Pursuant to interlocal agreements with the County, all cities have instituted mandatory garbage and recycling collection. Cities in the WUTC-regulated areas have the option of providing for solid waste collection either through municipal crews or through contracted services. If cities do not elect to exert local authority over collection, collection services will be provided by the collection company with the underlying certificate for the geographical area that includes the city.

The cities of Everson, Ferndale, Lynden, Nooksack, and Sumas have municipal contracts for both residential and commercial solid waste collection. The City of Bellingham has a municipal contract with SSC for residential collection and commercial collection remains governed by WUTC regulations; disposal is managed through an independent contract. No other cities in the County currently have independent disposal agreements, although the City of Ferndale previously had separate disposal contracts. The City of Blaine has asserted no local authority and consequently is fully serviced under WUTC authority. Coincidentally, all cities that contract for collection services at this time have contracted with a collection company that holds the underlying WUTC certificate covering that city.

Apart from Blaine, cities in the County undertake solid waste collection and determine collection rates, frequency of service, billing, and recordkeeping systems through ordinances and contracts with private collection companies. City-contracted collection companies provide direct billing services. No city in the County has a municipally operated collection system.

The City of Bellingham also has a formal, staffed, litter-control program. A deputized city staff member performs all litter and illegal dumping control activities, including investigating litter and illegal dumping complaints, providing enforcement, and cleaning up dumping sites. Other cities also have litter-control programs, although litter-control activities are often informal and are generally performed by public works or parks crews, as needed.

NATIVE AMERICAN TRIBES

Residents of the Lummi and Nooksack tribal lands use many of the same services as non-tribal residents of the County living on fee lands, and as such are considered participants in the 2022-2027 CSHWMP; however, the County does not have enforcement jurisdiction in these areas. Both the Lummi Nation and Nooksack Tribe contract with private WUTC certificated haulers for garbage collection.

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Ecology is responsible for promulgating and enforcing state regulations associated with solid waste disposal, air emissions, and wastewater and leachate discharges. The state solid waste regulations that Ecology enforces result from state legislation (including RCW 70A.205) and in response to federal law such as RCRA.

Ecology reviews and approves local solid waste management plans, works with local health departments to enforce the state's Solid Waste Handling Standards (WAC 173-350), and permits incinerator ash disposal as authorized by RCW 70.138RCW 70A.315. Ecology may periodically revise facility standards for demolition landfills, compost facilities, and MRW facilities as part of the MFS revisions. Ecology also provides grant funding to local governments that assists in solid waste program operations.

NORTHWEST CLEAN AIR AGENCY

The NWCAA has regional responsibility for regulating and enforcing air quality. Solid waste management activities that impact air quality fall under NWCAA jurisdiction. NWCAA regulatory activities in local solid waste management historically have been focused on the regulation of emissions for solid waste incinerators; the permitting of controlled burns of woody debris, including burns at landfills and transfer sites; and enforcement related to the use of burn barrels to burn solid waste. NWCAA is also responsible for regulation of any construction that may result in handling and/or disposal of asbestos-containing materials.

The Post Point wastewater treatment plant operates an incinerator for its sewage sludge and is permitted by NWCAA.

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

The WUTC regulates solid waste collection companies under the authority of RCW 81.77. In brief, the law provides for regulated garbage collection companies with monopolies in specified geographical (certificated) areas. The WUTC regulates collection fees and operating standards, as well as requiring annual revenue and expense reports for certificated collection companies. Collectors charge uniform rates subject to WUTC approval across each certificated area. Collection companies must provide collection services at the specified tariffs to all customers in their certificated area. The original certificates were awarded in 1961. These certificates are perpetual unless a collection company fails to

offer adequate service or cedes or sells all or part of their certificated area to another collection company. If a collection company decides to cease business, their certificate could be sold to a competing entity, under review of the WUTC, that competing entity would then provide collection services to the same jurisdiction. The WUTC provides temporary authorization during the review period to ensure uninterrupted service to customers.

With the passage of the County's 1990 Service Level Ordinance (Ordinance No. 90-95), the County took an active role in defining local solid waste collection services. Through the ordinance and successive amendments, the County defined minimum garbage and recycling collection services and set collection charge rate policies. The WUTC is responsible for regulating the certificated services in the framework of the County's Service Level Ordinance.

The WUTC also reviews the CSHWMP during the approval process and evaluates probable financial impacts to County ratepayers.

9.1.2 Flow Control Ordinance

Flow controls are legal provisions that allow state and local governments to designate the places where MSW is taken for processing, treatment, or disposal. County Ordinance 91-041, adopted June 25, 1991 and codified as WCC 8.15.030, establishes County control over the disposal of solid waste in the County and requires designated disposal sites to have disposal agreements with the County. The FCO establishes priorities for the flow of materials through the County solid waste system, prioritizing recycling as the primary means of solid waste handling. In September 1996, the County Council passed an ordinance (No. 96-037) to exempt C/D materials from the flow control requirements.

9.1.3 Financing

Until 1990, the County financed solid waste activities from disposal revenues received at County disposal facilities. These activities included landfill operations, transfer operations (e.g., subsidizing the Maple Falls and Point Roberts drop box sites), the closure and maintenance of old landfill sites, and planning and administration. With the establishment of the FCO and the temporary disposal site agreement with the former Recomp facility (now Republic) in 1990, the County funded its solid waste activities with the $9-per-ton surcharge collected by Recomp. These surcharge funds allowed the County to formally close past County landfills, enhance waste reduction and recycling program design and implementation, and address other County solid waste funding obligations. When FCO-based disposal site agreements became unenforceable in early 1997, disposal sites ceased to collect and remit the disposal surcharge and the County lost its solid waste revenue source.

The County then reviewed several financing options, including no funding (i.e., ceasing any solid waste functions), reactivating a 1987 County ordinance (No. 87-17) authorizing the collection of pass-through fees at private disposal facilities; implementing a percentage collection excise tax through the disposal district; implementing a per-container collection excise tax through the disposal district; and shifting to general tax funding through the County's current expense fund.

The no-funding option was rejected because of the County's need to meet statutory obligations, including planning, ordinance enforcement, and post-closure responsibilities for closed County landfills. The implementation of the 1987 pass-through ordinance was deemed inadvisable, since many of the same flow control legal issues that challenged the disposal site agreements would apply to the earlier pass-through ordinance. The percentage excise tax through a disposal district was considered feasible, but potentially inequitable, since customers paid varying amounts to different haulers for the same level of service and would thus pay varying amounts of excise tax while receiving the same service. The shifting to general tax funding was rejected because of the limited availability and competition for current expense funds.

The County determined that a weight-based excise tax based on disposal district taxing authority would be the best funding mechanism. This approach would avoid the perceived inequity of a percentage tax and would link tax payments to container size and anticipated container weight. The County's disposal district (WCC 8.13) was revised to reflect this excise tax approach and others updated through Ordinance 97-041, adopted July 29, 1997. The collection of the excise tax began in October 1997. According to WCC 8.13.030, effective January 1, 2020, the excise tax is levied on all solid waste collection at each residence, business, and institution at the rate of 3.3 percent of collection charges paid to certified and franchised solid waste haulers and $8.50 per ton for solid waste received at disposal facilities. The County levies this tax to administer solid waste management planning and a portion of the education and community outreach in the County. This excise fee is collected by the collection companies.

9.1.4 Construction and Capital Acquisition Plan

State regulations require a "six-year construction and capital acquisition program for solid waste handling facilities" and a "plan for financing both capital costs and operational expenditures for the proposed solid waste system" (RCW 70A.205.075). This requirement only applies to public facilities and since the majority of solid waste collection facilities in the County are privately owned and operated, only the Point Roberts scale house replacement is included.

Table 9-1

Whatcom County Construction and Capital Acquisition Program (2022-2027)

	2022	2023	2024	2025	2026	2027
Point Roberts Scale House Replacement	$150,000	--	--	--	--	--
NOTE: -- = no data available.						

9.1.5 Administration

The County Health Department provides staff to administer the contracts for solid waste education and outreach programs, procure state and local grants supporting solid waste operations, and support the SWAC and SWEC. In addition to contract administration, County staff respond to public questions and serve as a resource to the community. Except for defining the terms of the Service Level Ordinance, the County does not take an active role in administering the collection, transfer, or disposal of solid waste generated in the County. These actions are managed through municipal contracts, WUTC G-Permits, and private contract mechanisms between service providers.

9.1.6 Enforcement and Compliance

The County Health Department maintains responsibility for permit compliance and solid waste enforcement activities in the County and the solid waste system. County Health Department staff routinely administer solid waste permits to facilities in the County and periodically assess compliance. Staff, along with the sheriff's office, address the need to enforce solid waste ordinances, including instances of illegal dumping and improper solid waste management on private property.

Although disposal rates have been stable or have moderately increased for years, illegal disposal continues to be a problem in rural County areas. Given the size of the County, the possibility of multiple sites scattered throughout the County, and the difficulty of gathering sufficient evidence, enforcement activities related to illegal disposal are very time-consuming. Staff only responds to complaints and does not actively patrol the County looking for illegal disposal sites or improper solid waste management on private property. On average, there are 170 complaints per year.

The County Health Department's complaint tracking consists of an initial site visit for documentation and verification of illegal dumping or improper solid waste management; research of ownership, property owner, etc.; outreach to the property owner and enforcement letters; follow-up public contacts, correspondence, and inspections; and court preparation and appearances, if needed. It is County Health Department policy to encourage voluntary compliance and avoid the use of law enforcement agencies. If there is a lack of progress, the sheriff's department may become involved and the illegal dumping may result in a civil action and subsequent court date.

In addition to the general problem of adequately responding to complaints of illegal disposal, bringing charges against violators is further complicated by the evidence requirements for prosecution based on state law. The current system can consume numerous work hours to gather sufficient evidence, conduct repeated inspections or investigations, and possibly bring court action.

9.2 Needs and Opportunities

Financing for the solid waste system is provided through the County excise tax collected by collection companies, various Ecology grants (as made available), and revenues resulting from leases with private sector solid waste providers (refer to sections 7.1.1 and 7.1.2). Current funding levels are enough to

support minimum programming, but more funding may be needed to expand the County's education, outreach, and business technical assistance. The County should periodically assess programs in development and the funds available and reallocate funds on an as-needed basis to meet the implementation priorities for waste reduction, recycling, and composting.

9.2.1 Enforcement and Compliance

Enforcement of solid waste disposal provisions is a critical component of the County's solid waste management program. While the community prides itself on disposal compliance and a relatively high rate of diversion, specific challenges exist in the more rural portion of the County. In particular, the Kendall-Maple Valley area requires urban levels of service even though it is a more rural area.

THE KENDALL-MAPLE VALLEY AREA

The Kendall-Maple Valley area is in unincorporated Whatcom County but requires near urban area levels of service because of its relatively high residential development density. In addition to demographic factors, the area is challenged by its distance to typical urban services. As a result, there is frequent illegal dumping of solid waste on vacant lots, off logging roads, and in culverts. County Health Department staff have implemented a compliance and enforcement program, but because of limited resources and countywide demands, additional infrastructure may be necessary to better serve this area. In the past, the County Health Department has worked with community groups, including Kendall Kleen, to provide special attention to these issues and has facilitated various cleanup activities.

POINT ROBERTS

Point Roberts is located just south of the United States–Canadian border and is isolated from the mainland United States. The community includes many seasonal residents who must travel into Canada to return to their primary place of residence, whether in the United States or Canada. While residents and visitors in other seasonal communities around the United States would be permitted to transport household solid waste to dispose of at their primary place of residence, international border regulations prohibit the importation of solid waste into Canada. As a result, residents must dispose of garbage before leaving Point Roberts and in some cases, garbage is disposed of illegally at public parks and facilities.

In January 2019, the County implemented mandatory curbside garbage pickup for Point Roberts, which helped alleviate many of the enforcement challenges, including illegal dumping, illegal transport of garbage into Canada and overuse of public park dumpsters.

9.3 Goals and Actions

Beyond educational programming, administrative and enforcement activities represent a significant role for the County in the largely privatized system. As funding for these roles expands, the County

will consider alternatives to increasing compliance and participation in the appropriate recycling and waste management programs.

Table 9-1
Goals and Actions for Administration and Enforcement

GOALS	ACTIONS
1. Evaluate regulatory changes to increase efficiency and management.	A. Evaluate the existing exemption program (discussed in Section 4.1.1) for solid waste collection effectiveness.
	B. Evaluate the existing civil penalty structure for waste violations, with consideration to develop alternative structures to incentivize compliance.
	C. Evaluate and create effective County solid waste enforcement tools countywide, with emphasis on highly developed, unincorporated areas (such as LAMIRDs).
	D. Conduct revision, as warranted, to Whatcom County Code 8.15.030.E to reflect current disposal sites.
	E. Pursue an interlocal agreement with Skagit County that defines and establishes solid waste planning and service provision responsibilities in the Newhalem and Diablo area.
	F. Review adequacy of existing excise tax levy and exemptions to address recent state funding reductions.
2. Develop and implement community-specific programs in highly developed unincorporated areas (e.g., LAMIRD) to address compliance challenges.	A. Provide programming and support to local community watch groups in areas with compliance challenges and host events to raise awareness.
	B. Assess the need for additional drop box facilities in unincorporated areas to encourage legal disposal practices.
	C. Evaluate the potential need for additional enforcement staff.
3. Provide sufficient funding to maintain current and expanded levels of service.	A. Explore potential new funding options to support expanded County facilities and disposal options.

NOTES:
County = Whatcom County.
LAMIRD = Limited Area of More Intense Rural Development.

10 LOCAL HAZARDOUS WASTE MANAGEMENT PLAN

10.1 Master Section

This section provides the framework of the County's existing hazardous waste management system, current program services associated with hazardous waste collection, public education, and technical assistance, and identifies opportunities and constraints for improving those services. This section also serves as a foundation for program goals that are presented in Section 10.2, Implementation.

10.1.1 Introduction

As an overall component of the County's solid and hazardous waste management system, this section is specific to hazardous waste management system components and is intended to demonstrate compliance with RCW 70A.300, the Hazardous Waste Management Act. The format of this section follows the Ecology-recommended outline provided in Guidelines for Developing and Updating Local Hazardous Waste Plans (Ecology, 2010).

The County adopted its initial hazardous waste management plan in 1991 to comply with requirements stipulated under RCW 70A.300. Since then, updates to the CSHWMP (most recently completed in 2022) have included reference to the 1991 Hazardous Waste Management Plan, with no substantial revisions to that plan completed

10.1.2 Analysis of Current Conditions

10.1.2.1 Hazardous Waste Inventory

MRW is regulated as solid waste and is defined as hazardous waste (waste chemicals) generated from households and qualified CESQG businesses. There are two permitted MRWFs located in the County.

The County owns the Whatcom County MRWF, also known as the Disposal of Toxics Program facility, located at 3505 Airport Drive in Bellingham (Figure 1-1), which accepts MRW from County households and qualifying small businesses. The facility's hours are 9:00 a.m. to 4:00 p.m., Monday through Friday and the first Saturday of each month. The facility is operated under contract by Clean Earth.

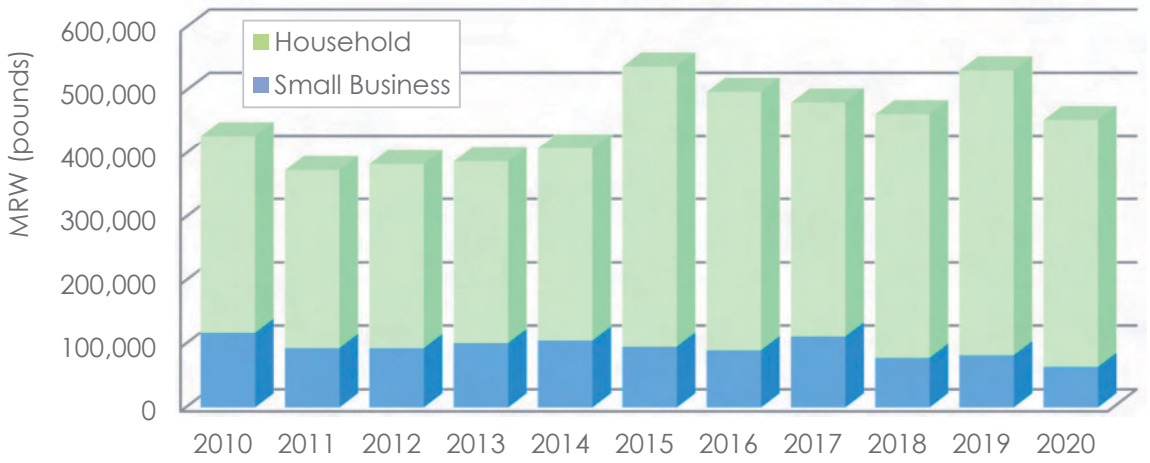
Automobile-related MRW (motor oil, antifreeze, and oil filters) are also accepted at the following satellite facilities:

- Cedarville Road drop box station
  - Hours: Saturday 9:00 a.m. to 5:00 p.m.
- Birch Bay drop box station
  - Hours: Sunday 9:00 a.m. to 5:00 p.m.
- NVD Lynden transfer station
  - Hours: Monday through Friday 8:00 a.m. to 4:00 p.m., and Saturday 9:00 a.m. to 12:00 p.m.

The second facility is the Seattle City Light Skagit Hydroelectric Project (Newhalem) MRWF. This facility accepts MRW from CESQGs working on the Skagit Hydroelectric Project and is open by appointment only.

In 2020, the Newhalem MRWF collected 12,364 pounds of MRW from eight businesses. The Newhalem MRWF contracts with Clean Harbors to transport and dispose of all MRW collected. The County collected 453,766 pounds of MRW in 2020 (64,003 pounds from CESQGs and 389,763 pounds from County residents). Figure 10-1 presents the annual MRW received over the past ten years.

Figure 10-1
Annual MRW Received



The County served 6,907 customers at the MRW facility and through mobile collection events in 2020 (972 visits by CESQGs and 5,935 visits by County residents). This represents a decrease of nearly 2,800 household customers between 2019 and 2020, which is believed to have been largely related to the COVID-19 pandemic. Figure 10-2 presents the annual MRW received from households on a per capita basis.

Figure 10-2
Annual Per Capita Household MRW Received

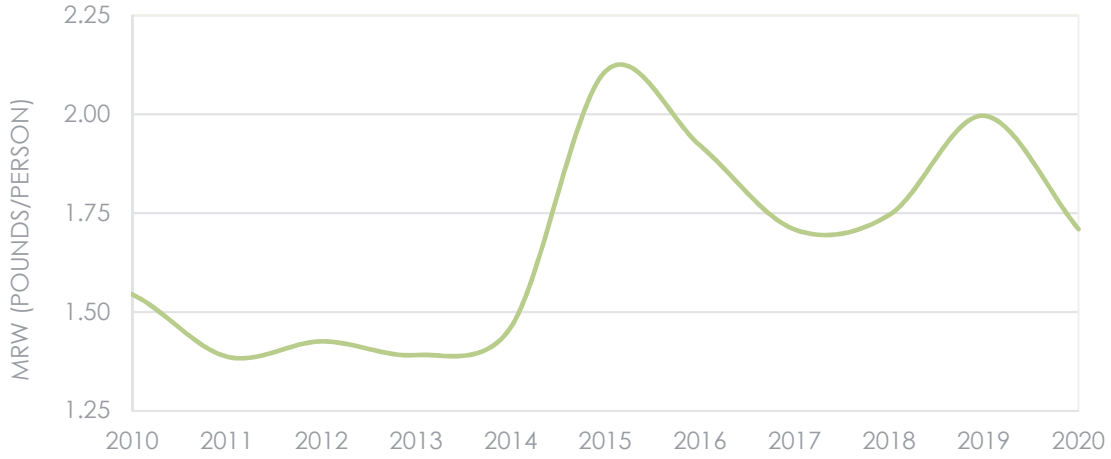
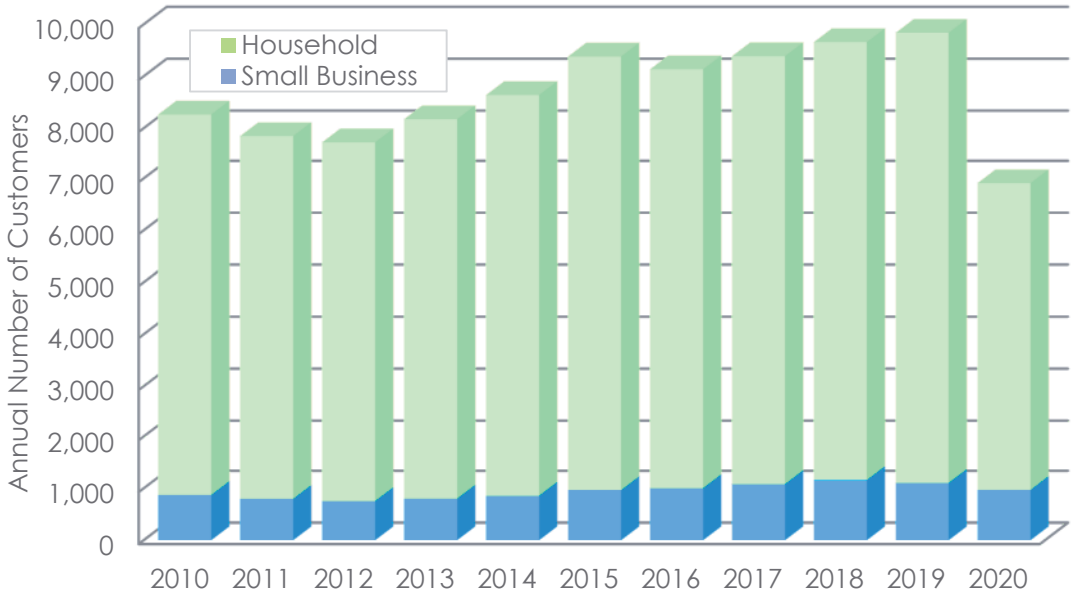


Figure 10-3 presents the annual number of users of the County's MRW facilities and programs over the past ten years.

Figure 10-3
Annual Customers—Moderate Risk Waste Facilities



Dangerous waste generators. Ecology's records indicate how many of the following numbers of businesses and institutions in the County were registered as hazardous waste generators as of June 2021:

- Large-quantity generators: 23
- Medium-quantity generators: 27
- Small quantity generators: 51
  - Includes only those small quantity generators that have chosen to obtain an EPA identification number, which is not required for CESQGs; the actual number of CESQGs is higher
- Non-generating sites and transporters: 24
  - These have active EPA or state identification numbers but did not generate waste in the most recent year.

Remedial action sites. Ecology's list of confirmed and suspected contaminated sites in the County can be found at https://fortress.wa.gov/ecy/tcpwebreporting/Default.aspx.

The sites are listed in five categories (figures shown are current as of June 2021):

1. Brownfield sites: one site. Brownfield sites are abandoned or underutilized properties where potential liability due to environmental contamination and cleanup costs complicates redevelopment.
2. Environmental covenants register: seven sites. This registry is a list of sites that have residual contamination after the cleanup has been completed. These sites have environmental covenants or deed restrictions limiting the types of uses on the property.
3. Leaking underground storage tanks: 121 active sites. This report contains information on underground storage tank facilities that require cleanup, as well as their cleanup history.
4. State cleanup sites:
   a. Confirmed and contaminated sites report: 245 records. This report contains information about sites that are undergoing cleanup and sites that are awaiting further investigation and/or cleanup.
   b. No further action sites: 263 records. This dataset contains information about sites previously on the confirmed and suspected contaminated Site list (above) that have received a no further action decision. These sites may have deed restrictions or environmental covenants.
5. Regulated underground storage tanks: 128 active sites with 546 tanks. Washington State regulates active storage tanks on different properties including gas stations, industries, commercial properties, and government entities.

Hazardous waste services (transporters and facilities). Listed on Ecology's hazardous waste and toxics reduction services directory at https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Dangerous-waste-guidance/Dispose-recycle-or-treat/Dangerous-waste-facilities

10.1.2.2 Public Education

The County is dedicated to educating the public about hazardous waste issues. Educational programs are designed to increase awareness and to reduce use, misuse, improper storage and disposal, and risks to human health and the environment related to hazardous products. The County prioritizes specific topics, audiences, and education methods according to hazards, community needs, and outreach effectiveness, so specific campaign elements change over time. The County also strategically teams with community partners to cost-effectively reach a wider range of the public in its educational messaging.

The County identifies and implements effective means of connecting hazardous materials education to related environmental, health, and resource concerns, such as restoring Puget Sound, protecting indoor air quality, protecting drinking water, preventing chronic disease, and broader community health improvement.

In addition to educational materials on the County's website specific to hazardous material management (http://www.co.whatcom.wa.us/674/Solid-Waste-Management), the County maintains printed brochures and posters for distribution at the public's request. Tours of the MRW facility are provided to various community groups upon request, and Clean Earth and MRWF staff are available to speak at various public meetings (e.g., small business associations, neighborhood associations, real estate professional associations).

10.1.2.3 Technical Assistance

The County is committed to assisting the public in safely storing and using hazardous chemicals, as well as appropriately disposing of MRW. In addition to information provided on the County's website relative to appropriate disposal options (see Section 10.1.2.2), County residents can receive technical assistance through the Disposal of Toxics, as well as a telephone hotline (360-380-4640) maintained by Clean Earth. Assistance is typically provided in the form of over-the-phone technical advice and referrals to information available on the Internet. In cases where additional, on-site technical assistance is warranted for small businesses, County staff Pollution Prevention Assistance specialists are available to conduct hazardous waste management assessments and consultations. In addition, the EnviroStars program (see Section 3.1.1) is another resource for businesses.

10.1.2.4 Service Improvement Opportunities and Constraints

The County plans to focus its available funding on program and service maintenance. Partnerships with both the private sector and nonprofit organizations will continue to be explored to identify potential means of cost-effective service enhancement.

10.1.3 Legal Authority for the Program

The 1976 RCRA addresses the management of solid and hazardous waste at the federal level. RCRA exempts small quantity generators and household hazardous waste from hazardous waste regulation at the federal level to allow greater focus on large-quantity generators of hazardous waste. At the state level, the management of solid and hazardous waste is delegated to Ecology by the EPA through the RCRA State Authorization rulemaking process. The RCRA program is administered by Ecology through the Washington State Dangerous Waste Regulations in WAC Chapter 173-303, Solid Waste Handling Standards in WAC Chapter 173-350 (including MRW), and Criteria for MSW in Landfills in WAC Chapter 173-351. Relevant federal laws and regulations include the following:

- RCRA
- Toxic Substances Control Act
- Universal waste rule
- Mercury-containing and rechargeable battery management legislation
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA/Superfund)
- Emergency Planning and Community Right-to-Know Act (establishes the Toxics Release Inventory program)

Solid and hazardous wastes are regulated in the state through multiple statutes and regulations:

- Hazardous Waste Management Act (RCW 70A.300)
- Solid Waste Management Act (RCW 70A.205)
- MTCA
- Pollution Prevention Planning Act
- Used-Oil Recycling Act

Under RCW 70A.300, local governments are assigned the responsibility to develop and implement plans for managing MRW. The County's Department of Health is the lead agency for implementation and enforcement of local hazardous waste regulations, which include:

- WCC 24.06, Solid Waste Rules and Regulations—Standards and Permits

10.1.4 Financing the Program

The County's programs to address MRW are funded primarily through:

- Excise tax on solid waste hauled by certificated haulers and self-haulers
- Ecology grants (primarily LSWFA Grant funds)

10.1.5 Governance Structure

As presented in Section 10.1.3, local governments are delegated the responsibility by the state to prepare and carry out comprehensive management plans for small quantities of hazardous waste through adoption of the Hazardous Waste Management Act in 1985. The County, through the County Health Department's Disposal of Toxics Program, is assigned the lead responsibility for operating and maintaining the hazardous waste management system. Consistent with the solid waste management governance structure, the County has adopted interlocal agreements with the cities of Bellingham, Blaine, Everson, Ferndale, Lynden, Nooksack, and Sumas for the County's management of hazardous waste (Appendix B).

10.1.6 Program Philosophy

The primary objective of the hazardous waste management program is to protect the health and safety of the public and the environment from the potential adverse effects of exposure to hazardous waste.

10.1.7 Program Services

The County provides services in the following six required elements associated with hazardous waste management:

- Household hazardous waste collection
- Household and public education
- Small business technical assistance
- Small business collection assistance
- Enforcement
- Used-oil collection and public education

Goals associated with maintenance of existing services, as well as strategic expansion of services, as warranted, specific to each of these elements are discussed in Section 10.2.2.

10.1.7.1 Household Collection

The County currently accepts household hazardous waste at its MRW facility located at 3505 Airport Drive in Bellingham (Figure 1-1). The facility accepts the following household hazardous waste substances from County residents:

- Automotive products
- Cleaners
- Fluorescent lamps
- Latex paint
- Lawn and garden chemicals and other toxic materials

- Mercury thermometers and other devices
- Oil-based paint and associated products
- Solvents
- Corrosive liquids and solids
- Aerosols
- Pool chemicals
- Used oil and fuels

Annual collection events: To promote appropriate disposal of MRW in underserved areas of the County, up to two collection events have been held annually at locations that are geographically distant from the MRW facility. Because of international transport challenges, one MRW collection event is held in the Point Roberts area at least once every two years.

CESQG waste pharmaceuticals collection: Disposal services are available for qualifying CESQGs at the MRW facility. CESQGs wishing to dispose of dangerous waste pharmaceuticals must comply with the Dangerous Waste Regulations (WAC 173-303-555(2)(a)). CESQG's must call the telephone hotline (360-380-4640) and follow specific guidelines before transporting the substance(s) to the facility.

MRW reuse program: To reduce MRW disposal rates, reuse of appropriate materials is provided at the MRW facility. For example, latex-based paint that is received by the facility is made available to the public for reuse. This program annually reduces the amount of MRW requiring disposal by ten to 15 percent.

10.1.7.2 Household and Public Education

Section 10.1.2.2 provides a description of current household and public education services provided by the County specific to hazardous waste management.

10.1.7.3 Small Business Technical Assistance

In addition to information provided on the County's website relative to appropriate disposal options (see Section 10.1.2.2), County residents can receive technical assistance through a telephone hotline (360-380-4640) maintained by Clean Earth. Assistance is typically provided in the form of technical advice over the phone and referrals to information available on the Internet. In cases where additional, on-site technical assistance is warranted for small businesses, County staff Pollution Prevention Assistance specialists are available to conduct hazardous waste management assessments and consultations. In addition, the EnviroStars program (see Section 3.1.1) is another resource for businesses.

10.1.7.4 Small Business Collection Assistance

CESQGs may dispose of hazardous wastes at the MRW facility and must pay for hazardous waste disposal in accordance with the fee structure defined in the Disposal of Toxics Program operations plan. Wastes accepted from CESQGs at the facility are consistent with those identified in Section 10.1.7.1 for household collection.

The County also provides pharmaceutical collection services to CESQGs through a specific program. Participating small businesses must be pre-certified to participate in the disposal program.

10.1.7.5 Enforcement

The County Health Department leads enforcement of local hazardous waste regulations for CESQGs and households and investigates approximately 170 complaints per year. When appropriate, the County coordinates with Ecology and other agencies on enforcement, inspections, and technical assistance. The three main activities of the local enforcement program are:

- Complaint response and enforcement
- Regulatory coordination
- Site investigation

10.1.7.6 Used-Oil Education and Collection

Used motor oil is currently collected curbside by MSW collectors for appropriate management. As an alternative, used oil may also be delivered to the MRW facility, as well as to satellite sites such as SSC Cedarville Road and Birch Bay drop box stations and NVD Lynden Transfer Station. The County relies primarily on service description content on its website for public education specific to used-oil collection services. It also relies on technical assistance offered through the telephone hotline (360-380-4640). In addition, the County has collaborated with the Port of Bellingham to provide handling and disposal of used watercraft motor oil. Efforts by the Port have resulted in earning EnviroStar status by educating the public on proper watercraft motor oil disposal through signage at port-operated facilities.

10.1.8 Process for Updating the Hazardous Waste Section

With inclusion of this hazardous waste management section in the 2022-2027 CSHWMP, the process for completing revisions to this section specific to the hazardous waste system components is described in Section 1.8.

10.2 Implementation

This section describes programs to help the County achieve the goals related to its hazardous waste management program for the 2022–2027 planning period.

10.2.1 Guiding Principles

The County will:

1. In priority order, promote the following hazardous waste management strategies:
    a. Waste prevention
    b. Waste reduction
    c. Reuse
    d. Recycling
    e. Physical, chemical, and biological treatment
    f. Incineration
    g. Solidification or stabilization
    h. Landfill
2. Establish program priorities, target resources, and focus efforts accordingly.
3. Ensure that program services are available to and easily accessed by all residents and businesses regardless of income levels or where they reside.
4. Use emerging information technologies to the program's advantage. At the same time, use alternative communication methods to ensure that no group or community is excluded from program information or services.
5. Be adaptive to changing conditions, such as:
    a. Community values
    b. Environmental and health indicators
    c. Political priorities
6. Be responsive and accountable to ratepayers.
7. Continually improve the program efficiency and effectiveness by measuring performance.
8. To minimize risks to human health and the environment, foster an ethic of responsibility among those who produce, sell, and use hazardous products.
9. Be strategic in developing partnerships that advance the program's mission, including nontraditional partnerships.
10. Work to reduce human and environmental exposure to hazardous material and products and reliance on publicly funded services. Examples include:
    a. Promoting greater producer responsibility
    b. Encouraging businesses to use existing and emerging "green" technologies
11. Encourage greater coordination of effort by government and nongovernmental organizations, businesses, and residents.
12. Facilitate interagency coordination and cooperation to:

a. Improve regulatory oversight and enforcement
b. Minimize regulator gaps
c. Reduce duplication of effort

10.2.2 Strategic Goals

There are six elements specific to the County's local hazardous waste system under which future system preferred programs and alternatives are categorized. The following subsections present the County's goals specific to each element.

10.2.2.1 Household Collection

Household collection element objective: Provide or facilitate convenient collection services for household hazardous waste and key special wastes that meet the needs of residents.

Table 10-1
Household Collection Goals

Household Collection Goal 1: Disposal Facility Operation	
Action	Operate an MRWF and associated satellite collection facilities for residents.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County (through contract with Clean Earth).
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
Household Collection Goal 2: Collection Event	
Action	Host at least one annual mobile collection event for residents in underserved areas of the County.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County (through contract with Clean Earth).
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
NOTES: County = Whatcom County. MRW = moderate risk waste. LSWFA = local solid waste financial assistance.	

10.2.2.2 Household and Public Education

Household and public education element objective: Educate and motivate residents to understand the environmental risks posed by hazardous products, reduce purchase and use of hazardous product, and properly use, store, and dispose of hazardous products.

Table 10-2
Household and Public Education Goals

Household and Public Education Goal 1: MRW Reduction Education and Outreach	
Action	Provide HHW education programs designed to increase awareness and reduce use, misuse, improper storage and disposal, and risks to human health and the environment.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County.
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
Household and Public Education Goal 2: Hazardous Waste Hotline	
Action	Operate a hotline (360-380-4640) for residents to provide information about hazardous materials prevention, use, storage, disposal, and clean up.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County (through contract with Clean Earth).
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
NOTES: HHW = household hazardous waste. LSWFA = local solid waste financial assistance.	

10.2.2.3 Small Business Technical Assistance

Small business technical assistance element objective: Educate and motivate small businesses to understand the environmental risks posed by hazardous products, reduce purchase and use of hazardous product, and properly use, store, and dispose of hazardous products.

Table 10-3
Small Business Technical Assistance Goals

Small Business Technical Assistance Goal 1: MRW Reduction Education and Outreach	
Action	Deliver technical assistance services that result in measurable changes in waste management, compliance, and best management practice implementation.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County.
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and PPA funds.
Small Business Technical Assistance Goal 2: Hazardous Waste Hotline	
Action	Operate a hotline (360-380-4640) for small businesses to provide information about environmental health, including hazardous materials prevention, use, storage, disposal, and clean up.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County (through contract with Clean Earth).
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
NOTES: LSWFA = local solid waste financial assistance. MRW = moderate risk waste.	

10.2.2.4 Small Business Collection Assistance

Small business collection assistance element objective: Provide or facilitate collection services for business hazardous waste and key special wastes that meet the needs of small quantity generators.

Table 10-4
Small Business Collection Assistance Goals

Small Business Collection Assistance Goal 1: MRW Collection	
Action	Accept business hazardous waste from small quantity generators for a fee at the existing MRWF.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County.
Funding Source(s)	Disposal fee paid directly by business customers supplements excise tax on solid waste hauled by certified haulers and LSWFA funds.
NOTES: LSWFA = local solid waste financial assistance. MRW = moderate risk waste. MRWF = moderate risk waste facility.	

10.2.2.5 Enforcement

Enforcement element objective: Provide protection of human health and the environment for all residents and workers.

Table 10-5
Enforcement Goals

Enforcement Goal 1: Complaint Response and Enforcement	
Action	Respond to hazardous-and solid waste-related complaints, and conduct enforcement activities, as warranted.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County.
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
Enforcement Goal 2: Regulatory Coordination	
Action	Coordinate with Ecology, other agencies, and other County departments involved in hazardous materials regulations that relate to prevention and proper use, storage, and disposal of hazardous materials.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County.
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
NOTE: LSWFA = local solid waste financial assistance.	

10.2.2.6 Used-Oil Education and Collection

Used-oil education and collection element objective: Provide and facilitate collection services for used oil and related automotive wastes that meet the needs of residents and small quantity generators.

Table 10-6
Used-Oil Education and Collection Goals

Used-Oil Education and Collection Goal 1: Used-Oil Collection Sites	
Action	Operate the MRWF and associated satellite facilities.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County (through contract with Clean Earth Technologies).
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
Used-Oil Education and Collection Goal 2: Oil Filter and Antifreeze Collection	
Action	Operate the MRWF and associated satellite facilities.
Time frame	Ongoing, 2022–2027.
Implementing Agency	Whatcom County (through contract with Clean Earth Technologies).
Funding Source(s)	Excise tax on solid waste hauled by certified haulers and LSWFA funds.
NOTES: LSWFA = local solid waste financial assistance. MRWF = moderate risk waste facility.	

10.2.3 Programs and Milestones

All program goals presented in Section 10.2.2 are intended to be ongoing efforts throughout the planning horizon with no specific milestone-associated dates.

10.2.4 Annual Budgets

Section 10.1.4 presents the current sources of funding specific to operation and maintenance of the hazardous waste management program. The Disposal of Toxics Program is responsible for management of all hazardous waste-related system components and services. It was allocated an operating budget of $375,000 in 2021. This budget was supported in 2021 by Local Solid Waste Financial Assistance grant funds in the amount of $281,000. The current grant fund allocation has been reduced to $280,000 annually for the next two-year term.

11 IMPLEMENTATION SCHEDULE

The purpose of this section is to outline the planning process followed in the development of the 2022-2027 CSHWMP and identify implementation responsibilities, actions, and an overall implementation schedule.

11.1 Implementation Responsibility

Solid waste management is governed by the laws and regulations of federal, state, and local governments. These laws and regulations create the legal framework defining roles and responsibilities. The following section discusses the roles and responsibilities of local government in the management of solid waste in the County.

WASTE REDUCTION AND RECYCLING

Waste reduction and recycling is a fundamental strategy and top priority for solid waste management in the County and is a critical element of the CSHWMP. The County is responsible for implementing education and recycling programs countywide with its partners to reduce waste disposal. Private solid waste companies will continue to support recycling education and enforcement as a basic part of their customer services efforts.

COLLECTION

Except for the City of Blaine, the cities in the County manage the solid waste collection system, including establishing rates to pay for the service. Cities are responsible for ensuring that their solid waste collection systems, albeit privately owned, comply with the CSHWMP. The WUTC is responsible for ensuring that the services provided, and the rates charged by the regulated haulers are in compliance with the CSHWMP.

DISPOSAL

It is the responsibility of the County to ensure that a long-term disposal system is available for MSW. Private entities operating transfer stations in the County use their operating contracts to ensure that properly permitted disposal facilities are used for the disposal of county-generated waste. The CSHWMP is required to describe existing solid waste disposal handling facilities in the County that, are all privately owned. The County is responsible for assessing the need for additional solid waste handling facilities over the 20-year planning horizon.

EDUCATION AND PUBLIC INVOLVEMENT

Comprehensive education will continue to be conducted throughout the County so that people are informed of the need to reduce, source separate, and recycle solid waste. Developing educational programs is required as part of the CSHWMP (RCW 70A.205).

The County is responsible for ensuring that the public has a chance to participate in the decision-making process. This has been accomplished by holding public meetings about the CSHWMP and other solid waste issues, providing adequate public notice of SWAC meetings, establishing a comment period during which citizens submitted written comments on the proposed 2022-2027 CSHWMP, distributing informational brochures, and soliciting ideas from citizens.

SOLID WASTE PERMITS

As described in sections 9.1.1 and 9.1.5, the County Health Department is responsible for permitting solid waste facilities. The department issues permits for transfer stations, drop boxes, vactor waste facilities, recycling facilities, digesters, and MRW facilities.

Applicants must also apply for permit approval from the County Department of Planning and Development Services. The Department of Planning and Development Services reviews proposal to make sure they are consistent with County land use codes, zoning, and the County's comprehensive plan. Potential approvals required include building permits, grade/fill permits, and conditional use permits.

SOLID WASTE MANAGEMENT PLANNING

The County is responsible for solid waste planning and management. The County, in cooperation with the cities, is required to prepare a coordinated, comprehensive plan that must comply with RCW 70A.205, Ecology's Guidelines for the Development of Local Solid Waste Management Plans and Revisions, and the Cost Assessment Guidelines published by WUTC in accordance with RCW 70A.205.045.

IMPLEMENTATION

It is the responsibility of the County and cities to implement programs following the adoption and approval of the 2022-2027 CSHWMP. The County and the cities are required to adopt regulations and ordinances governing solid waste handling to implement the 2022-2027 CSHWMP (RCW 70A.205).

REPORTING

Municipalities that provide their own solid waste disposal are required to report annual tonnage information to Ecology.

SOLID WASTE ADVISORY COMMITTEE

The County is required to establish a local SWAC to assist in the development of programs and policies concerning solid waste management. The SWAC also reviews and comments about proposed rules, policies, and ordinances before their adoption. The SWAC is advisory only, making recommendations to the County Council that makes final decisions after considering SWAC recommendations and other available information. The County SWAC elects its own chairperson, adopts its own bylaws, and conducts its own meetings in accordance with the Ecology Solid Waste Planning Guidelines. County staff provide information to the SWAC and facilitate meetings.

11.2 Summary of Goals and Actions

The following table provides a list of implementation actions for the County, cities, private haulers, private businesses, and institutions in the County. The list is derived from the goals and actions in each section contained in the 2022-2027 CSHWMP. The County will perform an annual review of the 2022-2027 CSHWMP to ensure it is kept in current condition and identify goals and actions that have not been met according to the implementation schedule. The County will adjust existing programs as needed to address areas where goals are not being met. Additionally, the County will review and update ILAs as needed.

COST ASSESSMENT QUESTIONNAIRE

General Information

Plan prepared for the County of:	Whatcom
Plan prepared for the City of:	N/A
Prepared by:	Whatcom County Environmental Health Department, Jennifer Hayden
Contact telephone	(360) 778-6036
Contact email:	JHayden@co.whatcom.wa.us
Date	February 24, 2022

Years

Throughout this document:

Year 1 (Base Year) shall refer to :	2022
Year 2 shall refer to:	2023
Year 3 shall refer to:	2024
Year 4 shall refer to:	2025
Year 5 shall refer to:	2026
Year 6 shall refer to:	2027

Each year shall refer to (check one):

▪	Calendar year	January 1 – December 31
▪X	Fiscal year	Such as July 1 – June 30

1. Demographics

1.1. Population

1.1.1. Provide the total population of your County (excluding cities choosing to develop their own SWMP) for the base year and each of the following five years.

Table 1.1.1.a.

Year 1	236,702
Year 2	239,738
Year 3	242,700
Year 4	245,610
Year 5	249,048
Year 6	252,284

1.2. References and Assumptions

Note that the population under jurisdiction of the plan does not include East Whatcom County, which is covered under the Skagit County solid waste management plan.

Population projections have been provided from the OFM 2021 County Growth Management Projections 2010-2040 report.

0. Waste Stream Generation

Provide the information below related to solid waste and recycling. Disposal refers to those tons disposed of at a landfill, incinerator, transfer station, or any other form of disposal you may be using. If other, please identify.

2.1. Tonnage of Solid Waste Disposed

2.1.1. Provide the total tonnage of solid waste disposed of in the base year and each of the following five years.

Table 2.1.1.a.

Year 1	189,459
Year 2	193,486

Year 3	197,494
Year 4	201,498
Year 5	205,978
Year 6	210,336

2.2. Tonnage of Recyclable Materials with a Market[7]

2.2.1. Provide the tonnage of recyclable materials recycled in the base year and each of the following five years.

Table 2.2.1.a.

Year 1	158,288
Year 2	163,331
Year 3	172,221
Year 4	176,002
Year 5	182,256
Year 6	188,464

2.3. Tonnage of Recyclable Materials without a Market

2.3.1. Provide the tonnage of recyclable materials disposed of in the base year and each of the following five years.

Table 2.2.1.a.

Year 1	NA
Year 2	
Year 3	
Year 4	

[7] RCW 90.95.090(7)(c)

Year 5

Year 6

2.4. References and Assumptions

1. Total tonnage of solid waste disposed calculated using base year measured disposal per capita, the average of the high and low modeled growth rates of solid waste disposal, and OFM population forecast

2. Total tonnage of recyclable materials recycled calculated by taking the difference of the medium growth projected MSW Generated and MSW Disposed Of, and OFM population forecast

3. Lautenbach Recycling markets source separated recyclables to third party facilities if unable to process internally. All recyclable materials collected in the County have an end market.

3. Collection Programs

3.1. Regulated Solid Waste Collection Programs

Provide information for each UTC-regulated solid waste collection company operating in your jurisdiction for the base year and each of the following five years.

Table 3.1.a.

UTC-Regulated Hauler Name G- Cando Recycling and Disposal

Certificate # G063819

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	1,968	1,998	2,028	2,059	2,090	2,122
Tonnage collected	266	279	293	306	319	333
Commercial						
# of customers	73	74	75	77	78	79
Tonnage collected	149	162	175	189	202	215

UTC-Regulated Hauler Name Nooksack Valley Disposal (NVD)

G-Certificate # G000166

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	2,567	2,606	2,646	2,686	2,726	2,768
Tonnage collected	1,387	1,400	1,413	1,427	1,440	1,453
Commercial						
# of customers	463	470	477	484	491	499
Tonnage collected	3,680	3,693	3,706	3,720	3,733	3,746

Table 3.1.c.

UTC-Regulated Hauler Name G- Sanitary Services Company, Inc.

Certificate # G000014

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	23,911	24,273	24,641	25,015	25,394	25,779
Tonnage collected	55,626	55,639	55,652	55,666	55,679	55,692
Commercial						
# of customers	4,791	4,864	4,937	5,012	5,088	5,165
Tonnage collected	20,193	20,206	20,219	20,233	20,246	20,259

3.2. Cost & Funding for Solid Waste Programs

Provide information for solid waste programs that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 3.2.a.

Implemented

Program	Cost	Funding	Page #
NA			

Table 3.2.b.

Program	Proposed Cost	Funding	Page #
NA			

3.3. References and Assumptions

1. Number of customer growth calculated using average OFM intermediate population forecast (1.5%) applied to number of customers recorded during the base year.

2. Solid waste collected growth is calculated using medium solid waste disposal growth forecast (13.33%) applied to solid waste tonnage collected during the base year.

Waste Reduction (Recycling and Organics)

4.1. Recycling

4.1.1. Regulated Recycling Collection Programs[8]

Provide information for each UTC-regulated recycling company operating in your jurisdiction for the base year and each of the following five years.

[8] RCW 70.95.090(7)(c)

Table 4.1.1.a.

UTC-Regulated Hauler Name G-Certificate # Cando Recycling and Disposal (Freedom 2000, LLC) G063819

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	1,968	1,998	2,028	2,059	2,090	2,122
Tonnage collected	146	159	172	186	199	212
Commercial						
# of customers	NA					
Tonnage collected	NA					

Table 4.1.1.b.

UTC-Regulated Hauler Name G-Certificate # Nooksack Valley Disposal G000166

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	2,567	2,606	2,646	2,686	2,726	2,768
Tonnage collected	448	461	474	488	501	514
Commercial						
# of customers	NA					
Tonnage collected	NA					

Table 4.1.1.c.

UTC-Regulated Hauler Name G-Certificate # Sanitary Services Company, Inc. G000014

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	23,911	24,475	24,842	25,214	25,592	25,976
Tonnage collected	5,212	4,584	5,761	5,777	5,791	5,805
Commercial						
# of customers	802	814	826	839	852	864
Tonnage collected	1,535	1,548	1,561	1,575	1,588	1,601

4.1.2. Recyclable Materials

Provide a list of recyclable materials to be collected in accordance with the SWMP. For each item, indicate if there is an active market and if the revenues exceed the cost of processing.

Table 4.1.2.a.

Recyclable Material	**Active Market**	**Revenues > Processing Costs**
Cardboard	X Yes No	Yes X No
Mixed Paper	X Yes No	Yes X No
Aluminum	X Yes No	Yes X No
Specific Plastics	X Yes No	Yes X No
Glass	X Yes No	Yes X No
Tin	X Yes No	Yes X No

4.1.3. Costs & Funding for Recycling

Provide information for recycling programs that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 4.1.3.a.

Implemented

Program	Cost	Funding	Page #
Waste Reduction and Recycling Education - School/Community (Contract with ReSources)	$65,000	Solid Waste Collection Excise Tax	43
Sustainable Connections	$95,000	Solid Waste Collection Excise Tax	42

Table 4.1.3.b.

Proposed

Program	Cost	Funding	Page #
Single Stream Recycling Education and Outreach	$50,000	Rate Funded	60

4.2. Other Waste Reduction Programs (Organics, such as Yard Waste and Food Waste)

4.2.1. Regulated Organics Collection Programs

Provide information for each UTC-regulated company collecting organics operating in your jurisdiction for the base year and each of the following five years.

Table 4.2.1.a.

UTC-Regulated Hauler Name Nooksack Valley Disposal

G-Certificate # G-000166

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	NA					
Tonnage collected	NA					
Commercial						
# of customers	NA					
Tonnage collected	NA					

Table 4.2.1.b.

UTC-Regulated Hauler Name Sanitary Services Company, Inc.

G-Certificate # G-0000014

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Residential						
# of customers	3,653	3,709	3,765	3,822	3,880	3,939
Tonnage collected	1,948	1,961	1,974	1,988	2,001	2,014
Commercial						
# of customers	NA					
Tonnage collected	NA					

4.2.2. Costs & Funding for Organics Collection Programs

Provide information for programs for collecting organics that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 4.2.2.a.

Implemented

Program	Cost	Funding	Page #
WSU Extension Compost Program	$65,000	Solid Waste Collection Excise Tax	43

Table 4.2.2.b.

Proposed

Program	Cost	Funding	Page #
NA			

4.3. References and Assumptions

1. Recycling data provided by Lautenbach Recycling and calculated using intermediate OFM population forecast (1.5%) and recycling collection increase forecast (13.33%).

5. Disposal

5.1. Energy Recovery & Incineration (ER&I) Disposal Programs

5.1.1. ER&I Facilities:

Table 5.1.1.a.

	Facility	Facility
Name	NA	
Location		
Owner		
Operator		

5.1.2. Amount Landfilled

For each facility, provide the estimated amount of ash or materials that cannot be processed for the base year and each of the following five years.

Table 5.1.2.a.

Facility	NA	
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		

5.1.3. Costs & Funding for ER&I Programs

Provide information for ER&I programs that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 5.1.3.a.

Implemented

Program	**Cost**	**Funding**	**Page #**
NA			

Table 5.1.3.b.

Proposed			
Program	**Cost**	**Funding**	**Page #**
NA			

5.1.4. Ash Disposal Expense

Provide the expected costs ash disposal.

Table 5.1.4.a.

	Amount of Ash	Cost
Year 1	NA	
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		

5.2. Land Disposal Program

5.2.1. Land Disposal Facilities

Provide the following information for each land disposal facility in your jurisdiction that receives garbage or refuse generated in the county.

Table 5.2.1.a.

	Facility	Facility
Name	NA	
Location		
Owner		
Operator		

5.2.2. Regulated Disposal

Provide the tonnage disposed of at each facility by UTC-regulated haulers.

Table 5.2.2.a.

Facility	NA	
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		

5.2.3. Non-Regulated Disposal

Provide the tonnage disposed of at each facility by other (non-regulated) haulers and other contributors.

Table 5.2.3.a.

Facility	NA	

Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Year 6		

5.2.4. Costs & Funding for Land Disposal Programs

Provide information for land disposal programs that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 5.2.4.a.

Implemented

Program	Cost	Funding	Page #
NA			

Table 5.2.4.b.

Proposed

Program	Cost	Funding	Page #
NA			

5.3. References and Assumptions

6. Administration Program

6.1. Costs & Funding for Administration Programs

Provide information for administration programs that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 6.1.a.

Implemented

Program	Cost	Funding	Page #
Administration, including labor and benefits, facility expenses, staff training, vehicle and insurance, Solid Waste Management Plan	$952,461	Solid Waste Collection Excise Tax	91

Table 6.1.b.

Proposed

Program	Cost	Funding	Page #
NA			

6.2. References and Assumptions

7. Other Programs

7.1. Programs

For each program in effect or planned that does not readily fall into one of the previously described categories please fill in the following table.

Table 7.1.a.

Program	Landfill Post-Closure	Disposal of Toxics	Pollution Prevention Assistance
Page #	74-75	109	99
Owner/Operator	Whatcom County	Whatcom County	Whatcom County
UTC Regulations	· No	· Yes · No	· Yes · No
Anticipated Yearly Costs	$98,400	$666,633	$146,784

7.1.1. UTC Regulation Involvement

If UTC regulation is involved, please explain the extent of involvement.

7.2. Costs & Assumptions of Other Programs

Provide information for other programs that have been implemented and/or proposed. Include costs and proposed funding mechanism. If these programs are discussed in the SWMP, provide the page number in the draft plan on which it is discussed.

Table 7.2.a.

Implemented			
Program	**Cost**	**Funding**	**Page #**
Landfill Post-Closure	$98,400	Solid Waste Collections Excise Tax	*74-75*

Disposal of Toxics	$366,417	Solid Waste Collections Excise Tax	109
	$300,216	State Local Solid Waste Financial Assistance Grant	109
Pollution Prevention Assistance	$146,784	Solid Waste Collections Excise Tax	99
		State Local Solid Waste Financial Assistance Grant	

Table 7.2.b.

Proposed

Program	Cost	Funding	Page #
NA			

7.3. References and Assumptions

Costs provided by County

8. Funding Mechanisms

This section relates specifically to the funding mechanisms currently in use and the ones that will be implemented to incorporate the recommended programs in the draft plan. Because the way a program is funded directly relates to the costs a resident or commercial customer will have to pay, this section is crucial to the cost assessment process. Please fill in each of the following tables.

8.1. Facility Inventory

Table 8.1.a.

Facility Inventory

Facility Name	Type of Facility	Tip Fee per Ton	Transfer Cost	Transfer Station Location	Final Disposal Location	Total Tons Disposed	Total Revenue Generated (Tip Fee x Tons)
Recycling and Disposal Services	Private Transfer	$140	NA	Ferndale, WA	Columbia Ridge Arlington, OR	124,812 $17,473,680 Landfill,	
Republic Services	Private Transfer	$113.40	NA	Ferndale, WA	Roosevelt Regional Landfill, Roosevelt, WA	50,400	$5,715,360
Freedom 2000, LLC (Cando)	Private Transfer	$270	NA	Pt. Roberts, WA	Headquarters Landfill, Castle Rock, WA	634.82	$171,401
SSC Birch Bay-Lynden Drop Box Facility	Private Dropbox	$300	NA	Lynden, WA	Recycling and Disposal Services	109.57	$32,871
SSC Cedarville Drop Box Facility	Private Dropbox	$300	NA	Blaine, WA	Recycling and Disposal Services	142.30	$42,690
SSC Roeder Ave Drop Box Facility	Private Dropbox	$300	NA	Bellingham, WA	Recycling and Disposal Services	88.98	$26,694
NVD Drop Box Facility	Private Dropbox	$260.00	NA	Lynden, WA	Recycling and Disposal Services	5,013	$1,303,380

NOTE:
NA - Not Applicable.
Total Tons Disposed for each facility based on most recent year data is available (2020), except SSC Drop Box Facilities, which have data available for 2021.

8.2. Tip Fee Component

Table 8.2.a.

Tip Fee Components

Tip Fee by Facility	Surcharge	City Tax	County Tax[A]	Transportation Cost	Operational Cost[B]	Administration Cost[C]	Closure Costs
Recycling and Disposal Services	NA	14.5%	NA	ND	ND	ND	NA
Republic Services	NA	14.5%	NA	ND	ND	ND	NA
Freedom 2000, LLC (Cando)	NA	NA	NA	ND	ND	ND	NA
SSC Birch Bay-Lynden Drop Box Facility	NA	NA	NA	$0	$78.40	$0	NA
SSC Cedarville Drop Box Facility	NA	NA	NA	$0	$78.40	$0	NA
SSC Roeder Ave Drop Box Facility	NA	NA	NA	$0	$78.40	$0	NA
NVD Drop Box Facility	NA	NA	NA	$0	$144,372	$0	NA

Notes:
NA - Not Applicable
ND - Not Disclosed by private solid waste company

A The County solid waste excise tax is paid through solid waste collection fees and is not represented in the table above

B Drop Box Facilities have listed transfer station disposal fees per ton in the operations costs column

C Providers do not track operational and administrative costs per ton separately unless listed. These items are reported together in the Operational Costs Column.

8.3. Tip Fee Forecast

Table 8.3.a.

Tip Fee Forecast

Tip Fee per Ton by Facility	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recycling and Disposal Services	$148.53	$152.98	$157.57	$162.30	$167.17	$172.18
Republic Services	$119.10	$125.05	$131.31	$137.87	$144.77	$152.00
Freedom 2000, LLC (Cando)	$326.70	$336.50	$346.60	$356.99	$367.70	$378.73
SSC Birch Bay-Lynden Drop Box Facility	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
SSC Cedarville Drop Box Facility	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
SSC Roeder Ave Drop Box Facility	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
NVD Drop Box Facility	$280.00	$280.00	$280.00	$300.00	$300.00	$300.00

Notes:
1. Tip fees for private waste management facilities have been level for the past 10 years and rate increases are not currently anticipated by the facility operators.
2. Private operators of the faciltiies respond to market conditions and may change tip fees at any time.

8.4. References and Assumptions

Please provide any support for the information you have provided. An annual budget or similar document would be helpful.

Whatcom County Solid Waste Budget

8.5. Surplus Funds

Provide information about any surplus or saved funds that may support your operations.

Surplus funds within the County Solid Waste program are managed appropriately to their funding source. Grant funds that are not spent are returned to the grantor. County General FUnd dollars are not used to fund solid waste operations. Excess solid waste excise taxes (3.3% per ton) that are unspent are transferred to a solid waste reserve account that has been established to fund future landfill post-closure costs, provide for disaster debris management, or to support programs that are recommended within the solid waste management plan.

APPENDIX H

RESPONSE TO ECOLOGY PRELIMINARY REVIEW AND PUBLIC COMMENTS

Appendix H
Response to Comments

Comment No. and Category/Plan Section	Comment	Response
	Section 1. Public Comment: RE Sources	
1. Trash Pollution and Plastics	A. The CSHWMP rightfully provides a lot of data on the amount of trash and recycling collected that are sent to landfill or recycling facilities, but we noticed a lack of focus on escaped trash- the kind of trash we commonly experience at our beach and other cleanups. We have also helped pilot and have been among the first to officially collect data for the new Environmental Protection Agency's (EPA's) Escaped Trash Assessment Protocols (ETAP) where community science is used to collect data on how much and what kinds of trash are found where. These protocols were designed to address the growing problem with trash pollution in the U.S. and around the world. As the final protocols have just been adopted, this data is still very new and we have yet to see a report, though we hope to see one in the near future. Perhaps data from ETAP could be used in the future CSHWMP to help tackle the issue of escaped trash and trash pollution. In addition, we, as do many other groups, collect data on how much trash our volunteers cleanup by event and location. This data is most commonly reported by weight, but we could collect more data on volume or types if helpful in terms of tracking escaped trash metrics. We would be happy to share this data and see if others would be able to as well for the purposes of this plan.	The County will appreciate seeing future data from the ETAP.
	B. Along the lines of escaped trash and pollution, single-use plastics escape into the environment and pose a threat to not only aquatic organisms, but humans as well, as plastic pollution can entangle or trap animals, be mistaken as food and block digestive tracks to starve animals to death, can be toxic and can cause issues when plastics break down into microplastics or even nano plastics. We appreciate the mentions in the CSHWMP to single-use plastic reductions and would like to see it go even further with setting some measurement goals to track progress. We also would like to see more encouragement of education programs as local ordinances and legislation pass to reduce single-use plastic waste and pollution, along with more financial incentives and assistance to make these policies a reality for small businesses and schools that may have to change infrastructure and labor to accommodate new policies, such as accommodating durable flatware for example.	Promoting outreach related to local ordinances and legislation around waste reduction has been added in the goals and actions table (Table 3-1, Implementation Schedule). It is beyond the scope of this plan or the Solid Waste program to provide financial incentives for small businesses to incorporate new infrastructure.
	C. There are many ways trash can escape into the environment, but one way trash certainly escapes is accidentally on windy days as trash cans fall over and blow open or wind simply blows away unsecured items. There seems to be little mention of this in the CSHWMP. Perhaps there should be a mention of high wind periods in the description of the planning area (2-1) and/or may be under the climate section. Inclusion of education for minimizing escaped trash is also important.	The Solid Waste program put out a social marketing campaign aimed at reducing litter caused by high winds. Mention of that campaign has been added to the plan (Section 4.2.1). The County does not intend to add new language to the plan to further address high winds.
	D. We appreciate the inclusion of illegal dumping and think there should be some additional focus on dumping in creeks and along other shorelines, including the cleanup of older illegal dumpsites that continue to attract more illegal dumping.	Illegal dumps are addressed as they are brought to the Health Department's attention through the complaint process. This is addressed in the Admin and Enforcement section (Section 9.1.6). Illegal dumps located in the City of Bellingham are managed by City code enforcement staff (Section 9.1.1).
	E. One thing we did not see mentioned is the potential illegal dumping could have to spread noxious weeds (primarily when it comes to illegal yard waste dumping). We would again like to see some measurables associated with this in table 7-3 under goal 2.	The Solid Waste program does not have the resources to dedicate to something that is not a definite need or concern. The County's noxious weed division is responsible for identifying and controlling noxious weeds, and will refer cases to the Health Department for follow-up if there is a recurrence of illegal dumping that may result in the spread of noxious weeds. We do not anticipate adding new language to the plan to address noxious weeds.
	F. There is not a lot of detail under the action component in table 7-3, but along with surveying residents and businesses regarding disposal needs, please include people who are unhoused. It has been our experience that unhoused people can contribute to trash pollution, though generally would avoid doing so if they could have better access to disposal facilities. Additionally, services provided to the public in public areas as a way to alleviate illegal dumping should be considered.	Comment noted. The County is working with city governments to monitor garbage services available to unhoused people.

Comment No. and Category/Plan Section	Comment	Response
2. Waste Reduction and Public Education	A. We appreciate the focus here on waste reduction, both in the amount of toxic waste reduced as well as reuse as these are key components of protecting human health and the environment from hazards associated with waste. Looking at the larger picture, in terms of education and effectiveness of recycling and waste reduction programs, it certainly would make education and outreach much easier if recycling was consistent throughout all of Washington State. Instead, it becomes more complicated as different areas, even within the County, have different methods and "rules" for disposal. Having private sector haulers work together to bring consistent messaging across the County to the public would be of great help. Table 3-1 contains a lot of great goals and actions, however, we would like to see more measurables or milestones to know what the successes are, or if we are not meeting the goals, then how can we adjust to meet those goals? There also should be some reference to table 11-1 which actually gives a timeline that is very relevant to table 3-1 (similarly, table 11-1 should be referenced in all the other tables outlining goals and actions).	The County will perform an annual review of the CSHWMP to ensure it is kept in current condition and identify goals and actions that have not been met. A description of this process has been added to Section 11.2 and will address all goals and actions included in the plan. Additionally, Section 1.8.2 provides an overview of the relationship between the goals and actions in each section and the Implementation Schedule. Measurables and milestones are more appropriate for a work plan that can be easily amended to meet current trends, rather than the CSHWMP, which acts as a broader steering document.
	B. We urge that the CSHWMP include e-waste in more education programs, as we only expect more e-waste with electronics that are not always built to last.	Electronic waste is managed by the Washington State "E-Cycle Washington" program (Section 4.1.1).
	C. Along the lines of education and outreach, the County has had several previously successful social marketing campaigns such as scooping pet waste. Social marketing is not mentioned much in this plan, but seems particularly relevant in effectively reaching out to targeted audiences to better understand how to effect behavior change, such as with multifamily residents that could be doing better with waste and recycling disposal (as seen in table 4-2).	References to social marketing around waste reduction and recycling have been added to Section 3, including the goals and actions table (Table 3-1).
	D. Because of school closures due to the pandemic, we have been taught that entering classrooms is no longer a given. Reaching students today can be done through their teachers if tied to classroom curriculum. RE Sources is currently offering professional development or clock hours to teachers in order to reach students. But there is no equivalent to offer custodial staff. Education and training for this population is not addressed. They are not commercial or youth yet they are a population that can greatly impact the waste streams in Whatcom County.	The inclusion of custodial staff training will be considered during the next RFP process for waste reduction and recycling educational programs in schools.
3. Recycling	A. Recycling is a large component of this plan and is a great measurable way to look at how some waste is diverted from landfills. We would like to again see measurable goals included in this section. While recycling is important, the concept of downcycling is left out. Over time since the creation of the first CSHWMP, we have come to understand that recycling really is not the answer to waste diversion, especially as many materials are not truly recyclable and get downcycled so that eventually we cannot recycle them anymore because the integrity of the material is too compromised. Refuse, reduce, and reuse may be more difficult to capture in numbers, but deserve more attention in this plan in order to truly divert waste from landfills. In the next plan update, we would like to see more updated concepts of waste management, recycling, and diversion incorporated.	The County has incorporated the ideas of refuse, reduce, and reuse into the Waste Reduction section of the plan (Section 3; Table 3-1).
	B. Additionally, we would love to see the County become a leading example by adopting practices such as the County committing to goals to purchase paper with a certain percentage made from recycled paper materials, or sharing how much compost, recycled concrete, or other recycled materials the County uses or purchases. This could help create more of a market for recycling if others follow the County's example to try to purchase recycled or reused materials before buying new when appropriate.	It is not within the scope of this plan to have the County adopt the practice of committing to purchasing recycled materials.
	C. Ridwell was also not mentioned in this section. They are relatively new to the Bellingham area as of 2021, and provide pickup services for items like plastic film, Styrofoam, threads, batteries, light bulbs, and a rotating featured item every 2 weeks upon request.	Comment noted. We do not anticipate adding language about Ridwell in this plan.

Comment No. and Category/Plan Section	Comment	Response
4. Organic Material Management	A. We are pleased to see the progress and successes that have been made in organic material management. We would like to see more on how things like compostable plastic, tetrapax, and PFAS (per- and polyfluoroalkyl substance) containing food packaging or products are impacting the composting process. While compostable plastic is compostable under certain conditions, we worry that at a certain volume or concentration, these conditions may no longer exist. Of concern are the plastics that do not break down in the compost and use of compost that spreads plastics back out into the environment. PFAS is a persistent and bioaccumulative contaminant that is commonly found in food wrappers and packaging such as pizza boxes. Forever chemicals such as these can make compost less desirable. We would like to avoid these problems and would like to ensure that the compost produced can safely and confidently be used without posing undue risk to the environment or human health.	Green Earth Technologies routinely samples their finished product to ensure it meets all current compost quality specifications, and will work to include PFAS and other forever chemicals as those are incorporated into the specifications.
	B. We would suggest more investigation into these issues and that could mean more education and outreach on what truly should go into the curbside compost.	The goals and actions table in Section 3 has been updated to include an action on education about which items may go into the food waste bins.
	C. We are also concerned about the appropriate disposal of organic waste from marijuana farms as this industry expands and more information becomes available.	The County may consider this comment for the next plan update if there is more guidance readily available on this issue.
	D. We would love to see curbside compost and organic disposal be more accessible to all. However, we wonder about equitable ways this could be done, as well as how best to ensure that disposal is done properly, especially at multifamily residences.	"Consider accessibility of organic materials collection and management" is included as a goal in Table 5-1 with actions including "investigate expanding organics collection to areas of the County that are not served by existing programs," and "continue to support composting at home and identify opportunities to expand existing programs."

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Comment No. and Category/Plan Section	Comment	Response
5. Biosolids (Sewage, Sludge, and Septage)	A. Thousands of unregulated toxics are in sewage-derived biosolids. Research shows that thousands of chemical contaminants have been identified in sewage sludge including: 27 metals, PFAS, microplastics, flame retardants, pesticides, personal care products, pharmaceuticals, and hormones. Many of the chemicals found in sewage sludge are defined in Ecology's terms as being persistent, bioaccumulative, and toxic (PBT). They transfer throughout the food web exist in all trophic levels, and are found in organisms that are far from the source of contamination. The biosolids that are spread in Whatcom County are not an exception and will also contain thousands of toxic contaminants. Exposure to even small amounts of these toxics can, over time, be dangerous to human health and the environment. Studies show that these toxics can lead to respiratory and cardiovascular disease, cancer, reproductive effects, nerve and neurodevelopmental effects, endocrine disruption or immune system dysfunction, and organ damage in humans and animals. Federal and State Regulations are not protective of human health and the environment for biosolids. Of the thousands of toxic chemicals found in biosolids, only 9 metals will be tested for in the biosolids produced and spread in Whatcom County. That is the current State and Federal Regulations even though Ecology recognizes that PBTs found in biosolids are a serious health and environmental problem. There are Chemical Action Plans (CAPs) for 6 PBTs: Mercury, polybrominated diphenyl ethers (PBDEs), lead, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and per- and poly-fluorinated alkyl substances (PFAS). The two metals (mercury and lead) are currently being regulated under the Biosolids Permit but PBDEs, PAHs, PCBs, and PFAS are not. Even miniscule amounts of persistent toxics can have long lasting, profound effects. Future, stricter regulations are on the horizon. Recent developments at both the Federal and State levels regarding PFAS compounds could have substantial effects on the local spreading of biosolids. On October 18, 2021 EPA Administer Michael S. Regan announced the PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024.10 The Roadmap will hold polluters of PFAS responsible for their actions and will propose monitoring and testing requirements within the National Pollution Discharge Elimination Permits (NPDES). Also in October of this year, Ecology announced that PFAS compounds meet the definition of a hazardous substance that is in the Environmental Cleanup Law which means cleanup will now be regulated under the Model Toxics Control Act (MTCA). Ecology will be taking steps to: Create cleanup level standards for PFAS, prevent additional releases of PFAS into the environment, require PFAS releases to be reported to Ecology, and reduce the use of PFAS. If Whatcom County continues the practice of land applying biosolids, it will be responsible for meeting these new regulations and how this will be done needs to be incorporated into the CSHWMP.	The County recognizes that there are many concerns about land application of biosolids. If and when Ecology creates new regulations, the Biosolids permit administered through Ecology will address them.
Biosolids (Sewage, Sludge, and Septage) (cont.)	B. Increased transparency is needed. The CSHWMP lists the three facilities that currently apply biosolids. The locations of these facilities should be included. In addition, anyone that produces or processes biosolids in the county should also be listed and their location provided to be completely transparent.	This plan will not list addresses of Biosolids land applying facilities. Adjacent property owners are notified of Biosolid land appliers, and anyone who is interested in Biosolid activities can join the interested parties list though the Department of Ecology.
6. Construction and Demolition Waste	A. For construction and demolition (C/D) waste, there is a heavy reliance on nonprofits. As mentioned in the CSHWMP, the Appliance Depot went out of business because of covid, leaving our County without a way to drop off old appliances that can be fixed and resold for use. It would be wonderful to not have such vulnerabilities. There is also very little financial incentive for businesses to start based on reuse.	Comment noted.
	B. The CSHWMP should also have a stronger focus on construction debris and diversion as well as concrete and asphalt. Carbon diversion elements should be included in this plan as well.	Increasing C/D recycling is the first goal stated in Table 8-1, with actions including increasing outreach to business associations and supporting existing diversion efforts.

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Comment No. and Category/Plan Section	Comment	Response
7. Disaster Debris	A. As we recently experienced major flooding in Whatcom County in November 2021, this section is very important. As disasters become more frequent with climate change, it may no longer be appropriate to rely on FEMA and other emergency services to provide the answers to disaster debris as these emergency services become stretched thin. The CSHWMP should really consider at least a list of potential disaster debris locations and plans in case of an emergency. After the recent floods, there is sure to be a lot of C/D waste from flooded houses. It would be nice to see a way to mitigate or salvage what can be reused or recycled while also addressing a possible drastic increase in waste directly following the event. Additionally, we are concerned about sandbag disposal. Leaving sandbag disposal up to residents who are already burdened with potential flood damage, should not have to occur. Perhaps there could be a program started to take back sandbags and allow for reuse as possible when needed. We are also concerned about disaster waste such as fire suppressant that contain hazardous substances such as the example of the Custer train derailment in December of 2020 and what happens to this toxic debris that contains PFAS.	Disaster debris management is found in the Disaster Debris Management Plan, which is referenced in this plan (Section 8.1.5). The County does not anticipate adding new language in this plan to address disaster debris.
8. Vactor Waste	A. We appreciate that the toxicity of vactor waste is taken into consideration as we keep learning more about contaminants of emerging concern, such as 6PPD which is toxic to salmon.	Comment noted.
9. Waste Tires	A. We appreciate the programs that have gone on to collect waste tires and to make disposal more accessible. Tires can leach many toxic chemicals, and recently it was found that a chemical component in tire dust called 6PPD-quinone can cause prespawn mortality in salmon. We see a lot of piles of waste tires sitting around in parking lots (such as at car dealerships, mechanic shops, bike shops, or tire stores) before they are presumably picked up for disposal, and in the meantime are left to leach contaminants into waterways with every rain event. We would like to not only see information on the disposal methods, but best practices for the storage of this waste until it can be removed from a site.	This plan does not address private storage of tires. Waste tire storage regulations are found in WAC 173.350 and are discussed in Section 8.1.9.
	B. Additionally, we often see tires reused for purposes such as bumpering docks, armoring shorelines, or crumb rubber fields or playgrounds. This needs to stop as this creates a toxic hazard for human health and the environment and should never be considered an appropriate reuse method to divert from landfill and should be considered for inclusion in the plan.	It is beyond the scope of this plan to determine how and where waste tires are reused or recycled.
10. Other Types of Waste	A. The CSHWMP does account for many types of waste and disposal, but a few additional types we would like to see included are campaign signs and,	Comment noted. Campaign signs are the responsibility of the candidate or the property owner who placed them on their property.
	B. what can be done to address the increase of packaging and mailing containers as more folks get goods delivered to their homes.	Cardboard and envelopes can be recycled. Expanded polystyrene foam will be banned in Washington state starting in 2023.
	C. The practice of burning waste on private property seems to continue and residents suffer from poorer air quality because of this. It would be nice to see this addressed somewhere in the CSHWMP.	The illegal burning of waste is addressed in the Admin and Enforcement section under NWCAA (Section 8.1.2).
11. Reduce and Reuse	A. The CSHWMP contains a lot of pertinent information; however, it seems to fall short of our current fundamental understanding of reducing waste overall. For example, in the set of definitions given on pages 23-24, the concepts of reduce and reuse falls short despite earlier mention in the CSHWMP that these were important components. Reduce or reuse are not included under any of the terms, only super vaguely under "diversion" with the catch all of "or beneficial use that prevents disposition of material in landfills and incinerators." This does not set the right tone for the rest of the plan and hinders the effectiveness of the CSHWMP to its core if it does not update to reflect our current understandings with only including older approaches.	The concepts of "reduce" and "reuse" were added under the definition of "Waste Reduction" in Section 2.3.1.

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Comment No. and Category/Plan Section	Comment	Response
12. Equity, Diversity, and Inclusion	A. We appreciate that accessibility of waste disposal and recycling services is considered in the CSHWMP, though we wonder what that in actuality looks like. Equity and affordability should certainly be considered, beyond cost-effective actions. The accessibility dynamics of landlords as well as apartment complexes or multifamily residents should also be accounted for in the CSHWMP. More services should be considered for areas like Maple Falls and Glacier on highway 542 that currently have limited access, as well as needs for communities on Lummi Island and continued services to provide for the challenging needs of Point Roberts due to its geographic location.	Specific needs are addressed as they arise. This comment does not specify the needs and challenges of the noted communities. The Point Roberts solid waste collection system is detailed in Section 4.
	B. We appreciate that in the education section, it states that Ecology's intended audiences are routinely evaluated for planning for inclusive engagement that addresses languages, cultures, literacy, abilities, and other characteristics of the audience, but what about Whatcom County?	New language has been added to Section 3.1.1, stating that education that is put out will be reviewed by the County PIO for audience accessibility.
	C. Current curbside pick-ups are only possible if the customer is able-bodied. Do haulers provide alternatives for those in our community that cannot bring materials curbside?	It is not within the scope of this plan to require that haulers provide alternative services to their customers.
	D. While diversity, equity, and inclusion in the CSHWMP itself is important, it is also important that this be reflected in the committee and those who help compile the CSHWMP.	The County has held a convening of all Health Department boards and commissions to discuss and promote racial equity work.
	E. Is there a diversity, equity, and inclusion plan for the SWAC? It also appears that while some of the members are invaluable for their breadth and depth of knowledge, there are some inherent conflicts of interest from private companies who benefit from the increase of waste, so it is important to ensure there is a wide variety and balance of representation on the committee.	The roles of the SWAC are spelled out in the bylaws. Some of the positions are specified to be solid waste industry representatives; however, there are also many positions available for private citizens, public officials, and special interest groups. The County believes that the committee is appropriately balanced.
13. Measuring Success, Setting Measurable Goals	A. While there are many wonderful tables in the CSHWMP that lay out goals, actions, and timelines, there is a severe lack of measurables. How will the successes of this plan be measured? How do we know if goals are being met? We would love to see some numbers being assigned to the goals outlined in the CSHWMP and an assessment of how we are doing in the next CSHWMP with adaptive management incorporated.	The County and the SWAC worked together to determine appropriate goals and actions for this overarching plan. Keeping the goals and actions broad but targeted allows the program to focus on emerging trends, rather than locking into one. It was agreed that setting measurable goals would be appropriate for a more focused work plan that can be more quickly and easily revised than a five-year plan can to respond to changes in solid waste management. In addition, compostable organics and food waste is the largest waste stream by far, and the plan does state a goal of reducing this waste stream by 50%.
	B. A Zero Waste goal for the County would also be wonderful and could help push others to help meet this goal. On page 47 of the CSHWMP, the solid waste management planning guidelines recommend that local jurisdictions (such as the County) set specific waste reduction goals and implement programs to reduce waste.	Promoting the theme of zero waste is included in the goals and actions table of Section 3. Contracts with waste educators can be reviewed during future RFPs to require more deliverables in terms of waste reduction.
	C. We very much support the County moving forward to develop not just waste reduction programs, but also a mechanism for tracking subsequent results as stated, and would like to see goals set and progress measured and assessed so we can keep improving. We believe that the County can play a significant role in providing easy access to waste management information that is spread to various websites, being seen as the leader locally.	The County has very recently entered into a contract with a software company that provides a lookup tool for many waste streams, making it easy to determine how to recycle or dispose of certain materials. The County did not have this tool during the initial drafting of this plan update. Mention of this tool has been added to Section 3.1.1.
	D. Along these lines, the current CSHWMP indicates in some sections that the data show a change in waste generated (such as section 2.3.9 Per Capita Waste Projects), but there is very little discussion or data to indicate why these changes occurred. Such discussion would be valuable to include.	The plan states that waste generation trends that have been observed are likely due to factors such as recessions, increasing public awareness of the negative economic and environmental impact of solid waste, and the COVID-19 pandemic.

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14. Miscellaneous	A. The name of our organization has changed from "RE Sources for Sustainable Communities" to just "RE Sources" which is currently not reflected in this plan.	RE Sources' name has been changed and corrected throughout the plan.
	B. Figure 1-1 shows organics drop box on the legend, but there are none on the map. We wanted to make sure that there indeed were no organics drop boxes in Whatcom County?	There are no organics drop boxes in the county. That symbol has been removed from the legend.
	C. Some of the citations we found difficult to follow. For example: 1. There are some citations without links on page 11 and, 2. It is not made clear which version of the 2010-2040 projections were used for this plan.	1. We cannot find the citations on page 11 that are referenced. 2. Section 2.3.4 states that the medium series population projection was used for the plan.
	D. On page 21, in the second to last paragraph, in the last sentence, "the" should be capitalized at the beginning of the sentence. There are a few more similar, small errors in the plan.	Prior to finalizing, a final technical edit of the plan was completed to address spelling and grammatical errors.
	E. On page 23, the definition of organic materials states that it makes up "a significant component of the County's solid waste stream", however "significant" is a normative term that does not mean anything without context. We request that some language be added for clarification, or at least a reference to figure 2-5 on page 29 that does define the actual percentages for each category of waste stream composition in the Ecology 2016 study.	A reference to Figure 2-5 has been added.
	F. Figure 2-5 on page 29 fails to mention the actual measurement unit used for percent solid stream composition. It is unclear whether this measurement was the percentage by weight, volume, pieces of trash, or something else. If figure 2-5 is consistent with later figures, we could guess that it is percent by weight, but we think it would make the plan stronger to include this important information in the figure.	A description of the measurement unit was added to the text and the footnote of the figure.
	G. Similarly, figures 2-6 and 2-7 also cannot stand alone. The narrative text of the plan indicates that the measurements for waste diversion and recycling rates are derived from tons of waste, but the unit of measurement is not mentioned anywhere in the figures, leaving ambiguity and lack of clarity.	A description of the measurement unit for Figure 2-6 was added to the title of that figure. The definition of diversion rate is included in Section 2.3.8.
	H. On page 32, the last paragraph states that the plan predicts changes in waste disposal and generation due to covid and post-covid, but makes no indication of what those changes might be (increase or decrease and how so?). Figures 2-8 and 2-9 indicate an increase mostly, but perhaps this could be referenced in the narrative.	Comment noted. The County will review the data as they relate to the COVID-19 pandemic and incorporate that information into the next plan update.
	I. On page 44, there are some errors in reference to RE Sources work. Corrections are noted below with text in red for additions and strike through for deletions:	These errors have been addressed.

Appendix H
Response to Comments

Comment No. and Category/Plan Section	Comment	Response
	Section 2. Public Comment: Carl Weimer	
1. Miscellaneous	A. 1. This draft plan provides a very good overview of the privatized waste handling system in Whatcom County, historical background of the system and various programs, and the basic levels of recycling and disposal. But as the definition of "plan" indicates a plan is supposed to provide "a detailed proposal for doing or achieving something," and this plan falls short of that. While the plan provides priorities for handling various wastes, it fails to provide a prioritized list of specific actions to undertake to achieve those priorities, or budget numbers so decision makers can understand what is needed to make improvements.	The Implementation Schedule, Table 11-1, provides specific actions and a proposed timeline, which the County will attempt to implement with the resources available. Keeping the goals broad allows for the program to pivot and focus on emerging trends, rather than remaining committed to an education and outreach plan that may no longer be a priority.
	B. The "goals and actions" tables read more like a wish list of good ideas but provide no clear path forward in what order they should be implemented, what they might cost, preferred implementation dates, or what would be gained by implementing them.	Budget numbers are included in the UTC form for programs that the County implements.
	C. The plan as written provides no push and creates no responsibilities to actually do anything to improve the system. Please change the plan so it reads less like a history of solid waste in the County, and more like a real plan of action to move toward zero waste with clear priority actions, desired dates for implementation, and who is responsible for funding and implementing.	The plan has an implementation schedule that includes all of the goals and actions and the desired implementation dates. It is important to include the history of the system for context.
	D. The plan lacks useful information that would allow anyone to know whether the current activities are improving or even undermining solid waste handling based on the priorities listed. For example, waste prevention and reduction are listed as the highest priorities multiple times throughout the document, yet it would appear programmatic efforts in these areas have significantly declined over the past couple of decades. In the 90s, when the County was recognized as a national leader in waste prevention and recycling, there were hundreds of school programs and business waste audits done each year; there were multiple outreach activities and distribution sites throughout the County distributing information about using less toxic products;	These activities are still performed by contracted waste-reduction educators, as stated in Section 3.
	E. There were active efforts to get retailers to offer better packaging alternatives and products made of post-consumer waste;	Efforts to get retailers to offer better packaging alternatives is a policy-level decision and beyond the scope of this plan.
	F. There was a local recycling hotline that was promoted and answered hundreds of calls each month on waste prevention and recycling issues; and	People use the internet to get disposal and recycling information now; a recycling hotline would no longer be beneficial. The County has very recently purchased software that will provide easy access to information on how to dispose of or recycle many items (Section 3.1.1)
	G. There were efforts to create local jobs through county startup grants for businesses that would divert local waste materials (this is how The RE Store and Appliance Depot got started).	Efforts to create jobs diverting waste materials is a policy-level decision, and not within the scope of this plan.
	H. While this plan describes some current programs there are no measurables or metrics included that would allow anyone to know if the described programs are effective, are increasing or decreasing, or are really being treated as priorities like the plan states.	Annual waste and recycling per capita amounts are included in the plan; these are large indicators of whether waste reduction and recycling educational efforts are successful.
	I. There are not even any budget figures that show how much is being spent on such activities from year to year.	Budget numbers are included in the UTC form.
	J. The only real measurable is the per capita disposal rate which is going in the wrong direction, and ought to be clear call for the need for increased waste prevention and reduction programs.	The per capita disposal rate is affected by a multitude of factors, many of which are beyond the control of this program. Product packaging, consumer buying habits, and global pandemics all feed into waste habits.
	K. Please update this plan before approval to include clear metrics that allow us to know the trajectory of the different priorities based on budget spending and program activities.	The County and the SWAC worked together to determine appropriate goals and actions for this overarching plan. Keeping the goals and actions broad but targeted allows the program to focus on emerging trends, rather than locking in to one. Metrics and measurables are more appropriate for a work plan that can be quickly altered to account for changing trends.

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Miscellaneous (cont.)	L. The plan lacks any descriptive analysis of where materials being collected for recycling go, and whether that material is actually being recycled in a beneficial way, or is being down-cycled or disposed of. There have been many national and local articles over the past few years regarding the collapse of the recycling system nationwide, and how a large portion of what is being collected and paid for as recyclables is actually being disposed of because of lack of markets. Even the County's recently released Climate Action Plan states that "Much of our current waste is buried in landfills in eastern Washington and Oregon, including a large quantity of the waste we attempt to recycle." Yet nowhere in this plan is there a description of where our local recyclables go, and whether they are actually recycled or disposed of at those endpoints. There is also no discussion about whether the County or State tries to audit actual recycling or even cares whether it is ultimately being disposed of. I would suspect that due to our great residential recycling source separation system our recyclables are more marketable than in many communities that use commingled systems, yet there is no clear review or discussion of the actual end fate of our recyclables in this plan. Please add an additional section to this plan about where our recyclables ultimately go, and how the County or State verify recycling claims.	This statement refers to the entire U.S. recycling system and is not specific to Whatcom County. The recycling market is an ever changing landscape, making it challenging to track the final destination under the current solid waste authority. Reports submitted to the local health jurisdictions and the state do not include final destinations for recyclables. By all accounts, the source-separated recyclables produced in Whatcom County are very high quality and there has been much less difficulty finding recycling markets willing to accept them. The plan cannot include information about where all of our recyclables go.
	M. The plan contains little information on the actual funding of the system (like a line item budget) and no discussion of ways to possibly increase funding for the many programs that are alluded to but not active. The County's solid waste excise tax has remained static for decades, while other funding sources from the state and federal government have until recently decreased. The current draft of the plan says "As County funding levels for solid waste management improve, the County will prioritize their resources based on the goals and actions outlined" in the Waste Reduction and Public Education section of the plan, yet there is no discussion of how that funding might increase, whether the increase will be sufficient to accomplish anything, or possible ways to make such an increase happen. If a small increase to the County's excise tax would provide funding for priority waste prevention and reduction programs shouldn't that at least be discussed in this plan? If current waste prevention and reduction efforts fall short (and it appears they do from the increasing disposal rates) shouldn't there be a recommendation to increase funding if the County really believes in the priorities they state in their plan?	The solid waste tax was amended in 2018 to require self-haulers to pay the excise tax when bringing waste to the transfer stations. This amendment was made to make up for the shortfalls LHJs were experiencing in the grants provided by Ecology to pay for infrastructure programs. At this point there is no need to increase funding to the solid waste fund.
	N. Please add a section that shows current budget allocations by priority, and to discuss the costs and benefits of an increase in funding for waste prevention and public education programs.	A table with current budget allocations has been included in Section 11.3.
	O. The plan contains no mention of climate change, yet the County has worked for a number of years now to produce a Climate Action Plan that was recently approved by the County Council, and contains a whole section on "Waste." The Climate Action Plan discusses our current waste management system and makes recommendations for improving that system to help address our current and impending climate crisis. Please add a section that integrates the recommendations from the Climate Action Plan, and ensure that the Whatcom County Climate Impact Advisory Committee is provided a direct invitation to review and comment on this plan before it is finalized.	Reference to the Climate Action Plan has been added in Section 1.5, Relationship to Other Plans.
	P. The plan contains no clear analysis of what incentives or disincentives exist to a better system based on priorities stated, or what actions local government should consider to decrease unnecessary waste. For example, the Disposal of Toxics facility uses a large part of the County's solid waste budget so it can continue to offer free disposal of unused toxic products, but in this plan there is no discussion of whether offering such free disposal is encouraging use of such unnecessary products, or whether charging a small fee for such disposal might help prevent the use of such products and free up money to promote toxic-free alternatives. There is also no discussion or recommendation regarding what options local governments may have in banning some of these toxic products where good alternatives exist to prevent public money from having to continually be spent to subsidize such products use and disposal.	The Disposal of Toxics program is a valuable county resource available to all citizens. Charging a fee to disincentivize proper disposal of household hazardous waste would more than likely cause people to improperly dispose of their hazardous wastes rather than pay for disposal. Instead, this plan focuses on providing education around less toxic alternatives and buying only what is needed.

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Miscellaneous (cont.)	Q. Another example: Due to an office move, I recently had to haul several hundred pounds of high quality office paper to a recycler. There was insufficient information available anywhere I looked about the best place to do this, or what the costs would be. I decided to take the paper to RDS for convenience even though I knew they had recently begun charging a "small fee" for recycling. I was very surprised when I was charged the same rate for recycling this paper as the current disposal rate at RDS due to the quantity I had. In other words, if I had only been concerned with the cost and convenience of getting rid of this paper, I would have been better off disposing of it as garbage on their tipping floor. Yet nowhere in this plan is there a discussion of the potential benefits of requiring or subsidizing recycling and disposal facilities to offer recycling at rates less than disposal.	There are multiple reuse opportunities for good usable office paper.
	R. Please add a section that discusses current incentives and disincentives to waste prevention and recycling, provides information about what options local governments have regarding banning certain toxic products where alternatives exist or packaging that is problematic to recycling, and make recommendations along those lines for actions to improve our waste system based on the priorities in the plan.	Table 3-1 includes a stated goal of "increase community knowledge and expertise of waste reduction methods by providing educational opportunities to targeted populations using existing public and private resources." It is beyond the scope of this plan or the solid waste program to ban certain toxic products or packaging.

Appendix H
Response to Comments

Comment No. and Category/Plan Section	Comment	Response
Section 3. Ecology (Revisions Required for Plan Approval)		
1. Chapter 9	A. Include a section referring to six-year capital and acquisition projections. State Law (RCW 70A.205.075) requires that solid waste plans include a construction and capital acquisition program for six years into the future. This requirement is generally interpreted to apply only to public facilities, because a solid waste plan cannot dictate construction schedules and capital acquisitions by private companies (except in limited cases). Please clearly state that since Whatcom County solid waste facilities are privately owned and operated, no construction or capital acquisition expenses are being proposed for this Plan.	Most of the solid waste facilities in Whatcom County are privately owned and operated. The only construction and capital acquisition project planned is the Point Roberts transfer station scale house, which is slated to be replaced, with a budget of $150,000. A new section (9.1.4) has been added and includes a description of this project, along with Table 9-1.
2. Chapter 4	A. **Provide a description of markets for recyclables.** State law (RCW 70A.205.045(7)(c)) requires "a description of markets for recyclables" in solid waste management plans, which includes a recycling market analysis and an identification (designation) of the materials considered to be recyclable. Please include a description of the markets for recyclable materials collected in Whatcom County. This description would fit well under Section 4.1 Existing Conditions. We also recommend including a link to the market trend data posted and updated by Ecology in this section, see link below: https://app.box.com/s/klxstztju7kh8aql5qvzaf2vfo0oguun.	Table 4-2, Current Markets for Recyclable Materia+E79ls, has been added to Section 4.1.1.
Section 4. Ecology (Recommended Revisions)		
1. Chapter 9	A. **Include a recommendation to review and update interlocal agreements.** The combination of an interlocal agreement (ILA) and a resolution of adoption is generally required for all participating jurisdictions in order for a solid waste management plan to be approved by Ecology. The ILAs in the current plan were signed in 1991. For this reason, we strongly recommend the Plan include a recommendation that before the next Plan update, the County: 1. Review the current ILAs with all Plan signatories and revise as needed to reflect current conditions and statutes. 2. Consider entering into separate ILAs to plan together to ensure issues related to the financing and operation of the County's solid waste system do not delay or interfere with the plan update process.	A review of the ILAs is included as part of the annual plan review described in Section 11.2.
2. Chapter 4	A. **Expand designated recyclables list.** The Plan includes a list of "accepted curbside materials by bin" in Table 4-1 to be collected by certificated haulers in unincorporated areas, which meets the requirements under Whatcom County Code. We recommend expanding the designated recyclables list to include materials collected through other types of programs, such as drop-off and buy-back locations or through other collection services. In addition, in Section 4.1.3, the Plan includes a link to Whatcom County's code listing what's required to be collected curbside. We recommend this section also include a reference back to Table 4.1 where a summary of the current list can be found.	The County is not going to expand the designated recyclables list in the County Code, but will accept materials from other collection programs if there are available markets. Section 4.1.3 was updated to include a reference to Table 4-1.
3. Chapter 2 or 4	Include current and projected recovery rates through the current and proposed recycling programs. This is recommended criteria Ecology can use in determining whether or not to approve an alternative to curbside in an urban area. Figures 2.8 and 2.9 are particularly strong elements of the Plan, and we recommend the Plan uses this data and displays it as a recovery rate in addition to the per capita lbs. and total tons shown in the Figure 2.8 and 2.9. This data could also be included in Chapter 4 indicating that they are based on the projections in Chapter 2.	The County may consider this approach for the next plan update.

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4. Chapters 1 and 2	Update sections related to recent state plans and studies. **2018 Waste Generation Data:** In Section 2.3.2, 2017 waste generation and recovery data provided by Ecology is referenced. Please use 2018 data that is posted here: https://ecology.wa.gov/Research-Data/Data- **2020-2021 WA State Waste Characterization Study:** Section 2.3.6 references Ecology's 2015 waste characterization study. We recommend that data from 2020-21 study is used since the Plan covers 2022-2027. See here: https://app.box.com/s/orhkr4zorkx68dg5sk33hvnhx15hushd. **2021 State Solid and Hazardous Waste Plan:** In Section 1.6, please update reference to the 2021 State Solid and Hazardous Waste Plan: https://apps.ecology.wa.gov/publications/SummaryPages/2104050.htm	The latest data available at the time of drafting the plan were used, and it is not feasible to revise all of the data tables and figures throughout the CSHWMP, using the 2018 waste generation data, 2020–2021 WA State Waste Characterization Study data. Reference to the 2021 State Solid and Hazardous Waste Plan has been updated in Section 1.5.
5. Title Page—other places where the full title is mentioned	**Change the Plan's title.** To bring some statewide consistency and to make it clear the time period it covers, we recommended that the title be changed to: Whatcom County Comprehensive Solid and Hazardous Waste Management Plan – 2022 to 2027.	This has been updated throughout the plan.
6. Executive Summary	**Include an Executive Summary.** We suggest including an Executive Summary at the beginning of the Plan before the Introduction to summarize what the Plan will include and its purpose. The Plan provides some information in Chapter 1 (on pg. 6) that, if condensed further, would work well in the Executive Summary.	The County does not believe that an executive summary is a necessary element of the plan.
7. Glossary	**Move the Glossary for clarity.** Section 2.3.1 Solid Waste Definitions on pg. 23 includes some helpful definitions relevant to Chapter 2. However, the more comprehensive glossary included at the end of the Plan would be helpful to include earlier. We suggest moving the Glossary to the beginning of the document after the Acronyms and Abbreviations section and before the Executive Summary (which is a separate recommendation included in these comments). After making these changes, Section 2.3.1 Solid Waste Definitions would be redundant and can be removed from the Plan.	The glossary has been moved to the front of the plan.
8. Chapter 1	**Reference Skagit County's Solid Waste Management Plan.** In Section 1.5, the Plan addresses its relationship with other Plans. Since parts of Whatcom County (the easternmost portion including Diablo and Newhalem) are served by Skagit County waste hauler Waste Management and managed in the Skagit County system, we recommend you reference and provide a link to Skagit County's Solid Waste Management Plan (Skagit's SWMP). We also recommend that the Plan specifically reference Alternative D in Chapter 9 of Skagit's SWMP related to regional opportunities. Skagit's SWMP discusses entering into an interlocal agreement with Whatcom County for the Diablo and Newhalem area to be included in the Skagit County solid waste system. Skagit's SWMP presents the advantages and disadvantages related to this Alternative option, and it would be helpful to reference this language in the Plan and include Whatcom County's perspective	A reference to the Skagit County SWMP has been added to Section 1.5. The County may consider entering into an ILA with Skagit County in the future.
9. Appendix	**Include SWAC Bylaws and evidence of SWAC participation.** Ecology recommends that the County show the Plan was developed with the active assistance and participation of a local SWAC. Although Ecology did receive documentation of meeting minutes when the Preliminary Plan was submitted, we did not receive the SWAC Bylaws and they are not included in the Plan. We suggest the documentation of meeting minutes be included as an Appendix along with the SWAC Bylaws and the Resolution establishing the SWAC.	The SWAC bylaws and meeting minutes are included as Appendix E to the plan.
10. Chapter 4	Reference the sunsetting of the LightRecycle program in the Plan. The LightRecycle product stewardship law will likely end in July 2026. We recommend including language that addresses this likely change. Some sample draft language and additional guidance on this topic can be found here.	Reference to the LightRecycle program has been added to Section 3.1.1.

Comment No. and Category/Plan Section	Comment	Response
11. Multiple Sections	A. **Inclusion of Lummi and Nooksack tribes in Planning efforts.** Ecology's planning guidelines broadly encourage inclusion of tribal reservations in Planning Areas. Beyond ensuring that all solid waste services within the Planning area are described in the Plan, some benefits of including tribes in Planning efforts include strengthening the relationship between Whatcom County and the tribes, identifying opportunities to better coordinate services, and expanding opportunities for grant funding. We recommend including a section and/or recommendation in Ch. 3, 4, 5, or 9 that encompasses how Whatcom County collaborates (or intends to collaborate) with Lummi and Nooksack tribes in Planning efforts. Here are some examples of how tribal nations are addressed in other SWMPs: https://ecy.app.box.com/file/972217077848	A description of the Lummi Nation and Nooksack Tribe involvement in the planning process has been added to Section 1.3.
	B. In addition, a land acknowledgement created in collaboration with the local tribes would be a strong element to include in the Plan, or included as a recommendation to consider in the next Plan update. For example, in the draft Tacoma-Pierce County Plan, they acknowledge that Pierce County has for thousands of years been the traditional land of many tribal nations. This is just one of a few examples of counties who are incorporating an environmental justice perspective into their plans.	A land acknowledgment statement has been added to Section 2.1.
12. Multiple Sections	**Equity and environmental justice considerations.** We recommend providing some information about socioeconomic indicators that can be used to support Whatcom County's solid waste goals, specifically related to education and outreach gaps identified in Ch. 3, 4, and 5. According to the EJSCREEN tool, which you can read more about here, a significant percentage (80% or higher) of the population in parts of Whatcom County identify as low income, elderly, unemployed, and/or having less than a high school education. There is also a high percentage of children under the age of 5 in many areas of Whatcom County, which is important to consider when developing equitable stakeholder engagement strategies. For example, are public meetings held at a time suitable for parents and caretakers? These are all barriers to accessing services and achieving solid waste goals in Whatcom County. We strongly encourage you to use the EJSCREEN tool to support recommendations that more intentionally focus on under-resourced areas with underserved populations. The County could also include a section where existing plans and programs that incorporate environmental justice are discussed, such as the current efforts to expand the County's rate relief program. In addition to the EJSCREEN tool, Ecology has some Equity and Environmental Justice Resources that can assist with decision-making around access to services and targeted education and outreach. Please feel free to consult the resources provided in our Box folder: https://app.box.com/s/cz93a6fol241zzme9xtt1cqeo71wbk64	The County will discuss this as part of the planning effort for the next plan update.
13. Chapter 11	Include a periodic Plan check-up in your implementation plan To ensure the Plan is kept in current condition, we suggest including a recommendation in Ch. 11 to periodically perform a "Plan check-up" during the Plan's implementation period. We suggest this be done annually with your SWAC and that you share the results of your checkup with Ecology.	Language describing an annual review of the plan, specifically the goals and actions, has been added to Section 11.2.

Comment No. and Category/Plan Section	Comment	Response
	Section 5. Ecology (Minor Edits)	
13. Chapter 1, pg. 18	A. "Soil Conservation Service" is now known as "USDA – Natural Resources Conservation Service".	Addressed in the CSHWMP.
14. Chapter 2, pg. 21	A. We recommend displaying Table 2-3 *Whatcom County Employment Sectors, 2017* in descending order rather than in no particular order.	Addressed in the CSHWMP.
15. Chapter 2, pg. 21	A. Please link the Whatcom County Comprehensive Plan in Section 2.1.3 Land Use.	Addressed in the CSHWMP.
16. Chapter 2, pg. 22	A. Use of word "system" instead of "County" is not as intuitive and clear as to who owns the facilities and the County's role in solid waste management activities over time. Please refer to "County" instead of "system", or clarify that word "system" refers to the County.	Addressed in the CSHWMP.
17. Chapter 4, pg. 50	A. In Section 4.1.1, "Collection Services" has an unnecessary space in the word "Collection".	Addressed in the CSHWMP.
18. Chapter 4, pg. 56-57	A. Please link and fix the misspelling of "the" in the WSRA 2014 report titled *Sorting It Out: The State of Multifamily Recycling in Washington State*	Addressed in the CSHWMP.
19. Chapter 11, pg. 110	A. Chapter 11 Implementation Schedule title is misspelled.	Addressed in the CSHWMP.
20. Chapter 9, pg. 89	A. Please replace WAC 173-304 and cite the Solid Waste Handling Standards of WAC 173-350 instead, which came into effect in 2003.	Addressed in the CSHWMP.

Notes

C/D = construction and demolition.

the County = Whatcom County.

CSHWMP = comprehensive solid and hazardous waste management plan.

CROP = contamination reduction and outreach plan.

Ecology = Washington State Department of Ecology.

NWCAA = Northwest Clean Air Agency.

RFP = request for proposal.

UTC = Utilities and Transportation Commission