Kitsap County
Solid and Hazardous Waste Management Plan

Preliminary Draft

Kitsap County Department of Public Works
Solid Waste Division

April 7, 2017

ACKNOWLEDGMENTS

The Kitsap County Department of Public Works, Solid Waste Division, acknowledges the valuable contribution of the following organizations and individuals in the development of this plan:

Kitsap County
Solid Waste Advisory Committee

Washington State
Department of Ecology
Northwest Regional Office

Kitsap County Public Works
Solid Waste Division Staff

City and tribal staff and councils, as well as citizen groups and businesses, also contributed to this document through comments provided during public meetings and through various other channels. The Board of County Commissioners and the Public Works Department gratefully acknowledge this input.

Kitsap County
Solid and Hazardous Waste Management Plan

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

1999 Plan	Kitsap County Comprehensive Solid Waste Management Plan, December 1999
2011 Plan	Waste Wise Communities: The Future of Solid & Hazardous Waste Management in Kitsap County, February 2011
ACM	asbestos-containing material
BDI	Bainbridge Disposal Inc.
BOCC	Kitsap County Board of County Commissioners
BMP	best management practice
BSE	Bovine Spongiform Encephalopathy
CALF	closed and/or abandoned landfill
CAP	Cleanup Action Plan
CFP	Capital Facility Plan
C&D	construction and demolition debris
CPG	Coordinated Prevention Grant
DDMP	Disaster Debris Management Plan
Ecology	Washington State Department of Ecology
EOW	every other week
FEMA	Federal Emergency Management Agency
FTE	full-time employee(s)
GHG	greenhouse gas
HHW	household hazardous waste
HWTR	Hazardous Waste and Toxics Reduction Program, Washington State Department of Ecology
HWMA	Hazardous Waste Management Act
ILA	Interlocal Agreement
IMF	Intermediate Maintenance Facility
KCBH	Kitsap County Board of Health, now known as Kitsap Public Health Board
KCC	Kitsap County Code
KCSO	Kitsap County Sheriff's Office
KNAT	Kitsap Nuisance Abatement Team
KPHB	Kitsap Public Health Board
KPHD	Kitsap Public Health District
LEED	Leadership in Energy & Environmental Design
LSCP	Local Source Control Partnership
MOU	Memorandum of Understanding
MRF	material recovery facility
MRW	moderate risk waste
MRWMP	Moderate Risk Waste Management Plan
MSW	municipal solid waste
MTCA	Model Toxics Control Act, Chapter 70.105 RCW
MQG	medium quantity generator
$MMTCO_2e$	million metric tons of CO_2 equivalents
NFA	No Further Action
NWPSC	Northwest Product Stewardship Council
ODEQ	Oregon Department of Environmental Quality

ACRONYMS AND ABBREVIATIONS

OFM	Office of Financial Management
OVSL	Olympic View Sanitary Landfill
OVTS	Olympic View Transfer Station
PET	polyethylene terephthalate (i.e. plastic #1)
PLP	potential liable persons
Plan	Kitsap County Solid and Hazardous Waste Management Plan, April 2017
PBDE	polybrominated diphenyl ether
PP	polypropylene (i.e. plastic #5)
PS	polystyrene (i.e. plastic #6)
PRC	Poulsbo Recycle Center
PSNS	Puget Sound Naval Shipyard
PCBs	polychlorinated biphenyls
PVC	polyvinyl chloride (i.e. plastic #3)
RAGF	Recycling and Garbage Facility
RCRA	Resource Conservation Recovery Act
RCW	Revised Code of Washington
RI/FS	Remedial Investigation/Feasibility Study
SEPA	State Environmental Policy Act
SHA	Site Hazard Assessment
SHW	Solid and Hazardous Waste Program, Kitsap Public Health District
SQG	small quantity generator
SWAC	Solid Waste Advisory Committee
SWD	Kitsap County Solid Waste Division
TDSR	Temporary Debris Storage and Reduction
UGA	Urban Growth Area
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WGA	Waste Generation Area
WISHA	Washington Industrial Safety and Health Administration
WMW	Waste Management of Washington
WSRA	Washington State Recycling Association
WSDOT	Washington State Department of Transportation
WUTC	Washington Utilities and Transportation Commission

Glossary

Bangor	Naval Base Kitsap – Bangor.
biosolids	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 Chapter 173-308 WAC. Biosolids includes material derived from biosolids, and septic tank sludge, also known as septage, that can be beneficially recycled and meets all applicable requirements of the Chapter. WAC 173-308-080.
Cleanup Action Plan	Document prepared and approved by the Washington State Department of Ecology under WAC 173-340-380 that selects the cleanup action and specifies cleanup standards and other requirements for the cleanup action at contaminated sites.
climate change	Any significant change in measures of climate (such as temperature, wind, or precipitation) lasting for an extended period (decades or longer). Climate change results from a combination of natural factors and human activities.
dangerous wastes	Those solid wastes designated in WAC 173-303-070 through WAC 173-303-100 as dangerous, or extremely hazardous or mixed waste. As used in this Plan, the words "dangerous waste" will refer to the full universe of wastes regulated by the Chapter. In practice, the terms “dangerous waste” and “hazardous waste” are often used interchangeably. Such usage is convenient and is used throughout this Plan, but it is not technically accurate. The term “dangerous waste” refers to Washington-specific regulated waste streams in addition to the federally-regulated hazardous wastes. WAC 173-303-040.
diverted waste	Includes recyclables such as construction and demolition debris, materials that are burned for energy recovery, and re-used materials that are outside of the traditional State definition of recycling, but whose diversion is important to include in the State’s calculation of recycling rates. As more materials are diverted from disposal, the list of items will increase. Definition based on *Solid Waste Generation, Disposal and Recycling in Washington State: Solid Waste in Washington State 16th Annual Status Report.*
drop-box facility	Means a facility used for the placement of a detachable container including the area adjacent for necessary entrance and exit roads, unloading, and turn-around areas. Drop box facilities normally serve the general public with loose loads and receive waste from off-site. WAC 173-350-100.
e3 Washington	An inclusive process to develop a comprehensive environmental education plan that optimizes environmental education for everyone who lives, learns, works, and plays in Washington State.
Ecology	Washington State Department of Ecology.
energy recovery	The recovery of energy in a usable form from mass burning or refuse-derived fuel incineration, pyrolysis, or any other means of using the heat of combustion of solid waste that involves high temperature processing above twelve hundred degrees Fahrenheit.
generated wastes	All the wastes produced by a source, including those that are disposed, recycled, and otherwise diverted.
greenhouse gas	Includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), a number of fluorinated gases, and water vapor. Some greenhouse gases occur

	naturally, such as water vapor and carbon dioxide, while others (such as chlorofluorocarbons) are produced only through human activities.
hazardous waste	Those solid wastes designated by 40 CFR 261 and regulated as hazardous and/or mixed waste by the USEPA.
household hazardous wastes	Any waste which exhibits any of the properties of dangerous wastes that is exempt from regulation under Chapter 70.105 RCW solely because the waste is generated by households.
industry	Includes the sectors of Washington's economy (public agencies as well as private companies) that produce goods and services for businesses and citizens.
Landclearing waste	Waste resulting from site clearing operations including, but not limited to, stumps, tree trunks, brush, sod, and other vegetation and plant waste, and associated rocks, mud, dirt, sand, and other mineral waste.
moderate risk waste (MRW)	Waste that exhibits the properties of a dangerous waste and is conditionally exempt from regulation because it is small quantity generator (SQG) waste or exempt from regulation because it is household hazardous waste (HHW). WAC 173-350-100.
multifamily	Comprised of three or more combined dwelling units.
municipal solid waste	A subset of solid waste which includes unsegregated garbage, refuse, and similar solid waste material discarded from residential, commercial, institutional, and industrial sources and community activities, including residue after recyclables have been separated. Solid waste that has been segregated by source and characteristic may qualify for management as a non-MSW solid waste at a facility designed and operated to address the waste's characteristics and potential environmental impacts. The term MSW does not include: (a) Dangerous wastes other than wastes excluded from the requirements of Chapter 173-303 WAC; Dangerous waste regulations, in WAC 173-303-071, such as household hazardous wastes; (b) Any solid waste, including contaminated soil and debris, resulting from response action taken under section 104 or 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 U.S.C. 9601), Chapter 70.105D RCW, Hazardous waste cleanup–Model Toxics Control Act, Chapter 173-340 RCW, the Model Toxics Control Act cleanup regulation or a remedial action taken under those rules; nor (c) Mixed or segregated recyclable material that has been source-separated from garbage, refuse, and similar solid waste. The residual from source separated recyclables is MSW. WAC 173-350-100.
product stewardship	A management system in which producers take responsibility for managing and reducing the entire life-cycle impacts of their products and/or their packaging, from product design to end-of-life management.
recyclable materials	Solid wastes that are separated for recycling or re-use, including, but not limited to, papers, metals, and glass, that are identified as recyclable material pursuant to a local comprehensive solid waste plan. WAC 173-350-100.

Glossary

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.
Recycling and Garbage Facility (RAGF)	Name for drop-box facilities in Kitsap County, including Olalla RAGF, Silverdale RAGF, Hansville RAGF, and Bainbridge Island Transfer Station. When speaking informally, the Poulsbo Recycle Center, which does not handle garbage, and is therefore not a RAGF, is sometimes included when speaking in shorthand.
small quantity generator (SQG)	A business that generates dangerous waste but does not generate more than 220 pounds of dangerous waste, including not more than 2.2 pounds of extremely hazardous waste, per month or per batch, and accumulates less than the current "quantity exclusion limits" listed in WAC 173-303-081(2), WAC 173-303-082(2), and WAC 173-303-090(4), as amended.
solid waste	Putrescible and nonputrescible solid and semi-solid wastes including, but not limited to garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials. RCW 70.95.030.
special waste	Solid waste that requires special handling or disposal due to regulatory requirements, size, or material handling needs. This includes non-hazardous contaminated soil, asbestos-containing material (ACM), landclearing wood debris, coal ash and dredge spoils, biosolids, tires, biomedical waste, and electronic waste.
sustainability	A means of providing for current needs without sacrificing the needs of future generations. Sustainable practices require that we evaluate how our decisions today will affect society, the environment, and the economies of the future.
tipping fees	A gate fee charged at the facilities for disposal of municipal solid waste.
transfer station	A permanent, fixed, supplemental collection and transportation facility used by persons and route collection vehicles to deposit collected solid waste from off-site into a larger transfer vehicle for transport to a solid waste handling facility. Chapter 173-350 WAC.
white goods	Large appliances, such as refrigerators, freezers, ovens, and water heaters that contain large quantities of recyclable steel and other metals.
wood waste	Solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, handling and storage of raw materials, trees, and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard debris, but does not include wood pieces or particles containing paint, laminates, bonding agents, or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate. WAC 173-350-100.

yard 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. WAC 173-350-100.

CHAPTER 1 - INTRODUCTION

1.1 PLAN DEVELOPMENT

This update to *Waste Wise Communities: The Future of Solid and Hazardous Waste Management in Kitsap County*, issued in 2011 (2011 Plan), presents the Kitsap County Solid and Hazardous Waste Management Plan (the Plan). This Plan update was developed with guidance from the Kitsap County Solid Waste Advisory Committee (SWAC), whose participation is gratefully acknowledged. Committee members and their affiliations are identified in Table 1-1 below.

Table 1-1
Kitsap County Solid Waste Advisory Committee

Name	Affiliation/Title
Diane Landry	City of Bainbridge Island
Thomas Knuckey	City of Bremerton
Stephanie Bailey (Chair)	City of Port Orchard
Shannon Wood	City of Poulsbo
John Poppe (Vice-Chair)	Central Kitsap
Douglas Chamberlain	North Kitsap
Eric Lenius	South Kitsap
Shallee Baker	Port Gamble S'Klallam Tribe
Dee Williams	Suquamish Tribe
Les Hastings	NAVFAC Northwest
Erika Anderson	Agriculture
Rebecca Asencio	Commercial
Holly James	Alternate – Commercial
Jeff West	Organics Management
Heather Church	Bainbridge Disposal, Inc.
Dave Stanley	Alternate - Bainbridge Disposal, Inc.
Joey Pellecchia	Waste Management
Ex-Officio Members	
Jan Brower	Kitsap Public Health District
Vicki Colgan	Ecology – Northwest Regional Office

1.2 DOCUMENT SUMMARY AND ORGANIZATION

This Plan recommends strategies to manage solid waste generated in Kitsap County, including the cities of Bainbridge Island, Bremerton, Poulsbo, and Port Orchard, areas governed by the Suquamish Tribe, the Port Gamble S'Klallam Tribe, and U.S. Naval Base Kitsap. Solid waste handling includes management, storage, collection, diversion, transportation, treatment, use, processing, and final disposal. Recommendations address municipal solid waste (MSW), recycling, and other special wastes, including moderate risk waste (MRW).

A summary of recommended strategies along with a budget and implementation schedule is presented in Appendix A. Over the next six years, implementation of recommended strategies is estimated to cost a total of $6,150,000. This cost estimate reflects new and improved services, programs, or facility improvements to be implemented by Kitsap County. It does not reflect costs associated with existing programs, nor does it reflect the significant costs incurred by private firms, other public agencies, or residents who also have roles in managing solid waste in Kitsap County.

1.3 BACKGROUND

Washington's government, businesses, and citizens have made significant positive changes in waste management practices over the past five years, yet problems remain. According to the Washington State Department of Ecology (Ecology), recycling rates are increasing, but so is solid waste generation, even when considering the growth in population. This Plan considers solid and hazardous waste management programs and goals in Kitsap County, and recommends policies and strategies that support them.

Waste can be viewed as the direct result of inefficiency. Waste includes garbage, but it also includes emissions to the air, water, and land, and the inefficient use of energy resources. As a society, we have largely accepted the generation of waste as a natural outcome of commerce and society. This inefficient use of resources comes with a significant cost – the economic and environmental cost of producing, collecting, transferring, recycling, and eventually disposing of thousands of tons of waste each and every day. Much of this cost falls upon local governments and citizens in the form of taxes and fees to support government waste management programs and in the form of collection and tipping fees to pay for collection, recycling, and disposal.

By questioning the premise that waste is a natural outcome of our activities, we give ourselves the opportunity to re-consider and re-evaluate. Through reassessing this premise, we will be forced to look for ways to make our economy and our habits more efficient. Furthermore, it gives our community tools to enhance the positive aspects of our economy and its abundance, while reducing its negative impacts.

This Plan considers ways to prevent or reduce waste and inefficiency as it relates to the solid waste management system. At the same time it takes a methodical approach to evaluating the existing solid waste management system, and, where appropriate, makes recommendations for improving it.

Solid waste is typically divided into categories based on regulatory requirements and handling methods. Within this Plan, solid waste is divided into four categories: MSW, recyclable material, special waste, and MRW.

MSW is the largest category of solid waste. It includes all garbage and construction and demolition debris generated by residents, businesses, and institutions. In Kitsap County, MSW is generally set out for

pickup by a collection company or delivered by the waste generator to the transfer station or a drop box, known as a Recycling and Garbage Facility (RAGF) in Kitsap County.
Recyclable materials are those materials that are separated from solid waste and remanufactured into new products, such as metals, plastics, and paper. The residual from source-separated recyclables is MSW. This category also includes organic material which is processed for beneficial use rather than landfilled.

Special waste includes discarded materials that are often managed separately from MSW. Biomedical waste, contaminated soils, tires, and biosolids are examples of special wastes.

Finally, **moderate risk waste** (MRW) consists of hazardous waste produced by households (household hazardous waste, or HHW), and businesses and other entities in small quantities (small quantity generator waste, or SQG). Moderate risk waste is excluded from the Dangerous Waste Regulations (Chapter 173-30 WAC), provided it meets the criteria of HHW or the generation and accumulation limits of an SQG. It must be managed in a manner that does not pose a threat to human health or the environment. This waste must also be recycled, treated, or disposed of at an approved facility. MRW may also be regulated by local ordinance, through a local health district or department.

1.3.1 Purpose

The purpose of this Plan is to develop recommended management strategies for solid waste and MRW for the period 2017 through about 2022. The Plan also looks forward to ensure that sufficient processing and disposal capacity will be available well into the future.

Washington State law assigns primary responsibility for managing solid waste and MRW to local governments. The Chapter 70.95 Revised Code of Washington (RCW) requires local government to maintain current solid waste management plans. Chapter 70.105 RCW requires local government to develop plans for managing MRW.

A local plan must be complete and in good standing in order for a local government to be eligible to receive grant monies from the Coordinated Prevention Grant (CPG) program, which is an important source of funding for waste-related programs and activities.

1.3.2 Planning Area

The planning area includes the incorporated and unincorporated areas of Kitsap County. This includes the cities of Bainbridge Island, Bremerton, Poulsbo, and Port Orchard. The Plan also considers waste generated in areas governed by the Suquamish and Port Gamble S'Klallam Tribes.

Four Naval Base Kitsap installations (Puget Sound Naval Shipyard [PSNS] and Intermediate Maintenance Facility [IMF], Naval Base Kitsap-Bremerton, Naval Base Kitsap-Bangor, and Naval Base Kitsap-Keyport) are located within the county. They take the lead on managing their own waste and also receive solid waste management services from the County and from private vendors.

1.3.3 Planning Authority

This Plan is intended to satisfy the participating jurisdictions' responsibilities for maintaining a current solid waste management plan in accordance with Chapter 70.95 RCW and to provide a local hazardous waste management plan in accordance with Chapter 70.105 RCW.

Cities and counties share the responsibility for developing and maintaining a local solid waste management plan. RCW 70.95.080 provides cities with three alternatives for satisfying their planning responsibilities:

- Prepare and deliver to the County Auditor a City solid waste management plan for integration into the County solid waste plan
- Enter into an agreement with the County to prepare a joint City-County plan
- Authorize the County to prepare a plan for the City for inclusion in the County plan

In 2008, the cities of Bainbridge Island, Bremerton, Poulsbo, and Port Orchard, and the Port Gamble S'Klallam Tribe, executed Interlocal Agreements (ILAs) with Kitsap County designating the County as the lead planning agency for solid waste and MRW management. Memoranda of Understanding (MOU) governing solid waste planning have been selected by the U.S. Navy and the Suquamish Tribe as a preferred vehicle to outline the terms of their participation.

Participating cities have both the opportunity and responsibility to participate in Plan development, review and comment on the draft Plan, and to adopt the final Plan. State law does not require participation or plan adoption by tribes or by the U.S. military, although participation by the Suquamish Tribe, the Port Gamble S'Klallam Tribe, and the U.S. Navy is welcomed.

Copies of executed ILAs and MOUs are in Appendix C. Appendix D is reserved for Resolutions of Adoption upon execution.

1.3.4 Plan Development Process

Early public participation in the Plan development was largely focused on the SWAC. The Kitsap County Board of County Commissioners (BOCC) appoints certain SWAC members, with the remainder appointed by the local jurisdictions whom they represent. Current SWAC members are listed in Table 1-1. Members are selected to represent a balance of interests including citizens, public interest groups, business, the waste management industry, and local elected public officials, as required by RCW 70.95.165(3). The Solid Waste Advisory Committee provides guidance to the Solid Waste Division (SWD) in the development of programs and policies concerning solid waste handling and disposal. Solid Waste Advisory Committee reviews and comments on rules, policies, and ordinances before they are proposed for adoption. The SWAC meetings are open to the public, and meeting notices are published two weeks before each meeting. Agendas and meeting notes are posted at www.kitsapgov.com/sw.

Additional public involvement included an online posting and public comment tool and State Environmental Policy Act (SEPA) review.

The Plan was adopted by participating cities, tribes, and by the BOCC in meetings open to the public, in accordance with Section VII (Plan Adoption) of the executed ILAs (Appendix C).

1.3.5 Status of Previous Plans

This Plan supersedes all previous Kitsap County solid and hazardous waste management plans, including the most recent plan, *Waste Wise Communities: The Future of Solid and Hazardous Waste Management in Kitsap County, February 2011*, referred to as 2011 Plan (Kitsap County 2011).

1.3.6 Maintaining the Plan Over Time

To be useful as a planning tool, and to maintain eligibility for some forms of agency grant funding, the Plan must be kept "current." According to Ecology, a plan is considered to be functionally current if it adequately represents the existing:

- Planning area
- Service level
- Disposal facilities and their operation
- Systems for permitting facilities and enforcement
- Funding levels and methods

Plans must be reviewed within five years of Ecology approval (RCW 70.95.110(2)) to assess progress toward implementation and to determine whether a plan amendment or revision is needed. Changes that are consistent with the recommended strategies, policy objectives, or goals described in the Plan do not require an amendment.

Major changes, defined as changes that cannot be accomplished under the Plan goals, policy objectives, and recommended strategies proposed therein, may require a Plan revision. Plan revisions may be proposed and adopted using the following process:

- Plan revisions may be proposed by the SWD, participating cities and tribes, stakeholders and interested parties, and/or Kitsap County residents. SWD staff is available to provide assistance as needed.
- SWD staff will review proposed revisions, assess potential costs and benefits of implementation, suggest changes, and make a draft recommendation for or against the proposal. The SWD will then submit to SWAC for discussion.
- Following SWAC input, the SWD will submit the proposal and the draft recommendation to the participating jurisdictions for feedback.
- The SWD will then forward the proposal, including feedback from SWAC and the jurisdictions, and the SWD's final recommendation to the BOCC.
- The BOCC will review the proposal and approve or disapprove it. If the BOCC approves the proposal, the SWD will prepare a Plan revision for adoption by the BOCC and the participating jurisdictions affected by the revision.
- Upon adoption of the Plan revision by the BOCC and participating jurisdictions affected by the revision, the revised Plan will be submitted to Ecology and the Washington Utilities and Transportation Commission (WUTC) for review and approval.

1.3.7 Required Plan Elements

This Plan is intended to meet or exceed applicable requirements set by Washington State. RCW 70.95.090 establishes requirements for local solid waste management plans. Local plans are required to include the following elements:

- An inventory and description of all solid waste handling facilities including any deficiencies in meeting current needs
- The projected 20-year needs for solid waste handling facilities

- A program for the development of solid waste handling facilities that meets all laws and regulations, takes into account the comprehensive land use plans of participating jurisdictions, contains a six-year construction and capital acquisition program, and a plan for financing both capital costs and operational expenditures
- A program for surveillance and control (to avoid or mitigate the negative impacts of improper waste handling and to ensure that facilities and activities are managed in accordance with regulatory requirements)
- An inventory and description of solid waste collection operations and needs within each respective jurisdiction, including State collection certificate holders and municipal operations
- A comprehensive waste reduction and recycling element
- An assessment of the plan's impact on the costs of solid waste collection
- A review of potential areas that meet State criteria for land disposal facilities

RCW 70.105.220 establishes additional required elements for local hazardous waste management plans identified below:

- A plan or program to manage MRW including an assessment of the quantities, types, generators, and fate of MRW in the jurisdiction
- A plan or program to provide for ongoing public involvement and education including the potential hazards to human health and the environment resulting from improper use and disposal of the waste
- An inventory of all existing generators of hazardous waste and facilities managing hazardous waste within the jurisdiction
- A description of the public involvement process used in developing the plan
- A description of the eligible zones designation in accordance with RCW 70.105.225

The Hazardous Waste Management Plan is addressed as a dedicated chapter (Chapter 11-Moderate Risk Waste) in this Plan.

1.3.8 Evolution in Managing Waste

In the 1960s, the mission of the solid waste industry was to collect, transfer, and dispose of garbage to protect public health. Today, the mission of solid waste management entities around the world has expanded dramatically. We no longer think of waste management as a linear cradle-to-grave process, but rather as a cycle of renewal. While protecting public health from pathogens and exposure to chemical hazards remains critical, resource conservation and the reduction of environmental harm are recognized as equally important.

In the 1980s and 1990s, the focus was on waste reduction and re-use, recycling, and market development. Kitsap County's single and multifamily curbside recycling programs were phased in between 1990 and 1995 and have been continually refined since that time. The Kitsap County HHW Collection Facility opened in 1996. Through the development and implementation of the 1999 Plan, Kitsap County became a leader among mid-sized communities by re-committing itself to strong integrated waste reduction and recycling programs. By the end of the 20th century, recycling had become a standard service and a fundamental customer expectation – not only in Kitsap County, but also in most U.S. cities and urbanizing counties.

Waste management in the 21st century has shifted even farther away from the notion of waste. Zero waste, waste prevention, sustainability, and product stewardship are the key concepts driving the contemporary approach to solid waste management. This Plan incorporates these ideas and reflects the County's overall commitment to sustainability.

1.3.9 Plan Goals, Policy Objectives, and Recommended Strategies

The overall purpose of this Plan is to ensure that Kitsap County citizens continue to have efficient and reliable solid waste collection, handling, recycling, and disposal services with stable rates that are as low as reasonably possible, while protecting and preserving human health, environmental quality, and natural resources.

In the 2011 Plan, the SWD developed a vision and mission statement to guide planning and implementation activities. The SWD and SWAC reviewed the eleven broad Plan Goals as a means to achieve the vision and mission and to set the overall tone and direction for solid waste management into the future, confirming their continued applicability. The Plan Goals are intentionally broad and overarching in nature.

Within each Plan chapter, the Plan Goals were used to guide the development of a set of Policy Objectives. The Policy Objectives are derived from the analysis of existing programs, gaps, and needs, and define the short and long-term direction for the SWD. These Policy Objectives will be used as the basis for new or refined Recommended Strategies or activities throughout the planning period.

Policy Objectives are more specific than Plan Goals, yet are broad enough to provide guidance in more than one technical area. They are designed to focus program efforts so that specific Recommended Strategies will work in concert to achieve SWD and Plan Goals.

In the absence of a specific Recommended Strategy, the Policy Objectives will guide activities, grant applications, and program decisions as new or unanticipated issues arise during the planning period.

Figure 1-1
Plan Hierarchy

Recommended Strategies are specific action-oriented tasks recommended as a means of achieving Plan Goals and Policy Objectives. Recommended Strategies may serve to implement one or more Policy Objectives, and to achieve Policy Objectives in more than one technical area.

Vision Statement

We envision a sustainable society where we are able to provide for our current needs without sacrificing the needs of future generations. The practices and recommendations described in this Plan are an important element in transitioning to a sustainable society.

Mission Statement

This Plan includes programs to conserve natural resources and minimize impacts to land, water, air, and climate. Programs include continuing and expanding waste reduction and recycling activities, supporting product stewardship efforts, improving collection efficiencies, expanding hazardous waste programs,

managing permitting and enforcement programs, and supporting private sector technologies for reducing and managing waste. We strive to provide environmentally sound services in the most cost-effective manner possible.

Plan Goals

Each plan goal is essential to the future of waste management in Kitsap County. As such, they are not listed in priority order.

- Ensure convenient and reliable services for managing solid waste materials
- Promote the use of innovative and economical waste handling methods
- Encourage public-private partnerships for waste reduction and recycling programs
- Emphasize waste reduction as a fundamental management strategy
- Encourage the recovery of marketable resources from solid waste
- Assist the State to achieve its goal of a 50% recycling rate
- Reduce the environmental impacts to climate, air, water, and land that are associated with waste generation, transportation, handling, recycling, and disposal
- Ensure compliance with federal, state, and local solid and moderate risk waste regulations
- Encourage those who design, produce, sell, or use a product to take responsibility for minimizing the product's environmental impact throughout all stages of the product's life-cycle, including end-of-life management
- Provide customers with information and education to implement recommended waste management practices
- Support the State's Solid and Hazardous Waste Plan – Moving Washington Beyond Waste and Toxics (Ecology 2015). Key priorities for the State's Plan used as guiding principles in this Plan include:

    - Increase focus on manufacturing & use phases, not just on end-of-life issues
    - Reduce toxic threats in products and industrial processes
    - Increase efficiency of recycling (including organics processing) systems, and maximize effectiveness of existing solid and hazardous waste infrastructure
    - Mitigate climate change through waste reduction, reuse, & recycling

1.3.10 Sustainability

Sustainability is providing for current needs without sacrificing the needs of future generations. Putting sustainable practices in place means evaluating how our decisions today will affect society, the environment, and the economies of the future, and making decisions that have the lowest negative long-term impact.

Many of the solid waste management practices that Kitsap County has adopted over the past two decades support sustainability. For instance, Kitsap County has been an active leader in waste reduction and recycling efforts for many years. Single and multifamily curbside recycling programs were phased in between 1990 and 1995, and programs have been continually introduced and refined since that time. As of 2013, Kitsap County businesses and residents were recycling approximately 34% of their waste each year. Successful waste reduction and recycling programs in mid-sized counties such as Kitsap support the statewide goal of 50% recycling.

In addition to Kitsap County Resolution 091-2009 to support sustainable efforts in Kitsap County (Kitsap County 2009), other regional and local plans and policies support and strengthen the framework for this Plan, and reinforce the goals and principles first established in previous plans. Some of the most pertinent plans and policies are summarized below.

Kitsap County Comprehensive Plan 2016-2036

The basic philosophy underlying this Plan is consistent with the principles of sustainability articulated in the Final Kitsap County Comprehensive Plan 2016-2036 (BOCC 2016). The County's Comprehensive Plan captures these goals in the Mission Statement:

> *Kitsap County government exists to protect and promote the safety, health and welfare of our citizens in an efficient, accessible and effective manner.*

Our Plan incorporates and implements key elements, goals and policies of the County Comprehensive Plan as applied to solid and hazardous waste management. The key elements as summarized in the Vision Statement include:

- **Effective and Efficient County Services** - County government continuously assesses its purpose, promotes and rewards innovation and improvement, fosters employee development and uses effective methods and technologies to produce significant positive results and lasting benefits for citizens.
- **Thriving Local Economy -** A well-educated workforce and strategic investment in county infrastructure prompt businesses to expand or locate in Kitsap County, creating well-paying jobs and enhancing our quality of life.
- **Safe and Healthy Communities -** People are protected and secure, care about their neighborhoods and are proud of where they live, work and play.
- **Protected Natural Resources and Systems -** Education, land use planning and coordinated efforts assure that the forests, clean air and water that Kitsap is known for are sustained for the benefit of current and future generations.
- **Inclusive Government -** County government conducts all activities in a manner that encourages citizen involvement, enhances public trust and promotes understanding.

This Plan's recommendations involving transportation of waste (i.e. collection, transfer, or rail-haul) are consistent with the energy and environmental goals of the Final 2016 Kitsap County Comprehensive Plan 2016-2036 (BOCC 2016).

Washington State Solid and Hazardous Waste Plan

Ecology's Solid and Hazardous Waste programs released a statewide waste and toxics reduction plan in June 2015 (Ecology 2015), which focuses on moving in a direction where the full life-cycle of materials from manufacture to disposal is considered, and promotes sustainable materials management, as depicted in Figure 1-2. In so doing, the state hopes to reduce negative health and environmental impacts of materials throughout their life-cycle – not only when they become a waste material. Previous state plan revisions dating back to 2004 have commonly been referred to as the "Beyond Waste" plan, underscored by the goal that society transitions to a common thought that waste is viewed as inefficient, and sets a goal for most waste being eliminated by 2035 (Ecology 2004). This was based on a strategy by then-

governor Gary Locke that Washington would become sustainable in one generation. Although the name of the plan has changed, this still remains the vision of the state plan.

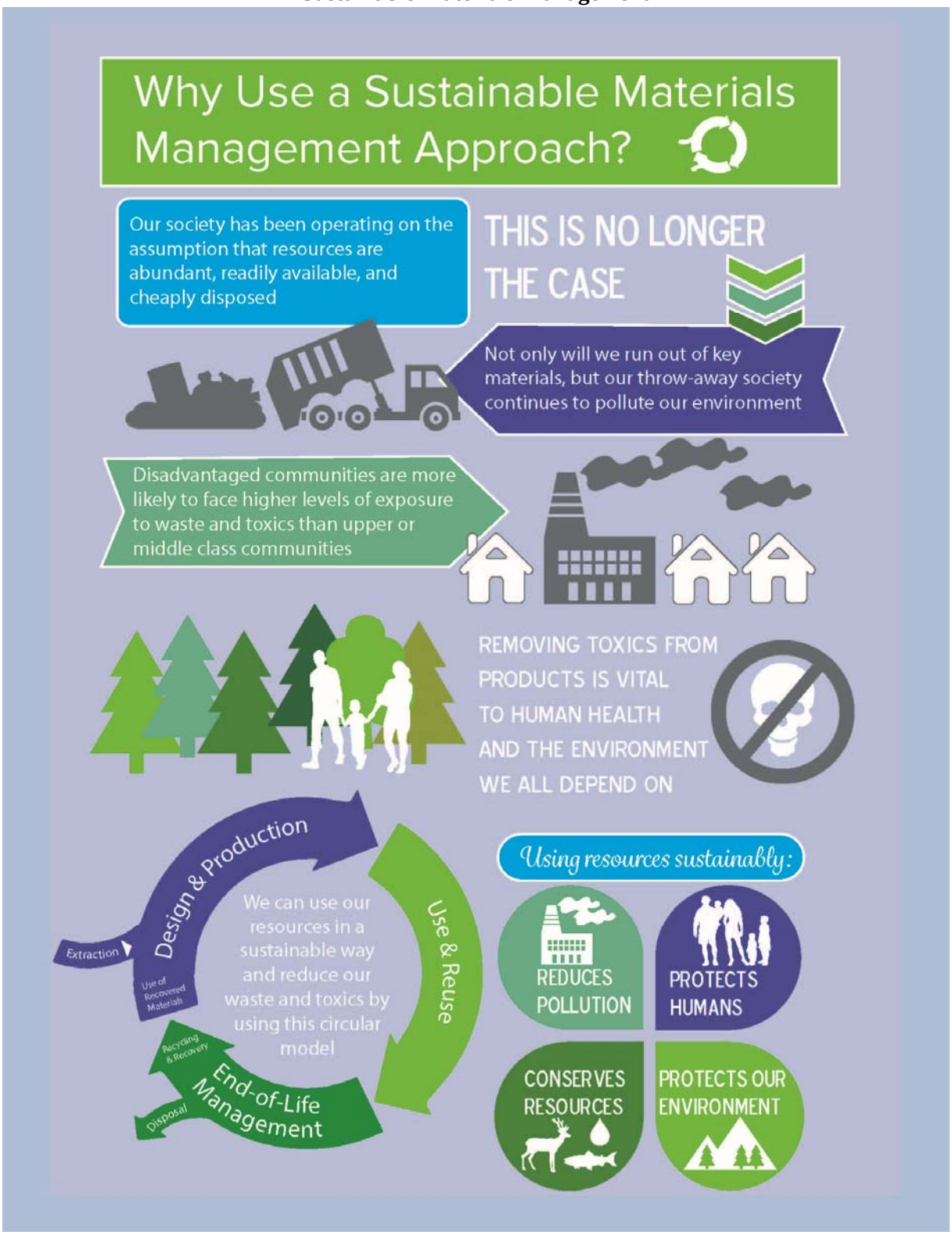
1.3.11 Product Stewardship

When local governments assumed responsibility for solid waste a century ago, people threw out mostly coal ash used for heating and cooking. The rest was mostly food, and simple manufactured products, like paper and glass. Product waste, often composed of difficult-to-recycle and/or hazardous materials, now makes up 75% of the waste stream. In response, state governments are increasingly adopting the successful product stewardship approach already in place in the European Union, Canada, and many other countries.

Ecology and the Northwest Product Stewardship Council (NWPSC), of which Kitsap County is an active member, are currently pursuing product stewardship programs for paint, pharmaceuticals, and other materials, while working on a long-range strategy that is not specific to particular products.

Washington State has implemented product stewardship programs for two material types: electronic wastes (2009) and mercury-containing lamps (2014). In addition, the Kitsap Public Health Board (KPHB) adopted the Secure Medicine Return Ordinance 2016-02 for an industry-funded local program for the collection of pharmaceuticals.

Figure 1-2
Sustainable Materials Management



Source: Washington State Department of Ecology, June 2015.

1.4 SUMMARY OF CHANGES IN SOLID WASTE REGULATION AND POLICY

Several rules have been adopted for oversight and regulation of solid waste management. Some of the more important new rules and regulations are shown, in no particular order.

1.4.1 Solid Waste Handling Standards

Solid waste facility standards are described in Chapter 173-350 WAC and Chapter 173-304 WAC, which applies to the closed landfills in the County. By State regulation, solid waste regulation and enforcement is delegated to local jurisdictional health authorities. Therefore, Kitsap County Board of Health (KCBH) Ordinance 2010-01 adopts state regulations by reference to specifically govern solid waste facilities in Kitsap County.

Chapter 173-350 WAC sets standards of operation and permitting requirements for solid waste handling facilities for recycling, intermediate handling (i.e. transfer), composting, MRW, and tires, unless exempted. The rule also regulates landfill disposal of inert wastes. As of 2017, this rule is in the process of being revised.

The rules place importance on local solid waste management plans by requiring all solid waste handling facilities to conform with local solid waste plans. Under the rules, some, but not all, recycling facilities may be conditionally exempt from permitting.

Landfill disposal of MSW is regulated by local jurisdictional health authorities under a separate rule, Chapter 173-351 WAC, Criteria for Municipal Solid Waste Landfills.

1.4.2 Recyclable Materials—Transporter and Facility Requirements

Chapter 70.95 RCW, Solid Waste Management – Reduction and Recycling, was amended by the Legislature in 2005 to require transporters of recyclable material to: register with Ecology, transport recyclable materials from commercial or industrial generators only to locations where recycling occurs, and keep records of all activities for two years. The revised statute requires recycling facilities to notify Ecology of their existence 30 days before operation commences (90 days for existing facilities). At this time, Ecology has determined not to adopt any financial assurance requirements for recycling facilities. A rule, Chapter 173-345 WAC, implementing the statute was adopted in April 2009.

1.4.3 Electronics Product Stewardship

The United States Environmental Protection Agency (USEPA) determined that disposal of electronic wastes into MSW landfills posed a risk to public health and the environment due to the presence of leachable quantities of lead and other toxics. This caused considerable concern about how to dispose of the rapidly growing volumes of electronic waste in our society and raised awareness about the need to encourage producer responsibility for the design, recycling, and eventual disposal of their products.

In 2006, Washington adopted a product stewardship law that requires the establishment of a system to recycle electronic wastes, including computers, monitors, and televisions. This system must not charge consumers to drop off materials and is financed by manufacturers of the electronic equipment. Rules to implement this law, Chapter 173-900 WAC, Electronic Products Recycling Program, were adopted in October 2007. The new system became effective January 1, 2009. Minor revisions pertaining to program financing were made in March 2016.

1.4.4 Revenue-Sharing Agreements

A recent addition to State law (RCW 81.77.185) allows waste collection companies to retain up to 50% of the market revenues they receive for recyclables collected in their certificated collection areas. Previously, all market revenues were required to be used to offset expenses in the calculation of permissible rates; therefore, certificated haulers had little incentive to maximize recycling. This new provision was adopted to motivate increased recycling and encourage further investments in recycling. To implement this system, the collection company and the County must develop a proposal that demonstrates how the retained revenues will be used to increase recycling. The County must certify that the proposal is consistent with its solid waste management plan, and the WUTC must approve the proposal.

As of 2016, only a few such agreements had been approved in the State of Washington and only in more populated areas with larger volumes of waste and recyclables than Kitsap County (e.g. King, Pierce and Snohomish Counties).

1.4.5 Tire Fee Reinstated

In 2005, Chapter 70.95 RCW was amended to reinstate the tire fee. The original tire fee, which expired in 1994, was used to clean up tire dumps, fund a special study of tires, and conduct other activities.

The updated fee was to clean up unauthorized tire dumps and to help prevent future accumulations of tires. Other amendments provide for stricter licensing requirements and make tire transporters (licensed or not) liable for the cost of cleaning up illegally stored or dumped tires. The fee raises about $4.4 million per year. The 2010 fee sunset was removed by 2009 legislation. That legislation transfers most of the tire funds to Washington State Department of Transportation (WSDOT) for road maintenance. Ecology is allocated $1 million per biennium for continued tire-related projects. Additional information concerning Ecology's tire clean-up program can be found at:
http://www.ecy.wa.gov/programs/swfa/tires/cleanup.html.

1.4.6 Secured Load Requirements

A State law, RCW 46.61.655, applies to people hauling garbage and other materials. The law states that "no vehicle shall be driven or moved on any public highway unless such vehicle is loaded as to prevent any of its load from dropping, sifting, leaking, or otherwise escaping." Significant fines may be levied against violators. RCW 70.93.097 requires counties with a staffed transfer station or landfill to adopt an ordinance to reduce litter from vehicles, by assessing a fee for unsecured loads. Kitsap County Code (KCC) 9.18, which was adopted in response to this law, requires users of County solid waste facilities to cover their loads. Violators are charged a $10 fee at all County solid waste facilities for having uncovered or improperly covered loads.

1.4.7 Ban on Sale of Mercury-Containing Products

In 2006, the Mercury Education and Reduction Act (Chapter 70.95M RCW) made it illegal to sell most items that contain mercury, including thermometers, manometers, toys, games, and jewelry. The sale of thermostats containing mercury is now illegal unless the manufacturer provides a thermostat recycling program. The sale of mercury-containing fluorescent light bulbs is still allowed, but labeling to warn consumers that the bulbs contain mercury is now required.

1.4.8 Children's Safe Products Act

Growing concerns about the presence of toxics in toys and other products sold for use by children led to the adoption of the Children's Safe Products Act (Chapter 70.240 RCW) in 2008. This Act is designed to protect children from lead, cadmium, and phthalates in products they use every day, provide consumers with information to make safer product choices for their children, and put Washington on track to address the many other hazardous chemicals in children's products. The Children's Safe Products Act prohibits sale of products that contain identified toxic chemicals over certain levels beginning in July 2009, and takes steps to begin phasing out other high risk chemicals in the future.

1.4.9 Public Event Recycling Law

RCW 70.93.093, known as the Public Event Recycling Law, became effective in Washington on July 22, 2007. This law requires that "in communities where there is an established curbside service and where recycling service is available to businesses, a recycling program must be provided at every official gathering and at every sport facility by the vendors who sell beverages in single-use aluminum, glass, or plastic bottles or cans." The vendors themselves are responsible for providing recycling programs at these events. "Official gatherings" include events such as fairs, musical concerts, festivals, athletic games, tournaments, etc.

1.4.10 Anaerobic Digester Exemption

RCW 70.95.330 went into effect in 2009. This legislation exempts an anaerobic digester that meets certain conditions from the need to obtain a solid waste handling permit. An anaerobic digester is defined as "a vessel that processes organic material into biogas and digestate using microorganisms in a decomposition process within a closed, oxygen-free container." Streamlining permitting requirements is intended to encourage renewable energy development from agricultural waste and livestock manure.

1.4.11 Mercury-Containing Lamp Recycling

In 2010, the Washington State Legislature passed, and then-Governor Gregoire signed Senate Bill 5543 (adopted as Chapter 70.275 RCW) requiring producers of mercury-containing lamps to participate in a product stewardship program. After a lawsuit from industry, another bill from the legislature to modify the law in 2013, and a rulemaking process (Chapter 173-910 WAC), the LightRecycle Washington Program was implemented in 2015. The program requires that all retailers must charge a $0.25 "eco-fee" at the point of sale for each mercury-containing lamp in Washington State. These fees are then collected by a stewardship organization and used to pay for the proper collection and disposal of the lamps. Currently, there are seven collection sites in Kitsap County. A current list of collection sites in the County can be found at: www.lightrecycle.org.

With the emergence of efficient, higher quality, and less costly LED lamps coming on the market, the expectation is that the use of fluorescent bulb consumption will dramatically decrease over the next decade. As a result of this, the program is scheduled to sunset in 2026.

1.5 REFERENCES/RESOURCES

Kitsap County Board of County Commissioners (BOCC). 2016. *Final Kitsap County Comprehensive Plan 2016–2036.* Kitsap County Board of County Commissioners. June 2016.

Kitsap County Department of Public Works, SWD (Kitsap County). 2011. *Waste Wise Communities: The Future of Solid and Hazardous Waste Management in Kitsap County*. February 2011.

Kitsap County. 2009. *Resolution to Support Sustainable Efforts in Kitsap County.* Resolution 091-2009. May 2009.

Washington State Department of Ecology (Ecology). 2004. *The Washington State Hazardous Waste Management Plan and Solid Waste Management Plan, Final Plan*. Publication 04-07-022. Washington State Department of Ecology.

Washington State Department of Ecology (Ecology). 2015. *The State Solid and Hazardous Waste Plan - Moving Washington Beyond Waste and Toxics*. Publication 15-04-019. Washington State Department of Ecology June 2015.

Washington State Department of Ecology (Ecology). 2014. *Dangerous Waste Regulations: Chapter 173-303-WAC.* Publication 92-91 (updated 12/14). Washington State Department of Ecology.

CHAPTER 2 - WASTE STREAM

2.1 INTRODUCTION

This chapter describes the population and solid waste stream in Kitsap County, including quantities, sources, and composition of waste that is generated, recycled, and disposed. This chapter updates information about the people who produce waste, how much they recycle and dispose, and what materials are still disposed.

The changes between 2011 and 2015 help to show how well existing programs are addressing Plan Goals, and, if necessary, how programs should be redirected to address particular materials and/or population sectors.

2.2 DESCRIPTION OF THE PLANNING AREA

Kitsap County is located in the Puget Sound region of western Washington. The County lies on the Kitsap Peninsula and includes Bainbridge Island. Kitsap County encompasses approximately 395 square miles of land. All unincorporated portions of the County total approximately 319 square miles. Urban areas comprise incorporated cities, totaling approximately 76 square miles (Bainbridge Island, Poulsbo, Bremerton, and Port Orchard) and unincorporated Urban Growth Areas (UGAs) total an additional 30 square miles (BOCC 2016a). Three cities, Poulsbo, Bremerton, and Port Orchard, are surrounded by Urban Growth Areas. Cities and designated UGAs are intended to accommodate the majority (78 percent) of 20-years' population growth. Designated UGAs in the County are listed below:

- Kingston UGA
- Poulsbo UGA
- Silverdale UGA
- Central Kitsap UGA
- Bremerton UGA: East Bremerton, West Bremerton, and Gorst
- Port Orchard UGA

Outside of the urban areas, rural lands are divided into rural residential, rural industrial and rural commercial areas; undeveloped areas; and lands for forestry, mining, and agriculture.

2.3 SOURCES OF DATA

There are several questions that must be answered to adequately plan for long-range solid and hazardous waste management:

- How much waste is generated in Kitsap County?
- How much is diverted or recycled?
- How much is disposed?

- What else can we divert or recycle?
- Are existing facilities able to handle all of the materials produced, or do we need to expand or build new facilities?
- Is the system cost-effective and sustainable?

The data needed to answer such questions come from population projections, disposal and recycling data, and waste composition studies. This section describes the sources of data that are available to support this planning effort and provides waste stream projections based on that data.

Population Data
Kitsap County's Department of Community Development analyzed existing population patterns and projected growth rates in order to produce the Final Kitsap County Comprehensive Plan 2016-2036 (BOCC 2016b). The U.S. Census Bureau data from 2010 was used and projected to year 2036 in the County's Comprehensive Plan. Based on those calculations, growth was projected every five years to 2035 for this Plan. Additional population projections were obtained from the Washington State Office of Financial Management (OFM) high and low population estimates in *Population Trends for Washington State and Growth Management Population Projections* (OFM 2012). These projections are summarized in Table 2-1.

Facility Data
Recycling facilities and facilities with solid waste handling permits are required to submit Annual Reports to the Kitsap Public Health District (KPHD) and Ecology that describe the types and volumes of wastes received, disposed, and recycled. Each year, Ecology uses Annual Report data to generate a report titled *Solid Waste in Washington State: Annual Status Report*. That report provides a wealth of information about facilities and the types and volumes of wastes and recyclables that they accept.

Waste Composition Data
In order to plan for additional waste reduction, recycling, and composting efforts in the future, it is important to understand the volumes and type of materials currently being disposed of as garbage. Waste composition studies are used to quantify the various materials in the disposed waste stream. The Plan relies upon waste composition data specific to Kitsap County, which was included in Ecology's 2009 waste characterization study.

Who Produces Waste?
Studies that evaluate the waste stream tend to categorize generators into four major groups. These groups are referred to throughout this Plan, and are identified as follows:

- Single-family households
- Multifamily households
- Commercial generators
- Self-haulers (includes both residential and commercial sources)

2.4 POPULATION PROJECTIONS

Within this Plan, OFM high and OFM low estimates are used to conservatively represent possible population growth, and Kitsap County's estimate from the Kitsap County Comprehensive Plan is used to

represent the County's estimate. Population projections used in this document are the County's estimate, recognizing that the actual number is likely to fall somewhere between the high and low ranges.

As time goes on, actual population changes and settlement patterns are affected by many factors such as the economy, local and national political events, climate, local building and zoning codes, and annexations. This should be taken into account when implementing specific projects.

Table 2-1 shows various population projections for Kitsap County. Year 2010 data is based upon the most recent U.S. Census data from 2010. The range shown in the projections gives us a likely range of growth.

Table 2-1
Kitsap County Population Estimates

Year	Kitsap County Population - High Est.[1]	Kitsap County Population - County Est.[2]	Kitsap County Population - Low Est.[1]
2010[3]	251,133	251,133	251,133
2015	297,455	266,602	232,674
2020	326,510	282,071	236,712
2025	355,786	297,540	240,939
2030	383,613	313,008	243,931
2035	408,976	328,477	244,823

[1] Data from "Population Trends for Washington State and Growth Mangement Population Projections 2010 to 2040 High and Low Series Data". http://www.ofm.wa.gov/pop/gma/projections12/projections12.asp. (OFM 2012)
[2] Data from Final Kitsap County Comprehensive Plan 2016-2036 (BOCC 2016b).
[3] Data taken from U.S. Census Bureau, 2010 County Data for Kitsap County, Washington. (US Census Bureau 2010).

2.5 WASTE IMPORT AND EXPORT

This section describes how the import and export of solid waste from other communities into and out of Kitsap County affect the types and volumes of waste that must be handled. In 1995, 17% of the solid waste disposed in Kitsap County was imported. The remaining 83% of the solid waste disposed in Kitsap County was generated from within Kitsap County (Kitsap County 1999). In 2015, 2% of the solid waste handled for disposal in Kitsap County was imported from Mason County, with small volumes received from other counties as well (Kitsap 2015). Nearly all of the solid waste handled for disposal in Kitsap County was exported to Columbia Ridge Landfill near Arlington, Oregon.

2.5.1 Waste Import

Imported solid waste is defined as solid waste generated in other counties, but disposed of in Kitsap County. Proximity, convenience, disposal bans, and lower disposal costs could make it attractive to dispose of wastes in Kitsap County, rather than a facility in the county in which the wastes originated.

Waste import occurs on a routine basis, and the fees collected help support the Kitsap County waste handling system. For instance, garbage and recyclables collected in the north end of Mason County are delivered to the Olympic View Transfer Station (OVTS) for disposal. In addition, Mason County residents may use the Kitsap County HHW Collection Facility under terms and conditions of an ILA

between Kitsap and Mason Counties. In addition, special wastes such as asbestos and contaminated soils are accepted at OVTS from a variety of generators.

2.5.2 Waste Export

Since 2002, the majority of MSW generated in Kitsap County has been exported to Waste Management of Washington's (WMW) Columbia Ridge Landfill and Recycling Center near Arlington, Oregon.

Some waste export is also reported to occur from the south side of the county where residents occasionally deliver yard debris and MSW generated in Kitsap County to facilities in Pierce County. This export tends to occur where driving distance, tipping fees, or facility operating hours are preferable. Volumes are not measured, but are presumed to be small. In addition, a majority of the yard debris and some construction wood waste generated in Kitsap County is delivered to a recycler in Mason County.

2.6 COMPOSITION OF DISPOSED MSW

MSW composition estimates were performed by Ecology in its 2009 Waste Characterization Study (Ecology 2010). Kitsap County's OVTS was a sampling location for this study, therefore disposal data specific to Kitsap County was obtained.

Table 2-2 provides a comparison of estimated waste composition of disposed MSW in percent by weight, between Kitsap County data and the statewide average.

Table 2-2
Estimated Composition of Disposed MSW (Percent by Weight), 2009

	Kitsap County[1]	Statewide (2009)[2]*
Construction & Demolition Debris	26.9%	21.6%
Glass	4.0%	2.4%
Metal	9.4%	6.3%
Organics	12.1%	27.2%
Other	16.5%	7.7%
Paper	18.1%	19.2%
Plastic	9.7%	11.4%
Special	3.4%	4.0%

[1] Kitsap County-specific data from Ecology 2009 Washington State Waste Characterization Study (Ecology 2010).
[2] Ecology 2009 Washington State Waste Characterization Study (Ecology 2010).
* Does not equal 100% due to rounding methodology.

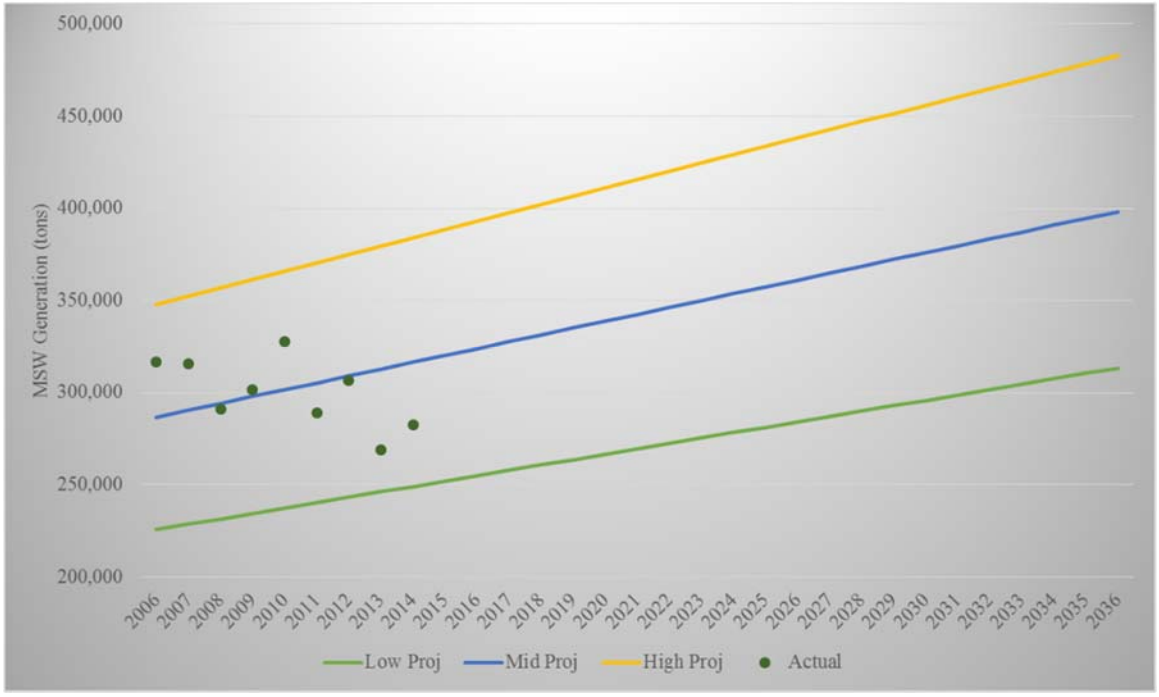
2.7 SOLID WASTE GENERATION FORECAST

According to Ecology, per-capita solid waste generation (disposed + recycled + diverted) statewide was 13.49 lbs./day, and the per-capita MSW generation (disposed + recycled) was 6.99 lbs./day in 2013 (Ecology 2014). These numbers have remained somewhat stable, but show some signs of reduction over time. Given the economic conditions over the last ten years, it is hard to say if this is a result of changes in manufacturing – such as light-weighting packaging – or a product of economic decline that began in 2008. In either circumstance, or a combination of the two, waste generation projections should be made with both of these factors in mind. In the event of a period of economic prosperity, the expectation can be made that increased consumerism and rises in new construction could result in higher generation rates, and could also lead to stronger recycling markets.

Solid waste generation rates, as they relate to population growth can have significant consequences on capital facility needs, collection, and identifying economic thresholds for divertible and recyclable materials. As it relates to County-owned infrastructure and collection, the most relevant data is MSW generation.

Over a 10-year period, between 2005 and 2014, the average per-capita MSW generation in Kitsap County was 6.58 lbs./day, ranging between a low of 5.80 lbs./day and a high of 7.14 lbs./day. Figure 2-1 shows a projection of estimated MSW generation through the year 2036. It is based on population projections contained in the Final Kitsap County Comprehensive Plan 2016 – 2036 (BOCC 2016), using the average 6.58 lbs./person/day, plus or minus three standard deviations to estimate high and low projections.

Figure 2-1
Projected MSW Generation (Tons), 2006-2036



Sources: BOCC 2016b, Ecology 2016, Kitsap County 2015.

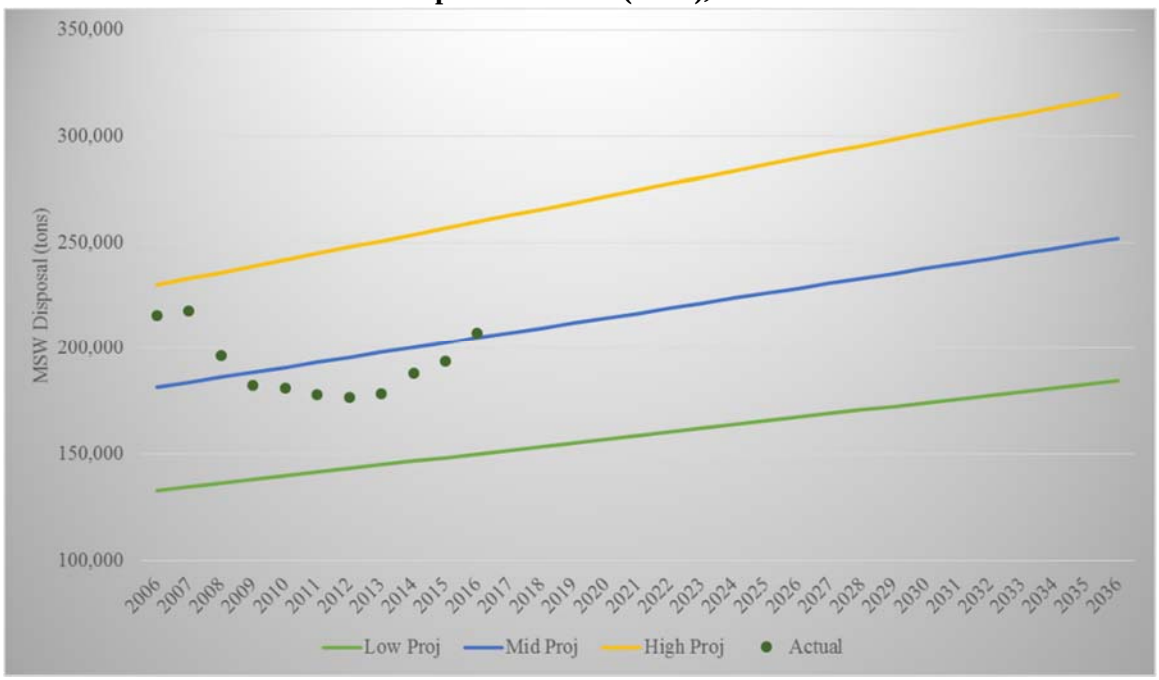
As can be seen in Figure 2-1, actuals between 2010 and 2014 seem to be trending toward the low end of the projections; however, 2015 actuals are expected to rise in comparison. At the time of publication,

recycling data is unavailable for 2015 and 2016, but increases in disposal at OVTS have been observed in 2015 and 2016, illustrated in Figure 2-2.

If this projection holds true, and waste generation continues to trend in a similar nature to the past ten years, MSW generation could see somewhere between a minimal tonnage increase up to nearly 200,000 additional tons from 2014. If recycling rates hold steady, the upper projection could result in approximately 120,000 additional tons – approximately 300,000 total tons - being disposed through the OVTS or its successor(s) by 2036. At the mid-range projection, the total disposal burden on the transfer system drops to approximately 245,000 tons at current recycling rates.

If only disposal trends are analyzed, 2015 and 2016 data can be considered, since there is complete data available. Projections for MSW disposal can be found in Figure 2-2. The average MSW per-capita disposal rate was 4.16 lbs./day between 2006 and 2016. Using the same methodology used above for the MSW generation forecast, tonnages project out slightly higher than the total generation – an upper limit of approximately 319,000 tons by 2036, or an increase of about 113,000 tons over 30 years. The lower limit estimate is approximately 184,000 tons, a decrease of 24,000 tons from 2016 recorded tonnages.

Figure 2-2
MSW Disposal Forecast (Tons), 2006-2036



Sources: BOCC 2016b; Kitsap County 2016.

With a myriad of factors influencing solid waste generation, it is far from an exact science. Continual monitoring of waste generation metrics and closely examining trends is essential. Global, national, and local events can have significant impacts on these rates – resulting in sudden changes. Kitsap County will continue to monitor these trends over time.

2.8 RECYCLING AND DIVERSION DATA

Ecology conducts a voluntary annual recycling survey to collect data about recyclable materials collected from homes and businesses, as well as diverted materials managed in a way that does not meet the State's definition of recycling. The information gathered in the annual survey helps maintain support for recycling, it shows the progress and success of recycling in Washington's homes and businesses, and it is used as a tool for planning solid waste and recycling services in local areas such as Kitsap County.

Annual Recycling Survey data is used to determine the amounts and types of materials recycled in Kitsap County in order to gauge the success of recycling efforts conducted by the County, and by extension, residents and businesses within the county.

2.8.1 Generation, Disposal, and Recycling Rates

Recycling, as defined in WAC 173-350-100, means "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." Generally, recycling rates refer to that portion of the MSW part of the waste stream which is transformed or remanufactured. However, because local governments have placed significant emphasis on the recovery of the non-MSW waste stream, in the late 1990's Ecology started tracking "diverted" waste, which includes those materials which are recovered for uses other than recycling.

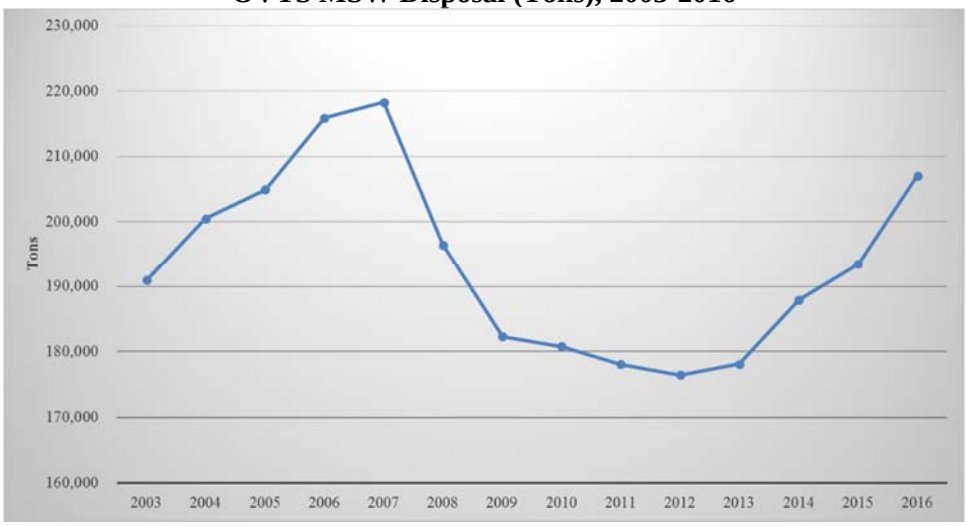
According to Ecology, Kitsap County generated approximately 268,950 tons of MSW in 2013. Of that amount, approximately 177,260 tons were disposed, and 91,690 tons recycled, equating to an MSW recycling rate of approximately 34%. When non-MSW wastes are considered in addition to MSW, Kitsap County generated approximately 320,343 tons in 2013. Of that, approximately 190,685 tons were disposed, and approximately 129,658 recycled or diverted, equating to an overall waste recycling/diversion rate of approximately 40% (Ecology 2014).

Because Kitsap County's programs address both MSW and non-MSW waste streams, it is advantageous to track both recycling and diversion data. This information will determine potential recycling and waste handling infrastructure requirements, and enhance progression toward waste reduction, resource conservation, and sustainability goals.

2.9 CHANGES IN THE WASTE STREAM

As indicated in Figure 2-3, the disposal of MSW at OVTS since 2003 (the first full year of operation) through 2016 has in large part been a reflection of the economic conditions of the region and the nation. During periods of growth, new construction and increased consumer purchasing generally result in greater waste generation, as shown through the year 2007. The recession that followed resulted in an overall 19% decrease in MSW disposal by year 2012. Gradual recovery has been evident since 2012, with an overall increase of 17% through 2016, including a 7% increase between 2015 and 2016. Therefore, while population projections can be useful in predicting future waste generation and disposal needs, economic factors can also significantly impact these trends, making accurate year-to-year forecasting difficult.

Figure 2-3
OVTS MSW Disposal (Tons), 2003-2016



Source: Kitsap County 2016.

A part of the decline is also the result of environmental awareness on the part of the businesses and residents of Kitsap County and the impact of the SWD and other public and private sector programs to increase waste reduction, recycling, and overall waste diversion. The SWD continuously monitors trends in recycling and disposal as part of its program planning activity. Tonnages impact costs and revenues, capital facilities, operations and maintenance, and program design. Recent data will be used in combination with the waste projections discussed throughout this chapter as new programs and policies are implemented.

2.10 REFERENCES/RESOURCES

Kitsap County Board of County Commissioners (BOCC). 2016a. *Final Supplemental Environmental Impact Study for Kitsap County 2016 Comprehensive Plan Update.* Kitsap County Board of County Commissioners. April 2016.

Kitsap County Board of County Commissioners (BOCC). 2016b. *Final Kitsap County Comprehensive Plan 2016-2036.* Kitsap County Board of County Commissioners. June 2016.

Kitsap County Department of Public Works, SWD (Kitsap County). 2016. *MSW Disposal and Data from Olympic View Transfer Station and MSW Generation Data derived from Ecology Recycling Survey.* Unpublished Excel spreadsheet. Prepared by Kitsap County Public Works, SWD.

Kitsap County Department of Public Works, SWD (Kitsap County). 2015. *Internal Waste Tracking Documents, 2011-2015.* Unpublished Excel spreadsheet. Prepared by Kitsap County Public Works, SWD.

Kitsap County Department of Public Works, SWD (Kitsap County). 1999. *Kitsap County 1999 Comprehensive Solid Waste Management Plan, Final Version*. Prepared by SCS Engineers and Kitsap County Department of Public Works, SWD.

United States Census Bureau (U.S Census Bureau). 2010. *2010 Census Redistricting Data, Public Law 94-171*.

Washington State Department of Ecology (Ecology). 2016. *2014 Annual Recycling Survey (Internal Report)*.

Washington State Department of Ecology (Ecology). 2014. *Solid Waste in Washington State, 23rd Annual Status Report.* Publication 14-07-035. Washington State Department of Ecology, Waste 2 Resources Program.

Washington State Department of Ecology (Ecology). 2010. *2009 Washington Statewide Waste Characterization Study*. Prepared for the Washington State Department of Ecology by Cascadia Consulting, Seattle, Washington.

Washington State Office of Financial Management (OFM). 2012. Population Trends for Washington State and Growth Management Population Projections 2010-2040 high and low series data. http://www.ofm.wa.gov/pop/gma/projections12/projections12.asp.

CHAPTER 3 - WASTE REDUCTION AND RECYCLING

3.1 INTRODUCTION

This chapter discusses Waste Reduction and Recycling, and establishes immediate, mid-term, and long-term policy objectives to ensure a proactive, convenient, reliable, and efficient system for residents of Kitsap County that minimizes waste generation and maximizes recovery of recyclables in a cost-effective manner.

Waste diversion programs have a significant environmental impact beyond merely reducing waste disposal needs. As diversion increases, reductions in greenhouse gas (GHG) emissions will be realized due to the energy and pollution savings when products are manufactured from recycled materials instead of virgin raw materials.

3.1.1 Planning Issues

The significant planning issues facing the management of waste reduction and recycling programs include:

- What are the most effective actions the SWD can take to reduce the volume, toxicity, or life-cycle impacts of materials in the waste stream?
- Are existing programs sufficient to achieve SWD recycling and diversion goals?
- How should the SWD's waste reduction programs be revised to incorporate the multiple environmental benefits, including climate change impacts, associated with promoting sustainability?

3.2 EXISTING PROGRAM ELEMENTS

3.2.1 Waste Generation, Recycling, and Disposal

The waste quantities in Kitsap County are increasing every year as the population expands. Currently over 300,000 tons of waste are generated annually. Recycling rates have been improving steadily, from 9.5% in 1990 to 34% in 2013, the last year recycling data is available from Ecology. However, waste generation has also been increasing. Figure 3-1 illustrates the trends in waste generation, recycling and disposal.

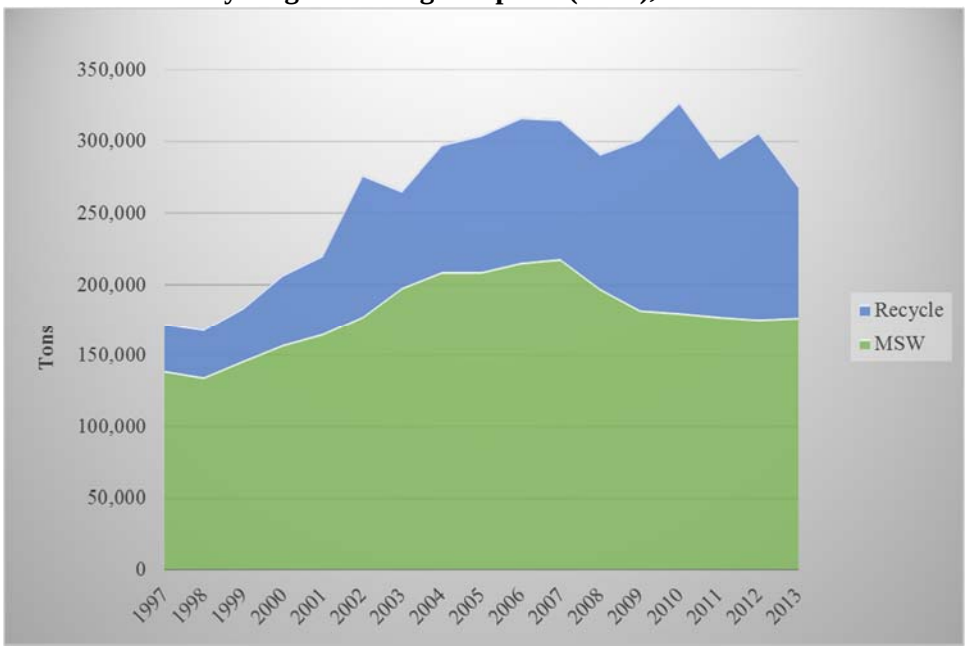
On a per capita basis, it is estimated that Kitsap County residents and businesses generate 6.58 lbs./day of MSW, on average (see Chapter 2 for additional information).

Diversion strategies to achieve the next incremental level of diversion require targeting select sectors and materials. Strategies available to local governments interested in pursuing enhanced waste prevention and diversion can be classified into the following four categories:

- **Regulatory –** includes actions such as adopting extended producer responsibility mandates (i.e. producer-funded take-back programs), instituting bans on certain classes of materials, charging user-fees on disposable items, or mandating recycling at construction sites.

- **Policy –** includes changing the rate structure for refuse collection, altering purchasing guidelines to emphasize recycled or re-used materials in government projects, or adding material classes that may be integrated into the traditional recycling and organics waste collection service.
- **Programmatic –** includes education, market development, or implementing changes in the actual collection of materials, including the frequency of collection and the size and type of containers used by residents and business.
- **Contractual –** includes structuring solid waste service contracts to compensate contractors, vendors, and suppliers based on performance objectives that are aligned with the community's waste reduction or product stewardship goals.

Figure 3-1
Recycling & Garbage Disposal (Tons), 1997-2013



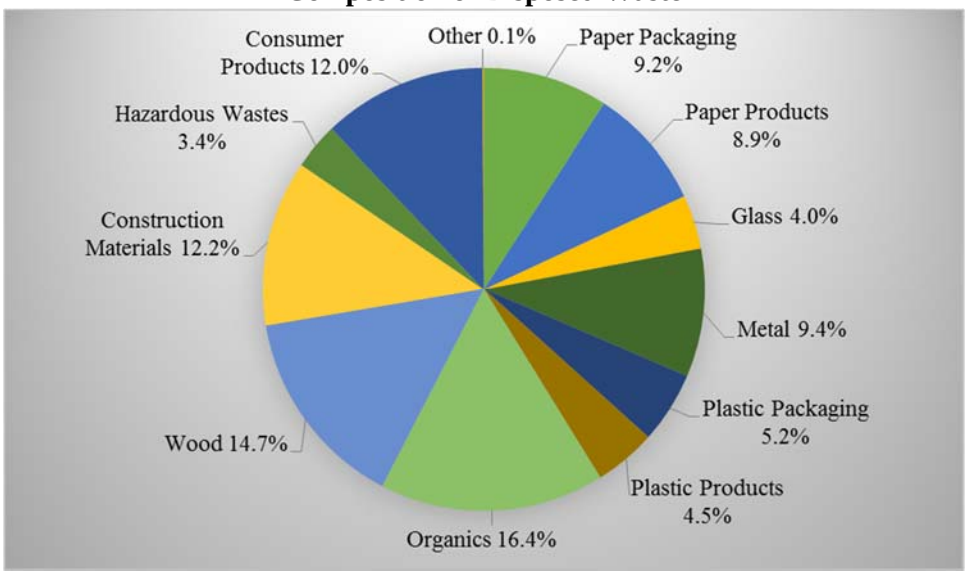
Source: Ecology 2016.

Figure 3-2 shows the estimated composition of the disposed waste stream. This is a "snapshot" of the waste from data taken from Ecology's 2009 Waste Characterization Study, specific to Kitsap County.

This study clearly identifies several materials which should be targeted for diversion, including:

- Construction materials (12.2%)
- Organic materials (16.4%)
- Paper products and packaging (18.1%)
- Wood (14.7%)
- Consumer products – i.e. game consoles, computer peripherals, other electronic equipment, textiles (12.0%)

Figure 3-2
Composition of Disposed Waste



Source: Ecology 2010.

Each potentially recyclable material above represents over 12% (by weight) of materials found in disposed waste. A significant fraction of this material can be managed through robust organics and construction waste recycling programs – namely, paper products not fit for commingled recycling (food-soiled, wet, etc.), wood wastes, construction debris, and organic materials.

Kitsap County currently recycles or diverts approximately 40% of the County's waste stream. This Plan considers strategies to reduce waste generation and toxicity, as well as strategies to increase diversion. Glass, paper, plastic, and other "household" recyclables are discussed in this chapter. Organic materials are discussed in Chapter 4 and construction and demolition debris (C&D) is discussed in Chapter 5.

3.2.2 Waste Reduction

Waste reduction is defined as a collective set of actions that reduce the volume, toxicity, or life-cycle impacts of materials in the waste stream. Waste reduction is first in the County and State waste management hierarchy. It is the most cost-effective means by which waste can be prevented from entering the solid waste handling and disposal system. Preventing or minimizing waste supports long-term sustainability because it reduces the cost, greenhouse gas, and environmental impacts associated with production, distribution, and marketing virgin products, as well as reducing the impacts associated with disposing of end-of-life products.

Available historical data does not distinguish between waste generated by sub-sector (i.e. residential, commercial, industrial) and so trends by sub-sector cannot be easily identified. However, Ecology data indicates that MSW generated in the residential and commercial sectors account for approximately 75% of all waste generated in Kitsap County (Ecology 2014). Consequently, emphasis on waste reduction programs should focus on those sectors, with additional toxic waste reduction emphasis on those commercial and industrial businesses that are identified by the County. The County can and should play a role in working with businesses to identify material and product substitutes that are less toxic and use fewer resources.

Zero Waste Philosophy

Zero Waste is a philosophy and design principle that provides a visionary goal for Kitsap County. It goes beyond recycling to take a "whole system" approach to the flow of resources and waste through human society. It attempts to guide people to emulate sustainable natural cycles, where discarded materials become resources for others to use.

Zero Waste means designing and managing products and processes to reduce the volume and toxicity of materials used and waste produced; to conserve and recover resources, and not to burn or landfill them. Implementing Zero Waste strategies could reduce discharges to land, water, or air that may negatively impact human, animal or plant health. Zero Waste maximizes recycling, minimizes waste, reduces consumption and ensures that products are made to be re-used, repaired, or recycled back into nature or the marketplace (Seattle Public Utilities 2007).

In our industrial society, waste results from the inefficient use of any resource and includes activities and products that generate by-products with no clear use, no market value, or hazardous properties and by-products that decrease their potential value. Waste takes many different forms from solid and hazardous waste to wastes in energy and material use, wastes in manufacturing and administrative activities, and wastes of human resources.

Our industrial system today is primarily linear, where materials are extracted from the earth's crust, transported to manufacturing sites, used to produce products (all materials not part of end product are discarded as waste), then products are transported to users and finally, at the end-of-life, discarded as waste. This is inefficient and costly and these products often contain persistent or toxic materials that negatively impact the environment when they are incinerated or disposed of in landfills. Figure 3-3 provides a visual representation of material flows through today's society.

Zero waste suggests that the entire concept of waste should be eliminated. Instead, waste should be thought of as a "**residual product**" or simply a "**potential resource**" and not accepted as an unavoidable impact of the normal course of events. Opportunities such as reduced costs, increased profits, and reduced environmental impacts are found when returning these "residual products" or "resources" as food to either natural or industrial systems. This may involve redesigning both products and processes in order to eliminate hazardous properties that make them unusable and unmanageable in quantities that overburden both industry and the environment. These new designs will strive for reduced materials use, use of recycled materials, use of more benign materials, longer product lives, repair ability, and ease of disassembly at end-of-life.

Zero Waste strategies consider the entire **life-cycle** of our products, processes, and systems in the context of a comprehensive **systems understanding** of our interactions with nature and search for inefficiencies at all stages. Indeed, we should work to "design "our wastes, if any, so that they have future applications (Zero Waste Alliance 2009).

Key program efforts in Kitsap County include:

- Actively supporting the adoption, development, and implementation of product stewardship programs that encourage manufacturers to re-design products so that they produce less waste when they reach the end of their useful life.
- Educating consumers to demand products that are less toxic and/or result in less waste when they reach the end of their useful life.
- Continuing to update procurement policies to emphasize products that have a reduced environmental impact during manufacture, use, and disposal, including those that are less toxic and produce less waste when they reach the end of their useful life.
- Supporting community efforts to re-use durable goods and building materials through expanded donation and sales opportunities
- Support for Built Green™, Leadership in Energy & Environmental Design (LEED), and other programs that promote waste reduction in the building trades, as well as use of durable and less toxic alternatives, and design for disassembly that results in less waste and more easily recyclable waste at the end of the facility's useful life.

Figure 3-3
Material Flows Today

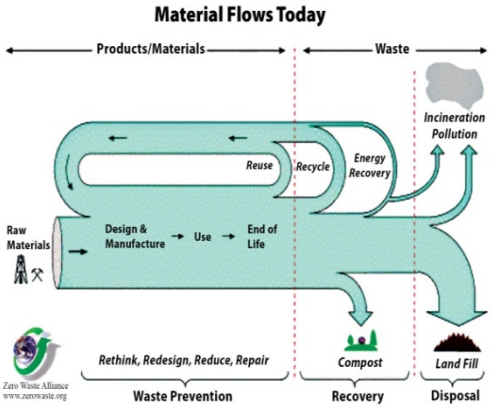
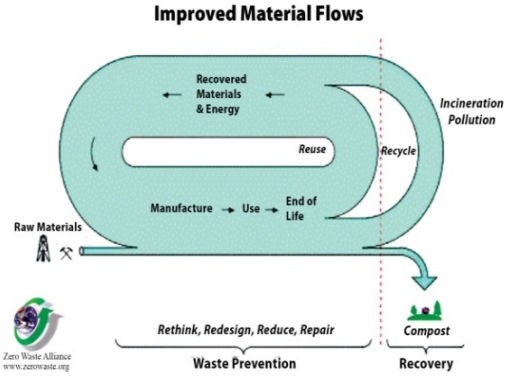


Figure 3-4
Improved Material Flows



Source: Zero Waste Alliance 2009

Product Stewardship

Product waste now makes up 75% of the waste stream. Many of these products contain difficult to recycle and/or hazardous materials. Rather than continue to manage landfill disposal of these products, state governments are increasingly adopting the successful product stewardship approach already in place in the European Union, Canada, and many other countries. Product stewardship represents a fundamental shift in how end-of-life products are managed. The producer, rather than local government, takes responsibility to reduce the life-cycle impacts of their products and packaging, from design to end-of-life management. The producer is responsible for funding collection, transportation, re-use, and either recycling or disposal of end-of-life products.

Successful product stewardship programs tend to be mandatory, and often take the form of take-back programs where a private infrastructure is established (reverse-distribution) to recover end-of-life products. Product stewardship programs are funded in a variety of ways, including advanced disposal fees collected at time of product purchase, end-of-life disposal fees at time of disposal, or with charges incorporated in the purchase price of the product. According to Ecology, product stewardship can be coupled with positive incentives such as technical assistance, education for consumers, recognition programs, tax reductions, market development plans, grants, and government procurement policies. Ecology and/or the NWPSC, of which the County is an active member, are currently pursuing product stewardship programs for paint, pharmaceuticals, and other materials, while working on a long-range strategy that is not specific to particular products.

As a matter of program policy, the SWD supports product stewardship as a key method of achieving long-term waste reduction and recycling goals.

One key development in product stewardship since 2011 was the implementation of Washington State's LightRecycle program, which provides free recycling of mercury-containing lamps bought at retail locations. This program is funded by a $0.25 fee on all mercury containing lamps sold at retail in Washington State, collected at the retail point of sale.

3.2.3 Recycling

At its most basic level, a recycling system consists of the following inter-connected parts:

- Generation
- Collection
  - Residential (single and multifamily)
  - Commercial
  - Self-haul
- Processing
- Re-manufacturing recycled materials into new products
- Marketing recycled-content products to manufacturers and consumers

When devising strategies to increase the level of recycling, it is important to consider that barriers and opportunities can exist in any of the above areas, and to target efforts accordingly. Based upon a review of existing conditions, key needs and opportunities have been identified as a focus for the 6-year and 20-year planning horizon. To meet the State recycling goal of 50%, enhanced or additional programs must be developed.

3.2.4 List of Designated Recyclables

According to KCC 9.48, the following recyclable materials are designated as a minimum list of recyclables that must be included in curbside recycling service and collected from single and multifamily customers when set out as specified:

- Glass food and beverage containers;
- Tin-coated steel cans;
- Aluminum cans;
- Newspaper, including glossy advertisements and inserts that are delivered with the newspaper;
- Mixed paper, including mail, magazines, catalogs, phone books, paperback books, computer paper, white and colored ledger, file folders, file cards, and chipboard;
- Paper food containers, including paper bags, dry food boxes, frozen food boxes, and milk cartons;
- Corrugated cardboard;
- Plastic containers including bottles, jugs, jars, and dairy tubs.

This list can be revised according to the following factors, using the process described below:

- Potential for significant waste stream diversion
- Market conditions, including market risk
- New technologies and innovative program approaches

Based on current collection and processing capabilities, diversion potential, and market conditions, the following items are recommended for inclusion in the list of designated recyclables:

- Scrap metal with dimensions less than 2-foot by 2-foot and less than 35 pounds
- Rigid plant pots
- Buckets

3.2.5 Process to Revise List of Designated Recyclables

When conditions warrant, outside of regular updates to the Solid Waste Management Plan, the following process will be followed to revise the list of designated recyclables. The SWD discusses any proposed additions or deletions to materials collected with the SWAC and the Director of Public Works for each jurisdiction. Based on this feedback, the SWD will prepare recommended language for approval by the Kitsap County Public Works Director and those cities' public works directors who contract for waste collection services. Following approval, this plan and municipal codes are revised accordingly, and haulers and other service providers are notified regarding implementation of the new requirements. The SWD will provide notification to Ecology and the WUTC of any changes as they are adopted.

3.2.6 Recycling and Diversion Rate

Ecology calculates Kitsap County's recycling rate using information from the Annual Recycling Survey and disposal information reported by haulers, collection sites, processors, and other businesses. The recycling rate for Kitsap County includes materials collected from each city, tribal reservations, non-industrial Navy facilities, and the unincorporated county.

Ecology includes recyclables collected from homes, businesses, and institutions, and the tonnage of waste disposed of by these groups, and calculates the recycling rate according to this formula:

Tons Recycled / (Tons Recycled + Tons Disposed) = Recycling Rate

3.2.7 Urban/Rural Designation

Curbside garbage and commingled recycling collection is currently available county-wide, subject to KCC 9.48.040(1)(A). Therefore, urban and rural designations as they relate to recycling requirements are not applicable, since all residents now have access to curbside collection. All residents who subscribe to curbside garbage collection, automatically subscribe to commingled recycling. Access to curbside yard waste collection is limited to burn ban areas and some additional neighborhoods added in response to high demand and reasonable collection vehicle routing.

3.2.8 In-House Programs

Waste Wi$e Kitsap

KCC Chapter 3.72 "Prevention of Waste in County Government" sets the protocol for reducing waste in all departments of Kitsap County government. The code directs departments to identify annual goals to:

- Prevent waste of materials, energy, and water.
- Use less toxic products.
- Use environmentally preferred (resource and energy efficient) materials.
- Increase their recycling rate.

Waste Exchange

An electronic Waste Exchange enables employees from County departments to donate or obtain surplus items for re-use by other departments. The Waste Exchange intranet site encourages regular visits as a way for departments to save money. Program success is tracked to determine the amount of money saved and disposal avoided.

3.2.9 Collection Services

The way that collection services are structured has a strong influence on the diversion rates of materials within the waste stream, as well as cost, customer satisfaction, and the total volume of materials diverted from disposal. Factors such as rate structure, relative and apparent cost of add-on services, collection frequency, bin or can size, and whether participation is mandatory or voluntary work together to affect participation and set-out volumes.

In cities that contract for collection services or provide it using their own vehicles and personnel, rate structures can be used to support key goals such as waste prevention, added recycling, and revenue stability. Meanwhile, counties and cities that rely on WUTC-certificated haulers are more limited in their ability to influence rate structures because rates for certificated haulers are set according to WUTC standards and guidelines.

Single-Family Residential Curbside Recycling Program Participation

Curbside recycling service is available to all single and duplex dwelling units in Kitsap County and the incorporated cities. Table 3-1 summarizes collection of various wastes and recyclables in incorporated and unincorporated areas.

Table 3-1
Waste Collection Services Currently Available

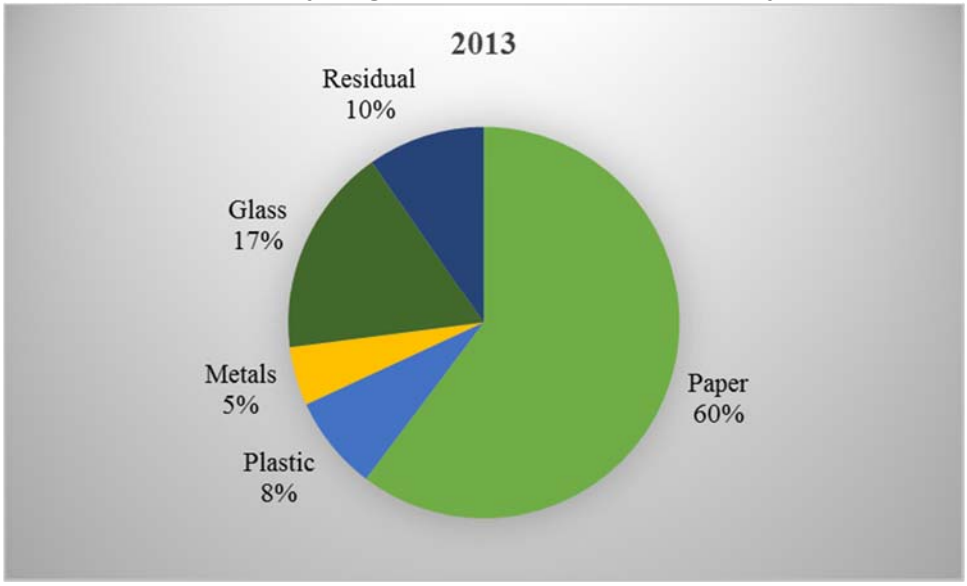
	Garbage	Recyclables	Yard Waste	Food Waste[1]	Landclearing
Bremerton Port Orchard Poulsbo	Mandatory	Included in cost of garbage service	Voluntary	Included with yard waste	Available from private contractors
Bainbridge Island	Voluntary	Included in cost of garbage service	Voluntary	Included with yard waste	Available from private contractors
Unincorporated Residential Burn Ban Area[2]	Voluntary	Included in cost of garbage service	Voluntary	Included with yard waste	Available from private contractors
Unincorporated Non-Residential Burn Ban Area	Voluntary	Included in cost of garbage service	Not Available	Included with yard waste	Available from private contractors

[1] Food scraps and food-soiled paper accepted. No manufactured organics (service ware, cups, etc.)
[2] Also includes non-burn ban areas where yard waste collection has been added due to demand.

Kitsap County implemented county-wide curbside collection services for all residential customers in 2010. Any customer who signs up for garbage collection services also receives curbside recycling collection. An exception can be made for low-income seniors and disabled people, who can request an exemption if they meet the criteria in KCC 9.48.040(1)(A).

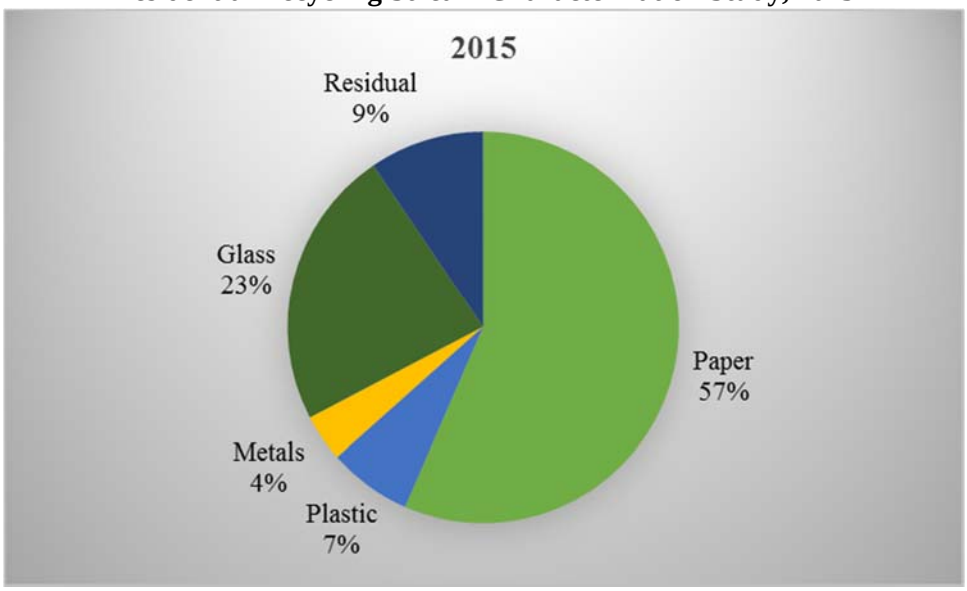
In order to better understand the composition of the residential commingled recycling stream, Kitsap County commissioned two studies to characterize the stream – one in 2013 and another in 2015. Figure 3-5 and Figure 3-6 illustrate a summary of the study findings.

Figure 3-5
Residential Recycling Stream Characterization Study, 2013



Source: Kitsap County 2013.

Figure 3-6
Residential Recycling Stream Characterization Study, 2015



Source: Kitsap County 2015a.

As can be seen in the figure, recyclable paper makes up more than half of the single-family commingled recycling stream, with a small decline in the two years between studies. Glass makes up the next highest fraction, by weight. Using best available data to calculate recovery rates (recovery rate = recycled/total generated), it is estimated that paper has a recovery rate of 63% in Kitsap County, and glass has a recovery rate of 83%. This is encouraging data, but plastics and metals experience lower recovery at 50% and 48%, respectively. All recovery rates from the 2015 data can be found in Table 3-2.

Table 3-2
Recovery Rates for Recyclable Materials

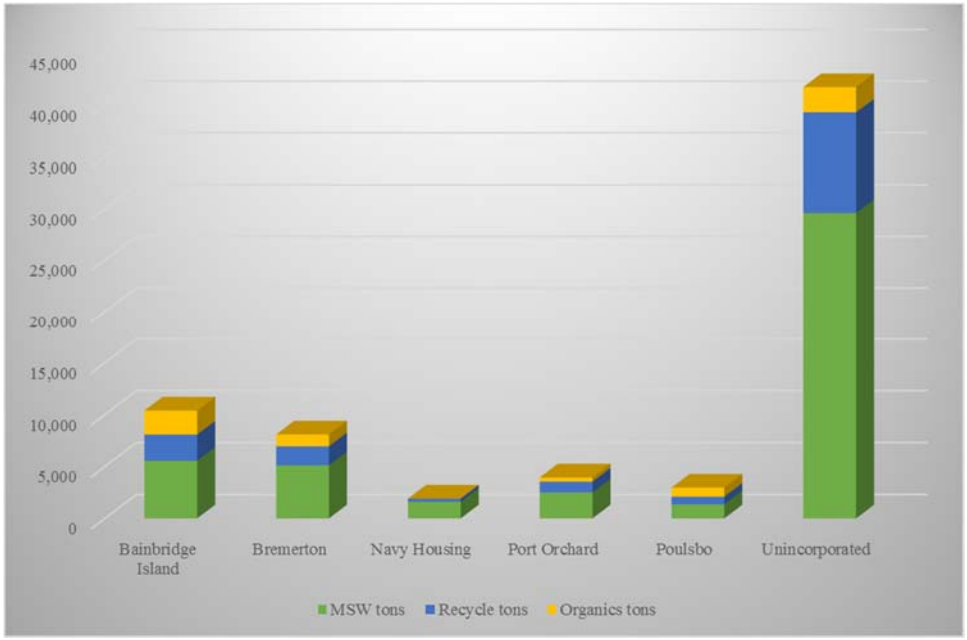
Type of Material	Recycled Amount		Disposed Amount		Recovery Rate (%)
	County-Wide Average	Tons in 2014	Residential Average	Tons in 2014	
Paper	56.6%	10,399	13.5%	6,025	63%
Newspaper	12.0%	2,208	2.2%	982	69%
Cardboard	14.5%	2,673	1.7%	759	78%
Mixed Waste Paper	28.4%	5,219	9.6%	4,284	55%
Acceptable Polycoated	1.6%	298	N/A[1]	N/A[1]	N/A[1]
Plastic	6.9%	1,264	2.8%	1,250	50%
Bottles	6.6%	1,220	2.8%	1,250	49%
Dairy Tubs	0.2%	44	N/A[1]	N/A[1]	N/A[1]
Metal	3.9%	712	1.7%	759	48%
Aluminum Cans	1.6%	288	0.7%	312	48%

Type of Material	Recycled Amount		Disposed Amount		Recovery Rate (%)
	County-Wide Average	Tons in 2014	Residential Average	Tons in 2014	
Tin Cans	2.3%	423	1.0%	446	49%
Glass (bottles and broken)	23.2%	4,268	2.0%	893	83%
Total Program Materials	90.5%	16,643	20.0%	8,926	65%
Non-Program Materials	9.5%	1,745	80.0%	35,702	
Total All Materials	100%	18,388	100%	44,628	

[1] N/A = Not Available, these materials were not measured separately by the Ecology Study. Source: Kitsap County, 2015a.

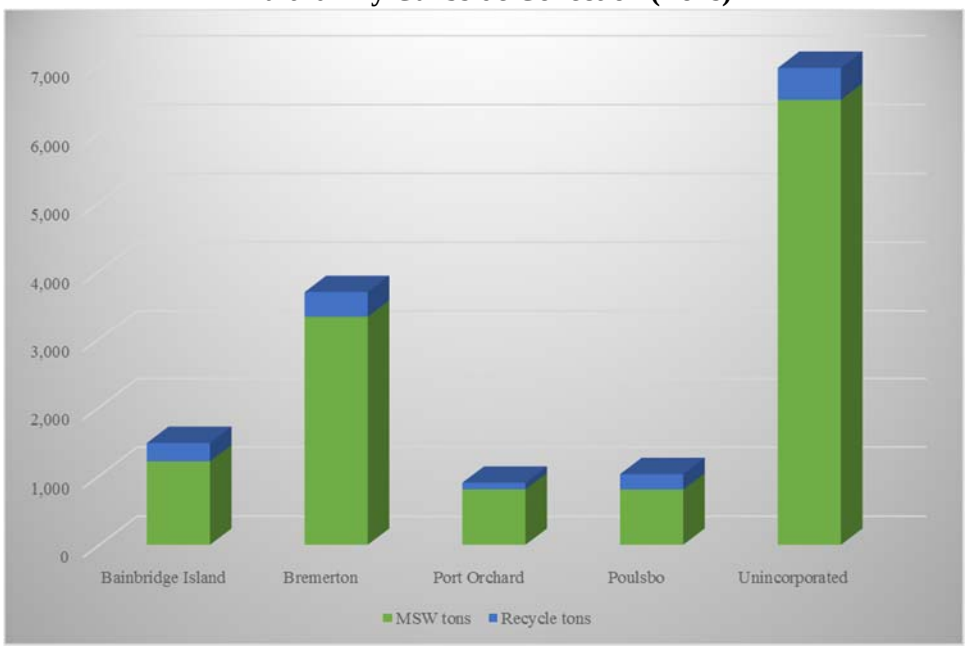
Contamination rates for single-family recyclables are comparable to rates throughout the Puget Sound Region at 9.8% in 2013 and 9.5% in 2015 (Kitsap County 2013, 2015a). This figure includes food scraps, diapers, and other non-program materials. Two particular contaminants of concern were plastic bags and polystyrene foam. These materials were observed in high quantities, but were not necessarily accurately portrayed in the data as a significant contaminant, due to their light weight. These materials are highly problematic in the stream, and future considerations should be made to address them.

Figure 3-7
Single-Family Curbside Collection (Tons)



Source: 2015 Hauler Data, Single-Family Residential Collection, Kitsap County 2015b.

Figure 3-8
Multifamily Curbside Collection (Tons)



Source: 2015 Hauler Data, Multifamily Residential Collection, Kitsap County 2015b.

Program participation remains strong in the single-family recycling sector. Set-out rates are consistently in the 88-90% range, and the curbside program diverts approximately 17,000 tons of recyclables per year.

Multifamily Curbside Recycling Program Participation

All multifamily buildings with three or more living units are charged for and provided with curbside recycling service. Participation in multifamily recycling programs varies greatly between apartment complexes and is generally low.

Many communities find the implementation of effective multifamily programs to be a challenge. Multifamily recycling and refuse collection tend to be collected like the commercial sector, but the waste generated is more like the residential sector. Part of the challenge in the multifamily sector is that there is little direct link between recycling goals or requirements and the behavior of individual tenants. Tenants have little to no control over the location, capacity or convenience of the recycling system at their residence. Property managers and owners have little to no control over the actual recycling and disposal behavior of the tenants. A two-pronged approach including tenant education and adequate infrastructure is necessary to overcome these barriers. To facilitate use and collection, container capacity and location are key to a successful program.

In 2014, the Washington State Recycling Association (WSRA) released *Sorting It Out: The State of Multifamily Recycling in Washington State* (WSRA 2014). This report was the product of a two-year study, identifying major hurdles to successful recycling programs and tools to improve material quality and participation. The study consisted of two surveys: one of multifamily property managers and another of municipal recycling coordinators and refuse haulers. The workgroup also examined other programs around the globe to identify what is working and what is not.

Using the WSRA report as a guide, the SWD hired Cascadia Consulting (Cascadia) to assist with piloting a community-based social marketing approach to improving multifamily programs. After hearing that

multifamily programs were plagued by high contamination and low participation for many years, a barrier and benefit analysis was conducted to find root causes. After observing a sample of properties and surveying tenants and property managers, it was determined that the main root cause of poor material streams and low recycling rates was primarily lower than acceptable available recycling container volumes at most properties.

Figure 3-9
Multifamily Containers, Pilot Project

Source: Kitsap County, 2015c.

After working with several jurisdictions throughout the west coast, Cascadia recommends that multifamily complexes must be provided with at least 0.1 cubic yards, per unit, per week of recycling volume in order to adequately meet demand (Kitsap County 2015c).

Kitsap County is now working to bring all multifamily properties with more than 50 units up to this standard by changing container types and quantities, coupled with door-to-door outreach and providing a tote bag for residents to transport their recyclables to communal containers. This work is ongoing and conducted one property at a time, and may last through much of the planning period.

Commercial Recycling Programs

Current commercial recycling rates in Kitsap County are low to moderate and offer significant potential for improvement. Participation or set-out data specific to Kitsap County is currently unavailable, but

anecdotal information indicates that some businesses perceive them as overly costly.

Some businesses that are located in multi-tenant buildings may not generate a large enough volume of recyclables to regularly fill a commercial container. As such they may not see a significant savings in their garbage bills even if they begin to recycle more. Some cities have addressed this issue by ensuring that businesses who generate less than a certain volume of garbage each week (e.g. 90 gallons) are eligible for residential service instead of the more costly large container commercial service. Some property managers have addressed it by offering shared recycling bins that can serve multiple tenants, while continuing to have tenants pay for the level of garbage service appropriate to their waste generation.

Washington State law does not authorize counties to regulate, or require haulers to provide commercial recycling services. Therefore, Bainbridge Disposal Inc. (BDI), WMW and independent recyclers, determine the level of commercial recycling service available and the commodities that are collected in the unincorporated areas.

Cities are not limited in this way. Cities can, by contract, require their hauler to provide commercial recycling service and specify the level of service required. In some cities, the authority to contract has been used to specify service levels and materials to be collected, or to require garbage haulers to provide certain minimum recycling services as part of their service offerings, or to specify the availability of residential service levels for businesses that generate low volumes of garbage as described above.

Self-Haul Recycling Programs

The self-haul recycling program is designed to provide recycling opportunities to residents and small businesses that self-haul their garbage or occasionally exceed the capacity of their recycling service level. The County owns a system of drop boxes, known as Recycling and Garbage Facilities (RAGFs) in Kitsap County, the PRC, and OVTS. Self-haul recyclables are accepted free of charge at each facility.

Customers give a variety of reasons for their preference to self-haul instead of signing up for curbside collection. The most common reasons customers give for self-hauling include: they have a large volume of garbage and are going to the RAGF so it is easier to bring their recyclables in the same trip; they perceive curbside collection as expensive; or they have items that are too big for curbside pickup. Self-hauling of extra or bulky wastes often results from an uncommon event like a household move or a major cleaning, remodeling, or landscaping project. SWD staff have also heard some people use the RAGFs because they have long driveways that make curbside collection inconvenient.

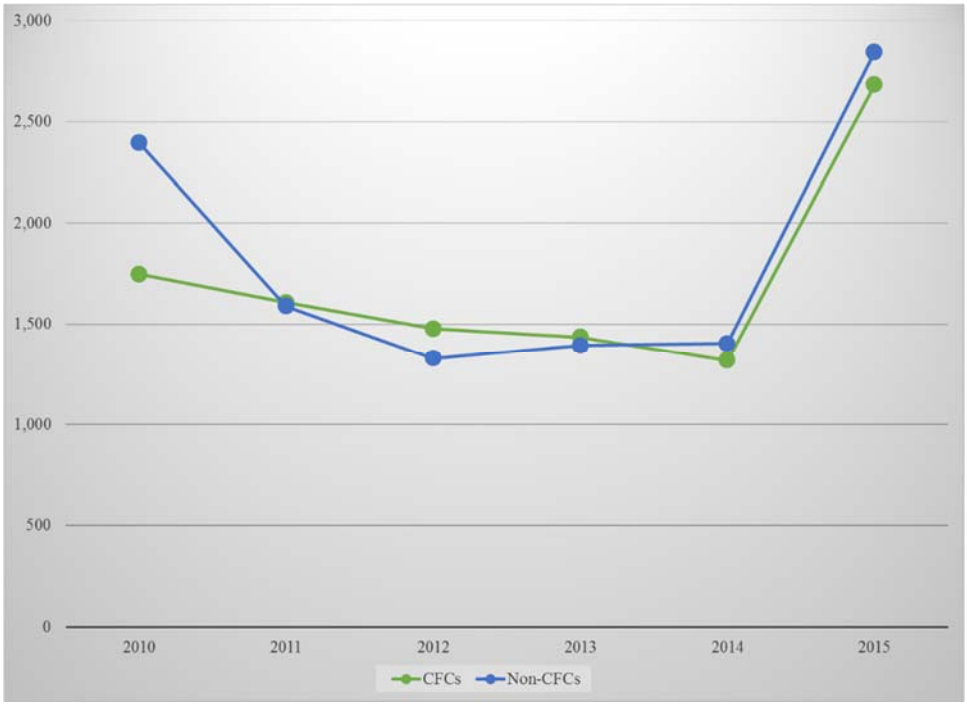
In addition to the items collected in curbside collection programs, the RAGFs offer self-haul service for used clothing, white goods, cooking oil (in select locations), and scrap metal. OVTS and the Bainbridge Island Transfer Station accept electronics for recycling under Washington's product stewardship program. Electronic wastes are also accepted at other privately operated facilities, both in and outside of Washington's product stewardship program. Some retail outlets are also offering drop-off collection of "fringe" recyclables such as computer peripherals, appliances, plastic film, printer cartridges, personal care product containers, rechargeable batteries, and others. Kitsap County has made every effort to make sure that the public is aware of these drop off locations through its "What Do I Do With It?" online database.

White Goods Collection Program

White goods are large appliances such as refrigerators, freezers, ovens, and water heaters that contain large quantities of recyclable steel and other metals. Some white goods contain oil, refrigerants, heat exchange fluids, and electrical components with hazardous wastes, which are not allowed in landfills. To

help residential customers manage these items responsibly, self-hauled white goods are accepted for recycling at County facilities. In 2015, 2,683 refrigerant-containing white goods and 2,845 non-refrigerant-containing white goods were collected at the RAGFs for a total of 5,528 units. In 2014, a total of 4,158 units were collected at RAGFs. That shows a significant increase of 33% in one year. OVTS had a similar significant increase in white goods collected. Residents are charged a fee to recycle/dispose of white goods. Figure 11-8 shows white goods collection from County sites from 2010 to 2015.

Figure 3-10
White Goods Collection, 2010-2015



Source: Kitsap County 2015.

3.2.10 Processing

Peninsula Recycling, a privately operated recycling company owned by WMW and located adjacent to OVTS, currently consolidates and bales mixed paper and cardboard recyclables collected from commercial customers and from RAGFs for transport to out-of-county recycling markets.

Mixed curbside and RAGF recyclables collected by WMW are transported to OVTS, where they are consolidated and loaded into large trailers and transported to an out-of-county material recovery facility, JMK Recycling (owned and operated by WMW) in Tacoma. BDI also hauls their collected curbside recyclables from their transfer station to JMK Recycling.

Markets

Markets exist for all of the recycled materials collected by Kitsap County. Market prices vary considerably depending on the type of material, and may be negative for certain commodities at certain times. Market prices fluctuate for most materials, depending on a variety of factors, including general economic conditions, prices of virgin materials, energy prices, transportation costs, and domestic and global demand for secondary materials. The cleanliness, composition, and quantity of recycled materials further affect commodity pricing.

In the case of Kitsap County, the costs to transport commodities to recycling markets are relatively high compared to other Puget Sound areas, due to its relatively poor access to major interstate transportation routes. Likewise, on a per-ton or per-household basis, collection costs are higher in rural areas than in urban areas due to the greater distances traveled and reduced route density.

Kitsap County shares the market risk associated with the processing and sale of self-hauled recyclables with WMW, who has the contract to haul, process, and market recyclables collected at the RAGFs. In addition, residential customers of WUTC-regulated haulers share in any financial benefit or burden associated with processing and selling curbside recyclables. Customers receive a credit or debit on their bill based on the revenue or costs from marketing recyclables collected at the curb.

3.2.11 Promotion, Education and Outreach

The SWD employs a number of marketing strategies to reach Kitsap County residents and businesses including printed materials, curriculum, staffing booths at community events, offering classes and workshops, other electronic means, newspaper ads, and newsletters. Education and promotion programs are described in Chapter 6.

3.2.12 Options for Recycling

Regulatory, policy, programmatic, and contractual methods that the SWD and participating jurisdictions may consider to increase access, participation, and set-out rates for recycling include the following:

- Pursuing product stewardship initiatives such as producer-funded take-back programs for materials that are toxic and/or costly to recycle.
- Directing government purchasing programs to favor materials made with recycled content and materials that by their use or manufacture tend to reduce greenhouse gas impacts.
- Setting rate structures such that participation in curbside services is cost competitive with cost of self-hauling and incorporating the cost of managing the recyclables collected at self-haul facilities (RAGFs and OVTS) into the fee structure that is charged for disposal.
- Adding items to the list of materials that can be collected and processed in curbside recycling carts, as markets develop and technology becomes available.
- Adding items to the list of materials that can be collected and processed at the RAGFs and OVTS, as markets develop and technology becomes available.
- Using city solid waste contracting authority to specify the availability and minimum materials to be collected from commercial accounts within city boundaries and encouraging haulers to provide affordable recycling services to commercial accounts in unincorporated areas of the county.
- Ensuring that new multifamily buildings and/or certain types of commercial facilities include adequate space for managing recyclables by including a technical review step in the building permit review process and requiring the recycling company to pick up the material at a given location.
- Implementing programs to increase the effectiveness of multifamily recycling programs.
- Providing technical assistance to businesses to help them achieve waste reduction and recycling goals.
- Considering disposal bans of materials for which recycling and diversion options are well-developed and widely available, and an enforcement program can be effectively implemented.
- Implementing a mandatory participation element to the curbside recycling program.

- Consider a ban on the sale and/or distribution of problematic materials, such as plastic film bags.
- Consider the addition of programs to address non-program materials that are recyclable outside the commingled system – i.e. polystyrene foam, mattresses, and carpet.
- Implement programs that emphasize materials identified as having low recovery rates and high marketability – namely, plastic and metal containers.

3.3 POLICY OBJECTIVES

Based on an analysis of existing program elements, regulatory requirements, and the goals identified within this Plan, the following Policy Objectives were identified:

1) Support waste prevention as the most effective and preferred means of helping residents and businesses manage waste and minimize climate and environmental impacts.

2) Support product stewardship. Product stewardship shifts the costs of collection, recycling, and disposal programs away from local government and toward those with the greatest ability to affect toxicity, packaging, and durability.

3) Support the use and ongoing refinement of environmentally preferable purchasing standards for government purchases as a means of stimulating market development and reducing greenhouse gas emissions associated with purchases.

4) Encourage residential customers to use curbside recycling collection service instead of self-hauling their normal household recyclables.

5) Encourage measures that increase the availability of and participation in recycling of recyclable and organic materials generated by all sectors.

6) Work with haulers and contracting cities to consider incentive-based rate structures to provide convenient and cost-effective recycling services for small businesses.

7) Encourage the local development of alternative technologies that produce energy or conserve natural resources and minimize impacts to land, water, air, and climate from solid wastes, including organic materials, where such technologies are cost-effective and technically proven.

8) Consider rate structures and disposal bans as potential tools to increase recycling of materials. Adapting the traditional cost/benefit paradigm to include the life-cycle environmental benefits associated with new waste prevention and recycling programs will be considered.

3.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Actively support the development of product stewardship laws at the state and national level that require manufacturers or retailers to provide collection, recycling, and/or safe disposal programs for target products.

2) Work with local jurisdictions and agencies to adopt and follow environmentally preferred purchasing programs. These programs will:

a) Use the County Waste Wi$e program as a model, and focus on the procurement of goods and services that cause less harm to humans and the environment than competing goods and services that serve the same purpose and are cost-effective.

b) Be refined on an ongoing basis and consider the impacts of goods and services over their life-cycle, including raw materials acquisition, production, manufacturing, packaging, distribution, re-use, operation, maintenance, or disposal of the product or service.

3) Continue to offer waste prevention programs and strategies that encourage businesses, institutions, and households to reduce the amount of waste they generate. Examples of successful approaches include:

a) Using both publicly and privately-operated central depots to collect re-usable materials such as used clothing.

b) Promoting re-usable products and waste exchange programs.

c) Cooperating with charities and service organizations to provide assistance and to promote services and community garage sales and events that help to reduce waste.

d) Participating in multi-jurisdictional and multi-disciplinary programs that build partnerships with organizations that emphasize waste prevention, resource recovery, and re-use.

e) Continuing to offer programs and awards to publicly recognize individuals, businesses, and agencies that exercise leadership and accomplishment in waste reduction, recycling, and environmental protection.

4) Continue to support efforts to increase the recycling rate and to increase participation in recycling programs in Kitsap County. This may include revising the list of materials accepted in curbside collection programs, expanding the availability of curbside collection, implementing rate incentives, and other techniques.

5) Include the cost of "free" recycling in the disposal fees at the Recycling and Garbage Facilities.

6) Set rate structures at RAGFs such that it is less costly for customers with small volume loads to sign up for curbside collection than it is to self-haul their garbage.

7) Continue to work regionally to develop new uses and markets for recycled and diverted materials.

8) Cities who are negotiating new or updated solid waste contracts should incorporate language that requires contracted haulers to offer specified levels of recycling services to commercial customers.

9) Refine and reinvigorate the business waste reduction and recycling program as follows:

a) Promote product stewardship.

b) Support legislation that encourages commercial recycling and environmentally sound design of consumer products.

c) Work with new businesses locating in the County to encourage them to incorporate pollution prevention, sustainability practices, and waste minimization into their facility and product design.

d) Participate with key organizations and institutions to promote sustainability in product development and manufacture. Assist such organizations and institutions with their research into selected existing and proposed alternative products for their toxicity, recyclability, re-usability, water consumption, energy use, and waste resulting from manufacturing and use.

e) Continue to promote the Waste Wi$e @ Work program by providing on-site waste assessments to businesses, other recycling-related technical assistance, and recognition for recycling efforts.

f) Expand participation in multi-disciplinary environmental assistance programs for businesses that offer industry-specific counseling on reducing the volume and toxicity of their waste stream, implementing environmentally-preferable purchasing, and reducing overall environmental impacts.

10) Work with City and County agencies to adopt building and zoning ordinances that incorporate technical review requirements to ensure that adequate recycling space and screening enclosures are included in new or remodeled multifamily and commercial projects prior to issuing permits.

11) Evaluate the benefits of charging variable tipping fees to capture loads of recyclable-rich commercial and C&D waste.

12) Include climate change considerations as well as economic impacts when considering the merits of expanding or enhancing curbside garbage and recycling collection in the unincorporated county.

13) If statewide waste diversion goals are not reached by 2022, consider disposal bans for materials including, but not limited to, organic materials and C&D if cost-effective recycling services and adequate program enforcement efforts are available by that time.

14) Complete widespread implementation of new multifamily recycling program, piloted in 2014-2015. Elements include individual property assessments and container right-sizing; door-to-door tenant outreach; provision of in-unit bags to transport recyclables to central enclosures.

15) Review service level ordinance and make necessary changes to address changing market conditions, need for different container types, and availability of services to residential customers.

16) Add scrap metal, rigid plant pots, and buckets to the designated recyclables list for curbside collection. Continue to revise curbside recycling material acceptance criteria as needed, using best available research and data. Make acceptance criteria dependent upon MRF capabilities, market conditions, material stream quality, ease of use, and social justice considerations.

3.5 REFERENCES/RESOURCES

Kitsap County Department of Public Works, SWD (Kitsap County). 2015a. *Composition Analysis for the Kitsap County Curbside Recycling Program*, Prepared by Green Solutions, LLC with assistance from Herrera Environmental Consultants. June 2015.

Kitsap County Department of Public Works, SWD (Kitsap County). 2015b. *Internal waste tracking documents, based on field data collection, shipping documents, and annual reports (unpublished document).* Prepared by the Kitsap County Department of Public Works, SWD. 2015.

Kitsap County Department of Public Works, SWD (Kitsap County). 2015c. *Kitsap County Multifamily Recycling Pilot*, prepared by Cascadia Consulting Group. June 2015.

Kitsap County Department of Public Works, SWD (Kitsap County). 2013. *Composition Analysis for the Kitsap County Curbside Recycling Program*, Prepared by Green Solutions, LLC with assistance from Dgb Consulting, LLC. June 2013.

Seattle Public Utilities, 2007. Seattle Solid Waste, Recycling, Waste Reduction, and Facilities Opportunities, Volumes I & II.

Washington State Department of Ecology (Ecology). 2016. *2014 Annual Recycling Survey (Internal Report).*

Washington State Department of Ecology (Ecology) 2014. "*Solid Waste in Washington State, 23rd Annual Status Report"*. Publication 14-07-035. Washington State Department of Ecology, Waste 2 Resources Program.

Washington State Department of Ecology (Ecology). 2010. *2009 Washington Statewide Waste Characterization Study*. Prepared for the Washington State Department of Ecology by Cascadia Consulting, Seattle, Washington. 2010.

Washington State Recycling Association (WSRA). 2014. *Sorting It Out: The State of Multifamily Recycling in Washington State*, Washington Multifamily Recycling Study group (WAMRS). July 2014.

Zero Waste Alliance. 2009. Zero Waste International Alliance Information about Zero Waste Definition and Global Principles for Zero Waste Communities. Accessed at http://www.zwia.org/

CHAPTER 4 - ORGANIC MATERIAL

4.1 INTRODUCTION

Organic material such as food and yard waste represents approximately 17% of the disposed waste stream in Kitsap County, and approximately 23% of the recycled waste stream, totaling about 52,000 tons. (Ecology 2016; Ecology, 2010) Composting, rather than disposing of organic materials, provides an effective way to reduce the volume of disposal, reduce GHG emissions associated with disposal, and create an excellent non-toxic soil conditioner that helps gardeners and farmers reduce outdoor water use, control pests and weeds, and improve soil tilth.

Organic material (also referred to as "organics", "putrescibles", "green waste", or "food and yard waste"), decomposing in a landfill is a significant source of methane, which is the primary GHG associated with landfill disposal. Therefore diverting organic material away from landfill disposal is an important tool to reduce the climate impacts associated with disposal.

Organic material can be diverted on a small scale such as when households, businesses, schools, or agricultural operations divert their organic material and compost it on-site in piles or bins, with or without the use of worms. Other high-tech options are becoming available to commercial and institutional applications, such as on-site anaerobic digesters and other conversion systems. At the time of publication, at least two of these systems exist in Kitsap County. Organic materials can also be diverted on a large industrial scale where it is source-separated, collected, and delivered to a centralized facility. Industrial or large-scale management of organic materials typically uses technologies such as aerated static pile composting, in-vessel composting, or anaerobic digestion to create compost and, in some cases, to recover energy. The resulting compost is highly recommended as an additive to soil as a tilth improver that helps soils retain water and supplies humus, nutrients and beneficial micro-organisms.

Since the publication of the previous plan, an increased focus on wasted food products has emerged on a national scale. The USEPA has made food waste reduction and recovery a national priority, due to the far-reaching nature of the issue in both the social and environmental arenas and its fraction of the disposed waste stream (estimated at 21%, nationally). Kitsap County embraces the USEPA's food waste reduction goal of 50% by 2030 (USEPA 2016), and has made food waste a priority reduction target. The challenge facing the solid waste industry in tackling this issue is the multi-faceted nature of the life-cycle of food products, and finding opportunities to creatively divert the material to higher and better uses than compost or disposal. As outlined in USEPA's food waste hierarchy shown in Figure 4-1, these priorities are: reduction first, followed by feeding food-insecure individuals, feeding animals, industrial processing, composting, and landfilling.

The success of food waste rescue and recovery programs rests heavily on educating the public about the negative impacts of wasted food from an environmental and social perspective, establishing partnerships with social services organizations that can use edible food to feed those in need, and fostering relationships with the agricultural industry to divert food scraps to animal feed.

Figure 4-1
USEPA Food Recovery Hierarchy

Source: US Environmental Protection Agency 2016.

This chapter establishes goals and objectives to ensure a proactive, convenient, reliable, and efficient system for residents of Kitsap County that maximizes recovery of organic material in a cost-effective manner.

4.1.1 Planning Issues

The significant planning issues facing the management of organic materials include:

- What actions should the SWD take to support the State's goal to "eliminate residential or commercial yard debris in landfills by 2012 in those areas where alternatives to disposal are available and effective"? RCW 70.95.010(10).
- What steps must be taken to facilitate the reduction of wasted food, and how can food waste be moved higher up the food waste hierarchy to better uses, as defined by the USEPA?
- Are existing programs sufficient to achieve SWD recycling and diversion goals?
- How can the SWD increase diversion of food waste and yard debris in the residential, agricultural, and commercial sectors while managing potential nuisances such as odors and vectors?
- How can the SWD encourage diversion of other organic materials such as animal wastes, back into the nutrient cycle, or into alternative energy production, and away from disposal?
- How can the SWD support emerging energy technologies that make use of organic materials?
- How can the SWD support the Puget Sound Clear Air Agency's recommendations related to restrictions of outdoor burning?
- How can the SWD increase participation in residential curbside food and yard waste collection programs?

4.1.2 State Legislation, Regulations, and Guidelines for Organic Compost Facilities

Local land use codes and building codes apply to the siting and construction of compost facilities. The key state and local environmental rules that may also apply are summarized in Table 4-1 below.

The applicability of specific requirements depends on the feedstock handled, volumes processed, and site-specific factors.

Table 4-1
State Regulations Applicable To Compost Facilities

State Regulation	Who Enforces The Regulation
Chapter 173-350 WAC, Solid Waste Handling Standards	KPHD Ecology – Waste 2 Resources Program
Chapter 173-216 WAC, State Waste Discharge Permit Program	Ecology – Water Quality Program
Chapter 173-220 WAC, National Pollutant Discharge Elimination System Permit Program	Ecology – Water Quality Program
Chapter 173-240 WAC, Submission of Plans and Reports for Construction of Waste Water Facilities	Ecology – Water Quality Program
Chapter 173-400 WAC, General Regulations for Air Pollution Sources	Puget Sound Clean Air Agency
Chapter 173-308 WAC, Biosolids Management	Ecology – Waste 2 Resources Program KPHD (via MOU with Ecology)
Chapter 197-11 WAC, State Environmental Policy Act (SEPA)	Lead agency responsible for SEPA compliance

4.1.3 Environmental Benefits Associated with Proper Management of Organic Materials

Composting and recovering energy value from yard debris and food waste saves landfill space and reduces methane production and leachate generation in landfills. Methane is a potent GHG that contributes to global climate change. Rotting food waste has a high impact compared to other common organic constituents so diverting it away from disposal has a large benefit when compared to its overall volume. For instance, there is 12 mg of CO_2e generated per mg of food; 5.5 mg of CO_2e per mg of grass clippings; and 1.2 mg of CO_2e per mg of leaves (Brown et al 2008).

Home composting reduces waste and garbage bills, keeps nutrients and beneficial micro-organisms on one's own property, and produces a valuable soil amendment that can be used to improve the soil's tilth and water retention, reduce weeds, and create a healthy yard. When used in landscaping, compost has the ability to prevent pollutants in stormwater runoff from reaching surface water resources. It has also been shown to prevent erosion and silting on embankments along creeks, lakes, and rivers, and prevents erosion and turf loss on roadsides, hillsides, playing fields, and golf courses (USEPA 2008a).

Composting is also a preferred alternative to backyard burning. Burning yard debris produces various compounds toxic to the environment including dioxin, nitrogen oxides, volatile organic compounds, carbon monoxide, and particle pollution. Backyard burning can also lead to residential, brush, and forest fires, particularly during drought conditions (USEPA 2008b).

4.2 EXISTING PROGRAM ELEMENTS

4.2.1 Organic Materials in Kitsap County

Organic materials that are commonly disposed in the Kitsap County municipal waste stream include food, yard debris, and compostable paper. Urban wood, which may be considered both organic material and C&D, is described in Chapter 5.

The amount of organic material generated in Kitsap County is significant, but largely unknown. This is mostly due to uncertainty about the amount of organic material generated that is not disposed of in the municipal waste stream, most notably, land clearing debris, which can vary widely with construction activity. Much of this material is managed on site or burned.

Recycling and Diversion Rate

Organic material (not including wood) accounted for approximately 17% of all waste disposed in the municipal waste stream. (Ecology 2010).

According to Ecology estimates from 2014, 22,034 tons of organic materials were recycled or diverted from landfill disposal in Kitsap County (Ecology 2016). If the disposal estimate above holds true, there remains more than 25,000 tons available for recycling or diversion in Kitsap County. This does not include a significant tonnage of land clearing debris managed on the site of origin. If land clearing debris is rolled into the potential diversion estimates, this estimate could be far lower than reality.

Organic Material Projections

By 2036, the population of Kitsap County is expected to increase to about 331,000 from about 251,000 in 2010 (BOCC 2016). This Plan assumes that organic material generation will rise along with population, primarily in the food, compostable paper, and biosolids categories. The generation of land clearing waste likely correlates directly with commercial and residential development trends, so future estimates of generation tend to be cyclical, and exact numbers are uncertain.

Yard debris generation will likely increase as more land is cleared for residential development, or as in-fill development occurs. Once residential units are in place, yard debris generation tends to plateau. In addition, increasing density in residential areas may put downward pressure on yard debris generation. Table 4-2 illustrates possible generation rates for yard debris over the next 20 years using the mid-range forecast data presented in Chapter 2.

Table 4-2
Organics Generation Projections, 2015-2035

	2015	2020	2025	2030	2035
Population	266,602	282,071	297,540	313,008	328,477
Projected Organics Generation (tons)	61,129	64,676	68,223	71,770	75,317

Source: BOCC 2016; Ecology 2016.

4.2.2 Existing Organic Material Management Infrastructure

Home Composting

According to the Puget Sound Clean Air Agency, the average household generates 1,900 pounds of yard waste each year (Puget Sound Clean Air Agency 2009). If a homeowner burned that waste, it would create 208 pounds of air pollutants. Composting at home is a sustainable and cost-effective alternative to burning and to disposal. There are many advantages of home composting including reducing cost to homeowners and local governments while helping citizens make an active commitment to sustainable living.

The SWD lets homeowners know that composting food and yard debris at home or signing up for yard and food waste collection service is less expensive than disposing of organic materials in the trash. The SWD also provides support and education to encourage use of both options.

The SWD sees a need to increase participation in composting activities. Current promotional activities include working with schoolchildren to turn lunch scraps into compost in the Food-to-Flowers program, support for Master Gardeners – Master Composters training, compost demonstration sites at community gardens, teaching natural lawn and gardening techniques, and helping residents reduce dependence on fertilizers and pesticides, which thereby reduces their exposure to toxics and the toxicity of the waste stream.

Collection

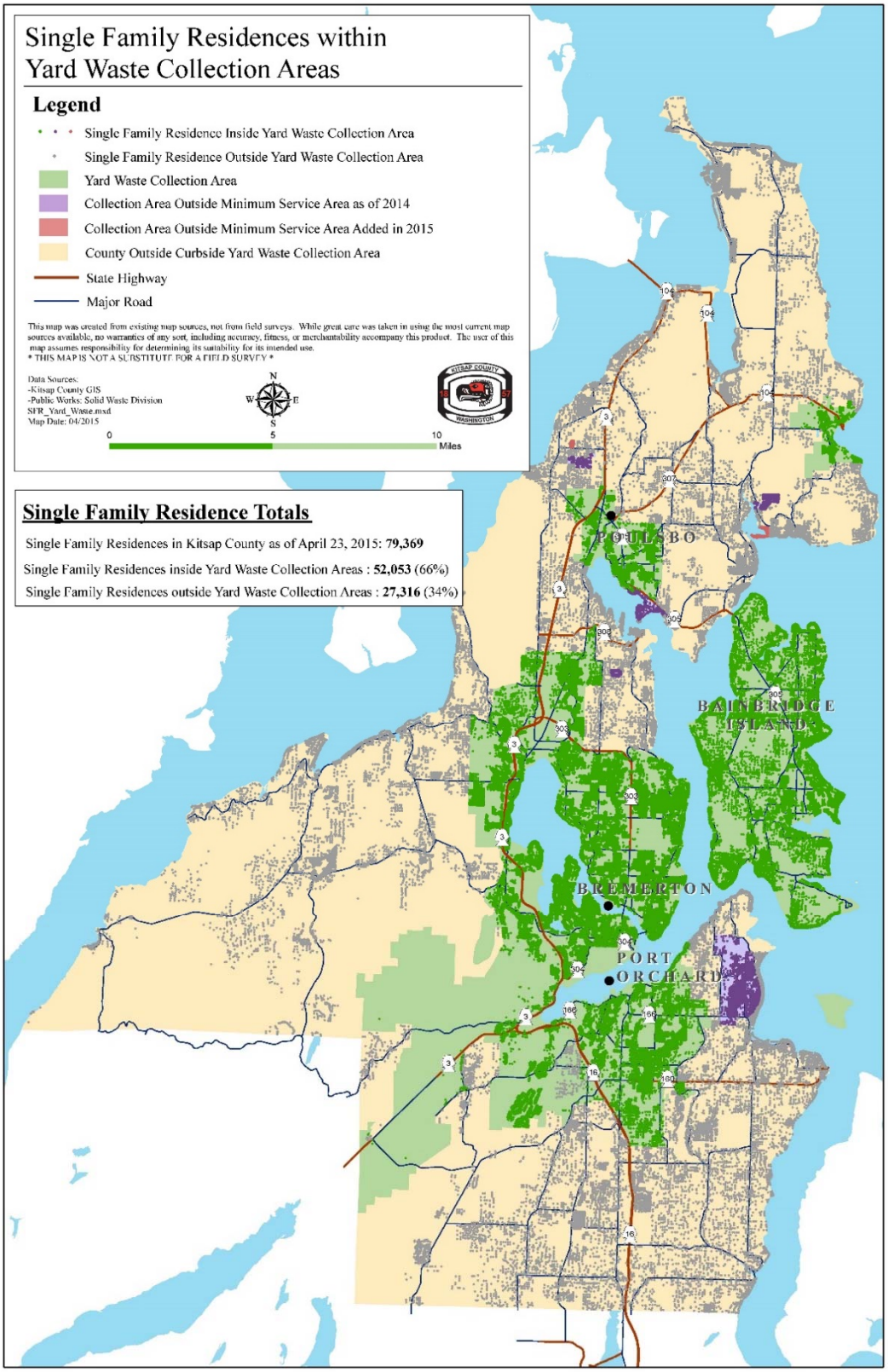
As good as it is, composting at home is not for everyone and is limited in potential feedstocks. Therefore, the SWD also ensures the availability of curbside yard waste collection and drop-off recycling opportunities in higher density areas throughout the county.

WMW and BDI offer optional, fee-based curbside yard and food waste collection to households within the permanent burn ban boundaries shown on Figure 4-2. Additional neighborhoods have also been added to the collection boundary where demand and access makes the service feasible. Yard debris, food scraps, garden waste, food-soiled paper, and shredded paper are accepted. The rates, based on the cost of service, are designed to encourage participation by allowing customers to save money as compared to disposing of the same material as garbage (96 gallons of yard debris collected at curbside costs less than 32 gallons of garbage). At the time of publication, 66% of single-family residences have access to curbside food and yard waste collection in Kitsap County.

Participation in the curbside program is relatively low, as shown in Table 4-4. Some possible reasons for low sign-up rate include: customers may perceive the program as an extra charge over and above garbage collection service even though it may save them money; customers may not see the need to pay for collection during months when their generation of yard debris is low; some customers continue to burn yard debris or manage it by placing it in ravines or wooded areas; and according to surveys, many customers are not aware that the program is available or of its potential advantage.

Residents outside the burn ban boundary are encouraged to use home composting or to self-haul their yard debris to one of the County-operated or privately-operated drop-off locations. Commercial businesses such as landscapers and landclearing businesses are served by privately operated mobile chipping services, on-call private collection services, and privately operated drop-off locations.

Figure 4-2
Curbside Yard and Vegetative Food Waste Collection Areas, 2015



Source: Kitsap County 2015

Table 4-3
Household Participation in Organics Collection Program, 2016

	Unincorporated Kitsap County	City of Bremerton	City of Port Orchard	City of Poulsbo	City of Bainbridge Island	Total
Total Households[1]	53,242	9,328	3,798	3,087	8,750	78,205
Garbage Accounts[2]	43,429	8,757	3,686	3,248	6,382	65,502
Yard Waste Accounts (service)[2]	5,633	2,801	845	1,129	2,860	13,268
Yard Waste Accounts (% of garbage accounts)	13%	32%	23%	35%	45%	20%
Yard Waste Accounts (% of total households)	11%	30%	22%	37%	33%	17%

Sources: [1]Washington Office of Financial Management single-unit housing projections, 2016 (http://www.ofm.wa.gov/pop/april1/default.asp) (OFM 2016).
[2]Account data obtained directly from collection companies – January 2017.

Processing

The Puget Sound Clean Air Agency expanded the landclearing debris burn ban county-wide in September 2009. It is estimated that 50,000 to 310,000 tons of landclearing debris had been burned annually (Kitsap County 2006). The following are area businesses that accept landclearing debris. These businesses offer an alternative to burning:

- A&L Topsoil, Poulsbo
- Olympic Organics, Kingston
- Tuckers Topsoil, Suquamish
- North Mason Fiber, Belfair
- Peninsula Topsoil, Belfair
- Allen Shearer Trucking, Belfair
- Williams Wood Waste Recycling, Poulsbo
- Tilz Soil and Compost, Bainbridge Island

Markets

Markets for compostable and composted materials include compost for soil amendment, energy production (i.e. biodiesel, anaerobic digestion, hog fuel, landscaping mulch, temporary erosion control, site stabilization, and animal bedding, among others). Economic conditions and pricing often alter the desirability and availability of these re-use end markets.

Food Re-use

Food banks are community-based, professional organizations that collect food from a variety of sources and save the food in warehouses. The food bank then distributes the food to hungry families and

individuals through a variety of emergency food assistance agencies, such as soup kitchens, youth or senior centers, shelters and pantries. Most food banks tend to collect non-perishable foods such as canned goods because they can be stored for a longer time.

Food rescue programs take excess perishable and prepared food and distribute it to agencies and charities that serve hungry people such as soup kitchens, youth or senior centers, shelters and pantries. Many of these agencies visit the food bank each week to select fresh produce and packaged products for their meal programs or food pantries. Many also take direct donations from stores, restaurants, cafeterias, and individuals with surplus food to share.

Typical food bank donors include large manufacturers, supermarket chains, wholesalers, farmers, food brokers, and organized community food drives. Perishable and prepared foods are typically collected from restaurants, caterers, corporate dining rooms, hotels, and other food establishments for prompt distribution to hungry people in their communities.

Donated food includes leftovers from events, products affected by labeling regulations or manufacturing glitches, test-market products, and food drive collections.

Donating surplus food inventory to food banks can be safe, efficient, and cost-effective. It reduces warehouse storage and disposal costs, and local food banks may pick up donations free of charge. Food banks and other forms of food rescue are quite active in Kitsap County and divert usable food to people in need.

4.2.3 Promotion, Education and Outreach

The SWD employs a number of marketing strategies to reach Kitsap County residents and businesses including printed materials, curriculum, staffing booths at community events, classes and workshops, other electronic means, newspaper ads, and newsletters.

Education, promotion, and outreach programs are described in Chapter 6.

4.2.4 Options for Increasing Diversion

Increased diversion of organic materials can be accomplished by:

- Expanding the emphasis on composting and worm-composting at schools, homes, and farms.
- Improving participation (as measured by both sign-up rate and set-out volume and frequency) in the residential curbside collection program.
- Emphasizing the importance of reducing wasted food in the residential and commercial sectors.
- Providing food waste collection service to groceries, restaurants, institutional kitchens, and other large scale generators of relatively uncontaminated food waste.
- Providing technical assistance and outreach to support management of agricultural food and animal-related wastes in an environmentally sound manner, such as composting on-farm or by promoting the delivery of large animals to composting or rendering plants.
- Fostering relationships between generators and potential processors/end-users. For example, connecting local grocers and restaurants with pig farmers or food rescue organizations.
- Supporting diversion of organic materials into renewable energy production.

4.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policy Objectives were identified:

1) Follow RCW 70.95.010(10) which specifies that local government should work toward eliminating disposal of residential and commercial yard debris in landfills by 2012.

2) Work toward achieving USEPA's goal to reduce disposed food waste by 50% by the year 2030.

3) Expand and increase organic materials recovery from the residential, agricultural, and commercial sectors.

4) Encourage those with contracting and regulatory authority, such as cities, to adopt measures that increase the availability of and participation in recycling of recyclable and organic materials generated by the commercial sector.

5) Encourage the local development of alternative technologies that produce energy or conserve natural resources and minimize impacts to land, water, air, and climate from solid wastes, including organic materials, where such technologies are cost-effective and technically proven.

4.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Continue to promote home composting and natural lawn care as an effective means of reducing exposure to toxics, reducing the volume and toxicity of the waste stream, reducing toxic runoff to surface water, reducing greenhouse gas impacts, and reducing system-wide costs associated with managing organic materials.

2) Expand the existing every-other-week residential curbside yard and vegetative food waste collection program as follows:

- **a)** Educate Kitsap residents about the greenhouse gas reduction benefits associated with composting and replacing synthetic petroleum-based fertilizers with compost.
- **b)** Pilot strategies to increase participation, such as allowing compostable plastic caddy liners and yard waste bags. Evaluate how the liners respond in the composting system and adjust acceptance criteria accordingly.
- **c)** Expand the availability of curbside organic materials collection by expanding the service boundary.

3) Expand the availability, participation, and diversion rate associated with commercial organic materials collection programs. Cities who are negotiating new or updated solid waste contracts are encouraged to include curbside yard and vegetative waste collection in the cost of residential and commercial curbside garbage collection service.

4) Work with City and County agencies and stakeholders to adopt building and zoning ordinances that require new construction and commercial projects, especially restaurants and institutional kitchens, to have food waste collection space available prior to issuing permits.

5) Work with local food growers, producers, manufacturers, food service providers, institutional kitchens, and retailers to expand diversion of organic materials, including vegetative and animal waste, into composting and/or energy production.

6) Continue to promote the recycling of landclearing debris via on-site chipping and wood waste processors.

7) Continue to coordinate activities with KPHD and jurisdictional code enforcement entities to ensure that management of food and yard waste is conducted to minimize nuisances and in accordance with all applicable regulations and performance standards.

8) Support Sewer Utility efforts to investigate economically viable options for managing biosolids in Kitsap County.

9) Encourage the local development of alternative technologies that produce energy or minimize greenhouse gas emissions from organic materials and solid wastes.

10) If statewide waste diversion goals are not reached by 2022, consider disposal bans for materials including, but not limited to, organic materials and C&D if cost-effective recycling services and adequate program enforcement efforts are available by that time.

11) Design and implement a food recovery/rescue program, using the USEPA's food recovery challenge framework.

4.5 REFERENCES/RESOURCES

Brown et al, 2008. Brown, Sally, Kruger, Chad, Subler, Scott, "Greenhouse Gas Balance for Composting Operations", College of Forest Resources, Box 352100 University of Washington, Seattle 98195.

Kitsap County Board of County Commissioners (BOCC). 2016. *Final Kitsap County Comprehensive Plan 2016-2036.* Kitsap County Board of County Commissioners. June 2016.

Kitsap County Department of Public Works, SWD (Kitsap County). 2015. *Existing Curbside Yard and Vegetative Food Waste Collection Areas.* April 2015.

Kitsap County Department of Public Works, SWD (Kitsap County). 2006. Kitsap County 2006 County Organic Waste Management Study. Prepared by Cascadia Consulting Group and LARK Environmental for Kitsap County Department of Public Works, SWD. 2006.

Puget Sound Clean Air Agency, March 19, 2009 memorandum to the Board of Directors "Briefing – Proposed Regulation Amendments Regarding regulation 1, Article 8, Outdoor Burning".

U.S. Environmental Protection Agency (USEPA). 2016. *Sustainable Management of Food*. Information obtained from USEPA website http://www.epa.gov/sustainable-management-food.

U.S. Environmental Protection Agency (USEPA). 2008a. *Composting Environmental Benefits.* Prepared by Katheryn Seckel, Herrera Environmental Consultants, Inc. Seattle, Washington.

U.S. Environmental Protection Agency (USEPA). 2008b. *Backyard Burning.* Prepared by Katheryn Seckel, Herrera Environmental Consultants, Inc. Seattle, Washington.

Washington State Department of Ecology (Ecology). 2016. *2014 Annual Recycling Survey (Internal Report).*

Washington State Department of Ecology (Ecology). 2010. *2009 Washington Statewide Waste Characterization Study.* Prepared for the Washington State Department of Ecology by Cascadia Consulting, Seattle, Washington.

Washington State Office of Financial Management (OFM). 2016. *2016 Official Population Estimates for single-unit housing projections.* Prepared by the Office of Financial Management. April 2016.

CHAPTER 5 - CONSTRUCTION AND DEMOLITION DEBRIS

5.1 INTRODUCTION

This chapter focuses on the opportunities and activities associated with waste reduction, recycling, and disposal of C&D debris, as well as the waste, GHG, and conservation benefits associated with green building.

C&D debris represents approximately 25-30% of Kitsap County's waste stream. Thus, a targeted waste reduction and recycling effort focused on C&D debris will yield significant reduction in disposal volumes.

In addition to reducing waste and its associated costs, recycling C&D debris also reduces GHG emissions. One of the primary ways that recycling reduces GHG emissions is by avoiding emissions associated with producing new materials. Therefore, the use of recycled content products in construction has a direct, significant, and measurable impact on GHG reduction.

The operation of existing commercial buildings accounts for 18% of the total energy consumption and 33.1% of the total electricity consumption in the U.S. (USEPA 2009) The energy consumption associated with commercial buildings contributes 17.5% of the nation's total carbon dioxide emissions (AGC 2007).

Once built, buildings tend to last a very long time, so changes impacting construction and operation have impacts with the potential to benefit owners, occupants, and the surrounding community year after year. A set of practices, collectively known as "green building", focuses on energy efficiency, use of renewable energy resources, water efficiency, environmentally preferable purchasing (reducing the use of water, soil, and wood products, and using recycled content and lower toxicity products), waste reduction and recycling, toxics reduction, indoor air quality, and sustainable communities. The widespread implementation of green building practices is a powerful way to reduce GHG emissions and the use of energy and water, while encouraging re-use and recycling over disposal in the construction and demolition industries.

Builders, demolition contractors, government agencies, building owners and others have been working to implement greener industry practices, such as recycling C&D debris. Increasingly, architects, contractors, local communities, and building owners are interested in opportunities to build and retrofit structures to use less energy, raw materials, and water.

5.1.1 Planning Issues

The significant planning issues facing the management of C&D include:

- Are existing programs sufficient to achieve SWD recycling and diversion goals?
- How can the SWD encourage C&D waste reduction and diversion and support the development of local C&D processing capacity?
- What should the SWD's role be in promoting green building, given that waste reduction and recycling represents one element of the overall environmental benefits associated with this practice?

5.2 EXISTING PROGRAM ELEMENTS

The following section describes existing conditions in Kitsap County for the management of C&D debris with respect to generation, collection infrastructure, processing, markets, and programs aimed at increasing diversion.

5.2.1 C&D Materials in Kitsap County

C&D debris is generated by the construction of residential and commercial buildings; construction of infrastructure such as roads and bridges; and demolition of residential and commercial structures. C&D debris is also generated by ship building, demolition, and other activities at U.S. Naval facilities located within the county.

C&D materials often contain bulky, heavy materials, such as concrete, wood, metals, glass, and salvaged building components. A complication is that materials containing asbestos, lead, and/or other contaminants are sometimes found in structures being demolished. If such debris is improperly managed, loads destined for recycling or disposal could be contaminated.

In general, clean wood, concrete and asphalt, metals, and cardboard are being recycled because there are strong markets for these materials and a competent collection and processing infrastructure. There are also retail stores designed to accept scrap and salvaged/used building materials donated by contractors, builders, and the general public.

Recycling and Diversion Rate

C&D debris is estimated to represent approximately 25-30%, by weight, of the disposed waste stream in Kitsap County (Ecology 2010). This means that increasing C&D recycling can have a significant impact on reducing disposal.

Of the C&D debris that is recycled and diverted, heavy materials such as asphalt and concrete represent a majority of the weight. The disposed portion of C&D debris still contains large quantities of recyclables like wood, gypsum, metals, roofing, plastics and carpet. Wood is a primary target for C&D recycling due to its low capture rate and its ability to be up-cycled into new products, or down-cycled into energy recovery.

5.2.2 Asbestos and Lead

Buildings and other structures may contain asbestos, lead, and other materials that, if improperly managed, can have negative impacts on human and environmental health. Several of the regulations governing construction and demolition activities were developed to assure proper management of asbestos, lead, and other toxics. They are designed to assure the safety of workers who might be exposed to them while repairing, remodeling, or demolishing structures, or when handling the associated wastes and recyclables.

Safety and environmental regulations have a significant effect on the timing and costs of demolition and disposal. For asbestos, the Puget Sound Clean Air Agency and Department of Labor and Industries generally require using specified methods of deconstruction, permit review and approval, worker safety measures, and separate packaging and disposal of asbestos-containing material (ACM). Noncompliance poses a challenge, whether due to lack of awareness or cost-avoidance. One way that those involved in

recycling, hauling, and disposal are affected by noncompliance is that operators are required to protect workers from exposure and to ensure that materials are disposed of in accordance with applicable regulations; however, they often have little control over or knowledge about how well the generator complied with safety and environmental rules. Another problem with noncompliance is that asbestos or lead may be present in loads destined for recycling, where it poses a safety risk and contamination concern.

Compliance with safety and environmental rules associated with C&D debris is the responsibility of the generator. Other parties help to support the generator's compliance. For instance, agency regulators have permit and enforcement authority. Haulers, recycling companies, and disposal operators also have a role, by informing generators about the rules and taking steps to screen improper materials out of the C&D debris stream.

Since contamination of friable asbestos in C&D debris poses an immediate health risk to transfer system workers and customers, an increased effort to educate property owners, builders and contractors about asbestos identification, permits and existing regulations and proper management will be made locally in the coming years. This may be supplemented by more rigorous screening procedures of C&D debris at OVTS for contaminants such as asbestos.

5.2.3 Existing C&D Handling Infrastructure

This section summarizes the existing infrastructure and programs associated with reducing and managing C&D debris.

Re-Use Options

Contractors and homeowners have access to in-county options that help them to donate, repair, buy, and sell used, surplus, and salvaged building materials. Re-using items in this way diverts useful materials away from landfill disposal, and can even help preserve materials of architectural or salvage value.

The internet has greatly enhanced this process. Building materials are advertised for free or for sale via online community websites. Used building materials are also advertised for sale on Craigslist, in online classifieds, in print media such as the Little Nickel, and at the local Habitat for Humanity Store.

There is a demand for used building materials such as scrap wood, drywall, flooring, windows, and plumbing and lighting fixtures because they tend to cost less than if they were purchased new. Kitsap County generally lacks large numbers of historic buildings from which high-value vintage items would typically be salvaged. A store operated by Habitat for Humanity in Bremerton specializes in surplus and used building materials. In addition, buyers and sellers have access to similar stores located in King, Pierce, Clallam, Mason, and Jefferson counties, among others.

Green Building

Green building is part of building healthy, sustainable communities for our future. Green building uses an integrated design approach which considers building location and orientation, site preparation, energy and water efficiency, material selection, and indoor environmental quality (USEPA 2009b). Definitions of green building vary, but the movement has three main goals:

- Ensure a healthy productive indoor environment for occupants to work and live

- Prevent negative impacts to our environment and improve its health
- Reduce operating costs and increase profitability for building owners through energy and resource conservation

Certification programs such as LEED and Built Green™ have become important tools to establish credibility for designers, builders, buyers, and funding agencies interested in green building. Certification provides a clear way to communicate the benefits a property offers and about the skill of the designers and builders.

Since 2005, Washington State has specified that public schools and public buildings should be "high-performance" which means that if they receive funding through a State capital budget, they must be certified to at least the LEED Silver standard (Chapter 39.35D RCW).

The SWD has a long history of leadership promoting green building. Our first partnership was with Town and Country Markets in 1995. The result was the cost-effective construction of the Central Market using a variety of recycled content building materials.

The SWD partnered with the South Kitsap High School's Project Teamwork program in 1996 to construct a Model Conservation Home in Port Orchard. The home showcased energy efficiency, improved air quality, the use of resource-efficient materials, and job-site waste reduction.

In 1997, the SWD also worked with the Homebuilders Association, now called the Kitsap Building Association, to develop and implement the first residential and commercial green building program in Washington State, the "Build a Better Kitsap" program, subsequently modified several times into the "Built Green" program currently in use in the Puget Sound region. The original program was also used as a model by the National Association of Homebuilders for their program. The Kitsap Building Association currently manages the local Built Green™ program, which sets standards and manages a certification program that is designed for residential construction.

A partnership between the SWD and Kitsap Community Resources resulted in a LEED Silver Certification for their new headquarters in Bremerton in 2008.

The Kitsap Home Builders Foundation partnered with WSU, Ecology, and a variety of local City and County agencies to develop and publish the "Low Impact Development Guidance Manual – A Practical Guide to LID Implementation in Kitsap County".

One aspect of green building that has a significant potential to enhance waste reduction and deserves additional attention is in the area of designing buildings to facilitate disassembly and material re-use. Also known as "design for disassembly" and "design for deconstruction", it focuses on the idea of creating high performance buildings for today that can serve as useful resources for the future.

Basic green building ideas that owners, managers, and contractors can readily implement at any site include:

- Recycle and re-use construction and demolition debris
- Limit the use of hazardous materials on the job site
- Protect existing vegetation and donate cleared trees or mulch them for use on site
- Make environmentally friendly purchasing decisions
- Procure and install more energy efficient mechanical and electrical systems

- Reduce particulate matter and nitrogen oxide emissions from existing equipment (to the extent economically and technologically feasible)

The positive impact of green building is not limited to the solid waste and recycling field. A key area requiring attention is to review City and County building codes and permit requirements. Ideally, codes and permits provide incentives for desired actions and disincentives for undesirable actions. Developing regulatory language that balances normal building code concerns with the desire to increase recycling and re-use, improve energy efficiency, and allow small scale renewable energy, could improve the success of green building over the long-term.

Recycling

Generation of C&D debris is inextricably linked to local, regional, national, and global economic cycles that affect residential and commercial development. The amount of C&D debris recycled depends on a number of factors, including transportation costs like fuel and hauling fees, the relative cost of disposal versus recycling, on-site space available for recycling containers, permit timing, local receiving and processing options, and the demand for recycled C&D materials such as hog fuel and building products made with recycled content. Clean wood, concrete and asphalt, metals, and cardboard, are currently the most recycled components of the C&D stream. Gypsum, roofing, plastics, carpet and other materials, are currently the least likely to be recycled due mainly to a lack of processors in the county.

Collection

Contractors generally mix the different types of recyclable and non-recyclable C&D debris for collection, in which case it is collected as solid waste. However, contractors and haulers will source-separate concrete and asphalt, clean wood, metals, and cardboard, when significant cost savings provide an incentive for recycling these materials. Since few options are available, wastes such as creosote-treated wood, gypsum, and roofing, are often disposed.

C&D debris that is source-separated into recyclable materials may be managed as commercial recycling as long as a separate container is used for non-recyclable solid waste. A hauler that collects commercial recycling for recycling purposes must first obtain a common carrier permit (Chapter 81.80 RCW) from the WUTC and register as a transporter of recycling material with Ecology (Chapter 173-345 WAC). The source-separated recyclable materials must be taken to a recycler, not to a solid waste transfer station or landfill. A hauler of "commercial recycling" collected and transported to a disposal facility requires a certificate of public convenience and necessity (Chapter 81.77 RCW).

Only BDI, WMW and the City of Poulsbo (within its city limits) are approved haulers of solid waste within Kitsap County. Another company may dispose of C&D debris only if it self-hauls its own material or does so as a private carrier, where disposal of garbage is incidental to its primary business function.

C&D debris generated by home remodelers or others who generate small volumes is often co-mingled with garbage via the curbside collection or self-haul system. C&D debris that is co-mingled is managed as regular MSW. Existing collection services are sufficient to serve the need for C&D collection at this time.

Processing

The availability of local processing capacity is currently a barrier to increased C&D recycling. More C&D debris could be diverted away from disposal if there were an in-county facility with the capability to separate mixed C&D debris into separate wood, cardboard, and other recycle streams.

Such facilities exist in the Puget Sound region, but transportation costs make using them undesirable for many of the waste generators who are located in Kitsap County.

There is currently one operation testing the feasibility of recycling mixed C&D in Kitsap County. In 2015, Olympic Organics began accepting mixed material and sorting out wood and gypsum with the intent of building up capacity and sorting technology over time. This pilot project is ongoing and still in the testing phase. Due to limited capacity at the lone facility, coupled with a geographical service gap, the SWD is considering the option of working with WMW to develop space at OVTS where loads of C&D recyclables, separated from garbage, could be consolidated for shipment to an out-of-county sorting facility. This would likely require a significant MSW rate increase to implement incentive-based rate structures.

Table 5-1 lists the major facilities that handle specific source-separated C&D materials. To date, there is no facility locally with the ability to fully separate co-mingled C&D so more of it can be recycled.

Table 5-1
C&D Materials Processors Currently Available

Material	Processor
Asphalt/Concrete	Allen Shearer Trucking & Landscape Supplies, Kitsap Reclamation and Materials, Peninsula Topsoil, Recovery 1, CCZ, Inc.
Gypsum	New West Gypsum, Recovery 1, Olympic Organics
Metals	Navy City Metals, Kitsap Recycling (pickup service), Horseshoe Lake Auto Wrecking, Yank-a-Part, Recovery 1
Clean Wood	Allen Shearer Trucking & Landscape Supplies, North Mason Fiber, Olympic Organics, Recovery 1, Peninsula Topsoil, Williams Wood Waste
Used Building Materials	Habitat for Humanity, St. Vincent DePaul

Illegal Dumping

Illegal dumping of C&D has been a problem, though the County has several programs (e.g. Public Property Illegal Dumpsite Clean-up, Private Property Clean Up Assistance Program) to discourage and monitor the practice. Illegal dumping is discussed in Chapter 13: Regulation and Enforcement.

Markets

Markets for C&D materials such as asphalt and concrete, metals, clean wood, and used building materials have historically been strong. Local markets for gypsum and roofing are weak. Current market conditions are summarized below.

- **Asphalt and concrete:** Asphalt and concrete are recycled in significant quantities. According to Ecology's Recycling Survey, approximately 4,800 tons were diverted from landfill disposal in Kitsap County in 2014 (Ecology 2016). Asphalt and concrete are processed at several locations including Allen Shearer Trucking and Landscape Supplies, CCZ, Inc., Kitsap Reclamation and Materials, and Peninsula Topsoil.

  There is currently strong demand for recycled asphalt and concrete for use as road base, new road surfacing materials, and other structural fill applications.

- **Gypsum:** The market for recycled gypsum generated in Kitsap County is weak. The nearest gypsum processor is located in Fife, Washington, and trucking costs add significantly to the cost of recycling the material. Olympic Organics does accept gypsum, however, and provides an economical outlet in the north end of the County.

  Regionally, demand for recycled gypsum is limited by the capacity of new gypsum drywall manufacturers located in Seattle and Tacoma. New markets may be emerging for gypsum as an ingredient in the production of cement or as a soil amendment.

- **Metals:** Naval facilities are the largest generators of scrap metal in Kitsap County. These metals are generated primarily from ship deconstruction.

  Scrap metal markets have slumped in the recent past, and are currently rather flat. Access to processors is relatively good in Kitsap County though.

- **Clean Wood:** Clean wood includes urban wood such as pallets and crates, and wood from construction projects. According to the 2014 Ecology Recycling Survey, 214 tons of wood were recycled, and approximately 1,500 tons were diverted for energy recovery in Kitsap County (Ecology 2016). Contractors and the Navy are the largest local generators.

  Clean wood is processed on-site using mobile chippers or mixed into compost and soil amendments near the south end of Kitsap County by North Mason Fiber, Allen Shearer Trucking and Landscape Supplies, and Peninsula Topsoil. In the central and northern parts of the county, clean wood is processed by Olympic Organics and Williams Wood Waste.

  Clean wood is chipped and sold to local and regional paper mills as hogged fuel. Clean wood has a higher British Thermal Unit (BTU) value than landclearing debris, and recycled wood fibers are longer than fibers from recycled paper, making it a good alternative for pulping. Secondary wood products include designer mulches for landscaping applications, pulp and paper applications, reconstituted panel board (e.g., fiber and particleboard), and composite products.

  Wood-derived fuel markets have dipped over the last few years, due to significant decreases in demand due to mill closures and the low price of crude oil.

- **Roofing, carpet, and other materials:** Roofing, carpet, and other materials (such as painted lumber from demolition, and creosote-treated wood) are accepted for disposal at County disposal facilities. The market for recycled roofing, and carpet/carpet pad generated in Kitsap County is weak.

- A new facility to process carpet and pad opened in Tacoma in 2016. This facility is still working to increase their throughput, but may be an outlet for carpet recycling if private industry or the SWD can find an opportunity to economically collect and transport material to Tacoma.

5.3 POLICY OBJECTIVES

Based on an analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policy Objectives were identified:

1) Expand local C&D processing capacity and markets in order to increase waste reduction and recycling of the construction and demolition materials generated in Kitsap County.

2) Implement incentive-based rate structures that encourage the growth of C&D markets in Kitsap County.

3) Find solutions to overcome transportation barriers associated with marketing C&D materials.

5.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Increase residential and commercial C&D recycling as follows:

- **a)** Support the addition of C&D processing capacity at the Olympic View Transfer Station and other in-county locations.
- **b)** Develop a rate structure that provides an incentive for customers to source-separate garbage from C&D in order to facilitate processing of mixed C&D and/or segregated C&D materials.
- **c)** Work with contractors and industry associations such as the Kitsap Building Association on programs that encourage source-separation of C&D materials for recycling.
- **d)** Work with City and County agencies to adopt building and zoning ordinances that require a mandatory waste diversion plan for projects over a specified size or value.
- **e)** Promote salvage and re-use of C&D materials.

2) Continue to promote and support sustainable building practices and certification programs such as Built Green™ and LEED for new construction and for major remodels.

3) Encourage the use of environmentally preferable building materials in construction and remodeling.

4) Actively support the development of product stewardship laws at the state and national level that require manufacturers or retailers to provide collection, recycling, and/or safe disposal programs for target products.

5) Work with City and County agencies to adopt building and zoning ordinances to identify and remove regulatory barriers to green building, and to encourage increased recycling and the use of recycled products in remodeling, construction, and demolition as a part of the permit process.

6) If statewide waste diversion goals are not reached by 2022, consider disposal bans for materials including, but not limited to, organic materials and C&D if cost-effective recycling services and adequate program enforcement efforts are available by that time.

7) Educate property owners, builders and contractors of regulations on contaminants of C&D, including lead and asbestos. Provide better screening of C&D deliveries to recycling centers or OVTS for contaminants, particularly asbestos.

5.5 REFERENCES/RESOURCES

Associated General Contractors (AGC). 2007. Memorandum titled "*Talking Points on Green Construction"* June 2007.

U.S. Environmental Protection Agency (USEPA). 2009. Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 – 2007, Public Review Draft, Environmental Protection Agency.

Washington State Department of Ecology (Ecology). 2016. *2014 Annual Recycling Survey*, (Internal Report).

Washington State Department of Ecology (Ecology). 2010. *2009 Washington Statewide Waste Characterization Study.* Prepared for the Washington State Department of Ecology by Cascadia Consulting, Seattle, Washington.

CHAPTER 6 - PROMOTION, EDUCATION, AND OUTREACH

6.1 INTRODUCTION

The Solid Waste Division (SWD) employs a number of methods to reach residents, students, and businesses, providing environmentally sound strategies for managing solid and moderate risk waste, and connecting generators with available services.

Education and outreach programs address sustainability issues including product stewardship, waste reduction, recycling, organics, construction and demolition debris management, business waste, HHW, environmentally preferred purchasing, litter control, and reducing climate impact.

6.1.1 Planning Issues

The significant planning issues facing the promotion, education, and outreach program include:

- How can the SWD best enhance existing programs by using new technologies and marketing methods to communicate most effectively with target audiences and facilitate behavior change?
- How can the SWD monitor the effectiveness of various promotion, education, and outreach initiatives?
- What should the SWD's role be in promoting sustainability, given that waste management represents a portion of the overall environmental benefits associated with the broader and more multi-disciplinary concept of sustainability?
- Are current programs meeting the needs of the Division?

6.2 EXISTING PROGRAM ELEMENTS

Summaries of existing SWD promotion, education, and outreach programs are provided below. Outreach programs currently target residents, students, and businesses.

Kitsap Public Health District (KPHD) also provide regular outreach and education to both businesses and residents. As a partner of the SWD, KPHD utilizes many Division materials and online resources in their efforts. KPHD also maintains a solid waste "inspector of the day," whose job it is to immediately respond to solid and hazardous waste complaints.

Kitsap1

Kitsap1 serves as the main point of contact for all County programs and provide one-stop service for customers who need information about Solid Waste programs. Kitsap1 call agents provide information about where to take solid waste and recyclables, hours of operation at various facilities, resources for HHW and business waste management, and answer assorted inquiries related to garbage and recycling. They provide breaking news during emergencies and inclement weather, and serve as a clearinghouse for publicity related to the Public Works Department's programs.

Solid Waste Division Website

The SWD webpage, http://www.kitsapgov.com/sw/default.htm, is a one-stop resource of information about waste reduction, recycling, and disposal. People can find links to 1-800-RECYCLE, E-cycle Washington, as well as information about events and facilities. The popular "What Do I Do With It?" link provides information 24/7 on many topics of interest.

School and Youth Activities

The SWD gives teachers the support and materials needed to integrate age-specific environmental education into classroom curriculum through presentations, hands-on activities, and field trips. Students and teachers learn to apply concepts of waste reduction, re-use, and recycling. SWD school programs strive to be "project-based" and align with appropriate educational standards.

The SWD also partners with Washington Green Schools to promote sustainable activities in schools, championed and carried out by students.

Waste Wi$e @ Work Sustainability Technical Assistance Program

A variety of recycling collection services are available to Kitsap County businesses. The SWD provides technical assistance to help businesses determine the best options to prevent waste, increase recycling, and increase the use of environmentally preferred products.

Businesses that achieve a 40% or greater recycling rate are also recognized as Waste Wi$e @Work Certified Businesses.

Everyday Kitsap

Formerly known as the "Waste Wi$e Communities" newsletter, this publication has evolved from a solid waste-focused educational newsletter to a more refined magazine-style publication with contributions from all Public Works divisions. In 2016, the publication was rebranded to "Everyday Kitsap". The SWD is a major contributor to the publication and contributes to a significant portion of its funding. The frequency of publication remains annual, and is sent to all Kitsap County households.

Environmentally Sustainable Lawns and Gardens

Most of the SWD's outreach on sustainable gardening is conducted by the WSU Extension's Master Gardener Program. The Division provides the Master Gardeners with necessary publications and materials and public outreach is conducted by Master Gardeners through trainings, demonstrations, and events.

Built Green™ and LEED

Built Green™, formerly the Build a Better Kitsap program, is a market-based approach that promotes environmentally friendly home building. Kitsap County also promotes construction of LEED buildings and supports donation of surplus building materials to charities and stores who sell them for re-use.

Product Stewardship

Kitsap County is a member of the NWPSC, a regional planning group of local governments from Washington and Oregon who develop and share promotional materials to help educate the public about stewardship programs. Current NWPSC projects address electronic wastes, mercury-containing lamps, paint, mattresses, carpet, solar panels, and unused medications.

Small Quantity Generator Technical Assistance Program

Small Quantity Generator (SQG) technical assistance is shared between the SWD and KPHD. Program activities are discussed in Chapter 11 (Section 11.2.2).

Special Events

Kitsap County also sponsors and hosts special events to highlight recycling, re-use, and sustainability, including:

- Earth Day
- Kitsap Recycles Day
- Treecycling
- Yard Waste Amnesty Days
- Furniture Amnesty Days
- National Public Works Week
- Waste Free Holidays
- Kitsap Water Festival

6.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policy Objectives were identified:

1) Promote solid waste program goals and objectives using education and outreach tools. In order to promote sustainability initiatives in which solid waste program goals and objectives are an element of a broader multi-disciplinary environmental goal, SWD policy is to seek out partnerships with other public, private, and non-profit entities, as appropriate.

2) Expand the use of electronic media such as audio, video, and internet technology as a means of communicating with audiences and reducing paper waste, and to continue to provide county-wide mailings, targeted publications, point-of-sale materials, and newspaper/magazine advertising as deemed appropriate.

3) Emphasize reducing exposure to toxics, reducing the toxicity and volume of wastes, and implementing safe and effective management of MRW in its promotion, education, and outreach programs.

6.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Participate in forums, workshops, initiatives, and programs that effectively further solid waste program goals and objectives.

2) Explore the use of current and emerging information technologies such as small screen videos, internet advertising, interactive educational web games, internet-based focus groups, and webinars to reach targeted audiences and obtain public input so that they can be used in an effective manner. Emerging technologies may be used in conjunction with or in place of mail and printed media depending upon the needs of the project.

3) Continue to use mail and printed media to reach targeted audiences. Mail and printed media may be used in conjunction with or in place of emerging technologies depending upon the needs of the project.

4) Continue to produce outreach materials to increase awareness of covered load requirements, and continue to charge an uncovered load fee for any loads not in compliance with these regulations. Provide direct contact outreach at disposal facilities, as appropriate, regarding secured loads.

5) Seek out partnerships with other public, private, and non-profit entities as appropriate to reach certain target audiences and/or delivering specific messages.

6) Continue to provide technical assistance to businesses that generate dangerous wastes on reducing the volume and toxicity of wastes and preventing pollution, as a collaborative effort of the KPHD Business Pollution Prevention Programs, the Local Source Control Program, and the SWD Small Quantity Generator Program.

7) Continue to develop and provide promotion, education and outreach services that support residential and business efforts to reduce the volume and toxicity of waste.

8) Continue to offer programs and awards that publicly recognize individuals, businesses, and agencies that exercise leadership and accomplishment in waste reduction, recycling, and environmental protection.

9) Monitor the effectiveness of various promotion, education, and outreach initiatives and techniques using website counters, database logs, surveys, and interpersonal communication.

10) Continually evaluate outreach programs/campaigns for effectiveness using tangible metrics and measures of efficiency. Redesign/reconsider programs that are showing signs of ineffectiveness or inefficiencies. Use process improvement techniques to optimize efficiency.

11) Use community-based social marketing theory (McKenzie-Mohr 2011) in the design of all new outreach programs, focusing on behavior change and measurable results.

12) Develop new curriculum for youth education programs, focused on project-based learning, and considering mandated curriculum requirements in schools.

6.5 REFERENCES/RESOURCES

McKenzie-Mohr, Doug. 2011. *Fostering Sustainable Behavior*. New Society Publishers. Gabriola Island, BC, Canada.

CHAPTER 7 - COLLECTION

7.1 INTRODUCTION

This chapter addresses collection, which is how garbage, yard and food debris, and recyclables are transported from the residence, business, or industry where it was generated, to a sorting, transfer, recycling, or disposal facility.

Collection consists of residential curbside collection, commercial collection, and self-haul. This chapter describes existing program elements in each area, describes the regulatory structure that governs collection, and identifies areas for future action.

7.1.1 Planning Issues

The significant planning issues facing the management of collection programs include:

- Are existing programs sufficient to achieve SWD recycling and diversion goals?
- Does the current level of service for curbside recycling meet the needs of all county residents?
- What means are available to reduce the use of fuel and the greenhouse gases and other emissions associated with collection?
- Should the County encourage customers to use available curbside collection services, instead of self-hauling their typical household wastes and recyclables, in order to encourage greater levels of recycling, reduce fuel use, costs, and emissions associated with transportation, and achieve benefits associated with greater route density?

7.2 EXISTING PROGRAM ELEMENTS

This section summarizes existing collection programs and discusses issues affecting and affected by collection programs.

7.2.1 Residential Curbside Collection

Residential collection of garbage, recyclables, and yard and food debris is regulated under Chapter 81.77 RCW and Chapter 480-70 WAC. Commercial collection is regulated under Chapter 81.80 RCW. These statutes are administered by WUTC.

Under Chapter 81.77 RCW, incorporated and unincorporated areas have different types of authority over residential collection available to them. In incorporated areas, cities have the option of operating their own collection program, contracting for collection service, or using the local WUTC "certificated" hauler. In unincorporated areas, State law grants the certificated hauler exclusive authority to provide service throughout its territory and the County neither selects nor regulates the hauler.

WUTC issues G-certificates that provide a hauler the exclusive right to collect garbage in a specified territory subject to WUTC regulation of rates, service levels, and safety. To the extent that solid waste

management plan recommendations do not conflict with WUTC regulation or policy, the WUTC implements Plan recommendations about collection rates, service levels and materials.
The ability to offer their own service or to contract for collection service allows cities to direct levels of service, rates, and rate structures for their businesses and residents. There are many examples of cities in Washington, and across the country, who have used the authority granted to them to implement collection programs that incorporate strong incentives for residents and businesses to decrease disposal by reducing waste volumes, recycling more materials, and using yard and food debris collection services.

Garbage: Curbside garbage collection service is available to all residents of Kitsap County. In the County unincorporated areas and on Bainbridge Island, each resident can decide whether to sign up for curbside garbage service. In Bremerton, Poulsbo, and Port Orchard, local ordinances make garbage collection mandatory, which means that customers will be billed for the service whether they use it or not. Customers may select a level of service that is appropriate to the amount of waste they generate.

Over time, the SWD will re-evaluate whether mandatory curbside garbage collection should be considered. Under current state law, this would require the formation of a solid waste collection district pursuant to Chapter 36.58A RCW.

Recycling: Curbside recycling has been available since 1994. It is available to all single-family and multifamily residential units located in the county.

Participation is voluntary, but all residents who subscribe to garbage service are required to pay for it whether they participate or not. However, participation is advantageous, since recycling helps customers reduce the level of garbage service they would otherwise need, thereby saving them money on the cost of their garbage bill.

Yard and food debris: Curbside yard and food waste collection service is available to the 67% of single-family residences in the county, which are located inside of the residential burn ban boundary and auxiliary areas added through 2016. The households located outside of the collection boundary do not have access to curbside yard and food waste collection. Therefore, these residents must compost on-site or self-haul to OVTS or a private composting facility if they wish to divert yard and food waste.

US Naval Facilities

The Naval facilities in Kitsap County haul their own commercial and industrial solid waste to OVTS for disposal. The Navy also hauls recyclables from their on-base recycling center to various recycling markets. The base operating support contractor, WMW, provides residential collection of garbage and recyclables on base and transports to OVTS.

Impact of Annexations on Collection Programs

Cities sometimes expand their boundaries by annexing land. Once an annexation is approved, the population becomes subject to City codes and regulations, which, in the case of many cities, includes the requirement to participate in mandatory curbside garbage collection. In terms of who performs the hauling, what services are offered, and at what cost, State law provides for a minimum 7-year transition period after the City notifies the hauler, at which time the service will change over from unincorporated area service to incorporated area service (WUTC 2017).

Table 7-1
Residential Collection Service Summary

Area	Service Provider, Address	Garbage		Recycling		Yard & Food Debris
		Frequency	Container Size	Frequency	Materials Collected	
Unincorporated Kitsap County	Waste Management 9300 SW Barney White Rd Bremerton, WA 98312 UTC Certificate #G-237	Voluntary: weekly, every-other-week (EOW), monthly, or on-call pick-up	20 or 32-gallon can; or hauler-provided 35, 64, or 96-gallon cart	EOW single stream recycling: hauler-provided 96, 64, or 35-gallon cart	All designated recyclables listed in Chapter 3	Inside burn ban boundary, EOW grass, leaves, branches <4" diameter and <4' long, houseplants, food waste, select paper products, shredded paper, hauler-provided 96-gallon cart
Bainbridge Island	Bainbridge Disposal[1] 9423 Business Park Lane P.O. Box 10699 Bainbridge Island, WA 98110 UTC Certificate #G-143	Voluntary: weekly and monthly	20 or 32-gallon can	EOW single stream recycling: hauler-provided 96 or 64-gallon cart	Same as above	Same as above
Bremerton	Waste Management 9300 SW Barney White Rd Bremerton, WA 98312	Mandatory: weekly	20 or 32-gallon can or hauler-provided 35, 64, or 96-gallon cart	Same as unincorp-orated county	Same as above	Same as above
Port Orchard	Waste Management 9300 SW Barney White Rd Bremerton, WA 98312	Mandatory: weekly or EOW	Hauler-provided 35, 64, or 96-gallon cart	Same as unincorp-orated county	Same as above	Same as above
Poulsbo	Garbage: City of Poulsbo 780 NE Iverson Street P.O. Box 2275 Poulsbo, WA 98370 Recycling/Yard Waste: Bainbridge Disposal 9423 Business Park Lane P.O. Box 10699 Bainbridge Island, WA 98110	Mandatory: weekly	10, 20 or 32-gallon can or hauler-provided 64-gallon cart	EOW single stream recycling: hauler-provided 96 or 64-gallon cart	Same as above	Same as above

[1] The City of Bainbridge Island authorized the WUTC to regulate the garbage and recycling services provided by Bainbridge Disposal, Inc.

7.2.2 Commercial Recycling Collection Programs

Collection of recyclables from commercial businesses is regulated under a different set of rules than collection of recyclables from residential customers. In contrast to the residential rules where exclusive territories are granted in exchange for agency oversight, Chapter 81.80 RCW. allows for competition in commercial recycling collection, and does not govern territory, service levels or materials collected.

Where haulers operate under WUTC oversight, local government has little ability to impact the price, type, or availability of commercial collection services.

Cities that assume contract authority over waste collection services can specify service levels, including materials to be collected, as a term of the contract. Cities cannot grant exclusive right to collect recyclables to any particular hauler. They can assure the availability of minimum levels of recycling service by specifying contract terms that direct contracted hauler to collect certain materials.

Curbside garbage collection is available to all businesses in Kitsap County. Commercial commingled recycling service is available on a limited basis in the unincorporated area – with the primary limitations being cost, efficiency, and container logistics. Collection of yard debris or food waste from commercial generators is available, but is generally cost prohibitive to low feedstock-generating operations. Most businesses that use the service are large institutions that have a cafeteria, restaurants, and grocers.

7.2.3 Self-Haul System

In 2015, 11,272 tons of garbage were collected at Hansville, Silverdale, Olalla RAGFs and the Bainbridge Island Transfer Station via the self-haul system by people who deliver materials directly to the facilities. Many of the customers classified as self-haulers are commercial businesses who deliver loads in trucks or trailers. These businesses are typically landscapers, construction contractors and remodeling businesses, demolition contractors, roofers, and similar businesses. The rest are residential self-haulers who haul their own wastes.

Current rates at the County-owned solid waste facilities were established after a comprehensive rate study completed in 2013. Rates were adopted at that time through 2017 to reflect actual costs of services. To address increasing costs and the capital needs of aging facilities, a rate study is proposed in 2017 to determine a rate structure which will support the necessary revenue requirements.

Handling residential self-hauled garbage has a higher unit cost than handling commercially-collected garbage. The costs associated with self-hauling include owning and operating the RAGF system (see Chapter 8) to serve self-haulers. The largest budget items, transportation, staffing, and funding capital improvements are proportional to tonnage and customer count.

Costs and environmental impacts can be reduced by encouraging residents to switch from self-hauling to curbside collection. This might involve increasing the self-haul minimum rates charged at the RAGFs and OVTS, decreasing the hours facilities are open to self-haulers, and benchmarking RAGF rates to the cost of curbside collection services.

7.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following SWD Policies were identified:

1) Encourage residential customers to use curbside collection services instead of self-hauling their normal household recyclables and wastes.

2) Encourage measures that increase the availability of and participation in recycling of recyclable and organic materials generated by the commercial sector.

3) Work with haulers to provide convenient and cost-effective recycling services for businesses.

4) Support improving mileage, reducing emissions, and reducing greenhouse gas emissions associated with solid waste collection and processing, including the use of rate adjustments or other methods to help fund implementation costs.

7.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Reduce greenhouse gas emissions associated with transportation and processing of wastes and recyclables as follows:

- **a)** Promote participation in curbside collection programs
- **b)** Support efforts of waste haulers that increase mileage and reduce emissions.

2) Expand the existing every-other-week residential curbside yard and vegetative food waste collection program, as follows:

- **a)** Expand organic materials collection programs by adding additional compostable papers and foods to the existing collection service.
- **b)** Evaluate methods of increasing participation in curbside organic materials collection services, then implement the selected options.
- **c)** Expand the availability of curbside organic materials collection by expanding the service boundary.

3) Continue to support efforts to increase the recycling rate and to increase participation in recycling programs in Kitsap County. This may include revising the list of materials accepted in curbside collection programs, expanding the availability of curbside collection, implementing rate incentives, and other techniques.

4) Expand the availability, participation, and diversion rate associated with commercial organic materials collection programs. Cities who are negotiating new or updated solid waste contracts are encouraged to include curbside yard and vegetative waste collection in the cost of residential and commercial curbside garbage collection service.

5) Consider lobbying to change the existing regulatory system that governs collection if it is found to inhibit the County's ability to meet solid and hazardous waste management goals.

7.5 REFERENCES/RESOURCES

Washington Utilities and Transportation Commission (WUTC). 2017. Solid Waste Carriers Website, www.utc.wa.gov/regulatedIndustries/transportation/solidWaste/Pages/default.aspx.

CHAPTER 8 - TRANSFER SYSTEM FOR WASTE AND RECYCLABLES

8.1 INTRODUCTION

This chapter evaluates the transfer system for waste and recyclables. Within Kitsap County there are seven facilities which receive and transfer solid waste and recyclables. There are three drop-box facilities, in Kitsap County called Recycling and Garbage Facilities (RAGFs), one privately owned and operated transfer station, one City-owned transfer station that accepts only its own commercially-hauled waste, one facility that accepts recyclables but does not handle wastes, and OVTS. They are listed below:

- Bainbridge Island Transfer Station
- City of Poulsbo Transfer Station
- Hansville RAGF
- Olalla RAGF
- Silverdale RAGF
- Poulsbo Recycle Center (PRC)
- Olympic View Transfer Station (OVTS)

Customers who use PRC and the RAGFs are known as self-haulers. Some self-haulers also use the Bainbridge Island Transfer Station and OVTS for recyclables and garbage disposal. Self-haulers include small businesses and individuals who haul their own wastes and recyclables rather than using curbside collection services. Customers at RAGFs unload wastes by hand and place them into open roll-off containers.

OVTS accepts wastes from self-haulers and commercial vehicles that include garbage trucks designed to tip waste on to a floor where it can be pushed with a loader into an automated compactor. Waste is compacted into rail-compatible containers and sent via rail to an approved Resource Conservation Recovery Act (RCRA) "Subtitle D" MSW landfill: Columbia Ridge Landfill near Arlington, Oregon. Bainbridge Island Transfer Station is designed to accommodate self-haulers and the commercial vehicles operated by Bainbridge Disposal, Inc. (BDI). Due to size and permit constraints, other commercial tipping trucks are not accepted at Bainbridge Island Transfer Station. The City of Poulsbo Transfer Station accepts only commercially-hauled waste from the City.

Wastes collected at the RAGFs are hauled in roll-off containers via a County contractor to OVTS where they are managed via the tipping floor, compactor, and rail delivery to the landfill. Curbside recyclables are hauled to a material recovery facility where they are processed for delivery to recyclers. Certain materials that are source-separated and collected in smaller quantities, such as sharps, oil, antifreeze, fluorescent lights, and appliances are managed in accordance with their specific hazards, under separate contracts, when applicable.

8.1.1 Planning Issues

The significant planning issues facing the transfer system include:

- Should the SWD encourage customers to use available curbside collection services instead of self-hauling their typical household wastes and recyclables, in order to encourage greater levels of recycling, reduce fuel use, costs, and emissions associated with transportation, and achieve benefits associated with greater route density?
- Should the SWD use rate structures to encourage delivery of large loads and loads of source-separated C&D waste directly to OVTS? In general, it is less costly to the system overall if customers deliver wastes directly to OVTS instead of to the RAGFs.
- Should the SWD consider reducing hours and/or eventually closing any facilities, directing customers to use curbside collection services and/or OVTS in its place?
- Should the SWD support the addition of a separate scale and tipping area dedicated to self-haulers at OVTS? A new self-haul area at OVTS would improve wait and processing times for commercial and self-haul traffic and open up space where source-separated C&D materials could be recovered.

8.2 EXISTING PROGRAM ELEMENTS

The RAGFs are not equipped with scales and charge customers based on the estimated volume of inbound waste material rather than weight. OVTS is equipped with scales, and weighs inbound materials. Recyclables, other than white goods, are accepted at no charge. Table 8-1 lists materials currently accepted at the public transfer system facilities.

Brief descriptions of each facility follow, including observations made during site visits. Site observations and waste projections indicate that:

- Waste-handling capacity is largely sufficient to handle current and projected volumes. However, the layout of the Silverdale RAGF makes it difficult to manage the number of customers resulting in long lines, unsafe traffic patterns, and long wait times.
- In general, the RAGFs are aging and would benefit from upgrade and refurbishment. Traffic circulation patterns are less than optimal, stormwater quality issues exist and attendant facilities are minimal. Upgrades made at the Hansville RAGF could be evaluated for improvements at the other transfer system locations.

Bainbridge Island Transfer Station

The Bainbridge Island Transfer Station is owned and operated by BDI, who hauls the collected solid waste to OVTS. Recyclables are hauled to several different locations both within and outside Kitsap County. There are several independent recycling programs on Bainbridge Island that are hauled by other independent companies, including oil and antifreeze, white goods, electronics and books.

At the Bainbridge Island Transfer Station, MSW and commercially collected recyclables materials are mechanically dumped into roll-off containers, while self-haulers unload materials by hand into separate roll-off containers.

The transfer station site has had numerous upgrades to address issues with customer safety, traffic routing, and storm water quality. It is permitted under the Solid Waste Regulations, Kitsap County Board of Health (KCBH) Ordinance 2010-01 and Chapter 173-350 WAC.

Table 8-1
Waste Materials Currently Accepted at Public Facilities

Material	Bainbridge Island Transfer Station	Hansville RAGF	Olalla RAGF	Silverdale RAGF	Poulsbo Recycle Center	OVTS
Commercial Waste	✓					✓
Self-Haul Waste	✓	✓	✓	✓		✓
Tires	✓*					✓
Electronics	✓					✓
Household Recyclables	✓	✓	✓	✓	✓	✓
Yard Debris	✓					✓
Wood Debris	✓					✓
Scrap Metal	✓			✓	✓	✓
Sharps	✓	✓	✓	✓	✓	✓
Used Oil	✓	✓	✓	✓	✓	✓
Used Antifreeze	✓	✓	✓	✓	✓	✓
Household Batteries	✓	✓	✓	✓	✓	✓
Vehicle Batteries	✓	✓	✓	✓		
White Goods	✓	✓	✓	✓	✓	✓
Compact Fluorescent Lights	✓	✓	✓	✓	✓	✓
Used Oil Filters	✓	✓	✓	✓	✓	✓

* Limited number and size collected.

City of Poulsbo Transfer Station

The City of Poulsbo's Transfer Station is not open to the public. It operates as a consolidation center for city and contracted commercial haulers for removal of garbage collected from Poulsbo residents. All materials go to permitted facilities post-consolidation. MSW is delivered to OVTS. Specific downstream locations for recyclables depend on contractual agreements between the City and selected collection and hauling vendor(s).

Hansville Recycling and Garbage Facility

Hansville RAGF is owned and operated by the SWD. The facility has been upgraded to continue to meet the needs of area residents for the foreseeable future. A County contractor, WMW hauls the garbage and recyclables to OVTS. Residential self-haulers comprise the majority of users, though some small to medium-sized businesses use this facility.

The following site improvements have been made to the facility during the past several years:

- Installation of an attendant's building in 2010 to replace a poor-condition, decaying booth
- Upgrades to utilities, including internet connections and a municipal water line
- Installation of a back-up generator in 2015 to allow for operations during power outages
- Installation of a concrete pad in the glass recycling area
- Upgrades to security systems, including surveillance cameras and full-facility fencing

Olalla Recycling and Garbage Facility

Olalla RAGF is owned by the County and currently operated by a County contractor. Garbage and recyclables are hauled to OVTS under the terms of a separate contract. In general, Olalla RAGF manages the least waste and handles the fewest customers of any of the RAGFs.

To date, significant capital improvements to this location and facility have generally not been allocated, partly due to Olalla RAGF's proximity to OVTS and an abundance of high priority facility needs in the transfer system overall. As part of an evaluation of the transfer systems, Olalla RAGF is being assessed to ensure needs and operations are achieved efficiently and effectively. In the meantime, minor improvements to the Olalla RAGF, including repairing the pad for garbage drop off will be evaluated as part of the County's Capital Facility Plan (CFP) process.

Silverdale Recycling and Garbage Facility

Silverdale RAGF is owned by the County and currently operated by a County contractor. Garbage and recyclables are hauled to OVTS under the terms of a separate contract. Silverdale RAGF is heavily used and is the busiest RAGF in the transfer system. It is second to OVTS in terms of the number of customers. Like OVTS, it is currently open seven days a week.

Yard debris collection was discontinued at Silverdale RAGF due to low use. Scrap metal recycling was added in its place and has become a popular feature.

The following site improvements are needed:

- Current use exceeds the design capacity, resulting in long lines and wait times.
- Multiple closely-spaced intersections and crossings reduce the amount of space available for waiting cars, posing traffic hazards.
- Traffic circulation is awkward, with little control of flow and poor visibility.
- Roadway turning space is too tight for a "doubles" truck (truck pulling two containers) typically used for pick-up.
- The facility was not designed to handle heavy loads and the high traffic volumes, which has resulted in significant degradation of the roadway, curbing, and waste container rails.
- The recycling area and waste disposal area are on opposite sides of the access road, requiring garbage customers with recyclables to wait in both lines. Traffic re-routing could reduce congestion.
- The existing attendant booth is in poor condition and barely meets minimum standards.
- The site is difficult to secure and frequently experiences theft, illegal dumping, and break-ins. Site fencing and security improvements are needed.

- There is a need to clarify property lines, easements, and buffer zones. County-owned property adjacent to the facility may be available for facility expansion and/or remodeling.

Upgrades to address these issues are being evaluated and prioritized, in light of Silverdale RAGF's usage numbers, including the development of a Master Plan to address the usage and long-term needs of the facility.

Poulsbo Recycle Center

PRC accepts recyclables and limited HHW from self-haul customers. Garbage is not accepted. The County owns and operates the facility and a County contractor hauls the recyclables.

Operating costs at PRC exceed revenues, since there is no charge for materials accepted, except appliances (white goods). In spite of curbside recycling services being available throughout the County, PRC remains a popular option for residents due to free recycling and the collection of limited HHW.

The following improvements are needed at PRC:

- The site is difficult to secure and has experienced theft of metals and some attendant booth break-ins. Site fencing and security improvements are needed.
- The existing attendant booth, a skid-mounted 8' x 10' building, is in poor condition and does not meet standards.
- The recycling area is unpaved and becomes rutted and muddy with heavy use leading to potential exceedance of water quality discharge requirements.

Increased development and real-estate purchases in the area have made the PRC location highly valuable, due to its proximity to Highway 3, its corner location on State Highway 305 and Viking Road, and the extensive development of commercial interests in the area. PRC operations have been closely evaluated by the County for closure, primarily due to site conditions, local needs, and the availability of curbside recycling services. Based on this evaluation and thorough discussion with interested parties such as SWAC and the City of Poulsbo, the County is recommending to surplus the property where PRC is located.

Olympic View Transfer Station (OVTS)

In 2002, OVTS opened to address County waste disposal needs when the adjacent Olympic View Sanitary Landfill (OVSL) closed. OVTS is owned by the County and is currently operated by WMW under terms of a contract that includes operation of the facility and disposal of Kitsap County waste via rail to a permitted Subtitle D landfill at Columbia Ridge.

The bulk of garbage and curbside-collected household recyclables generated in the county are handled at OVTS. OVTS also accepts garbage from portions of neighboring counties, such as Mason County, and accepts special wastes generated within Kitsap County as well as from other jurisdictions. OVTS serves as the temporary consolidation point for garbage containers from all the RAGFs, as well as curbside-collected recyclables.

At OVTS, garbage is compacted into intermodal shipping containers and placed on rail cars. Loaded containers are transported via rail lines to Columbia Ridge Landfill for final disposal.

The following site improvements are needed at OVTS:

- The single exit line for the scale results in long wait times to exit OVTS on a regular basis.
- In 2016, OVTS handled an average of 345 vehicles per day. An additional outbound lane for commercial vehicles would lower onsite times.

A Master Plan to assess conditions and needs for OVTS and determine future activities and operations of the facility needs to be conducted. The Master Plan is scheduled to be conducted in 2017-2018.

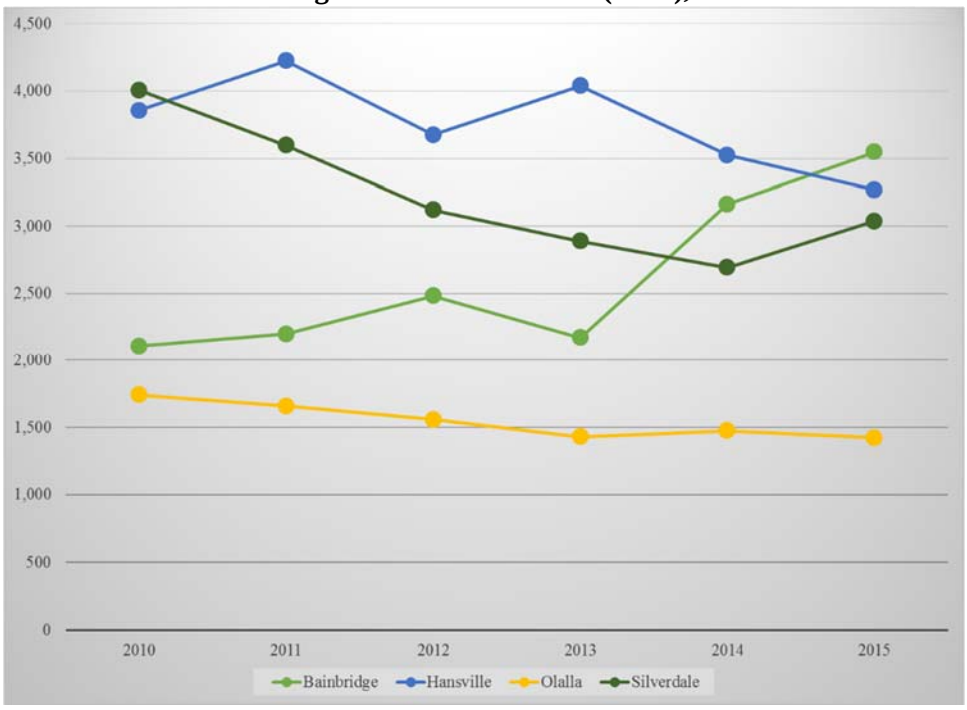
Recent projects completed at OVTS include:

- A major repaving and stormwater improvement project was completed in 2016. This project provided a paved area for staging of commercial truck traffic and improved the stormwater conveyance system resulting in improved stormwater runoff water quality.
- After a facility fire in the transfer station building in 2015, facility repairs were conducted in damaged areas. Repairs included improved lighting installed above the tipping floor in 2015. At the same time, lighting improvements were installed throughout the facility and grounds. All fire restoration activities were completed in 2016. Existing fire prevention and suppression features at the facility were reviewed and upgraded when necessary.

8.2.1 Tonnage Trend Analysis

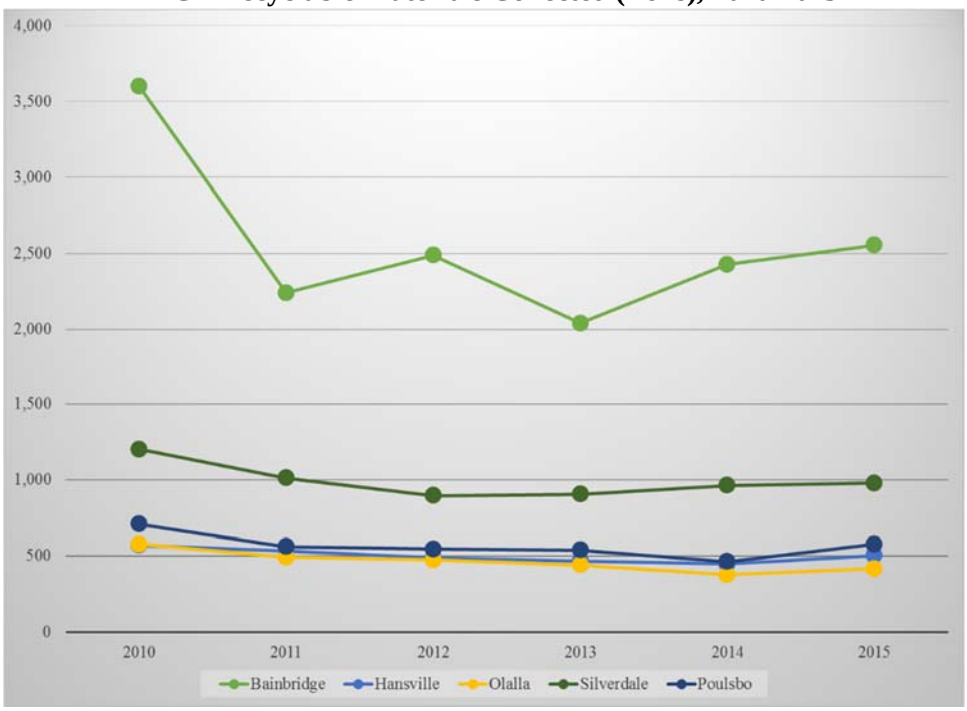
Figures 8-1 through 8-4 summarize the quantities of garbage and recyclables that passed through the transfer system in recent years.

Figure 8-1
RAGF Garbage Materials Collected (Tons), 2010-2015



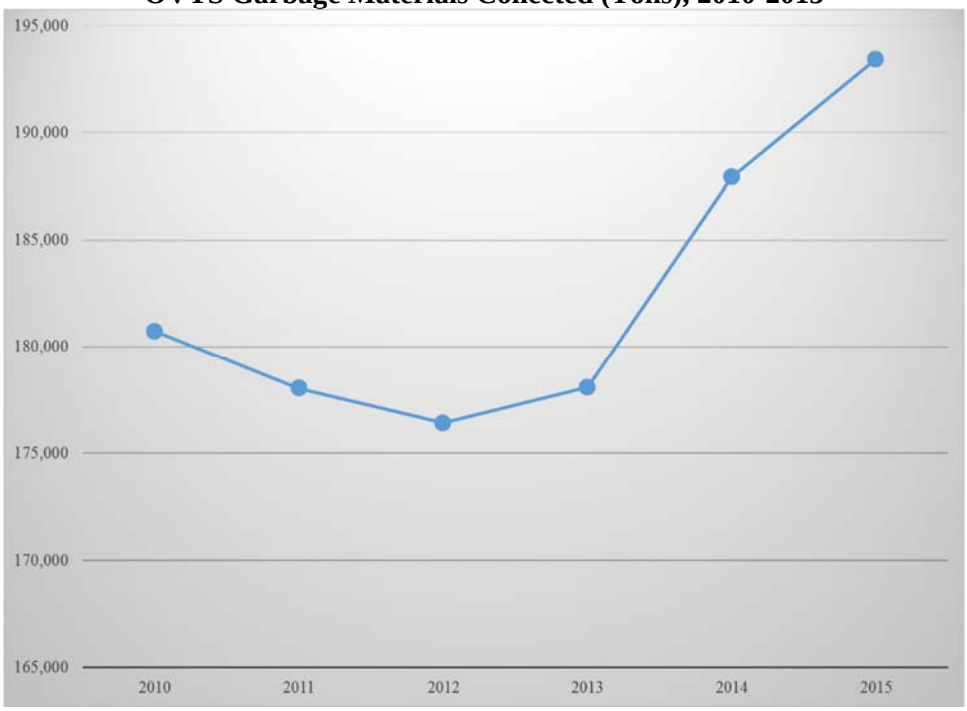
Source: Kitsap County 2015a. Kitsap County 2015b.

Figure 8-2
RAGF Recyclable Materials Collected (Tons), 2010-2015



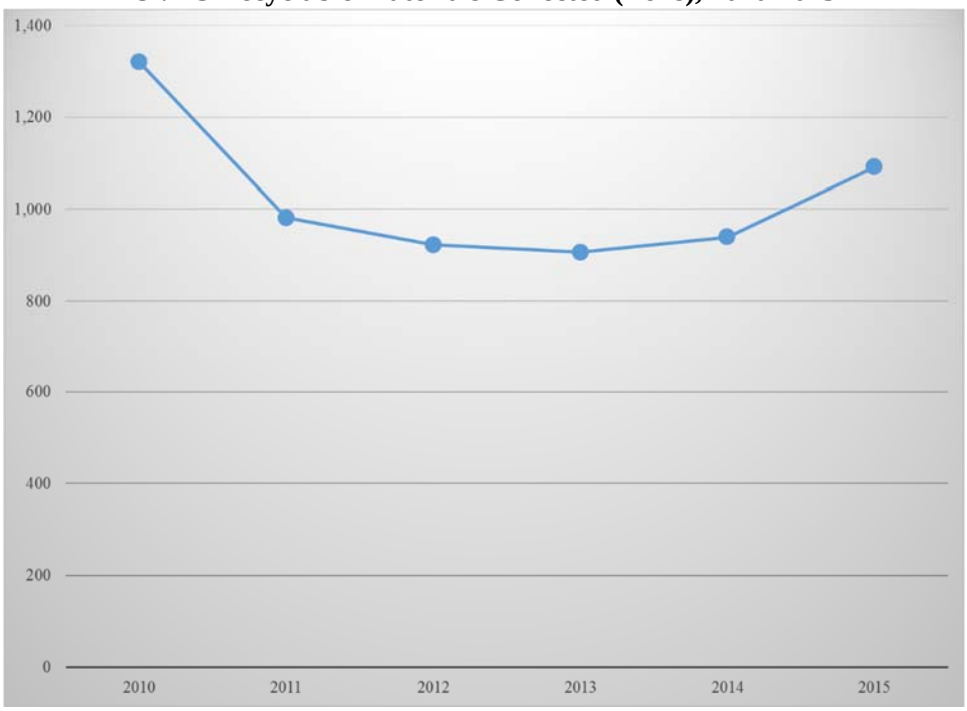
Source: Kitsap County 2015a. Kitsap County 2015b.

Figure 8-3
OVTS Garbage Materials Collected (Tons), 2010-2015



Source: Kitsap County 2015a. Kitsap County 2015b.

Figure 8-4
OVTS Recyclable Materials Collected (Tons), 2010-2015



Source: Kitsap County 2015a, Kitsap County 2015b.

8.2.2 Contractual Analysis

Bainbridge Island Transfer Station: The SWD continues to provide HHW support services at the Bainbridge Island Transfer Station. Solid Waste Division pays for the collection, recycling, and disposal of used oil, antifreeze, household batteries, and medical sharps. The only off-setting revenue is for used oil, during times when the County receives a per-gallon credit. There is currently no contract or formal agreement in place for these services between BDI and the County.

County-Owned RAGFs: County and independent vendors operate under the terms of a County contract for the operation and maintenance of the Silverdale and Olalla RAGFs. A separate County contract oversees hauling waste and recyclables from the Hansville, Silverdale, and Olalla RAGFs and PRC.

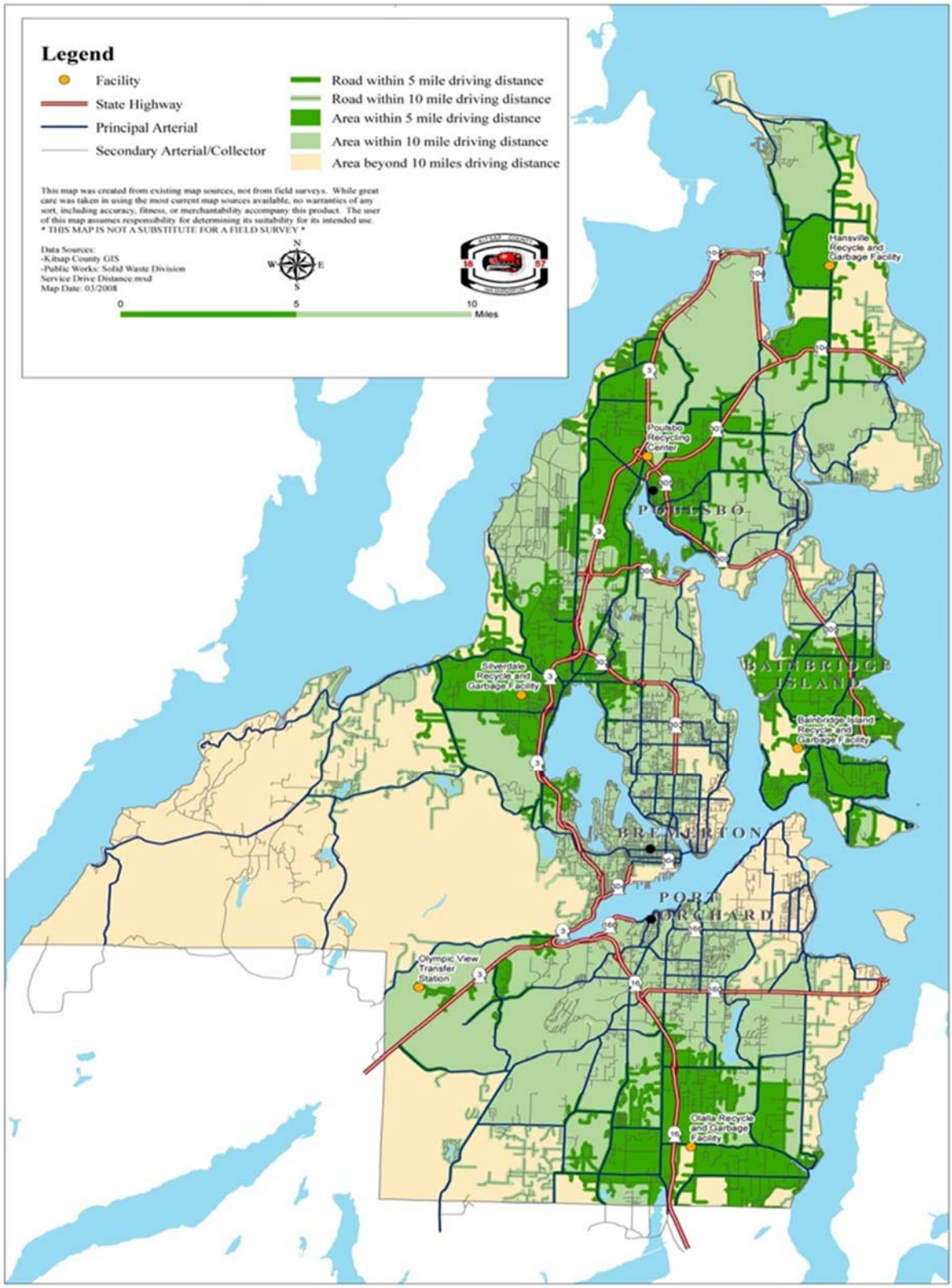
City of Poulsbo Transfer Station: This facility is closed to the public and serves as a consolidation center for MSW collected within the City.

OVTS: This facility is currently operated by WMW, under the terms of a long-term contract set to expire in June, 2022. The contract with WMW provided for the development of OVTS and continues to provide for OVTS operation and disposal of the County's solid waste at the Columbia Ridge Landfill near Arlington, Oregon. (Kitsap County 2000)

8.2.3 Level of Service Analysis

The service areas of the County that are within 5 and 10 road miles of a RAGF, PRC, or OVTS are illustrated in Figure 8-5.

Figure 8-5
Transfer System Level of Service (Residential Proximity to Facilities)



Source: Kitsap County 2008.

Except for the extreme west-central part of the county and northern Port Orchard, most areas of the county are located within 10 road miles of a disposal facility. In general, the facilities are suitably located from a geographic perspective, in that they are relatively convenient to reach from current population centers and areas of projected growth.

Self-Haul Service and Curbside Collection: Rates at the County-owned solid waste facilities were adopted by the Board of County Commissioners in Resolutions 056-2013 and 057-2013, which set rates at OVTS through 2017. A new study is planned in 2017 to match rates with ongoing expenses and capital improvement and reserve balance requirements.

Handling residential self-hauled garbage has a higher unit cost than handling commercially-collected garbage. The costs associated with self-hauling include owning and operating the RAGF system to serve self-haulers. The largest budget items, specifically transportation, staffing, and funding capital improvements, are proportional to tonnage and customer count. Some issues to consider as the SWD evaluates rates and rate structures include:

- Facilities that are dedicated to self-haulers must be staffed and designed to manage peak period numbers of vehicles and transactions, even when overall volumes are small.
- The largest category of customers, residential self-haulers, tend to carry small loads of garbage. The 2013 rate adjustment attempted to mitigate this trend with a higher minimum disposal fee, but it needs ongoing evaluation.
- Mechanisms to fully or partially recover costs through fees for transporting recyclables from the RAGFs should be evaluated.
- Rate–based incentives that encourage self-haulers to use available curbside services or to bring self-haul materials directly to OVTS would result in cost savings because of the avoided costs associated with transporting materials from the RAGFs to OVTS.
- As the numbers of customers using curbside services increases, the efficiency of the collection route improves. This leads to more stops and more tonnage collected per route, thereby reducing GHG emissions and fuel use, increasing material recovery, and the ability to minimize collection rate increases because costs are spread over a larger customer base.

Costs and environmental impacts of self-hauling can be reduced by encouraging residents to switch to curbside collection. This might involve: increasing the self-haul minimum rates charged at the RAGFs and OVTS, decreasing the hours the facilities are open to self-haulers, and/or benchmarking RAGF rates to the cost of curbside collection services.

In general, efficiencies of scale apply to transfer systems. It is more expensive to handle a ton of waste delivered to a RAGF by self-haulers than a ton delivered to OVTS in a commercial garbage truck. Subsequently, materials delivered to PRC and RAGFs result in an added cost to the County when they are then delivered to OVTS.

Given its low customer count and low tonnage, operating costs at Olalla RAGF are higher per customer and per ton than they are in the rest of the system. Since the Olalla RAGF area lies within the service radius of OVTS, the SWD will assess the impact of reducing or ceasing operations at Olalla as part of an overall RAGF system analysis (including rates) planned for 2017.

8.3 POLICY OBJECTIVES

Based on an analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following SWD policies were identified:

1) Encourage residential customers to use curbside collection services instead of self-hauling their normal household recyclables and wastes.

2) Re-structure rates so that they better support solid waste program goals.

3) Maintain and improve facilities so that they remain safe, efficient, reasonably convenient, and desirable for their intended purpose.

8.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Complete a RAGF and OVTS Rate Study designed to re-structure rates so they support solid waste program goals. This study will consider an evaluation of level of service, costs for facility operations, and cost implications associated with "free" recycling. Rates at County-owned facilities should be structured to achieve the following:

- **a)** Include the cost of "free" recycling in the disposal fees at the RAGFs.
- **b)** Set rate structures at RAGFs such that it is less costly for customers with small volume loads to sign up for curbside collection than it is to self-haul their garbage.
- **c)** Encourage customers to consolidate their materials so that they bring fewer but larger loads.
- **d)** Encourage customers with large loads and C&D materials to deliver their materials directly to OVTS.
- **e)** Consider the potential impact of rate structures on illegal dumping with information as available.
- **f)** Consider the needs of low-income residents.
- **g)** Are projected for a 5-year period.
- **h)** Charge equivalent fees at each of the County-owned RAGFs.
- **i)** Generate sufficient revenue to cover the costs of operations, maintenance, and reserve requirements.

2) Request that BDI implement a rate structure that complements the County's rate structure, but that considers site-specific costs at the Bainbridge Island Transfer Station.

3) Implement the results of a RAGF Level of Service (LOS) Analysis in determining the most efficient and effective means of operations of the RAGFs.

4) Evaluate whether the RAGFs are best operated by a private contractor, SWD staff, or under the existing scenario which combines both methods, and proceed accordingly.

5) Develop master plans for future development at OVTS and Silverdale RAGF to determine improvements and necessary construction to minimize congestion and maximize diversion.

6) Close operations at PRC. Secure an interim location for collection of the limited HHW types currently accepted at PRC, until a North HHW Facility is operational. Evaluate the entire Recycling

and Garbage Facility system to determine the most cost-effective level of service and operational structure system-wide.

8.5 REFERENCES/RESOURCES

Kitsap County Department of Public Works, SWD. 2015a. *Kitsap County Department of Public Works, SWD Annual Reports, 2011-2015.* Prepared by the Kitsap County Department of Public Works, SWD. Port Orchard, Washington.

Kitsap County Department of Public Works, SWD. 2015b. *Internal Waste Tracking Documents, 2011-2015.* Prepared by the Kitsap County Department of Public Works, SWD. Port Orchard, Washington.

Kitsap County. 2008. *Map of Transfer System Level of Service Analysis: Residential Proximity to Facilities.* Prepared by Kitsap County Department of Public Works, SWD, and the Kitsap County Geographic Information Services. March 2008.

Kitsap County Department of Public Works, SWD. 2000. *Kitsap County Transfer Station Development and Waste Disposal Project Agreement KC-479-00 Between Kitsap County Washington and Waste Management of Washington, Inc.* October 2000.

CHAPTER 9 - DISPOSAL

9.1 INTRODUCTION

This chapter discusses both near-term and long-term solid waste disposal needs and the oversight and management of historic landfills. The current waste export system is discussed, as is the ongoing management of closed landfills.

9.1.1 Planning Issues

The significant planning issues facing the management of disposal programs include:

- Is the current method of disposal adequate to support the long-term disposal needs for Kitsap County?
- What are the SWD's best options for minimizing environmental risk and long-term liability at closed landfill sites?

9.2 EXISTING PROGRAM ELEMENTS

9.2.1 Current Disposal System Status

As recommended by the 1999 Plan (Kitsap County 1999), OVSL was closed in 2002 and OVTS was opened simultaneously to consolidate and ship waste by rail to a permitted RCRA Subtitle D landfill. In 2000, the County signed a 20-year contract with WMW to operate OVTS and to rail-haul MSW to the Columbia Ridge Landfill near Arlington, Oregon for disposal, beginning in July 2002.

The existing disposal system is effective and reliable. This landfill has an estimated 125-year capacity at the current disposal rate of 2 million tons per year. There is a good working relationship between the parties and the terms of the Agreement are being executed in a satisfactory and economical manner.

9.2.2 Closed Landfill Oversight

KPHD and Ecology provide regulatory oversight for closed and abandoned landfills in Kitsap County. Currently, there are 13 closed and 31 abandoned landfills identified in Kitsap County. The SWD is responsible for oversight of two of these closed landfills, Hansville and Olalla. Management of these landfills also includes maintenance and administration by several County departments. The Stormwater Division performs routine maintenance, and a Deputy Prosecuting Attorney assist with legal issues when needed. Costs for closed landfill oversight are significant with respect to short-term (up to five years) and long-term (20 to 50 years) monitoring and other responsibilities.

Hansville Landfill (Closed)

The closed Hansville Landfill is located adjacent to the Hansville RAGF and bordered by Port Gamble S'Klallam Tribal land. The landfill formally closed in 1989 and the RAGF opened at that time. The landfill was identified as a contaminated site and remedial investigations/feasibility studies and actions were initiated under the Model Toxics Control Act (MTCA). Ecology identified the County and Waste Management as the potentially liable persons (PLPs) for cleanup actions at the closed landfill.

In 2011, Kitsap County and Waste Management entered into an Amended Consent Decree with Ecology, with the Cleanup Action Plan (CAP) as an Exhibit, which implemented the approved Remedial Action Plan of natural attenuation of groundwater with enhanced monitoring and institutional controls including a restrictive covenant (Ecology 2011).

Per the CAP, ongoing quarterly groundwater and surface water sampling and landfill gas monitoring are currently conducted by a contractor. The County performs regular routine maintenance of the landfill including the gas system and cover, mowing the grass on the landfill cap, and maintaining the monitoring stations and surface water conveyance system. Regular inspections conducted in inclement weather indicate that the surface water conveyance system and landfill cap are operating as designed. In 2015, the KPHD issued a Landfill Post Closure Permit for management of closure activities at the Hansville Landfill.

Trespassing and vandalism continue to be a problem at the landfill. Large concrete blocks, stumps, rocks, and trenches have been strategically placed to limit vehicle access. Extensive signage on the landfill and surrounding County-owned land is used as an additional deterrent to trespass and vandalism. The SWD typically notifies the Tribal Council and the County Sheriff's Office when incidents occur.

Olalla Landfill (Closed)

Olalla Landfill is located adjacent to the Olalla RAGF. When the landfill closed in 1989, the Olalla RAGF opened to receive wastes, recyclables and limited HHW. At that time KPHD, formerly known as the Bremerton-Kitsap County Health District, placed the closed Olalla Landfill under a Landfill Post Closure Permit.

Since that time groundwater and landfill gas have been regularly sampled and monitored quarterly and the site is inspected by the SWD and KPHD personnel quarterly. When present, surface water is sampled annually. SWD staff had in the past conducted groundwater and surface water sampling and landfill gas monitoring, but since 2009, these activities have been conducted by a contractor. Regular maintenance such as mowing the landfill cover, brush removal, surface water ditch repairs, and cleaning, are performed by the County on an as-needed basis. Inspections conducted in inclement weather indicate that the surface water conveyance system and landfill cover are operating as designed.

In 2006, KPHD directed the County to report a release at the Olalla Landfill to Ecology. The release consisted of documented periodic exceedances of groundwater standards and secondary drinking water standards. Ecology subsequently placed Olalla Landfill on the Confirmed and Suspected Contaminated Sites list under MTCA.

Ecology conducted a Site Hazard Assessment (SHA) of the site in 2008. The Olalla Landfill ranked a '3', with '1' being the highest level of concern and '5' being the lowest level of concern. As a result of being listed and ranked, the County began implementing the MTCA process at the Olalla Landfill.

As part of a voluntary cleanup project to meet MTCA requirements, a Remedial Investigation and Feasibility Study (RI/FS) was completed in 2014 and submitted to Ecology and KPHD (Parametrix 2014a). Upon approval of the RI/FS, SWD prepared a CAP to summarize the RI/FS activities and present the preferred cleanup action based on results of the RI/FS. Ecology and KPHD approved the CAP in December 2014 (Parametrix 2014b). The approved cleanup action of monitored natural attenuation and land use controls includes continued ongoing groundwater monitoring in accordance with the permit issued by KPHD. Quarterly monitoring results are used to evaluate the effectiveness of the cleanup action and to verify that natural attenuation continues to occur at the landfill. The overall effectiveness of

the cleanup action will be evaluated at 5-year intervals as part of the periodic review process under MTCA. The first periodic review is scheduled for 2020. Financial impacts related to the cleanup action may increase pending the outcome of the periodic review if additional remedial actions are required.

The Solid Waste Landfill Post Closure Permit issued to the SWD by KPHD includes long-term monitoring, reporting, operation, maintenance, and post-closure requirements for the closed landfill. These requirements can have significant budgetary impacts.

Vandalism and illegal dumping continue to be a problem near the Bandix Road entrance gate on the east side of the Olalla Landfill. Illegally dumped wastes at the site have included suspected methamphetamine lab wastes, electronics, appliances, bags of concrete, tires, car parts, yard debris, and garbage. After authorities are contacted, the waste is removed in accordance with applicable regulations.

Bainbridge Island Landfill (Closed)

In 2001, the County excavated and screened waste from the former Bainbridge Island Landfill in accordance with a CAP approved by Ecology under MTCA. Material less than 1.5 inches in diameter was returned to a smaller landfill footprint onsite and larger material was disposed of at a permitted solid waste landfill. The new footprint was covered with a permeable cap and drainage system. Institutional controls and a deed restriction were placed on the property to control access and protect the final cover system.

After completing the cleanup action, the County transferred the property title to the City of Bainbridge Island in exchange for the City's cost sharing in the Remedial Action. An ILA codified the land transfer and obligated the City to continue sampling groundwater at designated wells, submit data reports to Ecology, and conduct long-term operation and maintenance as approved by Ecology. The SWD and KPHD continue to review copies of the environmental monitoring data and had the opportunity to comment on the Periodic Review Reports submitted to Ecology in 2006 who conducted a public review in 2009. Recommendations in the most current Periodic Review Report in 2009 included updating cleanup action levels to be consistent with current standards, repair of a slope failure at the landfill, and continuation of compliance groundwater monitoring (CH2M Hill 2006). In accordance with the Periodic Review Report, the property transfer between the County and the City of Bainbridge Island was formally documented with Ecology.

Norseland Landfill (Closed)

Norseland Landfill is owned by the Port of Bremerton and was listed under MTCA as a contaminated site. Between 1992 and 2000, a remedial investigation and feasibility study was conducted and a CAP developed. The potentially liable parties include the Port and Kitsap County. In 2000, a Consent Decree was entered into with the Port and County to mitigate the release or threatened release of hazardous materials at the landfill. The CAP approved by Ecology consisted of a consolidation of waste, installation of a surface water drainage and collection system, and capping the waste materials with clean soil.

In 2011, Ecology proposed the Norseland Landfill be removed from the state's Hazardous Sites List after conducting a Periodic Review. Based on the site review and monitoring results, Ecology determined that the site met cleanup standards and represented no threat to human health or the environment. After public comment, Ecology removed the site from the state's list of contaminated sites. KPHD continues to manage ongoing closure activities of the landfill under a Solid Waste Handling Permit.

Olympic View Sanitary Landfill (OVSL) (Closed)

The Olympic View Sanitary Landfill operated as a municipal landfill serving the southern portion of Kitsap County from about 1963 to 2002. The current owner is WMW. The landfill consisted of three adjoining areas encompassing about 65 acres. The areas and dates of use were: the unlined Old Barney White Landfill (1963 to 1985); the lined Phase 1 area (1985 to 1994); and the lined Phase II area (1994 to 2002). All three units are capped with a final cover system.

In 2011, Ecology signed an Agreed Order with WMW that implements the elements of a CAP to address groundwater contamination and a Restrictive Covenant that establishes limitations on the use of the landfill property (Washington State Attorney General 2001; Ecology 2010). WMW is responsible for the cost of implementing the selected cleanup action.

At the time of this Plan, the OVSL Periodic Review was being conducted by Ecology to evaluate site conditions and ensure continued protection of human health and the environment. Due to decreasing contaminant concentrations and the long-term monitoring record, Ecology proposed some reductions in monitoring.

9.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policies were identified:

1) Ensure a mechanism is in place to provide environmentally sound and cost-effective disposal of Kitsap County's waste stream now and into the future.

2) At sites where Kitsap County is a responsible party, continue to develop and implement remedial actions that are protective of human health and the environment, while remaining as cost-effective as reasonably possible.

3) Encourage development of validated and cost-effective alternative technologies aimed at conserving natural resources and minimizing the negative impacts of solid wastes on land, water, air, and climate.

9.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Continue implementation of County Contract KC-479-00 with WMW, which exports the majority of Kitsap County's waste stream via rail to the Columbia Ridge Landfill near Arlington, Oregon.

2) Continue to foster a positive working relationship and monitor performance under County Contract KC-479-00.

3) Implement the requirements of the Solid Waste Handling Permits for the Olalla and Hansville Landfills.

4) Implement the approved CAP at the Olalla Landfill; continue monitoring program as a means of demonstrating effectiveness.

5) Implement the approved CAP at the Hansville Landfill; continue monitoring program as a means of demonstrating effectiveness.

6) Review confirmational monitoring at the Bainbridge Island Landfill and support de-listing of the site if it is supported by monitoring results.

9.5 REFERENCES/RESOURCES

CH2M Hill. 2006. Final First Five-Year Review Report (Periodic Review) for Bainbridge Island Landfill, Kitsap County, Washington.

Kitsap County Department of Public Works, SWD. 1999. *Kitsap County 1999 Comprehensive Solid Waste Management Plan, Final Version*. Prepared by SCS Engineers and Kitsap County Department of Public Works, SWD. Port Orchard, Washington.

Kitsap Public Health District. 2017. *List of contaminated Kitsap County landfills.* Located at http://www.kitsapcountyhealth.com/environment/files/landfill_list.pdf Maintained by KPHD.

Parametrix, Inc., 2014a. *Olalla Landfill Remedial Investigation/Feasibility Study.* Prepared for Kitsap County Department of Public Works, SWD. May 2014.

Parametrix, Inc., 2014b. *Olalla Landfill Cleanup Action Plan.* Prepared for Kitsap County Department of Public Works, SWD. December 2014.

Washington Department of Ecology (Ecology). 2011. Amended Consent Decree No. 95-2-03005-1 between State of Washington Department of Ecology and Kitsap County and Waste Management of Washington, Inc. August 2011.

Washington State Department of Ecology (Ecology). 2010. *Draft Cleanup Action Plan, Olympic View Sanitary Landfill, Kitsap County, Washington.* October 2010.

Washington State Attorney General. 2001. *Agreed Order No. DE 00SWFAPNR-1729 for Olympic View Sanitary Landfill*. January 31, 2001.

CHAPTER 10 - SPECIAL WASTES

10.1 INTRODUCTION

This chapter focuses on management of special wastes. The term "special wastes" refers to solid wastes that require special handling or disposal due to regulatory requirements, size, or material handling needs specific to the material.

This special wastes chapter discusses non-hazardous contaminated soil, asbestos containing material (ACM), landclearing wood debris, coal ash and dredge spoils, biosolids, tires, biomedical waste, and electronic waste.

10.1.1 Planning Issues

The significant planning issues facing the management of special wastes include:

- Are current methods of handling and disposal of special wastes adequate to meet the long-term needs of residents and businesses?
- Can special waste be handled differently within our current solid waste system, to optimize waste reduction and recycling?

10.2 EXISTING PROGRAM ELEMENTS

The following section describes existing conditions regarding the management of each type of special waste. Recycling/diversion from disposal is discussed where it applies.

10.2.1 Contaminated Soil

Soils removed during construction, remediation, or maintenance projects must be managed in accordance with applicable regulations. In determining the appropriate level of regulation, one must consider where and how the soil is generated and the types and levels of contaminants present. This determination is made on a case-by-case basis.

Soils that designate as hazardous wastes are not MSW and are managed under a separate regulatory, transportation, and disposal system. Information about managing hazardous soils in Kitsap County may be found at Ecology's Hazardous Waste and Toxics Reduction program (HWTR), by contacting a representative in Ecology's Northwest Regional Office on Ecology's website: www.ecy.wa.gov.

The MSW program addresses contaminated soils that contain, or potentially contain, some level of contamination, but based upon the type and level of contamination the soil is not considered hazardous. Common non-hazardous contaminated soils consist of dirt from a spill cleanup, street sweepings, decant waste (solids vacuumed out of stormwater catch basins), or dirt from ditch cleaning that is contaminated by fuel oil, diesel, unleaded gasoline, or other petroleum products, and some of the dirt removed from remediation sites.

Whether it comes from inside or outside of Kitsap County, generators seeking to dispose of contaminated soils at OVTS require written pre-approval and a "waste profile" from WMW, as operator of OVTS. The pre-approval step allows WMW's regulatory personnel to evaluate analytical data and other relevant information and determine if the soil or soil-like material is acceptable as a solid waste.

Generators also have the option of recycling or re-using waste soils, assuming all KPHD conditions are met. KPHD reviews and approves specific contaminated soil re-use proposals on a case-by-case basis after reviewing analytical results and specific site conditions.

Soils with contaminants below State cleanup standards may remain on-site or be re-used as fill at other locations. Generators and those who accept such soils are wise to develop a defensible sampling and analysis plan and to maintain verifiable documentation in order to support re-use.

Contaminated soil destined for disposal is typically transported to OVTS in trucks that allow the soil to be tipped onto the transfer station floor. The soil is co-mingled with MSW and compacted and shipped via rail for disposal in a Subtitle D permitted landfill. In some cases, soil may be delivered to OVTS in a rail-compatible container, and hauled off-site without placement on the tipping floor.

The management system for contaminated soils is well developed, with long-term capacity in place. In 2015, OVTS accepted, shipped, and properly disposed of 7,132 tons of contaminated soil (Kitsap County 2016).

10.2.2 Asbestos-Containing Material

Buildings and other structures may contain asbestos, lead, and other materials that, if improperly managed, can have negative impacts on human and environmental health. For asbestos, the Puget Sound Clean Air Agency and Department of Labor and Industries require use of specified methods of deconstruction, permit review and approval, worker safety measures, and separate packaging and disposal of ACM.

Kitsap County Board of Health (KCBH) solid waste regulations (KCBH 2010-1) direct generators, transporters, and disposal site operators to follow federal, state, and local air regulations that pertain to asbestos. Because of safety and regulatory concerns, there are currently no viable recycling options for ACM.

10.2.3 Landclearing Wood Debris

The burning of landclearing debris is regulated under Chapter 173-425 WAC and, as of September 2009, is prohibited by the Puget Sound Clean Air Agency, Regulation 1, Section 8.2. The SWD's website describes alternatives to burning and maintains a current list of facilities in Kitsap and Mason Counties that accept debris for management via chipping for fuel, landscaping uses, and/or compost feedstock. In 2015, 113 tons of wood waste was accepted at OVTS (Kitsap County 2016).

10.2.4 Coal Ash and Dredge Spoils

Dredge spoils do not constitute a significant waste stream for County waste facilities. Dredge spoils containing contaminants below State cleanup standards may be re-used in a manner similar to that described in Section 10.2.1. OVTS collected 2.9 tons of dredge spoils in 2015 (Kitsap County 2016).

10.2.5 Biosolids

Biosolids are produced by treating sewage sludge to meet certain quality standards that allow it to be applied to the land for beneficial use. Septage is a class of biosolids that comes from septic tanks and similar systems that receive domestic wastes. According to State regulation, biosolids are not solid wastes, nor are they managed under solid waste regulations. Sewage sludge that fails to meet biosolids standards is a solid waste, and must be managed and disposed as such.

Biosolids are regulated under Chapter 70.95J RCW and Chapter 173-308 WAC. Enforcement of Chapter 173-308 WAC is the responsibility of Ecology who has delegated certain authority for biosolids to KPHD pursuant to a MOU In Kitsap County, KPHD evaluates applications for beneficial re-use on a case-by-case basis.

City and County wastewater treatment plants and septage haulers represent the majority of biosolids generators in the County. Operators would like to expand the recycling and disposal options that are available to them in order to ensure adequate long-term capacity. A limiting factor is that biosolids may not be included in soil amendments and other products that are marketed as organic. As a result, marketing soil and soil amendments made from biosolids can be challenging.

OVTS managed 37.53 tons of biosolids in 2015 (Kitsap County 2016).

10.2.6 Tires

Most tires are recycled through the dealer when an old tire is replaced. As a result, most tires often bypass the County's solid waste facilities and are not reflected in the SWD's facility data.

In 2015, 3,592 tires were accepted for recycling at OVTS. An additional 713 tires were removed in 2015 from illegal dump sites through the County's inmate litter crews, Stormwater Division crews, and Adopt-A-Road volunteers. These additional tires were picked up by a County contractor.

10.2.7 Biomedical Waste

Biomedical waste is prohibited from disposal in Kitsap County unless it is contained and treated to destroy pathogens. Sharps may not be placed in the garbage even if contained. Due to regulatory and public perception concerns, there is little to no opportunity to recycle biomedical waste.

State statute Chapter 70.95K RCW and KCBH Ordinance 2010-01 regulate and define six types of biomedical waste:

- Animal Waste: carcasses, body parts, and bedding of animals infected with microorganisms that are infectious to humans.
- Bio-Safety Level 4 Disease Waste: waste from highly communicable infectious diseases as identified by the Centers for Disease Control.
- Cultures and Stocks: wastes infectious to humans, contaminated with etiologic agents or blood.
- Human Blood and Blood Products.
- Pathological Waste: human tissues.
- Sharps Waste: needles, scalpel blades, and lancets.

There are specific disposal requirements and logistical and regulatory concerns regarding these wastes that vary depending on type of waste.

Sharps: The SWD accepts household sharps for disposal at OVTS, the HHW Collection Facility, PRC, Hansville, Olalla, Silverdale RAGFs, and Bainbridge Island Transfer Station. Table 10-1 shows the SWD's sharps collection program since 2010. Sharps must be packaged in sharps containers or in sturdy plastic containers with a threaded lid. In addition, KPHD operates a Needle Exchange program that manages an estimated 1 million needles per year.

Table 10-1
Sharps Disposal (Cubic Feet), 2010-2015

FACILITY	2010	2011	2012	2013	2014	2015
Bainbridge Island Transfer Station	22.72	23.52	23.52	41.16	45.59	44.11
Hansville Recycling and Garbage Facility	34.61	24.99	23.52	27.93	44.11	57.35
HHW Collection Facility	63.87	86.73	82.32	85.26	97.05	126.46
Olalla Recycling and Garbage Facility	33.00	36.75	33.81	30.87	33.82	66.17
OVTS	64.28	72.03	72.03	72.03	58.82	72.05
Poulsbo Recycle Center	83.25	107.31	91.14	76.44	95.58	110.29
Silverdale Recycling and Garbage Facility	84.58	70.56	72.03	61.74	105.88	213.22
TOTAL	**386.31**	**421.89**	**398.37**	**395.43**	**480.85**	**689.65**

Source: Kitsap County 2015.
One 32-gallon sharps container = 4.27 cubic feet

Other Biomedical Wastes: Bio-safety Level 4 disease waste, cultures and stocks, pathological waste, human tissues, and some sharps, collected by the KPHD, are collected and disposed of by a permitted biomedical waste collection and disposal service.

Infected Animal Waste: Two important diseases in humans are potentially associated with animal waste: Bovine Spongiform Encephalopathy (BSE) and Avian Flu.

BSE, also known as "mad cow disease," is a progressive, lethal central nervous system disease that attacks cattle. It is believed that the prions for BSE may also cause a similar disease in humans, whose symptoms include loss of coordination, personality changes, mania, and dementia.

The second disease of interest, Avian Flu, is an infection caused by bird influenza viruses. Avian Flu is very contagious among birds and can sicken or kill domesticated birds such as chickens, ducks, and turkeys. Although the risk from Avian Flu is generally low to most people, sporadic human infections have been known to occur.

Both BSE and Avian Flu are diseases that, once verified by a licensed veterinarian or veterinary lab, require reporting to the Washington State Veterinarian's Office, per WAC 16-20-070.

Livestock infected with BSE must be disposed of in coordination with the State Veterinarian's Office, per WAC 16-25-030. Any such carcass disposal occurring in Kitsap County should be done in consultation

with KPHD. If disposal occurs via Kitsap County's MSW system, coordination must be made with the SWD and with approval of the transfer system contractor and final landfill operator.
Though Kitsap County has not experienced an outbreak of BSE or Avian Flu that resulted in the need to dispose of large volumes of waste from diseased animals, there is a need to plan for such a possibility.

10.2.8 Electronic Waste

E-wastes, or electronic devices, especially TVs and computers, contain toxic materials such as lead, cadmium, and mercury. Many e-wastes can be re-used. Others that would otherwise be disposed of can be recycled. Re-using and recycling electronics keeps toxic materials out of landfills and incinerators and recovers valuable resources.

Chapter 70.95N RCW and Chapter 173-900 WAC require manufacturers to set up and fund recycling programs for covered electronic products as a condition of selling products in Washington State. As a result, the Washington Materials Management and Financing Authority began operation of a producer-funded take-back program for televisions, computer monitors, laptops, and computers in January 2009. Peripheral devices are generally not covered in the program. Some locations, such as Bainbridge Island Transfer Station, accept other related items including printers.

Under the "E-Cycle Washington" product stewardship (producer-funded) program, consumers no longer have to pay to recycle their covered electronics at participating locations, including nine locations in Kitsap County. These locations are shown in Table 10-2; updates to these locations can be found at www.ecyclewashington.org.

Table 10-2
E-Cycle Washington Locations

LOCATION	BUSINESS NAME	ADDRESS
Bainbridge Island	Goodwill Donation Center	NE High School Road
	Bainbridge Island Transfer Station	7215 Vincent Road NE
Bremerton	All Shred	5800 W Werner Road
	Goodwill Store	4209 Wheaton Way
	Olympic View Transfer Station	9380 SW Barney White Road
	St. Vincent de Paul	13th and Wycoff
Port Orchard	Goodwill Store	1700 SE Mile Hill Drive
Poulsbo	Goodwill Donation Center	19801 Viking Ave NW
Silverdale	Goodwill Store	10001 Mickelberry Road NW

Source: Ecology 2017.

Since the E-Cycle Washington program started in January 2009, Kitsap County residents, schools, and small businesses have recycled over 4,800 tons of e-waste. Volumes have dropped about 35% since the first full year of the program, but are still above one million pounds annually. Over half of the material collected, by weight, is televisions (www.ecyclewashington.orgm).

In addition, Best Buy, Staples and Office Depot offer electronic take-back programs in their stores. However, the eligible items, fees, and details vary. Specific data on these programs is not readily available.

10.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policies were identified:

1) Ensure a mechanism is in place to provide environmentally sound and cost-effective disposal of Kitsap County's waste stream now and into the future.

2) Provide guidelines and strategies for all special waste types to ensure they are managed in compliance with applicable regulations.

3) Support waste prevention as the most effective and preferred means of helping residents and businesses manage waste and minimize climate impacts.

4) Support product stewardship to shift the costs of collection, recycling and disposal programs away from local government and toward those with the greatest ability to affect toxicity, packaging, and durability.

10.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Continue implementation of County Contract KC-479-00, with WMW, which exports the majority of Kitsap County's waste stream via rail to the Columbia Ridge Landfill near Arlington, Oregon.

2) Continue to provide or identify the availability of diversion and disposal alternatives for special wastes generated in Kitsap County.

3) Continue support for re-use of non-hazardous soils. Kitsap County, in cooperation with KPHD, will continue to provide technical assistance to other agencies seeking to re-use non-hazardous soils.

4) Continue outreach and education efforts promoting the Washington State e-waste program and the LightRecycle Washington (LRW) program to Kitsap County residents.

5) Continue to work within the County and other external agencies to develop criteria and procedures for handling ACM in the MSW system.

6) Continue to work with KPHD to ensure proper handling of bio-medical waste and that bio-medical waste is not introduced into the waste stream at OVTS.

7) Continue to work with KPHD to ensure proper management of sharps in accordance with all requirements, including Oregon Department of Environmental Quality (ODEQ) regulations for end-point disposal at Columbia Ridge Landfill near Arlington, Oregon.

10.5 REFERENCES/RESOURCES

Kitsap County Department of Public Works, SWD. 2016. *Kitsap County Department of Public Works, SWD 2015 Annual Report.* Prepared by the Kitsap County Department of Public Works, SWD.

Kitsap County Department of Public Works, SWD. 2015. *Internal Waste Tracking Documents, 2015.* Prepared by the Kitsap County Department of Public Works, SWD.

Washington State Department of Ecology. 2017. *E-cycle Washington Sites in Kitsap County,* www.ecyclewashington.org. March 2017.

CHAPTER 11 - MODERATE RISK WASTE

11.1 INTRODUCTION

Local governments are required by the Washington State Hazardous Waste Management Act (HWMA), Chapter 70.105 RCW to address the management of moderate risk waste (MRW) in their jurisdictions. Management recommendations must be presented in the form of a plan that meets requirements stated in the Act and follows planning guidelines established by Ecology.

In response to the HWMA and local needs, the first *Kitsap County Moderate Risk Waste Management Plan* (MRW Plan) was completed in 1990, and later updated in 1993, 1999, and 2011. Kitsap County considers this update to the MRW Plan a "minor update" consistent with requirements of HWMA, and the *Guidelines for Developing and Updating Local Hazardous Waste Plans* (Ecology 2010). This MRW Plan helps to implement SWD goals and objectives as stated in Chapter 1.

11.1.1 Planning Issues

The significant planning issues facing the management of moderate risk wastes include:

- Should the SWD enhance MRW collection services for residents living in the north-end of the county?
- Should the SWD continue to accept latex paint as a MRW and manage it using current methods?
- How should the SWD promote product stewardship of MRW so that the cost of collection, recycling, and disposal is shifted away from local government, and toward those with the greatest ability to affect toxicity, packaging, and durability?

11.1.2 Roles of Local Governments Who Participated

The SWD prepared this MRW Plan with assistance from the KPHD, SWAC, Ecology, local elected officials, and interested citizens. This MRW Plan proposes continuing and updating Kitsap County's successful comprehensive program for improving MRW management in the county, including household and business education and technical assistance, MRW collection, and compliance.

Primary responsibilities for implementing the recommendations from the 2011 MRW Plan were assigned to the SWD and KPHD in the 2011 Plan. The SWD is the lead in conducting HHW education, HHW collection, SQG hazardous waste collection, and provides small quantity generator (SQG) technical assistance. KPHD is the lead in compliance and enforcement activities and also provides SQG technical assistance. Both agencies participate in health and safety training activities appropriate to their roles and assignments. In addition, both agencies are responsible for administration of their respective programs, including planning, budgeting, tracking, reporting, and evaluation.

Plan recommendations are coordinated between the two agencies, and as appropriate with other local and state agencies, private firms, and other organizations whose activities involve MRW programs.

11.1.3 Planning Area

The planning area includes the incorporated and unincorporated areas of Kitsap County. This includes the cities of Bainbridge Island, Bremerton, Poulsbo, and Port Orchard. The Plan also considers wastes generated in areas governed by the Suquamish and Port Gamble S'Klallam Tribes.

11.1.4 Public Involvement Process

Early public participation in the Plan development was largely focused on the SWAC. The BOCC appoints certain SWAC members, with the remainder appointed by the local jurisdictions whom they represent. Current SWAC members are listed in Table 1-1. Members are selected to represent a balance of interests including citizens, public interest groups, business, the waste management industry, and local elected public officials, as required by RCW 70.95.165(3). The SWAC provides guidance to the Solid Waste Division (SWD) in the development of programs and policies concerning solid waste handling and disposal. The SWAC reviews and comments on rules, policies, and ordinances before they are proposed for adoption. The SWAC meetings are open to the public and meeting notices are published two weeks before each meeting. Agendas and meeting notes are posted at www.kitsapgov.com/sw.

Additional public involvement included an outline posting and public comment tool and State Environmental Policy Act (SEPA).

The Plan was adopted by participating cities, tribes, and by the BOCC in meetings open to the public, in accordance with Section VII (Plan Adoption) of the executed ILAs (Appendix C).

11.1.5 What is Moderate Risk Waste?

MRW consists of HHW and small quantity generator (SQG) waste. These represent hazardous wastes that are produced by households, businesses, and institutions in small quantities. MRW possesses hazardous characteristics (flammability, corrosivity, toxicity, and reactivity) and risks, but are subject to fewer local, state and federal regulations, due to their small quantities.

By applying the principles of waste reduction, diversion away from solid waste landfills, recovering energy, and treating and disposing MRW in an appropriate manner, it is possible to benefit public health and safety and protect the environment.

For the purpose of this MRW Plan, MRW consists of the following categories of waste:

- SQG Waste
- HHW
- Universal waste
- Used oil

Each category is briefly defined below:

SQG Waste: Commercial waste generators are conditionally-exempt from full regulation if they are SQGs, which means that they do not produce or accumulate hazardous waste above specified quantities defined by law, as described in Chapter 173-303 WAC. For a business to be a SQG, the business generates dangerous waste but does not generate more than 220 pounds of dangerous waste, including not

more than 2.2 pounds of extremely hazardous waste, per month or per batch, and accumulates less than the current "quantity exclusion limits" listed in WAC 173-303-81(2), WAC 173-303-082(2), and WAC 173-303-090(4), as amended.

Conditionally-exempt SQGs must comply with certain requirements, including determining whether the waste is hazardous, properly labeling the waste, providing secondary containment, and ensuring disposal at a facility permitted to accept hazardous wastes. By meeting these minimum requirements, SQGs can become "conditionally-exempt" from many of the more rigorous elements of hazardous waste regulation. Government agencies, non-profit institutions, and schools may also be considered SQGs if they meet the quantity exclusion limit criteria as outlined in Chapter 173-303 WAC.

HHW Waste: Hazardous waste generated by homeowners for residential use is exempt from state and federal hazardous waste regulation and is called HHW.

In Kitsap County, KCBH Ordinance 2010-01 requires HHW to be managed at a permitted MRW facility and prohibits disposal in the trash or sewer. State and federal regulations allow for SQG and HHW waste streams to be managed together prior to treatment without the resultant mixture becoming a fully regulated hazardous waste. This allows for a more cost-effective waste management program. Kitsap County's HHW Collection Facility meets this definition and holds a valid Solid Waste Handling Permit issued by KPHD to handle MRW.

Universal Waste: Hazardous wastes that are widely used and have been granted relaxed regulation under USEPA rules, which are then adopted by the State of Washington, are called universal wastes. These include mercury-bearing lamps, mercury-containing equipment, and batteries. Ecology reserves the right to include other wastes under this rule in future rulemaking (WAC 173-303-573).

Kitsap County's MRW program accepts universal wastes from HHW and SQG sources.

Used Oil: Used oil is a category of waste that does not technically fall under the definition of MRW, but is addressed as part of this MRW Plan, continuing an approach that was first adopted in 1993. The Used Oil Recycling Act (Chapter 70.95I RCW) requires that MRW plans more specifically address needs for collection and recycling of used motor oil produced by residents who change the oil in their own vehicles. The Used Oil Recycling Act requires that plans establish appropriate goals for improving collection, recycling and re-refining of used oil, for educating citizens, and for meeting reporting requirements.

11.1.6 Hazardous Waste Inventory

The zone designations and hazardous waste inventory required by State planning guidelines are in Appendix H.

11.2 EXISTING PROGRAM ELEMENTS

Kitsap County's goal is to use education and the promotion of safer alternatives to increase the amount of MRW properly managed through the MRW collection program, while reducing the use of hazardous products by Kitsap County residents and businesses. MRW should be managed in a manner that protects human health and the environment and reflects the State's hazardous waste management priorities, as detailed in RCW 70.105.150, and listed below in order of highest to lowest priority:

- Waste reduction
- Recycling
- Physical, chemical, and biological treatment
- Incineration
- Solidification and stabilization treatment
- Landfill disposal

To this end, the MRW program consists of the following elements, described in detail in the following subsections:

- Education
- SQG Technical Assistance
- Collection
- Re-Use or Exchange
- Proper Management of Collected Wastes
- Compliance and Enforcement
- Evaluation

11.2.1 HHW Education

Educational programs are considered fundamental to improving HHW management in Kitsap County. They work by raising awareness of health and environmental hazards associated with household products, encouraging the use of safer alternative products for household cleaning and landscape maintenance, and informing residents about proper management of HHW.

Promotion, education and outreach is discussed in Chapter 6.

11.2.2 SQG Technical Assistance Program

Responsibility for SQG technical assistance is shared between the SWD and KPHD. Program summaries are as follows:

Kitsap County SWD Programs

- **Business Technical Assistance:** The SWD assists SQGs by providing detailed receipts to all customers who bring their wastes to the HHW Collection Facility for management. Annual summaries of delivered waste can also be provided, upon request. Solid Waste staff periodically visit businesses and other SQGs to provide expertise on the proper storage and management of hazardous waste. This helps SQGs more safely handle the materials and makes delivery of wastes to the HHW Collection Facility more efficient and safe for generators and staff.
- **Assistance to Public Schools:** SWD staff provides support for area schools in order to inventory and package large volumes of lab chemicals for delivery to the HHW Collection Facility. Some lab chemicals pose unique threats to human health and the environment due to their toxicity and reactivity. Site visits allow enough time to carefully inspect each container, segregate waste according to hazards, and identify chemicals that pose significant risks.

Kitsap Public Health District (KPHD) Programs

KPHD's Business Pollution Prevention Program includes the following elements:

- **EnviroStars:** EnviroStars certifies businesses for reducing, recycling, and properly managing hazardous waste. The program offers free technical assistance and recognizes environmentally friendly businesses that prevent pollution and reduce their hazardous waste. Recognition includes certificates, window decals, use of the EnviroStars logo for marketing, and free publicity.
- **Complaint Response and Enforcement:** KPHD investigates hazardous waste complaints and conducts enforcement, as necessary, to achieve compliance with hazardous waste regulations.

Regional Collaborative Approaches:

- **Local Source Control Partnership (LSCP):** The SWD and KPHD were among several local agencies in Washington, funded through the State legislature and the Puget Sound Partnership, to hire specialists to help businesses control, reduce, or eliminate toxic pollution sources. This effort is currently funded through June 2017.

  The LSCP collaborates with existing programs such as MRW and Stormwater to provide technical assistance to local businesses to prevent pollution. Local Source Control Specialists give guidance on ways to reduce toxic waste, store materials properly, and prevent improper discharge of waste into wastewater and stormwater systems. They are an information resource for hazardous waste disposal options, regulatory requirements, and local government contacts that have expertise in all facets of pollution prevention.

  The SWD and KPHD work closely together on the LSCP and communicate frequently. Each program has distinct geographic areas of coverage, so there is no overlap in business visits. The SWD also has an ILA with Mason County to provide Local Source Control services, with funding provided by an Ecology contract.

11.2.3 Collection

Collection programs available in Kitsap County include:

- Kitsap County HHW Collection Facility: a full service fixed facility that serves households and SQGs
- Six limited service HHW collection stations are co-located at the RAGFs in Hansville, Olalla, and Silverdale, the Bainbridge Island Transfer Station, PRC, and OVTS
- One limited service collection facility at Naval Base Kitsap-Bangor serves Navy maintenance, motor pool, and warehouse operations, and collects used oil and automobile batteries from residents
- North-end HHW collection events
- Privately operated used oil collection sites
- Private hazardous waste service providers

HHW Collection Facility and MRW Programs

Kitsap County's HHW Collection Facility, located in the Olympic View Industrial Park across State Route 3 from the Bremerton National Airport, is the most comprehensive collection site for HHW in the County. Although named the "HHW Collection Facility", it also serves as the only publicly owned site in Kitsap County for the proper management of SQG hazardous waste. Residents and businesses bring a variety of potentially hazardous products to the HHW Collection Facility where County staff sorts, processes, and packages the items for shipment off-site for proper management – either recycling, beneficial re-use, treatment, or environmentally sound disposal in a solid or hazardous waste incinerator or landfill. Materials accepted at the MRW facilities in the County are presented in Table 11-1.
In 2016, Kitsap County continued the ILA with Mason County to supplement their HHW collection program by offering Mason County residents the use of the HHW Collection Facility. Mason County currently pays a per customer charge for the use of the HHW Collection Facility helping to defray management costs.

Table 11-1
Hazardous Materials Currently Accepted at Public Facilities

Material	HHW Facility	Bainbridge	Hansville RAGF	Olalla RAGF	Poulsbo Recycle Center	Silverdale RAGF	OVTS
Used Oil	✓	✓	✓	✓	✓	✓	✓
Used Oil Filters	✓	✓	✓	✓	✓	✓	✓
Antifreeze	✓	✓	✓	✓	✓	✓	✓
Household & Vehicle Batteries	✓	✓	✓	✓	✓	✓	✓
Fluorescent Tubes	✓				✓		
Compact Fluorescent Lights	✓	✓	✓	✓	✓	✓	✓
Fertilizers	✓						
Paint – Latex & Oil-Based	✓						
Pesticides	✓						
Acids & Bases	✓						
Flammables & Oxidizers	✓						
Solvents	✓						

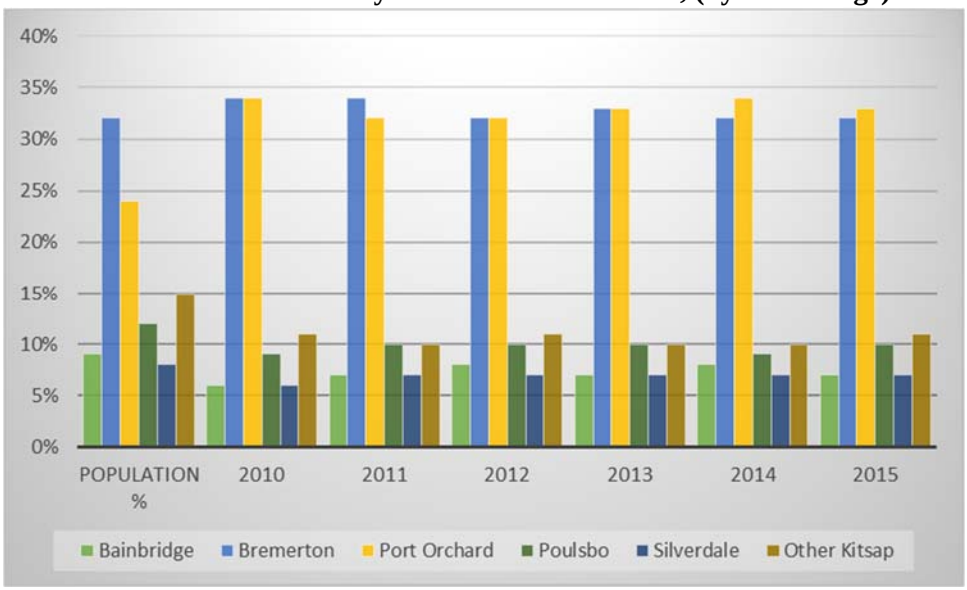
Household Hazardous Waste Collection

For residential customers, the HHW Collection Facility is open Thursday, Friday, and Saturday between the hours of 10:00 a.m. and 4:00 p.m. The HHW Collection Facility is closed Christmas, New Year's

Day, the 4th of July, and the week of Thanksgiving. It is also closed the week between Christmas and New Year's for annual maintenance and cleaning.

When customers arrive at the HHW Collection Facility, they are asked to fill out a form listing their name and zip code. The zip code is used to track usage, assess participation by geographic area (see Figure 11-1), and to invoice Mason County for their residential usage. HHW Collection Facility staff fills out additional items on the form, such as deliveries of over 50 gallons, whether the customer brought oil and/or antifreeze, and if the materials were properly packaged for transport to the HHW Collection Facility, to provide a more complete picture of each delivery. This form, including the customer's signature, serves as an affidavit stating the waste they are bringing is from a home and not generated by a business. Residential customers are not asked to pay handling or disposal fees for their waste.
In 2015, the HHW Collection Facility served 7,652 Kitsap County residents and 918 Mason County residents, which represents an average of 153 customers per week. Users of the HHW Collection Facility come from throughout the county and are tracked by self-reported zip codes (see Figure 11-1). For comparison to population percentage by geographic area in the County, Figure 11-1 also shows the 2010 population for each area by zip code (OFM 2010). HHW collected at the facility is summarized in Table 11-2.

Figure 11-1
HHW Collection Facility Customer Distribution, (by Percentage)



Source: Kitsap County 2015. OFM 2010.
Note: HHW customers are tracked by zip code. Population percentage from the US 2010 decennial census is shown for area distribution and comparison purposes (OFM 2010).

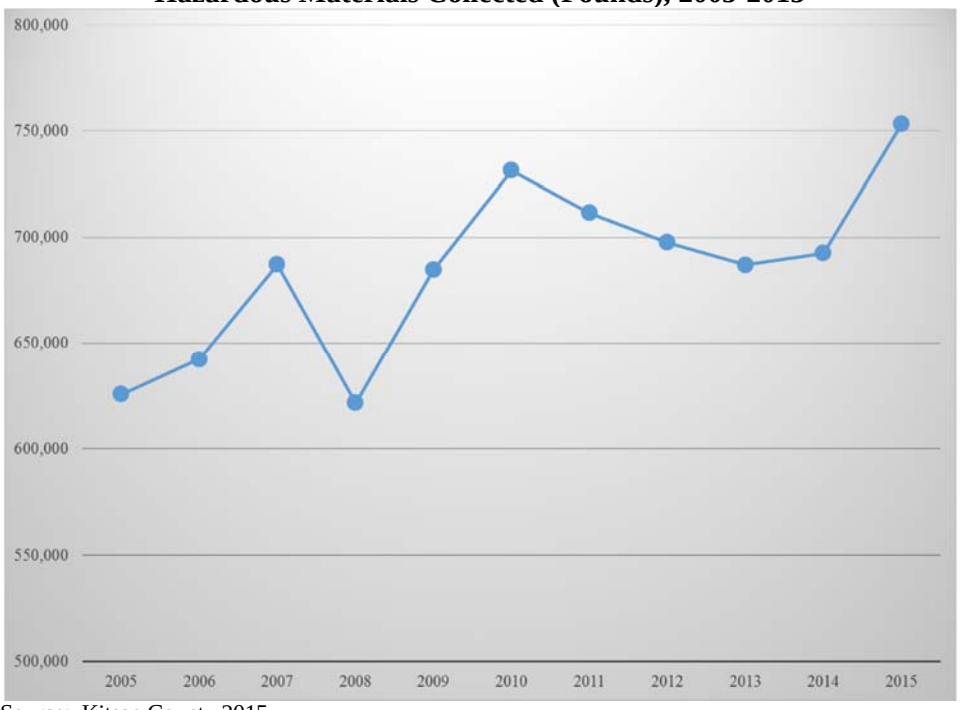
Table 11-2
Hazardous Materials Received at the HHW Collection Facility (Pounds), 2015

Waste Type	Amount Received	Re-Used/ Recycled	Energy Recovery	Treatment/ Disposal
Acids	7,356	0	0	7,356
Antifreeze	8,218	8,218	0	0
Bases	12,361	0	0	12,361
Batteries – Household	56,182	50,446	0	5,736
Batteries – Vehicle	8,682	8,682	0	0
Compressed Gas	22,757	4,131	11,737	6,889
Fertilizers	2,221	2,221	0	0
Flammable Liquids	92,100	5,981	86,119	0
Flammables (Other)	210	0	0	210
Latex Paint	263,078	32,771	0	230,307
Mercury	69	69	0	0
Mercury-Fluorescent Lamps and CFL's	18,391	18,391	0	0
Oil-Based Paint	192,101	6,236	185,865	0
Oil Filters	0	0	0	0
Oil-Non Contaminated	28,858	28,858	0	0
Organic Peroxides	34	0	0	34
Other-Dangerous Waste	1,102	0	0	1,102
Oxidizers	856	0	0	856
Pesticides	38,670	0	0	38,670
Reactives	108	0	0	108
TOTALS (in pounds)	**753,354 376.66 tons**	**166,004 83.00 tons**	**283,721 141.86 tons**	**303,629 151.81 tons**

Source: Kitsap County 2015.

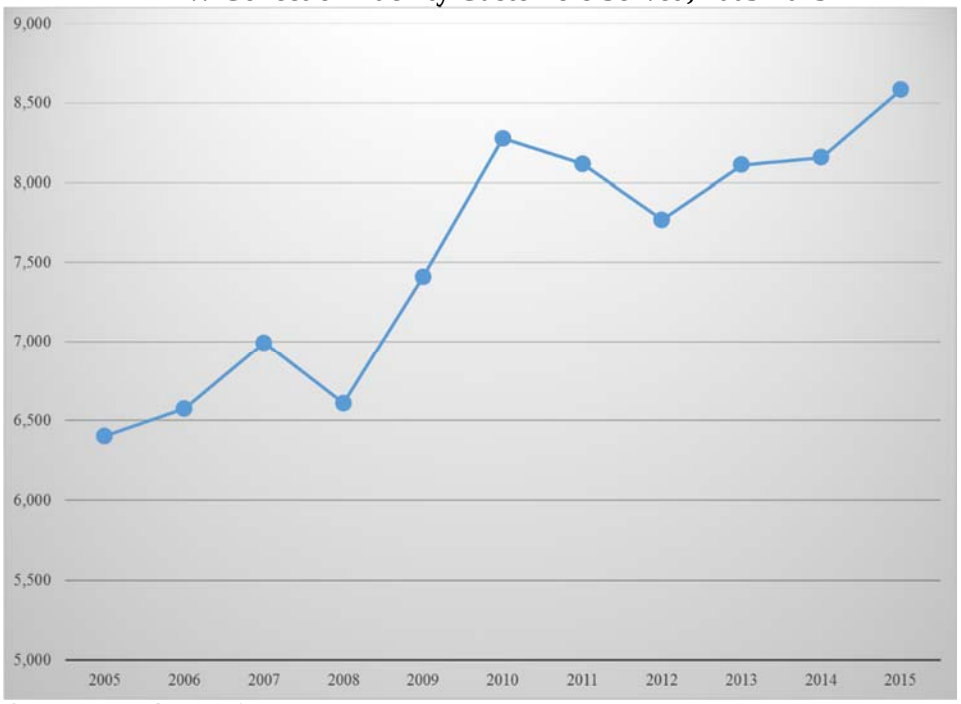
Figures 11-2 and 11-3 show the history of how much HHW was received and how many customers were served at the HHW Collection Facility since 2005. As these figures show, both have grown substantially in the past decade, with the exception of a one-year reduction in 2008.

Figure 11-2
Hazardous Materials Collected (Pounds), 2005-2015



Source: Kitsap County 2015.

Figure 11-3
HHW Collection Facility Customers Served, 2005-2015



Source: Kitsap County 2015.

Business Hazardous Waste (Small Quantity Generator) Collection Program

Businesses can access a convenient and affordable waste management program for SQG waste through the HHW Collection Facility. Because many businesses cannot completely eliminate the use of hazardous materials, the SQG collection is important to help them stay in regulatory compliance. The HHW Collection Facility accepts wastes from SQGs by appointment only usually on the third and fourth Wednesday of each month. Businesses can access an appointment application and inventory sheet on the SWD's webpage at www.kitsapgov.com/sw/sqg.htm.

Businesses routinely participating in the SQG collection program include dental/medical offices, school districts, auto body repair shops, research laboratories, governmental entities, and contractors. Dental offices bring developer and fixer solutions, sterilizing solutions and mercury-bearing amalgam. Medical and analytical labs dispose of used testing chemicals. Auto body businesses bring a variety of paint-related materials including oil-based paint, distillation by-products, and paint thinner. Construction related hazardous waste includes items such as concrete sealer, bonding agents, tar, oil-based paints, and kerosene. Schools bring in outdated or unused chemicals from school laboratories, and construction and automotive wastes. The SQG collection program accepts fluorescent lamps, but program staff can also refer those with smaller volumes to recycle them at one of the local LightRecycle WA retail locations. LightRecycle WA is the statewide product stewardship collection program for mercury-bearing lamps.

In 2015, 118 businesses made 179 appointments for SQG waste management. These businesses brought in 72,000 pounds (36 tons) of waste to the HHW Collection Facility (Table 11-3).

Table 11-3
SQG Materials Received at the HHW Collection Facility (Pounds), 2015

Waste Type	Amounts Received	Re-Used/ Recycled	Energy Recovery	Treatment/ Disposal
Acids	883	0	0	883
Antifreeze	214	214	0	0
Bases	1,452	0	0	1,452
Batteries – Household	2,172	1,968	0	204
Batteries – Vehicle	2,258	2,258	0	0
Compressed Gas	477	0	363	114
Fertilizers	0	0	0	0
Flammable Liquids	12,308	0	12,308	0
Flammables (Other)	476	0	0	476
Latex Paint	19,248	0	0	19,248
Mercury	42	42	0	0
Mercury-Fluorescent Lamps and CFL's	7,222	7,222	0	0
Oil-Based Paint	15,930	0	15,930	0
Oil Filters	0	0	0	0
Oil-Non Contaminated	1,167	0	1,167	0
Organic Peroxides	3	0	0	3
Other-Dangerous Waste	5,248	0	0	5,248
Oxidizers	58	0	0	58
Pesticides	3,165	34	0	3,131
Reactives	10	0	0	10
TOTALS (in pounds)	**72,333**	**11,738**	**29,768**	**30,827**

Source: Kitsap County 2015.

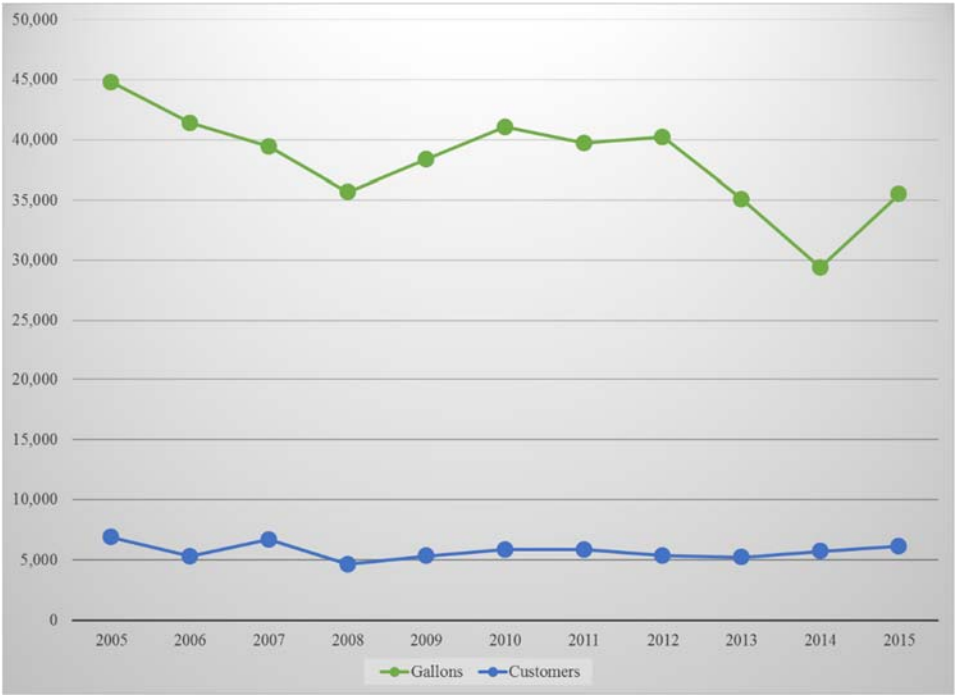
Used Uncontaminated Motor Oil Collection Program

There are six used oil drop-off collection sites co-located with OVTS, the RAGFs, and the Bainbridge Island Transfer Station in addition to the collection offered at the HHW Collection Facility. Residents are not charged a fee to participate in the used oil program.

In 2015, it is estimated that 6,160 customers participated in the used oil collection program at the RAGFs, Bainbridge Island Transfer Station, and the HHW Collection Facility. There is no accurate way to track

the number of customers that use the unstaffed used oil collection area at OVTS. In 2015, a total of 35,500 gallons of used motor oil were collected at these facilities including OVTS (Figure 11-4). The number of gallons collected has generally decreased since 2005 with a more significant drop in 2014 followed by an increase in 2015. The number of customers using the collection program has remained relatively stable.

Figure 11-4
Used Motor Oil Collected, 2005-2015

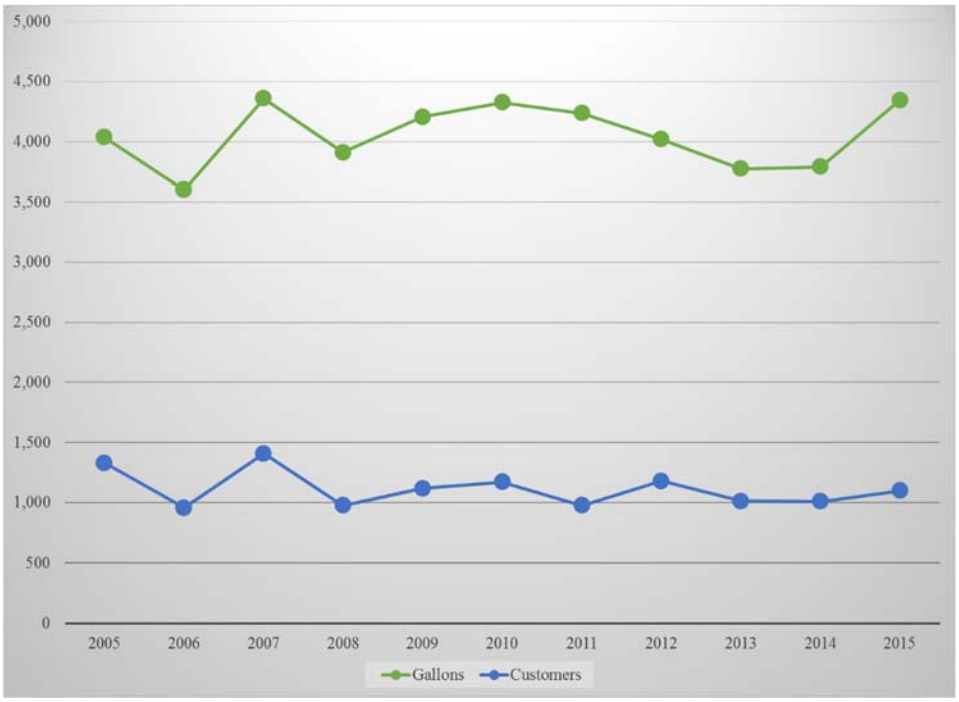


Source: Kitsap County 2015.

Used Antifreeze Collection Program

Solid Waste Division staff worked for several years to design and implement a county-wide used antifreeze collection program mirroring the uncontaminated used motor oil collection program. OVTS and the RAGFs participate in the program. In 2015, 1,097 customers used the antifreeze collection program at the RAGFs, the Bainbridge Island Transfer Station, and the HHW Collection Facility. There is no accurate way to track the number of customers that use the unstaffed antifreeze area at OVTS. In 2015, a total of 4,345 gallons of used antifreeze were collected at these facilities including OVTS. (Figure 11-5). Residents are not charged a fee to participate in the used antifreeze program.

Figure 11-5
Used Antifreeze Collected, 2005-2015



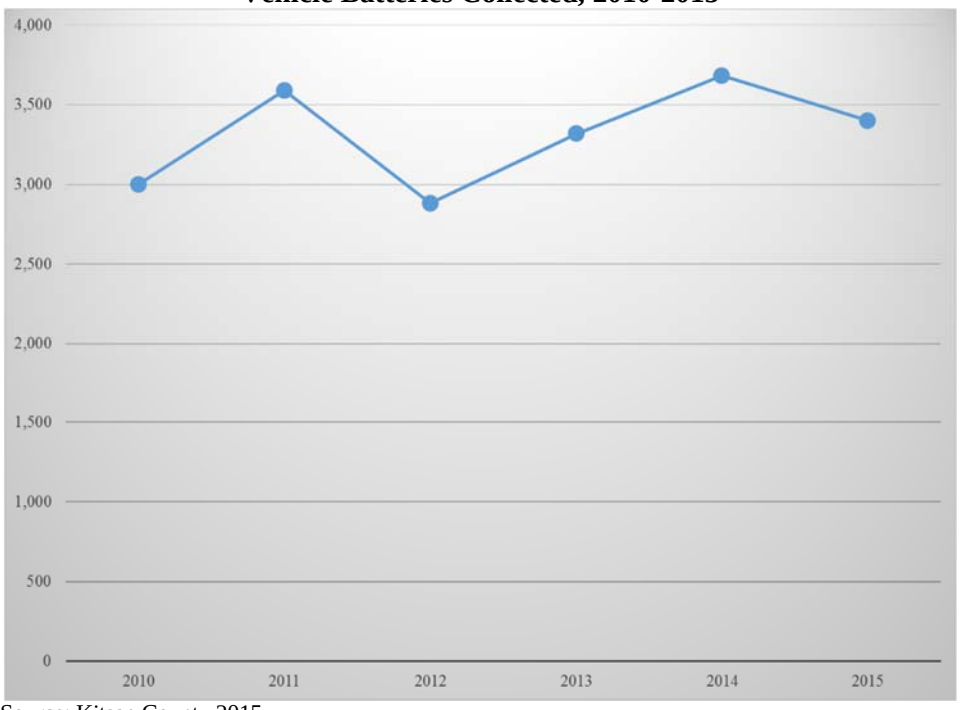
Source: Kitsap County 2015.

Battery Collection Program

Vehicle batteries contain corrosive chemicals and lead and should never be placed in the trash. The SWD coordinates the collection and recycling of lead acid (automobile, motorcycle, and utility) batteries for recycling at the Hansville, Silverdale, and Olalla RAGFs, the Bainbridge Island Transfer Station. OVTS and PRC no longer collect auto batteries due to ongoing theft and storage contamination issues. Multiple retail recycling options exist in the areas near the two locations. In 2015, 3,399 batteries were collected for recycling (52,110 pounds) (Figure 11-6). Residents are not charged a fee to participate in the used battery program.

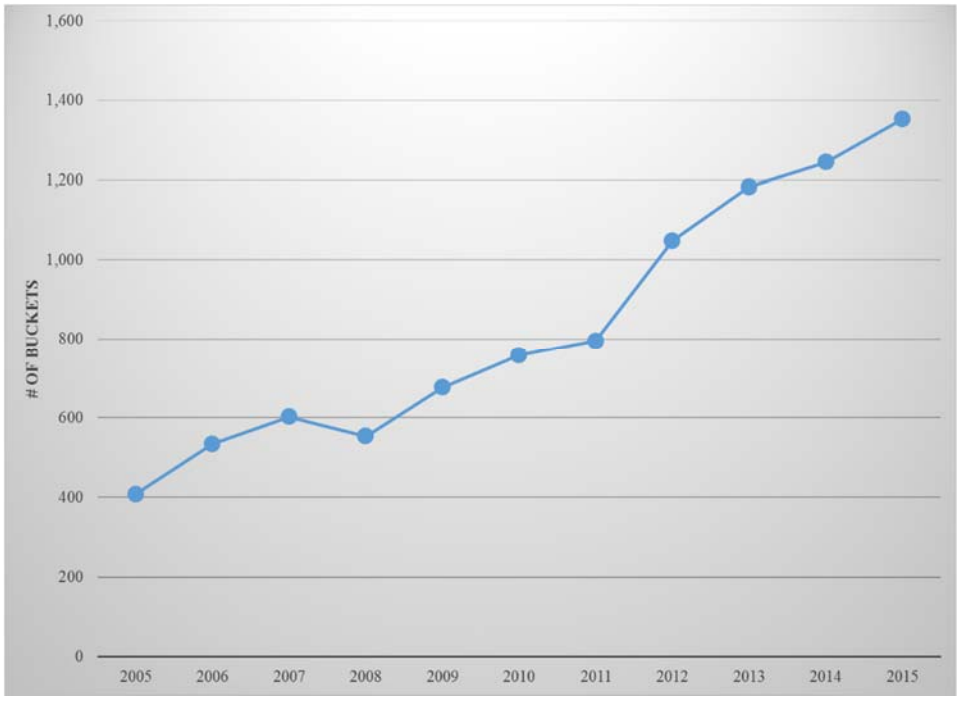
Household batteries (i.e., alkaline, nickel cadmium, lithium, and mercury) are among the most common hazardous wastes generated by residents. Household battery collection is available at each of the County RAGFs and at OVTS. Five-gallon plastic buckets are stationed at each site for battery collection. In 2015, 1,353 buckets of batteries (67,633 pounds) were collected and brought to the HHW Collection Facility for processing (Figure 11-7). Rechargeable batteries are recycled using the Call2Recycle industry-sponsored program, in an example of product stewardship. Residents are not charged a fee to participate in the household battery program.

Figure 11-6
Vehicle Batteries Collected, 2010-2015



Source: Kitsap County 2015.

Figure 11-7
Household Batteries Collected, 2005-2015



Source: Kitsap County 2015.

Mercury Collection Programs

The collection and proper management of mercury is a priority for the Washington State Departments of Health and Ecology to protect not only human, but environmental health. Elemental mercury, mercury-containing devices such as thermometers, thermostats, and automotive switches, and other mercury debris such as dental amalgam are managed at the HHW Collection Facility.

Kitsap County participates in a product stewardship program sponsored by the Thermostat Recycling Corporation, a not-for-profit initiative managed by three electrical manufacturing companies. Thermostat Recycling Corporation offers free recycling of mercury-containing thermostats to businesses.

Compact fluorescent lamps are now accepted at all the RAGFs, as well as at OVTS, PRC, and the HHW Collection Facility. In 2015, area residents dropped off 14,123 compact fluorescent lamps at these locations (Kitsap County 2015). PRC also accepts 4-foot straight fluorescent tubes, and the HHW Collection Facility takes all other types of mercury bearing lamps.

The SWD actively promotes the statewide LightRecycle WA mercury lamp program. LightRecycle WA is the stewardship program set up by manufacturers of fluorescent lamps as a result of Chapter 70.275 RCW. This law requires manufacturers to fund a statewide network of take-back locations, to increase the convenience of recycling to the public. The program went into effect in 2015 and there are currently seven locations in Kitsap County, including the HHW Collection Facility. The lamps collected at OVTS, PRC, and the RAGF's are funneled through the HHW Collection Facility as part of this program.

North-End Mobile Remote Collection Events

Remote collection events have been scheduled in the north-end of the county at least every other year since 2001. A stakeholder planning group agrees on which waste streams to target and staffing is contracted, with support from SWD staff and volunteers.

The SWD coordinates these events, and locates them on either Bainbridge Island or in north Kitsap County. These are usually "targeted" collection events, focusing on yard maintenance chemicals, oil-based paint products, corrosive cleaners, and related materials. These waste streams are of concern due to their toxicity, corrosivity and flammability.

The remote collection events help provide better service equity to north Kitsap and Bainbridge Island residents, since the permanent HHW Collection Facility is in the southern area of the county. These events also serve as educational opportunities to tell residents about other HHW management options in their area and for residents to get information about other Solid Waste programs.

11.2.4 Re-Use or Exchange (Swap Shop)

This program, which began in 1999, allows the re-use of certain products that come into the HHW Collection Facility. There is no cost to participants; however, a re-use program liability waiver form must be filled out for all products taken.

Use of a portable, stand-alone re-use building began in early 2004. This building increased HHW Collection Facility capacity, limited public access to the restricted areas of the Facility to comply with WAC 173-350-360, and increased the volume of materials available to Swap Shop customers.

Currently, new or nearly new paint, paint-related materials, non-corrosive cleaners, automotive products, aerosol paints, and fertilizers are available to the public through the Swap Shop. Products identified as ingredients in methamphetamine production are excluded from this program. In 2015, 909 customers re-used 54,777 pounds (27 tons) of material (Kitsap County 2015).

11.2.5 Proper Management of Collected Wastes

Materials received at the HHW Collection Facility, RAGFs, OVTS, and North-End Mobile Collection Events are managed in several ways including energy recovery, recycling, re-use, incineration and landfilling.

Self-haul facilities located throughout the county provide opportunities for residents to conveniently manage uncontaminated used motor oil, antifreeze, household and vehicle batteries, and compact fluorescent lamps. The SWD provides necessary supplies and safety equipment to manage the program and arranges for the removal and proper management of the commodities.

Waste transportation and management companies are selected through the county's procurement process. This includes close inspection of regulatory compliance and corrective actions at the vendors' facilities for final management of wastes. Waste tracking documents may be used to verify ongoing disposal options. SWD staff routinely communicate with waste management companies about their operations, and conduct tours of local facilities.

A total of 753,354 pounds (377 tons) of HHW were received at the HHW Collection Facility in 2015. In the 19 years the HHW Collection Facility has operated, over 10,553,950 pounds (5,277 tons) of hazardous waste has been collected for proper management protecting the health of Kitsap County residents and the environment (Kitsap County 2015).

11.2.6 MRW Compliance and Enforcement

In Kitsap County, MRW is directly regulated by KPHD via Ordinance 2010-1, which provides oversight of solid waste activities including moderate risk waste. State rules are either adopted by reference or used as a basis to provide more specific guidance relevant to the local solid waste system.

KPHD requires solid waste handling facilities to identify and remove unacceptable wastes that otherwise may enter the MSW stream. Procedures call for routinely examining waste loads, identifying hazardous and other unacceptable wastes, identifying waste sources, and arranging for proper disposal.

Problems with MRW management are identified through complaints, field investigations, or other means. Responses may include gathering information through phone consultations or onsite visits, and referring the complaint to other appropriate state or local agencies having jurisdiction. Enforcement or compliance actions may be taken or referred to appropriate agencies, if significant threats to public health, the environment, or worker safety exist.

KPHD coordinates with other state and local environmental, fire safety, health, and building code agencies to provide technical assistance and compliance inspections of SQGs, as necessary.

As part of the Clean Kitsap program, Kitsap County Public Works Stormwater Division and Correctional Facility inmate crews respond to complaints about illegally dumped household hazardous materials on road right-of-ways and public areas. If the material is easily identifiable as standard household hazardous

products, such as paint, motor oil, etc., the crews collect it and bring it to the HHW Collection Facility for disposal.

In the case of spills, suspicious unknowns, explosives, suspected methamphetamine lab waste, or other higher risk problems, the crew alerts Kitsap 1 where the complaint is routed to the appropriate agency for action following established procedures. Emergency hazardous waste incidents, including spills, are reported to the 911 call center.

11.2.7 Evaluation

The SWD evaluates the success of MRW programs using a variety of tools. Program metrics are evaluated to determine cost-effectiveness and to measure trends. Public awareness is evaluated to determine education program focus and community awareness of program offerings and messages. Service levels are evaluated in order to determine long-range needs. Evaluation findings are discussed in the following sections.

Table 11-4 is a list of MRW typically targeted for collection. In some counties, including Kitsap County, MRW facilities do not accept some items, generally because of safety concerns with handling the materials or security concerns about storing the materials, or because other management options exist.

Table 11-4
Household Hazardous Substances Examples

Type	Example
Repair and Remodeling	Adhesives, oil-based paint, thinner, epoxy, stripper
Cleaning Agents	Oven, deck, and toilet cleaners; degreasers
Pesticides	Wood preservatives, mole killer, herbicides, pesticides
Auto, Boat and Equipment Maintenance	Batteries, paint, gasoline, oil, antifreeze, solvents
Persistent Bioaccumulative Toxin	Mercury, lead, polychlorinated biphenyls
Hobby and Recreation	Photo & pool chemicals, glaze, paint, white gas
Miscellaneous [1]	Ammunitions, fireworks, asbestos

[1] Ammunitions and fireworks are not handled as part of Kitsap County's MRW Program. Asbestos also is not accepted as part of Kitsap County's MRW Program, although approved asbestos disposal is available at OVTS.

11.2.8 Latex Paint

Latex paint represents approximately 35% of all materials collected at the HHW Facility and represents a large portion of the cost of managing MRW in the County. Newer latex paints are not considered hazardous, and many local cities and counties have stopped taking latex paint through their MRW programs.

In communities that do not manage latex paint in their MRW programs, residents are advised to solidify paint, and throw the material in the garbage with the lid off the can. Residents with larger volumes of paint find this time consuming and very labor-intensive. No other product in the solid waste system is required to undergo such a transition. In addition, residents may not properly solidify the paint, or not

solidify it at all, which poses housekeeping and other logistical problems for garbage haulers and transfer stations.

The SWD continues to collect latex paint through the MRW program, but supports the development of alternative management options that are more sustainable in terms of cost and environmental protection. As part of the program, the SWD continues to evaluate how paint is collected, processed and disposed, and looks for the most cost-effective and environmentally sound methods possible.

By collecting latex paint, the HHW Collection Facility can route large volumes through the reuse program. This provides free paint to the public, some of whom may not be able to afford the retail costs of a new can of paint. The reuse program routinely gives away over 2,000 gallons of latex paint every year.

In addition, the SWD supports product stewardship initiatives that may expand paint recycling options in the near future, and reserves the option of diverting latex paint away from the HHW Collection Facility and into the solid waste stream at a later date. The paint industry has supported legislative efforts in Washington for a paint product stewardship system, and county staff have testified in favor of this legislation.

11.2.9 Unused Medications

Unused medications in the home pose significant poisoning and abuse risks. Recent studies have found measurable levels of pharmaceutical chemicals and their metabolites in fish and in watersheds. The emergence of this concern has produced more focused attention on the proper management of these wastes.

Currently, the Kitsap County Sheriff's offices in Port Orchard and Silverdale collect non-liquid prescription medications, including opioids. There are also periodic Drug Enforcement Agency one-day collections events. Residents are advised to never flush any medications.

Kitsap County supports product stewardship initiatives and legislative efforts to require manufacturer funding and support of take-back programs. Locally, in late 2016, the KPHB passed Ordinance 2016-02 requiring such a program. This will expand the scope of medications eligible for take-back, as well as increase the number of locations that will participate. The ordinance and any approved collection plans for implementation are scheduled to be operational in late 2017-early 2018.

11.2.10 Used Oil Collection and Re-Refining

Kitsap County encourages proper management of used oil and the purchase and use of re-refined oil. The re-refining process uses less energy and produces less GHGs than refining the equivalent amount of new oil. Kitsap County adopted Washington State's goal of contributing to the collection and proper management of 80% of used oil disposed by residents by 1996.

Ecology's 1-800-RECYCLE database currently lists 26 facilities in Kitsap County that accept uncontaminated used oil from residential customers. Some franchised auto parts locations may opt to not accept oil, but many do. The database does not provide data regarding the number of automotive shops that recycle used oil collected from oil change customers.

Washington State sets a used oil collection goal for urban counties, including Kitsap, that requires one facility for every 10,000 residents, and/or that 90% of residents live within two miles of a used oil collection facility. Kitsap County's program was compared to this benchmark as follows:

- Based on 2015 population estimates as identified in Chapter 2 Table 2-1, providing one facility for every 10,000 residents would require 27 facilities to be based in Kitsap County. Ecology's database currently identifies 26 facilities in the County, indicating Kitsap County's program narrowly misses state goals at this time.
- Based on 2015 population densities, the current level of service is less than the state guideline criteria that 90% of residents live within two miles of a used oil collection facility. Figure 11-8 shows that over 90% of all residents live within 10-miles driving distance of a used oil collection facility, providing reasonably convenient location options.

Though the current service level for geographic area is slightly below the levels suggested by State guidelines, used motor oil drop-off locations are reasonably convenient to residents in all areas of the county. Based on a review of use and volume data for the past 10 years, and on the widespread availability and use of automotive service centers for oil changes (where the oil is typically recycled), the SWD believes that access to do-it-yourself used oil recycling service is satisfactory, for the following reasons:

- The level of service is significantly higher than was available in 1999 when the only service available in West Bremerton was for military personnel.
- The number of users at the County-operated drop-sites has leveled off since 2010. Therefore, even though the number and geographic distribution of used oil drop-sites is somewhat below the State standard, demand does not appear to call for additional service. Used oil has become a popular fuel source for space heaters, for example.
- Facility capacity is adequate to handle volumes that are delivered.
- The State's service availability guidelines were written at a time when do-it-yourself oil changes represented a greater proportion of used oil generators. Since that time, the number of people who have their oil changed by an automotive service provider has grown, as has the number of automotive service providers who recycle the used oil that they collect. Kitsap County's contribution toward the State's 80% used oil recycling goal includes oil recycled by automotive service providers.
- Used oil drop-off locations need staffing. Unstaffed drop off sites quickly become contaminated with other liquids. Some sites have had polychlorinated biphenyls (PCB) contamination in their tanks, resulting in expensive disposal costs and fines from the USEPA. Some local government programs are therefore reducing the number of available used oil recycling locations, rather than increasing them.

Kitsap County has to balance the oil recycling goals of Chapter 70.95I RCW with the "best management practices" (BMPs) as outlined in the same chapter, to be published by Ecology. These BMPs, if followed, allow an operator of a public drop-off location to petition Ecology for cost recovery if used oil becomes contaminated with PCB's or other contaminants that prompt "extraordinary costs" for disposal. The BMPs have not been formally published. Based on Ecology presentations that address BMPs for used oil collection, Kitsap County has already adopted many of them, including customer declaration forms, restriction of tank contents to used motor oil only, prominent signage, and testing protocols that reflect the conditions of the specific site.

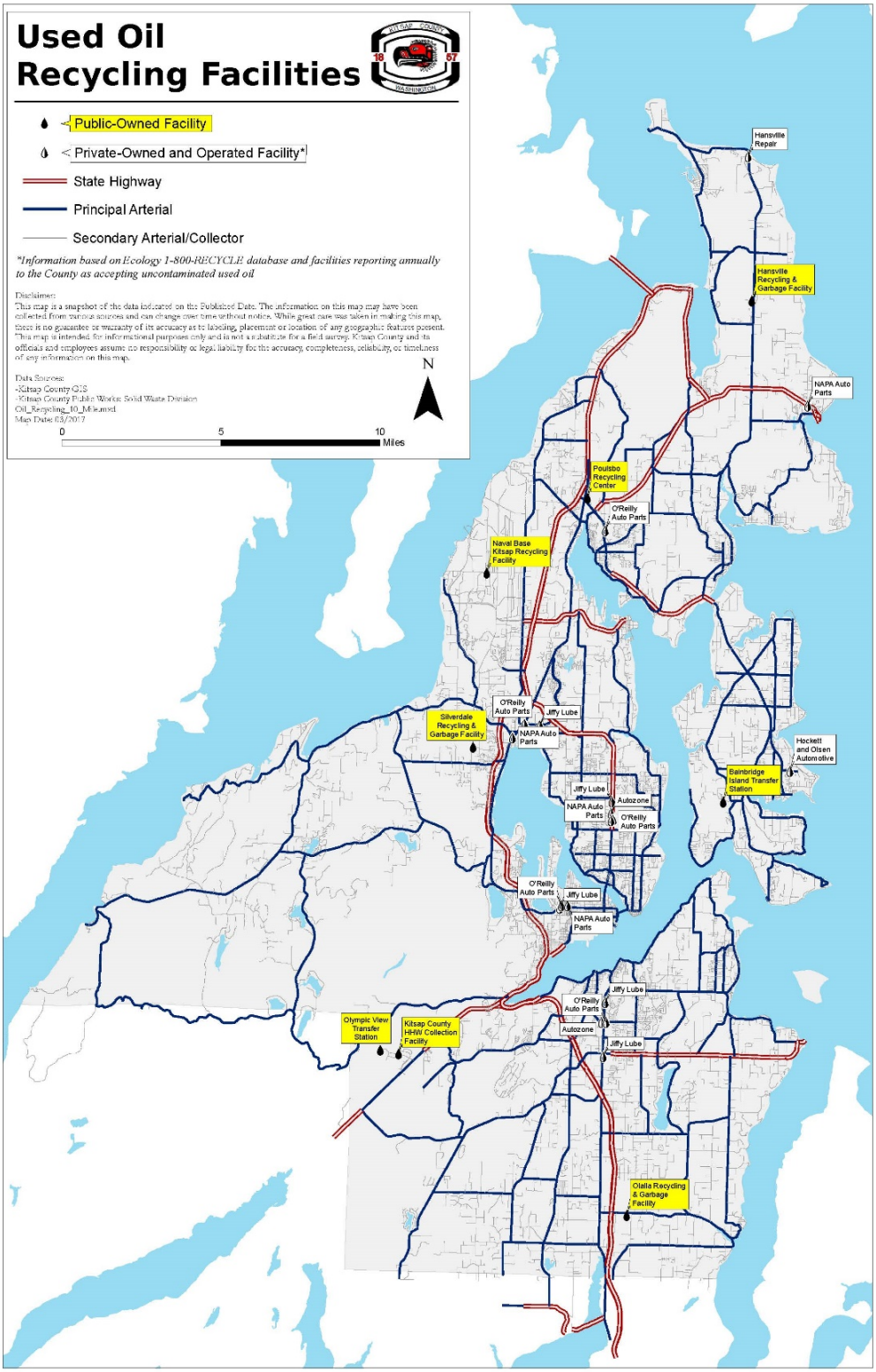
The SWD recommends that capacity be monitored on an ongoing basis. Should findings indicate a need for additional diversion capacity, expanding existing capacity or adding collection locations will be considered.

11.2.11 North-End HHW Collection Services

Some north-end residents must make a 70-mile or longer round trip to deliver wastes to the HHW Collection Facility in Bremerton. This trip increases carbon emissions from vehicles, and is less desirable when fuel costs spike. The time and cost disincentives may result in increased improper disposal of hazardous wastes.

To address North Kitsap and Bainbridge Island community concerns about proper disposal options, targeted mobile collection events have been held on a fairly regular basis. However, these events target specific, but limited, waste streams. In addition to addressing the service equity concerns for safe, convenient, year-round disposal options, a new facility or collection program may reduce carbon emissions associated with vehicle trips from North Kitsap and Bainbridge Island.

Figure 11-8
Used Oil Recycling Locations (10-Mile Service Areas)



Source: Kitsap County 2017

In 2008, the SWD hired consultants to complete two tasks:

- A study of alternative HHW collection options for North Kitsap county residents. Options were evaluated for cost, viability, and carbon footprint reduction.
- A survey of North Kitsap residents. The survey evaluated respondents' familiarity with existing services, and gauged the level of interest in alternative services, including those listed in the first task.

Results are summarized below:

- **Collection Options:** Options ranged from a one-day collection event, to small-scale regular collections at RAGFs, to a permanent full-time HHW collection facility located in the north-end. The permanent facility had the highest impact on carbon footprint reduction, but at the highest cost to achieve this reduction. This cost was far greater than the commensurate reduction in carbon.

  The other options had relatively equal impacts on carbon emissions. Costs for ongoing small-scale collection were similar, and were greater than a one-day collection event. According to the study, any of these options, if utilized, would result in carbon footprint reductions of at least 13% per year.

- **Survey:** A 34% response rate from 2000 surveys ensured a useful survey for monitoring North Kitsap residents' knowledge of existing services and desires for alternatives. Residents had realistic requests, if any, for alternative services. For example, 55% of residents closest to the existing HHW Collection Facility indicated that providing no additional service at all is acceptable. North Kitsap residents preferred collection events or small-scale ongoing collections (Kitsap County 2009).

The SWD will continue to pursue alternative HHW collection services for North Kitsap residents. Services will help provide the proven carbon footprint reduction benefit, and be compatible with residents' requests as outlined in the survey. Besides budget considerations, other variables will affect the specifics of these services:

- Regulatory requirements for managing and storing HHW
- Logistical considerations at RAGFs, including siting and permitting requirements
- Staffing needs for alternative services
- Public and staff safety
- Hazardous waste management vendor services and costs

Kitsap County Department of Public Works, Roads Division is currently evaluating the feasibility of building a new road shop in the coming years, either to replace the existing north road shop or to replace both the north and central shops with one larger facility. The SWD is included in this study, considering co-locating a permanent HHW collection facility with either option, depending on the exact location chosen. This study is still in its early stages and is dependent on funding, permitting, public input, and Board of County Commissioner approval.

11.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policies were identified:

1) Maintain reasonable service equity in the collection of a wide range of moderate risk wastes throughout Kitsap County.

2) Emphasize reducing exposure to toxics, reducing the toxicity and volume of wastes, and implementing safe and effective management of MRW in its promotion, education, and outreach programs.

3) Support waste prevention as the most effective and preferred means of helping residents and businesses manage waste and minimize climate impacts.

4) Support product stewardship to shift the costs of collection, recycling and disposal programs away from local government and toward those with the greatest ability to affect toxicity, packaging, and durability.

5) Encourage collaborative efforts that involve affected stakeholders in waste reduction and the safe and effective management in MRW, including other government agencies, waste management handlers, local businesses, schools, and the public.

6) Encourage the local development and implementation of cost-effective and technically viable alternative technologies (i.e., waste-to-energy) that produce energy or conserve natural resources while minimizing impacts to land, water, air and climate.

11.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Implement a mobile collection system in North County as the preferred means of providing alternative collection services for Kitsap residents living in the north county. Continue to monitor needs, and supplement with special collection events and/or a fixed facility as needed.

2) Continue to collect compact fluorescent light bulbs (CFLs) at the RAGFs, as a long-term service pending ongoing volumes of CFLs remaining consistent.

3) Actively support the development of product stewardship laws at the state and national level that require manufacturers or retailers to provide collection, recycling and/or safe disposal programs for target products.

4) Continue to engage with stakeholders by participating in and conducting conferences, presentations, training, and providing technical assistance to residents and businesses.

5) Maintain the viability of the existing HHW Collection Facility by increasing efficiencies and processing capability, when feasible. This may be in the form of equipment upgrades, layout design changes, facility expansion, or altering hours of operation or materials accepted.

6) Evaluate the continued collection and management of latex paint. Support product stewardship models for paint, but consider other management options, such as solidification and disposal.

7) Solid Waste Division and KPHD will continue to provide technical assistance to businesses that generate dangerous wastes on reducing the volume and toxicity of wastes and preventing pollution through business pollution prevention programs such as Envirostars, Local Source Control, and SQG technical assistance.

8) Solid Waste Division and KPHD will continue developing and providing promotion, education, and outreach services that support residential and business efforts to reduce the volume and toxicity of waste.

9) KPHD will continue to review commercial building permit applications to identify potential waste-related issues and to ensure that industrial wastewater and hazardous wastes are properly managed.

10) KPHD will work with public and private entities to develop and maintain a list of businesses in Kitsap County who are SQGs.

11) Ensure that MRW is managed in accordance with the applicable regulations (KCBH Ordinance 2010-01, Solid Waste Regulations).

12) Promote retail and other non-SWD collection of high-volume, pervasive wastes that are not appropriate for landfill disposal, such as rechargeable household batteries, through product stewardship programs, laws, and other collection initiatives.

13) Implement Kitsap Public Heath Board Ordinance 2016-02, Secure Medicine Return Regulations to continue to review, develop, and promote criteria for proper management and disposal of pharmaceutical waste.

11.5 REFERENCES/RESOURCES

Kitsap County. 2017. *Map of Used Oil Recycling Facilities in Kitsap County*. Prepared by Kitsap County GIS and Information Services. Facilities were identified by Ecology in the 1-800-RECYCLE database March 2017.

Kitsap County. 2016. Contract #KC-156-16. *Inter-Local Agreement with Mason County for Local Source Control Activities.* May 2016.

Kitsap County. 2015. Contract #KC-001-15. *Inter-Local Agreement with Mason County for Household Hazardous Waste (HHW) Services to Mason County Residents.*

Kitsap County Department of Public Works, SWD (Kitsap County). 2015. *Internal waste tracking documents, based on field data collection, shipping documents, and annual reports (unpublished).* Prepared by the Kitsap County Department of Public Works, SWD.

Kitsap County Department of Public Works, SWD (Kitsap County). 2010. *Kitsap County Department of Public Works, SWD 2009 Annual Report (unpublished).* Prepared by the Kitsap County Department of Public Works, SWD.

Kitsap County Department of Public Works, SWD (Kitsap County). 2009. *Study of Household Hazardous Waste Options for North-end Kitsap County Residents.* Prepared by Sustainable Business Consulting & OASIS Environmental.

Washington State Department of Ecology (Ecology). 2010. *Guidelines for Development of Local Hazardous Waste Plans.* Publication #10-07-006.

Washington State Office of Financial Management (OFM). 2010. *Office of Financial Management Census 2010 data for population by zip code and area.*

CHAPTER 12 - ADMINISTRATION AND ORGANIZATION

12.1 INTRODUCTION

This section describes the administrative and organizational structure that is in place to oversee and implement the solid waste management program in Kitsap County.

12.1.1 Planning Issues

The significant planning issues facing the administration and organization of the solid waste management system include:

- What rate structure is needed at the transfer station and the RAGFs to fully fund operations, programs, and provide for reserve fund balances as required to meet Public Works policy goals?
- What management and operational structure is needed to properly handle debris following a natural or man-made disaster?

12.2 EXISTING PROGRAM ELEMENTS

Statutes and regulations as well as local ordinances and policies direct solid waste activities, and assign responsibilities to state and local agencies. The roles of state and local government are summarized here.

12.2.1 Washington State

Solid waste management priorities are set by statute (Chapter 70.95 RCW), with primary responsibility for management assigned to local government. Ecology provides oversight and technical assistance to local implementing agencies and adopts regulations governing various aspects of solid waste including solid waste handling, landfilling, special waste management, and remedial action.

Ecology has provided financial assistance to local governments, primarily through the Coordinated Prevention Grant (CPG) program. The program provides grants for eligible projects and programs that conform to local solid and hazardous waste management plans. Funding is also provided to local health jurisdictions for solid waste enforcement and control programs. These grants are authorized by RCW 70.105D.070. Remedial Action Grants may also be available to local governments for clean-up activities at contaminated sites. Funding for Ecology grants has declined significantly since 2015, and future allocations are dependent upon legislative action.

The WUTC regulates commercial and residential garbage collection and collection of residential recyclables, including approval of rates charged by their certificated haulers. WUTC's role is fully discussed in Chapter 7 (Collection).

12.2.2 Kitsap County

Within Kitsap County, responsibility for solid waste management is shared between the SWD and KPHD.

Solid Waste Division (SWD)

The SWD, a division of the County Public Works Department, reports to the BOCC. It is the lead agency in charge of long-range planning and implementation of solid and hazardous waste programs. The SWD promotes waste reduction and product stewardship, manages waste reduction, recycling, composting, moderate risk waste, litter and illegal dumping clean up and prevention programs, manages transfer and disposal activities, and, under policies developed in the Plan and by the BOCC, incorporates climate change and sustainability into its decision-making process.

In 2016, the SWD had 24 full-time employees (FTE). Funding for staff and programs comes from a combination of solid waste disposal fees and grants.

Counties may establish or acquire solid waste disposal sites and adopt policies governing solid waste handling practices. Kitsap County's current ordinances governing solid waste handling practices are codified in Title 9 of the Kitsap County Code. Chapter 9.16 ordains that disposal rates at County-owned facilities are established as needed through resolution of the BOCC. Chapter 9.18 authorizes the imposition of a $10 fee for failure to secure a load when transporting solid waste to a County-owned facility. Chapter 9.48 defines criteria establishing the minimum level of curbside recycling service for all residents of Kitsap County.

Upon a finding that mandatory solid waste collection throughout the county is in the public interest and necessary for the preservation of public health, counties have the authority to form solid waste collection districts (Chapter 36.58A RCW). Currently, the formation of a solid waste collection district is not being recommended.

Kitsap Public Health District (KPHD)

Kitsap Public Health District reports directly to the Kitsap Public Health Board (KPHB), which is comprised of City and County officials. The Solid and Hazardous Waste Program of KPHD regulates, permits, and inspects the collection, storage, treatment, handling, and disposal of solid and moderate risk waste, biomedical waste, asbestos, and other special wastes. They are responsible for enforcement of solid and hazardous waste regulations, including premise and illegal dumping violations on public and private property.

KPHD also offers hazardous waste technical assistance to businesses, may perform Site Hazard Assessments (SHAs) for Ecology, and responds to premises and solid waste complaints. Funding comes from a combination of surcharges on solid waste disposal, charges for permitting and regulatory activities, and grants. Money collected as penalties goes into the General Fund and is not directed to the District.

KPHD had 3.5 FTE responsible for solid waste operations and enforcement in 2016, a decrease of 2 FTE from 1999. An additional 2.5 FTE are responsible for hazardous waste programs and enforcement. Staffing decreases are largely due to closure of Kitsap County's only operating permitted landfill (OVSL), as well as decreases in funding in combination with increasing costs.

Kitsap County Solid Waste Advisory Committee (SWAC)

The SWAC operates in accordance with the provisions of RCW 70.95.165. The SWAC consists of appointed members and some alternates from each of the three districts of the County; the four incorporated cities; two Indian tribes; the solid waste industry (2); agriculture, commercial, and organics sectors; and the Navy. There are currently 15 appointed members of the SWAC.

The SWAC's role is to advise the SWD about solid waste activities, to review and comment on solid waste plans and proposed actions, to assist in the formation of policies, ordinances, and rules related to solid waste, and to assist in the dissemination of public information about solid waste issues.

The SWAC was involved throughout each phase of the Plan development, helping shape the policies and programs described throughout the Plan.

Cities

Each of the incorporated cities in Kitsap County has entered into an ILA, included in Appendix C, which directs the SWD to develop long-range solid and hazardous waste plans on its behalf. Formal adoption of the Plan by each of the participating cities is required prior to State approval.

Cities are responsible for ensuring the availability of solid waste collection services, responding to their citizens' concerns, and managing nuisances. Cities have the authority to require mandatory solid waste collection within their boundaries. City collection programs are discussed in Chapter 7 - Collection.

Tribes

This Plan also considers tribal communities and ensures that adequate services are available to businesses and residents on tribal land. The Port Gamble S'Klallam Tribe is participating in the Solid and Hazardous Waste Plan process through an ILA. In lieu of an ILA, the Suquamish Tribe's participation in this Plan is through a MOU (Appendix C).

Under federal law, the USEPA and tribes have authority to administer and enforce solid waste regulation on tribal lands. In general, tribal members and tribal lands are subject to tribal enforcement authority as implemented by tribal police, and non-tribal members and non-tribal lands are subject to KPHD and Kitsap County authority, though consultation with legal counsel is advised on a case-by-case basis as jurisdictional questions can be complex.

As applied to solid waste facilities and nuisance abatement, the variety of enforcement mechanisms can sometimes lead to similar situations having differing outcomes based upon the location or the membership status of alleged offenders or affected parties. To address this, it may be useful to establish a dialogue between the tribes, KPHD, USEPA, and local code enforcement personnel to consider ways to improve consistency of regulation and enforcement across jurisdictional boundaries.

U.S. Naval Installations

The four military facilities based in Kitsap County (Puget Sound Naval Shipyard and Intermediate Maintenance Facility, Naval Base Kitsap-Bremerton, Naval Base Kitsap-Bangor, and Naval Base Kitsap-Keyport), are collectively known as Naval Base Kitsap. The Navy hauls its commercial and industrial solid waste directly to OVTS for disposal, and contracts for residential collection of garbage and recyclables. Residential garbage is transported to OVTS for disposal. The Navy pays for disposal at OVTS via contract with the County. Tonnage collected is included in the totals for unincorporated Kitsap County.

The Navy has a representative on the SWAC and regularly communicates with Kitsap County concerning solid waste management and related issues. The Navy and Kitsap County have a MOU that recognizes the SWD as the lead solid and hazardous waste planning authority.

12.2.3 Funding and Finance

The majority of the costs incurred by the SWD are for daily transfer operations at OVTS and the RAGFs.

Revenues are currently generated from three sources: disposal fees on solid waste (97%), Ecology grants (1.5%), and other miscellaneous fees and interest (1.5%). The 2017 disposal fee is $71 per ton of MSW. This tipping fee is currently the second lowest in Western Washington; only Cowlitz County, with an in-county landfill, has a lower tipping fee. Reduction in grant funding from Ecology could result in a reduction of services to customers. Alternatively, these programs could be fully funded through tipping fee revenue, likely requiring an increase in rates.

Much of the disposal fee funds the contracted services provided by Waste Management, including operation of OVTS, rail-hauling of refuse, and disposal at Columbia Ridge Landfill located near Arlington, Oregon. SWD programs funded through disposal fees include moderate risk waste collection and disposal, waste reduction and recycling programs, education and outreach, oversight of closed landfills, and system administration.

The SWD follows generally accepted accounting principles for enterprise funds. Solid waste fees, investment earnings, grant, and contract reimbursements are deposited into solid waste funds. These funds are utilized solely for solid waste activities.

Separate funds have been established for the contracted transfer station and RAGF operations (Fund 437), the SWD programs (Fund 401), and the Clean Kitsap program (Fund 430). Other separate funds have been established for capital projects (Fund 438) and equipment replacement (Fund 434), as well as landfill closure and remediation activities (Funds 415, 418, and 439).

Table 12-1 details the components of the 2017 disposal fee, assuming an estimated 210,000 tons of MSW received at OVTS.

Table 12-1
Disposal Fee Breakdown

Component	Cost	% of Cost
Waste Management Service Fee	$50.20	70.7%
SWD	$15.07	21.3%
KPHD	$2.65	3.7%
Clean Kitsap Fund (litter/illegal dumping)	$1.30	1.8%
Taxes	$1.78	2.5%

Table 12-2 describes the recent revenue and expenditure history for the three primary solid waste funds (Funds 401, 437 and 430) and a forecast for years 2017-2022. Given the recent recovery from the 2008 recession and the wide variability in annual increases in tonnage, it is difficult to accurately project MSW tonnages in the future. For purposes of this forecast, it is assumed that tonnage, and therefore revenues, will increase by approximately 2% per year through 2022. Operating expenditures are assumed to increase by approximately 3% per year. This table assumes no new programs or activities resulting from implementation of this Plan, but rather a continuation of current activities. Additional costs associated with implementation of new Plan recommendations are contained in Appendix A.

Table 12-2
Solid Waste Division Revenues and Expenditures, 2014-2022

	2014 Actuals	2015 Actuals	2016 Budget	2017 Budget	2018 Estimate	2019 Estimate	2020 Estimate	2021 Estimate	2022 Estimate
Tonnage	187,914	193,432	205,000	210,000	214,200	218,484	222,854	227,311	231,857
REVENUE - FUND 401 (SOLID WASTE DIVISION)									
Grants	$ 460,297	$ 577,379	$ 400,000	$ 210,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000	$ 200,000
Solid Waste Fees and Charges	2,320,858	2,374,433	2,455,500	3,038,000	3,098,760	3,160,735	3,223,950	3,288,429	3,354,197
Interfund	107,694	111,131	100,000	100,000	102,000	104,040	106,121	108,243	110,408
Interest	13,249	13,480	20,000	20,000	20,400	20,400	20,400	20,808	20,808
Misc. Rev.	7,725	13,215	-	-	-	-	-	-	-
TOTAL FUND 401	**$ 2,909,823**	**$ 3,089,638**	**$ 2,975,500**	**$ 3,368,000**	**$ 3,421,160**	**$ 3,485,175**	**$ 3,550,471**	**$ 3,617,480**	**$ 3,685,414**
REVENUE - FUND 437 (TRANSFER STATION AND CONTRACTOR-OPERATED RAGFs)									
Solid Waste Fees and Charges	$ 11,071,279	$ 12,054,278	$ 12,540,000	$ 12,875,000	$ 13,132,500	$ 13,395,150	$ 13,663,053	$ 13,936,314	$ 14,215,040
Interfund	-	8,995							
Interest	6,157	9,786	3,000	3,000	$ 3,060	3,121	3,184	3,247	3,312
Misc. Rev.	3,512	6,789	-	-	-	-	-	-	-
TOTAL FUND 437	**$ 11,080,949**	**$12,079,847**	**$12,543,000**	**$12,878,000**	**$13,135,560**	**$13,398,271**	**$13,666,237**	**$13,939,561**	**$14,218,353**
REVENUE - FUND 430 (CLEAN KITSAP)									
Grants	$ 41,247	$ 42,614	$ 30,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Solid Waste Fees and Charges	206,536	232,546	180,000	260,000	265,200	270,504	275,914	281,432	287,061
Interest	2,329	3,532	-	-					
TOTAL FUND 430 - Clean Kitsap	**$ 250,112**	**$ 278,692**	**$ 210,000**	**$ 300,000**	**$ 305,200**	**$ 310,504**	**$ 315,914**	**$ 321,432**	**$ 327,061**
FUND 438 - Solid Waste Capital Improvement	**$ 15,251**	**$ 16,742**		**$ -**	**$ 3,120,000**	**$ 500,000**			
FUND 434 - Solid Waste Equipment Reserve	**$ 402,221**	**$ 404,389**	**$ 400,000**	**$ 400,000**	**$ 400,000**	**$ 400,000**	**$ 400,000**	**$ 400,000**	
TOTAL REVENUE	**$ 14,658,356**	**$ 15,869,308**	**$ 16,128,500**	**$ 16,946,000**	**$ 20,381,920**	**$ 18,093,950**	**$ 17,932,621**	**$ 18,278,474**	**$ 18,230,827**
EXPENDITURES - FUND 401 (SOLID WASTE DIVISION)									
4011 - Solid Waste Administration	$ 854,191	$ 940,910	$ 1,062,901	$ 1,052,725	$ 1,019,226	$ 1,043,243	$ 1,067,582	$ 1,093,581	$ 1,119,781
4012 - Solid Waste Dropbox Operations	548,939	608,304	748,875	767,729	649,205	663,885	678,851	694,975	711,268
4013 - Waste Reduction/Recycling/Litter	470,152	541,084	571,325	592,087	586,444	600,096	613,921	628,869	643,917
4014 - Household Hazardous Waste	963,873	1,060,751	1,231,167	1,265,475	1,174,470	1,200,047	1,225,979	1,253,988	1,282,250
4015 - Landfill Management	108,551	95,533	137,912	137,927	113,114	116,027	118,971	122,163	125,364
4016 - Local Source Control	94,395	97,986	98,350	104,947	103,790	106,452	109,146	112,060	114,526
TOTAL FUND 401	**$ 3,040,101**	**$ 3,344,568**	**$ 3,850,530**	**$ 3,920,890**	**$ 3,646,250**	**$ 3,729,750**	**$ 3,814,450**	**$ 3,905,637**	**$ 3,997,106**
EXPENDITURES - FUND 437 (TRANSFER STATION AND CONTRACTOR-OPERATED RAGFs)									
4371 - Transfer Station Operations	$ 10,570,815	$ 10,955,584	$ 11,759,645	$ 12,265,163	$ 15,622,381	$ 13,271,442	$ 13,034,637	$ 13,327,703	$ 13,615,188
4372 - Transfer Dropbox Operations	550,532	583,367	794,335	808,033	611,231	622,605	634,184	646,591	659,222
TOTAL FUND 437	**$ 11,121,347**	**$11,538,951**	**$12,553,980**	**$13,073,196**	**$16,233,612**	**$13,894,047**	**$13,668,821**	**$13,974,295**	**$14,274,410**
FUND 430 - Clean Kitsap		**$ 160,002**	**$ 249,500**	**$ 255,500**	**$ 176,002**	**$ 193,602**	**$ 212,963**	**$ 234,259**	**$ 257,685**
FUND 438 - Solid Waste Capital Improvement				**$ 1,670,000**	**$ 1,400,000**	**$ 1,250,000**	**$ 500,000**		
FUND 434 - Solid Waste Equipment Reserve		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,600,000**
Fund 401 Beginning Fund Balance				$ 1,769,761	$ 1,216,871	$ 991,781	$ 747,206	$ 483,227	$ 195,070
Fund 401 Target Fund Balance (= 3 months operating expenses)				980,000	910,000	930,000	950,000	980,000	1,000,000
Fund 437 Beginning Fund Balance				$ 3,406,324	$ 3,211,128	$ 113,076	$ (382,699)	$ (385,283)	$ (420,016)
Fund 437 Target Fund Balance (= 3 months operating expenses)				3,200,000	3,200,000	3,200,000	3,300,000	3,400,000	3,500,000
Fund 430 Beginning Fund Balance				$ 863,500	$ 908,000	$ 1,037,198	$ 1,154,099	$ 1,257,051	$ 1,344,224
Fund 430 Target Fund Balance (= $1,000,000 disaster debris disposal)				1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Fund 438 (Capital Improvement) Beginning Fund Balance				$ 2,200,000	$ 530,000	$ 2,250,000	$ 1,500,000	$ 1,000,000	$ 1,000,000
Fund 438 Target Fund Balance (= $1,000,000 emergency repair/replacement)				2,670,000	2,400,000	2,250,000	1,500,000	1,000,000	1,000,000
Fund 434 (Equipment Reserve) Beginning Fund Balance				$ 1,635,000	$ 2,035,000	$ 2,435,000	$ 2,835,000	$ 3,235,000	$ 3,635,000
Fund 434 Target Fund Balance (= $3,600,000 by 2022)				1,600,000	2,000,000	2,400,000	2,800,000	3,200,000	3,600,000
NEW Fund X (Rate Stabilization) Beginning Fund Balance				$ -	$ -	$ -	$ -	$ -	$ -
Fund X Target Fund Balance (= 15% of annual estimated revenue)				2,500,000	2,500,000	2,600,000	2,600,000	2,700,000	2,700,000
Funds 401, 437, 430, 438 Fund Balance				$ 8,239,585	$ 5,865,999	$ 4,392,055	$ 3,018,607	$ 2,354,995	$ 2,119,278
Funds 401, 437, 430, 438 Target Fund Balance				7,850,000	7,510,000	7,380,000	6,750,000	6,380,000	6,500,000
DIFFERENCE				$ 389,585	$ (1,644,001)	$ (2,987,945)	$ (3,731,393)	$ (4,025,005)	$ (4,380,722)
TOTAL FUND BALANCE				**$ 9,874,585**	**$ 7,900,999**	**$ 6,827,055**	**$ 5,853,607**	**$ 5,589,995**	**$ 5,754,278**
TOTAL TARGET FUND BALANCE				**11,950,000**	**12,010,000**	**12,380,000**	**12,150,000**	**12,280,000**	**12,800,000**
DIFFERENCE				**$ (2,075,415)**	**$ (4,109,001)**	**$ (5,552,945)**	**$ (6,296,393)**	**$ (6,690,005)**	**$ (7,045,722)**

In addition to the three main operating funds, this table also includes fund balance projections for Fund 438 (Solid Waste Capital Improvement Fund), Fund 434 (Solid Waste Equipment Reserve Fund), and a not-yet-created Rate Stabilization fund. Kitsap County Public Works implemented a policy (PW 4.08.01

POL) in 2016 establishing levels for minimum reserves in the Public Works operations and construction funds. For SWD Funds, this policy establishes the following minimum fund balances:

- Solid Waste Fund (401): three (3) months of operating expenses
- Transfer Station Operations Fund (437): three (3) months of operating expenses
- Solid Waste Clean Kitsap Fund (430): A minimum fund balance of $1,000,000 will be maintained to cover disposal of debris resulting from a disaster
- Solid Waste Capital Improvement Fund (438): A minimum fund balance of $1,000,000 will be maintained to cover asset repair and/or replacement resulting from an emergency or natural disaster
- Solid Waste Equipment Reserve Fund (434): $400,000 will be transferred from Fund 437 each year through 2021 to cover equipment replacement costs at Olympic View Transfer Station
- Rate Stability Reserve Funds: Fund managers will maintain the following minimum balances in dedicated separate funds to hedge against revenue shortfalls or volatile expenses that could result in an intra-year deficit. For Solid Waste: 15% of annual estimated revenue for the budget year.

As shown in Table 12-2, although the overall fund balance of these six funds begins at close to $10 million in 2017, overall expenditures will continue to exceed revenues, such that the projected fund balance, at current disposal fees, will decrease to approximately $6 million by 2022. When fund balance goals are included, there exists an immediate shortfall of approximately $2 million, which will increase to $7 million by 2022. A rate study is planned for 2017, which will address tipping fee requirements to fully support both annual expenditures and fund balance requirements. It will be based on the methodology used to set current rates at OVTS and the RAGFs (Kitsap County 2013).

KPHD's Solid and Hazardous Waste (SHW) program has been primarily funded for many years through a combination of grants from Ecology, the Local Source Control Partnership (LSCP) contract with Ecology, permit fees, and a portion of the tipping fee at OVTS. Significant reductions are anticipated in both the SHA grant and the CPG grant from Ecology. Table 12-3 shows the projected revenue and expenditures through 2022, based on current best estimates. Grant funding allocations for the 2017-2019 biennium have not yet been announced. Based on these projections, it is assumed that there will be a reduction of 0.5 FTE in 2018.

KPHD's portion of the tipping fee at OVTS increased to $2.65 per ton in 2017. Using conservative tonnage estimates of 205,000 tons in 2017, increasing by 1.5% per year, expenditures are expected to exceed revenues by nearly $300,000 in 2022. The Reserve Account, with a desired target balance of three months of expenses (now approximately $250,000), is expected to be depleted in 2018. The deficit in the reserve account rises to almost $900,000 in 2022.

The 2017 rate study will also include an analysis of what level of funding for KPHD can be supported through increases in the OVTS tipping fee.

Table 12-3
KPHD Solid and Hazardous Waste Program Revenues and Expenditures, 2015-2022

	2015 Actual	2016 Budget	2017 Budget	2018 Estimate	2019 Estimate	2020 Estimate	2021 Estimate	2022 Estimate
REVENUES								
DOE CPG Regular Cycle	$57,798	$225,000	$46,000	$29,000	$46,000	$29,000	$46,000	$29,000
DOE LSC Grant	122,036	195,000	195,000	195,000	195,000	195,000	195,000	195,000
DOE LSC Secondary Containment Voucher Program	225	0	0	0	0	0	0	0
DOE SHA - SHW	95,265	110,000	96,250					
Kitsap County Derelict Vessel Prevention	11,243	0	0	0	0	0	0	0
Kitsap County Solid Waste Tipping Fees - SHW	423,181	460,000	543,250	551,399	559,669	568,064	576,584	585,234
Permits - SHW	35,905	40,000	46,000	50,000	50,000	50,000	50,000	50,000
Plan Reviews - SHW	109	1,500	1,200	1,500	1,500	1,500	1,500	1,500
New Unassigned Drug Lab Fees			15,000	15,000	15,000	15,000	15,000	15,000
Other - SHW	2,071			2,000	2,000	2,000	2,000	2,000
DIRECT PROGRAM REVENUES	**$747,833**	**$1,031,500**	**$942,700**	**$843,899**	**$869,169**	**$860,564**	**$886,084**	**$877,734**
EXPENDITURES								
Personnel Costs								
Salaries & Wages	$364,729	$442,544	$453,977	$424,629	$433,122	$441,784	$450,620	$459,632
Payroll Taxes	27,633	36,357	37,217	34,820	35,516	36,226	36,951	37,690
Benefits	83,793	101,003	108,706	101,911	103,949	106,028	108,149	110,312
Unemployment		2,647	2,715	2,548	2,599	2,651	2,704	2758
Subtotal Personnel Costs	$476,155	$582,551	$602,615	$563,907	$575,186	$586,689	$598,423	$610,391
Non-Personnel Costs								
NEX Expense			$80,000	$80,000	$80,000	$80,000	$80,000	$80,000
Supplies	5,443	7,000	6,000	6,300	6,615	6,946	7,293	7,658
Office Equipment <$5,000	413	1,900	4,000	2,000	2,000	2,000	2,000	2,000
Computer Hardware <$5,000	152		1,000	1,050	1,103	1,158	1,216	1,276
Professional Services	5,599	10,000	6,000	2,000	2,100	2,205	2,315	2,431
Legal Services	3,917	2,000	4,000	4,200	4,410	4,631	4,862	5,105
Communications	4,430	4,396	6,216	6,527	6,853	7,196	7,556	7,933
Travel & Mileage	1,353	2,000	2,000	2,100	2,205	2,315	2,431	2,553
Parking & Commute Trip Reduction	23	1,230	240	252	265	278	292	306
Advertising	9,060	8,000	8,000	8,400	8,820	9,261	9,724	10,210
Insurance		538						
Repairs & Maintenance	2,657	2,482	500	525	551	579	608	638
Operations & Maintenance: Government Center	22,603	28,033	28,786	30,225	31,737	33,323	34,990	36,739
Training	6,672	5,000	6,000	6,300	6,615	6,946	7,293	7,658
Miscellaneous	2,755	2,004	3,000	3,150	3,308	3,473	3,647	3,829
Equipment >$5,000		21,000						
Subtotal Non-Personnel Costs	**$65,077**	**$95,583**	**$155,742**	**$153,029**	**$156,581**	**$160,310**	**$164,225**	**$168,336**
PROGRAM EXPENDITURES	**$541,232**	**$678,134**	**$758,357**	**$716,936**	**$731,766**	**$746,999**	**$762,648**	**$778,727**
Administrative Services Overhead	206,179	$252,198	$270,881	$284,425	$298,646	$313,579	$329,258	$345,720
Environmental Health Overhead	25,021	23,755	22,009	23,109	24,265	25,478	26,752	28,090
TOTAL EXPENDITURES	**$772,432**	**$954,087**	**$1,051,247**	**$1,024,471**	**$1,054,677**	**$1,086,056**	**$1,118,658**	**$1,152,538**
REVENUES MINUS EXPENDITURES	**-$24,599**	**$77,413**	**-$108,547**	**-$180,572**	**-$185,508**	**-$225,492**	**-$232,574**	**-$274,804**
Tonnage Projections (assumes 1.5% increase per year)			205,000	208,075	211,196	214,364	217,579	220,843
Reserve Account (Target = $250,000)		**$304,548**	**$196,001**	**$15,429**	**-$160,079**	**-$385,571**	**-$618,145**	**-$892,949**

12.2.4 Disaster Debris Management

Debris resulting from natural disasters such as severe storms, floods, and earthquakes can quickly exceed the capacity of local solid waste disposal facilities. The amount and types of debris generated from a disaster vary, and managing this waste material may place an additional burden on a community already struggling to cope with a natural disaster.

As the lead solid waste management planning agency, the SWD has prepared a preliminary draft Disaster Debris Management Plan (DDMP). Kitsap County's plan is modeled after other jurisdictions within Washington State which have current, approved disaster debris plans. The purpose of the DDMP is to:

- Establish and provide a centralized repository of information critical to developing and operating a disaster debris management program
- Identify the rules, regulations and guidelines enacted by Federal Emergency Management Agency (FEMA) and other agencies governing the disaster debris removal process
- Identify locations of disaster debris management sites, including neighborhood collection sites (NCS) and temporary debris storage and reduction (TDSR) sites
- Identify the roles and responsibilities of all involved parties
- Establish and provide reference and contact information for key County personnel
- Establish language and a protocol for pertinent public information such as press releases and other debris management information.

The preliminary draft DDMP (Kitsap County 2015) has been reviewed by Kitsap County Department of Emergency Management, KPHD, and emergency management officials from the incorporated cities. Several comments have been received, and will be incorporated into a final draft. During 2017, Kitsap County SWD will procure the services of a disaster debris management contractor, who will be responsible for overseeing and staffing disaster debris collection sites when the magnitude of the disaster exceeds existing staff's management capabilities. The first task in the selected contractor's scope of work will be to assist the SWD in completing the final draft DDMP. The DDMP will then be presented to the Washington State Department of Emergency Management for their review and approval.

12.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policies were identified:

1) Re-structure rates so that they better support solid waste program goals.

2) Ensure that transfer and disposal rates are equitable and reflect the management and operational costs of programs and program goals.

3) Provide and improve services in a cost-effective manner.

4) Plan for the management of solid and hazardous wastes and recyclables as a part of the County's overall response in the event of a disaster or emergency.

12.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Continue to cover the cost of managing solid and hazardous waste using a combination of user fees and grant funds.

2) Complete an updated RAGF and OVTS Rate Study designed to re-structure rates so that they support solid waste program goals. Rates at County-owned RAGFs should be structured to achieve the following:

- **a)** Include the cost of "free" recycling in the disposal fees at the RAGFs.
- **b)** Set rate structures at the RAGFs such that it is less costly for customers with small volume loads to sign up for curbside collection than it is to self-haul their garbage.
- **c)** Encourage customers to consolidate their materials so that they bring fewer but larger loads.
- **d)** Encourage customers with large loads and C&D materials to deliver their materials directly to OVTS.
- **e)** Consider the potential impact of rate structures on illegal dumping.
- **f)** Consider the needs of low-income residents.
- **g)** Are projected for a 5-year period.
- **h)** Charge equivalent fees at each of the County-owned RAGFs.
- **i)** Generate sufficient revenue to cover the costs of operations, maintenance, and reserve requirements.

4) Finalize a DDMP that addresses issues specific to managing wastes and recyclables following a natural or man-made disaster. Coordinate with Kitsap County Department of Emergency Management, KPHD, Cities, haulers, and other stakeholders in plan implementation. Ensure that the plan addresses FEMA cost recovery and management requirements.

12.5 REFERENCES/RESOURCES

Federal Emergency Management Agency (FEMA). 2007. *Public Assistance Debris Management Guide FEMS-325.* July 2007.

Federal Emergency Management Agency (FEMA). 2010. *Public Assistance Debris Monitoring Guide FEMS-327.* October 2010.

Kitsap County Department of Public Works, SWD (Kitsap County). 2013. *Cost of Service, Level of Service, and Rate Study.* Prepared by SAIC. March 2013.

Kitsap County Department of Public Works, SWD (Kitsap County). 2015. *Kitsap County Disaster Debris Management Plan Preliminary Draft.* November 2015.

CHAPTER 13 - REGULATION AND ENFORCEMENT

13.1 INTRODUCTION

This chapter discusses solid waste regulation and enforcement, nuisance abatement, illegal dumping, and air quality. KPHD is the lead enforcement agency responsible for enforcing solid waste regulations and permitting solid waste facilities in Kitsap County. The SWD works with enforcement agencies to provide public and private property clean up assistance and offer alternatives to discourage litter and illegal dumping.

13.1.1 Planning Issues

The significant planning issues facing solid waste regulation and enforcement include:

- Is the KPHD Solid and Hazardous Waste Program adequately funded through existing tipping fees?
- What role should the SWD play in reestablishing the Kitsap Nuisance Abatement Team (KNAT)?
- What is the best approach to effectively abate waste-related nuisance situations in Kitsap County?
- What is the best mechanism for providing regulatory oversight to closed and/or abandoned landfills?

13.2 EXISTING PROGRAM ELEMENTS

13.2.1 Regulation of Solid Waste

Authority to regulate solid waste handling, biomedical wastes, and moderate risk waste facilities is delegated to KPHD under Washington State Department of Health and Ecology regulation. KPHD enforces the Kitsap County Solid Waste Regulations (Kitsap County Board of Health Ordinance 2010-01), which amends and adopts the Washington State Solid Waste Handling Standards (Chapter 173-350 WAC), as well as other State solid waste laws and regulations.

Tribes have the authority under federal and tribal laws to administer and enforce solid waste regulations on tribal lands. The Suquamish Tribe and KPHD have a Memorandum of Understanding pertaining to enforcement of solid waste complaints and illegal dumping on tribal lands.

The SWD implements relevant chapters of the health, welfare, and sanitation standards (KCC Title 9). These standards address disposal rates at County solid waste facilities (Chapter 9.16), vehicle litter control (Chapter 9.18), and residential recycling and yard debris collection (Chapter 9.48).

Nuisance abatement activities are conducted by City and County Code Compliance agencies. KCC Chapter 9.56, Public Nuisances, regulates these activities in the unincorporated county. Chapter 9.52 establishes roles, responsibilities, and authority of the KPHD, the KPHB, and the Health Officer, to enforce statutes, rules, and regulations governing public health.

Solid Waste Permits

KPHD regulates solid waste handling facilities and collection companies through a permitting system. KPHD issued 32 solid waste handling permits in 2015 including 16 facility permits and 17 hauler permits, and conducted 136 inspections at permitted and conditionally-exempt solid waste facilities.

Table 13-1 presents a list of current solid waste facilities handling permits. Hauler permits are issued to companies in one of three categories: Site Restoration Contractor, Biomedical Waste Transporter, and Mixed MSW Transporter. To perform solid waste collection, however, a private transporter needs a certificate of public convenience and necessity from the WUTC.

Table 13-1
Solid Waste Handling Permits (Active and Issued by KPHD), 2015

SOLID WASTE FACILITIES	
Facility	**Location**
Kitsap County HHW Collection Facility	Port Orchard
Bainbridge Island Transfer Station	Bainbridge Island
Hansville Recycling and Garbage Facility	Kingston
Hansville Landfill (Closed)	Kingston
Olalla Recycling and Garbage Facility	Port Orchard
Olalla Landfill (Closed)	Port Orchard
Olympic View Sanitary Landfill (Closed)	Port Orchard
Olympic View Transfer Station	Port Orchard
Silverdale Recycling and Garbage Facility	Silverdale
Olympic Organics Compost	Kingston
Norseland Landfill (Closed)	Bremerton
City of Bremerton Decant Facility	Bremerton
City of Port Orchard Decant Facility	Port Orchard
Kitsap County Public Works Decant Facility	Poulsbo
City of Bainbridge Island Decant Facility	Bainbridge Island
City of Poulsbo Transfer Station/Decant Facility	Poulsbo

Source: KPHD 2016.

Conditionally Exempt Solid Waste Handling Facilities

Under Chapter 173-350 WAC, certain solid waste handling activities conducted by facilities are conditionally exempt from solid waste permitting, as long as these facilities meet conditions specified in the rule. Such facilities are referred to as "conditionally-exempt" solid waste facilities. KPHD is responsible for ensuring that conditionally-exempt solid waste facilities operate in accordance with conditional requirements, and if this is not the case, implementing the requirement for them to obtain a

Solid Waste Handling Permit. Conditionally-exempt solid waste facilities include certain recycling facilities that generate small volumes of residual (i.e. concrete, scrap metal, and asphalt recycling, and wood grinding operations), material recovery facilities (i.e. facilities that process source-separated household recyclables), exempt piles (i.e. wood waste), and limited MRW facilities or MRW collection events.

Closed and/or Abandoned Landfills

KPHD regulates certain aspects of closed and/or abandoned landfills (CALFs) under KCBH Ordinance 2010-01, §460, Construction and Notification Standards Near Landfills. CALFs are those historic landfills which were closed or abandoned prior to the effective date of Chapter 173-304 WAC, Minimum Functional Standards for Solid Waste. CALFs include permitted, or unpermitted and illegally operated landfills. These regulations are designed to minimize the potential adverse impacts posed by CALFs and to ensure that these impacts are fully considered and mitigated during development at or near these sites. CALFs must also register their status with the County Auditor so that future owners are aware of the presence of the landfills prior to purchase.

There are currently 44 CALFs in Kitsap County. Twenty-seven of them have been ranked under Washington State's Model Toxics Control Act–Cleanup Regulations (Chapter 173-340 WAC). Listed sites are ranked from 1 to 5, with the highest rank being a 1, or alternatively the site is recommended for No Further Action (NFA). The CALFS have been ranked as follows: NFA is recommended at seven landfills, five landfills were ranked 1, four landfills were ranked 2, four landfills were ranked 3, three landfills were ranked 4, and four landfills were ranked 5. The remaining landfills are either awaiting assessment, participating in Ecology's Voluntary Cleanup Programs, conducting an Independent Remedial Action, or being addressed under the Federal Superfund Law (CERCLA).

13.2.2 Air Quality

Mobile and stationary sources of air pollutants in Kitsap County are regulated by the Puget Sound Clean Air Agency. Each Fire District or Department cooperates with the Puget Sound Clean Air Agency to enforce regulations that prohibit outdoor burning.

Effective September 1, 2009, landclearing burning is no longer allowed anywhere in Kitsap County. This permanent ban was adopted by the Puget Sound Clean Air Agency in April 2009, following a public workshop, public comment period, and public hearing. Prior to this action, landclearing fires were prohibited only in the urbanized areas of the county. A similar permanent ban on landclearing burning was previously enacted in King, Pierce, and Snohomish counties. "Landclearing burning" means outdoor burning of trees, stumps, shrubbery, or other natural vegetation from landclearing projects (i.e., projects that clear the land surface so it can be developed, used for a different purpose, or left unused) WAC 173-425-030(9). This restriction is in addition to the existing ban on outdoor burning in urban growth areas and no-burn zones.

The ban affects any person clearing land for the purpose of changing its use, which may include:

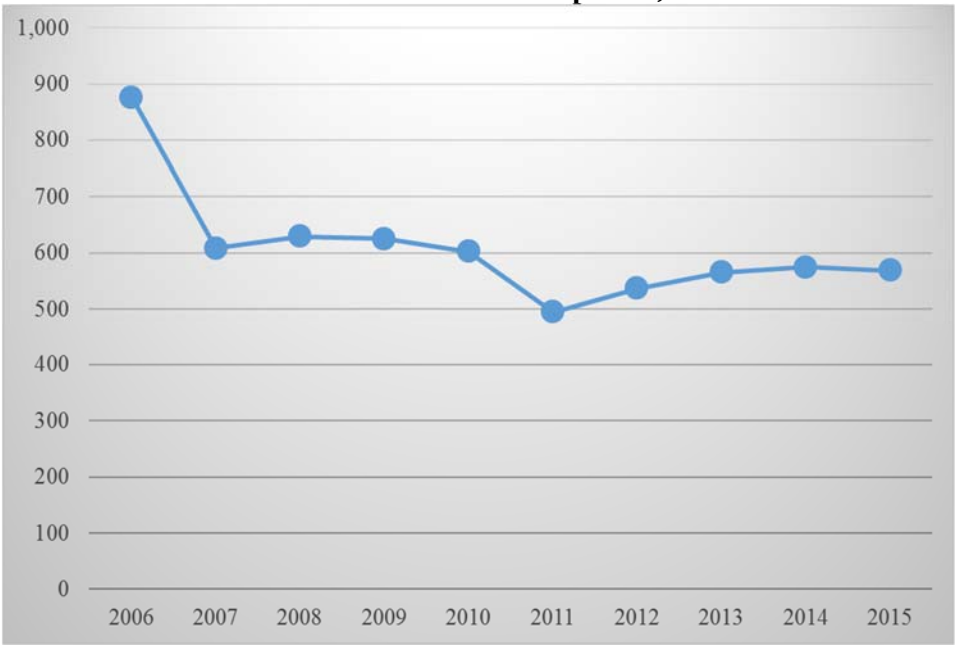
- Commercial property developers
- Residential property owners clearing land for building
- Contractors who clear and grade land

13.2.3 Solid Waste Complaints

Kitsap Public Health District responds to complaints involving violations of solid waste regulations, including premises violations and illegal dumping. As shown in Figure 13-1, the total number of solid waste complaints received by KPHD has varied between approximately 500 and 900 complaints per year, since 2006. A significant reduction, from 876 in 2006 to 630 in 2008, was observed. This appears to be mostly due to diversion of roadside dumping complaints to SWD's Clean Kitsap program. Complaints of illegal dumping, premises violations and garbage burning are received by KPHD. Additionally, Kitsap County's Kitsap1 customer service center forwards roadside dumping complaints with identification potential to KPHD for investigation or enforcement. For those complaints lacking identification potential, Kitsap County Department of Public Works, Stormwater Division Maintenance crews or Inmate Litter Crews quickly cleanup illegal dumping sites. In 2015, KPHD devoted 2.75 FTE (including administration) to solid waste and hazardous waste complaint response and enforcement.

The number of hazardous waste complaints fluctuates, averaging approximately 50 annually for the last 10 years. KPHD maintains a database to track information about complaints.

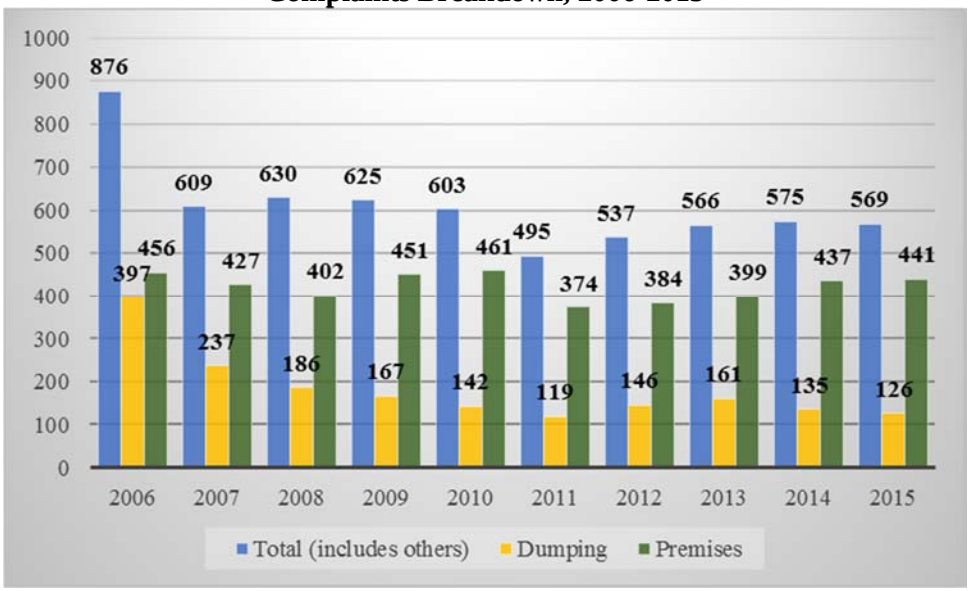
Figure 13-1
Solid and Hazardous Waste Complaints, 2006-2015



Source: KPHD 2016.

Figure 13-2 summarizes the number and nature of complaints investigated in 2006 – 2015.

Figure 13-2
Complaints Breakdown, 2006-2015



Source: KPHD 2016.

13.2.4 Nuisance Abatement

The Kitsap County Department of Community Development's Code Compliance Division has historically coordinated the activities of Kitsap Nuisance Abatement Team (KNAT). Members of this group included KPHD, the cities of Bremerton, Bainbridge Island, and Port Orchard, the SWD, Kitsap County Department of Community Development, KCSO, Kitsap County Animal Control, Kitsap County Prosecutor' Office, the Washington Department of Labor and Industries, and Washington State Patrol. The goals of this group were:

- To establish an interagency entity that can provide a unified response to a variety of complaints related to public nuisances
- Identify, prioritize, and reduce the number of nuisance properties more effectively
- Utilize staff time and resources more efficiently
- Reduce the number of contacts, revisits, and repeat inspections for violations

Due to budgetary constraints and nuisance abatement falling lower on the list of priorities within the Department of Community Development, KNAT has generally been inactive over the last several years. There is optimism that the group will reconvene in the near future.

13.2.5 Clean Kitsap Program

Litter and illegal dumping of waste materials negatively impact communities and present real threats to Kitsap County residents and the environment. Timely cleanup of illegal disposal sites tends to minimize the development of attractive nuisances – or additional chronic dumping – at dumpsites.

The SWD partners with KPHD, City and County Code Compliance, and the Sheriff's Office to augment litter and illegal dumping clean up and prevention response as part of the Clean Kitsap Program. Programs are available to all Kitsap County residents regardless of jurisdictional boundaries. Program goals include:

- Supporting the Adopt-A-Road program
- Reducing litter by increasing community awareness of the problem
- Funding illegal dump clean up on public and private property
- Funding voluntary clean-up of private properties as recommended by KPHD, City and County Code Compliance, and the Department of Emergency Management
- Funding the removal of junk vehicles from public and private property
- Reducing illegal dumping by offering cost-effective disposal alternatives
- Funding two Sheriff's crews, a juvenile detention crew, and a County Stormwater Division crew to clean up litter and illegal dump sites from road right-of-way and other public property

13.2.6 Free Disposal Events

Free disposal events, called Round-Up Days, are offered periodically to provide residential customers with the opportunity to dispose of difficult-to-manage wastes. Since 2011, these events have included furniture (2011, 2012, and 2014), yard waste (2013), and tires (2012 and 2014).

13.2.7 Abandoned Vehicle

The Clunker Clean Up program provides residential customers with removal of junk vehicles at no charge. In 2015, 34 cars, 10 RVs, 20 boats and trailers, and 25 travel and utility trailers were removed from right-of-ways and private properties.

The current trend is a steady increase in travel trailers, RVs, and boats being reported abandoned. Due to disposal of these vehicles being costly, it has had a significant impact in year-over-year spending on these activities. As of the end of Third Quarter 2016, the annual total had already matched the number of vehicles from all of 2015, with several vehicles in the queue awaiting demolition and disposal.

As of 2013, abandoned passenger vehicle complaints are exclusively managed by the KCSO. All complaint response activities and tow logistics are coordinated through the KCSO Citizens on Patrol.

13.2.8 Derelict Vessel Disposal

Derelict vessels are occasionally abandoned off shore. The Washington Department of Natural Resources reimburses up to 90% of the cost to remove the vessel. The SWD may provide disposal assistance to cover the extra 10%. KPHD and KCSO also respond to derelict vessel complaints and assist in facilitating removal and disposal.

13.2.9 Charity Disposal Assistance

Charity organizations may apply to the SWD for assistance to dispose of illegally dumped materials. Charity organizations may be granted free or half-priced disposal of the illegally dumped materials at OVTS.

13.2.10 Litter and Illegal Dumpsite Clean Up

Kitsap County receives Ecology Community Litter Clean-Up Program funds that partially support the cleanup of roadside litter and illegal dumpsites. The County Sheriff's Inmate Crews clean up roadside litter at least twice during the year from roads assigned by the SWD. The Inmate Crew cleaned up 55.8 tons of litter from 1,809 road miles in 2015. The Kitsap County Stormwater Maintenance Division cleans up illegal dumpsites on the road right-of-way when they cannot be managed by the Inmate Litter Crews. They cleaned up 28 tons of wastes from 227 dumpsites in 2015. On occasion, the Juvenile Detention crew cleans up litter and legacy illegal dumping from state highways and parks properties, as well. Due to the reassessment of safety issues with the cleanup of state highway medians, they suspended this activity in 2015; occasional highway shoulder cleanup resumed in 2016 with median work suspended indefinitely.

13.2.11 Adopt-A-Road

Kitsap County provides safety equipment, training, supplementary insurance, and free disposal to individuals and groups that clean up litter on neighborhood streets or other public property in city or county areas. In 2015, individuals and ten community groups participating in the program collected 497 bags of litter from Kitsap County roads.

13.2.12 Private Property Cleanup Assistance

The SWD sponsors a Clean Kitsap Property Clean Up Assistance program in cooperation with KPHD and City and County Code Enforcement agencies.

Each agency may issue vouchers for free disposal to assist cleanup of private property. Vouchers are used to facilitate clean-up of premises violations or illegal dumping when the owner cannot afford to clean the property. Vouchers can be used all year, but limit the user to disposal of 25 cubic yards of material. Private property cleanup requiring the disposal of more than 25 cubic yards or where equipment is needed are considered on a case-by-case basis. KPHD or local code enforcement officers often refer these cases to the SWD. Property owners or tenants must demonstrate a financial need or hardship and sign a Voluntary Clean-up Agreement. The SWD will provide disposal and transportation costs for accumulated wastes, under the condition that the property owner or tenant will not allow future accumulations.

13.2.13 Large Cleanup Projects

Private property cleanup requiring the disposal of more than 25 cubic yards or where demolition equipment is needed are considered on a case-by-case basis. Kitsap Public Health District (KPHD) or local code enforcement officers often refer these cases to the SWD. Property owners or tenants must demonstrate financial need or hardship and sign a voluntary cleanup agreement. The SWD will provide disposal and transportation costs for accumulated waste, under the condition that the property owner or tenant will not allow future accumulations.

13.2.14 Solid Waste Regulations

KPHD personnel follow established procedures when responding to complaints. Existing enforcement procedures for solid waste violations can be time consuming and troublesome.

Once a complaint is received, logged, and assigned, the inspector inspects to verify the alleged violation and requests that the violator correct the violation within a specified period of time. If that time elapses without correction, the inspector may pursue additional enforcement options including:

- A Notice and Order to Correct the violation (an optional administrative appeal is available to the violator)
- Civil Infraction which includes a fine of $524 (this may be contested in District Court)
- Criminal Penalties with fines up to $10,000 and/or one year in jail for certain violations (may be contested in District Court)
- Non-Compliance Fees (an optional appeal to the Health Officer is available)
- Stop Work Order (an optional appeal to the Health Officer is available)
- Voluntary Compliance Agreement (appeal is waived)
- Abatement Order (an optional appeal to the Health Officer is available)
- Notice to Vacate (an optional appeal to the Health Officer is available)
- Permit Suspension or Revocation (an optional appeal to the Health Officer is available)
- Recovery of abatement costs

Individuals who wish to contest a civil or criminal penalty may do so in Kitsap County District Court in accordance with the procedures established under Chapter 7.80 RCW. A civil or criminal penalty does not result in cost recovery for the abatement costs incurred by KPHD, unless it is for illegal dumping which allows the court to also impose restitution.

If a violation is not corrected in response to an Abatement Order, the Health Officer may enter the property and abate the unlawful condition. Under these circumstances, KPHD may recover all costs associated with the abatement action through a property lien.

13.2.15 Secure Loads Regulation

Several tragic incidents in recent years have led to increased concern and enforcement of requirements for loads to be secured properly while being transported. State law (RCW 46.61.655) was modified in 2005 to increase the penalties for unsecured loads. The penalty for an accident caused by unsecured load can now be as high as $5,000 plus up to one year jail time if an item falls off of a vehicle and causes bodily injury to another person. Loads that are not secured properly also create a significant amount of litter. Ecology estimated that as much as 25% of roadside litter is the result of improperly secured loads (Ecology 2005).

There has been much publicity and education focused on the problems caused by improperly secured loads. To address these issues, Kitsap County adopted KCC Chapter 9.18, which requires users of County solid waste facilities to cover their loads. Violators are charged a ten-dollar fee. Attendants at OVTS and the RAGFs also distribute brochures on this topic, as an outreach tool.

13.2.16 Nuisance Abatement Regulations

KPHD abates nuisances using traditional solid waste and on-site septic regulations. KPHD is not authorized to abate nuisances using the Kitsap County Nuisance Abatement Regulation. Until KNAT activities resume, KPHD has put together a combination of private, non-profit, and public resources to address chronic nuisances. The SWD assists in this effort through its Clean Kitsap Program by paying for

disposal and hauling costs associated with these cleanups. Beginning in 2015, many of these efforts have focused on cleaning up the by-products of homeless encampments throughout the County. Assistance in providing temporary or semi-permanent housing for individuals uprooted by cleanup activities at various sites is provided by Kitsap Community Resources or other charitable organizations.

13.3 POLICY OBJECTIVES

Based on analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Policies were identified:

1) Offer and support programs that discourage litter and illegal dumping and provide timely response to litter and illegal dumping complaints.

2) Continue to promote outreach efforts and enforcement of Washington State regulations pertaining to covered loads.

3) Continue to support enforcement of solid and hazardous waste regulations as they apply to individuals, facilities, and properties in Kitsap County.

4) Continue to partially fund the KPHD Solid and Hazardous Waste Program through a transfer station tipping fee surcharge.

5) Continue to actively participate on KNAT if/when it becomes active again.

13.4 RECOMMENDED STRATEGIES

The following Recommended Strategies were developed to implement the Policy Objectives:

1) Solid Waste Division will continue to work with other agencies to coordinate litter and illegal dumping reduction programs.

2) Continue to ensure prompt response to litter and illegal dumping complaints through the Clean Kitsap Program or its successors(s).

3) Continue to provide prompt response and enforcement of improper management of solid wastes on private property.

4) KPHD will continue to monitor the status of closed and abandoned landfills and review all proposals for development near (within 1,000 feet) or on abandoned landfill parcels.

5) Continue the community volunteer-based Adopt-A-Road program and identify opportunities to grow the program and appeal to new audiences.

6) Continue to fund crews to cleanup litter and illegal dump sites from right-of-way and other public properties.

7) Continue to produce outreach materials and provide on-site outreach at disposal facilities to increase awareness of covered load requirements, and continue to charge an uncovered load fee for any loads not in compliance with these regulations.

8) Continue to promote voluntary programs, which provide assistance and guidance in support of managing solid and hazardous waste in an environmentally sound manner and in compliance with applicable regulations.

9) Continue funding support for the KPHD Solid and Hazardous Waste Program through solid waste tipping fees at OVTS.

10) Continue to work with other agencies to evaluate efficient strategies for capturing and recycling junk vehicles, boats, and recreational vehicles.

11) Ensure that code enforcement and permitted solid waste facilities are operated in accordance with regulatory requirements.

12) Ensure that solid waste handling is conducted in accordance with applicable regulatory requirements.

13) Issue permits to covered Solid Waste Handling facilities as required by regulation.

14) Examine the need for, and, if necessary, implement material ban or take-back ordinances to reduce the prevalence of commonly dumped, littered, and problematic items. Examples: plastic shopping bag ban, medical sharps take-back, and pharmaceutical take-back.

15) Continue to partner with the WSDOT to encourage sponsorship of highway median cleanups along State Route 3 and State Route 16. In addition, continue to advocate for additional cleanup efforts along state highways by Washington State Department of Ecology's Youth Corps crews.

13.5 REFERENCES/RESOURCES

Kitsap Public Health District (KPHD). 2016. *Personal communications with Jan Brower, Solid and Hazardous Waste Program Manager and Christopher Piercy, SWD.* Kitsap County, Washington.

Washington State Department of Ecology (Ecology). 2005, *Tips for Securing Your Load to Prevent Litter and Injuries.* Publication number 05-07-028. Lacey, Washington.